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SIEMENS

Catalog IC 10

Edition 2023

SIRIUS

Industrial Controls

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Related catalogs

Industrial Controls IC 10
SIRIUS

PDF (E86060-K1010-A101-B5-7600)

Low-Voltage Power Distribution and Electrical Installation Technology LV 10
SENTRON • SIVACON • ALPHA

PDF (E86060-K8280-A101-B6-7600)

SIMATIC ST 70
Products for
Totally Integrated Automation

PDF (E86060-K4670-A101-B9-7600)

Motion Control Drives D 31.2
SINAMICS Converters for Single-Axis Drives
Distributed Converters

PDF (E86060-K5531-A121-A2-7600)

SIMATIC Ident ID 10
Industrial Identification Systems

E86060-K8310-A101-B1-7600

SITOP KT 10.1
SITOP
Power Supply

PDF (E86060-D4001-A510-E0)

SITRAIN
Digital Industry Academy

www.siemens.com/sitrain

Miscellaneous

Industry Mall
Information and Ordering Platform
on the Internet:

www.siemens.com/industrymall

Siemens TIA Selection Tool
for the selection, configuration and ordering of
TIA products and devices

www.siemens.com/tst

Contact
Your personal contact can be found in our
Contacts Database at:

www.siemens.com/automation-contact

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Further information about industrial controls:
www.siemens.com/sirius

Technical Support

Expert technical support
for Industrial controls:

Support Request:
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Industrial Controls

SIRIUS

Catalog IC 10 · 2023

Supersedes:
Catalog IC 10 · 01/2022

Refer to the Industry Mall for regular updates of this catalog:
www.siemens.com/industrymall

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The catalog PDF contains click-on article numbers, graphics and videos.

The products and systems described in this catalog are manufactured/distributed under application of a certified quality management system in accordance with EN ISO 9001 (for the Certified Registration Nos., see www.siemens.com/system-certificates/ep). The certificate is recognized by all IQNet countries.

1 Introduction

2 Industrial communication

3 Switching devices – Contactors and contactor assemblies – for switching motors

4 Switching devices – Contactors and contactor assemblies – Special applications

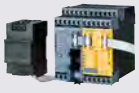
5 Switching devices – Contactors and contactor assemblies – Contactor relays and relays

6 Switching devices – Soft starters and solid-state switching devices

7 Protection equipment

8 Load feeders and motor starters for use in the control cabinet

9 Motor starters for use in the field, high degree of protection

10 Monitoring and control devices 

11 Safety technology

12 Position and safety switches

13 Commanding and signaling devices

14 Parameterization, configuration and visualization with SIRIUS

15 Power supply

16 Appendix

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Ordering notes

Catalog IC 10 contains all selection and order-relevant data.

Ordering notes

Ordering special versions

For ordering products that differ from the versions listed in the catalog, the article number specified in the catalog must be supplemented with "-Z"; the required features must be specified by means of the alphanumeric order codes or in plain text.

Small orders

When small orders are placed, the costs associated with order processing are greater than the order value. We recommend therefore that you combine several small orders. Where this is not possible, we unfortunately have to charge a processing supplement of 20.00 € to cover our costs for order processing and invoicing for all orders with a net goods value of less than 250.00 € .

Price units (PU)

The price unit defines the number of units, sets or meters to which the specified price applies.

Price groups (PG)

Each product is assigned to a price group.

Dimensions

All dimensions in mm.

Standard delivery time (SD)

Due to the current tight delivery situation on the market, no standard delivery times are listed for our articles in this edition of the catalog. Current information is given in the Mall for the respective article number at www.siemens.com/sirius/mall.

Packaging sizes (PS)

The packaging size defines the number, e.g. of units, sets or meters, contained in an outer packaging. Only the quantity defined by the packaging size or a multiple thereof can be ordered. For multi-unit packing and reusable packaging, see page 16/5 onwards.

Example

3RA2110-0FA15-1AP0
PG: 41D
Order quantity 1 unit or a multiple thereof
3RA1921-1D
PG: 41B
Order quantity 10 units or a multiple thereof
3SU1900-0AB71-0AB0
PG: 41J
Order quantity 10 units or a multiple thereof

Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RA2110-0FA15-1AP0		1	1 unit	41D
3RA1921-1D		1	10 units	41B
3SU1900-0AB71-0AB0		100	10 units	41J

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SIRIUS in the World Wide Web

The most important online services at a glance.

Industrial controls

Homepage
www.siemens.com/sirius

Siemens Industry Online Support – SIOS

Product Support
www.siemens.com/online-support

Industry Mall

Catalog and Ordering System
www.siemens.com/industrymall

Siemens Industry Online Support App

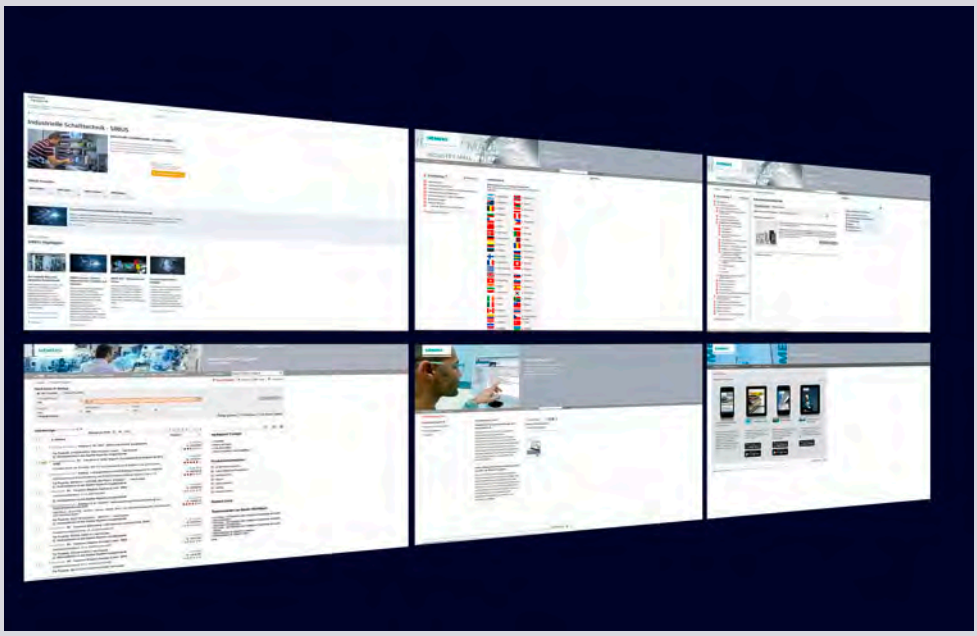
More information on the Online Support App
www.siemens.com/support-app

Configuring products and systems

Configurators
www.siemens.com/sirius/configurators

Device selection and configuration

TIA Selection Tool
www.siemens.com/tst



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SIRIUS 3RW soft starters

As diverse as your tasks

The strong, harmonized portfolio of soft starters is suited to a wide range of standard – and also Failsafe and ATEX – applications thanks to comprehensive and specific functions.
Benefit from intelligent functions such as condition monitoring, automatic parameterization, pump cleaning and integrated braking functions, regardless of the industry you are in.

Strong portfolio
Comprehensive, coordinated soft starter portfolio for simple to demanding starting: Basic, General, High Performance

Efficient switching
Energy-efficient switching and mechanical protection of the drive train thanks to soft starter with hybrid switching technology

Intelligent use
Concentrated, application-specific functionality thanks to intelligent features such as automatic parameterization, pump cleaning and condition monitoring

Ready for the digital future
Support for digital engineering processes with tools and data. Data provision for local visualization or cloud-based analysis

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SIRIUS 3RW
Strong, comprehensive portfolio with a wide range of possibilities thanks to a flexible design.

More information, see www.siemens.com/softstarters

Digitalization
The 3RW soft starters help you to realize the full potential of digitalization. This is particularly beneficial when it comes to economic efficiency.

Your application in focus

Pump cleaning and pump stopping mode

The pump cleaning function prevents pumps from blocking and therefore increases your productivity and system availability. The pump stopping mode avoids mechanical stress in the piping system and extends the service life of the equipment.

Electrical ruggedness

Due to the wide control voltage range from 110 to 250 V AC, soft starters have a high degree of electrical ruggedness. This guarantees reliable operation even in the event of falling voltages.

Condition monitoring

The condition monitoring function supports optimal planning of maintenance work on bearings or seals, thereby maximizing availability.

Automatic parameterization

Automatic parameterization simplifies the commissioning and operation of critical applications considerably, even in the case of highly dynamic load characteristics.

Integrated braking functions

Intelligent functions such as soft starter braking ensure a fast and reliable stop without engineering and configuration work.

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SIRIUS modular system

Efficiently combined.

More information, see www.siemens.com/sirius-modular-system

Modular design

Optimally matched and dimensioned products expandable with uniform accessories

Save space

Highest performance on the market based on installation size

Order pre-assembled

Ready-made and tested combinations with short-circuit strength up to 150 kA/400 V

Quick wiring

Comprehensive portfolio for spring-loaded terminals, function blocks for contactor assemblies for reversing and star-delta (wye-delta) starting as well as connectors

Efficient configuration

Configuration data and macros for integration into your CAE systems

Use anywhere

Fulfills all relevant standards worldwide and requirements of many applications even under extreme operating conditions (safety applications, rail and shipbuilding, etc.)

Sustainable switching and protecting AC-3e

Is IE3/IE4 ready and has the new utilization category AC-3e. Ideal partner for switching and protecting highly efficient motors

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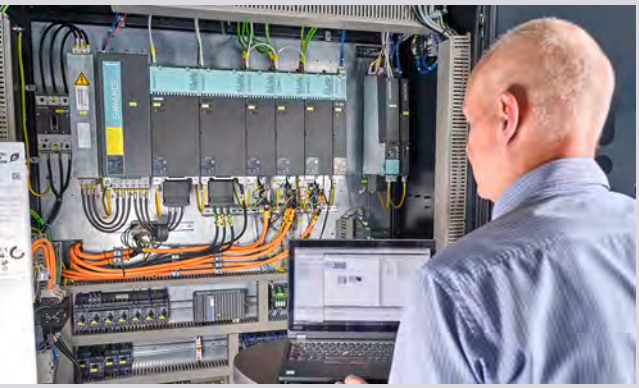
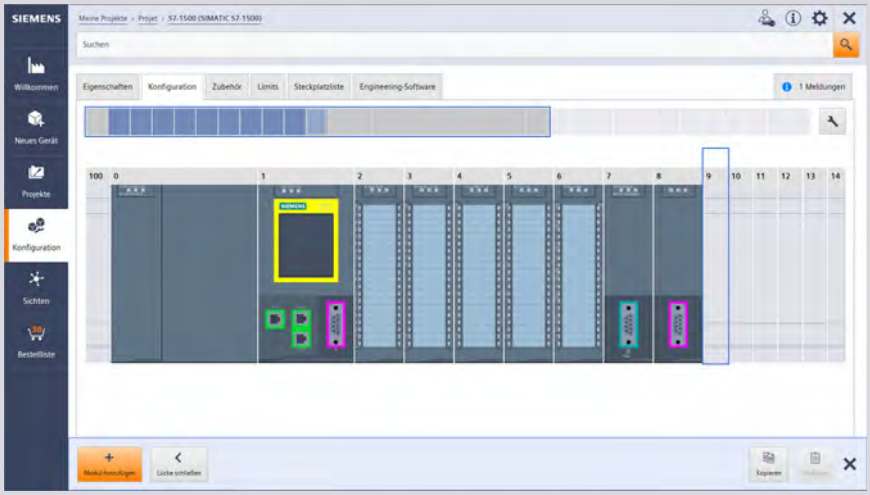


TIA Selection Tool

quick, easy, smart configuration

For you to get the most out of our portfolio quickly and easily.

Do you always need the optimum configuration for planning your project? For your application we offer the TIA Selection Tool to support all project planners, beginners and experts alike. No detailed portfolio knowledge is necessary.
TIA Selection Tool is available for download as a free desktop version or a cloud variant.



Quick

- Configure a complete project with just a few entries – without a manual, without special knowledge
- Import and export of hardware configuration to TIA Portal or other systems
- Ideal visualization of the projects to be configured

Easy

- Tool download either as desktop version or web-based cloud version
- Technically always up-to-date about product portfolio and innovative approaches
- Highly flexible, secure, cross-team work in the cloud
- Direct ordering in the Siemens Industry Mall

Smart

- Smart selection wizard for error-free configuration and ordering
- Configuration options can be tested and simulated in advance
- Library for archiving sample configurations

The TIA Selection Tool is a completely paperless solution. Download it now:
www.siemens.com/tst

For more information, scan the QR code

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Smart Control Panel Design

The new standard in electrical engineering

**With Control Panel Design, Siemens offers for the first time a function in the TIA Selection Tool that can be used to design and dimension the main electrical system of a machine in accordance with standards.
And this for the IEC standardization area and for the important North American market.**

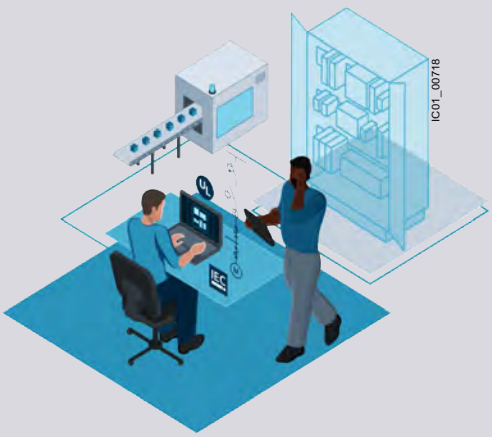
At the push of a button you receive the appropriate switching and protection devices for your motor, including standard-compliant cable cross-sections and short-circuit values for fuseless and fused load feeders.

Never before has the dimensioning of your load feeders been so quick and reliable!

Electrical engineering in ONE tool. This makes configuring more enjoyable!

1.
Digital expertise on standards
Standard conformity with no worries

2.
Easy dimensioning
A new dimension of dimensioning



3.
Consistent workflow
Electrical engineering with unlimited creativity

4.
Supported portfolio
Intelligent devices for versatile solutions

Highlights

- Automatic short-circuit calculation and cable dimensioning
- Automatic dimensioning of fuseless and fused load feeders up to 250 hp according to UL 508A or up to 250 kW according to IEC 60204-1
- Selection of the appropriate switching and protection devices for the motor
- Visual planning of the main circuit in the single-line diagram
- Simple accessory selection
- Complete PDF documentation of technical specifications and calculation results (e.g. for the short-circuit verification)
- Simple main switch dimensioning for IEC and UL infeeds

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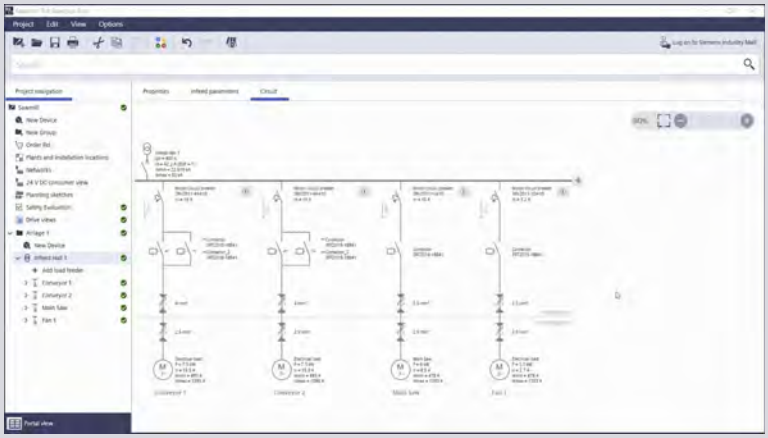
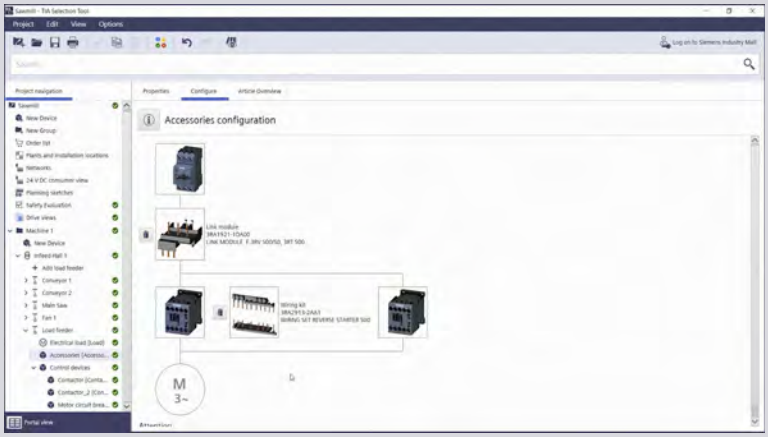
For more information, tool download and videos, see www.siemens.com/cpd

Are you looking for a clear and easy way to dimension your circuits?



Or do you need suitable accessories for your switching devices?



The main circuit view with single-line display and the automatic display of accessories are two of the many new functions in the TIA Selection Tool.

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Integrated Control Panels

The easy way to build the optimum control panel.

We offer practical support in mastering the typical challenges of control panel engineering through a harmonized product portfolio, tools and data for digitalization in engineering, and expert know-how.

Working together for simple and stress-free control panel design

Comprehensive support for all control panel applications

Want to save time and costs? With Integrated Control Panels, it's easy to optimize all aspects of control panel building for your machines and industrial plants. From preparation and dimensioning, design and construction, through to service and support – for greater competitiveness and long-term success.

Expert know-how

The faster route to the ideal control panel with practice-oriented expertise

We support you with exactly the right know-how to give you a competitive edge – both now and in the future. This includes applying standards and guidelines in day-to-day operations (e.g. UL 508A, IEC 60204-1) as well as efficient engineering and configuration.

- Webinars, online trainings and individual consulting on product and application topics
- Literature with practical tips and tricks, including: guidelines, product manuals, white papers

www.siemens.com/controlpanel/infocenter

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For more information, see www.siemens.com/panelbuilding

Tools & data for digitalization in engineering

Maximum efficiency for control panel design

With a range of tools and data-based services, we support you with the digitalization of your business and enable the leverage of all the advantages this offers for control panel design: greater efficiency, flexibility and quality – in every process phase!

- Intelligent selection, dimensioning and design
  www.siemens.com/controlpanel/cpd
  www.siemens.com/controlpanel/tools
- Control panel engineering
  www.siemens.com/controlpanel/engineering

Harmonized product and system portfolio

Effective savings in control cabinet design

Harmonized product and system portfolio saves construction time. With our coordinated, integrated portfolio of products that includes automation technology, drive train components, industrial controls and matching control panel enclosures, we can reduce your engineering overhead and ensure the harmonious interaction of all devices. These are extensively tested, and are all certified and available for use worldwide – enabling you to remain flexible within the global business environment.
Benefit also from our expert tips concerning control panels.
www.siemens.com/controlpanel/tips

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Product highlights

SIRIUS 3RW5 soft starters
can be flexibly deployed in many applications

Type: 3RW5
Pages 6/15, 6/39, 6/55 and 6/73 onwards

3RW55 system redundancy S2
for PROFINET High-Feature communications module

Type: 3RW5950-0CH00
Page 6/10 onwards

SIRIUS 3RQ1 force-guided coupling relays, fail-safe up to SIL 3/PL e

Type: 3RQ1
Page 5/21 onwards

3SE64 RFID safety switches with tumbler

Type: 3SE6415-1...
Page 12/122 onwards

Electronically configurable 8WD46 signaling columns

Type: 8WD4613, 8WD4615
Page 13/163 onwards

For more information, see www.siemens.com/sirius

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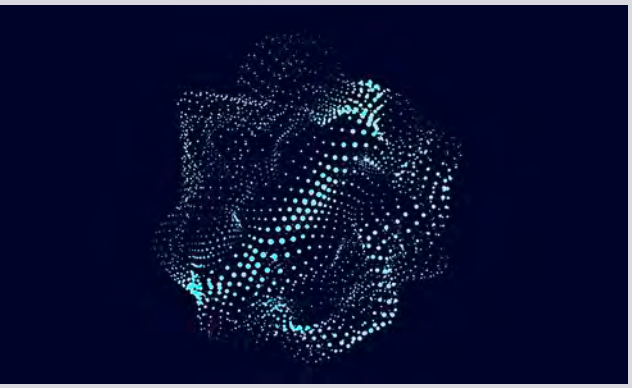

Sustainability@SI

An intelligent infrastructure is a sustainable infrastructure.

For more information, see www.siemens.com/sustainability-figures

As a company, Siemens considers environmental, social and governance (ESG) criteria from all angles with its DEGREE framework (decarbonization, ethics, governance, resource efficiency, equity and employability). We are not only committed to reducing the carbon footprint in our own operations to net zero by 2030, but also helping our customers achieve their decarbonization and sustainability goals. The main areas where Smart Infrastructure contributes to the DEGREE framework are decarbonization, resource efficiency and employability.

Mission & strategy

As a focused technology company, Siemens is committed to addressing the world's most profound challenges by leveraging the synergies between digitalization and sustainability.

Technology with aim and purpose

We develop technologies that connect the real and digital worlds and enable our customers to positively transform the industries that form the backbone of our economy: industry, infrastructure, transportation and healthcare.

Our contribution

Siemens makes an impact every day by providing innovative solutions in response to challenges relating to environmental protection, decarbonization, health and safety. Innovative solutions that have a clear goal: to make the world more sustainable, more integrative and a better place to live.

Sustainability facts

For almost 175 years, Siemens has been driven by the desire to improve the lives of people around the world with our technologies.

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Technical Support

One click – and you have all the information you need.

Industry Online Support – get fast and up-to-date information online

www.siemens.com/online-support

In Industry Online Support you will find FAQs, manuals, certificates, applications & tools, and much more

Support Request – the fast track to the experts

www.siemens.com/support-request

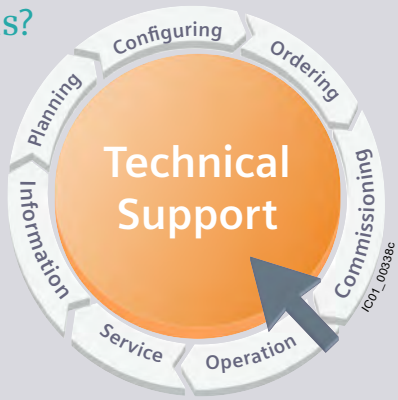
Using the Support Request form in Online Support you can send your query directly to Technical Support.

Conversion tool – the easy and efficient way to find successor products

www.siemens.com/conversion-tool

Any more questions?

Our experts are there to help you with competent technical advice.



Support Request:
www.siemens.com/support-request

Competent and fast technical advice regarding:

- Product selection
- Conversion from old to new
- Competitor conversion
- Special versions
- Particular requirements
- Commissioning
- Maintenance

Further input channel for other topics:

- Returned goods
- Field Service assignments
- Corrective maintenance needs
- Quality cases

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1/2 **Energy-efficient controls**
SIRIUS brings down energy costs

1/3 **Energy management with SIRIUS**
Integration into energy management software

1/4 **Systematic industrial safety technology**
SIRIUS Safety Integrated

1/8 **IE3/IE4 ready**
SIRIUS controls for reliable switching and protection of highly efficient IE3 and IE4 motors

1/9 **Innovative technology for saving energy**
Electronic starting with hybrid switching technology

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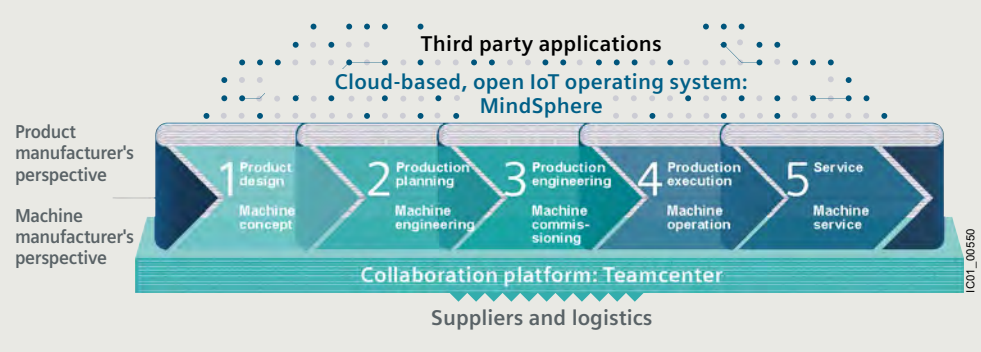
Introduction
Energy-efficient controls

SIRIUS brings down energy costs

Overview

Energy management in industry



Product development and production process

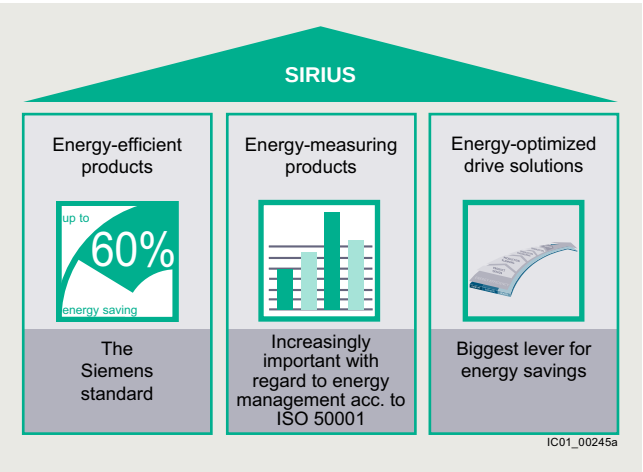
Whether you are a plant operator, planner or machine manufacturer: Energy-efficient production is a challenge and an opportunity in equal measure.

Energy-efficient production as a success factor

In order to harness energy potential, with our vast portfolio, we always maintain a clear view of the overall product development and production process. Because maximum energy efficiency in production can only be achieved through perfect interaction of all components.

That is why it is important to first create an awareness for existing energy-saving potential, recognize (identify) and assess (evaluate) opportunities for optimization through precise analysis. Finally, appropriate measures must be implemented (realized).

With our full-range portfolio of energy-efficient drive solutions, automation and services, you too will reach maximum energy efficiency, higher productivity and lasting competitiveness in your company.



Three columns of energy efficiency with products from the SIRIUS modular system

Energy-efficient products – SIRIUS reduces power loss

SIRIUS controls (3RM motor starter, 3RR2 monitoring relay, 3RB3 overload relay, 3RT2 contactor, 3RW soft starter and 3RV2 motor starter protector/circuit breaker) as well as the ET 200SP motor starters are characterized by extremely low intrinsic power loss. This not only lowers energy costs, but also reduces the amount of waste heat in the control cabinet. This then translates to a higher packing density and a reduction in the required cooling performance.

Energy-measuring products

Energy management can be instrumental in increasing plant productivity to bring about a significant improvement to the competitive ability of a company – in all industries.

Energy data acquisition represents an important component of the overall energy data management process here. Through transparency right down to the loads, it is possible to identify and utilize potential energy savings.

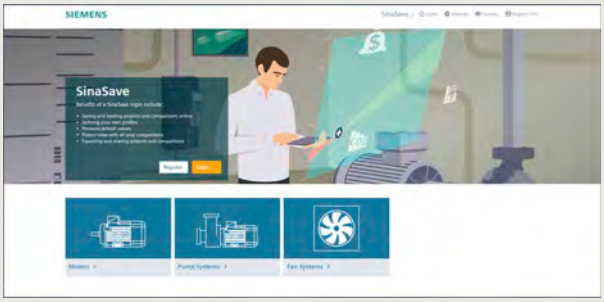
With communication-capable SIRIUS switching devices you can acquire energy data from the drive train without any additional effort.

SIRIUS controls help you make energy flows visible.

Best drive solutions in terms of energy

In order to design processes for optimal energy efficiency, it is not enough to simply measure the energy flow and deploy energy-efficient products. The greatest lever for saving energy can be derived from closely examining the application.

SinaSave energy efficiency tool



Amortization calculator for energy-efficient drive systems

The SinaSave energy efficiency tool determines energy saving potential and amortization times based on your individual conditions of use and therefore offers practical assistance in making decisions about investments in energy-efficient technologies.

In SinaSave, the drive systems to be compared and the relevant drive component parameters are displayed graphically. The various control types and comprehensive product combinations for drive solutions for pump and fan applications can be adapted in your application.

The product portfolio comprises not just SIRIUS controls, but also SIMOTICS motors and SINAMICS converters, thus offering a comprehensive range of comparison possibilities – according to your individual requirements.

SinaSave, the free amortization calculator for energy-efficient drives, see www.siemens.com/sinasave.

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Overview

SIMATIC Energy Suite

High energy consumption and automated production processes are typical for many industries.

If you want to keep your energy costs under control in the long term and you are already focusing on the digital future, it's a good idea to equip your plant with integrated energy measuring technology, thus anchoring energy management into the automation of your production processes – which is where most energy is consumed.

SIMATIC Energy Suite as an integrated option for the TIA Portal efficiently links energy management with automation, thus creating energy transparency in the production system.

The considerably simplified configuration of energy measuring components from the product families SIMATIC, SENTRON, SINAMICS, SIRIUS and SIMOCODE significantly reduces the configuration costs. For details on the currently supported devices, see www.siemens.com/energysuite-hardware.

Thanks to the end-to-end connection to SIMATIC Energy Manager PRO (innovative successor to SIMATIC B.Data) or cloud-based Service Energy Analytics, you can seamlessly expand the recorded energy data to create a cross-site energy management system.

This also enables companies to fulfill all economic and energy management requirements – from purchasing of energy through planning to energy management.

The advantages at a glance:

- Simple and intuitive configuration instead of programming
- Automatic generation of the PLC energy program
- Convenient integration of measuring components from the Siemens portfolio and from the portfolios of other manufacturers
- Integrated in the TIA Portal and automation
- Archiving on WinCC Professional or PLC
- Seamless connection to Energy Manager PRO and Energy Analytics

For more information on SIMATIC Energy Suite, see www.siemens.com/energysuite.

SENTRON powermanager

SENTRON powermanager

The SENTRON powermanager energy monitoring software displays important characteristic quantities for individual devices and the entire system on a clearly organized dashboard and thus analyzes the energy consumption.

The advantages at a glance:

- Analyzing energy flows: Cost-saving measures can be derived directly and faults can be localized rapidly – for greater awareness regarding energy consumption and lower costs.
- Easy to get started: Can be added to existing hardware and available infrastructure.
- Fast savings: Analyzes power curve and detects load peaks.
- High plant availability: Continuous monitoring of power distribution ensures that critical system states are detected at an early stage.

The SIRIUS 3RW55 soft starter is integrated into SENTRON powermanager by simple installation of an XML file, see https://support.industry.siemens.com/cs/ww/en/view/109798105

For more information on SENTRON powermanager, see www.siemens.com/powermanager.

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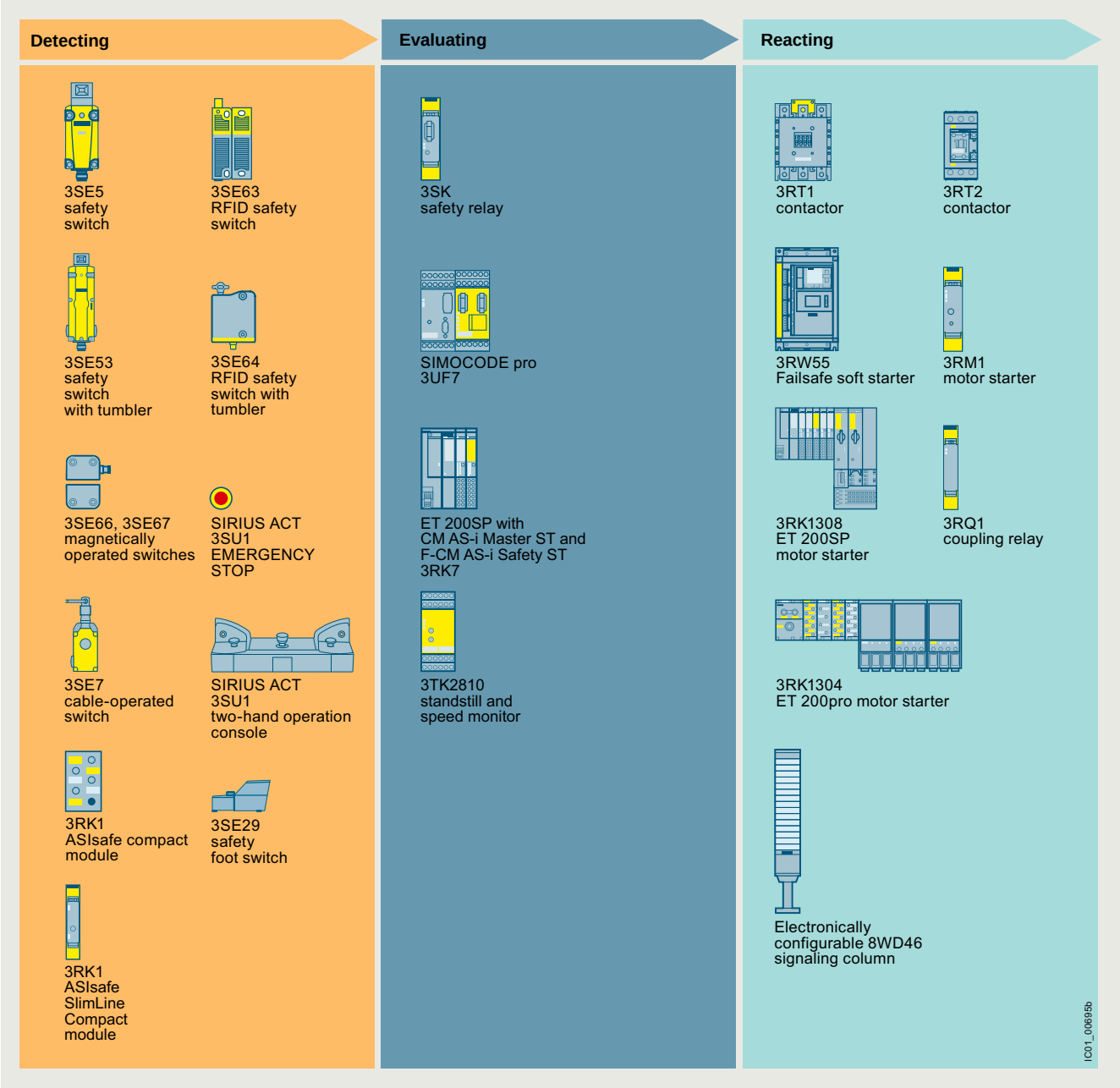
Overview



SIRIUS Safety Integrated

Manufacturers and operators of machines must fulfill numerous requirements: reducing costs, improving productivity, and ensuring the safety of machines. The industrial safety technology from Siemens offers innovative, economical solutions for the functional safety of machinery.

Machine safety – compliance with directives

Before any machines or plants can be supplied or operated, they must meet the fundamental safety requirements of the EU Directives. Similar requirements apply in many other countries and markets.

To guarantee conformity with these requirements, it is recommended that the correspondingly harmonized standards IEC 62061 or ISO 13849-1 are applied. This gives manufacturers and operators legal certainty regarding compliance with both national regulations and directives, which are confirmed by the manufacturer of a machine.

The aim of safety technology is therefore to allow people, machines and the environment to be protected and statutory safety requirements to be satisfied.

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The quick and easy way to safe machinery

In addition to the statutory regulations governing the protection of people there are also economic reasons for avoiding personal injury and the resulting downtimes, and for protecting both machinery and equipment from damage.

Safety Integrated benefits machine manufacturers and plant operators in many ways:

- Lower costs for hardware, assembly and engineering
- Higher availability thanks to faster diagnostics and fewer downtimes

At the same time, using modular safety concepts allows them to modernize their plants more easily and at lower cost.

Smart controls ensure the functional safety of machinery

Our SIRIUS Safety Integrated controls are a central element of the Siemens Safety Integrated concept, based on Totally Integrated Automation.

SIRIUS Safety Integrated, see www.siemens.com/safety-integrated.

Whether for reliable detecting, evaluating and reacting, our SIRIUS Safety Integrated controls (page 1/6 onwards) provide cost-effective solutions for the safety of your machine or plant. Take the SIRIUS 3SK safety relays for example: They are modularly expandable, and can integrate compact motor starters such as the fail-safe SIRIUS 3RM1 very simply via the device connector (parameterization is performed easily with a screwdriver on the DIP switches or by drag and drop in the engineering software).

The SIMOCODE pro modular motor management system combines all required protection, monitoring, safety and control functions for motor feeders. It can be connected to fail-safe controllers via PROFIBUS or PROFINET and shut down motors in emergency situations.

SIRIUS Safety Integrated uses fail-safe communication via standard fieldbus systems, such as ASIsafe via AS-Interface and PROFIsafe via PROFIBUS and PROFINET, to solve even networked safety tasks of greater complexity. This opens the door to flexible safety solutions for compact machines or large-scale plants – naturally compliant with current standards up to SIL 3/PL e.

The first integrated ASIsafe connection to the distributed I/O system ensures even more consistency. With the SIMATIC AS-i F-Links, AS-i networks can be connected quite simply to safety controls via PROFIsafe via the SIMATIC ET 200SP.

Particular highlights are the 3RT contactors of sizes S2 to S12 with fail-safe control input, the SIRIUS ACT 3SU1 EMERGENCY STOP with PROFINET or PROFIsafe interface, and the fail-safe motor starters for ET 200SP (page 8/94 onwards) and the 3RW55 fail-safe soft starters (page 6/39 onwards). With these products, seamless integration into fail-safe control systems is possible.

The Application Manual SIRIUS Safety Integrated (SIAM Safety Integrated Application Manual) provides users with comprehensive application examples for SIRIUS Safety Integrated products, see https://support.industry.siemens.com/cs/ww/en/view/81366718.

Your partner for machine and plant safety

With Safety Integrated, Siemens has provided the smart answer to constantly increasing requirements for the functional safety of a machine and for its cost-effectiveness and flexibility. Our comprehensive portfolio of safe controls, control technology and drive technology provides scalable solutions for precisely tailored safety concepts for protecting people, machines and the environment. Our products meet the current safety standards in the industry, including IEC, ISO, NFPA and UL.

As a partner for machine and plant safety, Siemens also supports users with examples of functions and up-to-date know-how concerning international standards and directives.

The Safety Selector (www.siemens.com/safety-selector) thus guides the user to the appropriate application example based on selection criteria to be assigned.

The free safety evaluation for evaluating safety functions in accordance with IEC 62061 and ISO 13849-1 is integrated in the TIA Selection Tool, see www.siemens.com/safety-evaluation.

Thus, the selection of components and their safety-related assessment are implemented in a coherent workflow.

Requirements-based training on CE marking, functional safety, risk assessment, and on our Safety Integrated products rounds off our portfolio, see www.siemens.com/sitrain.

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Introduction
Systematic industrial safety technology

SIRIUS Safety Integrated

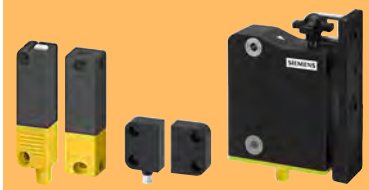
Devices with safety functions

Detecting

Product	Page
3SE position and safety switches	12/2

Flexible thanks to modular design, suitable for offshore applications

Product	Page
3SE6 non-contact safety switches	12/4



Magnetically operated switches (IP67) and RFID safety switches (IP69)

Product	Page
3SU11 EMERGENCY STOP mushroom pushbuttons, 3SU18 two-hand operation console	13/26, 13/50, 13/106

- SIRIUS ACT two-hand operation console with user-friendly capacitive sensor keys
- High level of flexibility due to direct integration of the SIRIUS ACT EMERGENCY STOP via standardized, fail-safe communication protocols (PROFIsafe, ASIsafe)

Product	Page
3SE7 cable-operated switches, 3SE29 safety foot switches	13/156, 13/161

- Foot switches with cover, metal enclosure with degree of protection IP65
- Cable-operated switches with latching and positive-opening NC contacts, in degree of protection IP65 or IP67

Evaluating

Product	Page
SIMOCODE pro 3UF7	10/5

Fail-safe expansion modules DM-F Local and DM-F PROFIsafe, safe shutdown of motors up to SIL 3/PL e

Product	Page
3SK safety relays	11/13

Key modules of a consistent and cost-effective safety chain. Flexible thanks to input and output expansion units

Product	Page
3TK2810 safety relays	11/33

Further modules of a consistent and cost-effective safety chain for fail-safe detection of standstill or speed

Reacting

Product	Page
3RQ1 coupling relays	5/21

SIRIUS 3RQ1 force-guided coupling relays, fail-safe up to SIL 3/PL e

Product	Page
3RW55 Failsafe soft starters	6/39

3RW55 Failsafe High Performance soft starters with STO

Product	Page
SIRIUS 3RM1 motor starters	8/83

Compact, narrow and fail-safe hybrid motor starters in IP20

Easy configuration and low outlay for storage thanks to wide setting range of the overload release

Product	Page
ET 200SP fail-safe motor starters	8/94

Compact, fail-safe hybrid motor starters for the ET 200SP system

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Devices with safety functions for AS-Interface

Detecting

Product — Page

Safety modules/EMERGENCY STOP mushroom pushbuttons

- K45F and K20F compact safety modules for use in the field — 2/26

- SC17.5F SlimLine Compact safety modules for use in the control cabinet — 2/26

- 3SU1 EMERGENCY STOP mushroom pushbuttons in the enclosure for AS-Interface — 13/100

Detection of safety-related signals via safe input slaves on the AS-Interface bus (field modules with degree of protection IP67, control cabinet modules with degree of protection IP20, EMERGENCY STOP mushroom pushbuttons in the enclosure with integrated ASIsafe slave with degree of protection IP69)

3SF1 mechanical safety switches — 12/93

Flexible thanks to modular design, degree of protection up to IP69, suitable for offshore applications

Evaluating

Product — Page

CM AS-i Master ST, F-CM AS-i Safety ST for SIMATIC ET 200SP — 2/29, 2/34

Evaluation and processing of signals via a fail-safe SIMATIC or SINUMERIK control.

Simple combination of the CM AS-i Master ST and F-CM AS-i Safety ST modules in one ET 200SP station results in a powerful, safety-oriented network transition between PROFINET (or PROFIBUS) and AS-Interface.

Reacting

Product — Page

ET 200pro Safety motor starters Solution PROFIsafe — 9/3

Communication-capable motor starters with high degree of protection IP65

Special safety modules enable the highest safety levels

3RT contactors from 18.5 kW (F-PLC input)

Optimum connection to the fail-safe controller as actuator in the safety chain

Considerable simplification of the application in large power ranges thanks to F-PLC input on the following contactors:

3RT203 and 3RT204, 3RT105 to 3RT107, 3RT145 to 3RT147 — 3/62, 3/65, 4/18

Electronically configurable 8WD46 signaling columns — 13/163

Flexible and versatile thanks to modular design

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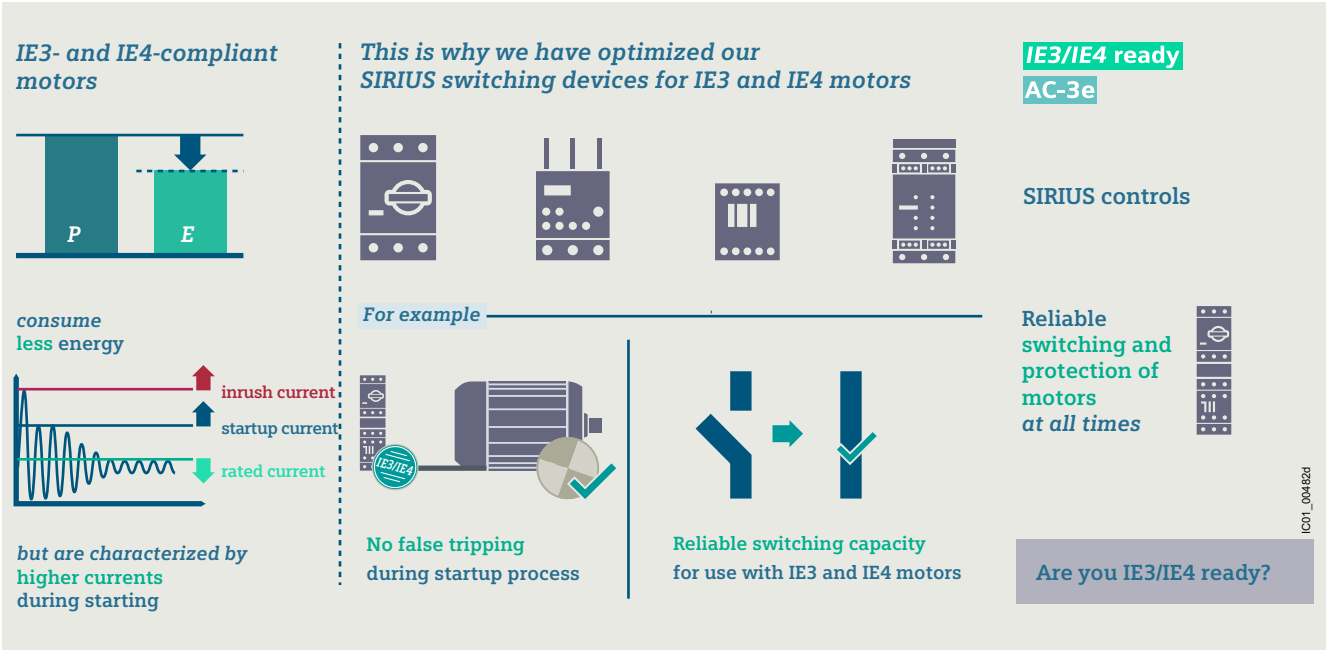
SIRIUS controls for reliable switching and protection of highly efficient IE3 and IE4 motors

Overview



IE3/IE4 ready with SIRIUS controls

We are IE3/IE4 ready and have AC-3e values

On July 1, 2021, the new EU Regulation (EU) 2019/1781 on electric motors and speed controls came into force. This regulation requires:

- Compliance with the legally required minimum efficiency levels IE3 for outputs from 0.75 to 1000 kW

In the next stage as of July 1, 2023:

- Compliance with the legally required minimum efficiency levels IE4 for outputs between 75 and 200 kW.

From an electrical viewpoint, IE3 and IE4 motors behave differently than less energy-efficient models – they are characterized by higher startup currents and modified dynamic behavior. This entails certain challenges for our controls.

The SIRIUS switching and protection devices are ideally suited for use with Premium High Efficiency motors (IE3) or Super Premium Efficiency motors (IE4). This is further underlined by the new utilization category AC-3e for contactors, circuit breakers, motor starters and other devices.

They avoid false tripping due to higher inrush currents of IE3 and IE4 motors, offer optimized setting ranges for rated currents, and ensure reliable switching and protection in any situation – the best prerequisites for the use of modern IE3 and IE4 motors.

Highlights

- Comprehensive range of IE3 and IE4 motors for every application
- Siemens offers expertise through extensive analysis of IE3 and IE4 motors
- Optimized SIRIUS controls for use with IE3 and IE4 motors
- Easy selection thanks to consistently identical rated values of utilization categories AC-3 and AC-3e

Introduction of utilization category AC-3e

Video: What is the purpose of the utilization category AC-3e?

More information

Application Manual for controls with IE3 and IE4 motors, see https://support.industry.siemens.com/cs/ww/en/view/94770820.

All IE3/IE4 ready products are marked in the catalog with the symbol **IE3/IE4 ready**.

All products with the utilization category AC-3e are marked in the catalog with the symbol **AC-3e**.

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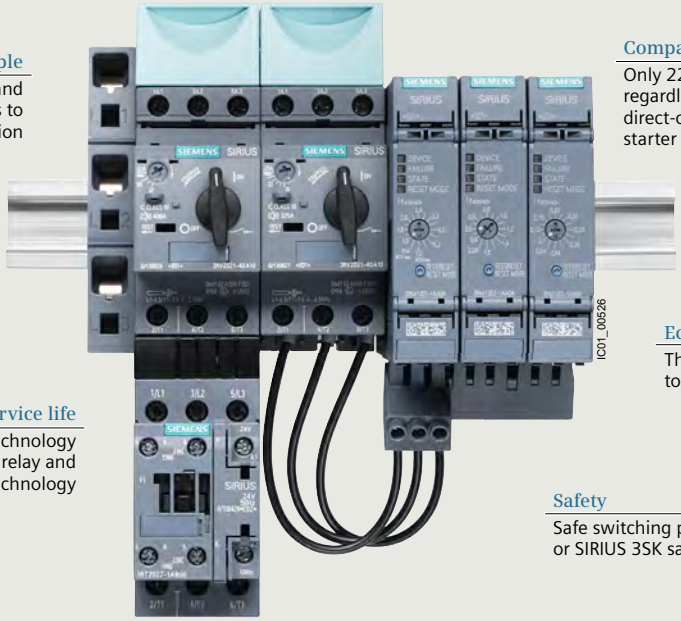
Overview

SIRIUS 3RV29 infeed system with 3RA2 load feeder and 3RM1 motor starter



Simple
Minimum wiring in the main and control circuits thanks to assembly option

Compact
Only 22.5 mm wide, regardless of whether direct-on-line or reversing starter function

Economical
Thanks to low device variance due to wide setting range

Long service life
Hybrid switching technology uses benefits of relay and semiconductor technology

Safety
Safe switching possible with F-CPU or SIRIUS 3SK safety relays

The hybrid switching technology uses low-wear semiconductor technology for switching the motor on and off, and in the operating phase it relies on energy-saving relay technology.

This ensures durability, especially with high switching frequency, and thus significantly reduces maintenance costs and extends the life of the motor starters.

In addition, due to the hybrid switching technology, motor starters have lower electromagnetic interference emissions, enabling you to increase your plant availability.

Further energy savings are provided by the integrated electronic overload protection.

This causes a lower intrinsic power loss than comparable motor feeders with thermal overload protection.

In this way, you benefit from reduced heat generation and therefore lower cooling power. And that saves energy.

SIRIUS soft starters 3RW30, 3RW40, 3RW50,3RW52, 3RW55 and 3RW55 Failsafe

Safe
SIL 1/STO without additional safety relay or contactor

Long service life
Reduced mechanical and electrical load

Energy saving
Reduced temperature rise in the control cabinet thanks to bypass contacts

Simple
Fast and easy commissioning

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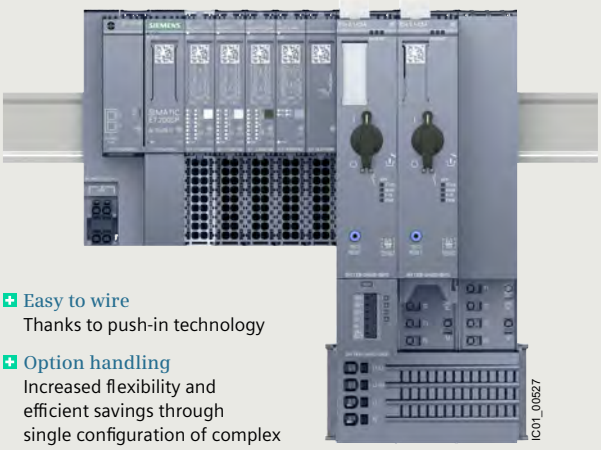
Introduction
Innovative technology for saving energy

Electronic starting with hybrid switching technology



Easy to wire
Thanks to push-in technology

Option handling
Increased flexibility and efficient savings through single configuration of complex automation projects

Reduced space requirements
50% slimmer than other distributed I/O systems

Hybrid switching technology
Durable and energy saving, since relay contacts are not subject to loading when switched

Power bus
Supply with power only once, then automatic setup with side-by-side mounting of multiple modules

Quick stop and end position disconnection
Load switch off even at high speed – independent of central controller

Quick installation
Hook in, slide into place and engage

Once it is installed and wired, you simply connect the ET 200SP motor starter to the controller in the TIA Portal ready for parameterization.

Highlights

Use of hybrid switching technology for:

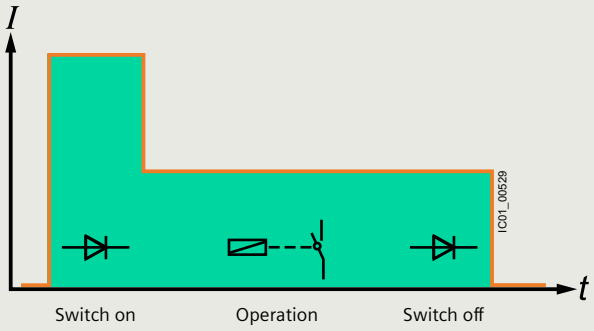
- SIRIUS 3RM1 motor starters
- ET 200SP motor starters
- SIRIUS soft starters

Failsafe functionality for SIRIUS 3RW55 soft starters, SIRIUS 3RM1 motor starters and ET 200SP:

- Maximum safety:
  Safety function up to SIL 3/PL e

Additional benefits for SIRIUS 3RM1 motor starters:

- Using device connectors safety-related group shutdown with reduced wiring is possible
- Direct connection to the 3SK safety relay, without additional wiring



Service life

Plant availability

Energy saving

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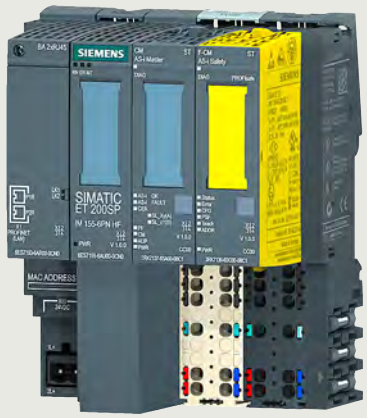

Price groups

PG 212, 219, 230, 250, 254, 255, 256, 257, 41B, 41L, 42C, 42D, 5K1, 5K2

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AS-Interface

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2/25 AS-i safety solution with F-CPU and AS-i in ET 200SP
2/34 F-CM AS-i Safety ST for SIMATIC ET 200SP
2/26 AS-Interface safety modules
12/93 SIRIUS 3SF1 mechanical safety switches for AS-Interface

SIRIUS ACT pushbuttons and indicator lights
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1) See Catalog D 31.2.

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1) See also Catalog KT 10.1.
2) See Catalog ID 10.

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Overview

More information

Homepage, see www.siemens.com/as-interface
Industry Mall, see www.siemens.com/product?as-interface
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=AsInterface
System Manual for AS-Interface, see https://support.industry.siemens.com/cs/ww/en/view/26250840

AS-Interface

AS-i = simple!	AS-i = flexible!	AS-i = efficient!
• Only one cable for data and energy	• Flexible topologies	• User-friendly addressing
• Time-saving assembly/installation	• Open standard	• Fast device replacement
• Engineering in the TIA Portal	• Expandability	• Ruggedness and stability
• User-friendly maintenance	• Safety engineering	• Device and network diagnostics

IC01_00210

AS-Interface – the smart communication standard for universal connection of the field level to the control system

The AS-Interface (AS-i) – the Actuator-Sensor-Interface, to be more precise – is a smart bus system for the field level that connects all the sensors and actuators in the field to the higher-level control system more simply, flexibly and efficiently than any other.

The structure of a complex automation system is not always clear at first glance. The field level in particular, with its large numbers of devices with real-time requirements, needs a clear structure.

That is exactly what the AS-i fieldbus delivers: Via a simple twisted pair – the yellow AS-i cable – in an AS-i network up to 62 bus nodes can be connected to the AS-i master and simultaneously supplied with power. The standard here is robust data transmission in a rugged environment with a high degree of protection for the AS-Interface.

AS-i from Siemens has everything in its favor

- Complete AS-i product range for bus-based standard and safety technology from a single source
- System-wide integration of the AS-i devices into SIMATIC, SINUMERIK and the TIA Portal engineering framework
- Integration of ASIsafe applications into SIMATIC F controller safety programming
- Central configuration of standard and safety technology in the TIA Portal and in STEP 7 (Classic) – just one engineering framework for controller, AS-i master and safety
- Quick diagnostics of master and slave components via web browser, HMI or TIA Portal
- Planning, calculation and verification of the whole safety chain based on AS-i Safety with Safety Evaluation in the TIA Selection Tool, see www.siemens.com/safety-evaluation
- Integration of lower-level AS-i networks into the PCS 7 process control system
- Global spare parts logistics, consulting and service

		Article No.	Page
ASIsafe			
	ASIsafe enables integration of safety-related components in an AS-Interface network, for example: • EMERGENCY STOP pushbuttons • Protective door switches • Cable-operated switches • Other AS-i safety sensors Your advantage: The simple wiring of AS-Interface is maintained.		
 AS-i Master and AS-i Safety module	**AS-i Master and AS-i Safety module for ET 200SP** The CM AS-i Master ST and F-CM AS-i Safety ST modules are plugged into an ET 200SP configuration and connect an AS-i network, including safety-related inputs and outputs, with the controller. • Single, double and multiple masters possible • Per CM AS-i Master ST module up to 496 DI/496 DQ/124 AI/124 AQ possible • Per F-CM AS-i Safety ST module up to 31 safe input signals (2-channel)/16 safe output channels possible • Configuring with TIA Portal or STEP 7 (Classic) • Plant-wide safety programming of the F-CPU via SIMATIC Distributed Safety/ Safety Advanced/F Systems • Integrated diagnostics • No other programming tools required Your advantage: Modular connection of fail-safe AS-i networks with system-wide programming in SIMATIC and SINUMERIK controllers.	**6ES7**	From 2/29

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AS-Interface

		Article No.	Page
ASIsafe (continued)			
K45F	**AS-Interface safety modules** • Complete portfolio of ASIsafe modules • For connection of safety switches with contacts (e.g. position switches) • Degree of protection IP65/IP67 or IP20 • Especially compact dimensions, with widths from 17.5 mm • Up to four safe inputs per module • Standard outputs are available on the module in addition • Up to SIL 3/PL e Your advantage: Easy integration of safe signals both in the switching cabinet and in the field.	**3RK1**	From 2/26
SC17.5F			
Safety switch	**SIRIUS 3SF1 mechanical safety switches for AS-Interface** • Plastic with degree of protection IP65 and metal with degree of protection IP66/IP67 • ASIsafe electronics integrated into the enclosure • Available with separate actuator, with or without tumbler Your advantage: Conventional wiring of safety functions no longer required.	**3SF1**	From 12/93
EMERGENCY STOP mushroom pushbutton in enclosure	**SIRIUS ACT EMERGENCY STOP mushroom pushbuttons for AS-Interface** • Degree of protection IP66/IP67/IP69 (IP69K) • Metal or plastic version • Connection of an EMERGENCY STOP command device according to ISO 13850 to AS-Interface • Safety-related AS-Interface module is snapped onto the command device from behind • Can be used up to SIL 3/PL e Your advantage: Easy direct connection of control elements to ASIsafe.	**3SU14 modules** **3SU18 enclosure**	13/88 From 13/100

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		Article No.	Page
Masters			
	The AS-Interface master connects SIMATIC controllers to AS-Interface. It automatically organizes the data traffic on the AS-Interface cable and handles not only signal processing, but also parameter setting, monitoring and diagnostics functions.		
	Masters for SIMATIC ET 200		
CM AS-i Master ST for SIMATIC ET 200SP	CM AS-i Master ST for SIMATIC ET 200SP • Connection of up to 62 AS-Interface slaves per master • Connection of up to 496 inputs and 496 outputs per AS-Interface network • Integrated analog value transmission • Simple configuration by adopting the ACTUAL configuration on the AS-Interface network • Easy operation in the input/output address range of the SIMATIC (or other controller) comparable to standard I/O modules • Monitoring of the control supply voltage on the AS-Interface shaped cable • Integrated ground-fault monitoring Your advantage: Easy connection of AS-i networks to distributed I/Os.	**3RK7**	From 2/29
F-CM AS-i Safety ST for SIMATIC ET 200SP	F-CM AS-i Safety ST for SIMATIC ET 200SP • Monitoring of up to - 31 fail-safe AS-i input slaves per F-CM - 16 fail-safe AS-i outputs per F-CM • Transmission via PROFIsafe into the F-CPU for safety-related applications up to SIL 3 (IEC 62061)/PL e (ISO 13849-1) • As a result, these sensors become part of the "unlimited programming and data archiving" options of SIMATIC and of Safety Integrated. Your advantage: Easy connection of fail-safe AS-i networks to the distributed I/Os.	**3RK7**	From 2/34
	Masters for SIMATIC S7		
CM 1243-2 for SIMATIC S7-1200	AS-Interface master connections: • CM 1243-2 for SIMATIC S7-1200	**3RK7**	From 2/37
CP 343-2, CP 343-2P for SIMATIC S7-300	• CP 343-2P, CP 343-2 for SIMATIC S7-300 and ET 200M Features: • Connection of up to 62 AS-Interface slaves • Connection of up to 496 inputs and 496 outputs per master or AS-Interface network • Integrated analog value transmission • Simple configuration by adopting the ACTUAL configuration on the AS-Interface network • Easy operation in the input/output address area of the SIMATIC S7 comparable to standard I/O modules • Monitoring of the control supply voltage on the AS-Interface shaped cable Your advantage: Easy connection to SIMATIC controllers.	**6GK7**	From 2/39
Routers			
DP/AS-Interface Link 20E	• Degree of protection IP20 • PROFIBUS slave and AS-Interface master • Connection of up to 62 AS-Interface slaves per AS-Interface network • Connection of up to 496 inputs and 496 outputs per AS-i network • Integrated analog value transmission • Configuring and uploading of AS-Interface configuration in STEP 7 possible • User-friendly selection of AS-Interface slaves Your advantage: Compact transition to PROFIBUS A high-performance router can be set up between PROFINET and AS-Interface by combining the CM AS-i Master ST and FF-CM AS-i Safety ST modules (for safety-related applications) in an ET 200SP station, see pages 2/32 and 2/36.	**6GK1**	From 2/41

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Slaves

Slaves contain the AS-Interface electronics and connection options for sensors and actuators in the field and in the control cabinet. A total of up to 62 slaves can be connected to one bus. The slaves then exchange their data in cyclic mode with a control module (master).

	Article No.	Page
I/O modules for use in the field, high degree of protection		
Digital I/O modules, IP67 - K60, K60R, K45 and K20	**3RK1, 3RK2**	From 2/44
• Degree of protection IP65/IP67 or IP68/IP69 (IP69K)		
• Modules available with up to degree of protection IP68/IP69 (IP69K)		
• Connection sockets in M8/M12		
• Up to eight inputs and four outputs		
• A/B technology available		
• Contacting protected against polarity reversal		
• DIN-rail mounting and wall mounting possible		
• Mounting of the module on the base plate using just one screw		
• Diagnostics LEDs		
Your advantage: Reduction of mounting and startup times by up to 40%.		
Analog I/O modules, IP67 - K60	**3RK1**	From 2/54
• Degree of protection IP65/IP67		
• Detects or transmits analog signals locally		
• 2-/4-channel		
• Input modules for up to four current measurement, voltage measurement or resistance/thermal resistance modules		
• Output modules for current or voltage		
Your advantage: Easy integration of analog values.		

K20 digital module

K45 digital module

K60 digital module

K60 analog module

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		Article No.	Page
Slaves (continued)			
SlimLine Compact SC17.5 SlimLine Compact SC22.5	**I/O modules for use in the control cabinet** • Degree of protection IP20 • No M12 plugs required for connection • Especially narrow design for SlimLine Compact modules with widths of 17.5 mm and 22.5 mm • Analog modules are also available • Removable, finger-safe terminal blocks that cannot be inadvertently interchanged when using the SlimLine Compact modules • Flat design of the flat modules for small control cabinets and confined conditions • Connection with screw terminals or spring-loaded terminals • DIN-rail mounting and wall mounting possible • Diagnostics LEDs Your advantage: Modules enable space-saving use in control cabinets and small local control boxes.	**3RG9, 3RK1, 3RK2**	From 2/57
F90 module			
Flat module			
	Modules with special functions		
Counter module	Counter modules • Degree of protection IP20 • For evaluation of pulses • Connection with screw terminals or spring-loaded terminals Your advantage: Evaluation of pulses which exceed even the clock frequency of AS-Interface.	**3RK1**	2/64
Ground-fault detection module	Ground-fault detection modules • Degree of protection IP20 • Display using LEDs • Two signaling outputs Your advantage: Automatic diagnostics of ground faults on AS-Interface.	**3RK1**	2/65
Overvoltage protection module	Overvoltage protection modules • Degree of protection IP67 • Discharge through ground cable with oil-proof outer sheath • Protection at transition of lightning protection zones Your advantage: The AS-Interface overvoltage protection module protects downstream AS-Interface devices or individual sections in AS-Interface networks from conducted overvoltages.	**3RK1**	2/66

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Slaves (continued)

		Article No.	Page
SIRIUS contactor 3RT203.-1NB30-0CC0	**Contactors and contactor assemblies**		
	SIRIUS 3RT contactors, 3-pole up to 250 kW	**3RT20**	From 3/18
	SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW	**3RA23**	From 3/142
	SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW	**3RA24**	From 3/158
	• Notable reduction of wiring in the control circuit		
	• Integrated mechanical interlocking		
	• Prevention of wiring errors in the main circuit		
SIRIUS 3RA2712 function module	SIRIUS 3RA27 function modules	**3RA2712**	From 3/101
	• Connection of 3RT20 power contactors with communication capability, 3RA23 reversing contactor assemblies, and 3RA24 contactor assemblies for star-delta (wye-delta) starting to AS-Interface		
	• Reduction of control current wiring through plug-in design and integrated monitoring of circuit breaker/motor starter protector and contactor		
	• Reduced space requirement in the control cabinet through fewer digital inputs and outputs in the control system		
	• Easy configuration through operation of feeders instead of individual contactors		
	• Enhanced operational reliability and quick wiring thanks to spring-loaded terminals		
	• Small number of variants through use of identical modules for size S00 to S3 contactors		
	Your advantage: Shortening of mounting and startup times.		
3RA61 compact starter	**Motor starters for use in the control cabinet**		
	SIRIUS 3RA6 compact starters	**3RA6**	From 8/57
	3RA61 direct-on-line starters, 3RA62 reversing starters	**3RA61, 3RA62**	From 8/65
	• Degree of protection IP20		
	• Very compact load feeders with the integrated functionality of an electronic overload relay		
	• As direct-on line or reversing starters for motors up to 15 kW/400 V		
	• Easy expansion into a communication-capable load feeder using AS-i add-on modules		
	• On-site safe disconnection also possible using AS-i add-on modules		
	• Standardized integration of the loads in higher-level control systems using AS-i		
	Your advantage: Compact solution with minimum wiring outlay for actuating direct-on-line and reversing starters in the control cabinet.		
SIRIUS M200D motor starter	**Motor starters for use in the field, high degree of protection**		
	SIRIUS M200D motor starters for AS-Interface	**3RK1**	From 9/21
	• High degree of protection IP65 for cabinet-free design		
	• As direct-on line or reversing starters for motors up to 5.5 kW/400 V		
	• Mechanical or electronic switching for high switching frequencies		
	• Optional with manual operation and brake actuation		
	• Expanded diagnostics and parameterization possible through AS-Interface		
	• Easy and consistent integration in STEP 7 through AS-Interface		
	Your advantage: The correct solution for all simple applications in conveyor systems with spatially distributed drives.		

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		Article No.	Page
Slaves (continued)			
SINAMICS G115D frequency converters, wall-mounted	**SINAMICS G115D distributed inverters** • Robust, with degree of protection IP65/IP66, wide operating temperature range -30 to +55 °C • Wide power range from 0.37 to 7.5 kW (SINAMICS G115D motor-mounted up to 4 kW) • Preconfigured with SIMOGEAR 2KJ8 • Local commissioning via DIP switch, USB interface and potentiometer or SINAMICS G120 Smart Access • Integrated safety functions (STO via F-DI or via PROFIsafe) • Integrated applications for conveyor systems, e.g. for roller conveyor, rotary table, transfer carriage • Expanded diagnostics and parameterization through AS-Interface • Flexible connection method for cables, choice of screw connection or push-in, compatible with SINAMICS G110D/G110M/G120D • Optional maintenance switch (SINAMICS G115D wall-mounted) • Optional manual local operation (SINAMICS G115D wall-mounted) Your advantage: The simple solution for consistent implementation of distributed plant concepts with requirements for wall-mounted and motor-mounted variable-speed drives with Safety functionality.	**SINAMICS G115D wall-mounted: 6SL352;** **SINAMICS G115D motor-mounted: 2KJ8**	Catalog D 31.2
SINAMICS G115D frequency converters, motor-mounted			
	Commanding and signaling devices		
AS-Interface module	SIRIUS ACT pushbuttons and indicator lights for AS-Interface • AS-Interface modules for snap-on mounting on front plate • AS-Interface modules for base mounting for mounting in enclosure • Modular enclosure configuration based on individual specifications • Enclosures with standard fittings • Up to six command points for standard signals or EMERGENCY STOP • Degree of protection IP66/IP67/IP69 (IP69K) • Metal or plastic version • Indicator lights with integrated LED • Any change of equipment possible even after installation Your advantage: Complete operating system with simple AS-Interface integration for your plant.	**3SU14 modules** **3SU18 enclosure**	13/88 From 13/101
AS-i enclosure			
8WD42, 8WD44 signaling columns AS-Interface adapter element	SIRIUS 8WD42 and 8WD44 signaling columns • Many optical and acoustic elements can be combined • Up to four signaling elements can be connected using an AS-Interface adapter element • With integrated LEDs or with BA15d base for LEDs/incandescent lamps • For fastening to connection elements (screw or spring-loaded terminals) • 24 V DC, diameters 50 mm (8WD42) and 70 mm (8WD44) • Connection with bayonet mechanism Your advantage: Signaling columns for monitoring production sequences and for visual or acoustic warnings in emergency situations, with easy AS-Interface integration.	**8WD42, 8WD44**	From 13/170

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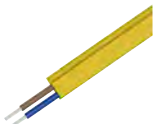
		Article No.	Page
Power supply units and data decoupling modules			
	AS-Interface power supply units generate a controlled direct voltage of 30 V DC with high stability and low residual ripple in conjunction with data decoupling. They are an integral component of the AS-Interface network and enable the simultaneous transmission of data and energy on one cable. In conjunction with data decoupling modules, AS-Interface can also be operated with standard power supply units.		
 IP20, 3 A	**AS-Interface power supply units** • With wide performance spectrum from 2.6 to 8 A • Degree of protection IP20 • Separation of data and energy by means of the integrated data decoupling • UL/CSA approval for global use, 2.6 A version with output power restricted to max. 100 W (for Class 2 circuits in accordance with NEC) • Certified for global use • Integrated ground-fault and overload detection save the need for additional components and make applications reliable • Diagnostics memory, remote signaling and Remote RESET allow fast detection of faults in the system • Ultra-wide input range permits 1-phase and 2-phase use (8 A version). Your advantage: Optimum performance for each application.	**3RX9**	2/67
 IP20, 8 A			
 PSN130S 30 V DC, 8 A	**30 V power supply units** Standard 30 V power supply units without data decoupling • Power spectrum 3 A, 4 A and 8 A • Overload and short-circuit-proof in every performance class • Diagnostics: With output voltage > 26.5 V DC LED and signaling contact for output voltage 30 V O.K. • Primary-side connection to 120/230 V AC (1-phase) with automatic range selection Your advantage: Economical alternatives in conjunction with data decoupling modules while making full use of the maximum AS-Interface cable length.	**3RX9**	From 2/69
 SITOP PSU100M, 24 V DC, 20 A	**24 V power supply units** Standard 24 V power supply units (SITOP), without data decoupling • Power spectrum 2.5 to 40 A • Overload and short-circuit-proof in every performance class • Add-on modules for signaling, redundancy, buffering and UPS • 1-, 2- and 3-phase versions Your advantage: Economical alternatives in conjunction with data decoupling modules.	**6EP**	15/1 or Catalog KT 10.1
 S22.5 data decoupling module	**S22.5 data decoupling modules** • Degree of protection IP20, narrow design 22.5 mm • Supply of several AS-i networks with a single power supply unit • Single and double data decoupling • Operation with 24 V DC or 30 V DC Your advantage: Cost-effective installation of AS-i networks in conjunction with standard power supply units.	**3RK1**	From 2/71
 DCM 1271 data decoupling module	**DCM 1271 data decoupling module for SIMATIC S7-1200** • Simple data decoupling in IP20 design • Supply of several AS-i networks with a single power supply unit • Operation with 24 V DC or 30 V DC Your advantage: Cost-effective installation of AS-i networks in conjunction with standard power supply units in the design of a SIMATIC S7-1200 module.	**3RK7**	From 2/73
Transmission media			
	AS-Interface shaped cable for connection of network stations		
 Shaped cable	**AS-Interface shaped cable** • No polarity reversal thanks to trapezoidal shape • Cables made of optimized material for different operating conditions • Special version according to UL CLASS 2 available Your advantage: Fast replacement and connection to AS-Interface by piercing method.	**3RX9**	2/76

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System components and accessories

Accessories comprise tools for mounting, installation and operating as well as individual components.

Repeater

Extension Plug Compact

Repeaters and extension plugs

- Repeaters for extending the AS-Interface cable by 100 m per repeater
- Extension plug for extending the AS-Interface segment to max. 200 m
- Parallel connection of several repeaters possible (star configuration option)
- Maximum size increases (when combined) to more than 600 m
- Easy mounting
- IP67 module enclosure

Your advantage: Lower infrastructure costs, more possibilities of use and greater freedom for plant planning.

Article No.	Page
6GK1 repeater	2/77
3RK1 extension plug	2/79

Addressing unit for AS-Interface V 3.0

Addressing units

- Reading out and adjusting the slave address 0 to 31 or 1A to 31A, 1B to 31B, with automatic addressing aid and prevention of double addresses
- Reading out the slave profile (IO, ID, ID2) and reading out and setting the ID1 code
- Input/output test when commissioning the slaves, on all digital and analog slaves according to AS-Interface specification V3.0, including safe input slaves and complex CTT2 slaves
- Display of the operational current in case of direct connection of an AS-i slave (measuring range from 0 to 150 mA)
- Storage of complete network configurations (profiles of all slaves) to simplify the addressing

Your advantage: Easiest way to address and test the slaves.

Article No.	Page
3RK1	From 2/80

Analyzer

AS-Interface analyzer

- Diagnostics units for completely checking the quality and function of an AS-Interface installation
- Transmission of collected data through an RS 232 interface to a PC, evaluation by software
- Easy and user-friendly operation
- Automatically generated test logs
- Advanced trigger functions enable exact analysis
- Process data can be monitored online
- In addition to digital I/O data it is possible to view analog values and safety slaves in data mode.

Your advantage: Preventative testing of an AS-Interface network is possible, recorded logs facilitate remote diagnostics.

Article No.	Page
3RK1	From 2/82

M12 sealing cap

Cable end terminator

Miscellaneous accessories

Individual components such as sealing caps, cable adapters, distributors, M12 plugs and cables, cable end terminator, etc.

Article No.	Page
3RK1, 3RX9, 6ES7	From 2/86

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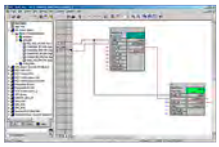
		Article No.	Page
Diagnostics			
Diagnostics for AS-Interface via HMI panels	The following diagnostics blocks with visualization via HMI or web browser for AS-Interface can be downloaded free of charge in the Industry Online Support Portal: Diagnostics blocks • For CM AS-i Master ST and F-CM AS-i Safety ST in ET 200SP, see https://support.industry.siemens.com/cs/ww/en/view/109479103 • For other Siemens AS-i master and links, see https://support.industry.siemens.com/cs/ww/en/view/50897766 Your advantage: Detailed diagnostics display for fast fault analysis and short downtimes – for easy integration into STEP 7 projects.	--	--
Software			
 AS-Interface block library for PCS 7	**AS-Interface block library for SIMATIC PCS 7** • Engineering and runtime software • Easy connection of AS-Interface to PCS 7 • Engineering work reduced to positioning and connecting the blocks in the CFC • No additional configuring steps required for connection to the PCS 7 Maintenance Station, diagnostics for the AS-i system optimally guaranteed Your advantage: Easy connection of AS-Interface to PCS 7, little engineering and configuration.	**3ZS1635**	From 14/19

Connection methods

	Screw terminals
	Spring-loaded terminals, spring-loaded terminals (push-in)
	COMBICON connectors (plug-in screw terminals)
	The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Ordering notes for multi-unit packaging

SlimLine Compact modules SC17,5, SC17.5F and SC22.5 can be ordered in practical and environmentally friendly multi-unit packaging on request.

Multi-unit packaging with order code X90

When ordering products in multi-unit packaging, the article number of the product concerned must be supplemented with **"-Z"** and, in addition, the order code **"X90"** must be specified.

Ordering examples:

- Safe SlimLine Compact module SC17.5F
  3RK1205-0BE00-2AA2-Z X90;
  Order quantity 16 items → Packed number of items 16
- Analog SlimLine Compact module SC22.5
  3RK1207-0CE00-2AA2-Z X90;
  Order quantity 12 items → Packed number of items 12

For more information, see page 16/7.

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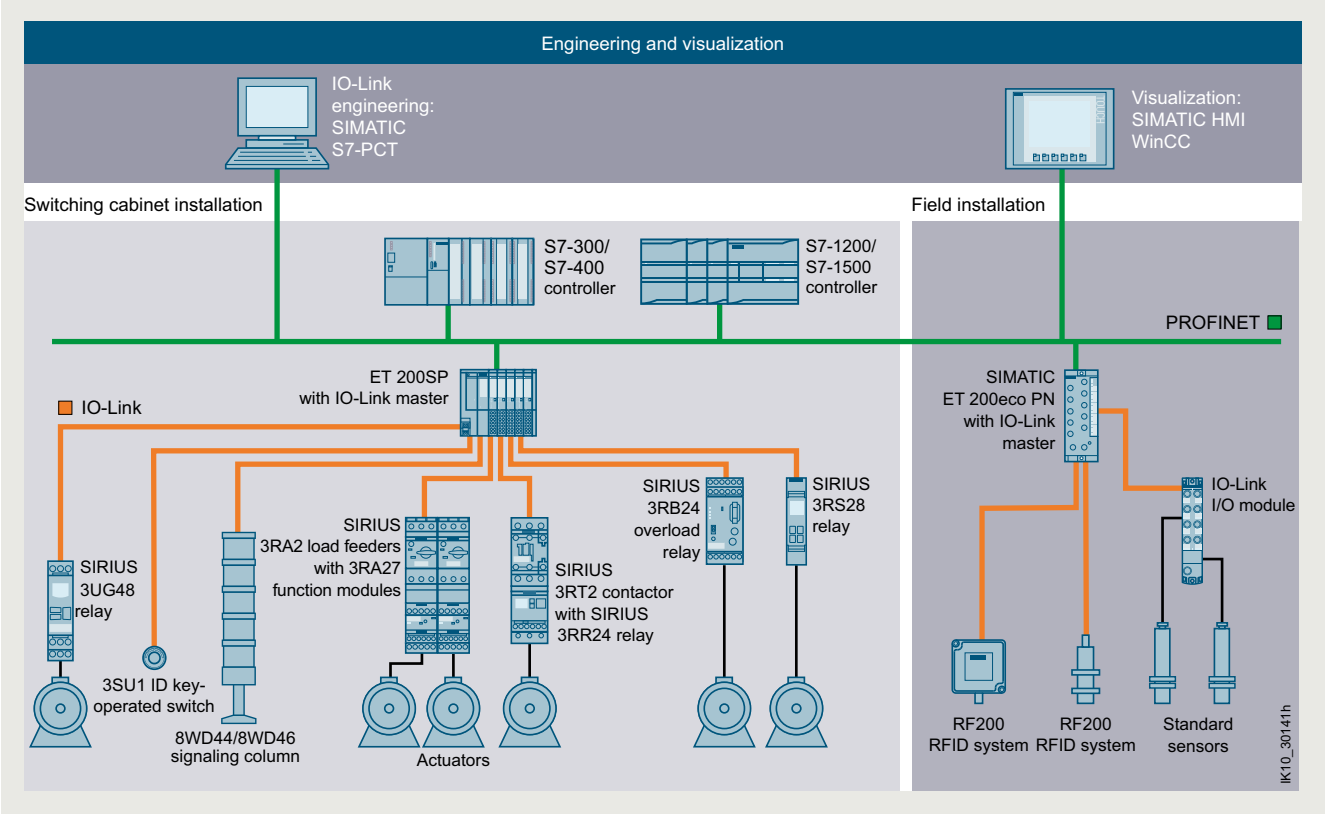
Overview

More information	
Homepage, see www.siemens.com/io-link TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=IoLink For important topics at a glance, see https://support.industry.siemens.com/cs/ww/en/view/109737170	For brochure, see https://assets.new.siemens.com/siemens/assets/api/uuid:ad500ab0-de89-4933-8d76-78728f45720d/dffa-b10447-01broschuereiolinkde-144.pdf



Engineering and visualization

IO-Link – more than just another interface

IO-Link is an open communication standard for sensors and actuators – defined by the IO-Link Consortium.

IO-Link is a smart concept for the uniform connection of actuators and sensors to the control level by means of a low-cost point-to-point connection.

As an open interface, IO-Link can be integrated into all standard fieldbus and automation systems.

The IO-Link communication standard below fieldbus level enables central error diagnostics and localization down to actuator/sensor level, and facilitates both startup and maintenance by allowing parameter data to be dynamically changed directly from the application.

The increasing intelligence of field devices and their integration into automation as a whole now allows data to be accessed right down to the lowest field level. The result: greater plant availability and less engineering work.

Transparency in the process through IO-Link

High system availability and data transparency are market requirements that must also be met by the connecting of innovative control technology to a control system. A systematic diagnostics concept and efficient handling of parameter data are required for this purpose in automation.

With the aid of the IO-Link communication standard, a communication link is established between switchgear and controller, and this allows data to be exchanged efficiently. Based on a standard cable, it is therefore possible to integrate parameter, process and diagnostics data and measured values into the plant automation with ease. For example, the available diagnostics data allow potential errors to be detected quickly, thus avoiding lengthy plant downtimes.

As a consequence of their basic function, such as overload protection (SIRIUS 3RB24 electronic overload relays for IO-Link), many switchgear units have measured values. The availability of these via IO-Link now allows conclusions to be drawn at an early stage concerning wear and tear in the application.

At the same time the option of parameterizing via IO-Link supports the device not just when parameters concerning operating time are changed, but also when the device is replaced. In the case of a spare part, for example, the parameters can be quickly transmitted to a new device via the communication system.

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Masters

	Article No.	Page
The IO-Link master modules form the heart of the IO-Link system.		Catalog ST 70

CM 8xIO-Link
for SIMATIC S7-1500

IO-Link master module for SIMATIC S7-1500

CM 8xIO-Link — **6ES7** — 2/97

- Communications module for connecting up to 8 IO-Link devices (three-wire connections) or 8 standard sensors according to IO-Link specification V1.1
- Can be used directly downstream of an S7-1500 CPU or distributed in ET 200MP via PROFINET or PROFIBUS
- Simple replacement of sensors/actuators without time-consuming parameterization
- Data transmission rates COM1 (4.8 kBd), COM2 (38.4 kBd), COM3 (230.4 kBd)

Your advantage: Easy connection of IO-Link connections to the SIMATIC S7-1500.

SM 1278 4xIO-Link
for SIMATIC S7-1200

IO-Link master module for SIMATIC S7-1200

SM 1278 4xIO-Link master — **6ES7** — 2/98

- IO-Link master as serial communications module with four ports (channels) according to IO-Link specification V1.1
- Easy device exchange with automatic data recovery without engineering for IO-Link device
- Up to four IO-Link devices (three-wire connections) can be connected to each IO-Link master module
- Data transmission rates COM1 (4.8 kBd), COM2 (38.4 kBd), COM3 (230.4 kBd), automatic adjustment to the data transmission rate supported by the device

Your advantage: Easy connection of IO-Link connections to the SIMATIC S7-1200.

CM 4xIO-Link
for ET 200SP

IO-Link master modules for ET 200SP

CM 4xIO-Link V1.1 Standard — **6ES7** — 2/99

- IO-Link master as serial communications module with four ports (channels) according to IO-Link specification V1.1
- Module replacement with automatic data recovery without engineering for IO-Link master and device
- Up to four IO-Link devices (three-wire connections) can be connected to each IO-Link master module.
- Data transmission rates COM1 (4.8 kBd), COM2 (38.4 kBd), COM3 (230.4 kBd), automatic adjustment to the data transmission rate supported by the device

Your advantage: Easy connection of IO-Link connections to distributed I/Os.

IO-Link master module
for ET 200pro

IO-Link master module for ET 200pro

4 IO-LINK HF — **6ES7** — 2/100

- IO-Link master as serial communications module with four ports (channels) according to IO-Link specification V1.1
- Easy device exchange with automatic data recovery without engineering for IO-Link device
- Up to four IO-Link devices can be connected to each IO-Link master module
- Support of IO-Link Port Class B
- Data transmission rates COM1 (4.8 kBd), COM2 (38.4 kBd), COM3 (230.4 kBd), automatic adjustment to the data transmission rate supported by the device

Your advantage: Easy connection of sensors and actuators to the I/Os directly in the machine's field area.

6ES7148-6J.00-0.B0

IO-Link master module for ET 200eco PN

IO-Link master — **6ES7** — 2/101

- 4 IO-L + 8 DI + 4 DO 24 V DC/1.3 A
  - Up to four IO-Link devices (IO-Link Port Class A) can be connected
  - Up to eight standard sensors and up to four standard actuators can be additionally connected
  - Enclosure width 60 mm
- 4 IO-L
  - Up to four IO-Link devices (IO-Link Port Class B) can be connected
  - Enclosure width 30 mm
- 8 IO-L + 4 DI 24 V DC
  - Up to eight IO-Link devices (4 x Port Class A + 4 x Port Class B) can be connected
  - Additionally four digital inputs
  - Enclosure width 45 mm

Your advantage: Easy connection of sensors and actuators to the I/Os directly in the machine's field area.

CM IO-Link
for ET 200AL

IO-Link master module for ET 200AL

CM IO-Link — **6ES7** — 2/102

- IO-Link master as serial communications module with four ports (channels) according to IO-Link specification V1.1
- Easy device exchange with automatic data recovery without engineering for IO-Link device
- Up to four IO-Link devices can be connected to each IO-Link master module
- Support of IO-Link Port Class B
- Data transmission rates COM1 (4.8 kBd), COM2 (38.4 kBd), COM3 (230.4 kBd), automatic adjustment to the data transmission rate supported by the device

Your advantage: Easy connection of sensors and actuators to the I/Os directly in the machine's field area.

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		Article No.	Page
IO-Link digital modules			
IO-Link I/O modules for ET 200AL	**IO-Link I/O modules** • IO-Link, digital input modules - DI 8 x 24 V DC, 8 x M8 - DI 16 x 24 V DC, 8 x M12 • IO-Link, digital output modules - DQ 8 x 24 V DC/2 A, 8 x M12 • IO-Link, digital input/output modules - DIQ 4+DQ 4 x 24 V DC/0.5 A, 8 x M8 - DIQ 16 x 24 V DC/0.5 A, 8 x M12	**6ES7**	From 2/103
Industrial controls			
	Starters and contactor assemblies for direct-on-line, reversing and star-delta (wye-delta) starting can be connected to IO-Link through function modules without any additional, complicated wiring.		
SIRIUS contactor 3RT201.-1B...-0CC0	**Contactors and contactor assemblies** SIRIUS 3RT contactors, 3-pole up to 250 kW SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW • Notable reduction of wiring in the control circuit • Integrated mechanical interlocking • Prevention of wiring errors in the main circuit	**3RT20** **3RA23** **3RA24**	From 3/18 From 3/142 From 3/158
SIRIUS 3RA2711 function module for IO-Link	SIRIUS 3RA27 function modules • Connection of 3RT20 power contactors with communication capability, 3RA23 reversing contactor assemblies, and 3RA24 contactor assemblies for star-delta (wye-delta) starting to IO-Link • Reduction of control current wiring through plug-in technology, feeder groups and integrated monitoring of circuit breaker/motor starter protector and contactor • Reduced space requirement in the control cabinet through fewer digital inputs and outputs in the control system • Simple user program through operation of feeders instead of individual contactors • Enhanced operational reliability and quick wiring thanks to spring-loaded terminals • Can be flexibly combined with many automation solutions using the open, standardized IO-Link wiring system • Small number of variants through use of identical modules for size S00 to S3 contactors Your advantage: Shortening of mounting and startup times	**3RA2711**	From 3/101
SIRIUS 3RB24 overload relay	**Overload relays** SIRIUS 3RB24 electronic overload relays for IO-Link for high-feature applications • Diagnostics and current value transmission via IO-Link • Current measuring modules (3RB29) for current values from 0.3 to 630 A • In connection with contactors: Controlling direct-on-line, reversing and star-delta (wye-delta) starters via IO-Link • Full motor protection through PTC connection Your advantage: Communication-capable overload relay enables remote diagnostics and preventive maintenance.	**3RB24**	From 7/127
SIRIUS 3RA64 compact starter	**Motor starters for use in the control cabinet** SIRIUS 3RA64, 3RA65 compact starters for IO-Link • Integrated functionality of a circuit breaker, contactor and electronic overload relay and various functions of optional mountable accessories • Can be used for direct starting of standard three-phase motors up to 32 A (approx. 15 kW/400 V) • Compact design offers enormous savings in space and wiring in the control cabinet • Low variance of devices thanks to wide setting ranges for the rated current and wide voltage ranges Your advantage: The diagnostics data of the process collected by the 3RA6 compact starter, e.g. short circuit, end of service life, limit position, etc., are not only indicated on the compact starter itself but also transmitted to the higher-level control system through IO-Link.	**3RA6** **3RA64, 3RA65**	From 8/57 From 8/67

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IO-Link

	Article No.	Page
Industrial controls (continued)		
Monitoring relays		
 SIRIUS 3RR24 monitoring relay SIRIUS 3RR24 monitoring relays for mounting on 3RT2 contactors for IO-Link • Monitoring relays for mounting on 3RT2 contactors • Parameterization and diagnostics via the display on the device or via IO-Link • Adjustable warning and switch-off limit values and on/tripping delay times • All current measured values available in the control system Your advantage: Communication-capable monitoring relay enables remote diagnostics and preventive maintenance.	**3RR24**	From 10/55
 SIRIUS 3UG48 monitoring relay SIRIUS 3UG48 monitoring relays for stand-alone installation for IO-Link • Monitoring of - Network (3UG481) - Voltage (3UG483) - Current (3UG4822) - Power factor and active current (3UG484) - Fault current (3UG4825) - Speed (3UG485) • Parameterization and diagnostics via the display on the device or via IO-Link • Adjustable warning and switch-off limit values and on/tripping delay times • All current measured values available in the control system Your advantage: Communication-capable monitoring relay enables remote diagnostics and preventive maintenance.	**3UG48**	From 10/96
 SIRIUS 3RS28 temperature monitoring relay SIRIUS 3RS28 temperature monitoring relay for IO-Link • Measuring the temperature of solids, liquids and gases • Use of resistance sensors or thermocouples • Parameterization and diagnostics via the display on the device or via IO-Link • Adjustable warning and switch-off limit values and on/tripping delay times • All current measured values available in the control system Your advantage: Independent monitoring easily linked to the control system.	**3RS28**	From 10/119
SIRIUS ACT pushbuttons and indicator lights		
 SIRIUS ACT 3SU1 ID key-operated switch SIRIUS ACT 3SU1 ID key-operated switches for IO-Link • Access system and selection system for four authorization levels • Authentication of groups and persons • Five ID keys with different coding • Option for individual coding via IO-Link • For installation in enclosures or fastening on front plate • Solid-state module for ID key-operated switches must be ordered separately. Your advantage: Only authorized personnel can work on plants and machines.	**3SU1**	13/12
 SIRIUS ACT 3SU1 solid-state module SIRIUS ACT 3SU1 solid-state modules for IO-Link • Eight digital inputs and outputs possible • DI and DQ freely selectable (programmable) • Input and output functions parameterizable • Connection method (push-in) • For installation in enclosures or fastening on front plate Your advantage: No wiring required if ordered in a 3SU1 enclosure via configurator.	**3SU1400**	13/89

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		Article No.	Page
Industrial controls (continued)			
8WD46 signaling column	**SIRIUS 8WD4 signaling columns** Electronically configurable 8WD46 signaling columns, 70 mm diameter Signaling columns for IO-Link, with or without audible signal • Configuration of signaling column via IO-Link interface (IODD) • Fast connection of signaling columns to application using 4-pole M12 plugs • Via the IO-Link interface, the pattern, color and brightness of the individual segments (9 to 15 segments) can be set. • The audible signal can also be set (volume, type of sound up to 105 dB). Your advantage: Signaling columns for monitoring production sequences and for visual or acoustic warnings in emergency situations, with easy IO-Link connection.	**8WD46**	From 13/163
8WD44 signaling column 8WD44 IO-Link adapter element	8WD44 signaling columns, 70 mm diameter • Up to five signaling elements can be connected using an IO-Link adapter element • 24 V DC • Connection with bayonet mechanism • For fastening on feet • Connection elements with screw or spring-loaded terminals or connection element with 5-pole M12 plug Your advantage: Signaling columns for monitoring production sequences and for visual or acoustic warnings in emergency situations, with easy IO-Link connection.	**8WD44**	From 13/170
IO-Link RFID systems			
RFID system for IO-Link	**SIMATIC RF200 RFID system in the HF range** Products SIMATIC RF210R, SIMATIC RF220R, SIMATIC RF240R, SIMATIC RF250R, SIMATIC RF260R • Simple identification tasks such as reading an ID number (UID) • Reading of user data • Writing of user data • No RFID-specific programming, ideal for those new to RFID • Simple connection via master modules for IO-Link, such as SIMATIC S7-1200, ET 200SP, ET 200pro, ET 200eco PN and ET 200AL • Use with the tried and tested ISO 15693 transponders (MDS Dxxx)	**6GT2**	Catalog ID 10
IO-Link Device Description (IODD)			
IODD files for IO-Link	**IODD files** These files provide the device description for IO-Link devices. • Comprehensive IODD catalog of SIEMENS IO-Link devices • Freely available for download from Industry Online Support, see https://support.industry.siemens.com/cs/ww/en/ps/15851	--	2/95
IODDfinder for IO-Link	**IODDfinder** The entire world of IO-Link under one roof The IODDfinder is a service provided by the IO-Link community. It is a central cross-vendor database for descriptive files (IODDs). In addition, the platform provides an overview of the available IO-Link devices. For more information, see https://ioddfinder.io-link.com/#/.	--	2/95

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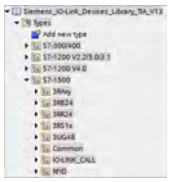
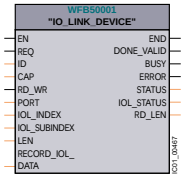
		Article No.	Page
IO-Link software			
S7-PCT	**S7-PCT (Port Configuration Tool)** Engineering software for configuring the IO-Link master modules for SIMATIC S7-1200, ET 200MP, ET 200SP, ET 200pro, ET 200eco PN and ET 200AL • Available as a stand-alone version or integrated into STEP 7 (V5.5 SP1 and higher) and TIA (V12 and higher) • Engineering of the IO-Link devices connected to the master • Monitoring of the process image of the IO-Link devices • Open interface for importing further IODDs • Freely available for download from Industry Online Support, see https://support.industry.siemens.com/cs/ww/en/view/32469496	--	2/95
 Library for IO-Link (LIOLink)	**Library for IO-Link (LIOLink)** This library provides blocks and PLC data types to enable easy communication between the SIMATIC controller and the IO-Link master or IO-Link device. • Freely available for download from Industry Online Support, see https://support.industry.siemens.com/cs/ww/en/view/82981502	--	2/95
 Function block IO-Link device	**Application of the device-specific blocks for IO-Link** This application illustrates in a specific example how easy it is to connect Siemens IO-Link devices to a SIMATIC S7 CPU using the library for IO-Link (LIOLink). • Freely available for download from Industry Online Support, see https://support.industry.siemens.com/cs/ww/en/ps/90529409	--	2/95

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Overview

AS-Interface is an open, international standard according to IEC 62026-2 for process and field communication. Leading manufacturers of actuators and sensors all over the world support the AS-Interface. Interested companies are provided with the electrical and mechanical specifications by the AS-Interface Association.

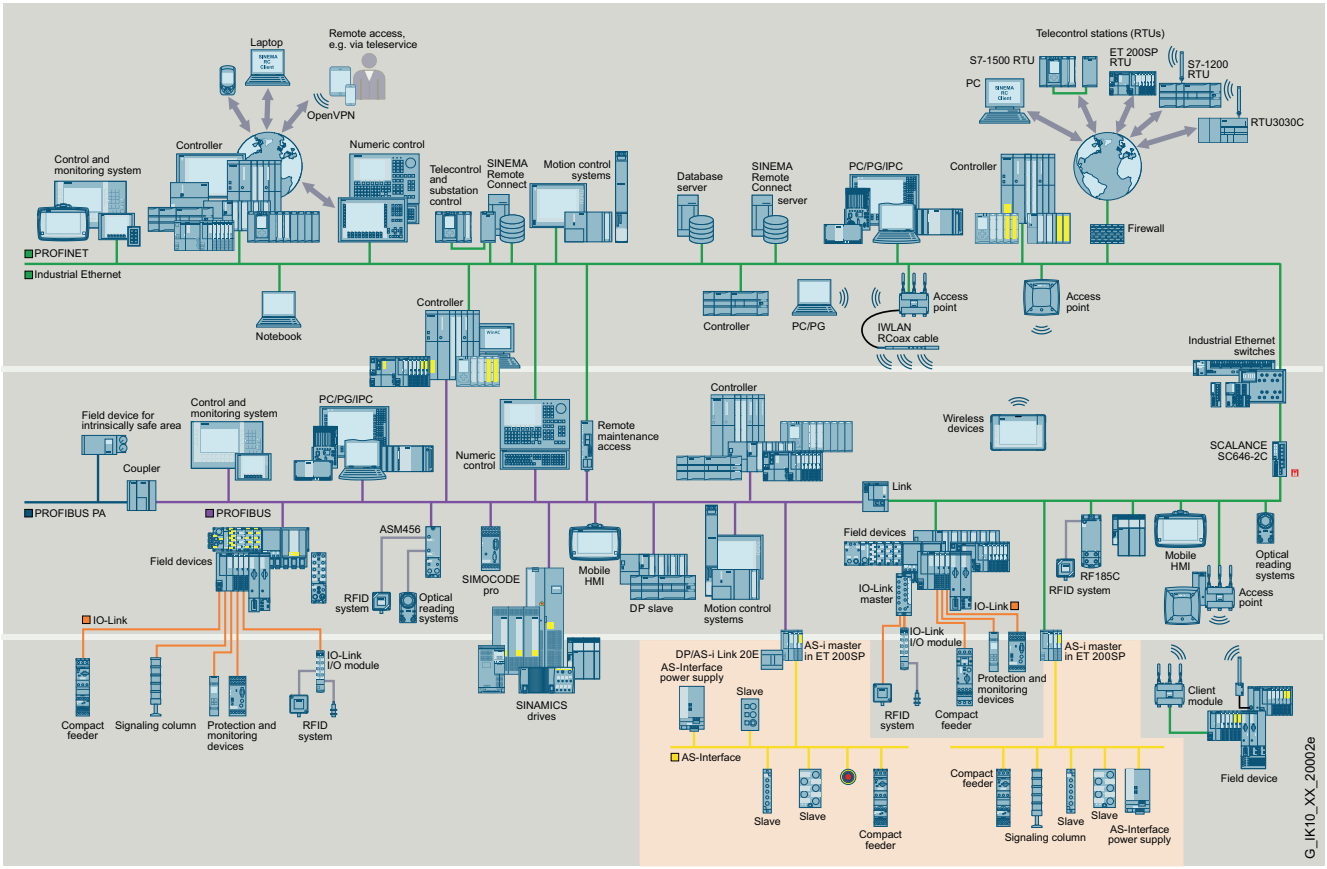
AS-Interface is a single master system. For automation systems from Siemens, there are communications processors (CPs), communications modules (CMs) and routers (links) that control the process or field communication as masters, and actuators and sensors that are activated as AS-Interface slaves.

Video: AS-Interface – Powerful integration in SIMATIC ET 200SP

More information

Homepage, see www.siemens.com/as-interface
Industry Mall, see www.siemens.com/product?as-interface

TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=AsInterface



AS-Interface in the SIMATIC NET communications landscape

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Benefits

An important characteristic of the AS-Interface technology is the use of a shared twisted pair for data transmission and distribution of auxiliary power to the sensors and actuators. An AS-i power supply unit or alternatively a standard power supply unit that meets the requirements of the AS-Interface transmission method and has an external AS-i data decoupling module is used for the distribution of auxiliary power. The AS-Interface cable used for the wiring is mechanically coded and hence protected against polarity reversal and can be easily contacted by the insulation piercing method.

Elaborately wired control cables in the control cabinet and marshaling racks can be replaced by AS-Interface.

The AS-Interface cable can be connected to any points thanks to a specially developed cable and connection by the insulation piercing method.

With this concept you become extremely flexible and achieve high savings.

Application

I/O data exchange

The AS-i master automatically transfers the inputs and outputs between the controller and the digital and analog AS-Interface slaves. Slave diagnostics information is forwarded to the control system when required.

The latest AS-Interface masters according to the AS-Interface specification V3.0 support integrated analog value processing. This means that data exchange with analog AS-Interface slaves is just as easy as with digital slaves.

Command interface

In addition to I/O data exchange with binary and analog AS-Interface slaves, the AS-Interface masters can provide a number of other functions through the command interface.

Hence it is possible, for example, for slave addresses to be issued, parameter values transferred or configuration information read out from user programs.

For more information, see https://support.industry.siemens.com/cs/ww/en/view/51678777.

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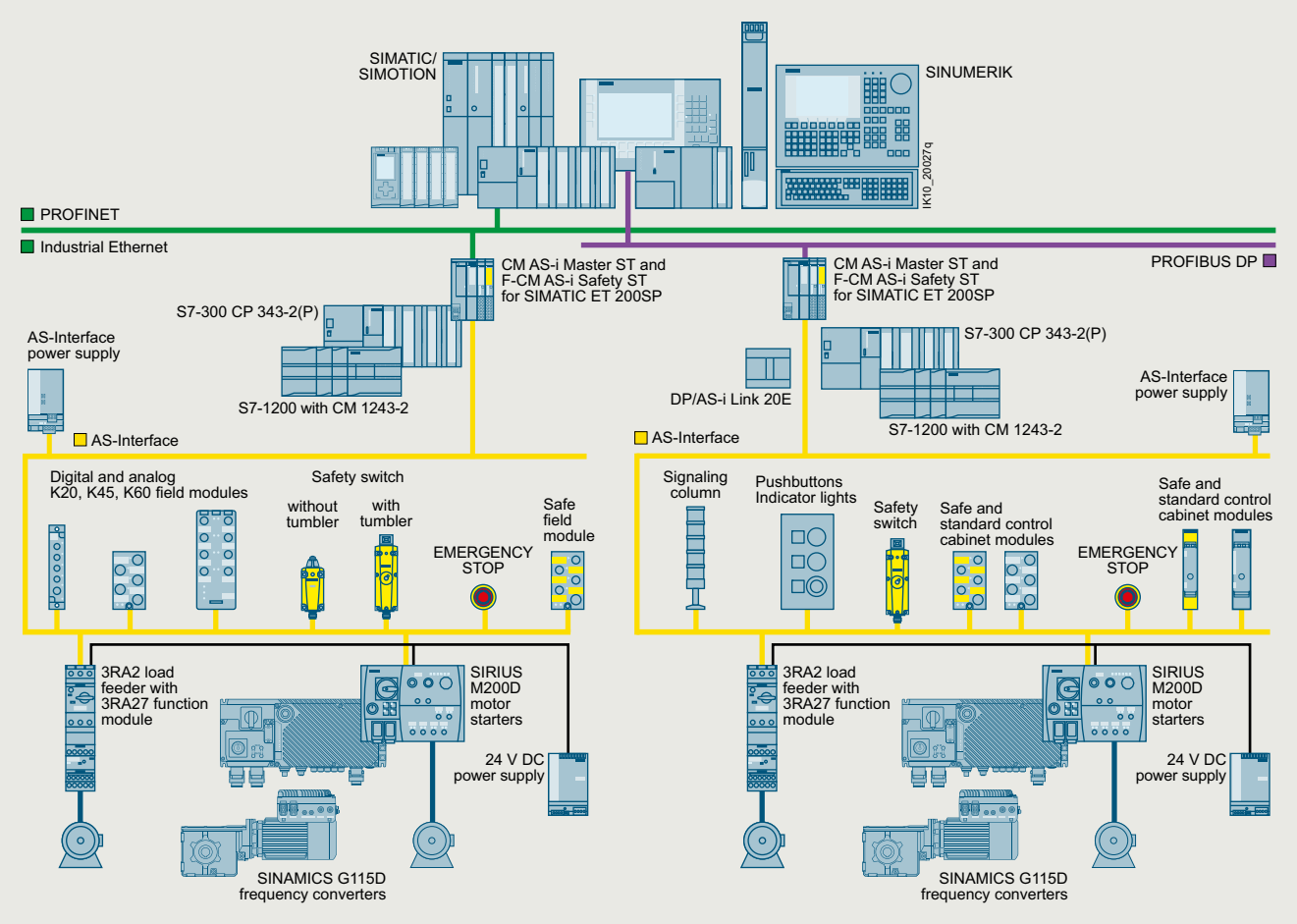
Overview

To implement communication, the following components of a system installation are available:

- AS-i master modules for central control units such as SIMATIC S7, ET 200M/ET 200SP distributed I/Os, or network transitions from PROFIBUS to AS-Interface
- AS-i power supply unit or alternatively a standard power supply unit in combination with an AS-i data decoupling module for the power supply to the slaves and sensors
- AS-Interface shaped cables
- Network components such as repeaters and extension plugs (cannot be used for AS-i Power24V)
- I/O modules (AS-i slaves) for connection of standard sensors/actuators
- Actuators and sensors with integrated AS-i slave
- Safe I/O modules (ASIsafe slaves) for transmitting safety-related data through AS-Interface
- Addressing device for setting slave addresses during commissioning



Example of a configuration with the system components

Features

Standard	IEC 62026-2
Topology	Line, star or tree structure (same as electrical wiring)
Transmission medium	Unshielded twisted pair (2 x 1.5 mm^2) for data and auxiliary power
Connection methods	Contacting of the AS-Interface cable by insulation piercing method
Maximum cable length	• 100 m without repeater, without an extension plug • 200 m with an extension plug • 300 m with two repeaters in series connection • 600 m with three extension plugs and two repeaters connected in parallel Longer cable lengths also possible through parallel connection of more repeaters.

Maximum cycle time	• 5 ms in maximum configuration with 31 standard addresses • 10 ms in maximum configuration with 62 A/B addresses • Profile-specific for slaves with extended data, e.g. analog slaves
Number of stations per AS-Interface line	• Up to 62 slaves (A/B addressing) • Integrated analog value transmission
Number of binary sensors and actuators	Max. 496 DI/496 DQ
Access control	• Cyclic polling master/slave procedure • Cyclic data acceptance from host (PLC, PC)
Error safeguard	Identification and repetition of faulty message frames

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Overview

Scope of AS-Interface specification V3.0

Maximum number of slaves			Number of digital inputs	Number of digital outputs
Digital	Analog	ASIsafe	DI	DQ
62	62	31	62 X 8 = 496	62 X 8 = 496

Basic data

- AS-Interface specification 3.0 describes a fieldbus system with an AS-i master and up to 62 AS-i slaves.
- Every AS-i slave with standard addressing occupies one AS-i address (1...31).
- Slaves with extended addressing divide an AS-i address into an A address (1A...31A) and a B-address (1B...31B). Up to 62 A/B slaves can be connected accordingly to one AS-Interface network.
- Mixed operation of slaves with standard addressing and extended addressing (A/B slaves) is possible without difficulty. The AS-i master identifies automatically which type of slave is connected, so no special adjustments are required of the user.
- One digital AS-i slave typically has up to four digital inputs and four digital outputs.
- Transmission of the digital input/output data requires max. 5 ms cycle time for 31 slaves; for further values, see "Communication cycle".
- Integrated analog value transmission permits access to both analog values and digital values without the need for any special function blocks.

Communication cycle

Maximum cycle time (digital signals)
• 5 ms with 31 slaves • 10 ms with 62 slaves • Up to 20 ms for slaves with A/B address and 4 DI/4 DQ • Up to 40 ms for slaves with A/B address and 8 DI/8 DQ

Each address is queried in max. 5 ms cycle time. If two A/B slaves are operated on one basic address (e.g. 12A and 12B), a maximum of 10 ms will be required to update the data of both slaves.

Slaves with A/B addressing transmit max. 4 DI/3 DQ in one cycle.

Slaves with A/B addressing and 4 DQ or 4 DI/4 DQ transmit the output data in two consecutive cycles. The double transmission time of these outputs has no effect in typical applications. The transmission procedure is performed automatically by the AS-i master in accordance with AS-i specification V3.0. These slaves are identified in the selection data with addressing type A/B (spec. V3.0).

Slaves with a single A/B address and 8 DI/8 DQ transmit the input and output data in four consecutive cycles. The transmission time of the inputs/outputs of these slaves increases accordingly. The transmission procedure is performed automatically by the AS-i master in accordance with AS-i specification V3.0.

The slaves offered by Siemens with 8 DI or 8 DI/2 DQ use two AS-i addresses so that the time-consuming procedure is not needed and a fast data update is ensured.

All slave types can be mixed and used on a single AS-Interface network.

For more information, such as the addressing type used by the AS-interface slave (standard or A/B address), see the "Selection and ordering data" for the relevant slave.

More information
System Manual for AS-Interface, see https://support.industry.siemens.com/cs/ww/en/view/26250840

AS-Interface product range

AS-Interface products from Siemens use the current AS-Interface specification V3.0, which is standardized internationally as IEC 62026-2.

The alternating pulse modulation developed more than 20 years ago for AS-Interface has proven to be a reliable transmission method with which the direct voltage supply for the bus modules and the connected sensors is provided on the standard twisted pair.

Multiple development stages were implemented to produce the proven-in-use system components with optimum EMC properties available today. The extensive product range with AS-Interface specification V3.0 undergoes constant innovation and is extremely cost-efficient, both to install and operate.

The bus cable can be retrofitted with repeaters of AS-Interface specification V3.0, and the modules function without any reciprocal interference. Master modules from Siemens enable ideal integration into the SIMATIC environment, in particular for the AS-Interface master of the ET 200SP distributed I/O system.

The underlying industrial requirements for the system concept are still applicable today: Numerous individual digital input and output signals are spatially distributed in the machine. Rather than having to install thick cable harnesses from the control cabinet to the sensors and actuators, smaller, more manageable AS-i modules are simply inserted in situ onto the bus cable in the IP67 enclosure, and the sensors and actuators connected with short M12 cables.

An additional AS-i module is installed in proximity to the next sensor to ensure that the length of the M12 cables is kept as short as possible. As analog signals are likewise transmitted without any problems, the AS-Interface also replaces the long, shielded analog cables.

Depending on requirements, the switching devices can also be connected to AS-i modules with terminal connection or conveniently used with the integrated AS-i connection. Motor controllers with digital and analog inputs and outputs are also offered with the current AS-Interface specification V3.0.

Safety signals are also transmitted simply and flexibly by the AS-Interface. The safety-related sensors for protective doors and EMERGENCY STOP buttons can be installed and retrofitted in any position.

The AS-i Safety functionality from Siemens has been continuously optimized and complies with the proven AS-Interface specification V3.0.

For industrial components which require greater transmission capacities, Siemens provide respective solutions with the suitable communications systems.

The AS-Interface system from Siemens continues to provide an ideal and consistent solution for a multitude of simple sensors and actuators, including safety technology and special applications.

Available masters with the latest AS-Interface specification V3.0

- CM AS-i Master ST, F-CM AS-i Safety ST (ET 200SP)
- CM 1243-2 (S7-1200)
- CP 343-2P/CP 343-2 (S7-300/ET 200M)
- DP/AS-Interface Link 20E

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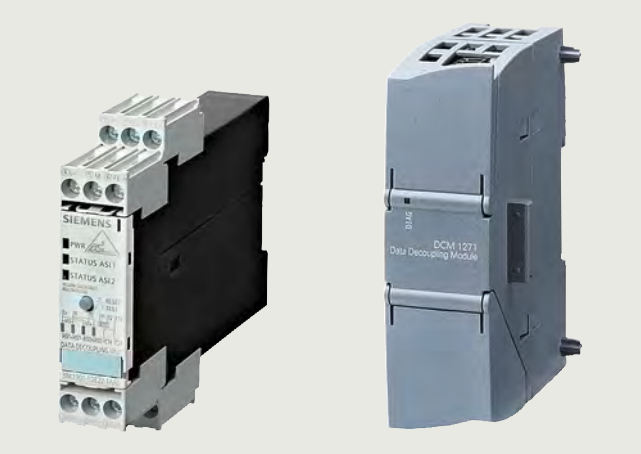
Overview

More information

For a complete overview of AS-i Power24V-capable devices currently available from Siemens, see https://support.industry.siemens.com/cs/ww/en/view/42806066

For details of AS-i Power24V, see System Manual for AS-Interface, https://support.industry.siemens.com/cs/ww/en/view/26250840



AS-Interface data decoupling modules for AS-i Power24V
Left: S22.5 data decoupling module,
Right: DCM 1271 data decoupling module for SIMATIC S7-1200

Parallel wiring frequently dominates, above all, in applications with very few I/Os. AS-Interface can, however, also replace extensive parallel wiring in small applications at a favorable price.

AS-i Power24V enables an already existing standard 24 V DC power supply unit to be used for the AS-i network.

Data and power in the standard AS-Interface network

One of the great advantages of AS-Interface is the ability to convey not only data, but also the power needed for the connected slaves and sensors over the same unshielded twisted pair. This is owed to the service-proven AS-Interface power supply units which provide integrated data decoupling as well as overload and short-circuit protection and integrated ground-fault monitoring.

AS-i Power24V

Instead of the AS-Interface power supply unit (with 30 V output voltage and integrated data decoupling) the AS-i cable is supplied via a data decoupling module from a 24 V standard power supply unit. The communication technology of AS-Interface works at the same high level of quality with an operational voltage of both 30 V DC and 24 V DC.

	Key data of AS-i Power24V
Number of slaves	Up to 62 slaves and up to 31 safe slaves
Topology	Any
Range	Up to 50 m
Components	• 24 V power supply unit with low residual ripple and limitation to max. 40 V • AS-i Power24V-capable data decoupling with integrated ground-fault detection • AS-i Power24V-capable masters, slaves and components

Requirements for operation of an AS-i Power24V network

- When 24 V power supply units are used, the maximum network range of 50 m must be observed to reach slaves and sensors with a sufficient level of voltage (at least 18 V).
- The power supply units must comply with the ES1 (IEC 62368-1) or PELV (Protective Extra Low Voltage)/ SELV (Safety Extra Low Voltage) standards, have a residual ripple of < 250 mV_{pp}, and must limit the output voltage to a maximum of 40 V in the event of a fault. We recommend SITOP power supplies, see page 15/1 or Catalog KT 10.1, https://support.industry.siemens.com/cs/ww/en/view/109745655.
- When used in conjunction with standard 24 V power supply units, each AS-Interface network requires AS-i Power24V-capable data decoupling, see page 2/71 onwards.
- For reliable operation of an AS-i network with 24 V voltage, it is important that the masters, slaves and other components are approved for AS-i Power24V. AS-i Power24V-capable AS-i components can also be used without restriction in standard 30 V AS-i networks.
- Use of repeaters or extension plugs in AS-i Power24V networks is not permitted.

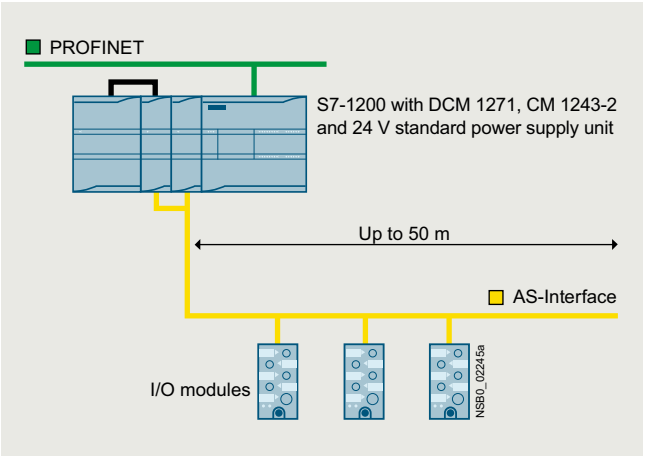
Benefits

In small control cabinets the AS-i power supply unit can be replaced by an AS-i data decoupling module that is connected to an existing 24 V power supply unit.

- The advantages of the AS-i communications system in terms of commissioning, maintenance and diagnostics can be fully exploited.
- If a double data decoupling module is used, two AS-i networks can be supplied.

Application

Configuration of an AS-i Power24V network



Configuration of an AS-i Power24V network with an AS-Interface DCM 1271 data decoupling module and S7-1200 (simple network)

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Introduction

Overview

More information

For more information and typical circuit diagrams on safety engineering, see https://support.industry.siemens.com/cs/ww/en/view/83150405

ASIsafe – Safety is included

ASIsafe enables the integration of safety-related components such as EMERGENCY STOP pushbuttons, protective door switches, cable-operated switches or other AS-i safety sensors in an AS-Interface network. These are fully compatible with the familiar AS-Interface components (masters, slaves, power supply units, repeaters, etc.) in accordance with IEC 62026-2 and are operated in conjunction with them on the yellow AS-Interface cable.

Tested safety

- Protective door switches
- Cable-operated switches
- Other AS-i safety sensors

The transmission method for safety-related signals is released for applications up to SIL 3 (IEC 62061)/PL e (ISO 13849-1).

Higher-level control

As usual, nodes on the AS-Interface bus are controlled in operation by the standard program of the higher-level SIMATIC (F) CPU or by a SINUMERIK control.

Configuring safety functions

In order to implement safe functions, the information from the safe and standard nodes must be combined logically and further parameters set.

In conjunction with the modular safety AS-i master, which is formed by combining the CM AS-i Master ST and F-CM AS-i Safety ST modules in an ET 200SP station, all safety functions and combinations are configured via STEP 7 and processed in the controller (F-CPU) by the Failsafe program.

Benefits

- Simple system structure thanks to standardized AS-Interface technology
- Safety-related and standard data on the same bus
- Existing systems can be expanded quickly and easily
- Optimum integration in TIA (Safety Diagnostics) and Safety Integrated
- Inclusion of the safety signals in the plant diagnostics, also on existing HMI Panels
- Approved up to SIL 3 (IEC 62061)/PL e (ISO 13849-1)
- ASIsafe is certified by TÜV (Germany), NRTL (USA) and INRS (France)

Application

Integrated safety technology in the AS-Interface system can be used wherever EMERGENCY STOP buttons, protective door interlocks, safety switches, light arrays and two-hand operation are installed.

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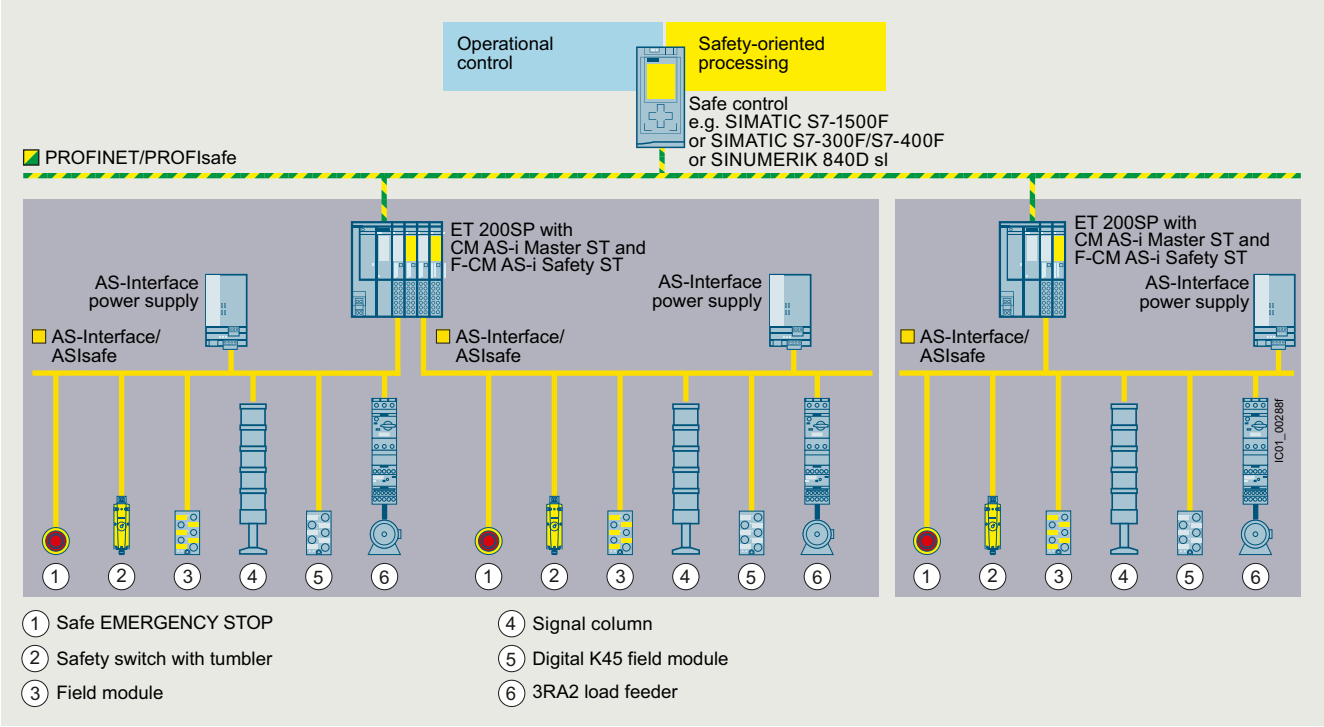
Overview



AS-Interface configuration with AS-i master modules in the ET 200SP

The AS-i communications modules in the ET 200SP facilitate the use of AS-Interface under fail-safe SIMATIC or SINUMERIK controllers.

The allocation of tasks is as follows:

- Acquisition of safety-related signals via safe input slaves on the AS-Interface bus.
  Further signals can be detected through other F-DI modules of the SIMATIC.
- Evaluation and processing of signals via the fail-safe SIMATIC or SINUMERIK control
- Reacting by means of safety output modules on the AS-Interface bus
  or other SIMATIC F-DQ modules

Simple combination of the CM AS-i Master ST and F-CM AS-i Safety ST modules in one ET 200SP station results in a powerful, safety-related network transition between PROFINET (or PROFIBUS) and AS-Interface, which can be expanded further in a modular fashion with further I/O modules of the ET 200SP.

Using these design methods, it is possible to create configurations for virtually any application. Besides the single AS-i master, double, triple or generally multiple masters can be realized with or without Failsafe functionality.

F-CM AS-i Safety ST for SIMATIC ET 200SP, see page 2/34 onwards.

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Overview

AS-Interface safety modules: K45F (left), K20F (center) and SC17.5F (right)

Safety modules for AS-Interface (ASIsafe modules) are available for field use in degree of protection IP67 (K20F and K45F compact modules) and for the control cabinet (SC17.5F SlimLine Compact modules) in degree of protection IP20.

A very compact module with an optimum price/performance ratio is thus available for every application.

All modules for the connection of (mechanical) switches and safety sensors with contacts feature cross-circuit monitoring of the connected sensor line.

Function

The safety-related modules with 2 F-DI have two safe inputs. These inputs can be used in a 2 x 1-channel configuration for applications up to SIL 1/PL c or as 1 x 2-channel for applications up to SIL 3/PL e according to IEC 62061 or ISO 13849. According to the AS-Interface specification, the two safe inputs are always evaluated in AND-gated pairs, i.e. the two inputs always influence the safety function as a pair and cannot therefore influence the two different actuators independently. A safety-related module takes up one AS-i address (1 ... 31) with standard addressing and no A/B address.

If the module is used in a 2 x 1-channel configuration, the actuator can be activated as soon as the contacts are closed at both inputs. No discrepancy check is made.

If the module is used in a 1 x 2-channel configuration, the actuator can be activated as soon as the contacts are closed at both inputs and no discrepancy has first been detected at the input pair. The response of the discrepancy check can be checked via the evaluation unit (e.g. F-CM AS-i Safety module).

The safety-related modules with 4 F-DI have four safe inputs, where each pair of 2 F-DI exert an influence jointly as described above (2 x 2 F-DI). The two input pairs work independently of each other. Each input pair can influence on one actuator (i.e. a safety function). The safety-related modules with 4 F-DI take up two AS-i addresses.

Safety-related modules with 2 F-DI/2 DQ contain not only the safety-related inputs but also non-safety-related standard outputs. The standard outputs must not be used for safety-related switching functions.

The safe inputs are designed for connecting (mechanical) switches. Safety sensors with solid-state outputs (OSSD) cannot be used at the safe inputs.

AS-Interface safety modules

The following modules are available for selection:

K20F compact safety modules for use in the field

Being only 20 mm wide, the K20F module is particularly well suited for applications where modules need to be arranged in the most confined space. The K20F modules are connected to the AS-Interface with a round cable with M12 cable box instead of with the AS-Interface flat cable. This enables extremely compact installation. The flexibility of the round cable means that it can also be used on moving machine parts without any problems. The K20 modules are also ideal for such applications as their non-encapsulated design makes them particularly light in weight.

K45F compact safety modules for use in the field

The platform of the K45F modules covers the connection of ("mechanical") switches/safety sensors with contacts:

- K45F 2 F-DI: two safety-related inputs. These can be used in a 2 x 1-channel configuration for applications up to SIL 1/PL c or as 1 x 2-channel for applications up to SIL 3/PL e according to IEC 62061 or ISO 13849.
- K45F 2 F-DI/2 DQ: There are also two standard outputs in addition to the safe inputs. Depending on the selected K45F module, the outputs are powered either from the yellow AS-Interface cable or via the auxiliary voltage U_{aux} from the black 24 V DC cable. Modules with degree of protection IP67 do not have a switch for setting the power supply on the module.
- K45F 4 F-DI: four safety-related inputs. Functionality as for two K45F 2 F-DI modules, but combined with a K45F enclosure. Extremely compact double slave (uses two AS-i addresses)
- K45F 4 F-DI: These can be used in a 2 x 1-channel configuration for applications up to SIL 1/PL c or as 1 x 2-channel for applications up to SIL 3/PL e according to IEC 62061 or ISO 13849. Extremely compact double slave (uses two standard AS-i addresses)

SC17.5F SlimLine Compact safety modules with a width of just 17.5 mm for use in control cabinets and local control boxes

With a width of only 17.5 mm, the safe SC17.5F SlimLine Compact modules are ideal for space-saving use in a control cabinet. The modules have two safety inputs for connecting signals to ASIsafe networks in the control cabinet. In operation up to SIL 1/PL c, the two inputs can be assigned separately (with AND gating of the inputs); if SIL 3/PL e is required, the inputs must be used in a 2-channel configuration.

There are also two module variants which have two standard outputs in addition to the two safety inputs. The outputs are supplied either from the yellow AS-Interface cable alone, or via auxiliary voltage from the black 24 V DC cable. The supply voltage is set via a slide switch on the rear of the device.

When using several modules, they can be connected simply via the optional device connector. This simplifies the wiring. The yellow AS-i bus cable and the 24 V DC auxiliary voltage U_{aux} then only need to be connected to one module.

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Selection and ordering data

For multi-unit packaging for SC17.5F, see page 16/7.

Version		Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK1205-0BQ30-0AA3	**K20F compact safety modules** Slave addressing type: Standard address					
I/O type	U_{aux} 24 V					
2 F-DI	--	**3RK1205-0BQ30-0AA3**		1	1 unit	42C
3RK1205-0BQ00-0AA3	**K45F compact safety modules** Slave addressing type: Standard address (modules supplied without mounting plate)					
I/O type	U_{aux} 24 V					
2 F-DI	--	**3RK1205-0BQ00-0AA3**		1	1 unit	42C
4 F-DI[1]	--	**3RK1205-0CQ00-0AA3**		1	1 unit	42C
2 F-DI/2 DQ	--	**3RK1405-0BQ20-0AA3**		1	1 unit	42C
2 F-DI/2 DQ	✓	**3RK1405-1BQ20-0AA3**		1	1 unit	42C
3RK1405-2BE00-2AA2	**SC17.5F SlimLine Compact safety modules** Slave addressing type: Standard address					
I/O type	Outputs					
		Screw terminals				
2 F-DI	--	**3RK1205-0BE00-2AA2**		1	1 unit	42C
		Spring-loaded terminals (push-in)				
2 F-DI	--	**3RK1205-0BG00-2AA2**		1	1 unit	42C
		Screw terminals				
2 F-DI/2 DQ	U_{ASI}/U_{aux} supply selectable	**3RK1405-2BE00-2AA2**		1	1 unit	42C
		Spring-loaded terminals (push-in)				
2 F-DI/2 DQ	U_{ASI}/U_{aux} supply selectable	**3RK1405-2BG00-2AA2**		1	1 unit	42C

✓ Available or possible
-- Not available or not possible
[1] Module occupies two AS-Interface addresses

Standard I/O modules for AS-Interface
- For degree of protection IP67, see page 2/44 onwards
- For degree of protection IP20, see page 2/59 onwards

The existing SlimLine series of ASIsafe modules for use in the control cabinet and local control boxes is being replaced by the new SlimLine Compact series. We recommend that these new devices are used in future.

For the conversion table, see page 2/61.

Note:

The previous SlimLine devices are still available for use as replacements in existing systems. As a result of the innovation, the new SlimLine Compact devices are not fully compatible in terms of either mechanical dimensions or electrical properties.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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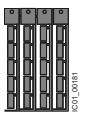
Accessories

More information

For the Equipment Manual for SlimLine Compact modules, see https://support.industry.siemens.com/cs/ww/en/view/109481489

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for compact safety modules					
3RK1901-2EA00					
K45 mounting plates					
For mounting K45F					
• For wall mounting	**3RK1901-2EA00**		1	1 unit	42C
• For DIN-rail mounting	**3RK1901-2DA00**		1	1 unit	42C
3RK1901-1AA00					
Input bridges for K45F					
• Black version	**3RK1901-1AA00**		1	1 unit	42C
• Red version	**3RK1901-1AA01**		1	1 unit	42C
3RK1901-1KA00 3RK1901-1KA01					
AS-Interface sealing caps M12	**3RK1901-1KA00**		100	10 units	42C
For free M12 sockets					
• Tamper proof	**3RK1901-1KA01**		100	10 units	42C
Accessories for SlimLine Compact safety modules					
3RK1901-1YA00 3RK1901-1YA01					
Device connectors					
For the electrical connection of SlimLine Compact modules (connects AS-i bus cable and 24 V DC auxiliary power supply U_{aux} when using several SlimLine Compact modules)					
• Width 17.5 mm	**3RK1901-1YA00**		1	1 unit	42C
• Width 22.5 mm	**3RK1901-1YA10**		1	1 unit	42C
Device termination connectors					
Required for the last module in the network					
• Width 17.5 mm	**3RK1901-1YA01**		1	1 unit	42C
• Width 22.5 mm	**3RK1901-1YA11**		1	1 unit	42C
3ZY1121-2BA00					
Removable terminals	**Screw terminals**				
• Screw terminals up to 2 x 1.5 mm² or 1 x 2.5 mm²					
- 2-pole	**3ZY1121-1BA00**		1	6 units	41L
- 4-pole	**3ZY1141-1BA00**		1	6 units	41L
	Spring-loaded terminals (push-in)				
• Push-in terminals up to 2 x 1.5 mm²					
- 2-pole	**3ZY1121-2BA00**		1	6 units	41L
- 4-pole	**3ZY1141-2BA00**		1	6 units	41L
Hinged cover	**3ZY1450-1BA00**		1	5 units	41L
Replacement for SlimLine Compact module, without terminal labeling, width 17.5 mm, yellow					
Push-in lugs for wall mounting	**3ZY1311-0AA00**		1	10 units	41L
Two lugs are required per device					
Coding pins for removable terminals	**3ZY1440-1AA00**		1	12 units	41L
For mechanical coding of the terminals					
3ZY1450-1BA00					
 3RT2900-1SB20					
Blank labels					
Unit labeling plates[1]					
• 10 mm x 7 mm, titanium gray	**3RT2900-1SB10**		100	816 units	41B
• 20 mm x 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B
3RA2908-1A					
Tools for opening spring-loaded terminals	**Spring-loaded terminals (push-in)**				
Screwdriver for SIRIUS devices with spring-loaded terminals 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated	**3RA2908-1A**		1	1 unit	41B

1) PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

CM AS-i Master ST for SIMATIC ET 200SP

Video: AS-Interface – Powerful integration in SIMATIC ET 200SP

More information

SIMATIC ET 200SP Manual Collection, see https://support.industry.siemens.com/cs/ww/en/view/84133942

Diagnostics blocks with visualization, see https://support.industry.siemens.com/cs/ww/en/view/109479103

AS-Interface block library for SIMATIC PCS 7 for easy connection of AS-Interface to PCS 7, see page 14/19 onwards

Released combinations of the AS-i modules for ET 200SP, see https://support.industry.siemens.com/cs/ww/en/view/103624653

The CM AS-i Master ST communications module is designed for use in the SIMATIC ET 200SP distributed I/O system and has the following features:

- Connection of up to 62 AS-Interface slaves
- Supports all AS-Interface master functions according to the AS-Interface specification V3.0
- User-friendly configuration with graphic or tabular display of the AS-i line in TIA Portal or STEP 7 (Classic) or via GSD in other systems
- Supply via AS-Interface cable
- Suitable for AS-i Power24V and for AS-Interface with 30 V voltage
- Integrated ground-fault monitoring for the AS-Interface cable
- Through connection to AS-Interface, the number of digital inputs and outputs available for the control system is greatly increased (max. 496 DI/496 DQ on the AS-Interface per CM AS-i Master ST).
- Integrated analog value processing

AS-i gateways with ET 200SP

An AS-i gateway or AS-i link enables access to the AS-Interface data via PROFINET or PROFIBUS.

With the CM AS-i Master ST module, flexible and powerful PROFINET/AS-i links or PROFIBUS/AS-i link solutions are set up. Depending on the requirements, even several AS-i masters can be plugged into one ET 200SP station, so that the setup can easily be extended from a single master to double masters or multiple masters.

The maximum number of modules is determined by the ET 200SP interface module (IM): Up to 8 AS-i masters with PROFINET IM 155-6PN Standard, up to 43 AS-i masters with IM 155-6PN High Feature, or a single AS-i master with IM 155-6PN Basic. For the connection to PROFIBUS, the IM 155-6DP HF interface module with up to 7 AS-i master modules is used.

Since in many plants an ET 200SP station with I/O, motor starter or other peripheral modules is provided, the AS-i master modules are simply plugged in without any additional effort. There are countless possible combinations.

An AS-i Safety gateway can also be implemented without any problems by adding the safety-related module F-CM AS-i Safety ST in the ET 200SP station. This greatly simplifies the cabling and connection of distributed EMERGENCY STOP pushbuttons and protective door monitoring systems to a Failsafe CPU. The AS-i Safety application is completely configured in TIA Portal/STEP 7.

The ET 200SP modules CM AS-i Master ST and F-CM AS-i Safety ST (see page 2/34 onwards) can of course also be used directly on an ET 200SP CPU or F-CPU, so that an extremely compact SIMATIC control system with AS-i bus connection can be set up.

For further application possibilities, see the brochure "The modular AS-i master" at www.siemens.com/as-interface.

More information, see the SIMATIC ET 200SP Manual Collection.

Design

The CM AS-i Master ST module has an ET 200SP module enclosure with a width of 20 mm. A type C0 BaseUnit (BU) is required for use in the ET 200SP.

The communications module has LED displays for diagnostics, operation, AS-i voltage and AS-i slave status and offers informative front-side module inscription for

- Plain-text marking of the module type and function class
- 2D matrix code (article and serial number)
- Circuit diagram
- Color coding module type communications module, light gray
- Hardware and firmware version
- Supported BaseUnit type BU: C0

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Function

The CM AS-i Master ST communications module supports all specified functions of the AS-Interface specification V3.0.

The input/output values of the digital AS-i slaves can be activated via the cyclic process image. The values of the analog AS-i slaves are accessible via the cyclic process image or via data record transfer.

If required, master calls can be performed with the command interface, e.g. read/write parameters, read/write configuration.

Changeover of the operating mode, automatic application of the slave configuration and the re-addressing of a connected AS-i slave can be implemented via the control panel of the CM AS-i Master ST in STEP 7.

For the implementation of modular machine concepts, the AS-i slaves can be activated or deactivated via the PLC program (option handling). The configuration of AS-i slaves can be modified while being executed, thus enabling variable machine setups and tool changing with integrated input/output modules during ongoing operation. AS-i input/output modules can be added to the system without deactivating the controller.

An existing AS-i installation can be read into the STEP 7 hardware configuration and adapted and documented in the project. Analog values are transmitted via the cyclic process image, the length of which is adjustable and extendable up to 288 bytes (depending on the interface module (IM) used).

Diagnostics information is accessed via automatic alarm indications, via the status information in the process image or via the graphical status display in the online diagnostics of the TIA Portal. The transmission quality of the AS-i network can also be read out. To avoid configuration errors, duplicate addresses can be detected on the AS-i network.

Configuration is possible with SIMATIC CPUs S7-300 up to S7-1500 and with a SINUMERIK 840D sl or other controller.

The online diagnostic status of the AS-i slaves can be displayed directly on the slaves in the network view in TIA Portal (for S7-1500 CPUs with firmware version V 2.0 or higher).

Notes on security:

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Configuration

The following software is required for configuration of the CM AS-i Master ST module:

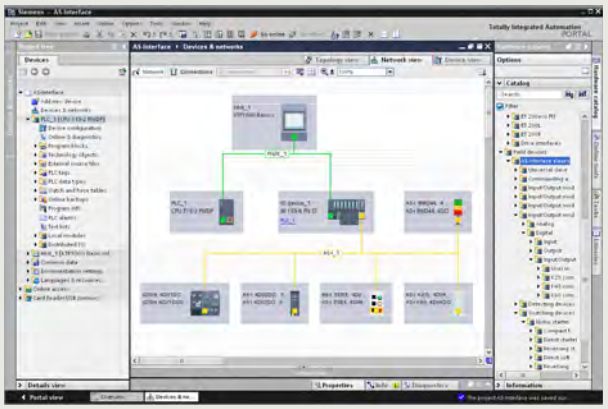
- STEP 7 (TIA Portal) or
- STEP 7 (Classic) or
- the GSD file of the ET 200SP with STEP 7 or another engineering tool

STEP 7 enables user-friendly configuration and diagnostics of the AS-i master and any connected slave modules.

Alternatively, you can also apply the AS-Interface ACTUAL configuration as the TARGET configuration at the "touch of a button" via the control panel integrated in the TIA Portal or an optional expansion button. Configuration with the GSD file is possible only with the button.

The CM AS-i Master ST module occupies up to 288 input bytes and up to 288 output bytes in the I/O data of the ET 200SP station. The I/O assignment depends on the configuration in STEP 7.

Together with an ET 200SP CPU 1510SP, 1512SP or 1515SP PC, preprocessing of safe AS-i signals directly in the ET 200SP station and setting up of an independent AS-i station without a higher-level CPU are possible.



Configuration of an AS-Interface network with CM AS-i Master ST via the TIA Portal

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Benefits

The CM AS-i Master ST for ET 200SP communications module enables modular, simple and high-performance expansion of AS-interface networks via engineering in the TIA Portal.

Up to eight CM AS-i Master ST units can be plugged into one ET 200SP station with IM 155-6PN Standard. When using the IM 155-6 PN High Feature, the number of CM AS-i Master ST in the ET 200SP station can be further increased. The maximum configuration depends on the interface module used. Multiple masters as well as single masters can thus be implemented in the ET 200SP depending on the number of modules.

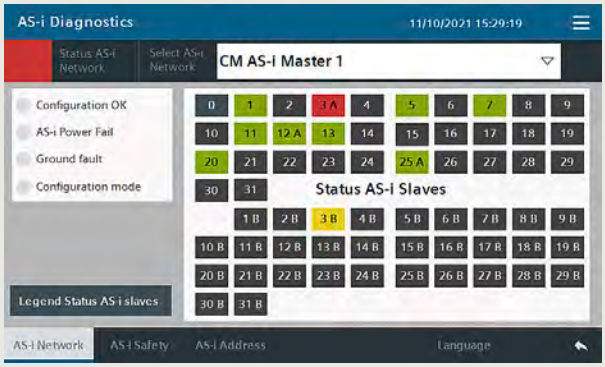
Together with the interface module, a scalable PROFINET/AS-i link or PROFIBUS/AS-i link can be assembled.

Using STEP 7, the AS-i network is consistently configured and programmed with only one configuration tool.

The PRONETA PC program (for ET 200SP with PROFINET interface module) is available for convenient input/output testing during the commissioning of an AS-i network without a CPU; see www.siemens.com/proneta.

For the connection of an AS-i network to systems with Ethernet/IP and Modbus TCP, the ET 200SP MultiFieldbus interface module IM155-6MF in combination with the CM AS-i Master ST module is available.

For diagnostics during ongoing operation, diagnostics blocks with clearly arranged visualization on the SIMATIC HMI panel are available or can be downloaded free of charge via a web browser, see https://support.industry.siemens.com/cs/ww/en/view/109479103.



CM AS-i Master ST diagnostics block

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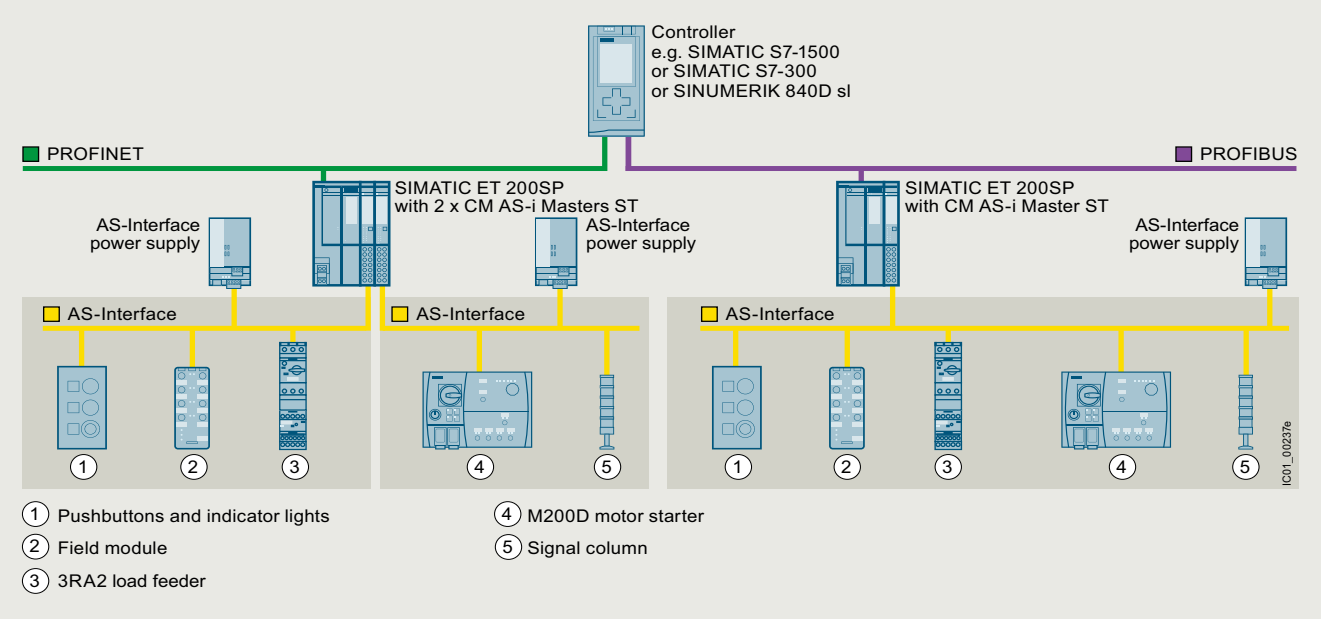
2

Application

Configuration examples of AS-Interface networks with CM AS-i Master ST for SIMATIC ET 200SP



Configuration of AS-Interface networks under a SIMATIC ET 200SP

Selection and ordering data

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK7137-6SA00-0BC1	**CM AS-i Master ST communications module** • AS-Interface master for SIMATIC ET 200SP, can be plugged onto BaseUnit type C0 • Corresponds to AS-Interface specification V3.0 • Dimensions W x H x D (mm): 20 x 73 x 58	**3RK7137-6SA00-0BC1**		1	1 unit	42C

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Accessories

Version	Spring-loaded terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 6ES7193-6BP20-0DC0	**BaseUnit BU20-P6+A2+4D** • BaseUnit (light), BU type C0 • Suitable for the CM AS-i Master ST module • For connection of the AS-Interface cable to the CM AS-i Master ST • Start of an AS-i network, isolation of the AS-i voltage from the left-hand module	**6ES7193-6BP20-0DC0**		1	1 unit	255

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 6ES7155-6AR00-0AN0 6ES7155-6AA01-0BN0	**PROFINET IM 155-6PN Basic interface modules** Max. 12 I/O modules, max. 32 bytes of I/O data per station					
	• Including server module and 2 x RJ45 ports (supplied without RJ45 plug)	**6ES7155-6AR00-0AN0**		1	1 unit	255
	PROFINET IM 155-6PN Standard interface modules Max. 32 I/O modules, max. 256 bytes I/O data per station					
	• Including server module and bus adapter 2 x RJ45 (supplied without RJ45 plug)	**6ES7155-6AA01-0BN0**		1	1 unit	255
	• Including server module (bus adapter must be ordered separately, see below)	**6ES7155-6AU01-0BN0**		1	1 unit	255
 6ES7155-6AU01-0CN0	**PROFINET IM 155-6PN High Feature interface modules** Max. 64 I/O modules, max. 1 440 bytes I/O data per station					
	• **IM 155-6PN/2 High Feature** 2-port IM with a bus adapter slot, including server module and optional strain relief (bus adapter must be ordered separately, see below)	**6ES7155-6AU01-0CN0**		1	1 unit	255
	• **IM 155-6PN/3 High Feature** 3-port IM with two bus adapter slots, including server module and optional strain relief (bus adapter must be ordered separately, see below)	**6ES7155-6AU30-0CN0**		1	1 unit	255
 6ES7155-6AU00-0DN0	**PROFINET IM 155-6PN High Speed interface modules** Max. 30 I/O modules, max. 1 440 bytes I/O data per station					
	• Including server module (bus adapter must be ordered separately, see below)	**6ES7155-6AU00-0DN0**		1	1 unit	255
	PROFIBUS IM 155-6DP High Feature interface modules Max. 32 I/O modules, max. 244 bytes I/O data per station					
	• Including server module and PROFIBUS plug	**6ES7155-6BA01-0CN0**		1	1 unit	255
 6ES7155-6MU00-0CN0	**MultiFeldbus interface modules IM 155-6MF High Feature** For operation on PROFINET, EtherNet/IP or Modbus TCP controllers, 1 slot for bus adapter, max. 64 I/O modules					
	• Including server module and optional strain relief (bus adapter must be ordered separately, see below)	**6ES7155-6MU00-0CN0**		1	1 unit	255
	For more information, see https://support.industry.siemens.com/cs/ww/de/view/109779189.					
 6ES7193-6AR00-0AA0 6ES7193-6AF00-0AA0	**Bus adapters for PROFINET/Ethernet** For connection of the Ethernet cable to the PROFINET IM 155-6PN interface module and the MultiFieldbus IM 155-6MF interface module					
	• Connection 2 x RJ45 (supplied without RJ45 plug)	**6ES7193-6AR00-0AA0**		1	1 unit	255
	• Connection 2 x FC (FastConnect)	**6ES7193-6AF00-0AA0**		1	1 unit	255
	For more bus adapters with fiber-optic cable connection, see Industry Mall.					

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

F-CM AS-i Safety ST for SIMATIC ET 200SP

More information

SIMATIC ET 200SP Manual Collection, see
https://support.industry.siemens.com/cs/ww/en/view/84133942

Diagnostics blocks with visualization, see
https://support.industry.siemens.com/cs/ww/en/view/109479103

Released combinations of the AS-i modules for ET 200SP, see
https://support.industry.siemens.com/cs/ww/en/view/103624653

The F-CM AS-i Safety ST fail-safe communications module supplements an AS-Interface network without additional wiring to produce a safety-related AS-i network.

Important features:

- Fail-safe communications module for the ET 200SP
  - 31 fail-safe input channels in the process image
  - 16 fail-safe output channels in the process image
  - Certified up to SIL 3 (IEC 62061)/PL e (ISO 13849-1)
  - Parameterization conforms with other Failsafe I/O modules of the ET 200SP
- The communications module supports PROFIsafe in PROFINET and PROFIBUS configurations. Can be used with fail-safe SIMATIC S7-300F/S7-400F CPUs and S7-1500F CPUs and also the Failsafe versions of the ET 200SP station with ET 200SP F-CPU 1510SP F, 1512SP F or 1515SP PC F.
- For reading up to 31 fail-safe AS-i input slaves
  - Two sensor inputs/signals for each fail-safe AS-i input slave
  - Adjustable evaluation of sensor signals: 2-channel or 2 x 1-channel
  - Integrated discrepancy evaluation in the case of 2-channel signals
  - Integrated AND operation in the case of 2 x 1-channel signals
  - Input delay can be parameterized
  - Start-up test can be set
  - Sequence monitoring can be activated
- For control of up to 16 fail-safe AS-i output circuit groups
  - The output circuit groups are controlled independently of one another.
  - One output circuit group can act on one or more actuators (e.g. to switch drives simultaneously).
  - The F-CM AS-i Safety ST module transmits the switching command of the output circuit group on the AS-i cable. A safe AS-i output module that is installed at any point on the AS-i cable receives the switching command and switches the connected actuator (e.g. contactor).
  - Simple fault acknowledgment via the process image
- Simple module replacement thanks to automatic importing of the safety parameters from the coding element
- Comprehensive diagnostics options
- Can be plugged onto type C1 or type C0 BaseUnits (BU)
- Informative automatic alarm indications
- Supply via AS-Interface voltage
- Eight LED displays for diagnostics, operating state, fault indication and supply voltage
- Informative front-side module inscription
  - Plain-text marking of the module type and function class
  - 2D matrix code (article and serial number)
  - Circuit diagram
  - Color coding module type communications module: light gray
  - Hardware and firmware version
  - Supported BaseUnit type BU: C1, C0

Design

The fail-safe F-CM AS-i Safety ST module has an ET 200SP module enclosure with a width of 20 mm.

One AS-i master according to the AS-i specification V3.0 and safe AS-i input slaves and/or safe AS-i output modules are needed for operation. The CM AS-i Master ST communications module (article number 3RK7137-6SA00-0BC1) is recommended as the AS-i master for the ET 200SP, see page 2/29 onwards.

Simple combination of the CM AS-i Master ST and F-CM AS-i Safety ST modules in one ET 200SP station results in a powerful, safety-related network transition between PROFINET (or PROFIBUS) and AS-Interface, which can be expanded further in a modular fashion.

Combination of an ET 200SP interface module, CM AS-i Master ST and F-CM AS-i Safety ST

With the digital and analog I/O modules of the ET 200SP, additional local inputs and outputs can be realized so as to ensure that the modular AS-i router complies precisely with customer requirements. Expansion variants for almost every application are possible thanks to the selection of standard and Failsafe I/O modules.

Besides the single AS-i master, double, triple or generally multiple masters can be realized with or without Failsafe functionality.

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Supported BaseUnits

With the combination of the CM AS-i Master ST and F-CM AS-i Safety ST modules, the CM module is plugged onto a light type C0 BaseUnit and, immediately to the right of it, the F-CM module is plugged onto a dark type C1 BaseUnit. The AS-i cable is connected only on the light BaseUnit of the CM module.

Notes on security:

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Configuration

The following software is required for configuration of the F-CM AS-i Safety ST module:

- STEP 7 (TIA Portal) and Safety Advanced or
- STEP 7 (Classic) and Distributed Safety or F-Configuration Pack SP11 or SIMATIC S7 F/FH systems

Configuration and programming are done entirely in the STEP 7 user interface. No additional configuration software is needed for commissioning.

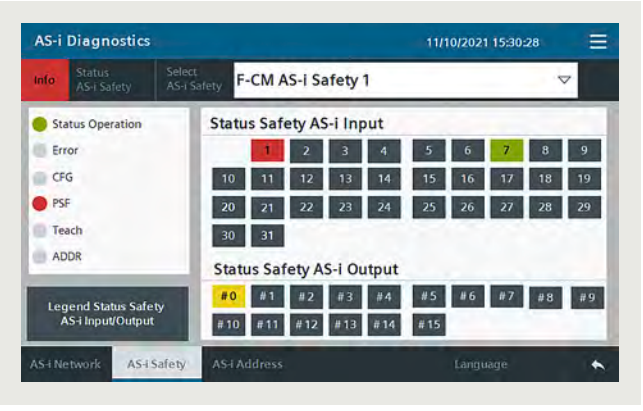
Data management – together with all other configuration data of the SIMATIC – is realized completely in the S7 project.

The input and output channels are assigned to the process image automatically and manual linking via configuration blocks is not necessary.

If the F-CM AS-i Safety ST module is replaced, all necessary settings are automatically imported into the new module.

The F-CM AS-i Safety ST module occupies 16 input bytes and 8 output bytes in the I/O data of the ET 200SP station.

For diagnostics during ongoing operation, diagnostics blocks with clearly arranged visualization on the SIMATIC HMI panel are available or can be downloaded free of charge via a web browser, see https://support.industry.siemens.com/cs/ww/en/view/109479103.



Diagnostics block for F-CM AS-i Safety ST

Application

Thanks to use of the fail-safe module in the ET 200SP, it is possible to fulfill the safety-related application requirements in a manner that is integrated in the overall automation solution.

The safety functions required for fail-safe operation are integrated in the modules. Communication with the fail-safe SIMATIC S7 CPUs is realized via PROFIsafe.

The safety application is programmed in the SIMATIC S7 F-CPU with Distributed Safety, S7 F/FH Systems or Safety Advanced. The fail-safe input signals of the ASIsafe slave modules are read via the AS-i bus line and are combined with any chosen further signals in the fail-safe program.

The fail-safe output signals can be output via safe SIMATIC output modules or also directly via AS-i output modules. No special functions are required for this in the program.

Operation with SINUMERIK 840D sl is possible with SINUMERIK software version V4.7 SP2 HF1 or higher.

Together with an ET 200SP station with ET 200SP F-CPU 1510SP F, 1512SP F or 1515SP PC F, pre-processing of safe AS-i signals directly in the ET 200SP station is possible, as well as the configuration of an autonomous AS-i Safety station without a higher-level CPU.

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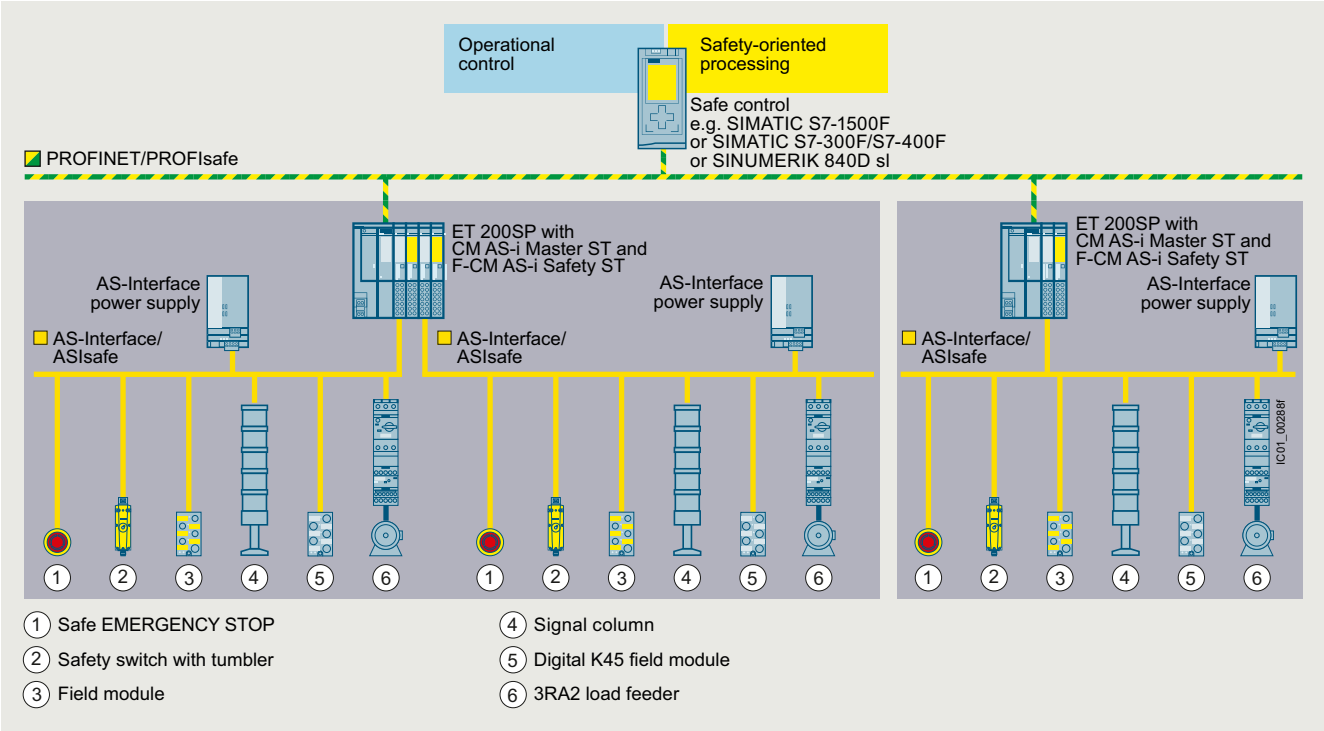
Configuration examples of AS-Interface networks with CM AS-i Master ST and F-CM AS-i Safety ST for SIMATIC ET 200SP



AS-Interface configuration comprising an ET 200SP station with CM AS-i Master ST and F-CM AS-i Safety ST modules

Selection and ordering data

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK7136-6SC00-0BC1	**F-CM AS-i Safety ST communications module** • Fail-safe module for SIMATIC ET 200SP, can be plugged onto BaseUnit type C1 (alternatively type C0) • Operation requires an AS-i master, e.g. CM AS-i Master ST (see page 2/29 onwards) • Can be used up to SIL 3 (IEC 62061)/PL e (ISO 13849-1) • Coding element type H (included in scope of supply) • Dimensions W x H x D (mm): 20 x 73 x 58	**3RK7136-6SC00-0BC1**		1	1 unit	42C

Accessories

	Version	Spring-loaded terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
6ES7193-6BP20-0BC1	**BaseUnit BU20-P6+A2+4B** • BaseUnit (dark), BU type C1 • Suitable for the F-CM AS-i Safety ST fail-safe communications module • Continuation of an AS-i network, connection with the AS-i voltage of the left-hand module	**6ES7193-6BP20-0BC1**		1	1 unit	255
	Coding element type H (spare part) • For the ET 200SP modules F-CM AS-i Safety ST and CM 4xIO-Link • Packing unit 5 items	**6ES7193-6EH00-1AA0**		1	5 units	256

More accessories, see page 2/33.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

CM 1243-2 communications module for S7-1200

More information

Equipment Manual for AS-i master CM 1234-2 and AS-i DCM 1271 decoupling module, see https://support.industry.siemens.com/cs/ww/en/view/57358958

The CM 1243-2 communications module is the AS-Interface master for the SIMATIC S7-1200 and has the following features:

- Connection of up to 62 AS-Interface slaves
- Integrated analog value transmission
- Supports all AS-Interface master functions in accordance with the AS-Interface specification V3.0
- Indication of the operating state on the front of the device displayed via LED
- Display of operating mode, AS-Interface voltage faults, configuration faults and peripheral faults via LED behind the front panel
- Compact enclosure in the design of the SIMATIC S7-1200
- Suitable for AS-i Power24V and for AS-Interface with 30 V voltage: A standard 24 V power supply unit can be used in combination with the optional DCM 1271 data decoupling module.
- Configuration and diagnostics via the TIA Portal

Design

The CM 1243-2 communications module is positioned to the left of the S7-1200 CPU and linked to the S7-1200 via lateral contacts.

It has:

- Terminals for two AS-i cables (internally jumpered) via two screw terminals
- One terminal for connection to the functional ground
- LEDs for indication of the operating state and fault statuses of the connected slaves

The screw terminals (included in scope of supply) can be removed to facilitate installation.

Function

The CM 1243-2 supports all specified functions of the AS-Interface specification V3.0.

The values of the digital AS-i slaves can be activated via the process image of the S7-1200. During configuration of the slaves in the TIA Portal, the values of the analog AS-i slaves can also be accessed directly in the process image.

If required, master calls can be performed with the data record interface, e.g. read/write parameters, read/write configuration.

Changeover of the operating mode, automatic application of the slave configuration and the re-addressing of a connected AS-i slave can be implemented via the control panel of the CM 1243-2 in the TIA Portal.

The optional DCM 1271 data decoupling module (see "Accessories", page 2/38) has an integrated detection unit for detecting ground faults on the AS-Interface cable. The integrated overload protection also disconnects the AS-Interface cable if the drive current required exceeds 4 A. For more information on DCM 1271, see page 2/73.

Notes on security:

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Configuration

The TIA Portal enables user-friendly configuration and diagnostics of the AS-Interface master and any connected slave modules.

When operated on an S7-1200 CPU with firmware version V4.0 or higher, the firmware version V1.1 (or higher) is required for the CM 1243-2.

Benefits

- More flexibility and versatility in the use of SIMATIC S7-1200 as the result of a significant increase in the number of digital and analog inputs/outputs available
- Very easy configuration and diagnostics of the AS-Interface via the TIA Portal
- Simple operation with AS-Interface power supply unit (see page 2/67) possible without restrictions.
- Alternatively: No need for the AS-i power supply unit with AS-i Power24V. The AS-Interface cable is supplied through an existing 24 V DC PELV power supply unit. For decoupling, the AS-i DCM 1271 data decoupling module is required, see "Accessories" and page 2/73.
- LEDs for indication of fault statuses for fast diagnostics
- Monitoring of AS-Interface voltage facilitates diagnostics

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Application

The CM 1243-2 is the AS-Interface master connection for the 12xx CPUs of the SIMATIC S7-1200. Through connection to AS-Interface, the number of digital inputs and outputs available for the S7-1200 is greatly increased (max. 496 DI/496 DQ on the AS-Interface per CM).

The integrated analog value processing also makes the analog values available at the AS-Interface for the S7-1200. Up to 31 analog slaves with a standard address (each with up to four channels) or up to 62 analog slaves with an A/B address (each with up to two channels) are possible per CM.

Operating conditions

- The CM 1243-2 communications module exchanges data with the S7-1200 CPU with a cycle time of 10 ms.
- The AS-i cycle time depends on the AS-i bus capacity and is up to 5 ms in the case of 31 slaves addresses; for more information, see Equipment Manual for AS-i master CM 1243-2 and AS-i DCM 1271 data decoupling module, https://support.industry.siemens.com/cs/ww/en/view/57358958.
- For calculation of the maximum switching frequency at inputs/outputs of AS-i slaves, these cycle times and the runtime of the user program must be added up.

Selection and ordering data

	Version	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK7243-2AA30-0XB0	**CM 1243-2 communications module** • AS-Interface masters for SIMATIC S7-1200 • Corresponds to AS-Interface specification V3.0 • Removable terminals (included in the scope of supply) • Dimensions W x H x D (mm): 30 x 100 x 75	**3RK7243-2AA30-0XB0**		1	1 unit	42C

Note:

The CM 1243-2 communications module is available as a SIPLUS version under article number 6AG1243-2AA30-7XB0 in the extended temperature range (from -25 to +70 °C) and for use in harsh environmental conditions (coated according to environment standard IEC 60721).

For more information, see www.siemens.com/siplus-extreme.

Accessories

	Version	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK7271-1AA30-0AA0	**DCM 1271 data decoupling module** • Max. 1 x 4 A • Removable terminals (included in the scope of supply) • Dimensions W x H x D (mm): 30 x 100 x 75	**3RK7271-1AA30-0AA0**		1	1 unit	42C
	Screw terminals (spare part)					
	• 5-pole, For AS-i master CM 1243-2 and AS-i DCM 1271 data decoupling module	**3RK1901-3MA00**		1	1 unit	42C
	• 3-pole, For AS-i DCM 1271 data decoupling module for connecting the power supply unit	**3RK1901-3MB00**		1	1 unit	42C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

CP 343-2P/CP 343-2

More information

Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/15754/man

For diagnostics during ongoing operation, diagnostics blocks with clearly arranged visualization on the SIMATIC HMI panel are available or can be downloaded free of charge via a web browser, see https://support.industry.siemens.com/cs/ww/en/view/61892138

AS-Interface block library for SIMATIC PCS 7 for easy connection of AS-Interface to PCS 7, see page 14/19 onwards

The CP 343-2P communications processor is the AS-Interface master for the SIMATIC S7-300 and the ET 200M distributed I/O station, with user-friendly parameterizing options.

The CP 343-2 is the basic version of the module.

The CP 343-2P/CP 343-2 has the following characteristics:

- Connection of up to 62 AS-Interface slaves
- Integrated analog value transmission
- Support of all AS-Interface master functions in accordance with the AS-Interface specification V3.0
- Status displays of operating states and indication of the readiness for operation of connected slaves by means of LEDs in the front panel
- Fault indications (including AS-Interface voltage errors, configuration errors) by means of LEDs on the front plate.
- Compact enclosure in the design of the SIMATIC S7-300
- Suitable for AS-Interface with 30 V voltage and AS-i Power24V
- Additionally for CP 343-2P: Supports the configuration of the AS-Interface network with STEP 7

Design

The CP 343-2P/CP 343-2 is connected like an I/O module to the S7-300. It has:

- Two terminal connections for connecting the AS-Interface cable directly.
- LEDs in the front panel for indicating the operating state and the readiness for operation of all connected and activated slaves
- Pushbuttons for switching over the master operating state and for adopting the existing ACTUAL configuration of the AS-i slave as the TARGET configuration

Function

The CP 343-2P/CP 343-2 supports all specified functions of the AS-Interface specification V3.0.

Each CP 343-2P/CP 343-2 occupies 16 bytes in the I/O address area of the SIMATIC S7-300. The digital I/O data of the standard slaves and A slaves are saved in this area. The digital I/O data of the B slaves and the analog I/O data can be accessed with the S7 system functions for read/write data records.

If required, master calls can be performed with the command interface, e.g. read/write parameters, read/write configuration.

For more information, see https://support.industry.siemens.com/cs/ww/en/view/51678777.

Notes on security:

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Configuration

All connected AS-Interface slaves are configured at the press of a button. No further configuration of the CP is required.

Additionally for CP 343-2P

The CP 343-2P also supports configuring of the AS-Interface network with STEP 7. Specifying the AS-i configuration in HW Config facilitates the setting of slave parameters and documentation of the plant. Uploading the ACTUAL configuration of an already configured AS-Interface network is also supported. The saved configuration cannot be overwritten at the press of a button and is therefore tamper-proof.

Benefits

- Shorter startup times through simple configuration at the press of a button
- Design of flexible machine-related structures using the ET 200M distributed I/O system
- Provides diagnostics of the AS-Interface network
- Well suited also for complex applications thanks to connection options for 62 slaves and integral analog value processing
- Reduction of standstill and servicing times in the event of a fault thanks to the LED displays:
  - Status of the AS-Interface network
  - Slaves connected and their readiness for operation
  - Monitoring of the AS-Interface voltage
- Lower costs for stock keeping and spare parts inventory because the CP can be used for the SIMATIC S7-300 and also for the ET 200M
- Additionally for CP 343-2P: Improved plant documentation and support for service assignments thanks to a description of the AS-Interface configuration in the STEP 7 project
- Simple operation with AS-Interface power supply unit (see page 2/67) possible without restrictions.
- Alternatively: No need for the AS-i power supply unit with AS-i Power24V. The AS-Interface cable is supplied through an existing 24 V DC PELV power supply unit. An S22.5 AS-i data decoupling module (e.g. 3RK1901-1DE12-1AA0) is required for the decoupling, see page 2/71.

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Application

The CP 343-2P/CP 343-2 is the AS-Interface master connection for SIMATIC S7-300 and ET 200M.

Through connection to AS-Interface it is possible to access max. 248 DI/248 DQ per CP, using 62 A/B slaves with 4 DI/4 DQ each.

With the integrated analog value processing, it is easy to transmit analog signals. Up to 62 analog slaves with an A/B address (each with up to two channels) or up to 31 analog slaves with a standard address (each with up to four channels) are possible per CP.

The CP 343-2P is the further development of the CP 343-2 and contains its entire functionality. An existing STEP 7 user program for a CP 343-2 can thus be used without restrictions with a CP 343-2P. It is only in STEP 7 HW Config that the two modules are configured differently, with the CP 343-2P offering additional options. This is why the CP 343-2P is recommended.

Selection and ordering data

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
6GK7343-2AH11-0XA0	**CP 343-2P communications processors** • Device version with expanded configuration options for connection of SIMATIC S7-300 and ET 200M to AS-Interface • Configuration of the AS-i network using the SET key or STEP 7 • Without front connector • Corresponds to AS-Interface specification V3.0 • Dimensions W x H x D (mm): 40 x 125 x 120	**6GK7343-2AH11-0XA0**		1	1 unit	42C
6GK7343-2AH01-0XA0	**CP 343-2 communications processors** • Basic version for connection of SIMATIC S7-300 and ET 200M to AS-Interface • Configuration of the AS-i network using the SET key • Without front connector • Corresponds to AS-Interface specification V3.0 • Dimensions W x H x D (mm): 40 x 125 x 120	**6GK7343-2AH01-0XA0**		1	1 unit	42C

Accessories

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Front connector, 20-pole					
• With screw terminals	**6ES7392-1AJ00-0AA0**		1	1 unit	230
• With spring-loaded terminals	**6ES7392-1BJ00-0AA0**		1	1 unit	230

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

DP/AS-Interface Link 20E manual

More information

Manual for DP/AS-Interface Link 20E, see https://support.industry.siemens.com/cs/ww/en/view/5281638

PN	DP-M	DP-S	AS-i M		
		●	●		

IK10_10195s

DP/AS-Interface Link 20E connects PROFIBUS DP to AS-Interface and has the following features:

- PROFIBUS DP slave and AS-Interface master
- Up to 62 AS-Interface slaves, each with four digital inputs and four digital outputs as well as analog slaves can be connected
- Integrated analog value transmission
- Supports all AS-Interface master functions according to the AS-Interface specification V3.0
- Supply from AS-Interface cable; hence no additional power supply required
- Suitable for AS-i Power24V (from product version 2/ firmware version 3.1) and for AS-Interface with 30 V voltage
- Supports uploading of the AS-Interface configuration in STEP 7

Routers

High-performance routers between PROFINET and AS-Interface and between PROFIBUS and AS-Interface can be set up by combining the CM AS-i Master ST and F-CM AS-i Safety ST modules in an ET 200SP station (for safety-related applications), see pages 2/29 and 2/34.

Design

- Compact plastic enclosure in degree of protection IP20 for DIN-rail mounting
- LEDs in the front panel for indicating the operating state and functional readiness of all connected slaves
- Setting of PROFIBUS DP address is possible by pressing a button
- LED display of the PROFIBUS DP slave address, PROFIBUS DP bus faults and diagnostics
- Two pushbuttons for switching over the operating state and for adopting the existing ACTUAL configuration as the TARGET configuration

Functionality

Communication

The DP/AS-Interface Link 20E enables a DP master to access all the slaves of an AS-Interface network.

The DP/AS-Interface Link 20E occupies a standard 32 bytes of input data and 32 bytes of output data in which the digital I/O data of the connected AS-Interface slaves (standard and A/B addressing) of an AS-i line is stored.

The size of the input/output image can be compressed so that only the actually required I/O address area is occupied in the system of the PROFIBUS DP master.

The analog I/O data can be accessed with the S7 system functions for read/write data records.

Configuration

The DP/AS-Interface Link 20E is configured as follows:

- With STEP 7 (TIA Portal) or STEP 7 (Classic)
  In the case of STEP 7 configuration, the AS-Interface configuration can be uploaded in STEP 7. Furthermore, AS-Interface slaves from Siemens can also be conveniently configured in HW Config (slave selection dialog).
- By adopting the ACTUAL configuration of the AS-Interface by using the SET pushbutton on the front panel.
- Alternatively, DP/AS-Interface Link 20E can be integrated by means of the PROFIBUS GSD file in the engineering tool (e.g. for non-Siemens engineering tools).

Benefits

- Reduction of installation costs because the power is supplied entirely via the AS-Interface cable, which means that no additional power supply is required
- Short startup times thanks to easy configuration at the touch of a button
- The LED displays help reduce downtime and service times if a slave fails
- Quick and easy commissioning by reading the AS-Interface configuration
- For diagnostics during ongoing operation, diagnostics blocks with clearly arranged visualization on the SIMATIC HMI panel are available or can be downloaded free of charge via a web browser; see https://support.industry.siemens.com/cs/ww/en/view/61892138.

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DP/AS-Interface Link 20E

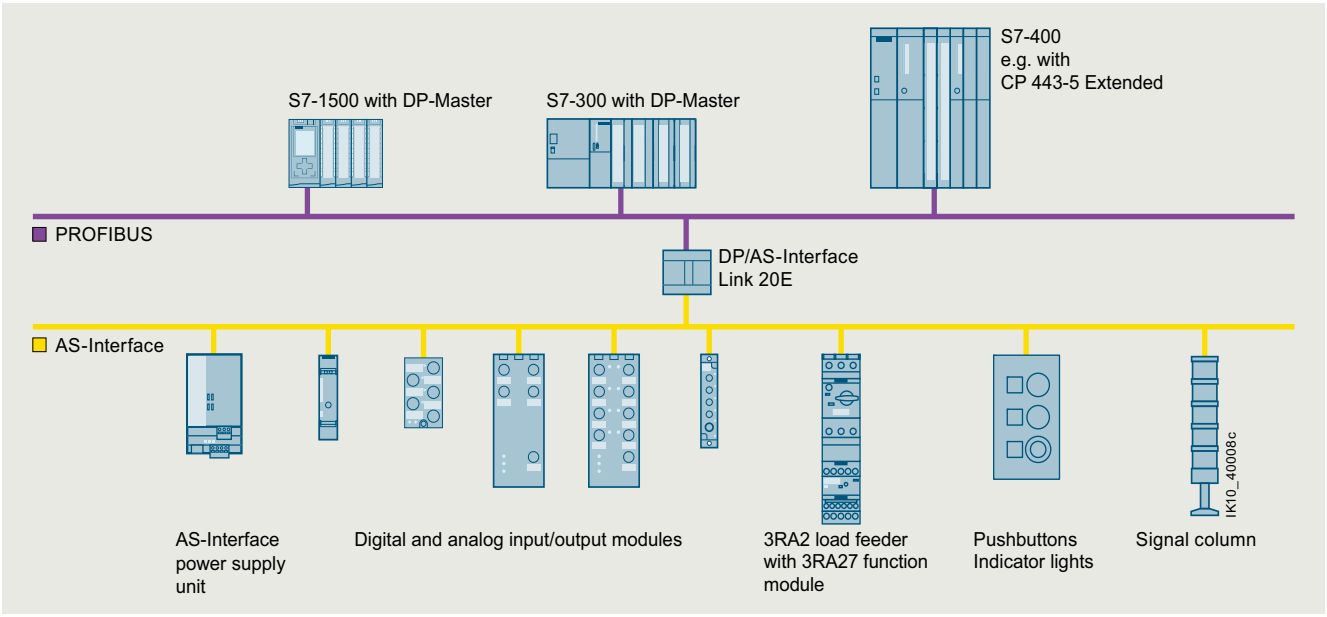
Application

The DP/AS-Interface Link 20E is a PROFIBUS DP slave (according to IEC 61158/IEC 61784) and an AS-Interface master (according to IEC 62026-2). It enables the AS-Interface to be operated on PROFIBUS DP.

Up to 248 DI/248 DQ can be operated via the DP/AS-Interface Link 20E using 62 A/B slaves with 4 DI/4 DQ each.

PROFIBUS DP masters (DP-V0) can exchange digital I/O data cyclically with the AS-Interface.

PROFIBUS DP masters with acyclic services (DP-V1) are additionally able to exchange analog I/O data and initiate AS-Interface master calls (e.g. reading/writing the AS-i configuration during normal operation).



Transition from PROFIBUS DP to AS-Interface using DP/AS-Interface Link 20E

Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
DP/AS-Interface Link 20E					
6GK1415-2AA10	**Screw terminals**				
Router between PROFIBUS DP and AS-Interface in degree of protection IP20; including screw terminals for connection of the AS-Interface cable; corresponds to AS-Interface specification V3.0; dimensions W x H x D (mm): 90 x 80 x 60 (dimensions without fixing lugs)	**6GK1415-2AA10**		1	1 unit	42C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Accessories

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
PROFIBUS FC standard cable GP FastConnect standard type with special design for fast installation, 2-core, shielded	**6XV1830-0EH10**		1	1 M	5K1
PROFIBUS FastConnect bus connector With insulation displacement connection, max. transmission rate 12 Mbps, activatable terminating resistor integrated					
• RS 485 bus connector with 90° cable outlet					
- Without PG connection socket	**6ES7972-0BA52-0XA0**		1	1 unit	250
- With PG connection socket	**6ES7972-0BB52-0XA0**		1	1 unit	250
• RS 485 bus connector with diagonal cable outlet (35°)					
- Without PG connection socket	**6ES7972-0BA61-0XA0**		1	1 unit	250
- With PG connection socket	**6ES7972-0BB61-0XA0**		1	1 unit	250
PROFIBUS FastConnect stripping tool Preset stripping tool for speedy stripping of PROFIBUS FastConnect bus cables	**6GK1905-6AA00**		1	1 unit	5K2

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

K60

K45

K20

Three coordinated series of AS-Interface compact modules with digital and analog compact modules and a high degree of protection are available for use in the field:

- Digital modules with a high degree of protection
  - Series K60, see pages 2/46 and 2/48
  - Series K45, see page 2/51
  - Series K20, see page 2/52
- Analog modules with a high degree of protection
  - Series K60, see page 2/55

All compact modules are characterized by particularly simple handling. The K60 and K45 modules are mounted with a mounting plate. The mounting plate is used to mount the AS-Interface flat cables and enables mounting on a wall or DIN rail.

The particularly narrow K20 modules are directly mounted without a mounting plate and connected to the AS-Interface using a round cable.

Connection types

For flexible connection of different sensors and actuators, the following pin assignments are available on the I/O modules with M12 sockets:

Standard assignment

With the standard assignment, one sensor/actuator is connected per M12 socket. In this case the signal for the outputs is acquired at pin 4 while the signal for the inputs is acquired at pin 4 and pin 2. As the result, sensors can be connected directly to pin 2 and pin 4.

Y-assignment

With the Y-assignment, two sensors or two actuators can be connected to one M12 socket. In this case, both pin 4 and pin 2 are provided for one sensor signal and one actuator signal on each M12 socket.

In this case, the second socket is not required and is closed with a sealing cap.

Y-II assignment

The Y-II assignment offers the following options:

- Individual connection of a sensor/actuator to one M12 socket
- Connection of two sensors/actuators to one M12 socket as follows:
  - The signal of the first sensor/actuator is connected to pin 4 of the first socket.
  - The signal of the second sensor/actuator is connected to pin 2 of the first socket and to pin 4 of the second socket.

Overview of digital compact modules

The following table provides an overview of the important features of the digital compact modules.

Version	K60	K45	K20
8 inputs/2 outputs	✓	--	--
8 inputs	✓	✓	--
4 inputs/4 outputs	✓	✓	✓
4 inputs/3 outputs	✓	--	--
4 inputs/2 outputs	✓	--	--
4 inputs	✓	✓	✓
2 inputs/2 outputs	--	✓	✓
4 outputs	✓	✓	✓
3 outputs	--	✓	--
AS-Interface connection	Flat cable/ round cable	Flat cable	Round cable
I/O connection method	M12	M12/M8	M12/M8
Pin assignment	Standard/Y-II/Y	Standard/Y	Standard/Y
Degree of protection	IP65/IP67/IP68/ IP69 (IP69K)	IP65/IP67	IP65/IP67
Addressing type A/B address	✓	✓	✓

✓ Available
-- Not available

For safety modules for AS-Interface, see page 2/27.

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Overview

K60

The K60 digital AS-Interface compact modules are characterized by optimized handling characteristics and user-friendliness. They permit the mounting times and startup times of AS-Interface to be reduced by up to 40%.

Mounting and connection of the AS-Interface shaped cables

Assembly of the K60 modules is performed with a mounting plate which accommodates the AS-Interface shaped cables. Two different mounting plates are offered for

- Wall mounting
- DIN-rail mounting

The mounting plate and the compact module are joined together by means of a screw, with simultaneous contacting of the AS-Interface cable by the service-proven insulation piercing method.

Addressing and connection of the sensors/actuators

Addressing of the K60 modules is performed using an addressing socket integrated in the compact module. The addresses can also be assigned after installation.

K60 modules with a maximum of four digital inputs and outputs

These compact modules contain the M12 standard connections for inputs and outputs. Using M12 standard plugs, a maximum of four sensors and four actuators can be connected to the compact module.

K60 compact modules with a maximum of eight digital inputs

These modules have eight digital inputs for connection through M12 plugs.

The module requires two AS-Interface addresses for processing all eight inputs. The addressing can thus be performed through a double addressing socket integrated in the module.

K60 data couplers

An AS-Interface data coupler has been added to the K60 compact module range. Integrated in this module are two AS-i slaves which are connected to two different AS-i networks. Each of the two integrated slaves has four virtual inputs and four virtual outputs. The bidirectional data transmission of four data bits between two AS-i networks is thus possible in a simple and cost-effective manner. The data coupler needs its own address in each AS-i network. The data coupler is supplied with power directly from the AS-i cable.

Each AS-i network works with a different cycle time depending on the number of stations. Hence two AS-i networks are not necessarily synchronous. For this reason, the AS-i data coupler can be used to transmit only standard data and no safety data.

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Selection and ordering data

3RK1400-1DQ00-0AA3

Digital I/O modules, IP67 - K60

- PNP transistor
- Width 60 mm
- Connection method: M12
- Modules supplied without mounting plate

Type	Current-carrying capacity of outputs	Slave addressing type	Pin assign-ment	Sensor power supply via	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
8 inputs/ 2 outputs[1]	2 A	A/B	Special	AS-i	**3RK2400-1HQ00-0AA3**		1	1 unit	42C
8 inputs[1]	--	Standard	Y-II	AS-i	**3RK1200-0DQ00-0AA3**		1	1 unit	42C
	--	A/B	Y-II	AS-i	**3RK2200-0DQ00-0AA3**		1	1 unit	42C
	--	A/B	Y-II	U_{aux}	**3RK2200-1DQ00-1AA3**		1	1 unit	42C
4 inputs/ 4 outputs	2 A	Standard	Y-II	AS-i	**3RK1400-1DQ00-0AA3**		1	1 unit	42C
	2 A	Standard	Standard	AS-i	**3RK1400-1CQ00-0AA3**		1	1 unit	42C
	1 A	Standard	Y-II	AS-i	**3RK1400-1DQ01-0AA3**		1	1 unit	42C
	1 A	Standard	Standard	AS-i	**3RK1400-1DQ03-0AA3**		1	1 unit	42C
	2 A	A/B (spec. V3.0)	Y-II	AS-i	**3RK2400-1DQ00-0AA3**		1	1 unit	42C
	2 A	A/B (spec. V3.0)	Y-II	U_{aux}	**3RK2400-1DQ00-1AA3**		1	1 unit	42C
4 inputs/ 3 outputs	2 A	A/B	Y-II	AS-i	**3RK2400-1FQ03-0AA3**		1	1 unit	42C
4 inputs/ 2 outputs	2 A	Standard	Y-II	AS-i	**3RK1400-1MQ00-0AA3**		1	1 unit	42C
4 inputs	--	Standard	Y-II	AS-i	**3RK1200-0CQ00-0AA3**		1	1 unit	42C
	--	A/B	Y-II	AS-i	**3RK2200-0CQ00-0AA3**		1	1 unit	42C
2 x 2 inputs/ 2 x 2 outputs	1 A	Standard	Y	AS-i	**3RK1400-1DQ02-0AA3**		1	1 unit	42C
4 outputs	2 A	Standard	Y-II	--	**3RK1100-1CQ00-0AA3**		1	1 unit	42C
	2 A	A/B (spec. V3.0)	Y-II	--	**3RK2100-1CQ00-0AA3**		1	1 unit	42C

Digital I/O modules, IP67 - K60 data couplers

Modules supplied without mounting plate

Type	Current-carrying capacity of outputs	Slave addressing type	Pin assign-ment	Sensor power supply via	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Data coupler 4 inputs/4 outputs (virtual)	--	Standard	--	--	**3RK1408-8SQ00-0AA3**		1	1 unit	42C

[1] Module occupies two AS-Interface addresses

For safety modules for AS-Interface, see page 2/27 onwards.

Accessories

3RK1901-0CA00

K60 mounting plates
Suitable for all K60 compact modules

- Wall mounting — **3RK1901-0CA00** — 1 — 1 unit — 42C
- DIN-rail mounting — **3RK1901-0CB01** — 1 — 1 unit — 42C

3RK1901-1KA00

AS-Interface sealing caps M12
For free M12 sockets — **3RK1901-1KA00** — 100 — 10 units — 42C

3RK1902-0AR00

Sealing sets — **3RK1902-0AR00** — 100 — 5 units — 42D

- For K60 mounting plate
- Cannot be used for K45 mounting plate
- One set contains one straight and one shaped seal

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

Operation in particularly harsh environments

K60R module in degree of protection IP68/IP69 (IP69K)

Modules with degree of protection IP67 cannot be used in areas exposed to permanently high levels of humidity, in applications with drilling emulsions and cutting oils or when cleaning with high-pressure cleaners. The answer for these applications is provided by the expansion of the K60 compact modules with the K60R module with degree of protection IP68/IP69 (IP69K).

The K60R modules are connected instead of the AS-Interface flat cable using a round cable with M12 cable box. The AS-Interface bus cable and the 24 V DC auxiliary power supply are routed in this case in a shared round cable.

Degree of protection IP68 permits many new applications that were impossible with the former field modules with degree of protection IP67. In applications such as filling plants or machine tools, the K60R with degree of protection IP68 enables the module to be used directly in zones exposed to permanent loading by humidity. It is thus possible to make even more rigorous savings in wiring with AS-Interface. For more information on IP68 test conditions, see "IP68/IP69 (IP69K) tests", page 2/48.

Cleaning with high-pressure cleaners, such as is regularly required in the food and beverages industry for instance, is possible without difficulty (IP69).

In applications with cable carriers, many users rely on placing the AS-Interface bus cable in a round cable. With the K60R module, a round cable connection enables direct connection to a round cable. No adapter is required.

Mounting

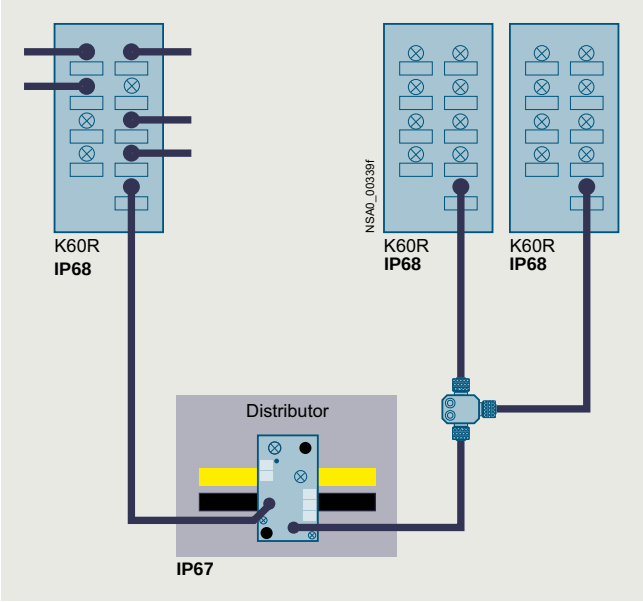
The same mounting plates are used as for the K60 modules. Instead of using flat cables, the K60R is connected using a 4-pole round cable with an M12 connection. With the K60R the mounting plate thus serves only as a fixture and ground terminal.

Addressing

Addressing is performed using the same socket as for the bus connection. Connecting the module to the addressing unit takes place over a 3-pole standard M12 cable.

When the mounting is finished, the module is connected with the addressing cable to the addressing unit and addressed. The addressing cable is then removed and the module connected to the bus cable.

Connection



K60R connection options

In the IP67 environment, the service-proven standard components are connected using flat cables. Spur lines are laid into the IP68 environment by means of an AS-Interface M12 feeder (3RK1901-2NR..). The module is connected with a round cable to an M12 cable box. For this purpose, the module has an M12 bus connection instead of the former addressing socket. The AS-Interface bus cable and the 24 V DC auxiliary voltage are routed together in a 4-pole round cable. There must be no ground conductor in this round cable. Connection to ground is made through the mounting plate.

In the IP68 environment, only cables with extruded M12 plugs may be used.

Please note the following conditions:

- The configuration guidelines for AS-Interface apply. For all M12 connecting cables, the maximum permissible current is limited to 4 A. The cross-section of these cables is just 0.34 mm^2. For connection of the K60R modules, the aforementioned M12 connecting cables can be used for the spur lines. The voltage drop caused by the ohmic resistance (approx. 0.11 Ω/m) must be taken into account.
- For round cable connections with shared AS-i and U_{aux} in a single cable, the following maximum lengths apply:
  - Per spur line from feeder to module: max. 5 m
  - Total of all round cable segments in an AS-Interface network: max. 20 m

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IP68/IP69 (IP69K) tests

K60R modules were tested with the following tests:

- Stricter test than IP67: 90 min at 1.8 m depth of water (IP67: 30 min at 1 m depth of water)
- Salt water test: Five months in salt water, 20 cm deep, at room temperature
- Test with particularly creepable oil: Five months completely under oil at room temperature
- Test with drilling emulsion: Five months at room temperature (components of the drilling emulsion: Anionic and non-ionic emulsifiers, paraffinic low-aromatic mineral oil, boric acid alkanolamines, corrosion inhibitors, oil content 40%)
- Test in oil bath (Excellence 416 oil) with alternating oil bath temperature: 130 cycles of 15 to 55 °C, two months
- Cleaning with a high-pressure cleaner according to IP69 (IP69K): 80 to 100 bar, 10 to 15 cm distance, time per side > 30 s, water temperature 80 °C

To simulate requirements as realistically as possible, the modules were artificially aged prior to the tests by 15 temperature cycles of -25/+85 °C. During the test, the modules were connected to 3RX1 connecting cables. Unassigned connections were closed with 3RK1901-1KA00 sealing caps.

Note:

Sealing caps and M12 connections must be tightened with the correct torque.

Selection and ordering data

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK1400-1CR00-0AA3	**Digital I/O modules, IP68/IP69 - K60R** • 4 inputs/4 outputs • Width 60 mm • IP68/IP69 (IP69K) • Standard assignment • Current-carrying capacity - 200 mA (inputs) - 2 A (outputs) • Slave addressing type: Standard address • Modules supplied without mounting plate	**3RK1400-1CR00-0AA3**		1	1 unit	42C

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Accessories

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK1901-0CA00	**K60 mounting plates** Suitable for all K60 and K60R compact modules					
	• Wall mounting	**3RK1901-0CA00**		1	1 unit	42C
	• DIN-rail mounting	**3RK1901-0CB01**		1	1 unit	42C
3RK1901-1KA00	**AS-Interface sealing caps M12** For free M12 sockets	**3RK1901-1KA00**		100	10 units	42C
3RK1901-2NR21	**AS-Interface M12 feeders, current-carrying capacity up to 4 A**					
	For flat cable: AS-i/U_{aux} — For: M12 socket — Cable length: -- — Cable end in feeder: Not available	**3RK1901-2NR20**		1	1 unit	42C
	For flat cable: AS-i/U_{aux} — For: M12 cable box — Cable length: 1 m — Cable end in feeder: Not available	**3RK1901-2NR21**		1	1 unit	42C
	For flat cable: AS-i/U_{aux} — For: M12 cable box — Cable length: 2 m — Cable end in feeder: Not available	**3RK1901-2NR22**		1	1 unit	42C
3RK1901-1NR04	**AS-Interface M12 feeders, 4-fold, current-carrying capacity up to 4 A**					
	For flat cable: AS-i/U_{aux} — For: 4-fold M12 socket, delivery includes mounting plate (for wall and DIN-rail mounting) — Cable length: -- — Cable end in feeder: Not available	**3RK1901-1NR04**		1	1 unit	42C
3RK1902-4PB15-3AA0	**M12 connecting cables** • 3-pole • For addressing AS-i slaves with M12 bus connection • Cable length 1.5 m	**3RK1902-4PB15-3AA0**		1	1 unit	42D

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

Compact modules K45

The K45 series of compact modules supplements the large K60 compact modules which have a proven track record in industry. They are the logical consequence for rounding off the bottom end of the existing product range.

The acclaimed advantages of the existing K60 compact modules are fully emulated by the K45 modules. The K45 modules have a substantially smaller basic area and installation depth, however.

Yet in spite of these small dimensions all the modules have large labels and an integrated addressing socket.

Two mounting plates are offered for the K45 compact modules:

- Mounting plate for wall mounting
  This has a hole pattern that is identical to that of the K60 compact modules. This means that K60 compact modules can be mounted together with K45 modules in an aligned arrangement. The shaped cables can be inserted in the recesses of the mounting plates where they cause no hindrance.
- Mounting plate for DIN-rail mounting

Connection of the AS-Interface shaped cables

The mounting plate and the compact module are joined together by means of a screw, with simultaneous contacting of the AS-Interface cable by the service-proven insulation piercing method.

Now, mounting the AS-Interface shaped cables is in fact easier than ever. The yellow and black AS-Interface shaped cable can be inserted into the mounting plates from the left or right regardless of the position of the coding lug. The correct polarity of the applied voltages is thus guaranteed.

Addressing and connection of the sensors/actuators

Addressing of the K45 compact modules is performed using an addressing socket integrated in the module. The addresses can be assigned even when mounted.

K45 modules with a maximum of four digital inputs and outputs

These compact modules contain up to four M12 standard connections or M8 standard connections for inputs and outputs. Using M12 or M8 standard plugs, a maximum of four sensors and four actuators can be connected to the compact module. Depending on the module, the sockets can be assigned in duplicate.
Pin assignment: Y – i.e. via a socket, two sensors or one sensor/one actuator are connected.

K45 modules with a maximum of eight digital inputs

These modules have eight digital inputs for connection through M12 plugs. The sockets have duplicate assignments. Pin assignment: Y – i.e. via a socket, two sensors or one sensor/one actuator are connected.

The module requires two AS-Interface addresses for processing all eight inputs. The addresses can be assigned through a double addressing socket integrated in the module.

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Selection and ordering data

3RK1400-0GQ20-0AA3

Digital I/O modules, IP67 - K45
- PNP transistor
- Width 45 mm
- Current-carrying capacity of the inputs: 200 mA
- Modules supplied without mounting plate

Type	Current-carrying capacity of outputs	Slave addressing type	Pin assignment	U_{aux} 24 V	Connection methods	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
8 inputs[1]	--	A/B	Y	--	M12	**3RK2200-0DQ20-0AA3**		1	1 unit	42C
4 inputs	--	Standard	Standard	--	M12	**3RK1200-0CQ20-0AA3**		1	1 unit	42C
	--	Standard	Standard	--	M8	**3RK1200-0CT20-0AA3**		1	1 unit	42C
	--	A/B	Standard	--	M12	**3RK2200-0CQ20-0AA3**		1	1 unit	42C
	--	A/B	Standard	--	M8	**3RK2200-0CT20-0AA3**		1	1 unit	42C
2 x 2 inputs	--	A/B	Y	--	M12	**3RK2200-0CQ22-0AA3**		1	1 unit	42C
2 inputs/ 2 outputs	2 A[2]	Standard	Standard	✓	M12	**3RK1400-1BQ20-0AA3**		1	1 unit	42C
2 x (1 input/ 1 output)	0.2 A	Standard	Y	--	M12	**3RK1400-0GQ20-0AA3**		1	1 unit	42C
4 x (1 input/ 1 output)	0.2 A	A/B (spec. V3.0)	Y	--	M12	**3RK2400-0GQ20-0AA3**		1	1 unit	42C
	0.5 A	A/B (spec. V3.0)	Y	✓	M12	**3RK2400-1GQ20-1AA3**		1	1 unit	42C
4 outputs	1 A	A/B (spec. V3.0)	Standard	✓	M12	**3RK2100-1CQ20-0AA3**		1	1 unit	42C
3 outputs	1 A	A/B	Standard	✓	M12	**3RK2100-1EQ20-0AA3**		1	1 unit	42C
4 outputs	1 A	Standard	Standard	✓	M12	**3RK1100-1CQ20-0AA3**		1	1 unit	42C
2 outputs/ 2 inputs	2 A	A/B	Standard	✓	M12	**3RK2400-1BQ20-0AA3**		1	1 unit	42C

✓ Available
-- Not available

[1] Module occupies two AS-Interface addresses
[2] The typical current-carrying capacity per output increases with version "E12" from 1.5 to 2 A (available since approx. 07/2003).

For safety modules for AS-Interface, see page 2/27 onwards.

Accessories

3RK1901-2EA00

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
K45 mounting plates					
• For wall mounting	**3RK1901-2EA00**		1	1 unit	42C
• For DIN-rail mounting	**3RK1901-2DA00**		1	1 unit	42C

3RK1901-1MN00

Cable end terminator For sealing open cable ends of the AS-Interface shaped cable with IP67	**3RK1901-1MN00**		1	10 units	42C

3RK1901-1KA00

AS-Interface sealing caps					
• For free M12 sockets	**3RK1901-1KA00**		100	10 units	42C
• For free M8 sockets	**3RK1901-1PN00**		100	10 units	42C

3RK1901-1PN00

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

Digital I/O modules, IP67 - K20

The K20 compact module series rounds off the AS-Interface compact modules with a particularly slim design and only 20-mm width. Thanks to its extremely compact dimensions, these modules are particularly suited for handling machine applications in the field of production engineering where modules need to be arranged in the smallest of spaces.

Robotics is yet another application area. The K20 modules are connected to the AS-Interface with a round cable with M12 cable box instead of with the AS-Interface flat cable. The AS-Interface bus cable and the 24 V DC auxiliary energy are routed in this case in a shared round cable. This enables extremely compact installation.

The flexibility of the round cable means that it can also be used on moving machine parts without any problems. The K20 modules are also ideal for such applications as their non-encapsulated design makes them particularly light in weight.

In applications with cable carriers, many users rely on placing the AS-Interface bus cable in a round cable. In this case, the K20 modules support direct connection to the round cable. No flat to round cable adapter is required.

The K20 compact module range includes standard AS-Interface modules, as well as an ASIsafe version for the connection of safety-related sensors, such as EMERGENCY STOP pushbuttons or protective door monitoring.

For particularly space-saving dimensions, the sensors and actuators are connected over M8 plug-in connectors. Alternatively, M12 connectors with Y-assignment can be used.

Selection and ordering data

3RK2200-0CT30-0AA3

Version					Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Digital I/O modules, IP67 - K20									
Width 20 mm									
Type	Current-carrying capacity of outputs	Slave addressing type	Pin assignment	Connection methods					
4 inputs	--	A/B	Standard	M8	**3RK2200-0CT30-0AA3**		1	1 unit	42C
	--	A/B	Y	M12	**3RK2200-0CQ30-0AA3**		1	1 unit	42C
2 inputs/ 2 outputs	1	A/B	Standard	M8	**3RK2400-1BT30-0AA3**		1	1 unit	42C
	1	A/B	Y	M12	**3RK2400-1BQ30-0AA3**		1	1 unit	42C
4 outputs	1	A/B (spec. V3.0)	Standard	M8	**3RK2100-1CT30-0AA3**		1	1 unit	42C
4 inputs/ 4 outputs	1	Standard	Standard	M8	**3RK1400-1CT30-0AA3**		1	1 unit	42C
	1	A/B (spec. V3.0)	Standard	M8	**3RK2400-1CT30-0AA3**		1	1 unit	42C
2 safe inputs	--	Standard	Y-II	M12	**3RK1205-0BQ30-0AA3**		1	1 unit	42C

For safety modules for AS-Interface, see page 2/27 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Accessories

	Version				Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK1901-1KA00	**AS-Interface sealing caps**								
	• For free M12 sockets				**3RK1901-1KA00**		100	10 units	42C
3RK1901-1PN00	• For free M8 sockets				**3RK1901-1PN00**		100	10 units	42C
3RK1901-2NN10	**AS-Interface compact distributors, for AS-Interface flat cable AS-i or U_{aux}**						1	1 unit	42C
	• Current-carrying capacity up to 8 A								
	• Degree of protection IP67/IP68/IP69 (IP69K)								
	For flat cable	For	Cable length	Cable end in feeder					
	AS-i or U_{aux}	Flat ribbon cable AS-i or U_{aux}	--	Not available	**3RK1901-2NN10**		1	1 unit	42C
3RX9801-0AA00	**AS-Interface M12 feeders**								
	• Current-carrying capacity up to 2 A								
	• Degree of protection IP67								
	For flat cable	For	Cable length	Cable end in feeder					
	AS-i	M12 socket	--	Available	**3RX9801-0AA00**		1	1 unit	42C
3RK1901-2NR10	**AS-Interface M12 feeders**								
	• Current-carrying capacity up to 4 A								
	• Degree of protection IP67/IP68/IP69 (IP69K)								
	For flat cable	For	Cable length	Cable end in feeder					
	AS-i	M12 socket	--	Not available	**3RK1901-2NR10**		1	1 unit	42C
	AS-i	M12 cable box	1 m	Not available	**3RK1901-2NR11**		1	1 unit	42C
	AS-i	M12 cable box	2 m	Not available	**3RK1901-2NR12**		1	1 unit	42C
	AS-i/U_{aux}	M12 socket	--	Not available	**3RK1901-2NR20**		1	1 unit	42C
	AS-i/U_{aux}	M12 cable box	1 m	Not available	**3RK1901-2NR21**		1	1 unit	42C
3RK1901-2NR21	AS-i/U_{aux}	M12 cable box	2 m	Not available	**3RK1901-2NR22**		1	1 unit	42C
3RK1901-1NR04	**AS-Interface M12 feeders, 4-fold**								
	• Current-carrying capacity up to 4 A								
	• Degree of protection IP67								
	For flat cable	For	Cable length	Cable end in feeder					
	AS-i/U_{aux}	4-fold M12 socket, delivery includes mounting plate (for wall and DIN-rail mounting)	--	Not available	**3RK1901-1NR04**		1	1 unit	42C
6ES7194-1KA01-0XA0	**M12 Y-shaped coupler plugs**				**6ES7194-1KA01-0XA0**		1	1 unit	250
	For connection of two sensors to one M12 socket with Y-assignment								
3RK1902-4PB15-3AA0	**M12 connecting cables**				**3RK1902-4PB15-3AA0**		1	1 unit	42D
	• 3-pole								
	• For addressing AS-i slaves with M12 bus connection								
	• Cable length 1.5 m								

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

K60 analog compact module

More information

Manual for AS-Interface analog modules, see https://support.industry.siemens.com/cs/ww/en/view/7643815

AS-Interface analog modules from the K60 compact series detect or issue analog signals locally. These modules are linked to the higher-level controller through an AS-Interface master according to specification V2.1 or specification V3.0.

The analog modules are divided into the following groups:

- Input modules for
  - Current measurement
  - Voltage measurement
  - Thermal resistance measurement
- Output modules for
  - Current actuators
  - Voltage actuators

The input modules according to profile 7.3/7.4 are available with two or four input channels. It is possible in addition to convert the 2-channel module to using only one input channel, thus enabling very short times before the analog value is available. The conversion is effected by means of a jumper plug at socket 3. The transmission times achieved with analog modules according to profile 7.A.9 are twice as fast as those achieved with profile 7.3/7.4. Operation is adjustable in this case, e.g. it is possible to choose with the ID1 code whether the module is operated with 1 or 2 channels.

The output modules are configured as 2-channel modules as standard.

The input and output channels are electrically separated from the AS-Interface network. If sensors with a higher power requirement are to be connected, more power can be supplied through the auxiliary voltage as an alternative to the internal supply.

In the manual (see "More information"), the modules are presented in great detail along with their technical specifications and in-depth notes on operation. Sample function blocks round off the manual.

Benefits

- Analog modules are just as easy to integrate in AS-Interface as digital modules
- Analog values can be easily detected and issued locally
- Preprocessing of the analog value transfer in the master enables rapid evaluation of the analog values
- Up to four values can be detected using one analog module
- Faster transmission and conversion of analog values thanks to the new option for switching to single-channel operation

In addition, specification V3.0 now also offers:

- A/B technology, now also with analog modules
- On average, double fast transmission times (only 3 or 4 cycles, depending on the resolution selected)
- Variable adjustable mode: 12-bit or 14-bit resolution, 1-channel or 2-channel, selectable via the ID1 code

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Selection and ordering data

3RK1207-1BQ44-0AA3

3RK2207-2BQ50-0AA3

Version			Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Analog I/O modules, IP67 - K60, analog profile 7.3 • Slave addressing type: Standard address • Width 60 mm • Modules supplied without mounting plate							
Inputs	Type	Measuring range					
1 or 2 inputs (selectable using jumper plug at socket 3)	Current	4 ... 20 mA or ±20 mA (selectable)[1]	**3RK1207-1BQ40-0AA3**		1	1 unit	42C
	Voltage	±10 V or 1 ... 5 V (selectable)	**3RK1207-2BQ40-0AA3**		1	1 unit	42C
	Thermal resistance	Pt100 or Ni100 or 0 ... 600 Ω (selectable)[1]	**3RK1207-3BQ40-0AA3**		1	1 unit	42C
4 inputs	Current	4 ... 20 mA or ±20 mA (selectable)	**3RK1207-1BQ44-0AA3**		1	1 unit	42C
	Voltage	±10 V or 1 ... 5 V (selectable)	**3RK1207-2BQ44-0AA3**		1	1 unit	42C
	Thermal resistance	Pt100 or Ni100 or 0 ... 600 Ω (selectable)	**3RK1207-3BQ44-0AA3**		1	1 unit	42C
Outputs	Type	Output range					
2 outputs	Current for two-wire actuators	4 ... 20 mA or ±20 mA or 0 ... 20 mA (selectable)[1]	**3RK1107-1BQ40-0AA3**		1	1 unit	42C
	Voltage for two-wire actuators	±10 V or 0 ... 10 V or 1 ... 5 V (selectable)	**3RK1107-2BQ40-0AA3**		1	1 unit	42C
Analog I/O modules, IP67 - K60, analog profile 7.A.9 • Slave addressing type: A/B (spec. V3.0) • Width 60 mm • Modules supplied without mounting plate							
Inputs	Type	Measuring range					
1 or 2 inputs (variably adjustable)	Current	4 ... 20 mA or ±20 mA (selectable)	**3RK2207-1BQ50-0AA3**		1	1 unit	42C
	Voltage	±10 V or 1 ... 5 V (selectable)	**3RK2207-2BQ50-0AA3**		1	1 unit	42C

[1] Some modules are available in the extended temperature range (from -25 to +70 °C) and for use in harsh environmental conditions (coated according to environment standard IEC 60721).

Description	SIPLUS article number	Corresponds to module
SIPLUS AS-Interface 2AA, IP67	6AG1107-1BQ40-7AA3	3RK1107-1BQ40-0AA3
SIPLUS AS-Interface 2AI, IP67	6AG1207-1BQ40-7AA3	3RK1207-1BQ40-0AA3
SIPLUS AS-Interface 2AI, IP67	6AG1207-3BQ40-7AA3	3RK1207-3BQ40-0AA3

For more information, see www.siemens.com/siplus-extreme.

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Accessories

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK1901-0CA00	**K60 mounting plates**					
	• Wall mounting	**3RK1901-0CA00**		1	1 unit	42C
	• DIN-rail mounting	**3RK1901-0CB01**		1	1 unit	42C
3RK1901-1KA00	**M12 sealing caps**	**3RK1901-1KA00**		100	10 units	42C
3RK1902-0AR00	**Sealing sets** • For K60 mounting plate • Cannot be used for K45 mounting plate • One set contains one straight and one shaped seal	**3RK1902-0AR00**		100	5 units	42D
3RK1901-1AA00	**Jumper plugs** For changing over the 2-channel input modules	**3RK1901-1AA00**		1	1 unit	42C

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Illustrations are approximate

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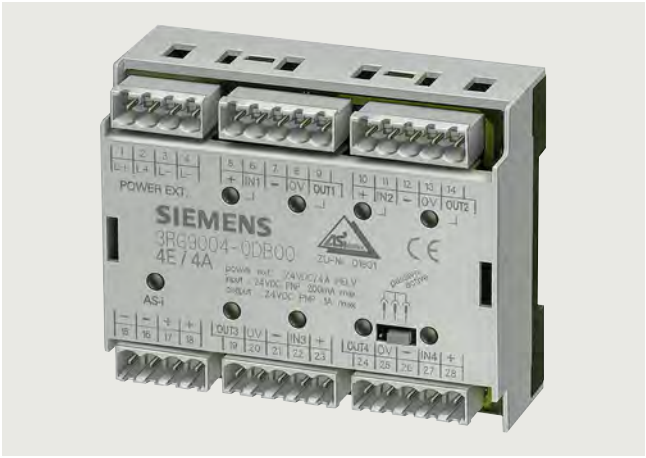
Overview

SlimLine Compact modules SC17.5F, SC17.5 and SC22.5



F90 module

Flat module

For AS-Interface applications inside control cabinets, there are various module series for the most diverse requirements:

- SlimLine Compact – particularly slim design ideal for space-saving use in the control cabinet
- F90 module – particularly flat design for flat control boxes
- Flat module – special design for integration into customer-specific solutions

The existing SlimLine series of modules S22.5 and S45 are being replaced by the innovative new devices in the SlimLine Compact SC17.5, SC17.5F and SC22.5 series. The previous SlimLine modules are still available as replacements for existing systems.

Available versions

The following table provides an overview of the key features of the different series of control cabinet modules.

Feature	SlimLine Compact	F90 module	Flat module
Digital I/O	✓	✓	✓
Analog I/O	✓	--	--
Safe inputs	✓	--	--
Relay outputs	✓	--	--
Addressing type A/B address	✓	--	--
Mounting on TH 35 DIN rail according to IEC 60715	✓	✓	--
Wall mounting using push-in lugs	✓	--	--
Integrated lugs for screw fixing	--	--	✓
Width in mm	17.5 or 22.5	90	80

✓ Available
-- Not available

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Overview

SlimLine Compact modules

SC17.5 and SC22.5 SlimLine Compact modules with screw terminals

SC22.5 SlimLine Compact module with connector with screw terminals

The AS-Interface module series for the control cabinet SlimLine Compact with degree of protection IP20 creates space in the cabinet and in distributed local control boxes. A width of just 17.5 mm or 22.5 mm ensures considerable space savings in the control cabinet.

The SlimLine Compact module series comprises not only digital and analog I/O modules but also ASIsafe modules with safe inputs. Digital outputs are available as solid-state and relay outputs.

Sensors and actuators, as well as the AS-Interface bus cable, are connected by means of removable screw or push-in spring-loaded terminals. Device connectors available as accessories offer the possibility of looping through the AS-Interface bus cable and the 24 V DC power supply U_{aux} from one module to additional modules. This significantly simplifies the wiring, as the AS-Interface bus cable and U_{aux} only have to be connected to one device.

All devices for the connection of three-wire sensors offer the option of supplying the sensors either from the AS-Interface bus cable or alternatively from the 24 V DC voltage supply U_{aux} depending on the requirements of the particular application. A slide switch is used to make the selection. If supply via U_{aux} is selected, the wiring of the sensor terminals remains unchanged. This means that no external supply is required for the sensors.

All modules have LEDs on the front that provide diagnostics information and indicate the status of the module inputs and outputs. Devices with semiconductor outputs indicate the status of each output by means of a dual LED. Thus the status (on/off/overload) is displayed for each output. An addressing socket integrated at the front enables the module to be addressed also when it is installed. Integrated adapters permit mounting on a DIN rail – either directly for the module or for the device connector. Alternatively, the modules can also be screw-mounted using push-in lugs (accessories). These lugs for screw fastening must be ordered separately.

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Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 42C

More information

Equipment Manual, see
https://support.industry.siemens.com/cs/ww/en/view/109481489

For multi-unit packaging, see page 16/7.

Version I/O type	Width mm	Inputs	Outputs	Screw terminals Article No.	Screw terminals Price per PU	Spring-loaded terminals (push-in) Article No.	Spring-loaded terminals (push-in) Price per PU
SC17.5 and SC22.5 digital SlimLine Compact modules							
Slave addressing type: A/B address							
4 inputs	17.5	Two-wire	--	**3RK2200-0CE00-2AA2**		**3RK2200-0CG00-2AA2**	
	22.5	Three-wire	--	**3RK2200-2CE00-2AA2**		**3RK2200-2CG00-2AA2**	
4 outputs	22.5	--	2A semiconductor	**3RK2100-1CE00-2AA2**		**3RK2100-1CG00-2AA2**	
4 inputs/ 2 outputs, relays	22.5	Three-wire	Relay (change-over contact)	**3RK2402-2ME00-2AA2**		**3RK2402-2MG00-2AA2**	
4 inputs/ 4 outputs, relays	22.5	Three-wire	Relay (NO contacts)	**3RK2402-2CE00-2AA2**		**3RK2402-2CG00-2AA2**	
4 inputs/ 4 outputs	22.5	Three-wire	2A semiconductor	**3RK2400-2CE00-2AA2**		**3RK2400-2CG00-2AA2**	
Slave addressing type: Standard address							
4 inputs/ 4 outputs	22.5	Three-wire	2A semiconductor	**3RK1400-2CE00-2AA2**		**3RK1400-2CG00-2AA2**	
SC22.5 analog SlimLine Compact modules							
Slave addressing type: Standard address							
4 inputs	22.5	Voltage/ current selectable (1 ... 5 V, ±10 V, 4 ... 20 mA, ±20 mA)	--	**3RK1207-0CE00-2AA2**		**3RK1207-0CG00-2AA2**	
		Thermal resistance (Pt100, Ni100, 0 ... 600 Ω)	--	**3RK1207-3CE00-2AA2**		**3RK1207-3CG00-2AA2**	
2 outputs	22.5	--	Voltage/ current selectable (0 ... 10 V, 1 ... 5 V, ±10 V, 0 ... 20 mA, 4 ... 20 mA, ±20 mA)	**3RK1107-0BE00-2AA2**		**3RK1107-0BG00-2AA2**	
SC17.5F ASIsafe SlimLine Compact modules							
Slave addressing type: Standard address							
2 safe inputs	17.5	For mechanical contacts	--	**3RK1205-0BE00-2AA2**		**3RK1205-0BG00-2AA2**	
2 safe inputs/ 2 standard outputs	17.5	For mechanical contacts	Semiconductor U_{ASI}/U_{aux} supply selectable	**3RK1405-2BE00-2AA2**		**3RK1405-2BG00-2AA2**	

3RK2200-0CG00-2AA2

3RK2400-2CG00-2AA2

3RK1207-0CG00-2AA2

3RK1405-2BE00-2AA2

For safety modules for AS-Interface, see page 2/27 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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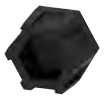
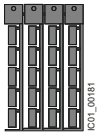
Accessories

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK1901-1YA00 3RK1901-1YA10					
Device connectors					
For electrical connection of SlimLine Compact modules (connects AS-i bus cable and 24 V DC auxiliary power supply U_{aux} when using several SlimLine Compact modules)					
• Width 17.5 mm	**3RK1901-1YA00**		1	1 unit	42C
• Width 22.5 mm	**3RK1901-1YA10**		1	1 unit	42C
3RK1901-1YA01 3RK1901-1YA11					
Device termination connectors					
Required for the last module in the network					
• Width 17.5 mm	**3RK1901-1YA01**		1	1 unit	42C
• Width 22.5 mm	**3RK1901-1YA11**		1	1 unit	42C
3ZY1121-2BA00					
Removable terminals	**Screw terminals**				
• Screw terminals up to 2 x 1.5 mm² or 1 x 2.5 mm²					
- 2-pole	**3ZY1121-1BA00**		1	6 units	41L
- 4-pole	**3ZY1141-1BA00**		1	6 units	41L
	Spring-loaded terminals (push-in)				
• Push-in terminals up to 2 x 1.5 mm²					
- 2-pole	**3ZY1121-2BA00**		1	6 units	41L
- 4-pole	**3ZY1141-2BA00**		1	6 units	41L
3ZY1450-1BA00 3ZY1450-1AB00					
Hinged cover					
Replacement for SlimLine Compact module, without terminal labeling					
• Width 17.5 mm					
- Titanium gray for SC17.5	**3ZY1450-1AA00**		1	5 units	41L
- Yellow for SC17.5F	**3ZY1450-1BA00**		1	5 units	41L
• Width 22.5 mm					
- Titanium gray for SC22.5	**3ZY1450-1AB00**		1	5 units	41L
3ZY1311-0AA00					
Push-in lugs for wall mounting	**3ZY1311-0AA00**		1	10 units	41L
Two lugs are required per device					
 3ZY1440-1AA00					
Coding pins for removable terminals	**3ZY1440-1AA00**		1	12 units	41L
For mechanical coding of the terminals					
 3RT2900-1SB20					
Blank labels					
Unit labeling plates[1]					
• 10 mm x 7 mm, titanium gray	**3RT2900-1SB10**		100	816 units	41B
• 20 mm x 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B
3RA2908-1A					
Tools for opening spring-loaded terminals	**Spring-loaded terminals**				
Screwdriver for SIRIUS devices with spring-loaded terminals 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated	**3RA2908-1A**		1	1 unit	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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More information

SlimLine S45 modules (picture on left) and S22.5 module (picture on right) with spring-loaded terminals

The existing SlimLine series of I/O modules for use in the control cabinet is being replaced by the new, innovative SlimLine Compact series. We recommend that these new devices are used in future.

The code conversion table indicates the best options for replacing the existing SlimLine devices with SlimLine Compact devices.

Note:

The previous SlimLine devices are still available for use as replacements in existing systems. As a result of the innovation, the new SlimLine Compact devices are not fully compatible in terms of either mechanical dimensions or electrical properties.

The code conversion table below links the existing S22.5, S22.5F and S45 SlimLine modules with the new SC17.5, SC17.5F and SC22.5 SlimLine Compact devices.

Code conversion table

S22.5, S22.5F and S45 SlimLine			**Comparison type: SC17.5, SC17.5F and SC22.5 SlimLine Compact**		
Screw terminals	Spring-loaded terminals	Version	Screw terminals	Spring-loaded terminals	Version
3RK1200-0CE00-0AA2	3RK1200-0CG00-0AA2	4 DI, two-wire, standard address	3RK2200-0CE00-2AA2	3RK2200-0CG00-2AA2	4 DI, two-wire, A/B address
3RK2200-0CE02-0AA2	3RK2200-0CG02-0AA2	4 DI, A/B address	3RK2200-2CE00-2AA2	3RK2200-2CG00-2AA2	4 DI, A/B address
3RK1200-0CE02-0AA2	3RK1200-0CG02-0AA2	4 DI, standard address			
3RK1400-0BE00-0AA2	3RK1400-0BG00-0AA2	2 DI/2 DQ, standard address	3RK1400-2CE00-2AA2	3RK1400-2CG00-2AA2	4 DI/4 DQ, standard address
3RK1402-0BE00-0AA2	3RK1402-0BG00-0AA2	2 DI/2 DQ relay, standard address	3RK2402-2ME00-2AA2	3RK2402-2MG00-2AA2	4 DI/2 DQ relay, A/B address
3RK1100-1CE00-0AA2	3RK1100-1CG00-0AA2	4 DQ, standard address	3RK2100-1CE00-2AA2	3RK2100-1CG00-2AA2	4 DQ, A/B address
3RK2400-1CE01-0AA2	3RK2400-1CG01-0AA2	4 DI/4 DQ, A/B address	3RK2400-2CE00-2AA2	3RK2400-2CG00-2AA2	4 DI/4 DQ, A/B address
3RK2400-1FE00-0AA2	3RK2400-1FG00-0AA2	4 DI/3 DQ, A/B address			
3RK1400-1CE00-0AA2	3RK1400-1CG00-0AA2	4 DI/4 DQ, 1A semiconductor, standard address	3RK1400-2CE00-2AA2	3RK1400-2CG00-2AA2	4 DI/4 DQ, 2A semiconductor, standard address
3RK1400-1CE01-0AA2	3RK1400-1CG01-0AA2	4 DI/4 DQ, 2A semiconductor, standard address			
3RK1402-3CE01-0AA2	3RK1402-3CG01-0AA2	4 DI/4 DQ (sensor supply from U_{aux}), standard address			
3RK1402-3CE00-0AA2	3RK1402-3CG00-0AA2	4 DI/4 DQ relay, standard address	3RK2402-2CE00-2AA2	3RK2402-2CG00-2AA2	4 DI/4 DQ relay, A/B address
3RK1205-0BE00-0AA2	3RK1205-0BG00-0AA2	2 F-DI, standard address	3RK1205-0BE00-2AA2	3RK1205-0BG00-2AA2	2 F-DI, standard address
3RK1405-0BE00-0AA2	3RK1405-0BG00-0AA2	2 F-DI/2 DQ, standard address (outputs supplied from U_{ASI})	3RK1405-2BE00-2AA2	3RK1405-2BG00-2AA2	2 F-DI/2 DQ, standard address (supply U_{ASI}/U_{aux} selectable)
3RK1405-1BE00-0AA2	3RK1405-1BG00-0AA2	2 F-DI/2 DQ, standard address (outputs supplied from U_{aux})			

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Selection and ordering data

3RG9002-0DB00

F90 module
- Slave addressing type: Standard address
- Width 90 mm
- With COMBICON version: Delivery without COMBICON plug

Version				Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type	Connection	Inputs	Outputs					
4 inputs/ 4 outputs	Screw	Two and three-wire PNP transistor	PNP transistor 1 A	**3RG9002-0DB00**		1	1 unit	42C
		Two and three-wire PNP transistor	PNP transistor 2 A	**3RG9002-0DA00**		1	1 unit	42C
		Two and three-wire PNP transistor floating	PNP transistor 2 A	**3RG9002-0DC00**		1	1 unit	42C
	COMBICON[1)]	Two and three-wire PNP transistor	PNP transistor 1 A	**3RG9004-0DB00**		1	1 unit	42C
		Two and three-wire PNP transistor	PNP transistor 2 A	**3RG9004-0DA00**		1	1 unit	42C
		Two and three-wire PNP transistor floating	PNP transistor 2 A	**3RG9004-0DC00**		1	1 unit	42C

1) Scope of supply does not include COMBICON connector set 3RX9810-0AA00, this must be ordered separately, see "Accessories".

Accessories

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
COMBICON connector sets For 4I/4O modules with COMBICON connection; one set comprises: • 4 x 5-pole plug for connection • Standard sensors/actuators • 2 x 4-pole plug for AS-Interface and external auxiliary voltage	**3RX9810-0AA00**		1	1 unit	42C

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

Flat module 4I/4O

The flat module for the control cabinet in degree of protection IP20 has four inputs and four outputs.

The module is fitted at the front with an LED which indicates the module's status.

With the integrated lugs, the modules can be screwed on.

An integrated addressing socket enables the module to be addressed when it is installed.

Standard sensors/actuators and the AS-Interface cable can be connected using screw terminals.

Selection and ordering data

	Version	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 3RK1400-0CE00-0AA3	**Flat module 4I/4O** Slave addressing type: Standard address • 4 inputs/4 outputs • 200 mA for all I/Os	**3RK1400-0CE00-0AA3**		1	1 unit	42C

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Overview

Counter module with spring-loaded terminals

The counter module is used to send hexadecimally coded count values (LSB=D0, MSB=D3) to a higher-level controller. The count value is increased by 1 for each valid count pulse at terminal 8. Beginning at 0, the module counts up to 15 and then begins again at 0. The controller adopts the current value and determines the number of pulses between two host invocations through subtraction from the previous value. The total number of count pulses is determined by adding these differences.

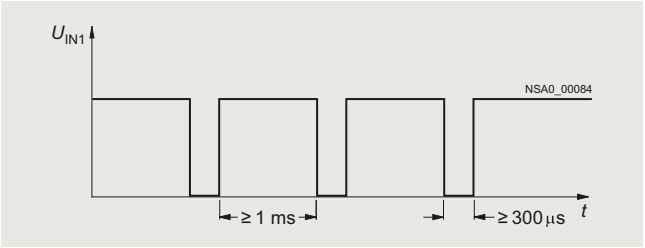
For the values sent to be unambiguous, no more than 15 count values are allowed between two host invocations or AS-Interface master invocations at terminal 8. The maximum permissible transmission frequency is calculated from these times:

$f_{Trmax} = 15/T_{max}$

T_{max}: max. possible transmission time from the slave to the host

A further condition for the maximum frequency is the required pulse shape. For the counter to accept a pulse as valid, a Low must have been applied at the input for at least 300 µs and a High for at least 1 ms.

This results in a maximum frequency of f_{Zmax} = 1/1.3 ms = 769 Hz independently of the control system (see figure below).



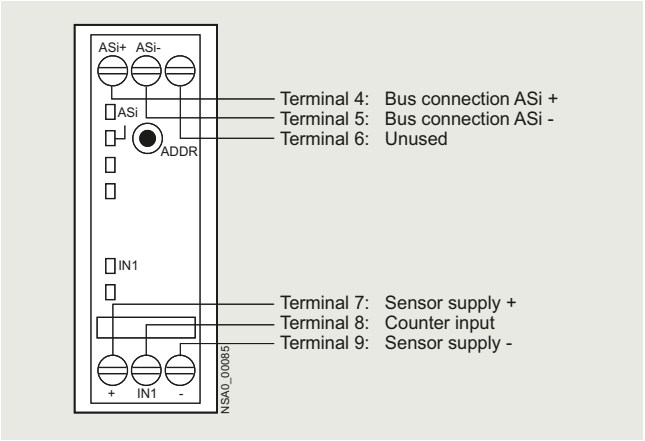
Maximum frequency for the counter module

If the time criterion stipulated in the figure is violated, the count value is rejected.

The counter is active only for the reset parameter P2 (default). The counter is deleted when P2 is set, and the incoming count pulses are not registered until after P2 is reset again.

Note:

A customized function block is necessary or must be programmed.



Counter module connection options

Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Counter modules					
Slave addressing type: Standard address					
Width 22.5 mm					
• With screw terminals	**3RK1200-0CE03-0AA2**		1	1 unit	42C
• With spring-loaded terminals	**3RK1200-0CG03-0AA2**		1	1 unit	42C

3RK1200-0CG03-0AA2

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

Ground-fault detection module with spring-loaded terminals

"Ground faults in any control circuit must not lead to unintentional starting or potentially hazardous movements or prevent the machine from stopping." (IEC 60204-1/VDE 0113-1).

The AS-Interface ground-fault detection module is used to meet these requirements. Using this module from the SlimLine series, ground faults in AS-Interface systems can be reliably detected and reported.

The following ground faults are detected:

- Ground fault from AS-i "+" to ground
- Ground fault from AS-i "-" to ground
- Ground fault on sensors and actuators that are supplied from the AS-Interface voltage.

Note:

Not suitable for AS-i Power24V.

Check whether the AS-i power supply unit or the AS-i master module, etc. features integrated ground-fault detection, and therefore whether a separate ground fault detection module can be omitted.

It should be noted that an AS-i cable segment behind an AS-i repeater requires its own ground-fault monitoring.

Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Ground-fault detection modules					
Module does not require an AS-i address					
Width 22.5 mm					
• With screw terminals	**3RK1408-8KE00-0AA2**		1	1 unit	42C
• With spring-loaded terminals	**3RK1408-8KG00-0AA2**		1	1 unit	42C

3RK1408-8KG00-0AA2

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

AS-Interface overvoltage protection module

The AS-Interface overvoltage protection module (protection module) protects downstream AS-Interface devices or individual sections in AS-i networks from conducted overvoltages which can be caused by switching operations and remote lightning strikes. The location of the protection module forms the transition from zone 1 to 2/3 within the lightning protection zone concept. Direct lightning strikes must be coped with using additional protective measures at the transitions from lightning protection zone 0A to 1.

With the AS-Interface overvoltage protection module, it is now also possible to integrate AS-Interface in the overall overvoltage protection concept of a plant or machine.

The module has the same design and degree of protection (IP67) as the AS-Interface K45 compact modules. It is a passive module and as such does not need its own address on the AS-Interface network. The module can be used to protect the AS-Interface cable and the cable for the auxiliary voltage from overvoltage. Overvoltages are discharged through a ground cable with a green/yellow oil-proof outer sheath. This cable is fixed in the module and must be connected with low resistance to the system's ground.

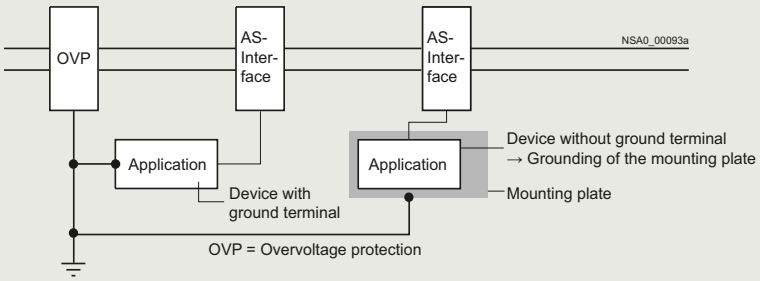
Rated discharge current I_{sn}

The rated discharge current is the peak value of a surge current of the form 8/20 µs (microseconds), for which the protection module is designed in accordance with a specified test program. With an 8/20 waveform, 100% of the value is achieved after 8 µs and 50% after 20 µs.

Protection level U_p

The protection level of a protection module is the highest momentary value of the voltage at the terminals, established in individual tests and characterizes the capability of a protection module to limit overvoltages to a residual level.

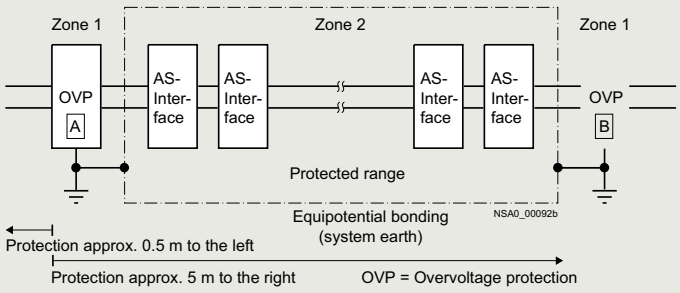
Configuration guidelines



The grounding of protection modules and the units to be protected must be effected through a shared grounding point.

If insulated devices are protected, their mounts must be included in the grounding points.

Sample application



Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
AS-Interface overvoltage protection module Module does not require an AS-i address Delivery includes mounting plate (for wall and DIN-rail mounting)	**3RK1901-1GA01**		1	1 unit	42C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

AS-Interface power supply unit for 3 A

More information

Operating Instructions for AS-i power supply units, see https://support.industry.siemens.com/cs/ww/en/view/21489904 and https://support.industry.siemens.com/cs/ww/en/view/22317836

AS-Interface power supply units feed 30 V DC into the AS-Interface cable and supply the AS-Interface components. They include power-optimized data decoupling for the separation of communication signals and supply voltage. As the result, AS-Interface is able to convey both data and power along a single line. The power supply units are resistant to overload and short circuits.

Dimensions

AS-Interface power supply units have compact dimensions in widths of 50/70/120 mm. No distances from other devices need to be observed when mounting the power supply units.

Features

- Higher rating: The power supply units deliver currents of 2.6 to 8 A.
- Integrated data decoupling: As the result, AS-Interface is able to convey both data and power along a single line.
- Integrated ground-fault detection: The power supply units perform the reliable detection and signaling of ground faults according to IEC 60204-1. The AS-Interface voltage can be disconnected automatically in the event of a ground fault.
- Integrated overload detection: An output overload is detected and reported over a diagnostics LED.
- Diagnostics memory: Any ground faults or overloads on the output side are stored in a diagnostics memory and signaled until the device is RESET.
- Remote RESET and remote signaling: Using relay contacts, a ground fault can be signaled and evaluated by a central controller and/or indicator light.
- Diagnostics LEDs: Three different LEDs indicate the status of the AS-Interface power supply unit locally at the power supply unit.
- Ultra-wide input range/2-phase connection: The ultra-wide input range of 120 to 500 V of the 8 A version means that the supply units can be used in virtually any network worldwide. In addition, this version dispenses with the need for an N conductor as the device can be connected directly between 2 phases of a network.
- Operation with 24 V DC: The 3 A power supply unit is also available as a version with a 24 V DC input. This power supply unit is suitable for use in battery-powered systems or in systems with UPS (uninterruptible power supply).
- Removable terminal blocks with spring-loaded terminals: For easy exchanging of devices, each power supply unit has three removable terminal blocks: for the input side, for the output side and for Signal/RESET connections.

Benefits

- Complete solution for supplying AS-Interface networks while making full use of the maximum possible cable length per AS-i segment
- Only AS-i masters and AS-i slaves need to be connected to the AS-Interface cable in order to operate AS-Interface
- Compact, space-saving dimensions
- Reliable power supply even for large numbers of AS-Interface modules with a high power requirement
- Integrated ground-fault and overload detection saves the need for additional components and enhances safety
- Fast fault detection and reduced downtimes thanks to diagnostics memory, remote signaling and Remote RESET
- Reduced downtimes as the result of removable terminal blocks which enable the fast exchanging of devices
- Ultra-wide input range of the 8 A version permits 1-phase and 2-phase operation and removes the need for an N conductor
- Can be used world-wide thanks to, for example, UL/CSA approval (UL 508)
- With the 2.6 A version, the output power is restricted to max. 100 W for use in Class 2 circuits in accordance with NEC (National Electrical Code)

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AS-Interface power supply units

Selection and ordering data

3RX9501-0BA00

3RX9503-0BA00

Version		Spring-loaded terminals	PU (UNIT, SET, M)	PS*	PG
		Article No.			
AS-Interface power supply units, IP20 • AS-i single output 30 V DC • Output voltage ES1 according to IEC 62368-1 • With integrated ground-fault detection • Ambient temperature during operation -10 ... +70 °C • 2.6 A version with output power restricted to max. 100 W (for Class 2 circuits in accordance with NEC) • Dimensions: Width: 50 mm (2.6 A/3 A), 70 mm (5 A), 120 mm (8 A); Height: 125 mm; Depth: 125 mm					
Output current	Input voltage				
3 A	120/230 V AC (selectable)	**3RX9501-0BA00**	1	1 unit	42C
5 A	120/230 V AC (selectable)	**3RX9502-0BA00**	1	1 unit	42C
8 A	120/230 ... 500 V AC (selectable)	**3RX9503-0BA00**	1	1 unit	42C
For special applications					
3 A	24 V DC	**3RX9501-1BA00**	1	1 unit	42C
2.6 A/max. 100 W	120/230 V AC (selectable)	**3RX9501-2BA00**	1	1 unit	42C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

PSN130S 30 V power supply units for 3 A, 4 A and 8 A

More information

For operating instructions and other technical information, see https://support.industry.siemens.com/cs/ww/en/view/64364000 and https://support.industry.siemens.com/cs/ww/en/view/44030789

The PSN130S 30 V power supply units feed 30 V DC into the AS-Interface cable and supply the AS-Interface components, but do not include data decoupling. Data decoupling modules are needed in addition therefore to separate communication signals and control supply voltage, see page 2/71 or 2/73.

The power supply units are resistant to overload and short circuits.

Dimensions

The 30 V power supply units have compact dimensions with widths of 50 and 70 mm. No distances from other devices need to be observed when mounting the power supply units.

Features

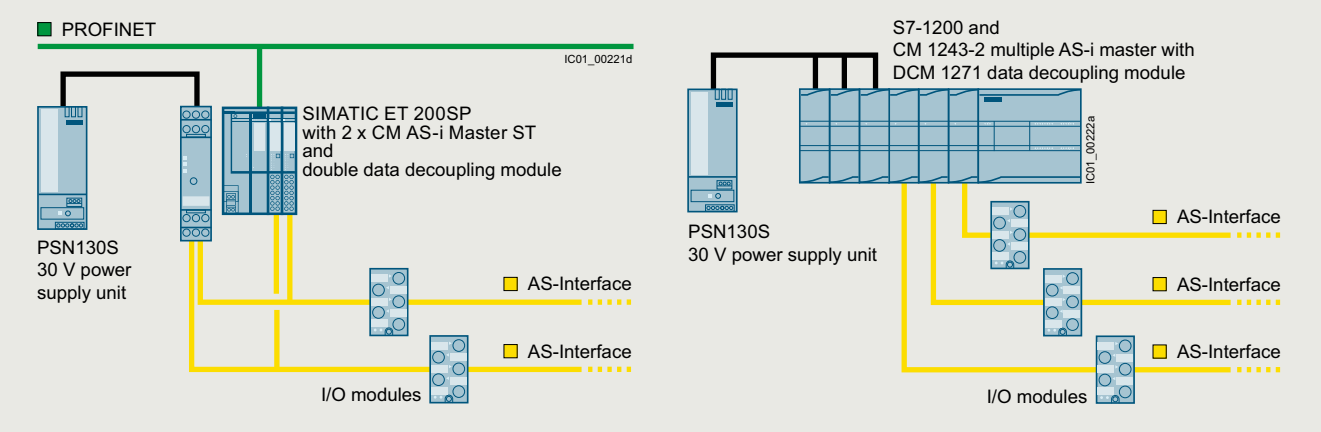
- Primary switched-mode power supplies for connection to a 1-phase AC system
- Power for currents of 3 A, 4 A and 8 A
- The output voltage is floating, and resistant to short-circuits and no-load operation. If there is an overload, the output voltage is reduced or cut-off. After a short circuit or overload, the devices start up again automatically.
- In the event of a device fault, the output voltage will be limited to max. 37 V.
- Modular installation devices in degree of protection IP20 and protection class I
- Diagnostics: With an output voltage > 26.5 V DC, the green LED (30 V O.K.) is lit and the signaling contact 13-14 is closed.

Benefits

- Low-cost alternative solution for supplying AS-Interface networks while making full use of the maximum possible cable length per AS-i segment
- Cost advantage particularly for multiple networks
- Compact, space-saving dimensions
- Reliable power supply even for large numbers of AS-Interface modules with a high power requirement
- Can be used world-wide thanks to, for example, UL/CSA approval (UL 508)

Application

Configuration examples of AS-Interface networks with a 30 V power supply unit



Configuration of AS-Interface multiple networks with one PSN130S 30 V power supply unit (examples with schematic representation):
Left: Double network based on the S22.5 double data decoupling module and a SIMATIC ET 200SP with two CM AS-i Master ST modules
Right: Triple network based on the SIMATIC S7-1200 with DCM 1271 data decoupling modules and CM 1243-2 communications processors

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30 V power supply units

Technical specifications

PSN130S 30 V DC power supply unit		3 A	4 A	8 A
Input data				
• Input voltage, rated value U_e	V AC	120/230 V, 1-phase, automatic selection		
• Range of input voltage	V AC	85 ... 132/174 ... 264		
• Mains frequency	Hz	50/60		
• Power consumption at full load, typ.	W	103	139	270
Output data				
• Output voltage, rated value U_a	V DC	30		
• Residual ripple	mV_{pp}	< 150		
• Output current, rated value at -20 ... +60 °C	A	3	4	8
• Max. output current at +60 ... +70 °C	A	3	3	4
Degree of efficiency under rated conditions				
• Degree of efficiency	%	87	88	90
• Power loss, typ.	W	12	17	25

PSN130S 30 V DC power supply unit		3 A	4 A	8 A
Protection and monitoring				
• Output overvoltage protection	V	< 37		
• Current limiting, typ.	A	4	5.5	11
Operating data				
Ambient temperature				
• Operation	°C	-20 ... +70		
• Transportation/storage	°C	-40 ... +85		
Pollution degree		2		
Humidity class		Climate class according to DIN 50010, relative air humidity max. 100%, without condensation		
Dimensions and weight				
• Width	mm	50	50	70
• Height x depth	mm	125 x 126.5		
• Weight	kg	0.4	0.4	0.7

Selection and ordering data

	Version		Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 3RX9511-0AA00	**PSN130S 30 V DC power supply unit (without AS-i data decoupling)** • Output voltage 30 V DC • Output voltage ES1 according to IEC 62368-1 • Dimensions: Width: 50 mm (3 A/4 A); 70 mm (8 A); Height: 125 mm; Depth: 126.5 mm						
	Output current	Input voltage					
	3 A	120/230 V AC (automatic selection)	**3RX9511-0AA00**		1	1 unit	42C
 3RX9512-0AA00	4 A	120/230 V AC (automatic selection)	**3RX9512-0AA00**		1	1 unit	42C
 3RX9513-0AA00	8 A	120/230 V AC (automatic selection)	**3RX9513-0AA00**		1	1 unit	42C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

AS-Interface S22.5 double data decoupling module:
Screw terminal version (picture on left),
Spring-loaded terminal version (picture on right)

More information

Operating Instructions, see
https://support.industry.siemens.com/cs/ww/en/view/44030789

More information on AS-i Power24V, see
System Manual for AS-Interface,
https://support.industry.siemens.com/cs/ww/en/view/26250840

With the aid of the S22.5 data decoupling module, the AS-Interface network can also be supplied with 24 V DC or 30 V DC from a standard power supply unit and the transmission of data and power can be realized along one cable.

The combination of data decoupling modules and standard power supply units is therefore a cost-efficient alternative to the service-proven AS-Interface power supply units.

The quality of the data signals and the reliable operation of the AS-i network are not negatively affected as the result.

Features of the S22.5 data decoupling module

- Degree of protection IP20
- Narrow design: 22.5 mm wide
- Version with screw or spring-loaded terminals
- Versions for single and double data decoupling
- Supply of several AS-i networks with a single power supply unit
- Operation with 24 V DC or 30 V DC, grounded or non-grounded
- Adjustable current limiting up to 2 x 4 A
- Integrated ground-fault detection with fault storage, display can optionally be switched off
- Diagnostics LEDs and signaling contacts
- RESET by button or Remote RESET

Ground-fault detection

The integrated ground-fault detection works with a grounded and non-grounded supply: The connection of negative pole and ground (upstream from the data decoupling module) customary with 24 V DC power supplies is permitted. A ground fault to the negative or positive pole on the AS-Interface network (downstream from the data decoupling module) is detected and stored as a fault and will be signaled using LEDs and a relay contact.

Using the ground-fault detection in the AS-i master is recommended for non-grounded supply. In this case, the ground-fault indicator can be deactivated in the data decoupling module to avoid any unwanted LED messages.

Benefits

- Compatible expansion of the AS-Interface system
- An existing standard power supply unit with 24 V DC or 30 V DC can be used for supplying AS-i networks
- The AS-Interface system can also be used in tightly budgeted applications because no AS-Interface power supply unit needs to be purchased
- Applications benefit in addition from the advantages of a modern bus system:
  - High level of standardization
  - Additional diagnostics and maintenance information
  - Faster commissioning
- Easy and cost-efficient design of single and multiple networks is possible

Application

The AS-Interface data decoupling module is designed for AS-Interface networks with 30 V or 24 V supply (AS-i Power24V).

Operation of an AS-i network with the data decoupling module and a 30 V standard power supply unit is technically equivalent to the use of an AS-Interface power supply unit and offers the service-proven features of AS-Interface for all applications.

AS-Interface Power24V uses a 24 V power supply unit in conjunction with a data decoupling module and is particularly suitable for:

- Compact machines using AS-Interface input/output modules
- Applications in the control cabinet for AS-Interface integration of SIRIUS 3RT2 contactors using 3RA27 function modules

When using the double data decoupling module or other data decoupling units, several AS-Interface networks can be operated with a single power supply unit. This results in an additional cost advantage.

Note:

The power supply units must comply with the ES1 (IEC 62368-1) or PELV (Protective Extra Low Voltage)/SELV (Safety Extra Low Voltage) standards, have a residual ripple of < 250 mV_{pp}, and must limit the output voltage to a maximum of 40 V in the event of a fault.

We recommend

- SITOP power supplies, see page 15/1 or Catalog KT 10.1, https://support.industry.siemens.com/cs/ww/en/view/109745655.
- PSN130S 30 V power supply units, see page 2/69

Note on AS-i Power24V:

The length of an AS-i Power24V network is restricted to 50 m in order to limit the voltage drop along the cable.

AS-i masters, AS-i slaves and the sensors and actuators supplied through the AS-i cable must be designed for the reduced voltage. Sensors and actuators for the standard voltage range of 10 to 30 V can be supplied with sufficient voltage.

Please also observe the requirements specified in "AS-i Power24V" for the operation of an AS-i Power24V network, see page 2/23.

For more information on AS-i Power24V, see System Manual for AS-Interface, https://support.industry.siemens.com/cs/ww/en/view/26250840.

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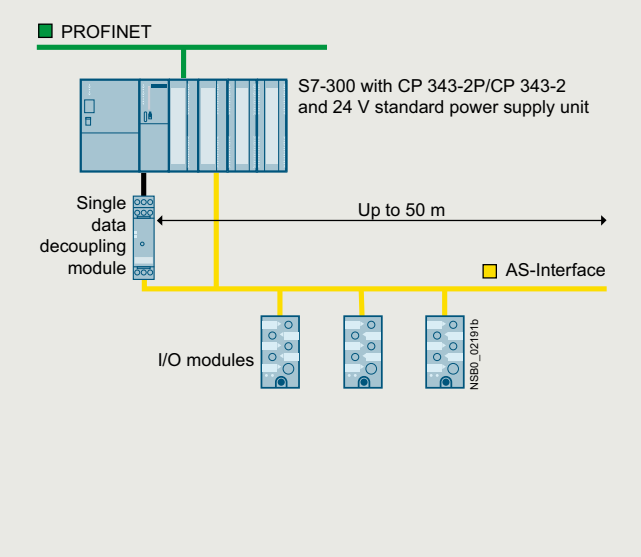
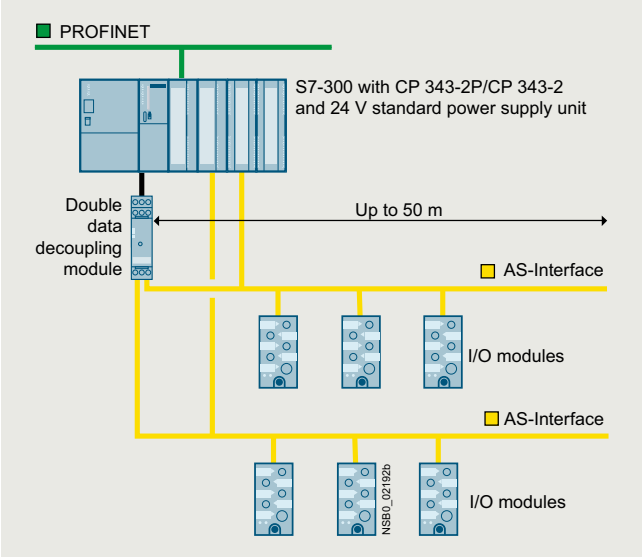
S22.5 data decoupling modules

Configuration of an AS-i Power24V network with AS-Interface S22.5 data decoupling module



Single network



Multiple network

Selection and ordering data

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK1901-1DE12-1AA0	**S22.5 data decoupling modules** With screw terminals, removable terminals, width 22.5 mm, height 101 mm, depth 115 mm	**Screw terminals**				
	• Single data decoupling module, 1 x 4 A	**3RK1901-1DE12-1AA0**		1	1 unit	42C
	• Double data decoupling module, 2 x 4 A	**3RK1901-1DE22-1AA0**		1	1 unit	42C
3RK1901-1DG12-1AA0	**S22.5 data decoupling modules** With spring-loaded terminals, removable terminals, width 22.5 mm, height 105 mm, depth 115 mm	**Spring-loaded terminals**				
	• Single data decoupling module, 1 x 4 A	**3RK1901-1DG12-1AA0**		1	1 unit	42C
	• Double data decoupling module, 2 x 4 A	**3RK1901-1DG22-1AA0**		1	1 unit	42C

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

DCM 1271 data decoupling module for SIMATIC S7-1200

More information

Manual for AS-i master CM 1234-2 and AS-i DCM 1271 data decoupling module, see https://support.industry.siemens.com/cs/ww/en/view/57358958

For more information on AS-i Power24V, see System Manual for AS-Interface, https://support.industry.siemens.com/cs/ww/en/view/26250840

With the aid of the DCM 1271 data decoupling module, the AS-Interface network can also be supplied with 24 V DC or 30 V DC from a standard power supply unit and the transmission of data and power can be realized along one cable.

The DCM 1271 data decoupling module has the same enclosure design as the S7-1200 module and is therefore ideal for combining with the CM 1243-2 AS-i master.

The DCM 1271 data decoupling module has no connection to the backplane bus of the SIMATIC S7-1200 and is not counted as a communications module when calculating the maximum configuration.

Features of the DCM 1271 data decoupling module

- Design: S7-1200, width 30 mm, degree of protection IP20
- Detachable terminals (included in the scope of supply)
- Single data decoupling
- Supply of several AS-i networks with a single power supply unit
- Operation with 24 V DC or 30 V DC, grounded or non-grounded
- Current limiting at 4 A
- Integrated ground-fault detection
- Diagnostics LEDs for ground faults and overloads
- Signaling contacts for ground-fault detection

Ground-fault detection

The integrated ground-fault detection works with a grounded and non-grounded supply: The connection of negative pole and ground (upstream from the data decoupling module) customary with 24 V DC power supplies is permitted. A ground fault to the negative or positive pole on the AS-Interface network (downstream of the data decoupling module) is identified and signaled via LED and a transistor output.

Benefits

- An existing standard power supply unit with 24 V DC or 30 V DC can be used for supplying AS-i networks
- The AS-Interface system can also be used in tightly budgeted applications because no AS-Interface power supply unit needs to be purchased
- Applications benefit in addition from the advantages of a modern bus system:
  - High level of standardization
  - Additional diagnostics and maintenance information
  - Faster commissioning

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Application

The AS-Interface data decoupling module is designed for AS-Interface networks with 30 V or 24 V supply (AS-i Power24V).

Operation of an AS-i network with the data decoupling module and a 30 V standard power supply unit is technically equivalent to the use of an AS-Interface power supply unit and offers the service-proven features of AS-Interface for all applications.

AS-i Power24V uses a 24 V power supply unit in conjunction with a data decoupling module and is particularly suitable for

- Compact machines using AS-Interface input/output modules
- Applications in the control cabinet for AS-Interface integration of SIRIUS 3RT2 contactors using 3RA27 function modules

Note:

The power supply units must comply with the ES1 (IEC 62368-1) or PELV (Protective Extra Low Voltage)/SELV (Safety Extra Low Voltage) standards, have a residual ripple of < 250 mV_{pp}, and must limit the output voltage to a maximum of 40 V in the event of a fault.

We recommend

- SITOP power supplies, see page 15/1 or Catalog KT 10.1, https://support.industry.siemens.com/cs/ww/en/view/109745655.
- PSN130S 30 V power supply units, see page 2/69

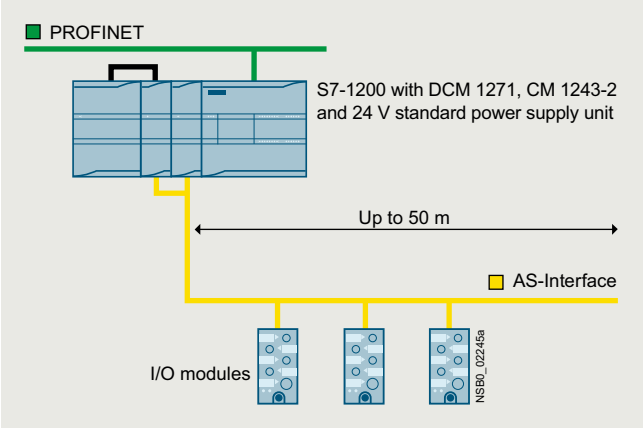
Note on AS-i Power24V:

The length of an AS-i Power24V network is restricted to 50 m in order to limit the voltage drop along the cable.

AS-i masters, AS-i slaves and the sensors and actuators supplied through the AS-i cable must be designed for the reduced voltage. Sensors and actuators for the standard voltage range of 10 to 30 V can be supplied with sufficient voltage.

Please also observe the requirements specified in "AS-i Power24V" for the operation of an AS-i Power24V network, see page 2/23.

For more information on AS-i Power24V, see System Manual for AS-Interface, https://support.industry.siemens.com/cs/ww/en/view/26250840.



Configuration of an AS-i Power24V network with DCM 1271 AS-Interface data decoupling module

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Selection and ordering data

Version	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
DCM 1271 data decoupling module • Max. current: 1 x 4 A • Removable terminals (included in the scope of supply) • Dimensions W x H x D (mm): 30 x 100 x 75	**3RK7271-1AA30-0AA0**		1	1 unit	42C

3RK7271-1AA30-0AA0

Accessories

Version	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Screw terminals (spare part)					
• 5-pole, For AS-i master CM 1243-2 and AS-i DCM 1271 data decoupling module	**3RK1901-3MA00**		1	1 unit	42C
• 3-pole, For AS-i DCM 1271 data decoupling module for connecting the power supply unit	**3RK1901-3MB00**		1	1 unit	42C
CM 1243-2 communications module • AS-Interface master for SIMATIC S7-1200 • Corresponds to AS-Interface specification V3.0 • Removable terminals (included in the scope of supply) • Dimensions W x H x D (mm): 30 x 100 x 75 See also from page 2/37 onwards	**3RK7243-2AA30-0XB0**		1	1 unit	42C

3RK7243-2AA30-0XB0

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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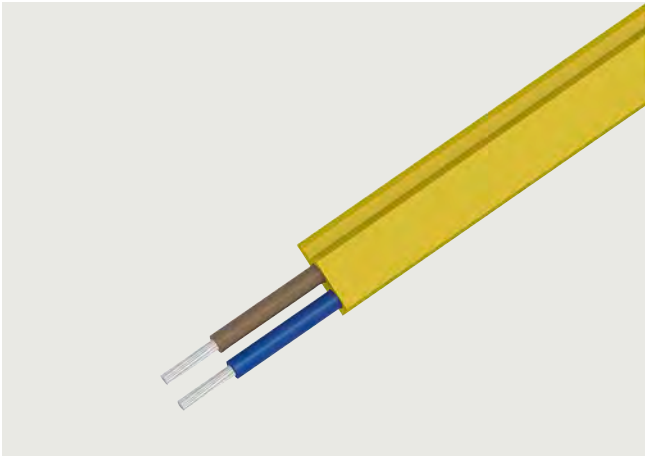
AS-Interface shaped cable

Overview



AS-Interface shaped cable

The actuator-sensor interface – the networking system used for the lowest field area – is characterized by very easy mounting and installation. A new connection method was developed specially for AS-Interface.

The stations are connected using the AS-Interface cable. This two-wire AS-Interface shaped cable has a trapezoidal shape, thus ruling out polarity reversal.

Connection is effected by the insulation piercing method. In other words, male contacts pierce the AS-Interface shaped cable and make reliable contact with the two wires. Cutting to length and stripping are superfluous. Consequently, AS-Interface stations (e.g. I/O modules, intelligent devices) can be connected in the shortest possible time and exchanging devices is quick.

To enable use in the most varied ambient conditions (e.g. in an oily environment), the AS-Interface cable is available in different materials (rubber, TPE, PUR).

For special applications it is also possible to use an unshielded standard round cable H05VV-F 2 x 1.5 mm^2 according to AS-i specification. With AS-Interface, data and energy for the sensors (e.g. proximity switches) and actuators (e.g. indicator lights) are transmitted over the yellow AS-Interface cable.

The black AS-Interface cable must be used for actuators with a 24 V DC supply (e.g. solenoid valves) and a high power requirement.

Suitable for operation in cable carriers

The use of the AS-Interface shaped cables with TPE and PUR outer sheath was checked in a cable carrier test with the following conditions:

Chain length	m	6
Travel	m	10
Bending radius	mm	75
Travel speed	m/s	4
Acceleration	m/s^2	4
Number of cycles		10 million
Duration of test		approx. 3 years (11 000 cycles per day)

After termination of the 10 million cycles only slight wear was visible due to the lugs of the cable carrier. No damage to the cores and core insulation could be detected.

Note:

When using a cable carrier, the cables must be installed in such a way that they are not subject to tensile forces. On no account may the cables be twisted, but they must be routed flat through the cable carrier.

Selection and ordering data

3RX90..-0AA00

Version			Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
AS-Interface shaped cables							
Material	Color	Quantity					
Rubber	Yellow (AS-Interface)	100 m roll	**3RX9010-0AA00**		1	1 unit	42C
	Yellow (AS-Interface)	1 km drum	**3RX9012-0AA00**		1	1 unit	42C
	Black (24 V DC)	100 m roll	**3RX9020-0AA00**		1	1 unit	42C
	Black (24 V DC)	1 km drum	**3RX9022-0AA00**		1	1 unit	42C
TPE	Yellow (AS-Interface)	100 m roll	**3RX9013-0AA00**		1	1 unit	42C
	Yellow (AS-Interface)	1 km drum	**3RX9014-0AA00**		1	1 unit	42C
	Black (24 V DC)	100 m roll	**3RX9023-0AA00**		1	1 unit	42C
	Black (24 V DC)	1 km drum	**3RX9024-0AA00**		1	1 unit	42C
TPE special version according to UL Class 2	Yellow (AS-Interface)	100 m roll	**3RX9017-0AA00**		1	1 unit	42C
	Black (24 V DC)	100 m roll	**3RX9027-0AA00**		1	1 unit	42C
PUR	Yellow (AS-Interface)	100 m roll	**3RX9015-0AA00**		1	1 unit	42C
	Yellow (AS-Interface)	1 km drum	**3RX9016-0AA00**		1	1 unit	42C
	Black (24 V DC)	100 m roll	**3RX9025-0AA00**		1	1 unit	42C
	Black (24 V DC)	1 km drum	**3RX9026-0AA00**		1	1 unit	42C

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

AS-Interface repeater

The AS-Interface repeater is used to extend the AS-Interface cable.

- In its basic version, an AS-i network comprises one segment with a maximum cable length of 100 m. An extension plug (see page 2/79) can be used to increase the cable length for a segment to a maximum of 200 m.
- If this is insufficient, however, you can use one or more repeaters
- A repeater adds an extra segment to an existing segment. The extra segment can have a cable length of up to 100 m (without extension plug) or up to 200 m (with an extension plug in the extra segment)
- Each segment requires a separate AS-i power supply unit The repeater is automatically supplied with power by the AS-i power supply units.
- Electrical separation of the two AS-Interface shaped cable lines, e.g. interfering signals or ground faults are blocked at the repeater. The wanted signals are prepared by the repeater and passed on after amplification.
- Slaves can be used on both sides of the repeater because the repeater has a symmetrical internal structure. The AS-i master can be positioned before or after the repeater.
- The additional power supply can increase the current infeed for slaves/sensors and lower the voltage drop on the AS-i cable
- Separate display of the correct AS-Interface voltage by means of LED for each segment
- Installed in K45 module enclosure IP67 with mounting plate
- Easy mounting

Benefits

- More possibilities of use and greater freedom for plant planning through extension of the AS-Interface network
- Reduced downtime and servicing times in the event of a fault thanks to separate display of the correct AS-Interface voltage for each side
- Increased operational reliability in extensive networks due to conditioning and amplification of the wanted signals.

Design of an AS-Interface network with repeaters

- Parallel connection of several repeaters possible (star configuration)
- Combination of series and parallel connection possible

The following conditions apply to enable the signal propagation times to be maintained:

- When used without an extension plug no more than two repeaters are permitted between AS-i master and slave (repeaters connected in series)
- When used with an extension plug no more than one repeater is permitted between AS-i master and slave

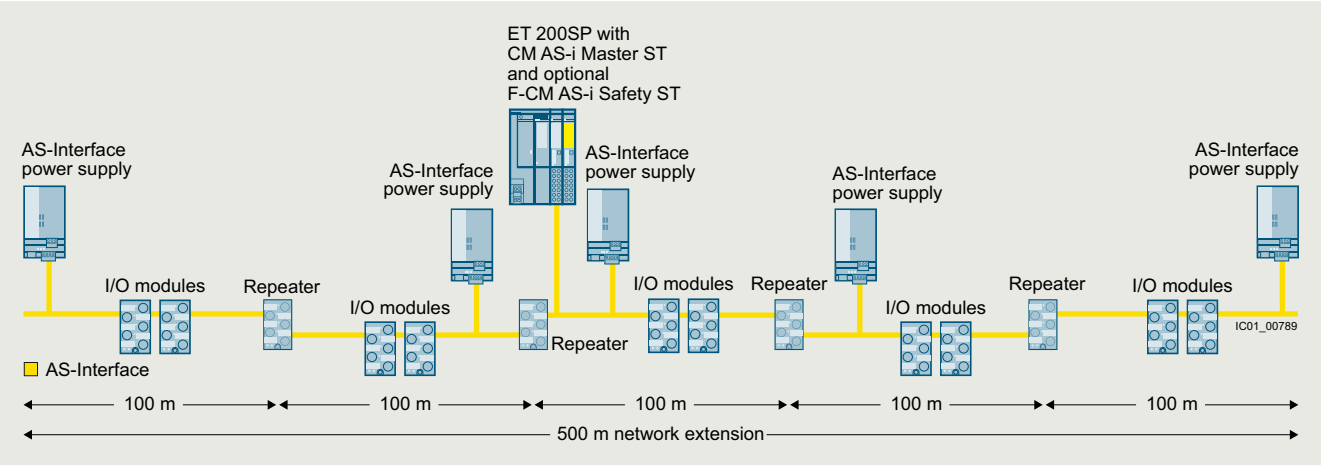
In safety-related applications the following also applies:

- When used without an extension plug, no more than two repeaters are permitted between evaluation unit (e.g. F-CM AS-i Safety ST for ET 200SP) and ASIsafe input slave or safe output module.
- When used with an extension plug, no more than one repeater is permitted between the evaluation unit (e.g. F-CM AS-i Safety ST for ET 200SP) and ASIsafe input slave or safe output module.

Note:

The open end of an AS-i bus cable must not be in the AS-Interface repeater. The AS-Interface shaped cable can be terminated by means of a cable end terminator to provide degree of protection IP67 where required, see "Miscellaneous accessories" on page 2/86.

The AS-Interface repeater is not suitable for AS-i Power24V networks. It is recommended for use in AS-Interface networks with AS-Interface power supply units (e.g. 3RX9501-0BA00).



Design of an example AS-Interface network with repeaters (without extension plug)

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Repeaters

Application

The repeater is used to extend the AS-Interface network. In this case there are AS-Interface slaves and one AS-Interface power supply unit on each side of the repeater.

As with all AS-Interface networks, any network structure (line, tree, star) is possible.

In an example configuration with two repeaters and three extension plugs, the maximum possible size of the AS-Interface network is 600 m, see example configuration with extension plug on page 2/79.

Selection and ordering data

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
6GK1210-0SA01	**Repeaters for AS-Interface** • Cable extension due to expansion of an existing cable segment by an additional segment • Doubling of the total cable length to 200 m when a repeater is used • Amplification of the wanted signals • Delivery includes mounting plate (for wall and DIN-rail mounting) • Direct connection to AS-Interface shaped cable using the insulation displacement method • Repeater does not require an AS-i address	**6GK1210-0SA01**		1	1 unit	42C

Accessories

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK1901-1MN00	**Cable end terminator** For sealing open cable ends (AS-Interface shaped cable) with IP67	**3RK1901-1MN00**		1	10 units	42C

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

AS-Interface Extension Plug Compact

With the Extension Plug Compact, it is possible to double the cable length possible in an AS-Interface segment from 100 to 200 m.

Only one AS-i power supply unit is needed to supply power to the slaves on the up to 200 m long segment.

The extension plug suppresses interfering signals that can arise due to reflection at the end of a long cable. The extension plug contains no amplification of the wanted signals.

The extension plug is mounted directly on the AS-Interface shaped cable by means of the insulation displacement method and does not require its own power supply.

Design of an AS-Interface segment with an extension plug

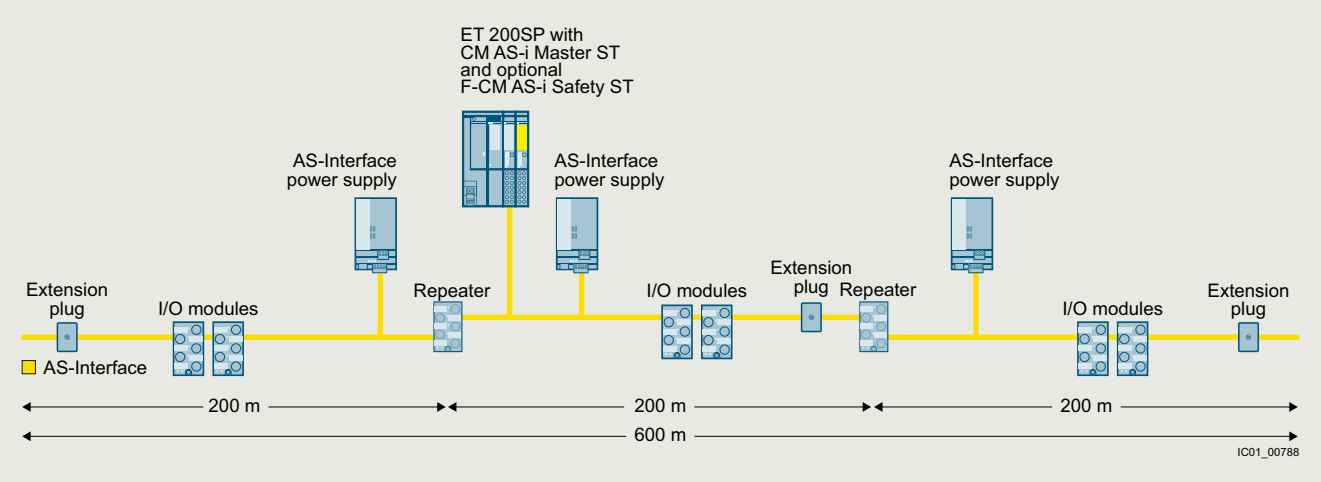
To construct an AS-Interface segment with a cable length of more than 100 m and up to a maximum of 200 m, the extension plug is installed in a radius of around ±10 m at the point of the network that is furthest from the AS-i power supply unit (tolerance up to 10 m from the end point). The extension plug is not allowed to be used in AS-Interface networks smaller than 100 m. Generally, any network structure (line, tree, star) is possible when using the extension plug. Only one extension plug is required per 200 m segment even with a tree or star structure.

The extension plug can be combined with the AS-Interface repeater, see page 2/78.

Note:

The open end of an AS-i bus cable must not be in the extension plug. The AS-Interface shaped cable can be terminated by means of a cable end terminator to provide degree of protection IP67 where required, see "Miscellaneous accessories" on page 2/86.

The AS-Interface extension plug is not suitable for AS-i Power24V networks. It is recommended for use in AS-Interface networks with AS-Interface power supply units (e.g. 3RX9501-0BA00).



Example configuration AS-Interface network with repeater and extension plug

Selection and ordering data

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK1901-1MX02	**AS-Interface Extension Plug Compact** • Doubling of the cable length to 200 m per AS-Interface segment • Direct connection to AS-Interface shaped cable using the insulation displacement method • Extension Plug Compact does not require an AS-i address	**3RK1901-1MX02**		1	1 unit	42C

Accessories

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK1901-1MN00	**Cable end terminator** For sealing open cable ends (AS-Interface shaped cable) with IP67	**3RK1901-1MN00**		1	10 units	42C

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

The innovated addressing unit for AS-Interface of the AS-i specification V3.0

The addressing unit is used to assign an address during commissioning to each AS-Interface slave. The device detects a connected slave module or a complete AS-i network and displays the found module in the LCD display. Each address can be individually set using the Up/Down keys. By turning the rotary switch, further commissioning functions are selected intuitively. The innovative device has been adapted to the current AS-i specification V3.0 and can now also handle the I/O data of the latest slaves.

Functionality

- Reading out and adjusting the slave address 0 to 31 or 1A to 31A, 1B to 31B, with automatic addressing aid and prevention of double addresses
- Reading out the slave profile (IO, ID, ID2)
- Reading out and adjusting the ID1 code
- Input/output test when commissioning the slaves: Read input signals and write outputs with all digital and analog slaves according to AS-Interface specification V3.0, including safe input slaves and complex CTT2 slaves
- Measuring the voltage on the AS-Interface cable (measuring range from 2 to 35 V)
- Display of the operational current in case of direct connection of an AS-i slave (measuring range from 0 to 150 mA)
- Storage of complete network configurations (profiles of all slaves) to simplify the addressing
- Adjusting the slave parameters for commissioning
- Reading out the identification and diagnostics of CTT2 slaves
- Reading out the code table of safe input slaves (ASIsafe)

Note:

For operation of the addressing unit on an AS-Interface cable with connected power supply unit, the following applies:
The AS-Interface addressing unit is suitable for standard AS-i networks and AS-i Power24V networks (min. operational voltage on the AS-Interface cable 19 V).

Benefits

- Increased power supply to the slaves to 150 mA
- Better utilization of the battery capacity thanks to improved circuitry
- Support for the current AS-i specification V3.0
- Expanded display for simultaneously displaying input and output states
- Clearly recognizable display of status of digital inputs/outputs in binary format (0/1), optionally also available as hexadecimal values
- Intuitive display of analog data either as decimal, hexadecimal or as a percentage (e.g. 100% corresponds to input/output value 20 mA)
- I/O data of complex slaves (CTT2 profile) can be displayed
- Decoded display of the input data of safe input slaves, including code table
- Simplification of the operating steps when setting the slave address with automatic read back of the set address
- Addressing cable, ready for operation even without screwing in tight into the M12 socket, thus faster availability of the addressing unit
- Proven compact housing with smooth keys and rotary switch
- Connection of standard AS-i networks possible with 30 V as well as Power24V networks
- Complex slaves with high operating currents can be addressed without external supply
- Longer operating time by automatic shutdown after approx. 5 minutes (or approx. 1 minute when data exchange is active) after last operation
- Can be used with all types of digital and analog slaves
- Comprehensive and fast input/output test of plants, even for A/B slaves with 4 DI/4 DQ and current analog modules with an A/B address
- Faster and more reliable commissioning of the AS-Interface modules
- One-hand operation possible, with unique selection of the functions
- Connection via M12 socket (pin 1: ASI+; pin 3: ASI-; pins 2, 4, 5: not used)
- Universal applicability for all AS-i networks

Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK1904-2AB02					
AS-Interface addressing unit V3.0 • For AS-Interface modules and sensors and actuators with integrated AS-Interface according to AS-i specification V3.0 • For setting the AS-i address of slaves with standard addresses, and slaves with extended addressing mode (A/B slaves) • With input/output test function and many other commissioning functions • Battery operation with four type AA batteries (IEC LR6, NEDA 15) • Degree of protection IP40 • Dimensions W x H x D (mm): 84 x 195 x 35 • Scope of supply: - Addressing unit with four batteries - Addressing cable, with M12 plug to addressing plug (hollow plug), length 1.5 m	**3RK1904-2AB02**		1	1 unit	42C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Accessories

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK1902-4PB15-3AA0	**Addressing cable, with M12 plug to M12 socket**[1] • For addressing slaves with M12 connection, e.g. K20 or K60R modules or light curtains • Length 1.5 m, 3-pole, 3 x 0.34 mm^2	**3RK1902-4PB15-3AA0**		1	1 unit	42D
3RX9801-0AA00	**AS-Interface M12 3RX feeder** • Transition of AS-Interface cable to a standard round cable • Insulation piercing method for connection of AS-Interface cable • M12 socket for connection of standard round cable • Current-carrying capacity up to 2 A	**3RX9801-0AA00**		1	1 unit	42C
3RK1901-2NR10	**AS-Interface M12 3RK feeder** • AS-Interface cable transition without U_{aux}, with M12 socket • Insulation piercing method for connection of AS-Interface cable • M12 socket for connection of standard round cable	**3RK1901-2NR10**		1	1 unit	42C
3RK1902-4HB50-5AA0	**M12 cable plug**[2] • Extruded M12 plug (angled cable outlet 90°), other cable end open • Length: 5 m, 5-pole, color: Black	**3RK1902-4HB50-5AA0**		1	1 unit	42D
3RK1902-4BA00-5AA0	**M12 plug, straight**[2] • For screw fixing, 5-pole screw terminal, max. 0.75 mm^2 • A-coded, max. 4 A	**3RK1902-4BA00-5AA0**		1	1 unit	42D
	Addressing cable, with M12 plug to addressing plug (hollow plug)[3] • Included in the scope of supply of the addressing unit • Length 1.5 m	**Z236A**				

1) Not included in scope of supply of the 3RK1904-2AB02 addressing unit.

2) For connecting the addressing unit to an AS-i network via AS-Interface M12 feeder it is necessary to establish a connection by means of a connecting cable (M12 plug to M12 connector) which must be wired as follows:
- M12 cable plug: pin 1/core brown ↔ M12 plug: pin 1
- M12 cable plug: pin 3/core blue ↔ M12 plug: pin 3
- Pin 2, 4, 5 not connected.

3) Addressing cable available from:
GMC-I Messtechnik GmbH
(see page 16/18).

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Analyzer

Overview

AS-Interface analyzer

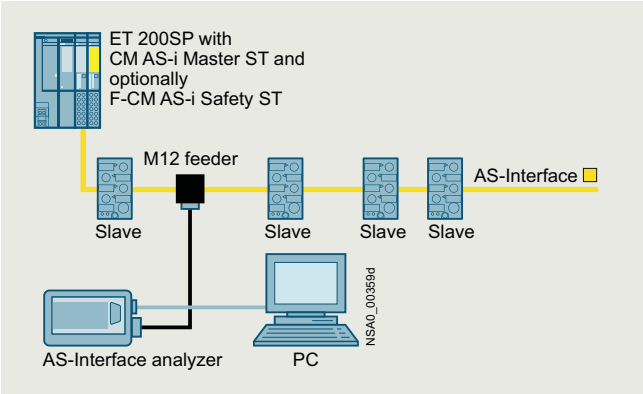
The AS-Interface analyzer is used to test AS-Interface networks.

Installation errors, e.g. loose contacts or EMC interference under extreme loads, can be revealed by this device.

Thanks to the easy-to-use software the user can assess the quality of complete networks even if he lacks detailed specialist knowledge of AS-Interface. In addition it is an easy matter with the AS-Interface analyzer to create test logs from the records produced, thus providing documentation for startups and service assignments.

For advanced AS-Interface users there are trigger functions for detailed diagnostics.

Connection



Connection of AS-Interface analyzer to PC and AS-Interface network

The AS-Interface analyzer follows the communication on the AS-Interface network as a passive station. The unit is supplied simultaneously from the AS-Interface cable.

This analyzer interprets the physical signals on the AS-Interface network and records the communication.

The data thus obtained are transferred through an RS 232 interface to a PC such as a notebook, for evaluation with the supplied diagnostics software.

Benefits

- Simple and user-friendly operation enables diagnostics of AS-Interface networks without help from specialists
- Speedy troubleshooting thanks to intuitive display in statistics mode
- Test logs provide verification of the state and quality of the installation for service and approval
- Recorded logs facilitate remote diagnostics by Technical Support
- Comprehensive trigger functions enable exact analysis
- Process data can be monitored online

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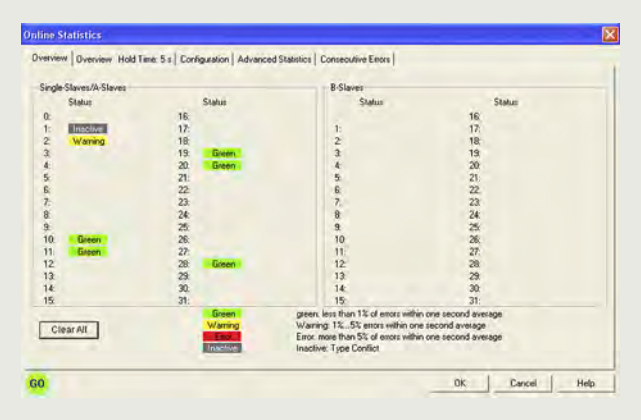
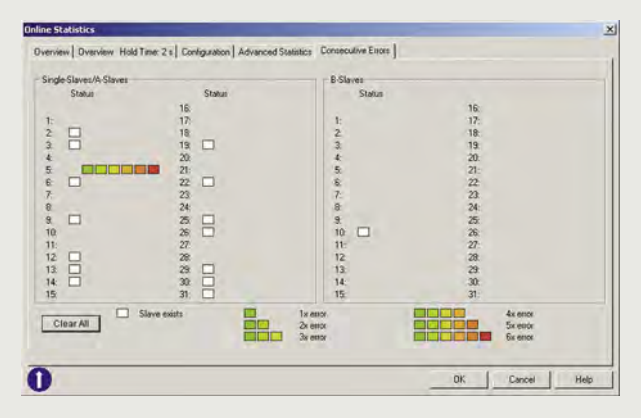
Application

Online statistics



Online statistics, overview



Online statistics, details, e.g. here a fault on slave 5

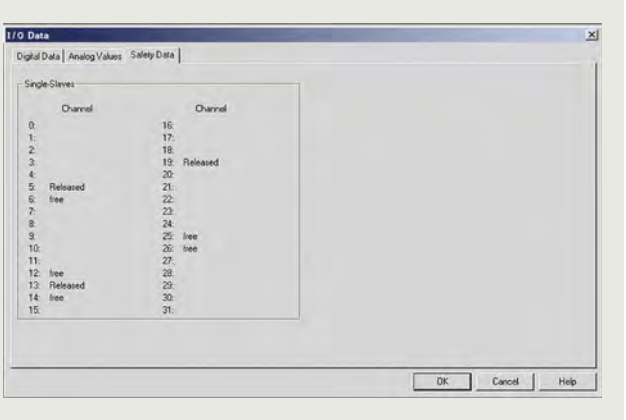
This mode provides a quick overview of the existing AS-Interface system. The error rates are displayed per slave in a traffic-light function (green, yellow, red).

The bus configuration and the currently transmitted data of the slaves are shown in a well arranged presentation.

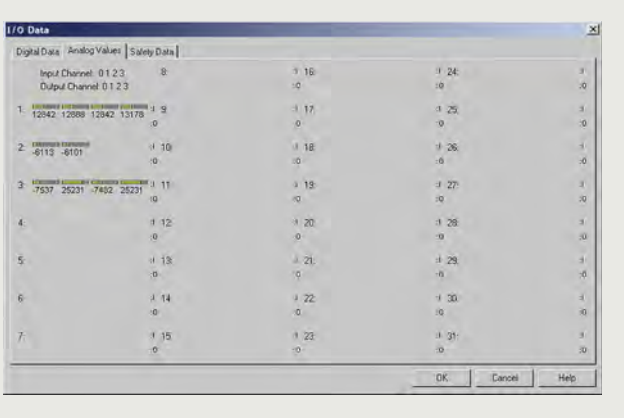
With the expanded statistics function, it is possible to determine the error rates as the number of transmitted or faulty bus message frames.

The bundle error overview shows in steps how many multiple repetitions of message frames occurred in order to enable a selective and look-ahead assessment of the transmission quality.

Data mode



Presentation of the I/O data: Safety data



Presentation of the I/O data: Analog values

In this mode, the analyzer shows not only the digital input/output values but also the current analog values and the input status of the safety slaves.

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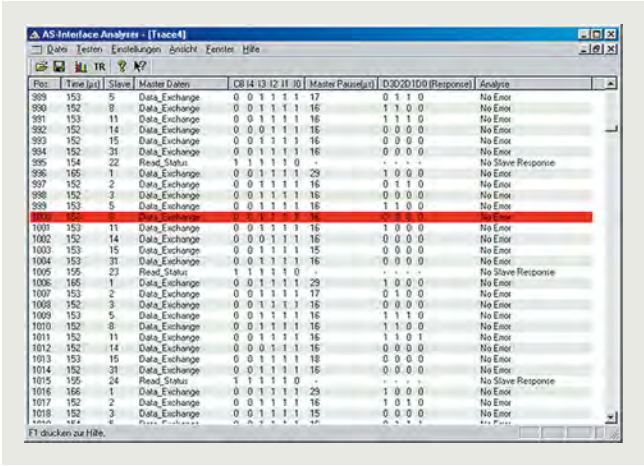
Analyzer

Trace mode



Presentation of message frames in trace mode

The presentation of message frames in the style of a classic fieldbus analyzer is indispensable for complex troubleshooting. Extensive trigger functions and recording and viewing filters are available for this purpose. An external trigger input and trigger output round off the scope of functions in order to find even the most difficult errors.

For troubleshooting in connection with ASIsafe applications, changes of status in the code tables of safety slaves are identified and assessed.

The AS-i analyzer can be used with an AS-i master in accordance with AS-Interface specification V3.0 or a predecessor version.

The analyzer does not automatically decode the process values for type CTT2 - CTT5 AS-i slaves. As for other slave types, the message frames are recorded and evaluated in the statistics. If required, decoding can also be performed by the user manually.

For more information, see https://support.industry.siemens.com/cs/ww/en/view/109746763.

Test log

Example of a test log

The recorded data of the online statistics are easy to output and document using a test log. Verification of the state of the plant can thus be provided for approvals or service assignments.

The integrated measurement assistant records the bus signals for a variable duration, thereby triggering creation of an automatic test log. A standardized quality test of AS-i plants is thus possible.

Note:

The AS-Interface analyzer is suitable for standard AS-i networks and AS-i Power24V networks (min. operational voltage 20 V).

Selection and ordering data

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK1904-3AB01	**AS-Interface analyzer** • For testing AS-Interface systems • For troubleshooting and service assignments in installations and networks with AS-Interface systems • Dimensions W x H x D (mm): 145 x 30 x 92 • Scope of supply: - AS-Interface analyzer - RS 232 cable for connecting to a PC - USB-to-serial/RS 232 adapter - Screwdriver - Magnetic adhesive tape for fastening the analyzer to metal surfaces - Service case with foam insert, dimensions W x H x D (mm): approx. 260 x 70 x 200 - Diagnostics software (CD-ROM) for PC with Windows operating system	**3RK1904-3AB01**		1	1 unit	42C

Note:

Download the current version of the diagnostics software for PC with Windows operating system, see https://support.industry.siemens.com/cs/ww/en/view/109750259.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Accessories

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RX9801-0AA00	**AS-Interface M12 3RX feeder** • Transition of AS-Interface shaped cable to a standard round cable • Insulation piercing method for connection of AS-Interface cable • M12 socket for connection of standard round cable • Current-carrying capacity up to 2 A • Degree of protection IP67	**3RX9801-0AA00**		1	1 unit	42C
3RK1901-2NR10	**AS-Interface M12 3RK feeder** • AS-Interface cable transition without U_{aux}, with M12 socket • Insulation piercing method for connection of AS-Interface cable • M12 socket for connection of standard round cable • Max. 4 A • Degree of protection IP67/IP68/IP69 (IP69K)	**3RK1901-2NR10**		1	1 unit	42C
3RK1902-4HB50-5AA0	**M12 cable plugs** • PUR cable, 5-pole • Length 5 m • Color black • Extruded M12 plug (angled cable outlet 90°), other cable end open	**3RK1902-4HB50-5AA0**		1	1 unit	42D

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Selection and ordering data

More information

System Manual for AS-Interface, see https://support.industry.siemens.com/cs/ww/en/view/26250840

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK1901-2NN10	**AS-Interface compact distributors, for AS-Interface flat cable** • Current-carrying capacity up to 8 A • Degree of protection IP67/IP68/IP69 (IP69K)			1	1 unit	42C
	For flat cable: AS-i or U_{aux} — For: Flat ribbon cable AS-i or U_{aux} — Cable length: -- — Cable end in feeder: Not available	**3RK1901-2NN10**		1	1 unit	42C
3RX9801-0AA00	**AS-Interface M12 3RX feeder** • Current-carrying capacity up to 2 A • Degree of protection IP67					
	For flat cable: AS-i — For: M12 socket — Cable length: -- — Cable end in feeder: Available	**3RX9801-0AA00**		1	1 unit	42C
3RK1901-2NR10	**AS-Interface M12 3RK feeder** • Current-carrying capacity up to 4 A • Degree of protection IP67/IP68/IP69 (IP69K)					
	For flat cable: AS-i — For: M12 socket — Cable length: -- — Cable end in feeder: Not available	**3RK1901-2NR10**		1	1 unit	42C
	For flat cable: AS-i — For: M12 cable box — Cable length: 1 m — Cable end in feeder: Not available	**3RK1901-2NR11**		1	1 unit	42C
3RK1901-2NR21	For flat cable: AS-i — For: M12 cable box — Cable length: 2 m — Cable end in feeder: Not available	**3RK1901-2NR12**		1	1 unit	42C
	For flat cable: AS-i/U_{aux} — For: M12 socket — Cable length: -- — Cable end in feeder: Not available	**3RK1901-2NR20**		1	1 unit	42C
	For flat cable: AS-i/U_{aux} — For: M12 cable box — Cable length: 1 m — Cable end in feeder: Not available	**3RK1901-2NR21**		1	1 unit	42C
	For flat cable: AS-i/U_{aux} — For: M12 cable box — Cable length: 2 m — Cable end in feeder: Not available	**3RK1901-2NR22**		1	1 unit	42C
3RK1901-1NR04	**AS-Interface M12 feeders, 4-fold** • Current-carrying capacity up to 4 A • Degree of protection IP67					
	For flat cable: AS-i/U_{aux} — For: 4-fold M12 socket, delivery includes mounting plate (for wall and DIN-rail mounting) — Cable length: -- — Cable end in feeder: Not available	**3RK1901-1NR04**		1	1 unit	42C
6ES7194-1KA01-0XA0	**M12 Y-shaped coupler plugs** For connection of two sensors to one M12 socket with Y-assignment	**6ES7194-1KA01-0XA0**		1	1 unit	250
3RK1901-1KA00 3RK1901-1KA01	**AS-Interface sealing caps** For free M12 sockets • M12					
	- Standard version	**3RK1901-1KA00**		100	10 units	42C
	- Tamper proof	**3RK1901-1KA01**		100	10 units	42C
3RK1901-1PN00	• M8 standard version	**3RK1901-1PN00**		100	10 units	42C
3RK1901-1MD00	**AS-Interface M20 seals** • For AS-Interface shaped cable • For insertion in M20 glands	**3RK1901-1MD00**		100	10 units	42C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK1901-3QM00	**Cable adapters for flat cables** Connection of AS-Interface cable to metric gland with insulation piercing method					
	• Continuation using standard cable					
	- For M16 gland	**3RK1901-3QM00**		1	1 unit	42C
	- For M20 gland	**3RK1901-3QM10**		1	1 unit	42C
	• Continuation using pins					
	- For M16 gland	**3RK1901-3QM01**		1	1 unit	42C
	- For M20 gland	**3RK1901-3QM11**		1	1 unit	42C
3RK1901-3QA00	**Cable clip for cable adapters**	**3RK1901-3QA00**		100	10 units	42C
3RK1901-1MN00	**Cable end terminator** For sealing open cable ends of the AS-Interface shaped cable with IP67	**3RK1901-1MN00**		1	10 units	42C
3RK1901-2EA00 3RK1901-0CA00	**Mounting plates**					
	• K45					
	- For wall mounting	**3RK1901-2EA00**		1	1 unit	42C
	- For DIN-rail mounting	**3RK1901-2DA00**		1	1 unit	42C
	• K60, suitable for all K60 compact modules					
	- For wall mounting	**3RK1901-0CA00**		1	1 unit	42C
	- For DIN-rail mounting	**3RK1901-0CB01**		1	1 unit	42C
3RK1902-0AR00	**Sealing set**	**3RK1902-0AR00**		100	5 units	42D
	• For K60 mounting plate					
	• Cannot be used for K45 mounting plate					
	• One set contains one straight and one shaped seal					
3RK1902-4GB50-4AA0	**Control cable, assembled at one end** Angled M12 socket for screw fixing, 4-pole, 4 x 0.34 mm^2, A-coded, black PUR sheath, max. 4 A					
	• Cable length 5 m	**3RK1902-4GB50-4AA0**		1	1 unit	42D
3RK1902-4CA00-4AA0	**M12 socket, angled** For screw fixing, 4-pole screw terminals, max. 0.75 mm^2, A-coded, max. 4 A	**3RK1902-4CA00-4AA0**		1	1 unit	42D
3RK1902-4BA00-5AA0	**M12 plugs** For screw fixing, 5-pole screw terminals, max. 0.75 mm^2, A-coded, max. 4 A					
	• Straight	**3RK1902-4BA00-5AA0**		1	1 unit	42D
3RK1902-4DA00-5AA0	• Angled	**3RK1902-4DA00-5AA0**		1	1 unit	42D
3RK1902-4H...-5AA0	**Control cable, assembled at one end** Angled M12 plug for screw fixing, 5-pole, 5 x 0.34 mm^2, A-coded, black PUR sheath, max. 4 A					
	• Cable length 1.5 m	**3RK1902-4HB15-5AA0**		1	1 unit	42D
	• Cable length 5 m	**3RK1902-4HB50-5AA0**		1	1 unit	42D
	• Cable length 10 m	**3RK1902-4HC01-5AA0**		1	1 unit	42D
3RK1902-4PB15-3AA0	**Control cable, assembled at both ends** Straight M12 plug, straight M12 socket, for screw fixing, 3-pole, 3 x 0.34 mm^2, A-coded, black PUR sheath, max. 4 A	**3RK1902-4PB15-3AA0**		1	1 unit	42D
	• Cable length 1.5 m					
	• Also for addressing AS-i slaves with M12 bus connection (e.g. K20, K60R compact modules, M200D motor starters)					

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Communications overview

Overview

More information

Homepage, see www.siemens.com/io-link

TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=IoLink

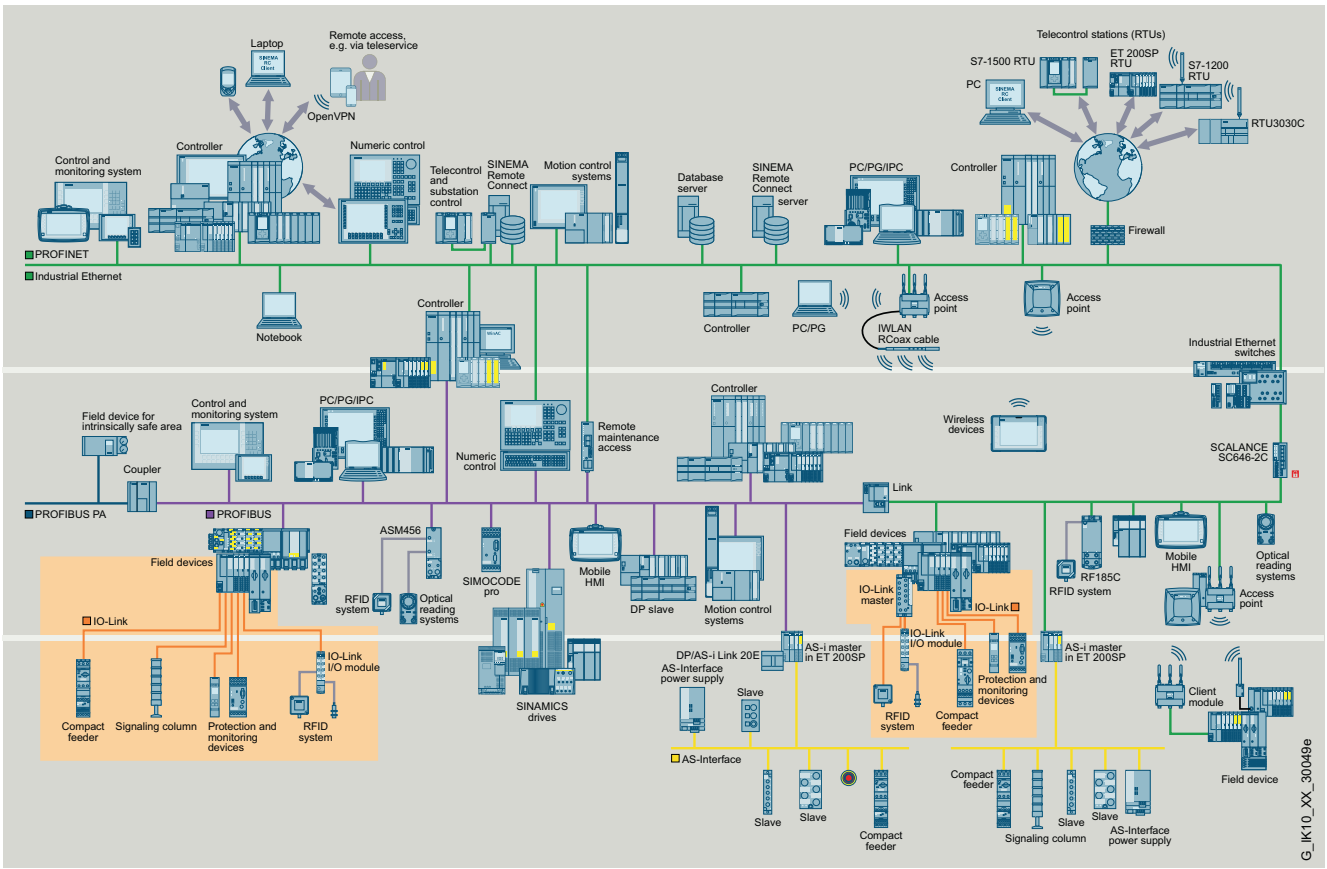
For important topics at a glance, see https://support.industry.siemens.com/cs/ww/en/view/109737170

For brochure, see https://assets.new.siemens.com/siemens/assets/api/uuid:7460eb69-efa0-4426-9213-af4d3619b567/dffa-b10447-01broschuereiolinkdeengb-144.pdf

Video: The open communication standard IO-Link

IO-Link is an open communication standard for sensors and actuators – defined by the PROFIBUS User Organization (PNO). IO-Link technology is based on the point-to-point connection of sensors and actuators to the control system.

Parameter and diagnostics data are transmitted in addition to the cyclic operating data for the connected sensors/actuators. The simple, unshielded three-wire cable customary for standard sensors is used for this purpose.



IO-Link in the SIMATIC NET communications landscape

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Benefits

Engineering

- Standardized, open system for greater flexibility (non-Siemens IO-Link devices can be integrated in engineering)
- Uniform, transparent configuring and programming through integrated engineering (SIMATIC STEP 7)
- Unassigned SIMATIC function blocks for easy parameterization, diagnostics and read-out of measured values
- Efficient engineering thanks to pre-integration into SIMATIC HMI
- Low error rate in CAD circuit diagram design as a result of reduced control current wiring

Installation and commissioning

- Faster assembly with minimized error rate as a result of reduced control current wiring
- Less space required in the control cabinet
- Low-cost circuitry where there are several feeders by making full use of existing components

Operation and maintenance

- High transparency in the system right down to field level and integration into power management systems
- Reduction in downtimes and maintenance times thanks to system-wide diagnostics and faster fault correction
- Support of predictive maintenance
- Shorter changeover times, even for field devices, by means of parameter and recipe management

Application

IO-Link can be used in the following main applications:

- Easy connection of complex IO-Link sensors/actuators with a large number of parameters and diagnostics data to the control system
- Replacement of sensor boxes for connecting binary sensors with the IO-Link input modules optimized in terms of cabling
- Optimized cable connection of switching devices to the control system
- Simple transmission of energy values from the device to the control system for integration into a user program or power management

In these cases, all the diagnostics data are transmitted to the higher-level control system through IO-Link. The parameter settings can be changed during operation.

Integration in STEP 7

Integration of the device configuration in the STEP 7 environment guarantees:

- Quick and easy engineering
- Consistent data storage
- Quick localization and rectification of faults

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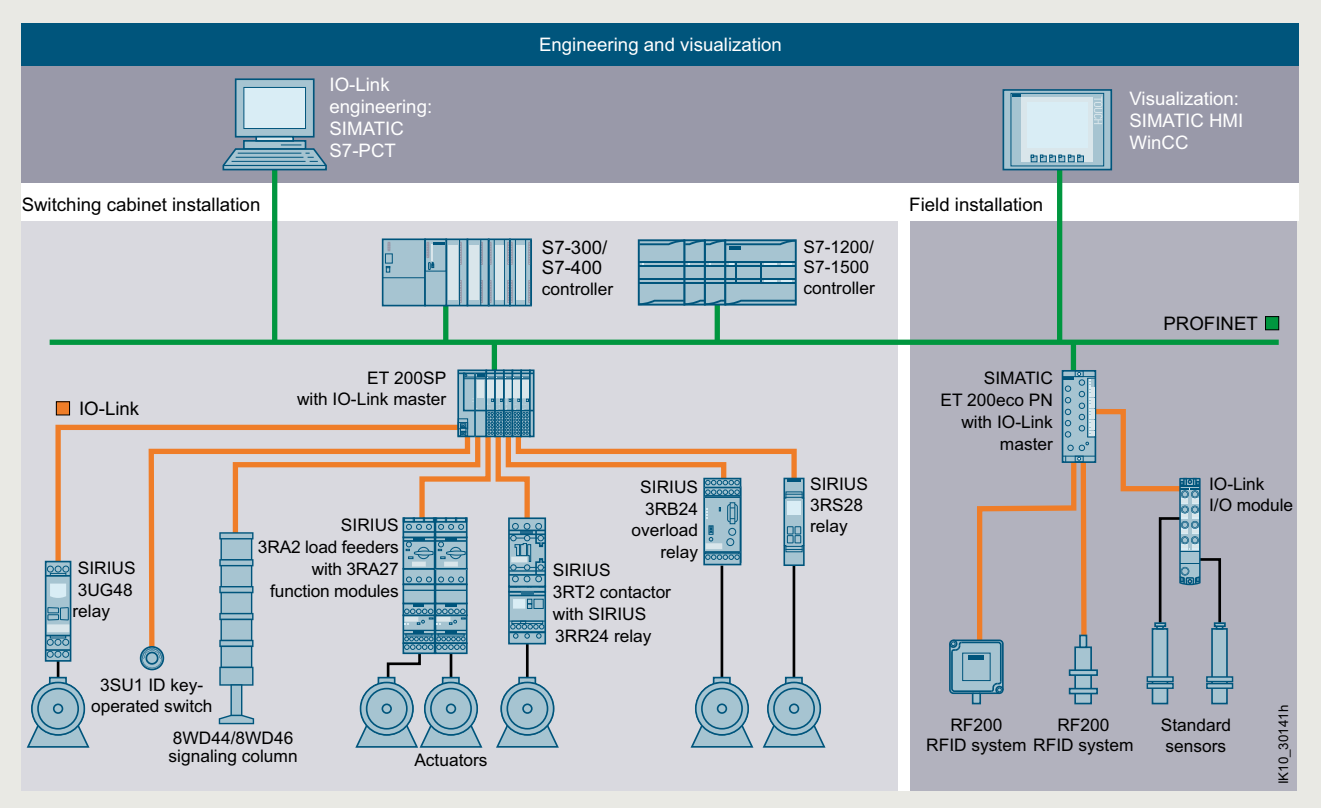
Overview

IO-Link product family

To implement communication, a system installation has the following main components:

- An IO-Link master
- One or more IO-Link devices, such as sensors (e.g. RFID systems), actuators or combinations thereof
- A standard three-wire sensor/actuator cable



Example of a configuration with the system components

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IO-Link compatibility

IO-Link ensures compatibility between IO-Link-capable modules and standard modules as follows:

- IO-Link sensors can generally be operated both on IO-Link modules (masters) and standard input modules.
- IO-Link sensors/actuators as well as today's standard sensors/actuators can be used on IO-Link masters.
- If conventional components are used in the IO-Link system, then of course only the standard functions are available at this point.

Analog signals

Another advantage of IO-Link technology is that analog signals are already digitized in the IO-Link sensor itself and are digitally transmitted via IO-Link communication. As the result, faults are prevented and there is no extra cost for cable shielding.

Enhancement with IO-Link input modules

IO-Link compatibility also permits connection of standard sensors/actuators, i.e. conventional sensors/actuators can also be connected to IO-Link. This is particularly cost-effective with the IO-Link input modules, which allow several sensors to be connected at one time via a cable to the controller.

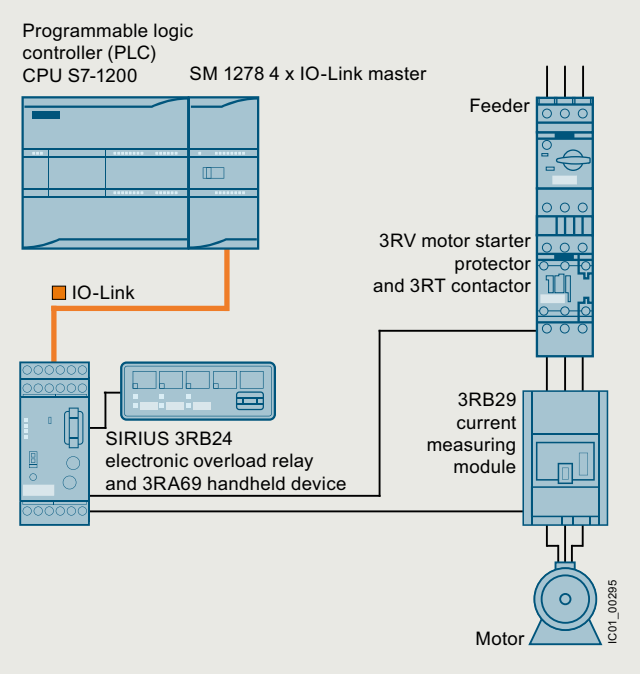
Overload relays

A starter combination, for example, consists of one or more SIRIUS 3RT contactors and one 3RB24 electronic overload relay for IO-Link plus its 3RB29 current measuring module.

3RB24 overload relays with IO-Link are basically designed to provide current-dependent protection for loads against inadmissibly high temperature rises due to overload, phase asymmetry or phase failure.

Direct-on-line starters can, therefore, as shown in the image, be connected to the control system via IO-Link without much wiring. Remote control of connected contactors, current value transmission and immediate remote fault diagnosis are just some examples of the large number of functions that can be implemented with this device.

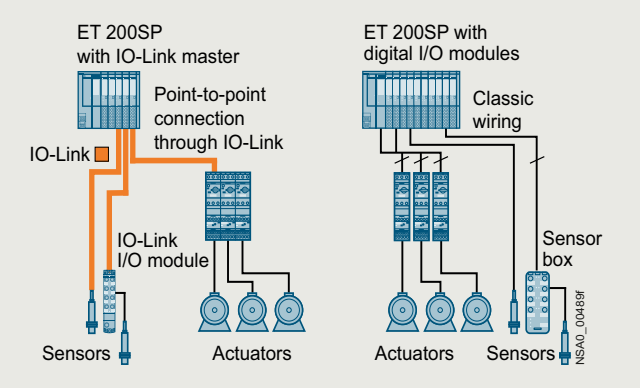
It is also possible to directly address a drive on-site via IO-Link using the optional handheld device.



Connection of an IO-Link-capable overload relay to a SIMATIC S7-1200 controller

Load feeders and motor starters

Through IO-Link it is possible to control not only sensors but also actuators in the form of load feeders and motor starters.



Possibilities of connecting load feeders and motor starters to IO-Link or in the conventional way

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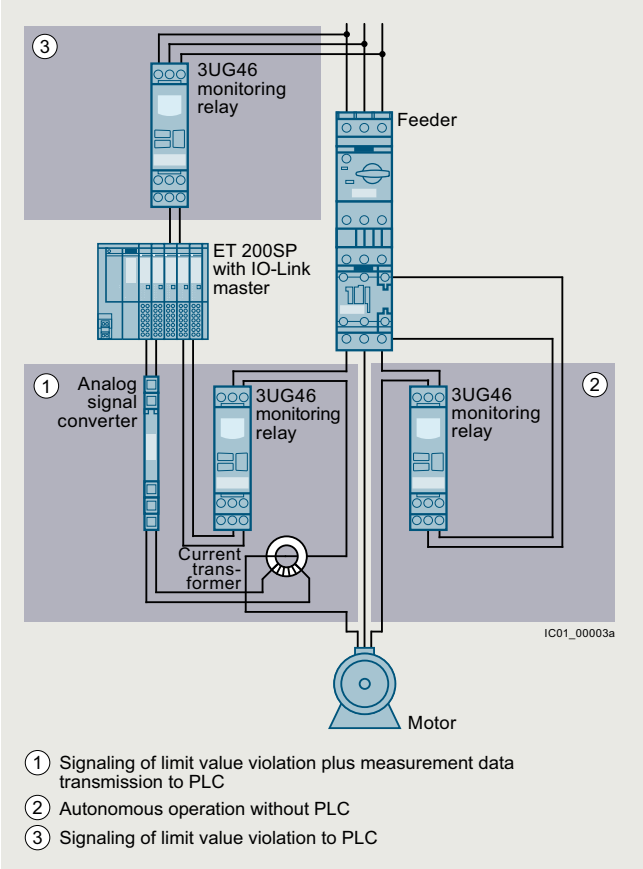
System components

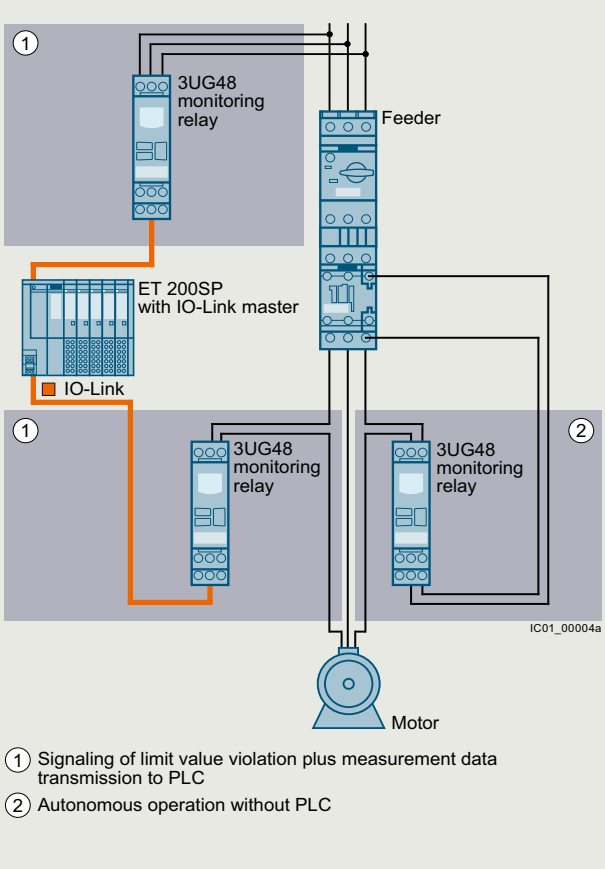
Monitoring relays

By using monitoring relays with IO-Link it is now possible to send data that has already been recorded and evaluated in the devices directly to the controller. This avoids the use of duplicated sensors.



1 Signaling of limit value violation plus measurement data transmission to PLC
2 Autonomous operation without PLC
3 Signaling of limit value violation to PLC

Possibilities for interfacing conventional 3UG46 monitoring relays (in comparison with 3UG48)



1 Signaling of limit value violation plus measurement data transmission to PLC
2 Autonomous operation without PLC

Possibilities of interfacing 3UG48 monitoring relays for IO-Link

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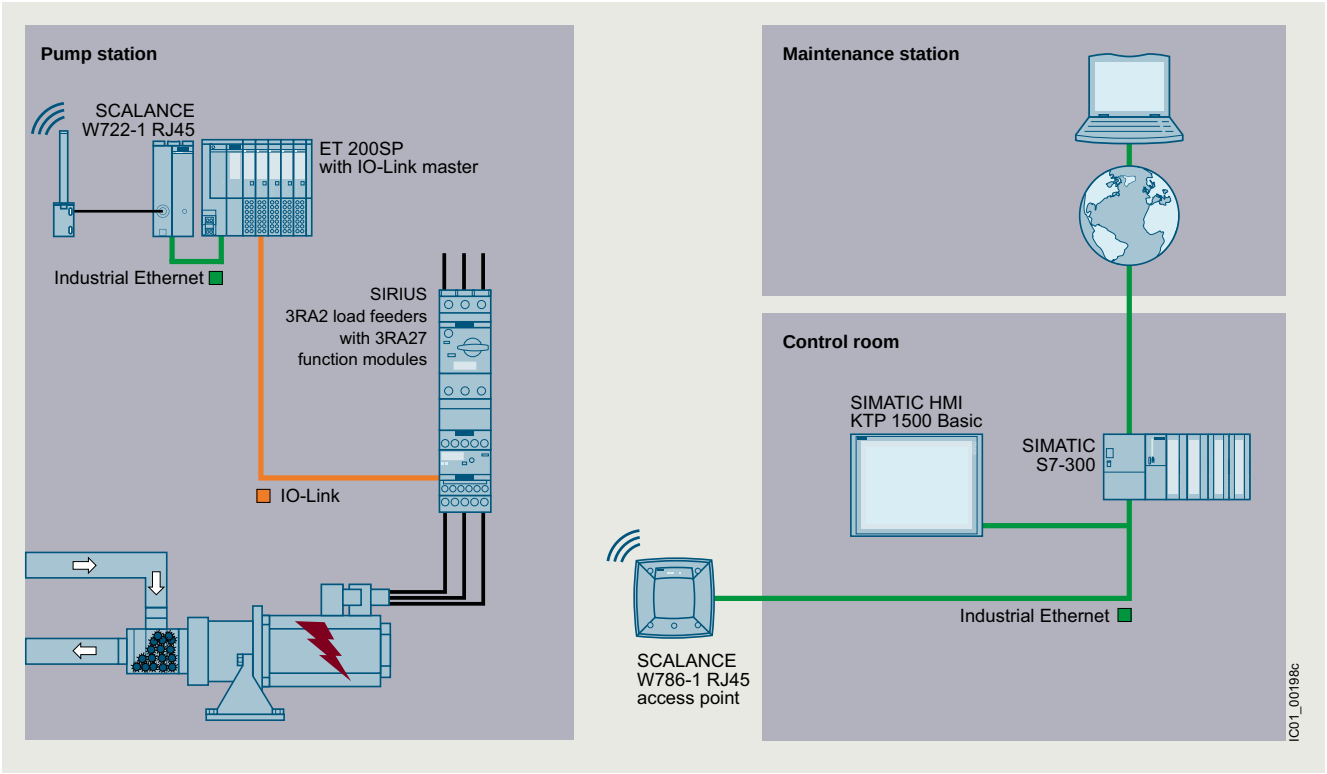
Wireless communication

Using an upstream IWLAN client module, such as SCALANCE W722-1 RJ45, allows IO-Link to be integrated into the PROFINET world via a distributed I/O. Possible uses include acting as an alternative to fault-prone cable carrier or collector wire technology.

The individual diagnostics options offered by the various IO-Link devices provide greater transparency for the production process. Just like the parameter data for a device, these diagnostics data can be evaluated remotely using the possibilities offered by SIMATIC. This supports remote maintenance down to the lowest level in the field.



Wireless communication between Industrial Ethernet and IO-Link components

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System components

IO-Link components

IO-Link masters

CM 8xIO-Link for S7-1500

Masters

IO-Link master module for S7-1500

- CM 8xIO-Link, see page 2/97

IO-Link master module for S7-1200

- SM 1278 4xIO-Link, see page 2/98

IO-Link master module for ET 200SP

- CM 4xIO-Link V1.1 Standard, see page 2/99

IO-Link master module for ET 200pro

- 4 IO-Link HF, see page 2/100

IO-Link master module for ET 200eco PN

- IO-Link master 4 IO-L + 8 DI + 4 DO 24 V DC/1.3 A
- IO-Link master 4 IO-L
- IO-Link master 8 IO-L + 4 DI 24 V DC

See page 2/101

IO-Link master module for ET 200AL

- CM IO-Link, see page 2/102

For full product range, see Catalog ST 70.

IO-Link devices

IO-Link I/O modules

Detection and output with IO-Link

IO-Link digital modules

IO-Link I/O modules

- IO-Link, digital input modules
  - DI 8 x 24 V DC, 8 x M8
  - DI 16 x 24 V DC, 8 x M12
- IO-Link, digital output modules
  - DQ 8 x 24 V DC/2 A, 8 x M12
- IO-Link, digital input/output modules
  - DIQ 4+DQ 4 x 24 V DC/0.5 A, 8 x M8
  - DIQ 16 x 24 V DC/0.5 A, 8 x M12

See page 2/103

SIRIUS 3RA2711 function module for IO-Link

Switching with IO-Link

Contactors and contactor assemblies

SIRIUS 3RT contactors, 3-pole up to 250 kW, see page 3/18 onwards

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW, see page 3/142 onwards

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW, see page 3/158 onwards

SIRIUS 3RA27 function modules

- For direct-on-line, reversing, and star-delta (wye-delta) starting with IO-Link connection, see page 3/101 onwards

SIRIUS 3RA64 direct-on-line starter

Motor starters for use in the control cabinet

SIRIUS 3RA64, 3RA65 compact starters for IO-Link for high-feature applications

- 3RA64 direct-on-line starters, see page 8/67
- 3RA65 reversing starters, see page 8/68

Infeed system for 3RA6, see page 8/76 onwards

Accessories, see page 8/69 onwards

SIRIUS 3RB24 overload relay

Contactors with IO-Link

Overload relays

SIRIUS 3RB24 electronic overload relays for IO-Link for high-feature applications

- Evaluation modules
- Current measuring modules from 0.3 to 630 A
- In connection with contactors: Controlling direct-on-line, reversing and star-delta (wye-delta) starters via IO-Link
- Full motor protection
- Diagnostics and current value transmission via IO-Link

See page 7/127 onwards

IO-Link devices (continued)

Monitoring with IO-Link

SIRIUS 3RR24 monitoring relay

SIRIUS 3RR24 monitoring relays for mounting on 3RT2 contactors for IO-Link

- Monitoring of current, phase failure, open circuit and phase sequence
- Designed for mounting on 3RT2 contactors
- Terminal supports for stand-alone installation for separate mounting

See page 10/55 onwards

SIRIUS 3UG48 monitoring relay

SIRIUS 3UG48 monitoring relays for stand-alone installation for IO-Link

- Monitoring the supply system, voltage, current, power factor and active current, residual current or speed depending on device design
- On/tripping delay time can be adjusted

See page 10/96 onwards

SIRIUS 3RS28 temperature monitoring relay

SIRIUS 3RS28 temperature monitoring relay for IO-Link

- Digital device for temperature monitoring with connected sensors
- Two limit values, can be adjusted separately

See page 10/119 onwards

Actuating and indicating with IO-Link

SIRIUS ACT 3SU1 ID key-operated switch

SIRIUS ACT 3SU1 ID key-operated switches for IO-Link

- Access system and selection system for four authorization levels
- Authentication of groups and persons
- Five ID keys with different coding
- Option for individual coding via IO-Link
- For installation in enclosures or fastening on front plate
- Solid-state module for ID key-operated switches must be ordered separately.

See page 13/12

SIRIUS ACT 3SU1 solid-state module

SIRIUS ACT 3SU1 solid-state modules for IO-Link

- Eight digital inputs and outputs possible
- DI and DQ freely selectable (programmable)
- Input and output functions parameterizable
- Connection method (push-in)
- For fastening on front plate or for installation in enclosure, see page 13/89

8WD46 signaling column for IO-Link

Electronically configurable 8WD46 signaling columns, 70 mm diameter

Signaling columns for IO-Link, with or without audible signal

- Configuration of signaling column via IO-Link interface (IODD)
- Fast connection of signaling columns to application using 4-pole M12 plugs
- Via the IO-Link interface, the pattern, color and brightness of the individual segments (9 to 15 segments) can be set.
- The audible signal can also be set (volume, type of sound up to 105 dB).

See page 13/163 onwards

8WD44 signaling column

8WD44 IO-Link adapter element

8WD44 signaling columns, 70 mm diameter

- Up to five signaling elements can be connected using an IO-Link adapter element
- 24 V DC, diameter 70 mm
- Connection with bayonet mechanism
- For fastening on feet, 8WD44
- Connection elements with screw or spring-loaded terminals or connection element with 5-pole M12 plug

See page 13/170 onwards

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IO-Link RFID systems

RFID system for IO-Link

SIMATIC RF200 RFID system in the HF range

SIMATIC RF210R, SIMATIC RF220R, SIMATIC RF240R, SIMATIC RF250R, SIMATIC RF260R products

- Simple identification tasks such as reading an ID number (UID)
- Reading of user data
- Writing of user data
- No RFID-specific programming, ideal for those new to RFID
- Simple connection via master modules for IO-Link, such as SIMATIC S7-1200, ET 200SP, ET 200pro, ET 200eco PN and ET 200AL
- Use with the tried and tested ISO 15693 transponders (MDS xxx)

See Catalog ID 10

IO-Link Device Description (IODD)

IODD files for IO-Link

IODD files

These files provide the device description for IO-Link devices.

- Comprehensive IODD catalog of SIEMENS IO-Link devices
- Freely available for download from Industry Online Support, see https://support.industry.siemens.com/cs/ww/en/ps/15851

IODDfinder for IO-Link

IODDfinder

The entire world of IO-Link under one roof

The IODDfinder is a service provided by the IO-Link community. It is a central cross-vendor database for descriptive files (IODDs). In addition, the platform provides an overview of the available IO-Link devices.

For more information, see https://ioddfinder.io-link.com/#/.

IO-Link software

S7-PCT

S7-PCT (Port Configuration Tool)

Engineering software for configuring the IO-Link master modules for SIMATIC S7-1200, ET 200SP, ET 200MP, ET 200pro, ET 200eco PN and ET 200AL

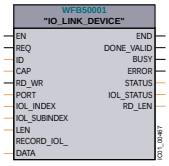
- Available as a stand-alone version or integrated into STEP 7 (V5.5 SP1 and higher) and TIA (V12 and higher)
- Engineering of the IO-Link devices connected to the master
- Monitoring of the process image of the IO-Link devices
- Open interface for importing further IODDs
- Freely available for download from Industry Online Support, see https://support.industry.siemens.com/cs/ww/en/view/32469496

Library for IO-Link (LIOLink)

Library for IO-Link (LIOLink)

This library provides blocks and PLC data types to enable communication between the SIMATIC controller and the IO-Link master or IO-Link device.

- Freely available for download from Industry Online Support, see https://support.industry.siemens.com/cs/ww/en/view/82981502



IO-Link device function block

Application of the device-specific blocks for IO-Link

This application shows on a specific example how easy it is to connect Siemens IO-Link devices to a SIMATIC S7 CPU using the library for IO-Link (LIOLink).

- Freely available for download from Industry Online Support, see https://support.industry.siemens.com/cs/ww/en/view/90529409

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IO-Link specification

Overview

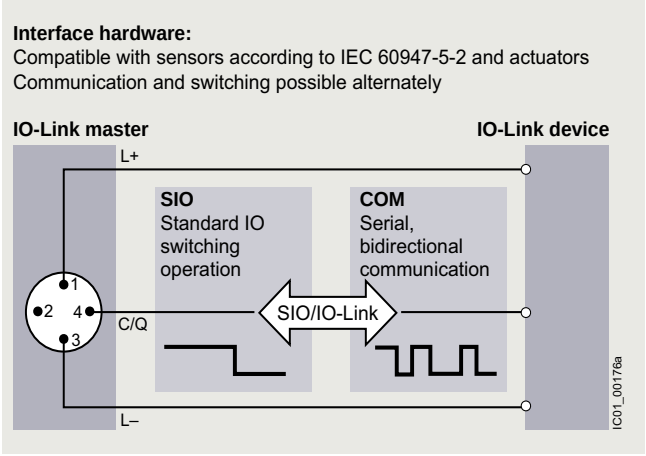
Principles of the IO-Link specification

According to the IO-Link specification, communication functions as follows:

- Transmission takes place via an unshielded three-wire cable no more than 20 m long, of the kind normally used for standard sensors.
- Digital communication from 0 to 24 V on the so-called C/Q cable
- Most of the values transmitted are measured values from the sensors
- The sensors and actuators are described by the IO Device Description (IODD)
- As a matter of principle, one IO-Link device can be connected to one IO-Link port of the master (point-to-point connection)
- The transmission rates between IO-Link master and the devices are as follows:
  - Via COM1: 4 800 Bd
  - Via COM2: 38 400 Bd
  - Via COM3: 230 400 Bd
- The average cycle time is 2 ms for the reading/writing of 16 data bits at a transmission rate of 38 400 Bd

IO-Link protocol

The IO-Link protocol supports both the Standard IO mode (SIO) and the IO-Link communications mode (COM).



The structure of the protocol and its message frames depends on the types of data to be transmitted.

Data types

The IO-Link specification makes a distinction between the following data types:

Process data

The process data of the devices are transferred cyclically in a data frame, with the process data width defined by the device. Process data of 0 to 32 bytes are possible per device (input and output in each case). The consistency width of the transmission is not fixed and therefore depends on the master.

Value status

Each port has a value status (PortQualifier). The value status indicates whether the process data are valid or invalid. The value status can be transferred cyclically with the process data.

Device data

Device data can be parameters, identification data and diagnostics information. Device data replacement is acyclic and in response to an inquiry from the IO-Link master. Device data can be written into the device (Write) and also read from the device (Read).

Events

When an event occurs, the device sends a signal to the master to report that an event is active. The master then reads out the event. Events can be fault messages (e.g. short circuit) and warnings/maintenance data (e.g. contamination, overheating). Fault messages are transferred from the device via the IO-Link master to the controller or HMI. The IO-Link master can also transfer events and states. Events include, for example, open circuit or communication breakdown.

Device parameters and events are sent independently of the cyclic transmission of process data. The transmissions do not affect or impair each other.

Data storage

As of specification V1.1, a data storage concept has been created for IO-Link. In this concept, the IO-Link device initiates storage of its data on a higher-level parameter server. In the event that a device is replaced, the parameter server can restore the original parameterization. It is therefore possible to replace the devices without reparameterization.

The IO-Link master contains the parameter server.
The parameter server can also be implemented centrally in the PLC or in a system server. In this case the data must be downloaded to the control system by means of the function blocks provided.

IO-Link masters

The IO-Link master is the interface to higher-level control systems. The IO-Link master presents itself to the fieldbus as a normal fieldbus node, and is integrated into the appropriate network configurator via the relevant device description (GSD file).

IO Device Description (IODD)

The IO Device Description (IODD) has been defined to provide a full, transparent description of system characteristics as far as the IO-Link device.

The IODD contains information on communication characteristics, device parameters, identification, process and diagnostics data, and is supplied by the manufacturer. The design of the IODD is the same for all devices from all manufacturers, and is always presented in the same way by the IODD Interpreter Tools. This therefore ensures that the handling is the same for all IO-Link devices, whatever the manufacturer.

New in IO-Link specification V1.1

The IO-Link specification is currently available in Version 1.1, and standardized in accordance with IEC 61131-9.

Specification V1.1 offers the following new features compared with the previous specification V1.0:

- Transmission of up to 32 bytes of process data in one cycle
- Parameter server function

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Overview

CM 8xIO-Link master

- Communications module for connecting up to 8 IO-Link devices (three-wire connection) or 8 standard sensors
- Can be used directly downstream of an S7-1500 CPU or distributed in ET 200MP via PROFINET or PROFIBUS
- Powerful diagnostics functions facilitate preventive maintenance to avoid plant standstills
- Simple replacement of sensors/actuators without time-consuming parameterization

Application

IO-Link makes it easy to change the parameters for manufacturing and processing different product versions and batches, even during CPU runtime, down to the sensor/actuator level. Easy, much more detailed diagnostics are also possible down to the sensor or actuator, including remote diagnostics.

The CM 8xIO-Link enables direct connection of up to 8 IO-Link devices directly to SIMATIC S7-1500 and ET 200MP. This makes external stations unnecessary.

This results in savings on wiring, engineering and commissioning, because everything can be configured centrally with the CPU.

Design

- Fastening to the S7-1500 DIN rail with a single screw
- 40-pole front connector, optionally with screw terminals or push-in terminals
- Front connector with expandable cable compartment
- Included in the scope of supply:
  - One U connector
  - Front door

Function

Overview of functions

- Suitable for connecting up to 8 IO-Link devices (three-wire connection) or 8 standard sensors
- IO-Link master according to IO-Link specification V1.1
- Data transmission rates COM1 (4.8 kBd), COM2 (38.4 kBd), COM3 (230.4 kBd)
- Parameterizable diagnostics can be set for each channel
- Master backup with "IO_Link_MASTER_8" function block
- Replacement of the IO-Link device (for V1.1 devices only)
- Support for firmware updating of IO-Link devices
- Variable address range for I/O data with up to 240 byte inputs and 240 byte outputs;
  expansion limits:
  - Max. 32 bytes of input data and 32 bytes of output data per port
  - Max. 240 bytes of input data and 240 bytes of output data per module
- Port Qualifier Information (PQI)
- IO-Link port configuration with S7-PCT
- IO-Link port configuration with STEP 7 or GSD (without S7-PCT)
- Standard system functions of SIMATIC ET 200MP:
  - Identification and maintenance data IM0
  - Firmware update
  - Unequivocal, front-side module inscription

Configuration

The SIMATIC S7-1500 IO-Link master of the S7-1500 can be conveniently configured using the graphical user interface in the free S7 Port Configuration Tool (S7-PCT, V3.5 and higher, SP1).

In addition to this configuration, commissioning without S7-PCT is also possible. In this case, the port is configured by means of either the TIA Portal or GSD file. The following port modes are supported:

- Operation in "IO-Link autostart" mode (default)
- Operation in "IO-Link manual" mode
- Operation as DI
- Deactivated

Selection and ordering data

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
6ES7547-1JF00-0AB0	**CM 8xIO-Link communications module** Communications module for connecting up to 8 IO-Link devices (three-wire connection) or 8 standard sensors	**6ES7547-1JF00-0AB0**		1	1 unit	219

For more information, see https://mall.industry.siemens.com/mall/en/ww/Catalog/Products/10355273.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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IO-Link master module for S7-1200 > SM 1278 4xIO-Link master

Overview

SM 1278 4xIO-Link master

Module for connecting up to four IO-Link devices in accordance with the IO-Link specification V1.1. The IO-Link parameters are configured by means of the Port Configuration Tool (PCT) with version V3.2 and higher.

Application

The SM 1278 module enables an exchange of data with up to four external IO-Link devices through one three-wire cable each or four standard actuators or standard encoders. Control can be flexibly adapted to the communication partners using the comprehensive parameter assignment options. Since IO-Link is compatible with standard sensors, commercially available sensors compliant with IEC 61131 Type 1 can also be operated on the IO-Link master.

Design

- Expansion limits
  - Cable length: Max. 20 m
  - Max. 32 bytes of input data and 32 bytes of output data per port
  - Max. 32 bytes of input data and 32 bytes of output data per module

LED displays

- DIAG: Operating state display (green/red) of the module
- C1..C4: Port status display (green) for ports 1, 2, 3 and 4
- Q1..Q4: Channel status display (green) for ports 1, 2, 3 and 4
- F1..F4: Port error display (red) for ports 1, 2, 3 and 4

Depending on the CPU type used, up to 8 SM 1278 units can be used on one S7-1200 CPU.

Function

Supported functions

- I&M identification data
- Firmware update
- SIO Mode (standard IO mode)
- IO-Link parameter assignment with the S7-PCT interface configuration tool, TIA Portal from V13 and an S7-1200 CPU V4.0 or higher

Supported data transmission rates

- COM1 (4.8 kBd)
- COM2 (38.4 kBd)
- COM3 (230.4 kBd)

Selection and ordering data

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
6ES7278-4BD32-0XB0	**SM 1278 4xIO-Link master signal module** For connecting up to four IO-Link devices in accordance with the IO-Link specification V1.1	**6ES7278-4BD32-0XB0**		1	1 unit	212

Accessories

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
6ES7292-1AG30-0XA0	**Terminal block (spare part)** 7-pole, tin-plated; 4 units					
	• Screw terminals	**6ES7292-1AG30-0XA0**		1	4 units	212
	• Push-in terminals	**6ES7292-2AG30-0XA0**		1	4 units	212

For more information, see https://mall.industry.siemens.com/mall/en/ww/Catalog/Products/10231178.

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Overview

CM 4xIO-Link

- CM 4xIO-Link communications module
  Serial communications module for connecting up to four IO-Link devices in accordance with the IO-Link specification V1.0 and V1.1. The IO-Link parameters are configured by means of the Port Configuration Tool (PCT) with version V3.0 and higher.
- Time-based IO
  Time-based IO ensures that signals are output with a precisely defined response time. By combination of inputs and outputs, products passing by, for example, can be measured exactly or liquids can be perfectly dosed.
- Supported data transmission rates
  - COM1 (4.8 kBd)
  - COM2 (38.4 kBd)
  - COM3 (230.4 kBd)
- Expansion limits
  - Cable length: Max. 20 m
  - Max. 32 bytes of input data and 32 bytes of output data per port
  - Max. 144 bytes of input data and 128 bytes of output data per module
- ET 200SP system functions supported
  - Exchange of IO-Link device parameters (V1.1 devices only) and of IO-Link master parameters without a PG including automatic backup recovery without an engineering tool by means of redundant parameter storage on the e-coding element
  - Reparameterization during ongoing operation
  - I&M identification data
  - Firmware update
  - PROFIenergy
- Can be plugged onto type A0 BaseUnits (BU) with automatic e-coding
- LED displays
  - DIAG: Operating state display (green/red) of the module
  - C1..C4: Port status display (green) for ports 1, 2, 3 and 4
  - Q1..Q4: Channel status display (green) for ports 1, 2, 3 and 4
  - F1..F4: Port error display (red) for ports 1, 2, 3 and 4
  - PWR: Supply voltage display (green)
- Informative front-side module inscription
  - Plain-text marking of the module type and function class
  - 2D matrix code (article and serial number)
  - Circuit diagram
  - CM module class color coding: Silver
  - Hardware and firmware version
  - Complete article number
- Optional accessories
  - Labeling strips
  - Reference identification label
  - Color-coded label with color code CC04
- Optional system-integrated shield connection

Application

- The CM 4xIO-Link communications module enables an exchange of data with up to 4 external IO-Link devices through one three-wire cable each.
- Control can be flexibly adapted to the communication partners using the comprehensive parameter assignment options.
- Since IO-Link is compatible with standard sensors, commercially available sensors compliant with IEC 61131 Type 1 can also be operated on the IO-Link master.

Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
CM 4xIO-Link V1.1 Standard communications module • Serial communications module for connecting up to 4 IO-Link devices, time-based IO, BU type A0, color code CC04	**6ES7137-6BD00-0BA0**		1	1 unit	255

6ES7137-6BD00-0BA0

For more information, see https://mall.industry.siemens.com/mall/en/ww/Catalog/Products/10205200.

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IO-Link master module for ET 200pro > 4 IO-Link HF

Overview

4 IO-LINK HF

- 45-mm-wide 4 IO-Link HF solid-state module
- 4 IO-Link ports according to IO-Link specification V1.1
- Port class B
- The IO-Link parameters are configured using the Port Configuration Tool (S7-PCT), version V3.4 and higher

Application

The 4 IO-Link HF solid-state module enables the exchange of data with up to 4 IO-Link devices.

Since IO-Link is compatible with standard sensors, commercially available sensors compliant with IEC 61131 Type 1 can also be operated on the IO-Link master.

Design

The 4 IO-Link HF solid-state module is used together with the CM IO-LINK 4 X M12 P connection module. Sensors and actuators are integrated using commercially available 3- or 5-pole M12 plugs on the CM IO-Link 4 X M12 P.

IO-Link devices (e.g. sensors) with a class A port are interconnected by means of a three-wire cable. IO-Link devices that require an additional supply voltage and have a class B port (e.g. actuators) are interconnected by means of a five-wire cable.

Selection and ordering data

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
6ES7147-4JD00-0AB0	**4 IO-Link HF solid-state module** • 4 IO-Link ports according to IO-Link specification V1.1 • Port class B • High Feature • Channel diagnostics • Including bus module • Connection module must be ordered separately	**6ES7147-4JD00-0AB0**		1	1 unit	250

Accessories

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
CM IO-LINK 4 X M12 P connection module 4 M12 sockets for connection of IO-Link devices to ET 200pro 4 IO-Link HF solid-state module	**6ES7194-4CA20-0AA0**		1	1 unit	250
Module labeling plates For color coding of CM IOs in the colors white, red, blue and green; pack of 100	**6ES7194-4HA00-0AA0**		1	500 units	250
M12 sealing caps For protection of unused M12 terminals on ET 200pro	**3RX9802-0AA00**		100	10 units	42C

For more information, see https://mall.industry.siemens.com/mall/en/ww/Catalog/Products/10304039.

* You can order this quantity or a multiple thereof.
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Overview

ET 200eco PN IO-Link master modules

IO-Link master with 2 x M12-L coded power connector and 45-mm width

- IO-Link communications modules for connecting up to 8 IO-Link devices
- IO-Link master with 4 x port class A and 4 x port class B and additional 4 digital inputs
- The IO-Link specifications V1.0 and V1.1 are supported.

IO-Link master with 2 x M12-A coded power connector and 30-mm width

- IO-Link communications modules for connecting up to 4 IO-Link devices
- IO-Link master with 4 x port class B
- The IO-Link specifications V1.0 and V1.1 are supported.

IO-Link master with 2 x M12-A coded power connector and 60-mm width

- IO-Link communications modules for connecting up to 4 IO-Link devices
- IO-Link master with 4 x port class A and additional 8 digital inputs and 4 digital outputs
- The IO-Link specification V1.0 is supported.

Application

IO-Link enables easy integration of sensors and actuators from different manufacturers. ET200eco PN IO-Link master I/O devices enable an exchange of data with up to 4 or 8 IO-Link devices.

IO-Link devices (e.g. sensors) with a class A port are interconnected by means of a three-wire cable. IO-Link devices that require an additional supply voltage and have a class B port (e.g. actuators) are interconnected by means of a five-wire cable.

Since IO-Link is compatible with standard sensors, commercially available sensors compliant with IEC 61131 Type 1 can also be operated on the IO-Link master.

With a high degree of protection, ruggedness and small dimensions, the IO-Link master I/O devices are especially well-suited for use at the machine level in confined spaces. They have adjustable parameters and diagnostics functions and can therefore be flexibly adapted to individual process requirements.

Function

In addition to the general functions of the ET 200eco PN I/O system, the IO-Link masters according to the IO-Link specification V1.1 have some further functions:

- Supported data transmission rates of the IO-Link communication
  - COM1 (4.8 kBd)
  - COM2 (38.4 kBd)
  - COM3 (230.4 kBd)
- Expansion limits
  - Cable length to the IO-Link device: Max. 20 m
  - Max. 32 bytes of input data and 32 bytes of output data per IO-Link port
- Automatic backup of device parameters when the IO-Link device is replaced (V1.1 devices only)
- Reparameterization of the device during operation using a PLC function block
- Master backup using a PLC function block
- Support for firmware updates of IO-Link devices
- Configuration using a GSD file or S7-PCT

Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
ET_200eco PN IO-Link master					
• 4 IO-L + 8 DI + 4 DO, 24 V DC/1.3 A; 8 x M12, degree of protection IP67, enclosure width 60 mm; for connecting up to 4 IO-Link devices according to IO-Link specification V1.0 and port class A as well as an additional 8 digital inputs and 4 digital outputs	**6ES7148-6JA00-0AB0**		1	1 unit	257
• 4 IO-L; 4 x M12, degree of protection IP67, enclosure width 30 mm; for connecting up to 4 IO-Link devices according to IO-Link specifications V1.0 and V1.1 and port class B	**6ES7148-6JD00-0AB0**		1	1 unit	257
• 8 IO-L + 4 DI 24 V DC; 8 x M12, degree of protection IP67, enclosure width 45 mm; for connecting up to 8 IO-Link devices according to IO-Link specifications V1.0 and V1.1, 4 x port class A + 4 x port class B as well as an additional 4 digital inputs	**6ES7148-6JG00-0BB0**		1	1 unit	257

6ES7148-6J.00-0.B0

For more information, see https://mall.industry.siemens.com/mall/en/ww/Catalog/Products/10370454.

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IO-Link master module for ET 200AL > CM IO-Link

Overview

CM IO-Link communications module

- CM IO-Link communications module, 30 mm wide
- For connecting up to 4 IO-Link devices in accordance with the IO-Link specifications V1.0 and V1.1 and port class B
- The IO-Link parameters are configured by means of the S7-PCT Port Configuration Tool with version V3.2 and higher.

Application

The CM IO-Link communications module supports data exchange between up to four IO-Link devices. IO-Link devices (e.g. sensors) with a class A port are interconnected by means of a three-wire cable. IO-Link devices, which require an additional supply voltage and have a class B port (e.g. actuators), are interconnected by means of a five-wire cable.

Since IO-Link is compatible with standard sensors, commercially available sensors compliant with IEC 61131 Type 1 can also be operated on the IO-Link master.

The 30-mm-wide I/O modules are ideally suited for use in extremely confined spaces. They have adjustable parameters and diagnostics functions and can therefore be flexibly adapted to individual process requirements.

The following IO-Link masters are available:

- CM 4xIO-Link communications modules, 4XM12

Design

The I/O modules have a screw mounting hole at the front and side, and can be mounted in any position. As a result, they are extremely flexible to install on either a level surface or on aluminum mounting rails using sliding blocks.

The CM IO-Link communications module features:

- A backplane bus connection (ET connection) with M8 connection technology for connection to an interface module or other I/O modules
- A power supply connection with M8 connection technology with loop-through
- LED display for port status
- LED display for channel status in SIO mode
- LED display for module status (DIAG)
- LED display for load voltage 2L+ (PWR)
- Labeling plates for channel, module and slot identification
- Integrated cable tie holder
- Meaningful module inscription on front panel:
  - Plain text marking of module type
  - Interface marking
  - LED label
- Meaningful module inscription on side panel:
  - Article number, function level and FW version
  - 2D matrix code (article and serial number)
  - Pin assignments of all interfaces

Labeling plates for channel, module and slot identification are supplied with the modules. These labeling plates can be inscribed using commercially available inscription machines.

Function

- IO-Link master according to IO-Link specification V1.1
- 4 ports, class B type
- Supported data transmission rates
  - COM1 (4.8 kBd)
  - COM2 (38.4 kBd)
  - COM3 (230.4 kBd)
- Expansion limits
  - Cable length: Max. 20 m
  - Max. 32 bytes of input data and 32 bytes of output data per port
  - Max. 32 bytes of input data and 32 bytes of output data per module
- Automatic backup of device parameters when the IO-Link device is replaced (V1.1 devices only)
- Reparameterization during ongoing operation
- Standardized display and diagnostics concept:
  - Port status display (port activated or deactivated, green LED)
  - Channel status display for signal state in SIO mode (green LED)
  - Module status display (DIAG, red/green LED)
  - Display for monitoring the load voltage 2L+ (PWR, green LED)
- Supported functions:
  - Detailed module-level diagnostics and diagnostic interrupt
  - Identification and maintenance data IM0 ... IM3
  - Firmware update
  - PROFIenergy

Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
CM IO-Link CM 4x IO-Link, 4x M12; for connecting up to 4 IO-Link devices in accordance with the IO-Link specifications V1.0 and V1.1 and port class B	**6ES7147-5JD00-0BA0**		1	1 unit	254

6ES7147-5JD00-0BA0

For more information, see https://mall.industry.siemens.com/mall/en/ww/Catalog/Products/10233997.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

IO-Link I/O modules

The IO-Link communication standard enables and standardizes communication between machine and plant control systems on one hand and sensors, actuators and other field devices on the other.

The IO-Link I/O modules permit simple connection of binary standard sensors and actuators and the signals and power supply are transmitted via IO-Link (IO-Link master).

The IO-Link IO modules can be connected to any IO-Link master and distributed I/O units that are independent of the fieldbus can be built. The universal deployability of the IO-Link DIQ I/O modules provides additional versatility.

With the ET 200AL IO-Link I/O modules, a rounded portfolio of digital input, digital output and digital input/output modules is available in the design and with the ET 200AL system features.

Application

IO-Link can provide advantages as a communications system, e.g. when complex sensors and actuators are to be used. These IO-Link devices can be connected via an IO-Link master and be integrated into the automation system with reduced effort, e.g. for cabling.

If such an IO-Link master is available, further binary sensor/actuator signals can be integrated in the field via the IO-Link I/O modules without great effort. IO-Link masters can be expanded with the IO-Link I/O modules to form a modular I/O station, with which distributed signals can be detected and output in the plant or machine.

The following IO-Link I/O modules are available:

- IO-Link, digital input module DI 8 x 24 V DC, 8 x M8
- IO-Link, digital input module DI 16 x 24 V DC, 8 x M12
- IO-Link, digital output module DQ 8 x 24 V DC/2 A, 8 x M12
- IO-Link, digital input/output module DIQ 4+DQ 4 x 24 V DC/0.5 A
- IO-Link, digital input/output module DIQ 16 x 24 V DC/0.5 A

Function

- Standardized display and diagnostics concept:
  - Channel status display for signal status log. "0" and log. "1" (green LED)
  - Module status display (DIAG, red/green LED)
  - Display for monitoring the load voltage 2L+ (PWR, green LED, only modules with outputs)
- Supported functions:
  - Channel-specific parameterization
  - Detailed module-level diagnostics and diagnostic interrupt
  - Safety-related tripping of digital outputs according to IEC 62061 (SILCL2) and ISO 13849-1 (Cat 3/PL d)
  - IO-Link V1.1
  - Support for the "general profile" of IO-Link
  - Firmware update

Engineering

The engineering of the IO-Link I/O modules is performed via IO-Link engineering of the relevant IO-Link master. For this purpose, one device description file (IODD) per IO-Link I/O module is provided.

Selection and ordering data

6ES714.-5..00-0BL0

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IO-Link, digital input modules					
Degree of protection IP67					
• DI 8 x 24 V DC, 8 x M8	**6ES7141-5BF00-0BL0**		1	1 unit	250
• DI 16 x 24 V DC, 8 x M12	**6ES7141-5AH00-0BL0**		1	1 unit	250
IO-Link, digital output modules					
Degree of protection IP67					
• DQ 8 x 24 V DC/2 A, 8 x M12	**6ES7142-5AF00-0BL0**		1	1 unit	250
IO-Link, digital input/output modules					
Degree of protection IP67					
• DIQ 4+DQ 4 x 24 V DC/0.5 A, 8 x M8	**6ES7143-5BF00-0BL0**		1	1 unit	250
• DIQ 16 x 24 V DC/0.5 A, 8 x M12	**6ES7143-5AH00-0BL0**		1	1 unit	250

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Accessories

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
6XV1801-2C...	**Control connecting cables M12-180/M12-180** Flexible 5-core cable, assembled with an A-coded, 5-pole M12 plug and A-coded, 5-pole M12 socket, both ends with a straight cable outlet, for connecting IO-Link sensors/actuators					
	• Cable length 1 m	**6XV1801-2CH10**		1	1 unit	5K2
	• Cable length 5 m	**6XV1801-2CH50**		1	1 unit	5K2
	• Cable length 15 m	**6XV1801-2CN15**		1	1 unit	5K2
6XV1801-6GH50	**Power connecting cables M12-90/M12-90** Flexible 4-core power supply cable, assembled with an L-coded 4-pole M12 plug and L-coded, 4-pole M12 socket, both ends with 90° angled connectors, for the 24-V DC device power supply					
	• Cable length 5 m	**6XV1801-6GH50**		1	1 unit	5K1
3RK1902-4BA00-5AA0	**M12 connector** Can be assembled, for connecting actuators or sensors, 5-pole, screw connection, max. 0.75 mm², A-coded, max. 4 A					
	• Straight	**3RK1902-4BA00-5AA0**		1	1 unit	42D
3RK1902-4DA00-5AA0	• Angled	**3RK1902-4DA00-5AA0**		1	1 unit	42D
3RK1902-4H...-5AA0	**Control cable** Assembled at one end with 1 x M12 angled plug, 5-pole, 5 x 0.34 mm², A-coded, max. 4 A, PUR sheath, black					
	• Cable length 5 m	**3RK1902-4HB50-5AA0**		1	1 unit	42D
	• Cable length 10 m	**3RK1902-4HC01-5AA0**		1	1 unit	42D
3RK1901-1KA00	**AS-Interface sealing caps**					
	• For free M12 sockets	**3RK1901-1KA00**		100	10 units	42C
3RK1901-1PN00	• For free M8 sockets	**3RK1901-1PN00**		100	10 units	42C

For more information, see https://mall.industry.siemens.com/mall/en/ww/Catalog/Products/10383153.

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Illustrations are approximate

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Price groups
PG 41B, 41E, 41H, 42F

3/2 **Introduction**

Power contactors for switching motors
3/8 General data
3/18 SIRIUS 3RT contactors, 3-pole up to 250 kW
Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays
3/69 - General data
3/81 - Auxiliary switches, instantaneous NEW
3/95 - Auxiliary switches, delayed
3/97 - Surge suppressors
3/99 - Modules for contactor control
3/104 - Link modules
3/109 - Connection modules/adapters
3/112 - Covers
3/113 - Miscellaneous accessories
Spare parts for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays
3/116 - Solenoid coils
3/119 - Contacts and arc chutes
3/120 SIRIUS 3RT12 and 3TF6 vacuum contactors
3/133 Accessories and spare parts for SIRIUS 3RT12 and 3TF6 vacuum contactors
3/138 3TG10 power relays/miniature contactors

Reversing contactor assemblies
3/142 SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW
3/153 Reversing contactor assemblies consisting of SIRIUS 3RT1 and 3TF6 contactors, up to 335 kW

Contactor assemblies for star-delta (wye-delta) starting
3/158 SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW
3/171 Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT and 3TF6 contactors, up to 710 kW

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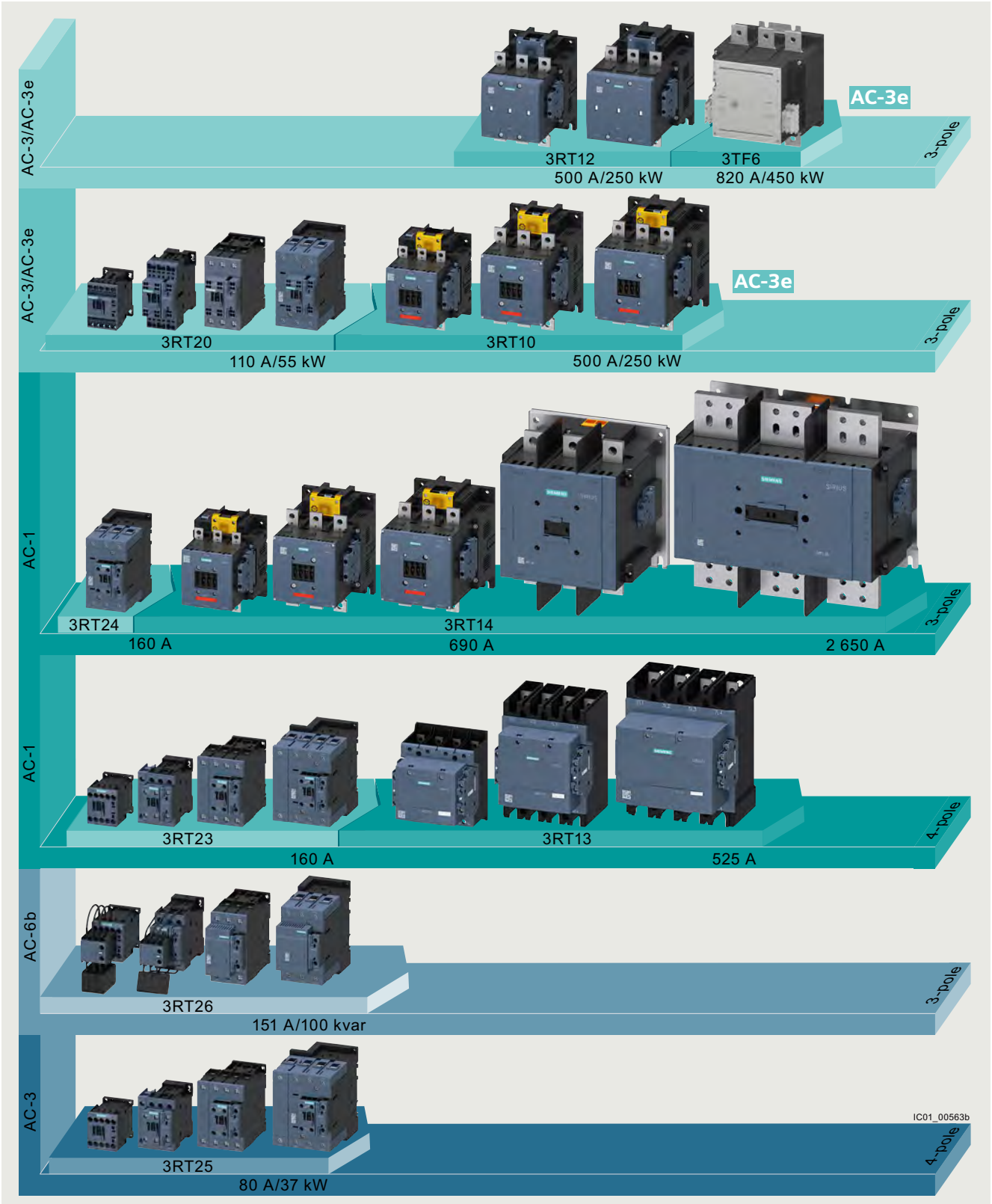
Overview



Overview of the 3RT and 3TF contactors

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More information

Homepage, see www.siemens.com/sirius
Industry Mall, see www.siemens.com/product?3RT_3TK_3TC
Conversion tool, see www.siemens.com/conversion-tool
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=Contactor

Size		**S00**				**S0**					
Type		3RT201				3RT202					
3RT20 contactors											
Type		**3RT2015**	**3RT2016**	**3RT2017**	**3RT2018**	**3RT2023**	**3RT2024**	**3RT2025**	**3RT2026**	**3RT2027**	**3RT2028**
AC, DC operation		(p. 3/47, 3/52 ... 3/55)				(p. 3/48, 3/49, 3/56 ... 3/58, 3/60)					
AC-3 and AC-3e											
I_e/AC-3/AC-3e/400 V	A	7	9	12	16	9	12	17	25	32	38
400 V	**kW**	**3**	**4**	**5.5**	**7.5**	**4**	**5.5**	**7.5**	**11**	**15**	**18.5**
230 V	kW	1.5	2.2	3	4	2.2	3	4	5.5	7.5	11
500 V	kW	6	7.7	9.2	12.4	9	12	17	18	32	32
690 V	kW	4	5.5	5.5	7.5	7.5	7.5	11	11	18.5	18.5
1 000 V	kW	--	--	--	--	--	--	--	--	--	--
AC-4 (at I_a = 6 x I_e)											
400 V	**kW**	**3**	**4**	**4**	**5.5**	**4**	**5.5**	**7.5**	**7.5**	**11**	**11**
400 V (200 000 operating cycles)	kW	1.15	2	2	2.5	2	2.6	3.5	4.4	6	6
AC-1 (40 °C, ≤ 690 V)											
I_e	**A**	**18**	**22**	**22**	**22**	**40**	**40**	**40**	**40**	**50**	**50**
Accessories for contactors											
Auxiliary switches	• On the front	**3RH29, 3RA28**			(p. 3/87 ... 3/95)	**3RH29, 3RA28**					(p. 3/87 ... 3/95)
	• Lateral	**3RH29**			(p. 3/91 ... 3/94)	**3RH29**					(p. 3/91 ... 3/94)
Function modules	• Direct-on-line starting, star-delta (wye-delta) starting	**3RA281.**			(p. 3/100)	**3RA281.**					(p. 3/100)
	• IO-Link, AS-Interface	**3RA271.-.AA00**			(p. 3/101, 3/102)	**3RA271.-.AA00**					(p. 3/101, 3/102)
Surge suppressors		**3RT2916**			(p. 3/97, 3/98)	**3RT2926**					(p. 3/97, 3/98)
3RU2 and 3RB3 overload relays											
3RU thermal overload relays		**3RU2116**	0.11 ... 16 A		(p. 7/89)	**3RU2126**	1.8 ... 40 A				(p. 7/89)
3RB electronic overload relays											
• For standard applications		**3RB3016, 3RB3113**	0.1 ... 16 A		(p. 7/102 ... 7/104)	**3RB3026, 3RB3123**	0.1 ... 40 A				(p. 7/102 ... 7/104)
• For High-Feature applications		**3RB22, 3RB23 and 3RB24 with current measuring module**			(p. 7/125, 7/133)	**3RB22, 3RB23 and 3RB24 with current measuring module**					(p. 7/125, 7/133)
		3RB2906-2.G1	0.3 ... 25 A		(p. 7/137)	**3RB2906-2.G1**	0.3 ... 25 A				(p. 7/137)
3RV20 motor starter protectors											
Motor starter protectors		**3RV2011**	0.11 ... 16 A		(p. 7/27)	**3RV2021**	0.45 ... 40 A				(p. 7/28)
Link modules		**3RA1921, 3RA2911**			(p. 7/61)	**3RA2921**					(p. 7/61)
3RA23 reversing contactor assemblies											
Complete units	Type	**3RA2315**	**3RA2316**	**3RA2317**	**3RA2318**	**--**	**3RA2324**	**3RA2325**	**3RA2326**	**3RA2327**	**3RA2328**
		(p. 3/149)					(p. 3/150)				
400 V	**kW**	**3**	**4**	**5.5**	**7.5**		**5.5**	**7.5**	**11**	**15**	**18.5**
Assembly kits/wiring modules		**3RA2913-2AA.**			(p. 3/104)	**--**	**3RA2923-2AA.**				(p. 3/104)
Function modules		**3RA271.-.BA00**			(p. 3/101)	**--**	**3RA271.-.BA00**				(p. 3/101)
3RA24 contactor assemblies for star-delta (wye-delta) starting											
Complete units	Type	**3RA2415**	**3RA2416**	**3RA2417**		**3RA2423**		**3RA2425**	**3RA2426**		
		(p. 3/167)				(p. 3/168)					
400 V	**kW**	**5.5**	**7.5**	**11**		**11**		**15/18.5**	**22**		
Assembly kits/wiring modules		**3RA2913-2BB.**			(p. 3/105)	**3RA2923-2BB.**					(p. 3/105)
Function modules		**3RA271.-.CA00**			(p. 3/101)	**3RA271.-.CA00**					(p. 3/101)

Note:

Safety characteristics for contactors, see "Standards and approvals", page 16/9.

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Introduction

Size		**S2**				**S3**		
Type		3RT203				3RT204		
3RT20 contactors								
Type		**3RT2035**	**3RT2036**	**3RT2037**	**3RT2038**	**3RT2045**	**3RT2046**	**3RT2047**
AC, DC operation		(p. 3/50, 3/59, 3/61)				(p. 3/51, 3/59, 3/63)		
AC-3 and AC-3e								
I_e/AC-3/AC-3e/400 V	A	41	50	65	80	80	95	110
400 V	**kW**	**18.5**	**22**	**30**	**37**	**37**	**45**	**55**
230 V	kW	11	15	18.5	22	22	22	30
500 V	kW	41	51	65	80	80	95	110
690 V	kW	22	22	37	45	55	75	90
1 000 V	kW	--	--	--	--	37	37	37
AC-4 (at I_a = 6 x I_e)								
400 V	**kW**	**18.5**	**22**	**30**	**37**	**37**	**45**	**55**
400 V (200 000 operating cycles)	kW	11.6	12.6	14.7	15.8	17.9	22	24.3
AC-1 (40 °C, ≤ 690 V)								
I_e	**A**	**60**	**70**	**80**	**90**	**125**	**130**	**130**
Accessories for contactors								
Auxiliary switches • On the front		**3RH29, 3RA28**			(p. 3/87 ... 3/95)	**3RH29, 3RA28**		(p. 3/87 ... 3/95)
Auxiliary switches • Lateral		**3RH29**			(p. 3/91 ... 3/94)	**3RH29**		(p. 3/91 ... 3/94)
Function modules • Direct-on-line starting		**3RA283.**			(p. 3/100)	**3RA283.**		(p. 3/100)
Function modules • IO-Link, AS-Interface		**3RA271.-.AA00**			(p. 3/101, 3/102)	**3RA271.-.AA00**		(p. 3/101, 3/102)
Surge suppressors		**3RT2936**			(p. 3/97, 3/98)	**3RT2936, 3RT2946**		(p. 3/97, 3/98)
Terminal covers		**3RT2936-4EA2**			(p. 3/112)	**3RT2946-4EA2**		(p. 3/112)
3RU2 and 3RB overload relays								
3RU thermal overload relays		**3RU2136**	11 ... 80 A		(p. 7/90)	**3RU2146**	28 ... 100 A	(p. 7/90)
3RB electronic overload relays								
• For standard applications		**3RB3036, 3RB3133**	12.5 ... 80 A		(p. 7/102 ... 7/104)	**3RB3046, 3RB3143**	12.5 ... 115 A	(p. 7/102 ... 7/104)
• For High-Feature applications		**3RB22, 3RB23 and 3RB24**			(p. 7/125, 7/133)	**3RB22, 3RB23 and 3RB24**		(p. 7/125, 7/133)
		with current measuring module 3RB2906-2JG1	10 ... 100 A		(p. 7/137)	**with current measuring module 3RB2906-2JG1**	10 ... 100 A	(p. 7/137)
3RV20 motor starter protectors								
Motor starter protectors		**3RV2031, 3RV2032**		9.5 ... 80 A	(p. 7/30)	**3RV2041, 3RV2042**	28 ... 100 A	(p. 7/30)
Link modules		**3RA2931**			(p. 7/61)	**3RA1941**		(p. 7/61)
3RA23 reversing contactor assemblies								
Complete units	Type	**3RA2335** (p. 3/151)	**3RA2336**	**3RA2337**	**3RA2338**	**3RA2345** (p. 3/152)	**3RA2346**	**3RA2347**
400 V	**kW**	**18.5**	**22**	**30**	**37**	**37**	**45**	**55**
Assembly kits/wiring modules		**3RA2933-2AA.**			(p. 3/104)	**3RA2943-2AA.**		(p. 3/104)
Function modules		**3RA271.-.BA00**			(p. 3/101)	**3RA271.-.BA00**		(p. 3/101)
Mechanical interlocks		**3RA2934-2B**			(p. 3/108)	**3RA2934-2B**		(p. 3/108)
3RA24 contactor assemblies for star-delta (wye-delta) starting								
Complete units	Type	**3RA2434** (p. 3/169)	**3RA2435**	**3RA2436**	**3RA2437**	**3RA2444** (p. 3/170)	**3RA2445**	**3RA2446**
400 V	**kW**	**22/30**	**37**	**45**	**55**	**55**	**75**	**90**
Assembly kits/wiring modules		**3RA2933-2BB./-2C**			(p. 3/105)	**3RA2943-2BB./-2C**		(p. 3/105)
Function modules		**3RA271.-.CA00**			(p. 3/101)	**3RA271.-.CA00**		(p. 3/101)

Note:

Safety characteristics for contactors, see "Standards and approvals", page 16/9.

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Size		**S6**			**S10**			**S12**	
Type		3RT105			3RT1.6			3RT1.7	
3RT10 contactors · 3RT12 vacuum contactors									
Type		**3RT1054**	**3RT1055**	**3RT1056**	**3RT1064**	**3RT1065**	**3RT1066**	**3RT1075**	**3RT1076**
AC, DC operation		(p. 3/64 ... 3/66)			(p. 3/64 ... 3/66)			(p. 3/64 ... 3/66)	
Type		--	--	--	**3RT1264** (p. 3/130)	**3RT1265**	**3RT1266**	**3RT1275** (p. 3/130)	**3RT1276**
AC-3 and AC-3e									
I_e/AC-3/AC-3e/400 V	A	115	150	185	225	265	300	400	500
400 V	**kW**	**55**	**75**	**90**	**110**	**132**	**160**	**200**	**250**
230 V	kW	37	45	55	55	75	90	132	160
500 V	kW	75	90	132	160	160	200	250	315 (355)[1]
690 V	kW	110	132	160	On request	On request	On request	400	400 (500)[1]
1 000 V	kW	75	90	90	90 (315)[1]	132 (355)[1]	132 (400)[1]	250 (560)[1]	250 (710)[1]
AC-4 (at I_a = 6 x I_e)									
400 V	**kW**	**55**	**75**	**90**	**110**	**132**	**160**	**200**	**250**
400 V (200 000 operating cycles)	kW	29	38	45	54 (78)[1]	66 (93)[1]	71 (112)[1]	84 (140)[1]	98 (161)[1]
AC-1 (40 °C, ≤ 690 V)									
I_e	**A**	**160**	**185**	**215**	**275 (330)**[1]	**330**	**330**	**430 (610)**[1]	**610**
3RT14 AC-1 contactors									
Type		**3RT1456** (p. 4/17, 4/18)			**3RT1466**	**3RT1467** (p. 4/17, 4/18)		**3RT1476**	
I_e/AC-1/40 °C/≤ 690 V	**A**	**275**			**400**	**500**		**690**	
Accessories for contactors									
Auxiliary switches • On the front		**3RH19, 3RT1926** (p. 3/90, 3/96)							
Auxiliary switches • Lateral		**3RH19** (p. 3/92 ... 3/94)							
Surge suppressors		**3RT1956-1C** (RC element) (p. 3/98)							
Terminal covers		**3RT1956-4EA.** (p. 3/112)			**3RT1966-4EA.** (p. 3/112)				
Box terminal blocks		**3RT1955-4G, 3RT1956-4G** (p. 3/110)			**3RT1966-4G** (p. 3/110)				
3RB2 overload relays									
3RB electronic overload relays									
• For standard applications		**3RB2056** 50 ... 200 A (p. 7/114, 7/115) **3RB2153** 50 ... 200 A (p. 7/116)			**3RB2066** 55 ... 250 A or 160 ... 630 A **3RB2163** 55 ... 250 A or 160 ... 630 A				
• For High-Feature applications		**3RB22, 3RB23 and 3RB24 with current measuring module 3RB2956-2TH2** 20 ... 200 A (p. 7/125, 7/133) (p. 7/137)			**3RB22, 3RB23 and 3RB24 with current measuring module 3RB2966-2WH2** 63 ... 630 A (p. 7/125, 7/133) (p. 7/137)				
3VA2 molded case motor starter protectors									
Molded case motor starter protectors		(See Catalog LV 10)							
• for 3RT10		**3VA21**	**3VA22**	**3VA22**	**3VA23**	**3VA23**	**3VA24**	**3VA24**	**3VA25**
• for 3RT12		**3VA21**	**3VA22**	**3VA22**	**3VA23**	**3VA23**	**3VA24**	**3VA24**	**3VA25**
Reversing contactor assemblies[2]									
Complete units	Type	--							
400 V	**kW**	**55**	**75**	**90**	**110**	**132**	**160**	**200**	**250**
Assembly kits/wiring modules		**3RA1953-2A** (p. 3/104)			**3RA1963-2A** (p. 3/104)			**3RA1973-2A**	(p. 3/104)
Mechanical interlocks		**3RA1954-2A** (p. 3/108)							
Contactor assemblies for star-delta (wye-delta) starting[2]									
Complete units	Type	--							
400 V	**kW**	--							
Assembly kits/wiring modules		**3RA1953-2B** (p. 3/106)			**3RA1963-2B** (p. 3/106)			**3RA1973-2B**	(p. 3/106)

[1] Value applies for 3RT12 contactors.

[2] Contactor assemblies for customer assembly:
- Reversing contactor assemblies, see pages 3/154 to 3/156,
- Contactor assemblies for star-delta (wye-delta) starting, see pages 3/172 to 3/177.

Note:

Safety characteristics for contactors, see "Standards and approvals", page 16/9.

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Introduction

Size		**14**	**14**
Type		3TF68	3TF69
3TF68/3TF69 vacuum contactors			
Type		**3TF68** (p. 3/131, 3/132)	**3TF69** (p. 3/131, 3/132)
AC-3 and AC-3e			
I_e/AC-3/AC-3e/690 V	A	630	820 (630)[1]
400 V	**kW**	**335**	**450 (335)**[1]
230 V	kW	200	260 (200)[1]
690 V	kW	600	800 (600)[1]
1 000 V	kW	600	800
AC-4 (at $I_a = 6 \times I_e$)			
400 V	**kW**	**355**	**400**
400 V (200 000 operating cycles)	kW	168	191
AC-1 (40 °C, ≤ 690 V)			
I_e	**A**	**700**	**910**
Accessories for contactors			
Auxiliary switches			
• Lateral		**3TY7561**	(p. 3/133)
Surge suppressors		**3TX7572**	(p. 3/134)
Terminal covers		**3TX7686, 3TX7696**	(p. 3/134)
3RB2 overload relays			
3RB electronic overload relays			
• For standard applications		**3RB2066, 3RB2163** 55 ... 250 A or 160 ... 630 A (p. 7/114, 7/115) (p. 7/116)	**3RB22, 3RB23 and 3RB24 with current measuring module 3RB2906-2.G1 with 3UF series transformer up to 820 A** (p. 7/125, 7/133) (p. 7/137) 63 ... 820 A
• For High-Feature applications		**3RB22, 3RB23 and 3RB24 with current measuring module 3RB2966-2WH2** (p. 7/125, 7/133) (p. 7/137) 63 ... 630 A	
3VA2 molded case motor starter protectors			
Molded case motor starter protectors		**3VA25**	(See Catalog LV 10)
Reversing contactor assemblies[2]			
Complete units	Type	**--**	
400 V	**kW**	**335**	
Assembly kits/wiring modules		**3TX7680-1A**	(p. 3/135)
Mechanical interlocks		**3TX7686-1A**	(p. 3/135)
Contactor assemblies for star-delta (wye-delta) starting[2]			
Complete units	Type	**--**	
400 V	**kW**	**710**	
Assembly kits/wiring modules		**3TX7680-1B**	(p. 3/135)

[1] Value applies for utilization category AC-3e.

[2] Contactor assemblies for customer assembly:
- Reversing contactor assemblies, see page 3/157,
- Contactor assemblies for star-delta (wye-delta) starting, see page 3/178.

Note:

Safety characteristics for contactors, see "Standards and approvals", page 16/9.

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Type			3TG10
3TG10 power relays/miniature contactors			
Number of main contacts			4
AC, DC operation			(p. 3/138)
AC-1			
I_e at **400 V**	55 °C	**A**	**20**
***P* at 400 V**		**kW**	**13**
At 230 V		kW	7.5
AC-3			
I_e up to 400 V		A	8.4
***P* at 400 V**		**kW**	**4**
AC-3e			
I_e up to 400 V		A	6.4
***P* at 400 V**		**kW**	**3**

Connection methods

The 3RT contactors are available with screw terminals (box terminals or flat connectors) or with spring-loaded terminals.

The 3TG10 power relays/miniature contactors are available with screw terminals or flat connectors.

Screw terminals

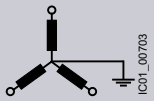
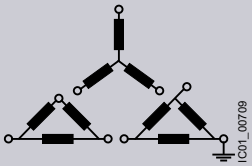
Spring-loaded terminals

Flat connectors

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Voltage data

The data for 3-phase power systems according to IEC 60947-4-1 are valid for the following line system configurations:

Voltage data U_e	**Line system configurations**	
	Three-phase four-wire systems 	**Three-phase three-wire systems** 
V	V	V
230	--	230
400	230/400	400
440	260/440	440
500	--	500
690	400/690	690 (only from size S3)
1 000	--	1 000

-- Not specified

Use of 3RT contactors, 3RT and 3TF vacuum contactors, reversing contactor assemblies, and contactor assemblies for star-delta (wye-delta) starting with IE3 and IE4 motors

Note:

For the use of 3RT contactors, 3RT and 3TF vacuum contactors, reversing contactor assemblies and contactor assemblies for star-delta (wye-delta) starting in conjunction with highly efficient IE3 and IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

For more information, see page 1/8.

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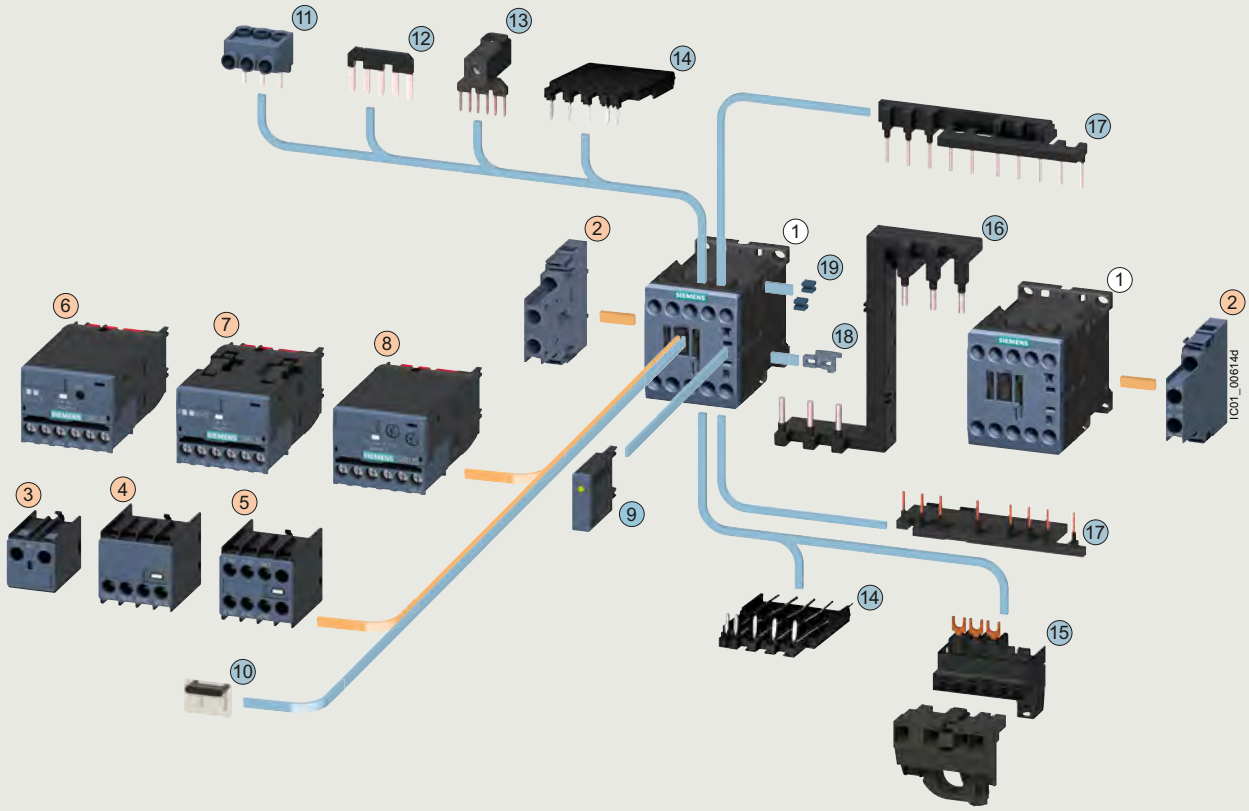
Overview

The SIRIUS family of controls

The SIRIUS modular system with its components for the switching, starting, protection and monitoring of motors and industrial systems stands for the fast, flexible and space-saving construction of control cabinets.

3RT2.1 contactors · Size S00 with mountable accessories

The figure shows the version with screw terminals



(1) Contactor, size S00

(2) 2-pole auxiliary switch, laterally mountable
(3) 1-pole auxiliary switch, for snapping onto the front, cable entry from the top
(4) 2-pole auxiliary switch, for snapping onto the front, cable entry from the bottom
(5) 4-pole auxiliary switch, for snapping onto the front
(6) 3RA27 function module for AS-Interface
(7) 3RA27 function module for IO-Link
(8) 3RA28 function module
(9) Surge suppressor with/without LED
(10) Cover, sealable
(11) 3-phase infeed terminal

(12) Star jumper, 3-pole, without connecting terminal
(13) Link for paralleling, 3-pole, with connecting terminal
(14) Solder pin adapter
(15) Connection module (adapter and connector) for contactors with screw terminals
(16) Safety main current connector for two contactors

Assembly kit 3RA2913-2AA1
Consisting of:
(17) Wiring modules on the top and bottom for connecting the main, auxiliary and control current paths, electrical interlock [1] included, interruptible (NC contact interlock)
(18) Mechanical interlocks [2]
(19) Two connecting clips for two contactors [2]

For contactors
For contactors and coupling contactors

[1] 3RT201. contactors with one NC contact in the basic unit are required for the electrical interlock. An additional NO contact is required for momentary-contact operation.

[2] The parts (18) and (19) can only be ordered together as 3RA2912-2H mechanical connectors.

Accessories and spare parts, see pages 3/69 to 3/119.

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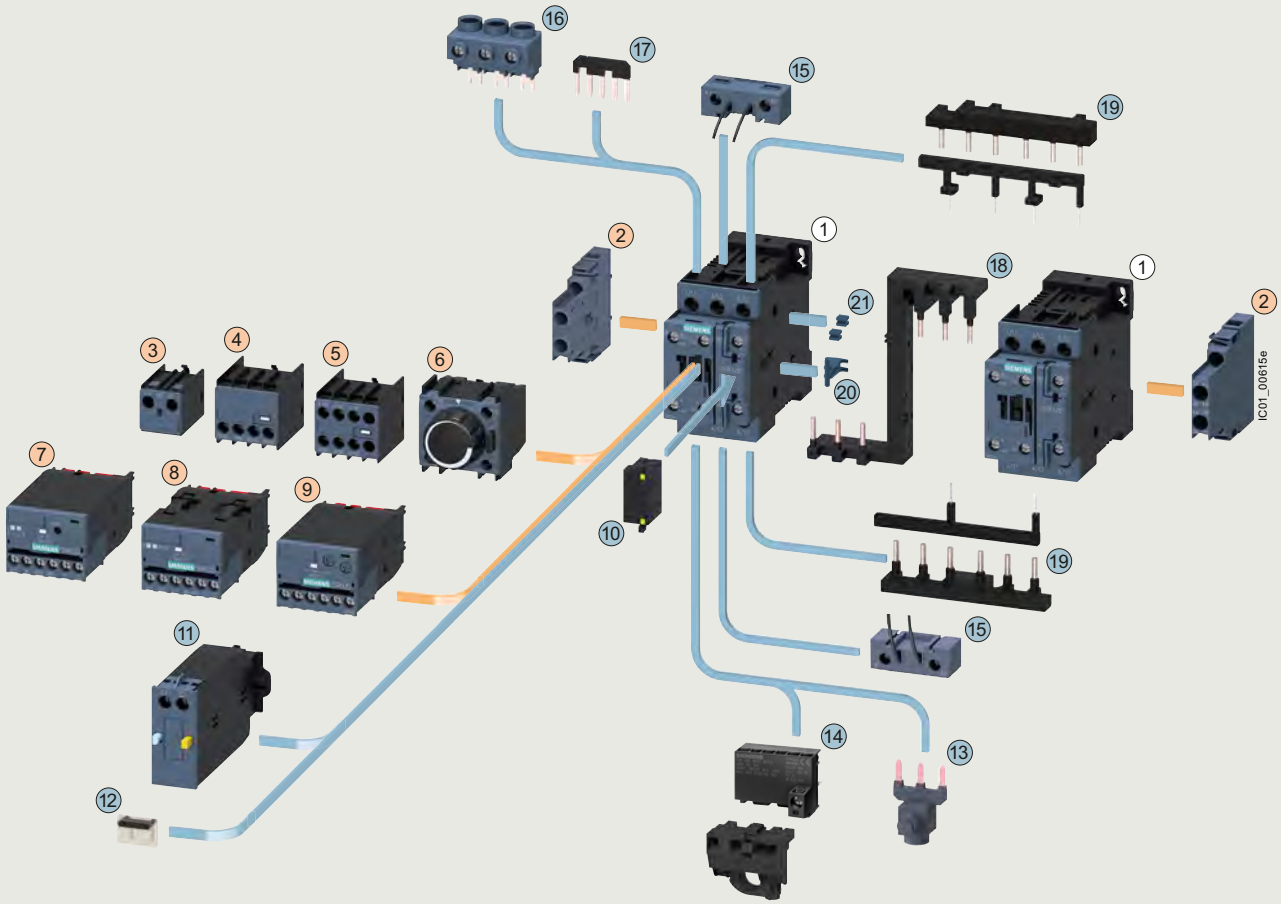
3RT2.2 contactors · Size S0 with mountable accessories

The figure shows the version with screw terminals



(1) Contactor, size S0

(2) 2-pole auxiliary switch, laterally mountable
(3) 1-pole auxiliary switch, for snapping onto the front cable entry from the top
(4) 2-pole auxiliary switch, for snapping onto the front cable entry from the bottom
(5) 4-pole auxiliary switch, for snapping onto the front
(6) Pneumatically delayed auxiliary switch
(7) 3RA27 function module for AS-Interface
(8) 3RA27 function module for IO-Link
(9) 3RA28 function module
(10) Surge suppressor with/without LED
(11) Mechanical latching block
(12) Cover, sealable

(13) Link for paralleling, 3-pole, with connecting terminal
(14) Connection module (adapter and plug) for contactors with screw terminals
(15) Coil connection module, on the top or bottom
(16) 3-phase infeed terminal
(17) Link for paralleling (star jumper), 3-pole, without connecting terminal
(18) Safety main current connector for two contactors

Assembly kit 3RA2923-2AA1
Consisting of:
(19) Wiring modules on the top and bottom for connecting the main current paths, electrical interlock included (NC contact interlock)
(20) Mechanical interlocks [1)]
(21) Two connecting clips for two contactors [1)]

For contactors
For contactors and coupling contactors

[1)] The parts (20) and (21) can only be ordered together as 3RA2922-2H mechanical connectors.

Accessories and spare parts, see pages 3/69 to 3/119.

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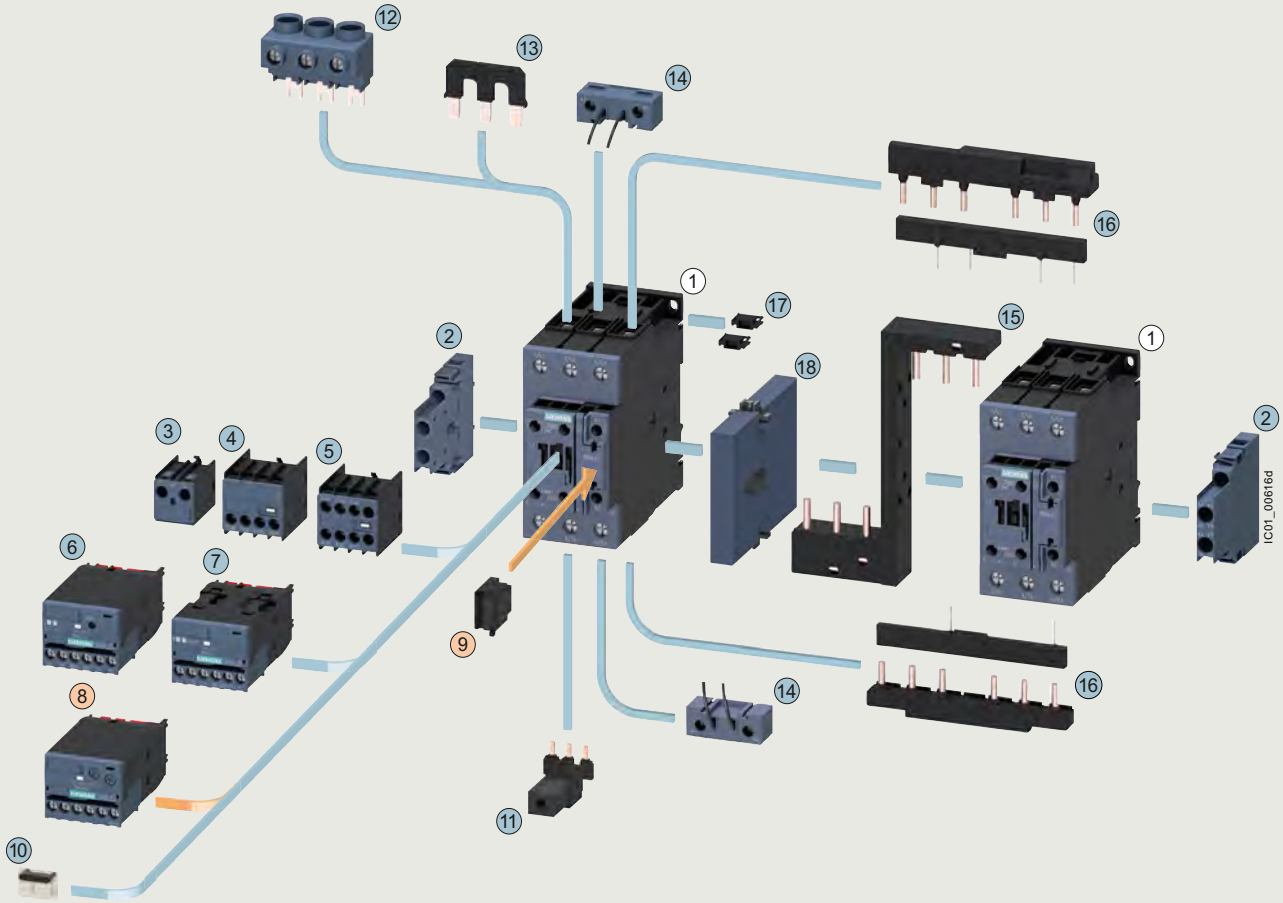
General data

3RT2.3 contactors · Size S2 with mountable accessories

The figure shows the version with screw terminals



① Contactor, size S2

② 2-pole auxiliary switch, laterally mountable
③ 1-pole auxiliary switch, for snapping onto the front, cable entry from the top
④ 2-pole auxiliary switch, for snapping onto the front, cable entry from the bottom
⑤ 4-pole auxiliary switch, for snapping onto the front
⑥ 3RA27 function module for AS-Interface
⑦ 3RA27 function module for IO-Link
⑧ 3RA28 function module
⑨ Surge suppressor with/without LED
⑩ Cover, sealable
⑪ Link for paralleling, 3-pole, with connecting terminal
⑫ 3-phase infeed terminal
⑬ Link for paralleling (star jumper), 3-pole, without connecting terminal
⑭ Coil connection module, top or bottom
⑮ Safety main current connector for two contactors

Assembly kit 3RA2933-2AA1
Consisting of:
⑯ Wiring modules on the top and bottom for connecting the main current paths, electrical interlock included (NC contact interlock)
⑰ Two connecting clips for two contactors

To be ordered separately:
⑱ Mechanical interlocks

For contactors
For contactors and coupling contactors

Accessories and spare parts, see pages 3/69 to 3/119.

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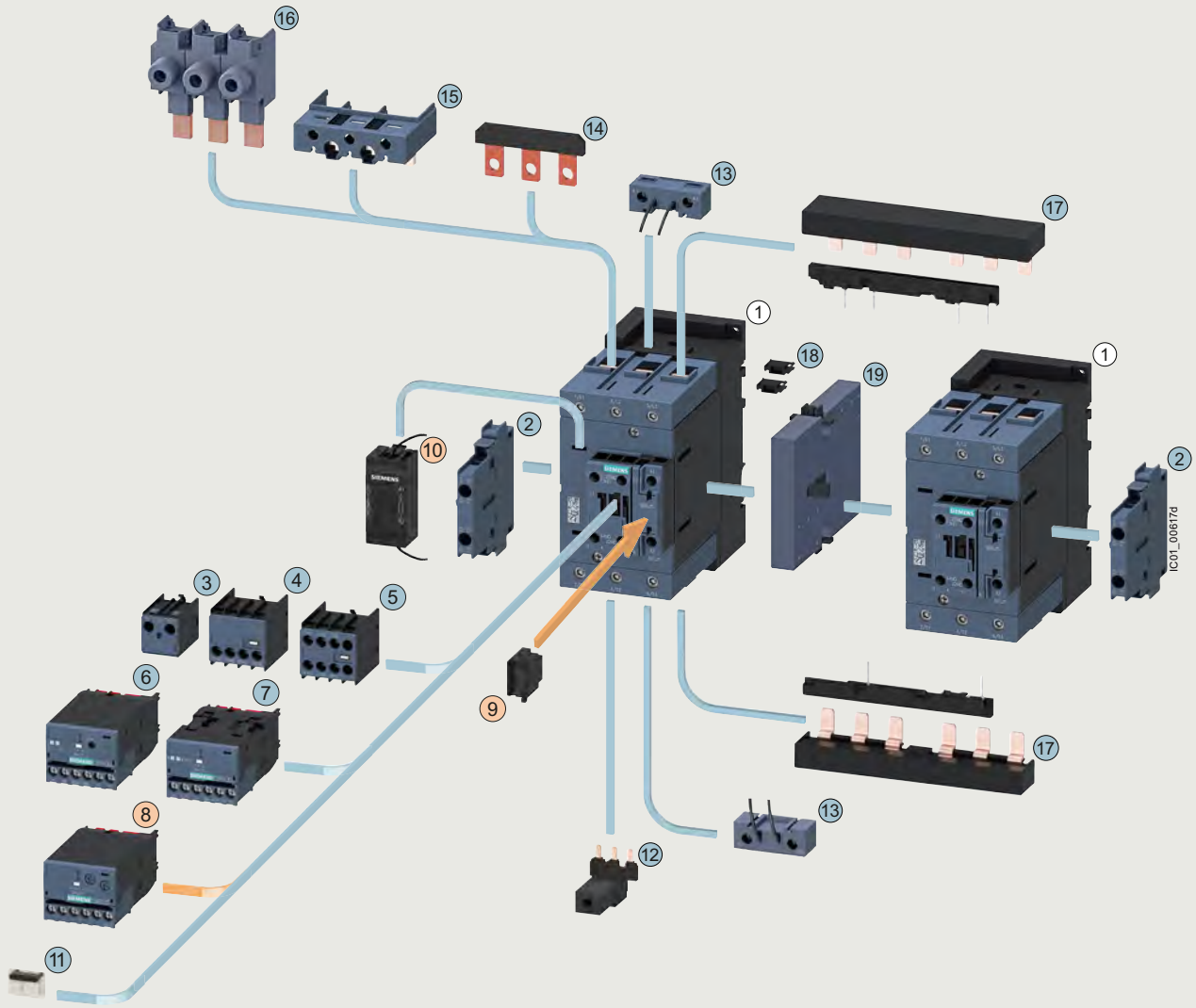
3RT2.4 contactors · Size S3 with mountable accessories

The figure shows the version with screw terminals



(1) Contactor, size S3

(2) 2-pole auxiliary switch, laterally mountable
(3) 1-pole auxiliary switch, for snapping onto the front, cable entry from the top
(4) 2-pole auxiliary switch, for snapping onto the front, cable entry from the bottom
(5) 4-pole auxiliary switch, for snapping onto the front
(6) 3RA27 function module for AS-Interface
(7) 3RA27 function module for IO-Link
(8) 3RA28 function module
(9) Surge suppressor with/without LED (Varistor, diode assembly), can be plugged in on the front
(10) Surge suppressor without LED (RC element), can be plugged in on the front in the recesses on the left next to the connection block
(11) Cover, sealable

(12) Links for paralleling, 3-pole, with connecting terminal
(13) Coil connection module, top or bottom
(14) Links for paralleling (star jumper), 3-pole, without connecting terminal
(15) Auxiliary conductor terminal, 3-pole
(16) Single-phase infeed terminals (3 units)

Assembly kit 3RA2943-2AA1
Consisting of:
(17) Wiring modules on the top and bottom for connecting the main, auxiliary and control current paths, electrical interlock[1] included, interruptible (NC contact interlock)
(18) Two connectors for two contactors

To be ordered separately:
(19) Mechanical interlock

[1] 3RT201. contactors with one NC contact in the basic unit are required for the electrical interlock. An additional NO contact is required for momentary-contact operation.

For contactors
For contactors and coupling contactors

Accessories and spare parts, see pages 3/69 to 3/119.

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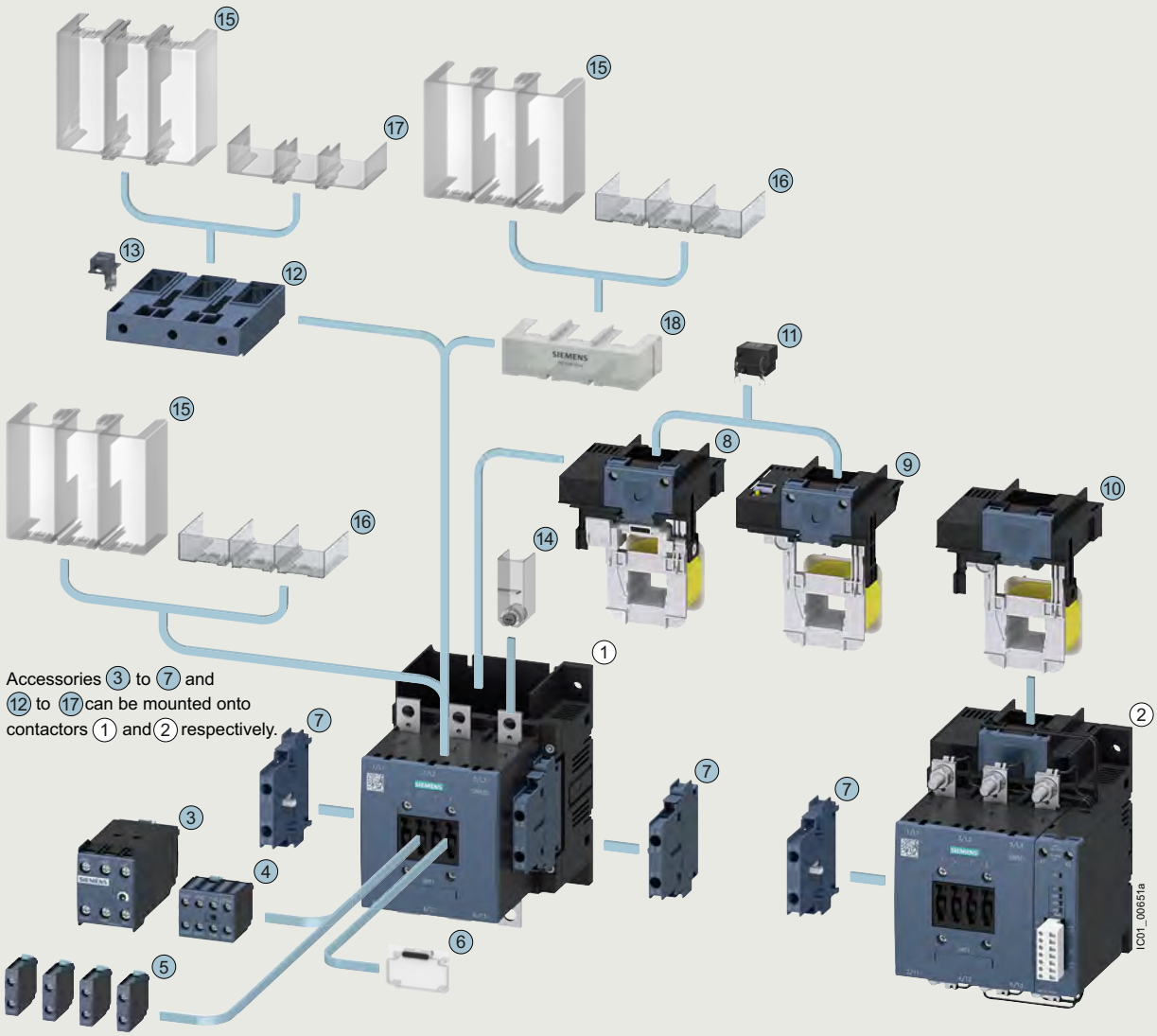
General data

3RT105 and 3RT145 contactors · Size S6 with mountable accessories



1 3RT105 and 3RT145 air-break contactors, size S6 (version without withdrawable coil)

2 3RT105.-.P and 3RT145.-.P air-break contactors with solid-state operating mechanism and remaining lifetime indicator, size S6 (version with withdrawable coil and laterally mountable add-on module)

Can be mounted onto the front of contactors 1 and 2

3 3RT1926: Auxiliary switch, electronically delayed (ON-delay or OFF-delay or star-delta (wye-delta) starting)

4 3RH192: 4-pole auxiliary switch

5 3RH192: 1-pole auxiliary switch (max. four can be snapped on)

6 3RT1926-4MA10: Cover, sealable

Can be mounted onto the side of contactors 1 and 2

7 3RH192: 2-pole auxiliary switch

Can be inserted in top of contactors

8 3RT1955-5A.3.: Withdrawable coil, standard operating mechanism

9 3RT1955-5N.3.: Withdrawable coil, solid-state operating mechanism

10 3RT1955-5P.3.: Withdrawable coil, solid-state operating mechanism and remaining lifetime indicator

Can be plugged onto the top of contactor operating mechanisms 8 and 9

11 3RT1956-1C: Surge suppressor (RC element)

Can be mounted onto the top or bottom on busbars or box terminals of contactors 1 and 2

12 3RT1956-4G: Box terminal block

13 3TX7500-0A: Auxiliary conductor terminal, 1-pole

14 3TX6526-3B: Terminal cover (can be screwed on), covers one busbar connection

15 3RT1956-4EA1: Terminal cover for busbar connection and on box terminal

16 3RT1956-4EA3: Terminal cover for busbar connection

17 3RT1956-4EA2: Terminal cover on box terminal

18 3RT1956-4EA4: Terminal cover for busbar connection, covers 15, 16 to 18 can be mounted

Accessories and spare parts, see pages 3/69 to 3/119.

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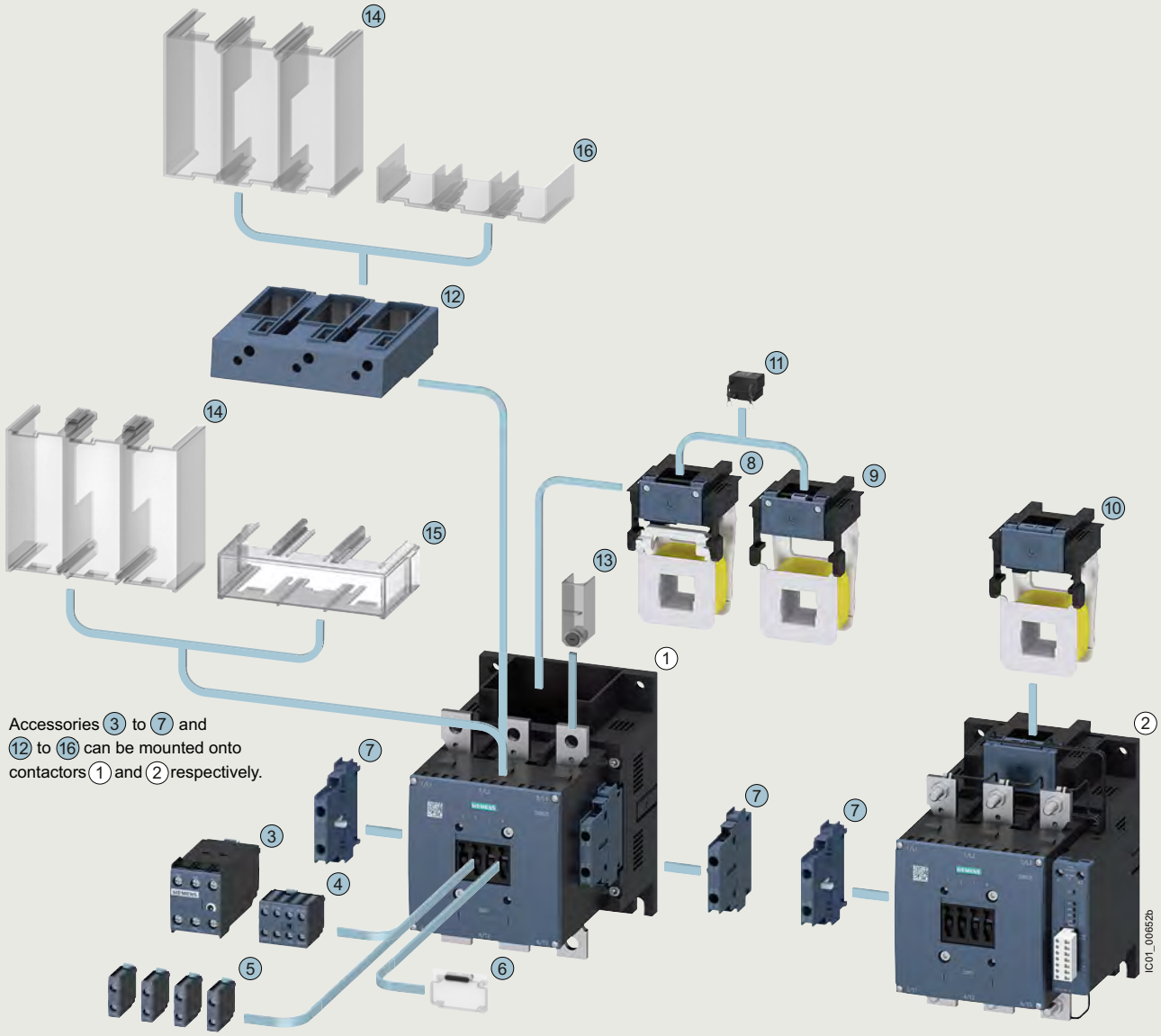
3RT106 and 3RT146 contactors · Size S10 with mountable accessories



(1) 3RT106 and 3RT146 air-break contactors, size S10 (version without withdrawable coil)

(2) 3RT106.-.P and 3RT146.-.P air-break contactors with solid-state operating mechanism and remaining lifetime indicator, size S10 (version with withdrawable coil and laterally mountable add-on module)

Can be mounted onto the front of contactors (1) and (2)

(3) 3RT1926: Auxiliary switch, electronically delayed (ON-delay or OFF-delay or star-delta (wye-delta) starting)

(4) 3RH192: 4-pole auxiliary switch

(5) 3RH192: 1-pole auxiliary switch (max. four can be snapped on)

(6) 3RT1926-4MA10: Cover, sealable

Can be mounted onto the side of contactors (1) and (2)

(7) 3RH192: 2-pole auxiliary switch

Can be inserted in the top of contactors

(8) 3RT1965-5A.3.: Withdrawable coil, standard operating mech.

(9) 3RT1965-5N.3.: Withdrawable coil, solid-state operating mech.

(10) 3RT1965-5P.3.: Withdrawable coil, solid-state operating mech. and remaining lifetime indicator

Can be plugged onto the top of contactor operating mechanisms (8) and (9)

(11) 3RT1956-1C: Surge suppressor (RC element)

Can be mounted at the top or bottom on busbars or box terminals of contactors (1) and (2)

(12) 3RT1966-4G: Box terminal block

(13) 3TX6546-3B: Terminal cover (can be screwed on), covers one busbar connection

(14) 3RT1966-4EA1: Terminal cover for busbar connection and on box terminal

(15) 3RT1966-4EA3: Terminal cover for busbar connection

(16) 3RT1966-4EA2: Terminal cover on box terminal

Accessories and spare parts, see pages 3/69 to 3/119.

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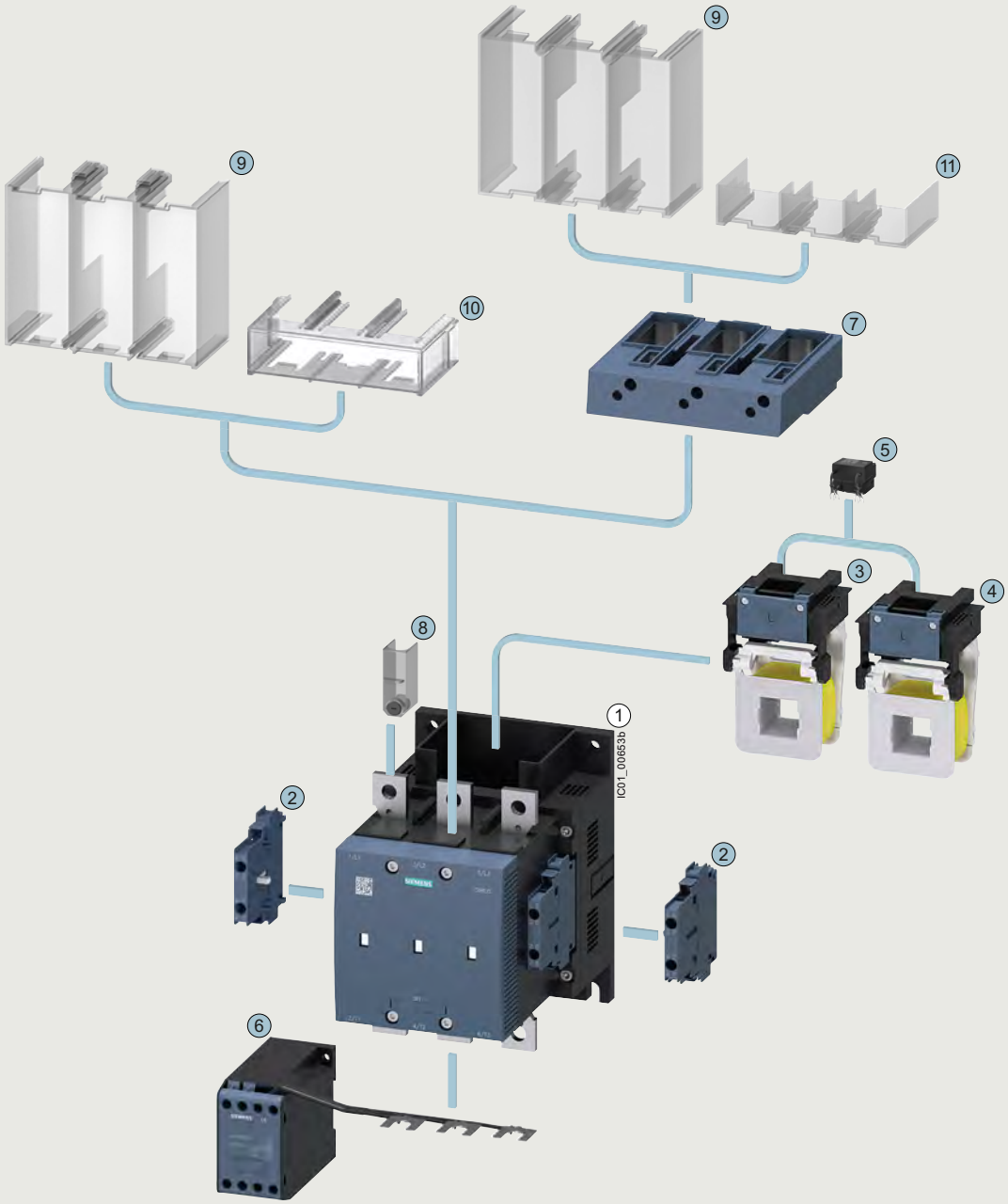
General data

3RT126 vacuum contactors · Size S10 with mountable accessories



(1) 3RT126 vacuum contactor, size S10 (version without withdrawable coil)

Can be mounted onto side of contactor

(2) 3RH192: 2-pole auxiliary switch

Can be inserted in top of contactor

(3) 3RT1966-5A.3.: Withdrawable coil, standard operating mechanism

(4) 3RT1966-5N.3.: Withdrawable coil, solid-state operating mechanism

Can be plugged onto top of contactor operating mechanisms

(5) 3RT1956-1C: Surge suppressor (RC element)

Can be mounted at bottom on busbars

(6) 3RT1966-1PV.: Main current path surge suppression module

Can be mounted onto the top or bottom on busbars or box terminals

(7) 3RT1966-4G: Box terminal block

(8) 3TX6546-3B: Terminal cover (can be screwed on), covers one busbar connection

(9) 3RT1966-4EA1: Terminal cover for busbar connection and on box terminal

(10) 3RT1966-4EA3: Terminal cover for busbar connection

(11) 3RT1966-4EA2: Terminal cover on box terminal

Accessories and spare parts, see pages 3/69 to 3/119 and 3/133 to 3/137.

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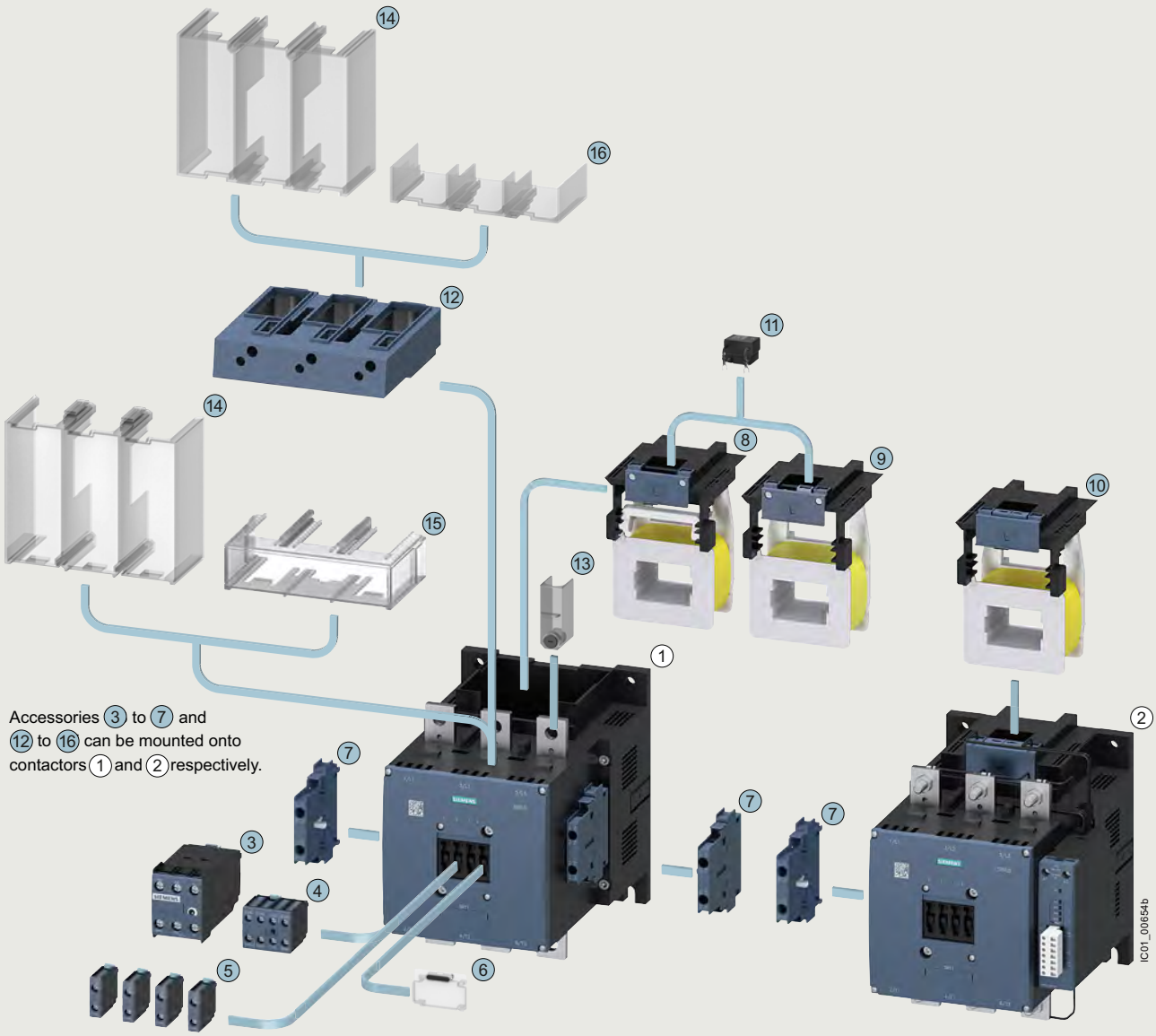
3RT107 and 3RT147 contactors · Size S12 with mountable accessories



1 3RT107 and 3RT147 air-break contactors, size S12 (version without withdrawable coil)

2 3RT107.-.P and 3RT147.-.P air-break contactors with solid-state operating mechanism and remaining lifetime indicator, size S12 (version with withdrawable coil and laterally mountable add-on module)

Can be mounted onto the front of contactors 1 and 2

3 3RT1926: Auxiliary switch, electronically delayed (ON-delay or OFF-delay or star-delta (wye-delta) starting)

4 3RH192: 4-pole auxiliary switch

5 3RH192: 1-pole auxiliary switch (max. four can be snapped on)

6 3RT1926-4MA10: Cover, sealable

Can be mounted onto the side of contactors 1 and 2

7 3RH192: 2-pole auxiliary switch

Can be inserted in top of contactors

8 3RT1975-5A.3.: Withdrawable coil, standard operating mech.

9 3RT1975-5N.3.: Withdrawable coil, solid-state operating mech.

10 3RT1975-5P.3.: Withdrawable coil, solid-state operating mech. and remaining lifetime indicator

Can be plugged onto top of contactor operating mechanisms 8 and 9

11 3RT1956-1C: Surge suppressor (RC element)

Can be mounted at the top or bottom on busbars or box terminals of contactors 1 and 2

12 3RT1966-4G: Box terminal block

13 3TX6546-3B: Terminal cover (can be screwed on), covers one busbar connection

14 3RT1966-4EA1: Terminal cover for busbar connection and on box terminal

15 3RT1966-4EA3: Terminal cover for busbar connection

16 3RT1966-4EA2: Terminal cover on box terminal

Accessories and spare parts, see pages 3/69 to 3/119.

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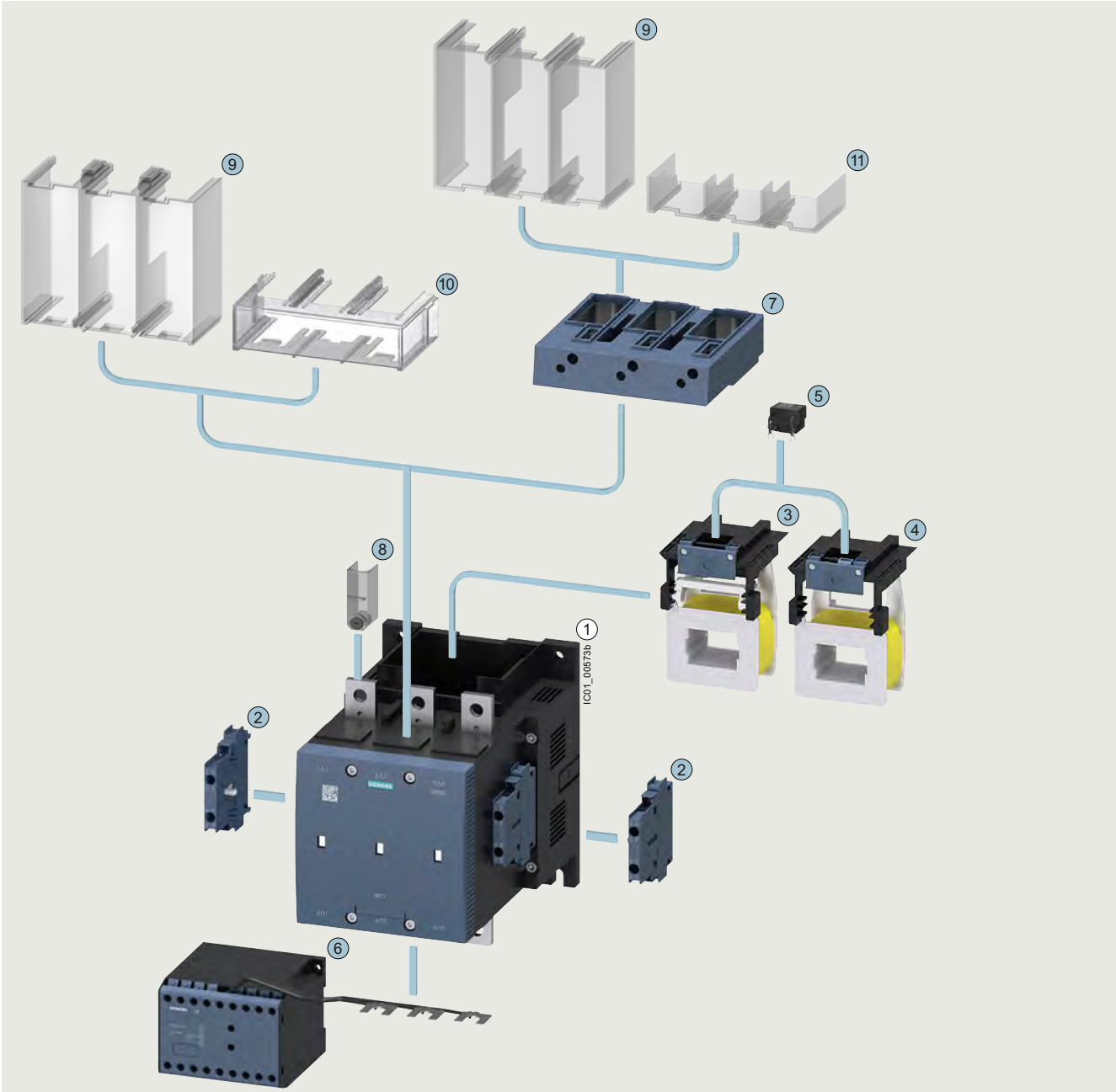
General data

3RT127 vacuum contactors · Size S12 with mountable accessories



(1) 3RT127 vacuum contactor, size S12
(version without withdrawable coil)

Can be mounted onto the side of contactor

(2) 3RH192: 2-pole auxiliary switch

Can be inserted in top of contactors

(3) 3RT1975-5A.3.: Withdrawable coil, standard operating mechanism
(4) 3RT1975-5N.3.: Withdrawable coil, solid-state operating mechanism

Can be plugged onto the top of contactor operating mechanisms

(5) 3RT1956-1C: Surge suppressor (RC element)

Can be mounted at bottom on busbars

(6) 3RT1966-1PV.: Main current path surge suppression module

Can be mounted at the top or bottom on busbars or box terminals

(7) 3RT1966-4G: Box terminal block
(8) 3TX6546-3B: Terminal cover (can be screwed on), covers one busbar connection
(9) 3RT1966-4EA1: Terminal cover for busbar connection and on box terminal
(10) 3RT1966-4EA3: Terminal cover for busbar connection
(11) 3RT1966-4EA2: Terminal cover on box terminal

Accessories and spare parts, see pages 3/69 to 3/119 and 3/133 to 3/137.

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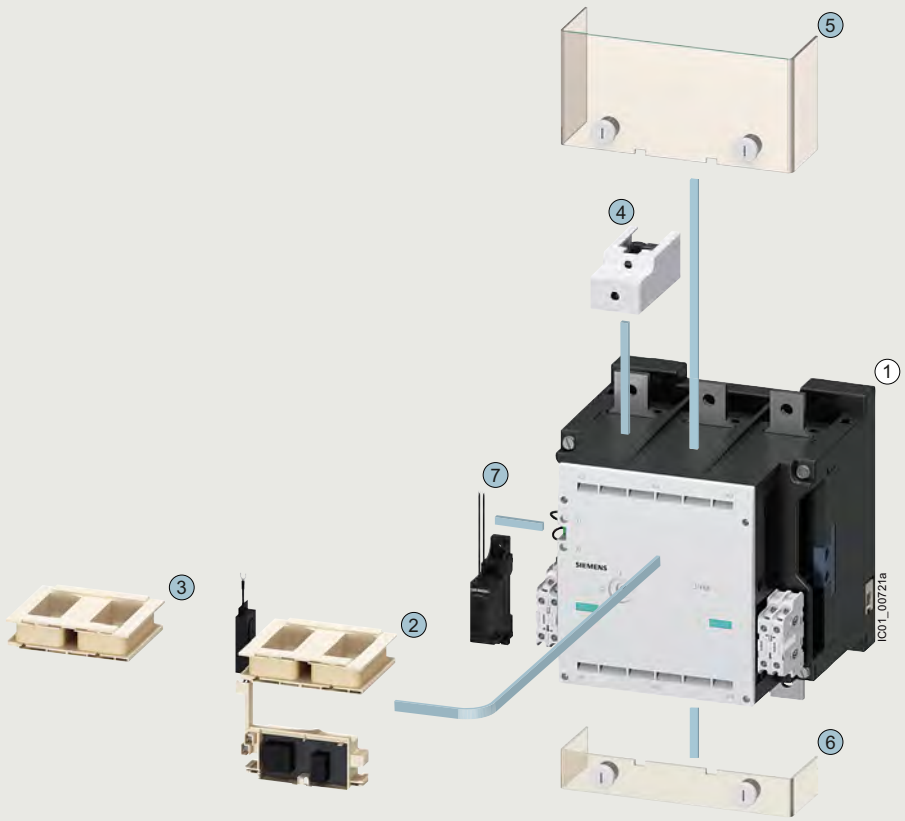
3TF68 and 3TF69 vacuum contactors · Size S14 with mountable accessories



(1) 3TF68 and 3TF69 vacuum contactors, size 14

Can be inserted or mounted on the front of the contactor (with the cover removed)

(2) Solenoid coils for AC operation, with switch-on electronics for contactor
3TF6844-.C: 3TY7683-0C.7
3TF6944-.C: 3TY7693-0C.7

(3) Solenoid coils for AC control supply voltage subject to strong interference
3TF6833-.Q: 3TY7683-0Q.7
3TF6933-.Q: 3TY7693-0Q.7

Solenoid coils for DC operation
3TF6833-.D: 3TY7683-0D.4

Can be mounted on the front from above or below on busbars

(4) Box terminal (1 set = 3 units)
3TF68: 3TX7570-1E
3TF69: 3TX7690-1F

(5) Terminal cover for busbar connection (1 set = 2 units), attached to the right and left busbar connection in each case
3TF68: 3TX7686-0A
3TF69: 3TX7696-0A

Can be mounted on the front of 3TF68 contactors from below on busbars

(6) Terminal cover for busbar connection (on outgoing side in combination with overload relay)
3TF68: 3TX7686-0B

Can be snapped onto the left-hand side of the auxiliary switches

(7) Surge suppressor (only with DC operation)
3TF6.33-.D: 3TX7572-3.

Accessories and spare parts, see pages 3/133 to 3/137.

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SIRIUS 3RT contactors, 3-pole up to 250 kW

Overview

Version	Size	Ratings of three-phase motors at 50 Hz and 400 V kW	Connection methods Screw terminals	 Spring-loaded terminals	Type	Page
Power contactors for switching motors						
AC operation						
Basic unit	S00	3 ... 7.5	✓	✓	3RT201.-.A0.	3/47
• With permanently mounted auxiliary switch			✓	✓	3RT201.-.AP04-3MA0	3/47
• With permanently mounted auxiliary switch and varistor plugged into the front			✓	✓	3RT201.-.CP04-3MA0	3/47
Basic unit	S0	4 ... 18.5	✓	✓	3RT202.-.A.00	3/48
• With removable auxiliary switch			✓	✓	3RT202.-.A.04	3/49
• With permanently mounted auxiliary switch and varistor plugged in			✓	✓	3RT202.-.CL24-3MA0	3/49
Basic unit	S2	18.5 ... 37	✓	✓	3RT203.-.A.00	3/50
• With removable auxiliary switch			✓	--	3RT203.-1A.04	3/50
• With permanently mounted auxiliary switch and integrated coil circuit			✓	✓	3RT203.-.CL24-3MA0	3/50
Basic unit	S3	37 ... 55	✓	✓	3RT20.-.A.00	3/51
• With removable auxiliary switch			✓	--	3RT204.-1A.04	3/51
• With permanently mounted auxiliary switch and integrated coil circuit			✓	--	3RT204.-1CL24-3MA0	3/51
DC operation						
Basic unit	S00	3 ... 7.5	✓	✓	3RT201.-.B.4.	3/52
• With integrated coil circuit			✓	✓	3RT201.-..B4.	3/52
• With permanently mounted auxiliary switch			✓	✓	3RT201.-.BB44-3MA0	3/53
• With permanently mounted auxiliary switch and integrated coil circuit			✓	✓	3RT201.-.FB44-3MA0	3/53
• With voltage tap-off			✓	✓	3RT201.-.BB4.-0CC0	3/53
Basic unit	S0	4 ... 18.5	✓	✓	3RT202.-.B.40	3/56
• With coil circuit plugged into front			✓	✓	3RT202.-..B40	3/56
• With removable auxiliary switch			✓	✓	3RT202.-.BB44	3/56
• With permanently mounted auxiliary switch and integrated coil circuit			✓	✓	3RT202.-..B44-3MA0	3/57
• With voltage tap-off			✓	✓	3RT202.-.BB40-0CC0	3/57
DC operation for direct control by PLC (coupling contactors)						
Basic unit	S00	3 ... 5.5	✓	✓	3RT201.-..B4.	3/54
Basic unit with integrated coil circuit	S00	3 ... 5.5	✓	✓	3RT201.-..B4.	3/54, 3/55
	S0	4 ... 15	✓	✓	3RT202.-.KB40	3/58
	S2	18.5 ... 37	✓	✓	3RT203.-.KB40	3/59
	S3	37 and 45	✓	✓	3RT204.-.KB40	3/59
AC/DC operation (50/60 Hz AC or DC)						
Basic unit with integrated coil circuit	S0	5.5 ... 18.5	✓	✓	3RT202.-.N.30	3/60
Basic unit with integrated coil circuit	S2	18.5 ... 37	✓	✓	3RT203.-.N.30	3/61
• With removable auxiliary switch			✓	--	3RT203.-1N.34	3/61
• With permanently mounted auxiliary switch			✓	✓	3RT203.-.NB34-3MA0	3/61
• With voltage tap-off			✓	✓	3RT203.-.NB30-0CC0	3/61
• With fail-safe 24 V DC control signal input for safety-related applications up to SIL 3			✓	✓	3RT203.-.S.30	3/62
Basic unit with integrated coil circuit	S3	37 ... 55	✓	✓	3RT204.-.N.30	3/63
• With removable auxiliary switch			✓	--	3RT204.-1N.34	3/63
• With permanently mounted auxiliary switch			✓	✓	3RT204.-.NB34-3MA0	3/63
• With voltage tap-off			✓	✓	3RT204.-.NB30-0CC0	3/63
• With fail-safe 24 V DC control signal input for safety-related applications up to SIL 3			✓	✓	3RT204.-.S.30	3/62
Basic unit with integrated coil circuit						
• Standard operating mechanism for AC and DC operation	S6 ... S12	55 ... 250	✓[1]	✓	3RT10..-.A.36	3/64
• Solid-state operating mechanism with the option of control via a separate 24 V DC control signal input						
- Fail-safe control signal input for safety-related applications up to SIL 3	S6 ... S12	55 ... 250	✓[1]	--	3RT10..-.S.36	3/65
- Standard control signal input			✓[1]	✓	3RT10..-.N.36	3/66
- Standard control signal input, with remaining lifetime indicator (RLT)			✓[1]	--	3RT10..-.P.35	3/66

-- Version not possible

✓ Version possible

[1] Connection method:
- Main circuit: Busbar connection (optionally with box terminals),
- Auxiliary/control circuit: Screw terminals or spring-loaded terminals.

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Contactors with screw terminals: 3RT20 (sizes S00 to S3) and 3RT10 (sizes S6 to S12)

Our power range of contactors for switching IE2 motors and highly efficient IE3 and IE4 motors:

- Contactors,
  see pages 3/47 to 3/66:
  - Size S00: 3RT201 up to 7.5 kW
  - Size S0: 3RT202 up to 18.5 kW
  - Size S2: 3RT203 up to 37 kW
  - Size S3: 3RT204 up to 55 kW
  - Sizes S6 to S12: 3RT10 up to 250 kW
- Vacuum contactors,
  see page 3/120 onwards:
  - Sizes S10 and S12: 3RT12 up to 250 kW
  - Size 14: 3TF6 up to 450 kW

Standards

IEC 60947-1, IEC 60947-4-1, IEC 60947-5-1 (auxiliary switches)

Contactors with increased tamper protection

Increased tamper protection is ensured either by using our contactor versions with factory-installed, permanently mounted auxiliary switches protected against mechanical external actuation (e.g. 3RT20...-.....-3MA0 or 3RT10...-.....-3PA0 contactors), or by using the 3RT2916-4MA10 or 3RT1926-4MA10 sealable cover as an accessory (see page 3/112).

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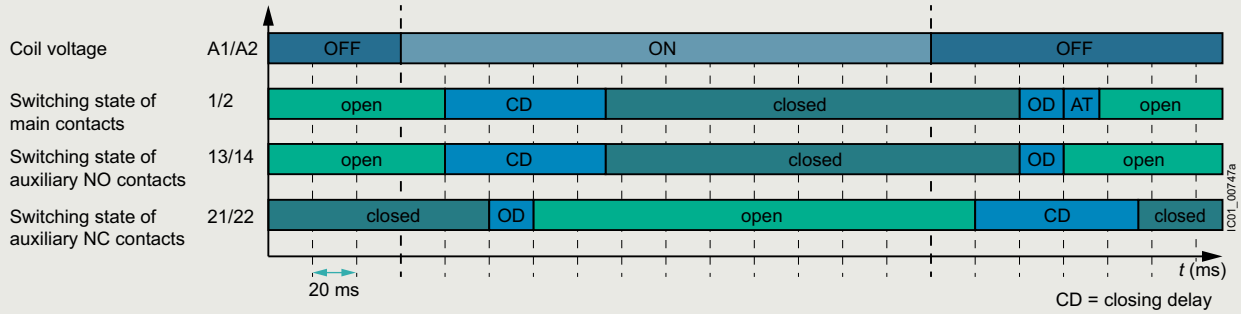
Operating times



Operation	Closing delay	Opening delay	Total break time = Opening delay + Arcing time 10 … 15 ms
AC	20 ... 95 ms	40 ... 60 ms	50 ... 75 ms
DC	20 ... 95 ms	40 ... 60 ms	50 ... 75 ms

Operating times using the example of contactor 3RT1054-1AB36

Protection of the device connections from short circuit, overload and overvoltage

Appropriate steps must always be taken to protect device connections from overload and short circuit. There are different constraints depending on the type of connection:

Protection of main terminals from short circuit and overload

For information about protection of a single contactor, see the technical product data sheet.

For more information on complete units such as contactors with overload relays or contactors with motor starter protectors as the motor feeder, see Configuration Manual for load feeders.

Protection of auxiliary connections from short circuit and overload

For information about protection of auxiliary contacts, see the technical product data sheet.

Protection of control supply voltage or supply voltage connections from short circuit and overload

First of all, the relevant standards and regulations for configuring control panels and the parts and components installed in them must be taken into account, for example when dimensioning the cables.

One possible protection for these circuits could be the selection of a suitable power supply, i.e. one with a current-limiting function. In the selection of the source and the connecting cable, the load characteristics of the contactor must be considered (short-time inrush current peaks for solid-state contactor operating mechanisms, closing, closed).

If there are further switching elements in the circuits, such as the auxiliary contact system of an overload relay that operates the contactor, the short-circuit protection necessary for this must also be considered.

For further recommendations, e.g. the use of miniature circuit breakers or circuit breakers for equipment in control circuits, see Control panel tip – Fast, reliable selection and dimensioning of an appropriate power supply unit.

Protection of contactors with digital input from short circuit and overload

For the PLC input types according to IEC 60947-4-1 these inputs have a typical rated current of 20 mA. These inputs can be protected accordingly.

- Contactors with PLC and F-PLC inputs:
  - For 3RT10..-.P marked with IN+/IN-
  - For 3RT10..-.S, -.N and 3RT20..-.S marked with +/-
- Supply voltage connections A1 - A2:
  - For 3RT10..-.N, -.P and 3RT20..-.S, protection should be provided on the basis of the load characteristics. For information about power consumption, see the technical product data sheet.
  - For 3RT10..-.S, protection is already integrated.

Protection of other connections from short circuit and overload

The contactor version 3RT10..-.P with remaining lifetime indicator (RLT) has additional connections H1 - H2 and R1 - R2.

If A1 - A2 is already protected, further protection of H1 - H2 is not required.

For information about protection of R1 - R2, see the technical product data sheet.

Overvoltage protection at the control supply voltage connection

3RT20 contactors supplied without a coil circuit can be retrofitted with RC elements, varistors, diodes or diode assemblies (combination of diode and Zener diode for short break times) for damping switching overvoltages in the coil and can be ordered separately as accessories, see page 3/97 onwards.

The 3RT10 contactors are already equipped with coil damping (varistor).

Note:

The break times of the contactor, the opening delay times of the NO contacts and the closing delay times of the NC contacts increase with damping.

For more detailed information about how damping affects the time response, see Equipment Manual.

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Connection methods

Main circuit

- 3RT201 and 3RT202 contactors:
  Screw terminals or spring-loaded terminals;
  spring-loaded terminals with convenient plug-in design for device connectors
- 3RT203 and 3RT204 contactors:
  Screw terminals with box terminal;
  direct connection to the connecting bar is possible with cable lugs for 3RT204 when the box terminal is removed.
- 3RT10 contactors:
  Screw terminals with connecting bars that the cables can be connected to using either cable lugs or flexible or rigid busbars. Alternatively, box terminals are available as accessories.

Auxiliary and control circuits

The 3RT contactors are available with screw terminals or spring-loaded terminals.

Electromagnetic compatibility

The contactors fulfill the requirements for environment category A.

Note:

When the contactors are used in an **environment with frequency converters**, the configuration notes must be observed, see Equipment Manual.

Contact reliability of the auxiliary contacts

If voltages ≤ 110 V and currents ≤ 100 mA are to be switched, the auxiliary contacts of the 3RT contactors or 3RH contactor relays should be used as they guarantee a high level of contact reliability.

These auxiliary contacts are particularly suitable for solid-state circuits with currents ≥ 1 mA at a voltage ≥ 17 V.

Motor protection

3RT20 contactors

For protection against overload, 3RU2 thermal overload relays (see page 7/89 onwards) or 3RB3 electronic overload relays (see page 7/102 onwards) can be mounted on the 3RT20 contactors.

3RT10 contactors

For protection against overload, 3RB2 electronic overload relays (see page 7/114 onwards) can be mounted on the 3RT10 contactors.

Plant and application monitoring

For monitoring and measuring in the application, 3RR2 monitoring relays can be mounted on the 3RT20 contactors (see page 10/47).

Contactors with voltage tap

The 3RT20 contactors with voltage tap-off are special versions for mounting the SIRIUS 3RA27 function modules for connection to the control system via IO-Link or AS-Interface (see page 3/73 onwards).

Without a function module, these contactors can be used like the standard versions.

For more information on IO-Link and AS-Interface, see "Industrial communication", page 2/1 onwards.

Operating mechanism types

3RT20 contactors

The standard versions are available with AC or DC operating mechanisms or as versions with a wide-range solid-state operating mechanism and a universal actuating voltage (AC or DC operation possible).

Versions with solid-state operating mechanisms for AC or DC operation with a fail-safe PLC input are also available for the 3RT203 and 3RT204 contactors.

Control takes place via the control supply voltage connection A1 - A2 with varying operating ranges (see the technical product data sheet for further details).

DC coupling contactors with reduced power consumption are also ideally suited for connection to the controller.

3RT10 contactors

The operating mechanisms are powered via a supply voltage with an operating range from 0.8 to 1.1 x U_s, optionally also controlled depending on the chosen mode of operation. Various rated voltage ranges are available for AC/DC control.

The following control and/or operating mechanism versions can be selected for contactors 3RT105 to 3RT107:

- 3RT10..-.A contactors:
  Standard operating mechanism for AC and DC operation (reduced power consumption when closing and in the closed state)
- Solid-state operating mechanisms:
  Overvoltage damping of the operating mechanism coil is already integrated in the electronics for contactors with solid-state operating mechanisms.
  The following versions are available:
  - 3RT10..-.N contactors:
    With two operating modes: Direct control or via PLC input (24 V DC)
  - 3RT10..-.P contactors:
    Control via PLC input (24 V DC) only, but with additional remaining lifetime indicator (RLT)
  - 3RT10..-.S contactors:
    Control via fail-safe PLC input (24 V DC) only, for simplification of safety applications (without mode of operation selection)

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Replacing solenoid coils, operating mechanisms or spare contacts

3RT20 contactors

Coil replacement is possible for contactors 3RT202 to 3RT204.

NOTICE:
Removal or changing of the operating mechanism or spare contacts is not permitted for 3RT20..-.S contactors with fail-safe control.

3RT10 contactors

The operating mechanisms for 3RT10..-.A/-.N/-.P contactors are removable and can be replaced simply by unlocking and pulling them out.

NOTICE:
Removal or changing of the operating mechanism is not permitted for 3RT10..-.S contactors with fail-safe control.

Fitting auxiliary contacts and mounting additional auxiliary switches

Features in the delivery state

- 3RT20 contactors:
  - 3RT201 contactors:
    An auxiliary contact is integrated in the basic unit.
  - Contactors 3RT202 to 3RT204:
    The basic units contain two integrated auxiliary contacts (1 NO + 1 NC).
- 3RT10 contactors:
  These contactors are supplied with two laterally mounted auxiliary switches. The fitting of auxiliary switches is possible on the front and on the side.

Expansion possibilities

All basic units (with the exception of coupling contactors in sizes S00 and S0) can be expanded using auxiliary switches.
The permitted configuration must be taken into account.

For detailed information about the fitting of auxiliary switches for 3RT20 contactors, see pages 3/81 to 3/86.

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Connection of contactors to fail-safe control modules

While contactors with smaller power ratings can be connected directly to the outputs of fail-safe controllers, implementing safety-related applications with standard contactors with higher power is much more complicated and elaborate because of the necessary coupling links.

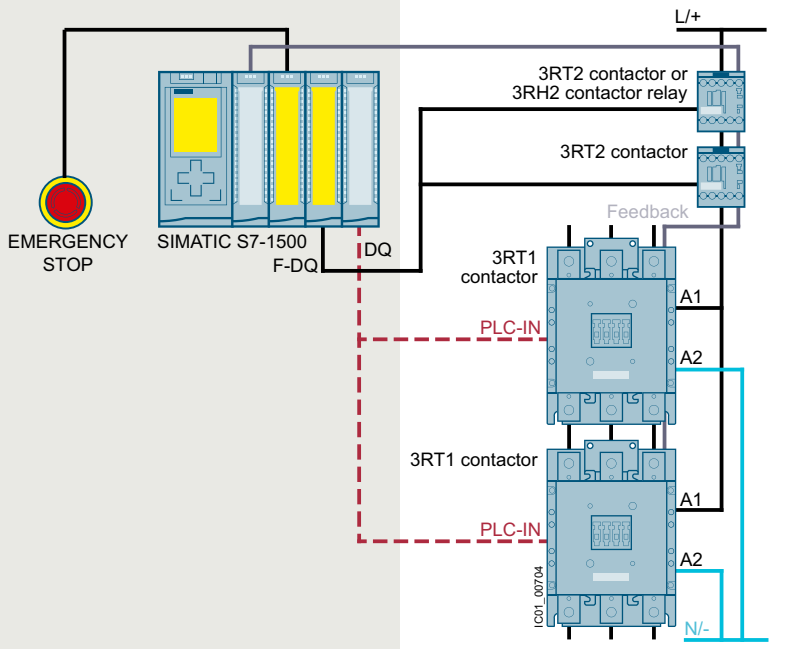
Due to their fail-safe control input, special contactors provide a much simpler way of doing this:

- 3RT20..-.S contactors in sizes S2 and S3
- 3RT10..-.S contactors in sizes S6 to S12

For more information, see

- Safety technology, page 11/1 onwards
- Guide of use for contactors in safety applications

Example for SIL 2 and SIL 3/PL e application – previously:

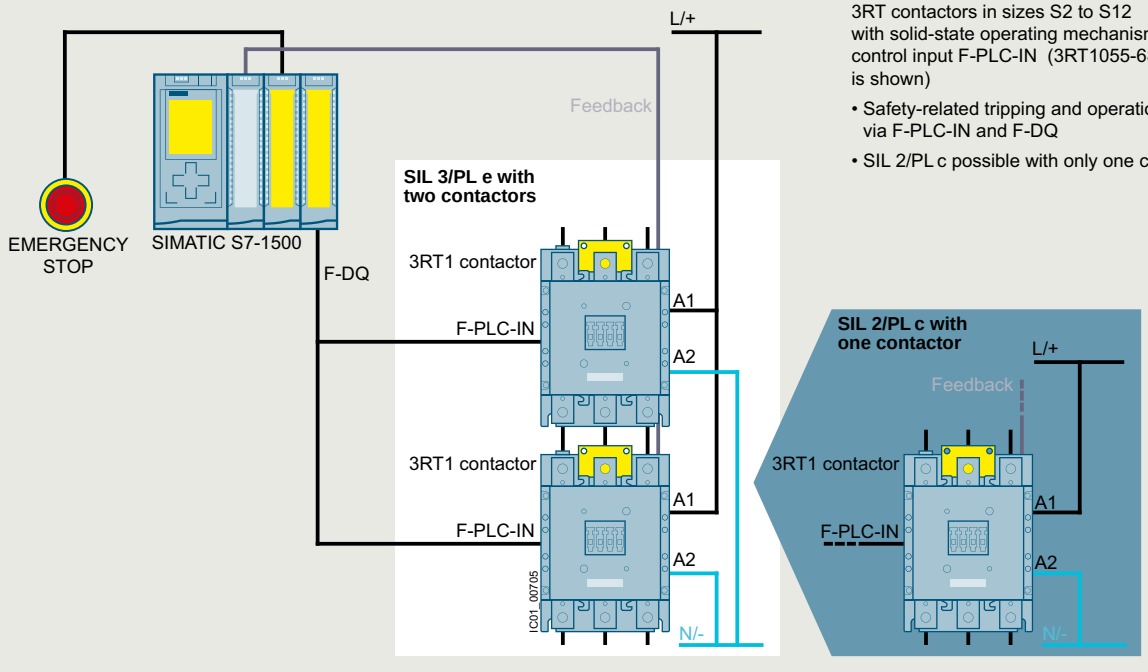


3RT contactors in sizes S2 to S12
with standard or solid-state operating mechanism
with PLC-IN (3RT105 contactor is shown)

- Safety-related tripping only possible via coupling links and F-DQ
- Standard operating mechanism: operational switching via coupling links and F-DQ
- Solid-state operating mechanism: operational switching with PLC-IN and DQ

Application with safety-related disconnection with standard contactors using the example of a 3RT105 contactor

Example for SIL 3/PL e (left-hand side) or SIL 2/PL c (right-hand side) application – new:



3RT contactors in sizes S2 to S12
with solid-state operating mechanism with fail-safe control input F-PLC-IN (3RT1055-6SP36 contactor is shown)

- Safety-related tripping and operational switching via F-PLC-IN and F-DQ
- SIL 2/PL c possible with only one contactor

Application with safety-related disconnection with contactors with fail-safe control using the example of a 3RT105 contactor

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SIRIUS 3RT contactors, 3-pole up to 250 kW

Contactors for special applications

- SIRIUS 3RT.4 contactors for low or non-inductive loads (AC-1), 3-pole, see page 4/7 onwards
- SIRIUS 3RT20 and 3RT10 contactors with an extended application range, 3-pole (for railway applications), see page 4/54 onwards

Article number scheme

Product versions		Article number
SIRIUS power contactors		**3RT2** □ □ □ **–** □ □ □ □ □ **–** □ □ □ □
Device type	e.g. 0 = 3-pole motor contactor	□
Size of the contactor	e.g. 4 = S3	□
Rating dependent on size	e.g. 5 = 37 kW for S3	□
Type of electrical connection	e.g. 1 = screw terminals (main and auxiliary circuits)	□
Operating range/solenoid coil circuit	e.g. A = AC standard/without coil circuit	□
Rated control supply voltage	e.g. P0 = 230 V AC, 50 Hz	□ □
Auxiliary switches	e.g. 0 = for S3: 1 NO + 1 NC integrated	□
Special version		□ □ □ □
Example		**3RT2 0 4 5 – 1 A P 0 0**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16134/td	System Manual for modular system, see https://support.industry.siemens.com/cs/ww/en/view/60311318
FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16134/faq	Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/60306557
	Application Manual - Switching devices with IE3 and IE4 motors, see https://support.industry.siemens.com/cs/ww/en/view/94770820
	Configuration Manual for load feeders, see https://support.industry.siemens.com/cs/ww/en/view/39714188
	Configuration Manual for UL, see https://support.industry.siemens.com/cs/ww/en/view/53433538
	Guide of use for contactors in safety applications, see https://support.industry.siemens.com/cs/ww/en/view/109807687

Type			Contactors		
			3RT2		3RT1
Size			S00 to S2	S3	S6 to S12
Rated data of the auxiliary contacts					
According to IEC 60947-5-1 Data apply to integrated auxiliary contacts and conventional contacts in the auxiliary switches					
Rated insulation voltage U_i (pollution degree 3)		V	690	1 000 (3RT20..-0CC0: 690)	--
• For laterally mountable auxiliary switches		V	690	690	500
• For front auxiliary switches		V	690	690	690
Conventional thermal current I_{th} = rated operational current I_e/AC-12		A	10		
AC load					
Rated operational current I_e/AC-15/AC-14					
• At rated operational voltage U_e	Up to 230 V	A	10[1]	6	6
	400 V	A	3		3
	500 V	A	2		2
	690 V	A	1		1[2]
DC load					
Rated operational current I_e/DC-12					
• At rated operational voltage U_e	24 V	A	10		10
	60 V	A	6		6
	110 V	A	3		3
	125 V	A	2		2
	220 V	A	1		1
	440 V	A	0.3		0.3
	600 V	A	0.15		0.15[2]
Rated operational current I_e/DC-13					
• At rated operational voltage U_e	24 V	A	10[1]		10[3]
	60 V	A	2		2
	110 V	A	1		1
	125 V	A	0.9		0.9
	220 V	A	0.3		0.3
	440 V	A	0.14		0.14
	600 V	A	0.1		0.15[2]
Contact reliability at 17 V, 1 mA According to IEC 60947-5-4			Frequency of contact faults < 10^{-8} i.e. < 1 fault per 100 million operating cycles		

1) 3RH22, 3RH29, 3RT2...-....4, 3RT2...-....6: I_e = 6 A at AC-15/AC-14 and DC-13.

2) With laterally mountable auxiliary switches, only the currents for rated operational voltages up to 500 V apply.

3) For laterally mountable auxiliary switches, DC-13/at 24 V: max. 6 A.

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3

Type	3RT contactors
Size	S00 to S12

Electrical endurance of auxiliary contacts

It is assumed that the operating mechanisms are switched arbitrarily and not synchronously with the phase angle of the supply system switching operating mechanism.

The electrical contact endurance is mainly dependent on the breaking current.

Sizes S00 to S3

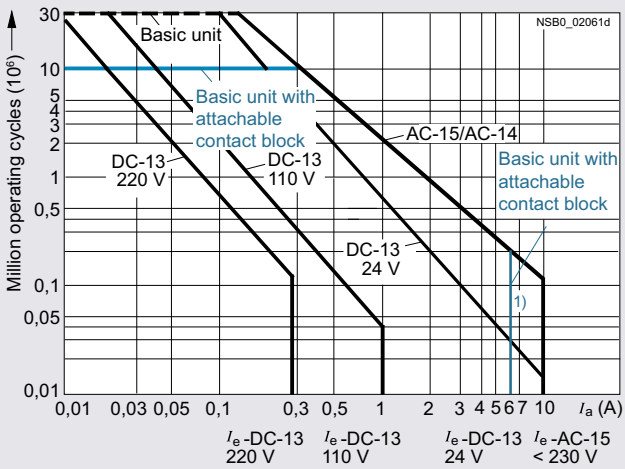

Diagram legend:
I_a = Breaking current
I_e = Rated operational current

The characteristic curves apply to:
- integrated auxiliary contacts on 3RT2.
- 3RH2911, 3RH2921 auxiliary switches[1)]

Sizes S6 to S12

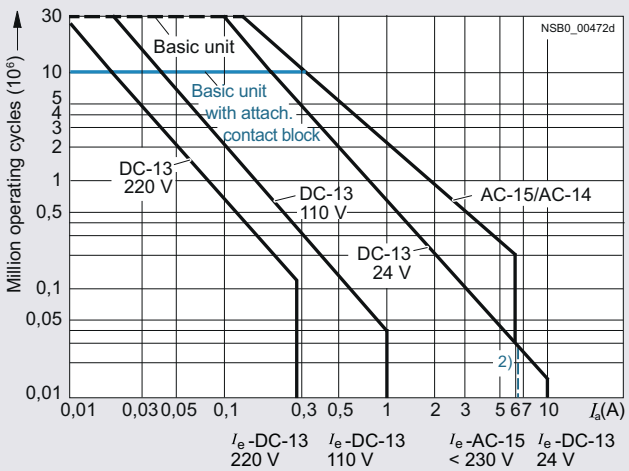

Diagram legend:
I_a = Breaking current
I_e = Rated operational current

The characteristic curves apply to:
- Integrated auxiliary contacts on 3RT10
- 3RH1921 auxiliary switches[3)]

[1)] 3RH22, 3RH29, 3RT2...-....4, 3RT2...-....6: I_e = 6 A at AC-15/AC-14 and DC-13, 3RT2.4: I_e = 6 A at AC-15/AC-14.

[2)] For laterally mountable auxiliary switches, DC-13/at 24 V: max. 6 A.

[3)] With laterally mountable auxiliary switches, the currents for rated operational voltages up to 500 V apply.

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Type
Size

3RT2 contactors
S00 and S0

Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching low inductive or non-inductive AC loads (AC-1) and motor-driven loads (AC-3 and AC-3e) depending on the breaking current and rated operational voltage. It is assumed that the operating mechanisms are switched arbitrarily and not synchronously with the phase angle of the supply system switching operating mechanism.

The rated operational current I_e complies with utilization category AC-4 (breaking 6 times the rated operational current) and is intended for a contact endurance of approximately 200 000 operating cycles.

If a shorter contact endurance is sufficient, the rated operational current I_e/AC-4 can be increased.

If the contacts are used for mixed operation, i.e. normal switching (breaking the rated operational current according to utilization category AC-3 and AC-3e) in combination with intermittent inching (breaking several times the rated operational current according to utilization category AC-4), the contact endurance can be calculated approximately from the following equation:

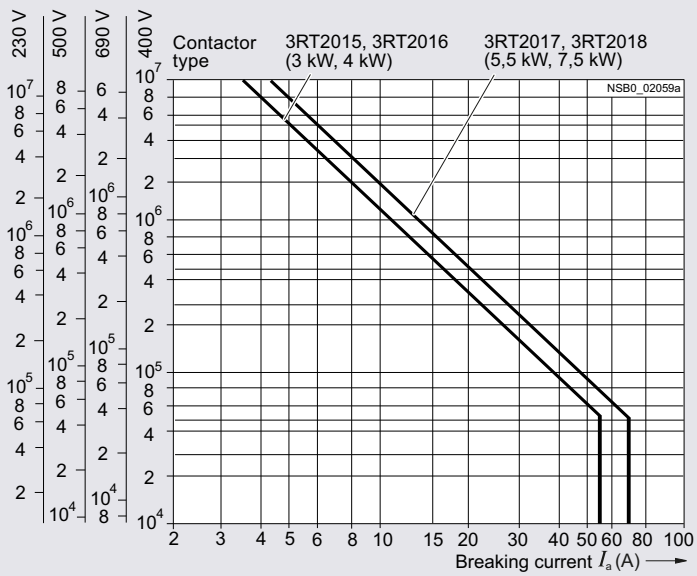
$$X = \frac{A}{1 + \frac{C}{100}\left(\frac{A}{B} - 1\right)}$$

Characters in the equation:

- X Contact endurance for mixed operation in operating cycles
- A Contact endurance for normal operation ($I_a = I_e$) in operating cycles
- B Contact endurance for inching (I_a = multiple of I_e) in operating cycles
- C Inching operations as a percentage of total switching operations

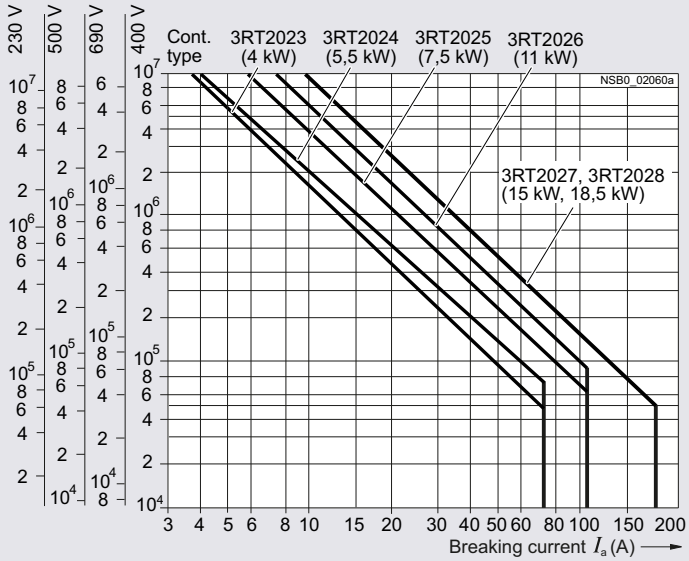
Size S00

Operating cycles at



Size S0

Operating cycles at



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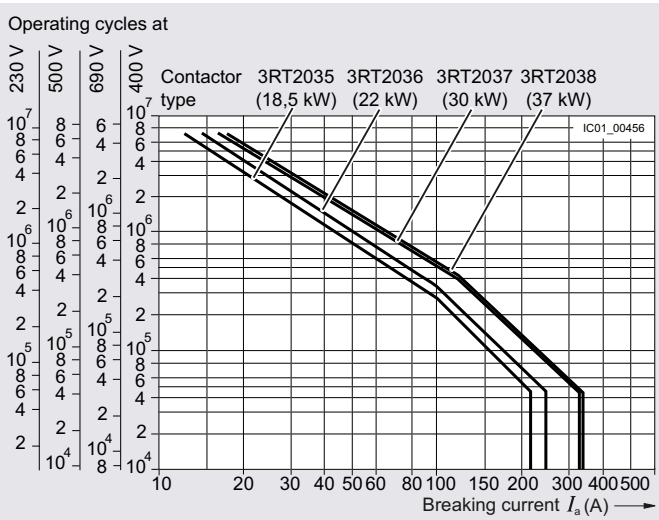
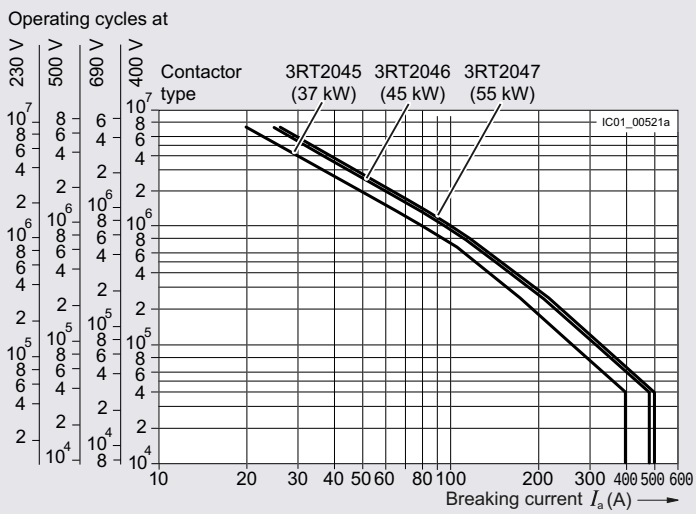
Type	3RT contactors
Size	S2 to S12

Contact endurance of main contacts (continued)

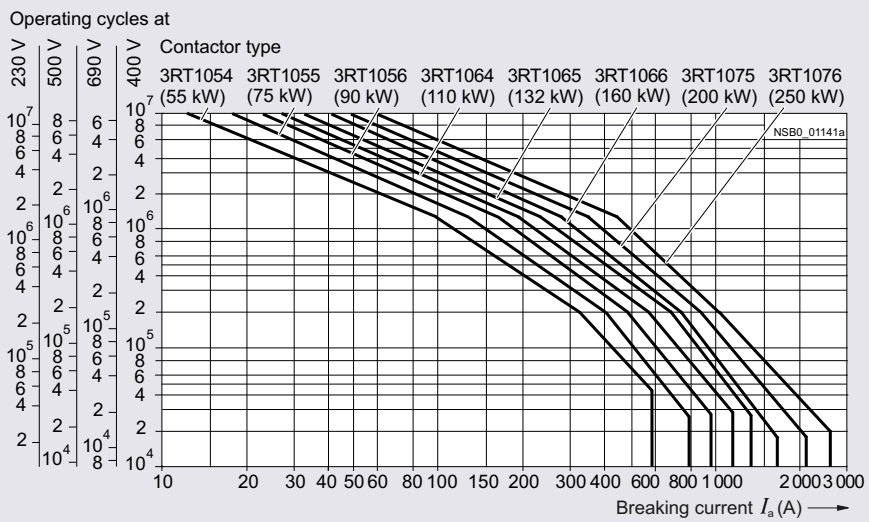
Size S2



Size S3



Sizes S6 to S12



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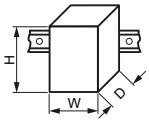
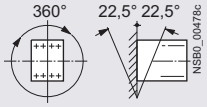
			Contactors
Type			**3RT2015, 3RT2016**	**3RT2017, 3RT2018**
Size			**S00**
General data			
Dimensions (W x H x D)			
• Basic unit			
- Screw terminals		mm	45 x 58 x 73
- Spring-loaded terminals		mm	45 x 70 x 73
• Basic unit with mounted auxiliary switch			
- Screw terminals		mm	45 x 58 x 117
- Spring-loaded terminals		mm	45 x 70 x 121
• Basic unit with mounted function module or solid-state time-delayed auxiliary switch			
- Screw terminals		mm	45 x 58 x 147
- Spring-loaded terminals		mm	45 x 70 x 147
Permissible mounting position			
The contactors are designed for operation on a vertical mounting surface.			
Upright mounting position			Special version required
Mechanical endurance			
• Basic unit		Operating cycles	30 million
- With mounted auxiliary switch		Operating cycles	10 million
- With solid-state compatible auxiliary switch		Operating cycles	5 million
Electrical endurance			For contact endurance of the main contacts, see page 3/27.
Rated insulation voltage U_i (pollution degree 3)		V	690
Rated impulse withstand voltage U_{imp}			
• Auxiliary circuit		kV	6
• Main circuit		kV	6
Protective separation between the coil and the main contacts according to IEC 60947-1, Annex N		V	400
Mirror contacts			
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.			
• 3RT2.1 (removable auxiliary switch)			Yes, in the basic unit as well as between the basic unit and the mounted auxiliary switch according to IEC 60947-4-1 Annex F
• 3RH2919-.NF.. solid-state compatible auxiliary switches			No mirror contact for size S00
Ambient temperature			
• During operation		°C	-25 ... +60
• During storage		°C	-55 ... +80

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SIRIUS 3RT contactors, 3-pole up to 250 kW

			Contactors	
Type			3RT2015, 3RT2016	3RT2017, 3RT2018
Size			S00	
Short-circuit protection				
Main circuit				
• Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE according to IEC 60947-4-1				
- Type of coordination "1"		A	35	50
- Type of coordination "2"		A	20	25
- Weld-free (test conditions according to IEC 60947-4-1)		A	10	
• Miniature circuit breaker (up to 230 V) with C characteristic Short-circuit current 1 kA, type of coordination "1"		A	10	
Auxiliary circuit				
Short-circuit test according to IEC 60947-5-1				
• With fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA		A	10	
• With 230 V miniature circuit breaker, C characteristic with short-circuit current I_k = 400 A		A	6	
Short-circuit protection for contactors with overload relays			See Configuration Manual for load feeders	
Short-circuit protection for fuseless load feeders			See 3RA2 load feeders, page 8/5 onwards	
Control				
Solenoid coil operating range				
• AC operation	50 Hz		0.8 ... 1.1 x U_s	
	60 Hz		0.85 ... 1.1 x U_s	
• DC operation	Up to 50 °C		0.8 ... 1.1 x U_s	
	Up to 60 °C		0.85 ... 1.1 x U_s	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)				
• AC operation, 50/60 Hz, standard version				
- Closing		VA	27/24.3	37/33
- P.f.			0.8/0.75	
- Closed		VA	4.2/3.3	5.7/4.4
- P.f.			0.25/0.25	
• AC operation, 50 Hz, for USA/Canada				
- Closing		VA	26.4	36
- P.f. for closing			0.81	0.8
- Closed		VA	4.4	5.9
- P.f. for closed			0.24	
• AC operation, 60 Hz, for USA/Canada				
- Closing		VA	31.7	43
- P.f. for closing			0.81	0.8
- Closed		VA	4.8	6.5
- P.f. for closed			0.25	
• DC operation (closing = closed)		W	4	
Permissible residual current of the electronics (with 0 signal)				
• AC operation			< 3 mA x (230 V/U_s)[1]	< 4 mA x (230 V/U_s)[1]
• DC operation			< 10 mA x (24 V/U_s)[1]	

[1] The 3RT2916-1GA00 additional load module is recommended for higher residual currents, see page 3/114.

		Coupling contactors					
Type		3RT201.-.HB4.	3RT201.-.JB4.	3RT201.-.KB4.	3RT201.-.MB4.-0KT0	3RT201.-.VB4.	3RT201.-.SB4.
Size		S00					
Control							
Solenoid coil operating range		0.7 ... 1.25 x U_s			0.85 ... 1.85 x U_s		
Power consumption of the solenoid coils (for cold coil) Closing = Closed	at U_s 24 V DC W	2.8			1.6		
Permissible residual current of the electronics (with 0 signal)		< 6 mA x (24 V/U_s)			On request		
Upright mounting position		On request					
Overvoltage configuration of the solenoid coil		No overvoltage damping	Integrated diode	Integrated suppressor diode	No overvoltage damping	Integrated diode	Integrated suppressor diode

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			Contactors			
Type			**3RT2015**	**3RT2016**	**3RT2017**	**3RT2018**
Size			**S00**			
Rated data of the main contacts						
Load rating with AC						
Utilization category AC-3 and AC-3e						
• Rated operational currents I_e	Up to 400 V	A	7	9	12	16
	440 V	A	7	9	11	14
	500 V	A	6	7.7	9.2	12.4
	690 V	A	4.9	6.7		8.9
• Rated power for slip-ring or squirrel-cage motors at 50 and 60 Hz	at 230 V	kW	1.5	2.2	3	4
	400 V	kW	3	4	5.5	7.5
	690 V	kW	4	5.5		7.5
Thermal load capacity	10 s current	A	56	72	96	128
Power loss per main conducting path	at I_e/AC-3/ AC-3e/400 V	W	0.2	0.3	0.5	1
Utilization category AC-4 (at $I_a = 6 \times I_e$)[1]						
• Maximum values						
- Rated operational current I_e	Up to 400 V	A	6.5	8.5		11.5
- Rated power for squirrel-cage motors at 50 Hz and 60 Hz	Up to 400 V	kW	3	4		5.5
• The following applies to a contact endurance of about 200 000 operating cycles:						
- Rated operational currents I_e	Up to 400 V	A	2.6	4.1		5.5
	690 V	A	1.8	3.3		4.4
- Rated power for squirrel-cage motors at 50 Hz and 60 Hz	at 230 V	kW	0.67	1.1		1.5
	400 V	kW	1.15	2		2.5
	690 V	kW	1.15	2.5		3.5

[1] The data only apply to 3RT2516 and 3RT2517 contactors (2 NO + 2 NC) up to a rated operational voltage of 400 V.

			Contactors
Type			**3RT2015 to 3RT2018**
Size			**S00**
Conductor cross-sections			
Main conductors, auxiliary conductors and coil terminals (1 or 2 conductors can be connected)			**Screw terminals**
• Solid or stranded		mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]; max. 2 x 4
• Finely stranded with end sleeve (DIN 46228)		mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]
• AWG cables, solid or stranded		AWG	2 x (20 ... 16)[1]; 2 x (18 ... 14)[1]; 2 x 12
• Terminal screw			M3 (for Pozidriv size 2; ∅ 5 ... 6 mm)
• Tightening torque		Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)
Main conductors, auxiliary conductors and coil terminals[2] (1 or 2 conductors can be connected)			**Spring-loaded terminals**
• Operating devices		mm	3.0 x 0.5
• Solid or stranded		mm^2	2 x (0.5 ... 4)
• Finely stranded with end sleeve (DIN 46228)		mm^2	2 x (0.5 ... 2.5)
• Finely stranded without end sleeve		mm^2	2 x (0.5 ... 2.5)
• AWG cables, solid or stranded		AWG	2 x (20 ... 12)
Auxiliary conductors for front and laterally mounted auxiliary switches[2] (1 or 2 conductors can be connected)			
• Operating devices		mm	3.0 x 0.5
• Solid or stranded		mm^2	2 x (0.5 ... 2.5)
• Finely stranded with end sleeve (DIN 46228)		mm^2	2 x (0.5 ... 1.5)
• Finely stranded without end sleeve		mm^2	2 x (0.5 ... 2.5)
• AWG cables, solid or stranded		AWG	2 x (20 ... 14)

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

[2] Max. outer diameter of the conductor insulation: 3.6 mm. On spring-loaded terminals with conductor cross-sections ≤ 1 mm^2, an insulation stop is recommended, see page 3/115.

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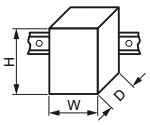
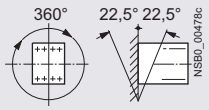
SIRIUS 3RT contactors, 3-pole up to 250 kW

		Contactors	
Type		3RT2023 to 3RT2025	3RT2026 to 3RT2028
Size		S0	
General data			
Dimensions (W x H x D)			
AC operation			
• Basic unit			
- Screw terminals	mm	45 x 85 x 97	
- Spring-loaded terminals	mm	45 x 102 x 97	
• Basic unit with mounted auxiliary switch			
- Screw terminals	mm	45 x 85 x 141	
- Spring-loaded terminals	mm	45 x 102 x 145	
• Basic unit with mounted function module or solid-state time-delayed auxiliary switch			
- Screw terminals	mm	45 x 85 x 171	
- Spring-loaded terminals	mm	45 x 102 x 171	
DC operation			
• Basic unit			
- Screw terminals	mm	45 x 85 x 107	
- Spring-loaded terminals	mm	45 x 102 x 107	
• Basic unit with mounted auxiliary switch			
- Screw terminals	mm	45 x 85 x 151	
- Spring-loaded terminals	mm	45 x 102 x 155	
• Basic unit with mounted function module or solid-state time-delayed auxiliary switch			
- Screw terminals	mm	45 x 85 x 181	
- Spring-loaded terminals	mm	45 x 102 x 181	
Permissible mounting position			
The contactors are designed for operation on a vertical mounting surface.			
Upright mounting position		Special version required, also applies for 3RT202.-.K.40 coupling contactors	
Mechanical endurance			
• Basic unit and basic unit with mounted auxiliary switch	Operating cycles	10 million	
• Basic unit with solid-state compatible auxiliary switch	Operating cycles	5 million	
Electrical endurance		For contact endurance of the main contacts, see page 3/27.	
Rated insulation voltage U_i (pollution degree 3)	V	690	
Rated impulse withstand voltage U_{imp}			
• Auxiliary circuit	kV	6	
• Main circuit	kV	6	
Protective separation between the coil and the main contacts (according to IEC 60947-1, Annex N)	V	400	
Mirror contacts			
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.			
• Integrated auxiliary switches		Yes, according to IEC 60947-4-1, Annex F	
• 3RT2.2. (removable auxiliary switch)		Yes, according to IEC 60947-4-1, Annex F	
Permissible ambient temperature			
• During operation	°C	-25 ... +60	
• During storage	°C	-55 ... +80	

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			Contactors		
Type			**3RT2023 to 3RT2025**	**3RT2026**	**3RT2027, 3RT2028**
Size			**S0**		
Short-circuit protection					
Main circuit					
• Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE according to IEC 60947-4-1					
- Type of coordination "1"		A	63	100	125
- Type of coordination "2"		A	25	35	50
- Weld-free (test conditions according to IEC 60947-4-1)		A	10	16	
• Miniature circuit breaker with C characteristic (short-circuit current 3 kA, type of coordination "1")		A	25	32	40
Auxiliary circuit					
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE (weld-free protection at $I_k \leq 1$ kA)		A	10		
• 230 V miniature circuit breaker, C characteristic (short-circuit current $I_k < 400$ A)		A	10		
Short-circuit protection for contactors with overload relays			See Configuration Manual for load feeders		
Short-circuit protection for fuseless load feeders			See 3RA2 load feeders, page 8/5 onwards		

			Contactors			
Type			**3RT2023 to 3RT2025**	**3RT2026 to 3RT2028**	**3RT202.-.NB3**	**3RT202.-.NF3.**	**3RT202.-.NP3**
Size			**S0**				
Control							
Type of operating mechanism			AC or DC		AC/DC		
Solenoid coil operating range	AC/DC		0.8 ... 1.1 x U_s [1]		0.7 ... 1.3 x U_s [2]		
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)							
• AC operation, 50 Hz, standard version							
- Closing		VA	65	77	6.6	11.9	12.7
- P.f.			0.82		0.98		
- Closed		VA	7.6	9.8	1.9	1.6	3.9
- P.f.			0.25		0.86	0.79	0.51
• AC operation, 50/60 Hz, standard version							
- Closing		VA	68/67	81/79	6.6/6.7	11.9/12.0	12.7/14.7
- P.f.			0.72/0.74		0.98/0.98		
- Closed		VA	7.9/6.5	10.5/8.5	1.9/2.0	1.6/1.8	3.9/4.3
- P.f.			0.25/0.28		0.86/0.82	0.79/0.74	0.51/0.56
• AC operation, 50 Hz, for USA/Canada							
- Closing		VA	65	77	--		
- P.f.			0.82	0.82	--		
- Closed		VA	7 [3]/7.6	9.8	--		
- P.f.			0.25	0.28	--		
• AC operation, 60 Hz, for USA/Canada							
- Closing		VA	73	87	--		
- P.f.			0.76		--		
- Closed		VA	7.2	9.4	--		
- P.f.			0.28		--		
• DC operation (closing = closed)		W	5.9/5.9		5.9/1.4	10.2/1.3	14.3/1.9
Permissible residual current of the electronics (with 0 signal)							
• AC operation		mA	< 6 mA x (230 V/U_s)		< 7 mA x (230 V/U_s)		
• DC operation		mA	< 16 mA x (24 V/U_s)				

[1] Coil operating range
- At 50 Hz: 0.8 to 1.1 x U_s
- At 60 Hz: 0.85 to 1.1 x U_s.

[2] The following applies to $U_{s\,max}$ = 280 V: Upper limit = 1.1 x $U_{s\,max}$

[3] Value applies to 3RT2023 contactor at 50 Hz AC.

			Coupling contactors	
Type			**3RT202.-.KB4.**	
Size			**S0**	
Control				
Solenoid coil operating range			0.7 ... 1.25 x U_s	
Power consumption of the solenoid coils (for cold coil) Closing = Closed	at U_s 24 V DC	W	4.5	
Permissible residual current of the electronics (with 0 signal)			< 10 mA x (24 V/U_s)	
Overvoltage configuration of the solenoid coil			Integrated varistor *U*	

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SIRIUS 3RT contactors, 3-pole up to 250 kW

Type			Contactors 3RT2023	3RT2024	3RT2025	3RT2026	3RT2027	3RT2028
Size			S0					
Rated data of the main contacts								
Load rating with AC								
Utilization category AC-3 and AC-3e								
• Rated operational currents I_e	Up to 400 V	A	9	12	17	25	32	38
	440 V	A	9	12	17	22	32	35
	500 V	A	9	12	17	18	32	
	690 V	A	9		13		21	
• Rated power for slip-ring or squirrel-cage motors at 50 and 60 Hz	at 230 V	kW	2.2	3	4	5.5	7.5	11
	400 V	kW	4	5.5	7.5	11	15	18.5
	690 V	kW	7.5		11		18.5	
Thermal load capacity	10 s current	A	80	110	150	200	260	304
Power loss per main conducting path	at I_e/AC-3/ AC-3e/400 V	W	0.2	0.3	0.6	1.9	2.3	3.2
Utilization category AC-4 (at $I_a = 6 \times I_e$)								
• Maximum values:								
- Rated operational current I_e	Up to 400 V	A	8.5	12.5	15.5		22	
- Rated power for squirrel-cage motors at 50 Hz and 60 Hz	at 400 V	kW	4	5.5	7.5		11	
• The following applies to a contact endurance of about 200 000 operating cycles:								
- Rated operational currents I_e	Up to 400 V	A	4.1	5.5	7.7	9	12	
	690 V	A	3.3	5.5	7.7	9	12	
- Rated power for squirrel-cage motors at 50 Hz and 60 Hz	at 110 V	kW	0.5	0.73	1	1.2	1.6	
	230 V	kW	1.1	1.5	2	2.5	3.4	
	400 V	kW	2	2.6	3.5	4.4	6	
	690 V	kW	2.5	4.6	6	7.7	10.3	

Type		Contactors 3RT2023 to 3RT2028
Size		S0
Conductor cross-sections		
Main conductors (1 or 2 conductors can be connected)		**Screw terminals**
• Solid or stranded	mm^2	2 x (1 ... 2.5)[1]; 2 x (2.5 ... 10)[1]
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (1 ... 2.5)[1]; 2 x (2.5 ... 6)[1]; 1 x 10
• AWG cables, solid or stranded	AWG	2 x (16 ... 12)[1]; 2 x (14 ... 8)[1]
• Terminal screws		M4 (for Pozidriv size 2; ∅ 5 ... 6 mm)
- Tightening torque	Nm	2 ... 2.5 (18 ... 22 lb.in)
Auxiliary conductors (1 or 2 conductors can be connected)		
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1]; 2 x (18 ... 14)[1]
• Terminal screws		M3 (for Pozidriv size 2; ∅ 5 ... 6 mm)
- Tightening torque	Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)
Main conductors[2] (1 or 2 conductors can be connected)		**Spring-loaded terminals**
• Operating devices	mm	3.0 x 0.5
• Solid or stranded	mm^2	2 x (1 ... 10)
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (1 ... 6)
• Finely stranded without end sleeve	mm^2	2 x (1 ... 6)
• AWG cables, solid or stranded	AWG	2 x (18 ... 8)
Auxiliary conductors[2] (1 or 2 conductors can be connected)		
• Operating devices		3.0 x 0.5
• Solid or stranded	mm^2	2 x (0.5 ... 2.5)
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

[2] Max. outer diameter of the conductor insulation: 6.4 mm.
On spring-loaded terminals with conductor cross-sections ≤ 1 mm^2, an insulation stop is recommended, see page 3/115.

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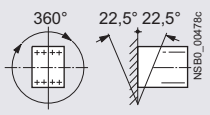
Type		**Contactors**			
		3RT2035	**3RT2036**	**3RT2037**	**3RT2038**
Size		**S2**			
General data					
Dimensions (W x H x D)					
• Basic unit - Screw/spring-loaded terminals	mm	55 x 114 x 130			
• Basic unit with mounted auxiliary switch - Screw terminals - Spring-loaded terminals	mm mm	55 x 114 x 174 55 x 114 x 178			
• Basic unit with mounted function module or solid-state time-delayed auxiliary switch - Screw/spring-loaded terminals	mm	55 x 114 x 204			
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.					
Upright mounting position		Special version required			
Mechanical endurance					
• Basic units and basic units with mounted auxiliary switch	Operating cycles	10 million (3RT203.-.S.30: 5 million)			
• Basic units with solid-state compatible auxiliary switch	Operating cycles	5 million			
Electrical endurance		For contact endurance of the main contacts, see page 3/28.			
Rated insulation voltage U_i (pollution degree 3)	V	690			
Rated impulse withstand voltage U_{imp}					
• Auxiliary circuit	kV	6			
• Main circuit	kV	6			
Protective separation between the coil and the main contacts (according to IEC 60947-1, Annex N)	V	400			
Mirror contacts A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.					
• Integrated auxiliary switches		Yes, according to IEC 60947-4-1, Annex F			
• 3RT2.3. (removable auxiliary switch)		Yes, according to IEC 60947-4-1, Annex F			
Permissible ambient temperature					
• During operation	°C	-25 ... +60			
• During storage	°C	-55 ... +80			
Short-circuit protection					
Main circuit					
• Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE according to IEC 60947-4-1					
- Type of coordination "1"	A	160		250	
- Type of coordination "2"	A	80		125	160
- Weld-free (test conditions according to IEC 60947-4-1)	A	16	25	50	
Auxiliary circuit					
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE (weld-free protection at $I_k \leq 1$ kA)	A	10			
• 230 V miniature circuit breaker, C characteristic (short-circuit current $I_k < 400$ A)	A	10			
Short-circuit protection for contactors with overload relays		See Configuration Manual for load feeders			
Short-circuit protection for fuseless load feeders		See 3RA2 load feeders, page 8/5 onwards			

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SIRIUS 3RT contactors, 3-pole up to 250 kW

		Contactors			Coupling contactors
Type		3RT203.-.A..., 3RT203.-.C...	3RT203.-.N.3.	3RT203.-.S.3.	3RT203.-.KB4.
Size		S2			
Control					
Type of operating mechanism		AC	AC/DC		DC
Solenoid coil operating range					
• AC operation[1]		0.8 ... 1.1 x U_s	--		
• AC/DC operation[1]		--	0.8 ... 1.1 x U_s		--
• DC operation		--			0.8 ... 1.2 x U_s
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)					
• AC operation, 50 Hz, standard version					
- Closing	VA	190	--		
- P.f.		0.72	--		
- Closed	VA	16	--		
- P.f.		0.37	--		
• AC operation, 50/60 Hz, standard version					
- Closing	VA	210/188	--		
- P.f.		0.69/0.65	--		
- Closed	VA	17.2/16.5	--		
- P.f.		0.36/0.39	--		
• AC operation, 60 Hz, for USA/Canada					
- Closing	VA	212	--		
- P.f.		0.67	--		
- Closed	VA	18.5	--		
- P.f.		0.37	--		
• AC/DC operation					
- Closing for AC operation	VA	--	40		--
- P.f.		--	0.95		--
- Closed for AC operation	VA	--	2		--
- P.f.		--	0.95	0.7	--
- Closing for DC operation	VA	--	23[2]	40	--
- Closed for DC operation	VA	--	1	1.6	--
• DC operation					
- Closing for DC operation	W	--			21.5[3]
- Closed for DC operation	W	--			1
Permissible residual current of the electronics (with 0 signal)					
• AC/DC operation	mA	--	< 20		--
• DC operation	mA	--			< 20
Overvoltage configuration of the solenoid coil		--	Integrated varistor		
PLC control input according to IEC 60947-1					
• Solid-state operating mechanism		--		Type 1	--
• Rated voltage	V DC	--		24	--
• Operating range	V DC	--		17 ... 30	--
• Power consumption	mA	--		≤ 30	--
• Recovery time after mains failure, typical	s	--		2	--

1) Coil operating range
- At 50 Hz: 0.8 to 1.1 x U_s,
- At 60 Hz: 0.85 to 1.1 x U_s.

2) In the case of AC/DC coils, increased pickup currents (2.6 A on average) arise during the first 230 ms. For direct control by PLC, we therefore recommend special coupling contactors with reduced power consumption. The connection of one 3RT203.-.KB4. coupling contactor is possible per PLC output port with an output current of 2 A, see page 3/59.

3) In the case of DC coils, increased pickup currents (2.1 A on average) arise during the first 230 ms.

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Type			Contactors 3RT2035	3RT2036	3RT2037	3RT2038
Size			S2			
Rated data of the main contacts						
Load rating with AC						
Utilization category AC-3 and AC-3e						
• Rated operational currents I_e	Up to 400 V	A	41	51	65	80
	440 V	A	41	51	65	80
	500 V	A	41	51	65	80
	690 V	A	24		47	58
• Rated power for slip-ring or squirrel-cage motors at 50 and 60 Hz	at 230 V	kW	11	15	18.5	22
	400 V	kW	18.5	22	30	37
	690 V	kW	22		37	45
Thermal load capacity	10 s current	A	400	420	520	640
Power loss per main conducting path	at I_e/AC-3/ AC-3e/400 V	W	2.2	4	3.8	5.7
Utilization category AC-4 (at $I_a = 6 \times I_e$)						
• Maximum values						
- Rated operational current I_e	Up to 400 V	A	35	41	55	
- Rated power for squirrel-cage motors at 50 Hz and 60 Hz	at 400 V	kW	18.5	22	30	
• The following applies to a contact endurance of about 200 000 operating cycles:						
- Rated operational currents I_e	Up to 400 V	A	22	24	28	30
	690 V	A	18.5	20	22	24
- Rated power for squirrel-cage motors at 50 Hz and 60 Hz	at 110 V	kW	3.2	3.5	4.1	4.3
	230 V	kW	6.7	7.3	8.5	9.1
	400 V	kW	11.6	12.6	14.7	15.8
	690 V	kW	16.8	18.2	20	21.8

Type		Contactors 3RT2035 to 3RT2038
Size		S2
Conductor cross-sections		
Main conductors (1 or 2 conductors can be connected)		**Screw terminals**
• Solid or stranded	mm^2	2 x (1 ... 35)[1]; 1 x (1 ... 50)[1]
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (1 ... 25)[1]; 1 x (1 ... 35)[1]
• AWG cables, solid or stranded	AWG	2 x (18 ... 2)[1]; 1 x (18 ... 1)[1]
• Terminal screws		Pozidriv size 2; ∅ 5 ... 6 mm
- Tightening torque	Nm	3 ... 4.5 (27 ... 40 lb.in)
Auxiliary conductors and control conductors (1 or 2 conductors can be connected)		
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1]; 2 x (18 ... 14)[1]
• Terminal screws		M3 (for Pozidriv size 2; ∅ 5 ... 6 mm)
- Tightening torque	Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)
Auxiliary and control conductors[2] (1 or 2 conductors can be connected)		**Spring-loaded terminals**
• Operating devices	mm	3.0 x 0.5
• Solid or stranded	mm^2	2 x (0.5 ... 2.5)
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

[2] Max. outer diameter of the conductor insulation: 3.6 mm.
On spring-loaded terminals with conductor cross-sections ≤ 1 mm^2, an insulation stop is recommended, see page 3/115.

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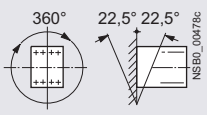
SIRIUS 3RT contactors, 3-pole up to 250 kW

		Contactors		
Type		3RT2045	3RT2046	3RT2047
Size		S3		
General data				
Dimensions (W x H x D)				
• Basic unit - Screw/spring-loaded terminals	mm	70 x 140 x 152		
• Basic unit with mounted auxiliary switch - Screw terminals - Spring-loaded terminals	mm mm	70 x 140 x 196 70 x 140 x 200		
• Basic unit with mounted function module or solid-state time-delayed auxiliary switch - Screw/spring-loaded terminals	mm	70 x 140 x 226		
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.				
Upright mounting position		Special version required		
Mechanical endurance				
• Basic units and basic units with mounted auxiliary switch	Operating cycles	10 million		
• Basic units with solid-state compatible auxiliary switch	Operating cycles	5 million		
Electrical endurance		For contact endurance of the main contacts, see page 3/28.		
Rated insulation voltage U_i (pollution degree 3)	V	1 000 (3RT20..-.....-0CC0: 690)		
Rated impulse withstand voltage U_{imp}				
• Auxiliary circuit	kV	6		
• Main circuit	kV	8		
Protective separation between the coil and the main contacts (according to IEC 60947-1, Annex N)	V	690		
Mirror contacts A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.				
• Integrated auxiliary switches		Yes, according to IEC 60947-4-1, Annex F		
• 3RT2.4. (removable auxiliary switch)		Yes, according to IEC 60947-4-1, Annex F		
Permissible ambient temperature				
• During operation	°C	-25 ... +60		
• During storage	°C	-55 ... +80		
Short-circuit protection				
Main circuit				
• Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE according to IEC 60947-4-1				
- Type of coordination "1"	A	250		
- Type of coordination "2"	A	160	160	200
- Weld-free (test conditions according to IEC 60947-4-1)	A	On request		
Auxiliary circuit				
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE (weld-free protection at $I_k \leq 1$ kA)	A	10		
• 230 V miniature circuit breaker, C characteristic (short-circuit current $I_k < 400$ A)	A	10		
Short-circuit protection for contactors with overload relays		See Configuration Manual for load feeders		
Short-circuit protection for fuseless load feeders		See 3RA2 load feeders, page 8/5 onwards		

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		Contactors			Coupling contactors
Type		3RT204.-.A..., 3RT204.-.C...	3RT204.-.N.3.	3RT204.-.S.3.	3RT204.-.KB4.
Size		S3			
Control					
Type of operating mechanism		AC	AC/DC		DC
Solenoid coil operating range					
• AC operation[1]		0.8 ... 1.1 x U_s	--		
• AC/DC operation[1]		--	0.8 ... 1.1 x U_s		--
• DC operation		--			0.8 ... 1.2 x U_s
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)					
• AC operation, 50 Hz, standard version					
- Closing	VA	296	--		
- P.f.		0.61	--		
- Closed	VA	19	--		
- P.f.		0.38	--		
• AC operation, 50/60 Hz, standard version					
- Closing	VA	348/296	--		
- P.f.		0.62/0.55	--		
- Closed	VA	25/18	--		
- P.f.		0.35/0.41	--		
• AC operation, 60 Hz, for USA/Canada					
- Closing	VA	326	--		
- P.f.		0.62	--		
- Closed	VA	22	--		
- P.f.		0.38	--		
• AC/DC operation					
- Closing for AC operation	VA	--	163	130	--
- P.f.		--	0.95		--
- Closed for AC operation	VA	--	3.1	2.4	--
- P.f.		--	0.95	0.7	--
- Closing for DC operation	VA	--	76[2]	130	--
- Closed for DC operation	VA	--	1.8		--
• DC operation					
- Closing for DC operation	W	--			25[3]
- Closed for DC operation	W	--			0.9
Permissible residual current of the electronics (with 0 signal)					
• AC/DC operation	mA	--	< 20		--
• DC operation	mA	--			< 20
Overvoltage configuration of the solenoid coil		--	Integrated varistor U		
PLC control input according to IEC 60947-1					
• Solid-state operating mechanism		--		Type 1	--
• Rated voltage	V DC	--		24	--
• Operating range	V DC	--		17 ... 30	--
• Power consumption	mA	--		≤ 30	--
• Recovery time after mains failure, typical	s	--		2	--

1) Coil operating range
- at 50 Hz: 0.8 to 1.1 x U_s
- at 60 Hz: 0.85 to 1.1 x U_s.

2) In the case of AC/DC coils, increased pickup currents (6.5 A on average) arise during the first 150 ms. For direct control by PLC, we therefore recommend special coupling contactors with reduced power consumption. The connection of one 3RT204.-.KB4. coupling contactor is possible per PLC output port with an output current of 2 A, see page 3/59.

3) In the case of DC coils, increased pickup currents (2.1 A on average) arise during the first 150 ms.

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SIRIUS 3RT contactors, 3-pole up to 250 kW

			Contactors		
Type			3RT2045	3RT2046	3RT2047
Size			S3		
Rated data of the main contacts					
Load rating with AC					
Utilization category AC-3 and AC-3e					
• Rated operational currents I_e	Up to 400 V	A	80	95	110
	500 V	A	80	95	110
	690 V	A	58	78	98
	1 000 V	A	30		
• Rated power for slip-ring or squirrel-cage motors at 50 and 60 Hz	at 230 V	kW	22	22	30
	400 V	kW	37	45	55
	690 V	kW	55	75	90
	1 000 V	kW	37		
Thermal load capacity	10 s current	A	760		880
Power loss per main conducting path	at I_e/AC-3/ AC-3e/400 V	W	5.3	6.6	7.9
Utilization category AC-4 (at $I_a = 6 \times I_e$)					
• Maximum values					
- Rated operational current I_e	Up to 400 V	A	66	80	97
- Rated power for squirrel-cage motors at 50 Hz and 60 Hz	at 400 V	kW	37	45	55
• The following applies to a contact endurance of about 200 000 operating cycles:					
- Rated operational currents I_e	Up to 400 V	A	34	42	46
	690 V	A	24	30	36
- Rated power for squirrel-cage motors at 50 Hz and 60 Hz	at 110 V	kW	4.9	6.1	6.7
	230 V	kW	10.4	12	14
	400 V	kW	17.9	22	24.3
	690 V	kW	21.8	27.4	32.9

		Contactors
Type		3RT2045 to 3RT2047
Size		S3
Conductor cross-sections		
Main conductors (1 or 2 conductors can be connected)		Screw terminals
• Solid	mm^2	2 x (2.5 ... 16)[1]
• Stranded	mm^2	2 x (6 ... 16)[1]; 2 x (10 ... 50)[1]; 1 x (10 ... 70)[1]
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (2.5 ...35)[1]; 1 x (2.5 ... 50)[1]
• AWG cables, solid or stranded	AWG	2 x (10 ... 1/0)[1]; 1 x (10 ... 2/0)[1]
• Terminal screws		Hexagon socket, size 4
- Tightening torque	Nm	4.5 ... 6 (40 ... 53 lb.in)
Auxiliary conductors and control conductors (1 or 2 conductors can be connected)		
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1]; 2 x (18 ... 14)[1]
• Terminal screws		M3 (for Pozidriv size 2; ∅ 5 ... 6 mm)
- Tightening torque	Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)
Auxiliary and control conductors[2] (1 or 2 conductors can be connected)		Spring-loaded terminals
• Operating devices	mm	3.0 x 0.5
• Solid or stranded	mm^2	2 x (0.5 ... 2.5)
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

[2] Max. outer diameter of the conductor insulation: 3.6 mm.
On spring-loaded terminals with conductor cross-sections ≤ 1 mm^2, an insulation stop is recommended, see page 3/115.

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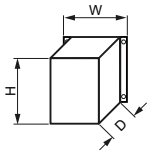
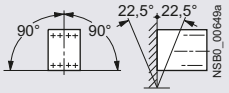
		Contactors				
Type		3RT1054	3RT1055, 3RT1056	3RT1064 to 3RT1066	3RT1075	3RT1076
Size		S6		S10	S12	
General data						
Dimensions (W x H x D) 						
• Basic unit	mm	120 x 172 x 170		145 x 210 x 202	160 x 214 x 225	
• Basic unit with mounted auxiliary switch	mm	120 x 172 x 217		145 x 210 x 251	160 x 214 x 271	
Permissible mounting position The contactors are designed for operation on a vertical mounting surface. 						
Mechanical endurance	Operating cycles	10 million				
Electrical endurance		For contact endurance of the main contacts, see page 3/28.				
Rated insulation voltage U_i (pollution degree 3)	V	1 000				
Rated impulse withstand voltage U_{imp}						
• Auxiliary circuit	kV	6				
• Main circuit	kV	8				
Protective separation between the coil and the main contacts according to IEC 60947-1, Annex N	V	690				
Mirror contacts A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.		Yes, according to IEC 60947-4-1, Annex F				
Permissible ambient temperature						
• During operation	°C	-25 ... +60				
• During storage	°C	-55 ... +80				
Electromagnetic compatibility (EMC)		See page 3/21				
Short-circuit protection						
Main circuit Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE according to IEC 60947-4-1						
• Type of coordination "1"	A	355		500	630	
• Type of coordination "2"	A	250	315	400	500	
• Weld-free	A	80	160	250		315
Auxiliary circuit						
Short-circuit test						
• With fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA according to IEC 60947-5-1	A	10				
• With miniature circuit breakers with C characteristic with short-circuit current I_k = 400 A	A	10				
Short-circuit protection for contactors with overload relays		See Configuration Manual for load feeders				

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SIRIUS 3RT contactors, 3-pole up to 250 kW

			Contactors		
Type			**3RT105.**	**3RT106.**	**3RT107.**
Size			**S6**	**S10**	**S12**
Control					
Operating range of the solenoid operating mechanism	AC/DC		0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$		
Power consumption of the solenoid operating mechanism (with cold coil and rated range $U_{s\,min}$ ... $U_{s\,max}$)					
• Standard operating mechanism (3RT10..-.A)					
- AC operation	Closing at $U_{s\,min}$	VA/p.f.	250/0.9	490/0.9	700/0.9
	Closing at $U_{s\,max}$	VA/p.f.	300/0.9	590/0.9	830/0.9
	Closed at $U_{s\,min}$	VA/p.f.	4.8/0.8	5.6/0.9	7.6/0.9
	Closed at $U_{s\,max}$	VA/p.f.	5.8/0.8	6.7/0.9	9.2/0.9
- DC operation	Closing at $U_{s\,min}$	W	300	540	770
	Closing at $U_{s\,max}$	W	360	650	920
	Closed at $U_{s\,min}$	W	4.3	6.1	8.5
	Closed at $U_{s\,max}$	W	5.2	7.4	10
• Solid-state operating mechanism (3RT10..-.N/-.P/-.S)					
- AC operation	Closing at $U_{s\,min}$	VA/p.f.	190/0.8	400/0.8	560/0.8
	Closing at $U_{s\,max}$	VA/p.f.	280/0.8	530/0.8	750/0.8
	Closed at $U_{s\,min}$	VA/p.f.	3.5/0.6	5.5/0.5	5.6/0.5
	Closed at $U_{s\,max}$	VA/p.f.	4.8/0.6	8.5/0.4	9/0.4
- DC operation	Closing at $U_{s\,min}$	W	250	440	600
	Closing at $U_{s\,max}$	W	320	580	800
	Closed at $U_{s\,min}$	W	2.1	2.8	3
	Closed at $U_{s\,max}$	W	2.8	3.4	3.6
PLC control input according to IEC 60947-1					
• Solid-state operating mechanism	3RT10..-.N/-.P		Type 2		
	3RT10..-.S		Type 1		
• Rated voltage		V DC	24		
• Operating range		V DC	17 ... 30		
• Power consumption		mA	≤ 30		
• Recovery time after mains failure, typical (applicable only for fail-safe version 3RT10..-.S)		s	2		

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		Contactors							
Type		**3RT1054**	**3RT1055**	**3RT1056**	**3RT1064**	**3RT1065**	**3RT1066**	**3RT1075**	**3RT1076**
Size		**S6**			**S10**			**S12**	
Rated data of the main contacts									
Load rating with AC									
Utilization category AC-3 and AC-3e									
• Rated operational currents I_e									
- Up to 500 V	A	115	150	185	225	265	300	400	500
- At 690 V	A	115	150	170	225	265	280	400	450
- At 1 000 V	A	53	65	65	68	95	95	180	180
• Rated power for slip-ring or squirrel-cage motors at 50 and 60 Hz									
- At 230 V	kW	37	45	55	55	75	90	132	160
- At 400 V	kW	55	75	90	110	132	160	200	250
- At 500 V	kW	75	90	132	160	160	200	250	315
- At 690 V	kW	110	132	160	On request	On request	On request	400	400
- At 1 000 V	kW	75	90	160	200	132	132	250	250
Thermal load capacity, 10 s current	A	1 100	1 300	1 480	1 800	2 400		3 200	4 000
Power loss per main conducting path at I_e/AC-3/AC-3e/400 V	W	7	9	13	17	18	22	35	55
Utilization category AC-4 (at I_a = 6 x I_e)									
Maximum values:									
• Rated operational current I_e									
- Up to 400 V	A	97	132	160	195	230	280	350	430
• Rated power for squirrel-cage motors at 50 Hz and 60 Hz									
- At 400 V	kW	55	75	90	110	132	160	200	250
The following applies to a contact endurance of about 200 000 operating cycles:									
• Rated operational currents I_e									
- Up to 500 V	A	54	68	81	96	117	125	150	175
- Up to 690 V	A	48	57	65	85	105	115	135	150
• Rated power for squirrel-cage motors at 50 Hz and 60 Hz									
- At 230 V	kW	16	20	25	30	37	40	48	56
- At 400 V	kW	29	38	45	54	66	71	85	98
- At 500 V	kW	37	47	57	67	82	87	105	123
- At 690 V	kW	48	55	65	82	102	112	133	148

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SIRIUS 3RT contactors, 3-pole up to 250 kW

		Contactors			
Type		**3RT105.**		**3RT106.**	**3RT107.**
Size		**S6**		**S10**	**S12**
Conductor cross-sections					
Main conductors (1 or 2 conductors can be connected)		**Screw terminals**			
With mounted box terminals	Type	3RT1955-4G (55 kW)	3RT1956-4G	3RT1966-4G	
• Terminal screws		M10 (hexagon socket, A/F 4)		M12 (hexagon socket, A/F 5)	
- Tightening torque	Nm	10 ... 12		20 ... 22	
	lb.in	90 ... 110		180 ... 195	
Front clamping point connected					
NSB0_00479					
• Finely stranded with end sleeve (DIN 46228)	mm^2	16 ... 70	16 ... 120	70 ... 240	
• Finely stranded without end sleeve	mm^2	16 ... 70	16 ... 120	70 ... 240	
• Stranded	mm^2	16 ... 70	16 ... 120	95 ... 300	
• AWG cables, solid or stranded	AWG	6 ... 2/0	6 ... 250 kcmil	3/0 ... 600 kcmil	
• Ribbon cable conductors (number x width x thickness)	mm	Min. 3 x 9 x 0.8, max. 6 x 15.5 x 0.8	Min. 3 x 9 x 0.8, max. 10 x 15.5 x 0.8	Min. 6 x 9 x 0.8, max. 20 x 24 x 0.5	
Rear clamping point connected					
NSB0_00480					
• Finely stranded with end sleeve (DIN 46228)	mm^2	16 ... 70	16 ... 120	120 ... 185	
• Finely stranded without end sleeve	mm^2	16 ... 70	16 ... 120	120 ... 185	
• Stranded	mm^2	16 ... 70	16 ... 120	120 ... 240	
• AWG cables, solid or stranded	AWG	6 ... 2/0	6 ... 250 kcmil	250 ... 500 kcmil	
• Ribbon cable conductors (number x width x thickness)	mm	Min. 3 x 9 x 0.8, max. 6 x 15.5 x 0.8	Min. 3 x 9 x 0.8, max. 10 x 15.5 x 0.8	Min. 6 x 9 x 0.8, max. 20 x 24 x 0.5	
Both clamping points connected (minimum cross-section 16 mm^2)					
NSB0_00481					
• Finely stranded with end sleeve (DIN 46228)	mm^2	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 50, max. 2 x 185	
• Finely stranded without end sleeve	mm^2	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 50, max. 2 x 185	
• Stranded	mm^2	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 70, max. 2 x 240	
• AWG cables, solid or stranded	AWG	Max. 2 x 1/0	Max. 2 x 3/0	Min. 2 x 2/0, max. 2 x 500 kcmil	
• Ribbon cable conductors (number x width x thickness)	mm	Max. 2 x (6 x 15.5 x 0.8)	Max. 2 x (10 x 15.5 x 0.8)	Max. 2 x (20 x 24 x 0.5)	
Busbar connections					
Connecting bar (max. width)	mm	17		25	
Cable lug connection					
• Finely stranded with cable lug[1)2)]	mm^2	16 ... 95		50 ... 240	
• Stranded with cable lug[1)2)]	mm^2	25 ... 120		70 ... 240	
• AWG cables, solid or stranded	AWG	4 ... 250 kcmil		2/0 ... 500 kcmil	
• Terminal screws		M8 x 25 (A/F 13)		M10 x 30 (A/F 17)	
- Tightening torque	Nm	10 ... 14		14 ... 24	
	lb.in	90 ... 124		124 ... 210	
Auxiliary conductors (1 or 2 conductors can be connected)					
• Solid	mm^2	2 x (0.5 ... 1.5)[3)]; 2 x (0.75 ... 2.5)[3)]; max. 2 x (0.75 ... 4)[3)]			
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)[3)]; 2 x (0.75 ... 2.5)[3)]			
• AWG cables, solid or stranded	AWG	2 x (18 ... 14)			
• Terminal screws		M3 (Pozidriv size 2)			
- Tightening torque	Nm	0.8 ... 1.2			
	lb.in	7 ... 10.3			
Auxiliary conductors[4)] (1 or 2 conductors can be connected)		**Spring-loaded terminals**			
• Operating devices		3.0 x 0.5; 3.5 x 0.5			
• Solid	mm^2	2 x (0.25 ... 2.5)			
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.25 ... 1.5)			
• Finely stranded without end sleeve	mm^2	2 x (0.25 ... 2.5)			
• AWG cables, solid or stranded	AWG	2 x (24 ... 14)			

1) 3RT105.: When using cable lugs according to DIN 46235, use the 3RT1956-4EA1 terminal cover for conductor cross-sections from 95 mm^2 to maintain the phase clearance; see page 3/112.

2) 3RT106. and 3RT107.: When connecting cable lugs according to DIN 46234 for conductor cross-sections larger than 240 mm^2 and according to DIN 46235 for conductor cross-sections larger than 185 mm^2, the 3RT1966-4EA1 terminal cover is required to maintain the phase clearance, see page 3/112.

3) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

4) Max. outer diameter of the conductor insulation: 3.6 mm.
On spring-loaded terminals with conductor cross-sections ≤ 1 mm^2, an insulation stop is recommended, see page 3/115.

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Data for North America

Type			Contactors						
			3RT2015	3RT2016	3RT2017	3RT2018			
Size			S00						
SP and UL rated data									
Rated operational voltage		V AC	600						
Uninterrupted current, at 40 °C, open and enclosed		A	20						
Maximum horsepower ratings (from SP and UL approved values)									
• Rated power for three-phase motors at 60 Hz	at 200 V	hp	1.5	2	3				
	230 V	hp	2	3		5			
	460 V	hp	3	5	7.5	10			
	575 V	hp	5	7.5	10				
Short-circuit protection (contactor)	at 600 V	kA	5						
• Class J fuse (values for RK5 fuses available on request)		A	60						
• Circuit breakers in accordance with UL 489 ("Inverse Time Breakers")		A	50						
• Combination Motor Controllers (Type E) according to UL 508 and UL 60947-4-1			3RV2.1 or 3RV2.2						

Type			Contactors						
			3RT2023	3RT2024	3RT2025	3RT2026	3RT2326-.....-4AA0	3RT2027	3RT2028
Size			S0						
SP and UL rated data									
Rated operational voltage		V AC	600						
Uninterrupted current, at 40 °C, open and enclosed		A	30					42	
Maximum horsepower ratings (from SP and UL approved values)									
• Rated power for three-phase motors at 60 Hz	at 200 V	hp	2	3		5	3	10	
	230 V	hp	3		5	7.5	5	10	
	460 V	hp	5	7.5	10	15	10	20	25
	575 V	hp	7.5	10	15	20	15	25	
Short-circuit protection (contactor)	at 600 V	kA	5						
• Class J fuse (values for RK5 fuses available on request)		A	125					150	
• Circuit breakers in accordance with UL 489 ("Inverse Time Breakers")		A	70					100	
• Combination Motor Controllers (Type E) according to UL 508 and UL 60947-4-1	at 480 V	Type	3RV202						
	at 600 V	Type	3RV202						

Type			Contactors						
			3RT2035	3RT2036, 3RT2336-.....-4AA0		3RT2037	3RT2038	3RT2045	3RT2046	3RT2047
Size			S2					S3		
SP and UL rated data										
Rated operational voltage		V AC	600							
Uninterrupted current, at 40 °C, open and enclosed		A	55	60		80	90	62	77	99
Maximum horsepower ratings (from SP and UL approved values)										
• Rated power for three-phase motors at 60 Hz	at 200/208 V	hp	10	15		20		25	30	
	230/240 V	hp	15			20	25	30		40
	460/480 V	hp	30	40		50		60	75	
	575/600 V	hp	40	50			60	60	75	100
Short-circuit protection (contactor)	at 600 V	kA	5	10				10		
• RK5 fuse		A	150	200		250		300	350	
• Combination Motor Controllers (Type E) according to UL 508 and UL 60947-4-1		Type	3RV203					3RV204		

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SIRIUS 3RT contactors, 3-pole up to 250 kW

			Contactors							
Type			3RT1054	3RT1055	3RT1056	3RT1064	3RT1065	3RT1066	3RT1075	3RT1076
Size			S6			S10			S12	
CSA and UL rated data										
Rated operational voltage		V AC	600							
Uninterrupted current, at 40 °C, open and enclosed		A	140	195		250	330		400	540
Maximum horsepower ratings (from CSA and UL approved values)										
• Rated power for three-phase motors at 60 Hz	at 200 V	hp	40	50	60		75	100	125	150
	230 V	hp	50	60	75		100	125	150	200
	460 V	hp	100	125	150		200	250	300	400
	575 V	hp	125	150	200		250	300	400	500
Short-circuit protection			For more information, see Certificate of Compliance for the individual devices. For the dimensioning of load feeders, see Configuration Manual.							

		Contactors			
Type		3RT201	3RT202 to 3RT204		3RT105 to 3RT107
Size		S00	S0 to S3		S6 to S12
		Integrated or mountable auxiliary switch	Integrated	Mountable auxiliary switch	Mountable auxiliary switch
CSA and UL rated data of the auxiliary contacts					
Rated voltage	V AC	600			
Switching capacity		A 600, Q 600	A 600, P 600	A 600, Q 600	A 600, Q 600
• Uninterrupted current at 240 V AC	A	10			

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Selection and ordering data

AC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT201.-1A...

3RT201.-2A...

3RT201.-1AP04-3MA0

3RT201.-2AP04-3MA0

Rated data			Auxiliary contacts			Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
AC-3 and AC-3e, t_u: 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to 400 V	Ratings of three-phase motors at 50 Hz and **400 V**	Operational current I_e up to 690 V	Ident. No.	Version NO	Version NC	50/60 Hz AC	Article No.	Price per PU	Article No.	Price per PU
A	**kW**	A		NO	NC	V				
For screw fixing and snap-on mounting on TH 35 DIN rail										
Size S00										
7	**3**	18	**10**	1	--	24 110 230	**3RT2015-1AB01** **3RT2015-1AF01** **3RT2015-1AP01**		**3RT2015-2AB01** **3RT2015-2AF01** **3RT2015-2AP01**	
			01	--	1	24 110 230	**3RT2015-1AB02** **3RT2015-1AF02** **3RT2015-1AP02**		**3RT2015-2AB02** **3RT2015-2AF02** **3RT2015-2AP02**	
9	**4**	22	**10**	1	--	24 110 230	**3RT2016-1AB01** **3RT2016-1AF01** **3RT2016-1AP01**		**3RT2016-2AB01** **3RT2016-2AF01** **3RT2016-2AP01**	
			01	--	1	24 110 230	**3RT2016-1AB02** **3RT2016-1AF02** **3RT2016-1AP02**		**3RT2016-2AB02** **3RT2016-2AF02** **3RT2016-2AP02**	
12	**5.5**	22	**10**	1	--	24 110 230	**3RT2017-1AB01** **3RT2017-1AF01** **3RT2017-1AP01**		**3RT2017-2AB01** **3RT2017-2AF01** **3RT2017-2AP01**	
			01	--	1	24 110 230	**3RT2017-1AB02** **3RT2017-1AF02** **3RT2017-1AP02**		**3RT2017-2AB02** **3RT2017-2AF02** **3RT2017-2AP02**	
16	**7.5**	22	**10**	1	--	24 110 230	**3RT2018-1AB01** **3RT2018-1AF01** **3RT2018-1AP01**		**3RT2018-2AB01** **3RT2018-2AF01** **3RT2018-2AP01**	
			01	--	1	24 110 230	**3RT2018-1AB02** **3RT2018-1AF02** **3RT2018-1AP02**		**3RT2018-2AB02** **3RT2018-2AF02** **3RT2018-2AP02**	
With permanently mounted auxiliary switch										
7	**3**	18	**22**	2	2	230	**3RT2015-1AP04-3MA0**		**3RT2015-2AP04-3MA0**	
9	**4**	22	**22**	2	2	230	**3RT2016-1AP04-3MA0**		**3RT2016-2AP04-3MA0**	
12	**5.5**	22	**22**	2	2	230	**3RT2017-1AP04-3MA0**		**3RT2017-2AP04-3MA0**	
16	**7.5**	22	**22**	2	2	230	**3RT2018-1AP04-3MA0**		**3RT2018-2AP04-3MA0**	
With permanently mounted auxiliary switch and varistor plugged into the front										
7	**3**	18	**22**	2	2	230	**3RT2015-1CP04-3MA0**		**3RT2015-2CP04-3MA0**	
9	**4**	22	**22**	2	2	230	**3RT2016-1CP04-3MA0**		**3RT2016-2CP04-3MA0**	
12	**5.5**	22	**22**	2	2	230	**3RT2017-1CP04-3MA0**		**3RT2017-2CP04-3MA0**	
16	**7.5**	22	**22**	2	2	230	**3RT2018-1CP04-3MA0**		**3RT2018-2CP04-3MA0**	

Other voltages according to page 3/67 on request.

Accessories and spare parts, see pages 3/69 to 3/119.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RT contactors, 3-pole up to 250 kW *IE3/IE4* ready AC-3e

AC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT202.-1A.00

3RT202.-2A.00

Rated data			Auxiliary contacts			Rated control supply voltage U_s	**Screw terminals**		**Spring-loaded terminals**	
AC-3 and AC-3e, t_u: 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version		50 Hz AC	Article No.	Price per PU	Article No.	Price per PU
400 V	**400 V**	690 V								
A	**kW**	A		NO	NC	V				
For screw fixing and snap-on mounting on TH 35 DIN rail										
Size S0										
9	**4**	40	**11**	1	1	24 110 230	**3RT2023-1AB00** **3RT2023-1AF00** **3RT2023-1AP00**		**3RT2023-2AB00** **3RT2023-2AF00** **3RT2023-2AP00**	
12	**5.5**	40	**11**	1	1	24 110 230	**3RT2024-1AB00** **3RT2024-1AF00** **3RT2024-1AP00**		**3RT2024-2AB00** **3RT2024-2AF00** **3RT2024-2AP00**	
17	**7.5**	40	**11**	1	1	24 110 230	**3RT2025-1AB00** **3RT2025-1AF00** **3RT2025-1AP00**		**3RT2025-2AB00** **3RT2025-2AF00** **3RT2025-2AP00**	
25	**11**	40	**11**	1	1	24 110 230	**3RT2026-1AB00** **3RT2026-1AF00** **3RT2026-1AP00**		**3RT2026-2AB00** **3RT2026-2AF00** **3RT2026-2AP00**	
32	**15**	50	**11**	1	1	24 110 230	**3RT2027-1AB00** **3RT2027-1AF00** **3RT2027-1AP00**		**3RT2027-2AB00** **3RT2027-2AF00** **3RT2027-2AP00**	
38	**18.5**	50	**11**	1	1	24 110 230	**3RT2028-1AB00** **3RT2028-1AF00** **3RT2028-1AP00**		**3RT2028-2AB00** **3RT2028-2AF00** **3RT2028-2AP00**	

Other voltages according to page 3/67 on request.

Accessories and spare parts, see pages 3/69 to 3/119.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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AC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT202.-1A.04

3RT202.-2A.04

3RT202.-1CL24-3MA0

3RT202.-2CL24-3MA0

Rated data			Auxiliary contacts			Rated control supply voltage U_s	**Screw terminals**		**Spring-loaded terminals**	
AC-3 and AC-3e, t_u: 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version		50 Hz AC	Article No.	Price per PU	Article No.	Price per PU
400 V	**400 V**	690 V		NO	NC	V				
A	**kW**	A								
For screw fixing and snap-on mounting on TH 35 DIN rail										
Size S0										
With removable auxiliary switch										
9	**4**	40	**22**	2	2	24 230	**3RT2023-1AB04** **3RT2023-1AP04**		**3RT2023-2AB04** **3RT2023-2AP04**	
12	**5.5**	40	**22**	2	2	24 110 230	**3RT2024-1AB04** **3RT2024-1AF04** **3RT2024-1AP04**		**3RT2024-2AB04** **3RT2024-2AF04** **3RT2024-2AP04**	
17	**7.5**	40	**22**	2	2	24 110 230	**3RT2025-1AB04** **3RT2025-1AF04** **3RT2025-1AP04**		**3RT2025-2AB04** **3RT2025-2AF04** **3RT2025-2AP04**	
25	**11**	40	**22**	2	2	24 110 230	**3RT2026-1AB04** **3RT2026-1AF04** **3RT2026-1AP04**		**3RT2026-2AB04** **3RT2026-2AF04** **3RT2026-2AP04**	
32	**15**	50	**22**	2	2	24 110 230	**3RT2027-1AB04** **3RT2027-1AF04** **3RT2027-1AP04**		**3RT2027-2AB04** **3RT2027-2AF04** **3RT2027-2AP04**	
38	**18.5**	50	**22**	2	2	24 110 230	**3RT2028-1AB04** **3RT2028-1AF04** **3RT2028-1AP04**		**3RT2028-2AB04** **3RT2028-2AF04** **3RT2028-2AP04**	
With permanently mounted auxiliary switch and varistor plugged in										
9	**4**	40	**22**	2	2	230	**3RT2023-1CL24-3MA0**		**3RT2023-2CL24-3MA0**	
12	**5.5**	40	**22**	2	2	230	**3RT2024-1CL24-3MA0**		**3RT2024-2CL24-3MA0**	
17	**7.5**	40	**22**	2	2	230	**3RT2025-1CL24-3MA0**		**3RT2025-2CL24-3MA0**	
25	**11**	40	**22**	2	2	230	**3RT2026-1CL24-3MA0**		**3RT2026-2CL24-3MA0**	
32	**15**	50	**22**	2	2	230	**3RT2027-1CL24-3MA0**		**3RT2027-2CL24-3MA0**	
38	**18.5**	50	**22**	2	2	230	**3RT2028-1CL24-3MA0**		**3RT2028-2CL24-3MA0**	

Other voltages according to page 3/67 on request.

Accessories and spare parts, see pages 3/69 to 3/119.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RT contactors, 3-pole up to 250 kW *IE3/IE4 ready* AC-3e

AC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT203.-1A.00

3RT203.-3A.00

3RT203.-1A.04

3RT203.-3CL24-3MA0

3RT203.-1CL24-3MA0

Rated data			Auxiliary contacts			Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
AC-3 and AC-3e, t_u: 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version		50 Hz AC	Article No.	Price per PU	Article No.	Price per PU
400 V	**400 V**	690 V		NO	NC					
A	**kW**	A				V				
For screw fixing and snap-on mounting on TH 35 DIN rail										
Size S2										
41	**18.5**	60	**11**	1	1	24 110 230	**3RT2035-1AB00** **3RT2035-1AF00** **3RT2035-1AP00**		**3RT2035-3AB00** **3RT2035-3AF00** **3RT2035-3AP00**	
51	**22**	70	**11**	1	1	24 110 230	**3RT2036-1AB00** **3RT2036-1AF00** **3RT2036-1AP00**		**3RT2036-3AB00** **3RT2036-3AF00** **3RT2036-3AP00**	
65	**30**	80	**11**	1	1	24 110 230	**3RT2037-1AB00** **3RT2037-1AF00** **3RT2037-1AP00**		**3RT2037-3AB00** **3RT2037-3AF00** **3RT2037-3AP00**	
80	**37**	90	**11**	1	1	24 110 230	**3RT2038-1AB00** **3RT2038-1AF00** **3RT2038-1AP00**		**3RT2038-3AB00** **3RT2038-3AF00** **3RT2038-3AP00**	
With removable auxiliary switch										
41	**18.5**	60	**22**	2	2	24 110 230	**3RT2035-1AB04** **3RT2035-1AF04** **3RT2035-1AP04**		**--** **--** **--**	
51	**22**	70	**22**	2	2	24 110 230	**3RT2036-1AB04** **3RT2036-1AF04** **3RT2036-1AP04**		**--** **--** **--**	
65	**30**	80	**22**	2	2	24 110 230	**3RT2037-1AB04** **3RT2037-1AF04** **3RT2037-1AP04**		**--** **--** **--**	
80	**37**	90	**22**	2	2	24 110 230	**3RT2038-1AB04** **3RT2038-1AF04** **3RT2038-1AP04**		**--** **--** **--**	
With permanently mounted auxiliary switch and integrated coil circuit (varistor plugged in at the factory)										
41	**18.5**	60	**22**	2	2	230	**3RT2035-1CL24-3MA0**		**3RT2035-3CL24-3MA0**	
51	**22**	70	**22**	2	2	230	**3RT2036-1CL24-3MA0**		**3RT2036-3CL24-3MA0**	
65	**30**	80	**22**	2	2	230	**3RT2037-1CL24-3MA0**		**3RT2037-3CL24-3MA0**	
80	**37**	90	**22**	2	2	230	**3RT2038-1CL24-3MA0**		**3RT2038-3CL24-3MA0**	

Other voltages according to page 3/67 on request.
Accessories and spare parts, see pages 3/69 to 3/119.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

© Siemens 2023

AC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT204.-1A.00

3RT204.-1A.04

3RT204.-1CL24-3MA0

3RT204.-3A.00

Rated data			Auxiliary contacts			Rated control supply voltage U_s	**Screw terminals**		**Spring-loaded terminals**	
AC-3 and AC-3e, t_u: 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version		50 Hz AC	Article No.	Price per PU	Article No.	Price per PU
400 V	**400 V**	690 V		NO	NC	V				
A	**kW**	A								
For screw fixing and snap-on mounting on TH 35-15 and TH 75-15 DIN rails										
Size S3										
80	**37**	125	**11**	1	1	24 110 230	**3RT2045-1AB00** **3RT2045-1AF00** **3RT2045-1AP00**		**3RT2045-3AB00** **3RT2045-3AF00** **3RT2045-3AP00**	
95	**45**	130	**11**	1	1	24 110 230	**3RT2046-1AB00** **3RT2046-1AF00** **3RT2046-1AP00**		**3RT2046-3AB00** **3RT2046-3AF00** **3RT2046-3AP00**	
110	**55**	130	**11**	1	1	24 110 230	**3RT2047-1AB00** **3RT2047-1AF00** **3RT2047-1AP00**		**3RT2047-3AB00** **3RT2047-3AF00** **3RT2047-3AP00**	
With removable auxiliary switch										
80	**37**	125	**22**	2	2	24 110 230	**3RT2045-1AB04** **3RT2045-1AF04** **3RT2045-1AP04**		**--** **--** **--**	
95	**45**	130	**22**	2	2	24 110 230	**3RT2046-1AB04** **3RT2046-1AF04** **3RT2046-1AP04**		**--** **--** **--**	
110	**55**	130	**22**	2	2	24 110 230	**3RT2047-1AB04** **3RT2047-1AF04** **3RT2047-1AP04**		**--** **--** **--**	
With permanently mounted auxiliary switch and integrated coil circuit (varistor plugged in at the factory)										
80	**37**	125	**22**	2	2	230	**3RT2045-1CL24-3MA0**		**--**	
95	**45**	130	**22**	2	2	230	**3RT2046-1CL24-3MA0**		**--**	
110	**55**	130	**22**	2	2	230	**3RT2047-1CL24-3MA0**		**--**	

Other voltages according to page 3/67 on request.

Accessories and spare parts, see pages 3/69 to 3/119.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RT contactors, 3-pole up to 250 kW IE3/IE4 ready AC-3e

DC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT201.-1B...

3RT201.-2B...

Rated data			Auxiliary contacts			Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
AC-3 and AC-3e, t_u: 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version		DC	Article No.	Price per PU	Article No.	Price per PU
400 V	**400 V**	690 V		NO	NC					
A	**kW**	A				V				
For screw fixing and snap-on mounting on TH 35 DIN rail										
Size S00										
7	**3**	18	**10**	1	--	24 220	**3RT2015-1BB41** **3RT2015-1BM41**		**3RT2015-2BB41** **3RT2015-2BM41**	
			01	--	1	24 220	**3RT2015-1BB42** **3RT2015-1BM42**		**3RT2015-2BB42** **3RT2015-2BM42**	
9	**4**	22	**10**	1	--	24 220	**3RT2016-1BB41** **3RT2016-1BM41**		**3RT2016-2BB41** **3RT2016-2BM41**	
			01	--	1	24 220	**3RT2016-1BB42** **3RT2016-1BM42**		**3RT2016-2BB42** **3RT2016-2BM42**	
12	**5.5**	22	**10**	1	--	24 220	**3RT2017-1BB41** **3RT2017-1BM41**		**3RT2017-2BB41** **3RT2017-2BM41**	
			01	--	1	24 220	**3RT2017-1BB42** **3RT2017-1BM42**		**3RT2017-2BB42** **3RT2017-2BM42**	
16	**7.5**	22	**10**	1	--	24 220	**3RT2018-1BB41** **3RT2018-1BM41**		**3RT2018-2BB41** **3RT2018-2BM41**	
			01	--	1	24 220	**3RT2018-1BB42** **3RT2018-1BM42**		**3RT2018-2BB42** **3RT2018-2BM42**	
With integrated coil circuit (varistor integrated at the factory)										
7	**3**	18	**10** **01**	1 --	-- 1	24 24	**3RT2015-1UB41** **3RT2015-1UB42**		**3RT2015-2UB41** **3RT2015-2UB42**	
9	**4**	22	**10** **01**	1 --	-- 1	24 24	**3RT2016-1UB41** **3RT2016-1UB42**		**3RT2016-2UB41** **3RT2016-2UB42**	
12	**5.5**	22	**10** **01**	1 --	-- 1	24 24	**3RT2017-1UB41** **3RT2017-1UB42**		**3RT2017-2UB41** **3RT2017-2UB42**	
16	**7.5**	22	**10** **01**	1 --	-- 1	24 24	**3RT2018-1UB41** **3RT2018-1UB42**		**3RT2018-2UB41** **3RT2018-2UB42**	
With integrated coil circuit (diode integrated at factory)										
7	**3**	18	**10** **01**	1 --	-- 1	24 24	**3RT2015-1FB41** **3RT2015-1FB42**		**3RT2015-2FB41** **3RT2015-2FB42**	
9	**4**	22	**10** **01**	1 --	-- 1	24 24	**3RT2016-1FB41** **3RT2016-1FB42**		**3RT2016-2FB41** **3RT2016-2FB42**	
12	**5.5**	22	**10** **01**	1 --	-- 1	24 24	**3RT2017-1FB41** **3RT2017-1FB42**		**3RT2017-2FB41** **3RT2017-2FB42**	
16	**7.5**	22	**10** **01**	1 --	-- 1	24 24	**3RT2018-1FB41** **3RT2018-1FB42**		**3RT2018-2FB41** **3RT2018-2FB42**	

Other voltages according to page 3/67 on request.

Accessories and spare parts, see pages 3/69 to 3/119.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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DC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT201.-1BB44-3MA0

3RT201.-2BB44-3MA0

3RT201.-1BB4.-0CC0

3RT201.-2BB4.-0CC0

Rated data			Auxiliary contacts			Rated control supply voltage U_s	**Screw terminals**		**Spring-loaded terminals**	
AC-3 and AC-3e, t_u: 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version		DC	Article No.	Price per PU	Article No.	Price per PU
400 V	**400 V**	690 V		NO	NC	V				
A	**kW**	A								
For screw fixing and snap-on mounting on TH 35 DIN rail										
Size S00										
With permanently mounted auxiliary switch										
7	**3**	18	**22**	2	2	24	**3RT2015-1BB44-3MA0**		**3RT2015-2BB44-3MA0**	
9	**4**	22	**22**	2	2	24	**3RT2016-1BB44-3MA0**		**3RT2016-2BB44-3MA0**	
12	**5.5**	22	**22**	2	2	24	**3RT2017-1BB44-3MA0**		**3RT2017-2BB44-3MA0**	
16	**7.5**	22	**22**	2	2	24	**3RT2018-1BB44-3MA0**		**3RT2018-2BB44-3MA0**	
With permanently mounted auxiliary switch and integrated coil circuit (diode integrated at the factory)										
7	**3**	18	**22**	2	2	24	**3RT2015-1FB44-3MA0**		**3RT2015-2FB44-3MA0**	
9	**4**	22	**22**	2	2	24	**3RT2016-1FB44-3MA0**		**3RT2016-2FB44-3MA0**	
12	**5.5**	22	**22**	2	2	24	**3RT2017-1FB44-3MA0**		**3RT2017-2FB44-3MA0**	
16	**7.5**	22	**22**	2	2	24	**3RT2018-1FB44-3MA0**		**3RT2018-2FB44-3MA0**	
With voltage tap-off (only available with 24 V DC coils)										
7	**3**	18	**10**	1	--	24	**3RT2015-1BB41-0CC0**		**3RT2015-2BB41-0CC0**	
			01	--	1	24	**3RT2015-1BB42-0CC0**		**3RT2015-2BB42-0CC0**	
9	**4**	22	**10**	1	--	24	**3RT2016-1BB41-0CC0**		**3RT2016-2BB41-0CC0**	
			01	--	1	24	**3RT2016-1BB42-0CC0**		**3RT2016-2BB42-0CC0**	
12	**5.5**	22	**10**	1	--	24	**3RT2017-1BB41-0CC0**		**3RT2017-2BB41-0CC0**	
			01	--	1	24	**3RT2017-1BB42-0CC0**		**3RT2017-2BB42-0CC0**	
16	**7.5**	22	**10**	1	--	24	**3RT2018-1BB41-0CC0**		**3RT2018-2BB41-0CC0**	
			01	--	1	24	**3RT2018-1BB42-0CC0**		**3RT2018-2BB42-0CC0**	

Other voltages according to page 3/67 on request.

Accessories and spare parts, see pages 3/69 to 3/119.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RT contactors, 3-pole up to 250 kW *IE3/IE4* ready AC-3e

DC operation for direct control by PLC ⎓

- Coupling contactors with adapted power consumption
- Suitable for solid-state PLC/F-PLC outputs
- Cannot be expanded with auxiliary switches

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT201.-1.B4.

3RT201.-2.B4.

Rated data			Auxiliary contacts			Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
AC-3 and AC-3e, t_u: 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to 400 V	Ratings of three-phase motors at 50 Hz and **400 V**	Operational current I_e up to 690 V	Ident. No.	Version NO	Version NC	DC	Article No.	Price per PU	Article No.	Price per PU
A	**kW**	A		NO	NC	V				
For screw fixing and snap-on mounting on TH 35 DIN rail										
Size S00										
(cannot be expanded with auxiliary switches)										
Operating range **0.7 ... 1.25 x U_s**, power consumption of the solenoid coils **2.8 W** at 24 V										
7	**3**	18	**10**	1	--	24	**3RT2015-1HB41**		**3RT2015-2HB41**	
			01	--	1	24	**3RT2015-1HB42**		**3RT2015-2HB42**	
9	**4**	22	**10**	1	--	24	**3RT2016-1HB41**		**3RT2016-2HB41**	
			01	--	1	24	**3RT2016-1HB42**		**3RT2016-2HB42**	
12	**5.5**	22	**10**	1	--	24	**3RT2017-1HB41**		**3RT2017-2HB41**	
			01	--	1	24	**3RT2017-1HB42**		**3RT2017-2HB42**	
Operating range **0.85 ... 1.85 x U_s**, power consumption of the solenoid coils **1.6 W** at 24 V										
7	**3**	18	**10**	1	--	24	**3RT2015-1MB41-0KT0**		**3RT2015-2MB41-0KT0**	
			01	--	1	24	**3RT2015-1MB42-0KT0**		**3RT2015-2MB42-0KT0**	
9	**4**	22	**10**	1	--	24	**3RT2016-1MB41-0KT0**		**3RT2016-2MB41-0KT0**	
			01	--	1	24	**3RT2016-1MB42-0KT0**		**3RT2016-2MB42-0KT0**	
12	**5.5**	22	**10**	1	--	24	**3RT2017-1MB41-0KT0**		**3RT2017-2MB41-0KT0**	
			01	--	1	24	**3RT2017-1MB42-0KT0**		**3RT2017-2MB42-0KT0**	
With integrated coil circuit (diode integrated at factory)										
(cannot be expanded with auxiliary switches)										
Operating range **0.7 ... 1.25 x U_s**, power consumption of the solenoid coils **2.8 W** at 24 V										
7	**3**	18	**10**	1	--	24	**3RT2015-1JB41**		**3RT2015-2JB41**	
			01	--	1	24	**3RT2015-1JB42**		**3RT2015-2JB42**	
9	**4**	22	**10**	1	--	24	**3RT2016-1JB41**		**3RT2016-2JB41**	
			01	--	1	24	**3RT2016-1JB42**		**3RT2016-2JB42**	
12	**5.5**	22	**10**	1	--	24	**3RT2017-1JB41**		**3RT2017-2JB41**	
			01	--	1	24	**3RT2017-1JB42**		**3RT2017-2JB42**	
Operating range **0.85 ... 1.85 x U_s**, power consumption of the solenoid coils **1.6 W** at 24 V										
7	**3**	18	**10**	1	--	24	**3RT2015-1VB41**		**3RT2015-2VB41**	
			01	--	1	24	**3RT2015-1VB42**		**3RT2015-2VB42**	
9	**4**	22	**10**	1	--	24	**3RT2016-1VB41**		**3RT2016-2VB41**	
			01	--	1	24	**3RT2016-1VB42**		**3RT2016-2VB42**	
12	**5.5**	22	**10**	1	--	24	**3RT2017-1VB41**		**3RT2017-2VB41**	
			01	--	1	24	**3RT2017-1VB42**		**3RT2017-2VB42**	

Other voltages according to page 3/67 on request.

Accessories and spare parts, see pages 3/69 to 3/119.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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DC operation for direct control by PLC

- Coupling contactors with adapted power consumption
- Suitable for solid-state PLC/F-PLC outputs
- Cannot be expanded with auxiliary switches

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT201.-1.B4.

3RT201.-2.B4.

Rated data			Auxiliary contacts			Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
AC-3 and AC-3e, t_u: 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version		DC	Article No.	Price per PU	Article No.	Price per PU
400 V	**400 V**	690 V		NO	NC	V				
A	**kW**	A								
For screw fixing and snap-on mounting on TH 35 DIN rail										
Size S00										
With integrated coil circuit (suppressor diode integrated at factory)										
(cannot be expanded with auxiliary switches)										
Operating range **0.7 ... 1.25 x U_s**, power consumption of the solenoid coils **2.8 W** at 24 V										
7	**3**	18	**10**	1	--	24	**3RT2015-1KB41**		**3RT2015-2KB41**	
			01	--	1	24	**3RT2015-1KB42**		**3RT2015-2KB42**	
9	**4**	22	**10**	1	--	24	**3RT2016-1KB41**		**3RT2016-2KB41**	
			01	--	1	24	**3RT2016-1KB42**		**3RT2016-2KB42**	
12	**5.5**	22	**10**	1	--	24	**3RT2017-1KB41**		**3RT2017-2KB41**	
			01	--	1	24	**3RT2017-1KB42**		**3RT2017-2KB42**	
Operating range **0.85 ... 1.85 x U_s**, power consumption of the solenoid coils **1.6 W** at 24 V										
7	**3**	18	**10**	1	--	24	**3RT2015-1SB41**		**3RT2015-2SB41**	
			01	--	1	24	**3RT2015-1SB42**		**3RT2015-2SB42**	
9	**4**	22	**10**	1	--	24	**3RT2016-1SB41**		**3RT2016-2SB41**	
			01	--	1	24	**3RT2016-1SB42**		**3RT2016-2SB42**	
12	**5.5**	22	**10**	1	--	24	**3RT2017-1SB41**		**3RT2017-2SB41**	
			01	--	1	24	**3RT2017-1SB42**		**3RT2017-2SB42**	

Other voltages according to page 3/67 on request.

Accessories and spare parts, see pages 3/69 to 3/119.

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SIRIUS 3RT contactors, 3-pole up to 250 kW *IE3/IE4* ready AC-3e

DC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT202.-1B.40

3RT202.-2B.40

3RT202.-1B.44

3RT202.-2B.44

Rated data			Auxiliary contacts			Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
AC-3 and AC-3e, t_u: 60 °C		AC-1, t_u: 40 °C					Article No.	Price per PU	Article No.	Price per PU
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version		DC				
400 V	**400 V**	690 V		NO	NC	V				
A	**kW**	A								
For screw fixing and snap-on mounting on TH 35 DIN rail										
Size S0										
9	**4**	40	**11**	1	1	24	**3RT2023-1BB40**		**3RT2023-2BB40**	
12	**5.5**	40	**11**	1	1	24 220	**3RT2024-1BB40** **3RT2024-1BM40**		**3RT2024-2BB40** **3RT2024-2BM40**	
17	**7.5**	40	**11**	1	1	24 220	**3RT2025-1BB40** **3RT2025-1BM40**		**3RT2025-2BB40** **3RT2025-2BM40**	
25	**11**	40	**11**	1	1	24 220	**3RT2026-1BB40** **3RT2026-1BM40**		**3RT2026-2BB40** **3RT2026-2BM40**	
32	**15**	50	**11**	1	1	24 220	**3RT2027-1BB40** **3RT2027-1BM40**		**3RT2027-2BB40** **3RT2027-2BM40**	
38	**18.5**	50	**11**	1	1	24 220	**3RT2028-1BB40** **3RT2028-1BM40**		**3RT2028-2BB40** **3RT2028-2BM40**	
With coil circuit plugged into front (varistor plugged in at the factory)										
9	**4**	40	**11**	1	1	24	**3RT2023-1DB40**		**3RT2023-2DB40**	
12	**5.5**	40	**11**	1	1	24	**3RT2024-1DB40**		**3RT2024-2DB40**	
17	**7.5**	40	**11**	1	1	24	**3RT2025-1DB40**		**3RT2025-2DB40**	
25	**11**	40	**11**	1	1	24	**3RT2026-1DB40**		**3RT2026-2DB40**	
32	**15**	50	**11**	1	1	24	**3RT2027-1DB40**		**3RT2027-2DB40**	
38	**18.5**	50	**11**	1	1	24	**3RT2028-1DB40**		**3RT2028-2DB40**	
With coil circuit plugged into front (diode assembly plugged in at the factory)										
9	**4**	40	**11**	1	1	24	**3RT2023-1FB40**		**3RT2023-2FB40**	
12	**5.5**	40	**11**	1	1	24	**3RT2024-1FB40**		**3RT2024-2FB40**	
17	**7.5**	40	**11**	1	1	24	**3RT2025-1FB40**		**3RT2025-2FB40**	
25	**11**	40	**11**	1	1	24	**3RT2026-1FB40**		**3RT2026-2FB40**	
32	**15**	50	**11**	1	1	24	**3RT2027-1FB40**		**3RT2027-2FB40**	
38	**18.5**	50	**11**	1	1	24	**3RT2028-1FB40**		**3RT2028-2FB40**	
With removable auxiliary switch										
9	**4**	40	**22**	2	2	24	**3RT2023-1BB44**		**3RT2023-2BB44**	
12	**5.5**	40	**22**	2	2	24	**3RT2024-1BB44**		**3RT2024-2BB44**	
17	**7.5**	40	**22**	2	2	24	**3RT2025-1BB44**		**3RT2025-2BB44**	
25	**11**	40	**22**	2	2	24	**3RT2026-1BB44**		**3RT2026-2BB44**	
32	**15**	50	**22**	2	2	24	**3RT2027-1BB44**		**3RT2027-2BB44**	
38	**18.5**	50	**22**	2	2	24	**3RT2028-1BB44**		**3RT2028-2BB44**	

Other voltages according to page 3/67 on request.

Accessories and spare parts, see pages 3/69 to 3/119.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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DC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT202.-1.B44-3MA0

3RT202.-2.B44-3MA0

3RT202.-1BB40-0CC0

3RT202.-2BB40-0CC0

Rated data			Auxiliary contacts			Rated control supply voltage U_s	**Screw terminals**		**Spring-loaded terminals**	
AC-3 and AC-3e, t_u: 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version		DC	Article No.	Price per PU	Article No.	Price per PU
400 V	**400 V**	690 V								
A	**kW**	A		NO	NC	V				
For screw fixing and snap-on mounting on TH 35 DIN rail										
Size S0										
With permanently mounted auxiliary switch and integrated coil circuit (varistor integrated at the factory)										
12	**5.5**	40	**22**	2	2	24	**3RT2024-1DB44-3MA0**		**3RT2024-2DB44-3MA0**	
17	**7.5**	40	**22**	2	2	24	**3RT2025-1DB44-3MA0**		**3RT2025-2DB44-3MA0**	
25	**11**	40	**22**	2	2	24	**3RT2026-1DB44-3MA0**		**3RT2026-2DB44-3MA0**	
32	**15**	50	**22**	2	2	24	**3RT2027-1DB44-3MA0**		**3RT2027-2DB44-3MA0**	
With permanently mounted auxiliary switch and integrated coil circuit (diode assembly plugged in at the factory)										
9	**4**	40	**22**	2	2	24	**3RT2023-1FB44-3MA0**		**3RT2023-2FB44-3MA0**	
12	**5.5**	40	**22**	2	2	24	**3RT2024-1FB44-3MA0**		**3RT2024-2FB44-3MA0**	
17	**7.5**	40	**22**	2	2	24	**3RT2025-1FB44-3MA0**		**3RT2025-2FB44-3MA0**	
25	**11**	40	**22**	2	2	24	**3RT2026-1FB44-3MA0**		**3RT2026-2FB44-3MA0**	
32	**15**	50	**22**	2	2	24	**3RT2027-1FB44-3MA0**		**3RT2027-2FB44-3MA0**	
38	**18.5**	50	**22**	2	2	24	**3RT2028-1FB44-3MA0**		**3RT2028-2FB44-3MA0**	
With voltage tap-off										
9	**4**	40	**11**	1	1	24	**3RT2023-1BB40-0CC0**		**3RT2023-2BB40-0CC0**	
12	**5.5**	40	**11**	1	1	24	**3RT2024-1BB40-0CC0**		**3RT2024-2BB40-0CC0**	
17	**7.5**	40	**11**	1	1	24	**3RT2025-1BB40-0CC0**		**3RT2025-2BB40-0CC0**	
25	**11**	40	**11**	1	1	24	**3RT2026-1BB40-0CC0**		**3RT2026-2BB40-0CC0**	
32	**15**	50	**11**	1	1	24	**3RT2027-1BB40-0CC0**		**3RT2027-2BB40-0CC0**	
38	**18.5**	50	**11**	1	1	24	**3RT2028-1BB40-0CC0**		**3RT2028-2BB40-0CC0**	

Other voltages according to page 3/67 on request.

Accessories and spare parts, see pages 3/69 to 3/119.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RT contactors, 3-pole up to 250 kW *IE3/IE4* ready AC-3e

DC operation for direct control by PLC ⎓

- Coupling contactors with adapted power consumption
- Suitable for solid-state PLC/F-PLC outputs
- Cannot be expanded with auxiliary switches

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT202.-1KB40

3RT202.-2KB40

Rated data			Auxiliary contacts			Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
AC-3 and AC-3e, t_u: 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version		DC	Article No.	Price per PU	Article No.	Price per PU
400 V	**400 V**	690 V		NO	NC	V				
A	**kW**	A								
For screw fixing and snap-on mounting on TH 35 DIN rail										
Size S0										
With integrated coil circuit (varistor integrated in electronics at the factory) (cannot be expanded with auxiliary switches) Operating range **0.7 ... 1.25 x U_s**, power consumption of the solenoid coils **4.5 W** at 24 V										
9	**4**	40	**11**	1	1	24	**3RT2023-1KB40**		**3RT2023-2KB40**	
12	**5.5**	40	**11**	1	1	24	**3RT2024-1KB40**		**3RT2024-2KB40**	
17	**7.5**	40	**11**	1	1	24	**3RT2025-1KB40**		**3RT2025-2KB40**	
25	**11**	40	**11**	1	1	24	**3RT2026-1KB40**		**3RT2026-2KB40**	
32	**15**	50	**11**	1	1	24	**3RT2027-1KB40**		**3RT2027-2KB40**	

Other voltages according to page 3/67 on request.

Accessories and spare parts, see pages 3/69 to 3/119.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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DC operation for direct control by PLC

- Coupling contactors with adapted power consumption
- Suitable for solid-state PLC/F-PLC outputs with 2 A
- Can be expanded using front or lateral auxiliary switch (1 x left and 1 x right)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT203.-1KB40

3RT203.-3KB40

3RT204.-1KB40

3RT204.-3KB40

Rated data			Auxiliary contacts			Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
AC-3 and AC-3e, t_u: 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version		DC	Article No.	Price per PU	Article No.	Price per PU
400 V	**400 V**	690 V		NO	NC	V				
A	**kW**	A								
For screw fixing and snap-on mounting on TH 35 DIN rail										
Size S2										
With integrated coil circuit (varistor integrated in electronics at the factory)										
Operating range **0.8 ... 1.2 x U_s**, closing power of the solenoid coils **21.5 W** at 24 V										
41	**18.5**	60	**11**	1	1	24	**3RT2035-1KB40**		**3RT2035-3KB40**	
51	**22**	70	**11**	1	1	24	**3RT2036-1KB40**		**3RT2036-3KB40**	
65	**30**	80	**11**	1	1	24	**3RT2037-1KB40**		**3RT2037-3KB40**	
80	**37**	90	**11**	1	1	24	**3RT2038-1KB40**		**3RT2038-3KB40**	
For screw fixing and snap-on mounting on TH 35-15 and TH 75-15 DIN rails										
Size S3										
With integrated coil circuit (varistor integrated in electronics at the factory)										
Operating range **0.8 ... 1.2 x U_s**, closing power of the solenoid coils **25 W** at 24 V										
80	**37**	125	**11**	1	1	24	**3RT2045-1KB40**		**3RT2045-3KB40**	
95	**45**	130	**11**	1	1	24	**3RT2046-1KB40**		**3RT2046-3KB40**	

Other voltages according to page 3/67 on request.

Accessories and spare parts, see pages 3/69 to 3/119.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RT contactors, 3-pole up to 250 kW *IE3/IE4* ready AC-3e

AC/DC operation

- Extended operating range of the solenoid coil 0.7 to 1.3 x U_s
- Power consumption reduced from closing to closed

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT202.-1N.30

3RT202.-2N.30

Rated data			Auxiliary contacts			Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
AC-3 and AC-3e, t_u: 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version		50/60 Hz AC or DC	Article No.	Price per PU	Article No.	Price per PU
400 V	**400 V**	690 V		NO	NC					
A	**kW**	A				V				
For screw fixing and snap-on mounting on TH 35 DIN rail										
Size S0										
With integrated coil circuit (varistor integrated in electronics at the factory)										
12	**5.5**	40	**11**	1	1	21 ... 28 95 ... 130 200 ... 280	**3RT2024-1NB30** **3RT2024-1NF30** **3RT2024-1NP30**		**3RT2024-2NB30** **3RT2024-2NF30** **3RT2024-2NP30**	
17	**7.5**	40	**11**	1	1	21 ... 28 95 ... 130 200 ... 280	**3RT2025-1NB30** **3RT2025-1NF30** **3RT2025-1NP30**		**3RT2025-2NB30** **3RT2025-2NF30** **3RT2025-2NP30**	
25	**11**	40	**11**	1	1	21 ... 28 95 ... 130 200 ... 280	**3RT2026-1NB30** **3RT2026-1NF30** **3RT2026-1NP30**		**3RT2026-2NB30** **3RT2026-2NF30** **3RT2026-2NP30**	
32	**15**	50	**11**	1	1	21 ... 28 95 ... 130 200 ... 280	**3RT2027-1NB30** **3RT2027-1NF30** **3RT2027-1NP30**		**3RT2027-2NB30** **3RT2027-2NF30** **3RT2027-2NP30**	
38	**18.5**	50	**11**	1	1	21 ... 28 95 ... 130 200 ... 280	**3RT2028-1NB30** **3RT2028-1NF30** **3RT2028-1NP30**		**3RT2028-2NB30** **3RT2028-2NF30** **3RT2028-2NP30**	

Other voltages according to page 3/67 on request.

Accessories and spare parts, see pages 3/69 to 3/119.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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AC/DC operation

- Extended operating range of the solenoid coil 0.8 to 1.1 x U_s
- Power consumption reduced from closing to closed

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT203.-1N.30

3RT203.-3N.30

3RT203.-1N.34

3RT203.-1NB34-3MA0

3RT203.-3NB34-3MA0

Rated data			Auxiliary contacts			Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
AC-3 and AC-3e, t_u: 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version		50/60 Hz AC or DC	Article No.	Price per PU	Article No.	Price per PU
400 V	**400 V**	690 V		NO	NC	V				
A	**kW**	A								
For screw fixing and snap-on mounting on TH 35 DIN rail										
Size S2										
With integrated coil circuit (varistor integrated in electronics at the factory)										
41	**18.5**	60	**11**	1	1	20 ... 33 83 ... 155 175 ... 280	**3RT2035-1NB30** **3RT2035-1NF30** **3RT2035-1NP30**		**3RT2035-3NB30** **3RT2035-3NF30** **3RT2035-3NP30**	
51	**22**	70	**11**	1	1	20 ... 33 83 ... 155 175 ... 280	**3RT2036-1NB30** **3RT2036-1NF30** **3RT2036-1NP30**		**3RT2036-3NB30** **3RT2036-3NF30** **3RT2036-3NP30**	
65	**30**	80	**11**	1	1	20 ... 33 83 ... 155 175 ... 280	**3RT2037-1NB30** **3RT2037-1NF30** **3RT2037-1NP30**		**3RT2037-3NB30** **3RT2037-3NF30** **3RT2037-3NP30**	
80	**37**	90	**11**	1	1	20 ... 33 83 ... 155 175 ... 280	**3RT2038-1NB30** **3RT2038-1NF30** **3RT2038-1NP30**		**3RT2038-3NB30** **3RT2038-3NF30** **3RT2038-3NP30**	
With removable auxiliary switch and integrated coil circuit (varistor integrated in electronics at the factory)										
41	**18.5**	60	**22**	2	2	20 ... 33 83 ... 155 175 ... 280	**3RT2035-1NB34** **3RT2035-1NF34** **3RT2035-1NP34**		-- -- --	
51	**22**	70	**22**	2	2	20 ... 33 83 ... 155 175 ... 280	**3RT2036-1NB34** **3RT2036-1NF34** **3RT2036-1NP34**		-- -- --	
65	**30**	80	**22**	2	2	20 ... 33 83 ... 155 175 ... 280	**3RT2037-1NB34** **3RT2037-1NF34** **3RT2037-1NP34**		-- -- --	
80	**37**	90	**22**	2	2	20 ... 33 83 ... 155 175 ... 280	**3RT2038-1NB34** **3RT2038-1NF34** **3RT2038-1NP34**		-- -- --	
With permanently mounted auxiliary switch and integrated coil circuit (varistor integrated in electronics at the factory)										
41	**18.5**	60	**22**	2	2	20 ... 33	**3RT2035-1NB34-3MA0**		**3RT2035-3NB34-3MA0**	
51	**22**	70	**22**	2	2	20 ... 33	**3RT2036-1NB34-3MA0**		**3RT2036-3NB34-3MA0**	
65	**30**	80	**22**	2	2	20 ... 33	**3RT2037-1NB34-3MA0**		**3RT2037-3NB34-3MA0**	
80	**37**	90	**22**	2	2	20 ... 33	**3RT2038-1NB34-3MA0**		**3RT2038-3NB34-3MA0**	
With voltage tap-off and integrated coil circuit (varistor integrated in electronics at the factory)										
41	**18.5**	60	**11**	1	1	20 ... 33	**3RT2035-1NB30-0CC0**		**3RT2035-3NB30-0CC0**	
51	**22**	70	**11**	1	1	20 ... 33	**3RT2036-1NB30-0CC0**		**3RT2036-3NB30-0CC0**	
65	**30**	80	**11**	1	1	20 ... 33	**3RT2037-1NB30-0CC0**		**3RT2037-3NB30-0CC0**	
80	**37**	90	**11**	1	1	20 ... 33	**3RT2038-1NB30-0CC0**		**3RT2038-3NB30-0CC0**	

Other voltages according to page 3/67 on request.

Accessories and spare parts, see pages 3/69 to 3/119.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RT contactors, 3-pole up to 250 kW *IE3/IE4 ready* AC-3e

AC/DC operation

- Certified and fail-safe 24 V DC control input with max. 20 mA, e.g. for control via the fail-safe output module of a controller (F-PLC) or safety relay
- Achievable Safety Integrity Level (SIL) according to IEC 62061 and Performance Level (PL) according to ISO 13849-1 with corresponding fault diagnostics:
  - With one contactor: SIL 2/PL c
  - With two contactors in series: SIL 3/PL e
  - Fail-safe applications can be implemented using this contactor.
- Extended operating range of the solenoid coil 0.8 to 1.1 x U_s
- Power consumption reduced from closing to closed

For more information, see
- Safety technology, page 11/1 onwards
- Guide of use for contactors in safety applications

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT203.-1S.30

3RT203.-3S.30

3RT204.-1S.30

3RT204.-3S.30

Rated data			Auxiliary contacts			Rated control supply voltage U_s	**Screw terminals**		**Spring-loaded terminals**	
AC-3 and AC-3e, t_u: 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version		50/60 Hz AC or DC	Article No.	Price per PU	Article No.	Price per PU
400 V	**400 V**	690 V		NO	NC					
A	**kW**	A				V				
For screw fixing and snap-on mounting on TH 35 DIN rail										
Size S2										
With integrated coil circuit (varistor integrated in electronics at the factory)										
41	**18.5**	60	**01**	--	1	21 ... 33 83 ... 150 175 ... 280	**3RT2035-1SB30** **3RT2035-1SF30** **3RT2035-1SP30**		**3RT2035-3SB30** **3RT2035-3SF30** **3RT2035-3SP30**	
51	**22**	70	**01**	--	1	21 ... 33 83 ... 150 175 ... 280	**3RT2036-1SB30** **3RT2036-1SF30** **3RT2036-1SP30**		**3RT2036-3SB30** **3RT2036-3SF30** **3RT2036-3SP30**	
65	**30**	80	**01**	--	1	21 ... 33 83 ... 150 175 ... 280	**3RT2037-1SB30** **3RT2037-1SF30** **3RT2037-1SP30**		**3RT2037-3SB30** **3RT2037-3SF30** **3RT2037-3SP30**	
80	**37**	90	**01**	--	1	21 ... 33 83 ... 150 175 ... 280	**3RT2038-1SB30** **3RT2038-1SF30** **3RT2038-1SP30**		**3RT2038-3SB30** **3RT2038-3SF30** **3RT2038-3SP30**	
For screw fixing and snap-on mounting on TH 35-15 and TH 75-15 DIN rails										
Size S3										
With integrated coil circuit (varistor integrated in electronics at the factory)										
80	**37**	125	**01**	--	1	21 ... 33 83 ... 150 175 ... 280	**3RT2045-1SB30** **3RT2045-1SF30** **3RT2045-1SP30**		**3RT2045-3SB30** **3RT2045-3SF30** **3RT2045-3SP30**	
95	**45**	130	**01**	--	1	21 ... 33 83 ... 150 175 ... 280	**3RT2046-1SB30** **3RT2046-1SF30** **3RT2046-1SP30**		**3RT2046-3SB30** **3RT2046-3SF30** **3RT2046-3SP30**	
110	**55**	130	**01**	--	1	21 ... 33 83 ... 150 175 ... 280	**3RT2047-1SB30** **3RT2047-1SF30** **3RT2047-1SP30**		**3RT2047-3SB30** **3RT2047-3SF30** **3RT2047-3SP30**	

Accessories and spare parts, see pages 3/69 to 3/119.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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AC/DC operation

- Extended operating range of the solenoid coil 0.8 to 1.1 x U_s
- Power consumption reduced from closing to closed

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT204.-1N.30

3RT204.-3N.30

3RT204.-1N.34

3RT204.-1NB34-3MA0

3RT204.-3NB34-3MA0

Rated data				Auxiliary contacts		Rated control supply voltage U_s	**Screw terminals**		**Spring-loaded terminals**	
AC-3 and AC-3e, t_u: 60 °C		AC-1, t_u: 40 °C								
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to		Ident. No.	Version	50/60 Hz AC or DC	Article No.	Price per PU	Article No.	Price per PU
400 V	**400 V**	690 V								
A	**kW**	A			NO NC	V				
For screw fixing and snap-on mounting on TH 35-15 and TH 75-15 DIN rails										
Size S3										
With integrated coil circuit (varistor integrated in electronics at the factory)										
80	**37**	125	**11**	1	1	20 ... 33 83 ... 155 175 ... 280	**3RT2045-1NB30** **3RT2045-1NF30** **3RT2045-1NP30**		**3RT2045-3NB30** **3RT2045-3NF30** **3RT2045-3NP30**	
95	**45**	130	**11**	1	1	20 ... 33 83 ... 155 175 ... 280	**3RT2046-1NB30** **3RT2046-1NF30** **3RT2046-1NP30**		**3RT2046-3NB30** **3RT2046-3NF30** **3RT2046-3NP30**	
110	**55**	130	**11**	1	1	20 ... 33 83 ... 155 175 ... 280	**3RT2047-1NB30** **3RT2047-1NF30** **3RT2047-1NP30**		**3RT2047-3NB30** **3RT2047-3NF30** **3RT2047-3NP30**	
With removable auxiliary switch and integrated coil circuit (varistor integrated in electronics at the factory)										
80	**37**	125	**22**	2	2	20 ... 33 83 ... 155 175 ... 280	**3RT2045-1NB34** **3RT2045-1NF34** **3RT2045-1NP34**		-- -- --	
95	**45**	130	**22**	2	2	20 ... 33 83 ... 155 175 ... 280	**3RT2046-1NB34** **3RT2046-1NF34** **3RT2046-1NP34**		-- -- --	
110	**55**	130	**22**	2	2	20 ... 33 83 ... 155 175 ... 280	**3RT2047-1NB34** **3RT2047-1NF34** **3RT2047-1NP34**		-- -- --	
With permanently mounted auxiliary switch and integrated coil circuit (varistor integrated in electronics at the factory)										
80	**37**	125	**22**	2	2	20 ... 33	**3RT2045-1NB34-3MA0**		**3RT2045-3NB34-3MA0**	
95	**45**	130	**22**	2	2	20 ... 33	**3RT2046-1NB34-3MA0**		**3RT2046-3NB34-3MA0**	
110	**55**	130	**22**	2	2	20 ... 33	**3RT2047-1NB34-3MA0**		**3RT2047-3NB34-3MA0**	
With voltage tap-off and integrated coil circuit (varistor integrated in electronics at the factory)										
80	**37**	125	**11**	1	1	20 ... 33	**3RT2045-1NB30-0CC0**		**3RT2045-3NB30-0CC0**	
95	**45**	130	**11**	1	1	20 ... 33	**3RT2046-1NB30-0CC0**		**3RT2046-3NB30-0CC0**	
110	**55**	130	**11**	1	1	20 ... 33	**3RT2047-1NB30-0CC0**		**3RT2047-3NB30-0CC0**	

Other voltages according to page 3/67 on request.

Accessories and spare parts, see pages 3/69 to 3/119.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RT contactors, 3-pole up to 250 kW *IE3/IE4* ready AC-3e

AC/DC operation ≂

- Standard operating mechanism 3RT10..-.A
- For screw fixing
- Auxiliary and control conductors: Screw terminals or spring-loaded terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts is enclosed.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT105.-6A.36

3RT106.-6A.36

3RT107.-6A.36

3RT107.-2A.36

Size	Rated data AC-3 and AC-3e, t_u: 60 °C				Rated data AC-1, t_u: 40 °C	Auxiliary contacts, lateral		Rated control supply voltage U_s	**Screw terminals**	**Spring-loaded terminals**
	Operational current I_e up to	Rating of three-phase motors at 50 Hz and			Operational current I_e up to	Version		50/60 Hz AC or DC	Article No. / Price per PU	Article No. / Price per PU
	500 V	**400 V**	500 V	690 V	690 V	NO	NC	V		
	A	**kW**	kW	kW	A					
Standard operating mechanism for AC and DC operation (power consumption reduced from closing to closed)										
With integrated coil circuit (varistor integrated at the factory)										
S6	115	**55**	75	110	160	2	2	110 ... 127 220 ... 240	**3RT1054-6AF36** **3RT1054-6AP36**	**3RT1054-2AF36** **3RT1054-2AP36**
	150	**75**	90	132	185	2	2	110 ... 127 220 ... 240	**3RT1055-6AF36** **3RT1055-6AP36**	**3RT1055-2AF36** **3RT1055-2AP36**
	185	**90**	132	160	215	2	2	110 ... 127 220 ... 240	**3RT1056-6AF36** **3RT1056-6AP36**	**3RT1056-2AF36** **3RT1056-2AP36**
S10	225	**110**	160	On request	275	2	2	110 ... 127 220 ... 240	**3RT1064-6AF36** **3RT1064-6AP36**	**3RT1064-2AF36** **3RT1064-2AP36**
	265	**132**	160	On request	330	2	2	110 ... 127 220 ... 240	**3RT1065-6AF36** **3RT1065-6AP36**	**3RT1065-2AF36** **3RT1065-2AP36**
	300	**160**	200	On request	330	2	2	110 ... 127 220 ... 240	**3RT1066-6AF36** **3RT1066-6AP36**	**3RT1066-2AF36** **3RT1066-2AP36**
S12	400	**200**	250	400	430	2	2	110 ... 127 220 ... 240	**3RT1075-6AF36** **3RT1075-6AP36**	**3RT1075-2AF36** **3RT1075-2AP36**
	500	**250**	315	400	610	2	2	110 ... 127 220 ... 240	**3RT1076-6AF36** **3RT1076-6AP36**	**3RT1076-2AF36** **3RT1076-2AP36**

Other voltages according to page 3/68 on request.

Accessories and spare parts, see pages 3/69 to 3/119.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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AC/DC operation

- Certified and fail-safe 24 V DC control input with max. 20 mA, e.g. for control via the fail-safe output module of a controller (F-PLC) or safety relay
- Achievable Safety Integrity Level (SIL) according to IEC 62061 and Performance Level (PL) according to ISO 13849-1 with corresponding fault diagnostics:
  - With one contactor: SIL 2/PL c
  - With two contactors in series: SIL 3/PL e
  - Fail-safe applications can be implemented using this contactor.
- Version with removable lateral auxiliary switches or permanently mounted auxiliary switches
- For screw fixing
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts is enclosed.

For more information, see

- Safety technology, page 11/1 onwards
- Guide of use for contactors in safety applications

3RT105.-6S.36

3RT106.-6S.36

3RT107.-6S.36

3RT105.-6S.36-3PA0

3RT107.-6S.36-3PA0

Size	Rated data according to IEC 60947-4-1 AC-3 and AC-3e, t_u: 60 °C		Auxiliary contacts, lateral		Rated control supply voltage U_s	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	Operational current I_e up to 500 V	Rating of three-phase motors at 50 Hz and 400 V	Version		50/60 Hz AC or DC	Article No.	Price per PU			
	A	kW	NO	NC	V					
Solid-state operating mechanism										
With two removable laterally mounted auxiliary switches										
With integrated coil circuit (varistor integrated in electronics at the factory)										
S6	115	**55**	2	2	96 ... 127	**3RT1054-6SF36**		1	1 unit	41B
					200 ... 277	**3RT1054-6SP36**		1	1 unit	41B
	150	**75**	2	2	96 ... 127	**3RT1055-6SF36**		1	1 unit	41B
					200 ... 277	**3RT1055-6SP36**		1	1 unit	41B
	185	**90**	2	2	96 ... 127	**3RT1056-6SF36**		1	1 unit	41B
					200 ... 277	**3RT1056-6SP36**		1	1 unit	41B
S10	225	**110**	2	2	96 ... 127	**3RT1064-6SF36**		1	1 unit	41B
					200 ... 277	**3RT1064-6SP36**		1	1 unit	41B
	265	**132**	2	2	96 ... 127	**3RT1065-6SF36**		1	1 unit	41B
					200 ... 277	**3RT1065-6SP36**		1	1 unit	41B
	300	**160**	2	2	96 ... 127	**3RT1066-6SF36**		1	1 unit	41B
					200 ... 277	**3RT1066-6SP36**		1	1 unit	41B
S12	400	**200**	2	2	96 ... 127	**3RT1075-6SF36**		1	1 unit	41B
					200 ... 277	**3RT1075-6SP36**		1	1 unit	41B
	500	**250**	2	2	96 ... 127	**3RT1076-6SF36**		1	1 unit	41B
					200 ... 277	**3RT1076-6SP36**		1	1 unit	41B
With two permanently laterally mounted auxiliary switches										
With integrated coil circuit (varistor integrated in electronics at the factory)										
S6	115	**55**	2	2	96 ... 127	**3RT1054-6SF36-3PA0**		1	1 unit	41B
					200 ... 277	**3RT1054-6SP36-3PA0**		1	1 unit	41B
	150	**75**	2	2	96 ... 127	**3RT1055-6SF36-3PA0**		1	1 unit	41B
					200 ... 277	**3RT1055-6SP36-3PA0**		1	1 unit	41B
	185	**90**	2	2	96 ... 127	**3RT1056-6SF36-3PA0**		1	1 unit	41B
					200 ... 277	**3RT1056-6SP36-3PA0**		1	1 unit	41B
S10	225	**110**	2	2	96 ... 127	**3RT1064-6SF36-3PA0**		1	1 unit	41B
					200 ... 277	**3RT1064-6SP36-3PA0**		1	1 unit	41B
	265	**132**	2	2	96 ... 127	**3RT1065-6SF36-3PA0**		1	1 unit	41B
					200 ... 277	**3RT1065-6SP36-3PA0**		1	1 unit	41B
	300	**160**	2	2	96 ... 127	**3RT1066-6SF36-3PA0**		1	1 unit	41B
					200 ... 277	**3RT1066-6SP36-3PA0**		1	1 unit	41B
S12	400	**200**	2	2	96 ... 127	**3RT1075-6SF36-3PA0**		1	1 unit	41B
					200 ... 277	**3RT1075-6SP36-3PA0**		1	1 unit	41B
	500	**250**	2	2	96 ... 127	**3RT1076-6SF36-3PA0**		1	1 unit	41B
					200 ... 277	**3RT1076-6SP36-3PA0**		1	1 unit	41B

Accessories and spare parts, see pages 3/69 to 3/119.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RT contactors, 3-pole up to 250 kW *IE3/IE4* ready AC-3e

AC/DC operation ≂

- Solid-state operating mechanism
  - 3RT10..-.N with 24 V DC control signal input
  - 3RT10..-.P with 24 V DC control signal input and with remaining lifetime indicator (RLT)
- For screw fixing
- Auxiliary and control conductors: Screw terminals or spring-loaded terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts is enclosed.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT105.-6N.36

3RT106.-2N.36

3RT107.-6N.36

3RT107.-6P.35

3RT107.-2N.36

Size	Rated data AC-3 and AC-3e, t_u: 60 °C Operational current I_e up to 500 V	Rating of three-phase motors at 50 Hz and 400 V	500 V	690 V	Rated data AC-1, t_u: 40 °C Operational current I_e up to 690 V	Auxiliary contacts, lateral Version NO	NC	Rated control supply voltage U_s 50/60 Hz AC or DC	Screw terminals Article No.	Price per PU	Spring-loaded terminals Article No.	Price per PU
	A	**kW**	kW	kW	A			V				
Solid-state operating mechanism												
With 24 V DC control signal input e.g. for control by PLC												
With integrated coil circuit (varistor integrated in electronics at the factory)												
S6	115	**55**	75	110	160	2	2	96 ... 127 200 ... 277	**3RT1054-6NF36** **3RT1054-6NP36**		**3RT1054-2NF36** **3RT1054-2NP36**	
	150	**75**	90	132	185	2	2	96 ... 127 200 ... 277	**3RT1055-6NF36** **3RT1055-6NP36**		**3RT1055-2NF36** **3RT1055-2NP36**	
	185	**90**	132	160	215	2	2	96 ... 127 200 ... 277	**3RT1056-6NF36** **3RT1056-6NP36**		**3RT1056-2NF36** **3RT1056-2NP36**	
S10	225	**110**	160	On request	275	2	2	96 ... 127 200 ... 277	**3RT1064-6NF36** **3RT1064-6NP36**		**3RT1064-2NF36** **3RT1064-2NP36**	
	265	**132**	160	On request	330	2	2	96 ... 127 200 ... 277	**3RT1065-6NF36** **3RT1065-6NP36**		**3RT1065-2NF36** **3RT1065-2NP36**	
	300	**160**	200	On request	330	2	2	96 ... 127 200 ... 277	**3RT1066-6NF36** **3RT1066-6NP36**		**3RT1066-2NF36** **3RT1066-2NP36**	
S12	400	**200**	250	400	430	2	2	96 ... 127 200 ... 277	**3RT1075-6NF36** **3RT1075-6NP36**		**3RT1075-2NF36** **3RT1075-2NP36**	
	500	**250**	315	400	610	2	2	96 ... 127 200 ... 277	**3RT1076-6NF36** **3RT1076-6NP36**		**3RT1076-2NF36** **3RT1076-2NP36**	
With 24 V DC control signal input · With remaining lifetime indicator (RLT), e.g. for control by PLC												
With integrated coil circuit (varistor integrated in electronics at the factory)												
S6	115	**55**	75	110	160	1	1	96 ... 127 200 ... 277	**3RT1054-6PF35** **3RT1054-6PP35**		-- --	
	150	**75**	90	132	185	1	1	96 ... 127 200 ... 277	**3RT1055-6PF35** **3RT1055-6PP35**		-- --	
	185	**90**	132	160	215	1	1	96 ... 127 200 ... 277	**3RT1056-6PF35** **3RT1056-6PP35**		-- --	
S10	225	**110**	160	On request	275	1	1	96 ... 127 200 ... 277	**3RT1064-6PF35** **3RT1064-6PP35**		-- --	
	265	**132**	160	On request	330	1	1	96 ... 127 200 ... 277	**3RT1065-6PF35** **3RT1065-6PP35**		-- --	
	300	**160**	200	On request	330	1	1	96 ... 127 200 ... 277	**3RT1066-6PF35** **3RT1066-6PP35**		-- --	
S12	400	**200**	250	400	430	1	1	96 ... 127 200 ... 277	**3RT1075-6PF35** **3RT1075-6PP35**		-- --	
	500	**250**	315	400	610	1	1	96 ... 127 200 ... 277	**3RT1076-6PF35** **3RT1076-6PP35**		-- --	

Other voltages according to page 3/68 on request.

Accessories and spare parts, see pages 3/69 to 3/119.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Options

Rated control supply voltages for 3RT20 contactors, possible on request (change of the 10th and 11th digits of the article number)

Delivery time on request

Rated control supply voltage U_s	Contactor type / Size	3RT201, 3RH2 S00	3RT202 S0	3RT203 S2	3RT204 S3
Sizes S00 to S3					
AC operation[1]					
Solenoid coils for 50 Hz (exception: Size S00: 50 and 60 Hz[2])					
24 V AC		B0	B0	B0	B0
42 V AC		D0	D0	D0	D0
48 V AC		H0	H0	H0	H0
110 V AC		F0	F0	F0	F0
230 V AC		P0	P0	P0	P0
240 V AC		U0	U0	U0	U0
400 V AC		V0	V0	V0	V0
Solenoid coils for 50 and 60 Hz[2]					
24 V AC		B0	C2	C2	C2
42 V AC		D0	D2	D2	D2
48 V AC		H0	H2	H2	H2
110 V AC		F0	G2	G2	G2
220 V AC		N2	N2	N2	N2
230 V AC		P0	L2	L2	L2
Solenoid coils (for USA and Canada[3])					
50 Hz	**60 Hz**				
110 V AC	120 V AC	K6	K6	K6	K6
220 V AC	240 V AC	P6	P6	P6	P6
Solenoid coils (for Japan)					
50/60 Hz[4]	**60 Hz[5]**				
100 V AC	110 V AC	G6	G6	G6	G6
200 V AC	220 V AC	N6	N6	N6	N6
400 V AC	440 V AC	R6	R6	R6	R6
DC operation[1]					
12 V DC		A4	A4	--	--
24 V DC		B4	B4	--	--
42 V DC		D4	D4	--	--
48 V DC		W4	W4	--	--
60 V DC		E4	E4	--	--
110 V DC		F4	F4	--	--
125 V DC		G4	G4	--	--
220 V DC		M4	M4	--	--
230 V DC		P4	P4	--	--

Examples

AC operation	3RT2023-1A**P0**0	Contactor with screw terminals; with solenoid coil for 50 Hz for rated control supply voltage 230 V AC.
	3RT2023-1A**G2**0	Contactor with screw terminals; with solenoid coil for 50/60 Hz for rated control supply voltage 110 V AC.
DC operation	3RT2025-2B**B4**0	Contactor with spring-loaded terminals; for rated control supply voltage 24 V DC.
	3RT2025-2B**G4**0	Contactor with spring-loaded terminals; for rated control supply voltage 125 V DC.

1) For deviating coil voltages and operating ranges of sizes S00 and S0, a SITOP 24 V DC power supply with wide-range input can be used for the coil control, see page 15/1 and Catalog KT 10.1.

2) Coil operating range
- at 50 Hz: 0.8 to 1.1 x U_s,
- at 60 Hz: 0.85 to 1.1 x U_s.

3) Coil operating range
- Size S00:
  at 50 Hz: 0.85 to 1.1 x U_s,
  at 60 Hz: 0.8 to 1.1 x U_s,
- Sizes S0 to S3: at 50 Hz and 60 Hz: 0.8 to 1.1 x U_s.

4) Coil operating range
- Size S00:
  at 50/60 Hz: 0.85 to 1.1 x U_s,
- Size S0:
  at 50 Hz: 0.8 to 1.1 x U_s,
  at 60 Hz: 0.85 to 1.1 x U_s.

5) Coil operating range at 60 Hz: 0.8 to 1.1 x U_s.

Rated control supply voltage $U_{s\,min}$ to $U_{s\,max}$[1]	Contactor type / Size	3RT202.-.N S0	Rated control supply voltage $U_{s\,min}$ to $U_{s\,max}$[1]	Contactor type / Size	3RT203.-.N S2	3RT204.-.N S3
Sizes S00 to S3						
AC/DC operation (50/60 Hz AC or DC)						
21 ... 28 V AC/DC		B3	20 ... 33 V AC/DC		B3	B3
95 ... 130 V AC/DC		F3	48 ... 80 V AC/DC		E3	E3
200 ... 280 V AC/DC[2]		P3	83 ... 155 V AC/DC		F3	F3
			175 ... 280 V AC/DC		P3	P3

1) Coil operating range
- Size S0: 0.7 x $U_{s\,min}$ to 1.3 x $U_{s\,max}$,
- Sizes S2 and S3: 0.8 x $U_{s\,min}$ to 1.1 x $U_{s\,max}$.

2) The following applies to S0 and $U_{s\,max}$ = 280 V: Upper limit = 1.1 x $U_{s\,max}$

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SIRIUS 3RT contactors, 3-pole up to 250 kW

Rated control supply voltages for 3RT10 contactors, possible on request (change of the 10th and 11th digits of the article number)

Delivery time on request

Rated control supply voltage	Contactor type	3RT105.-.A, 3RT106.-.A, 3RT107.-.A	Rated control supply voltage	Contactor type	3RT105.-.N, 3RT106.-.N, 3RT107.-.N	3RT105.-.P, 3RT105.-.S, 3RT106.-.P, 3RT106.-.S, 3RT107.-.P, 3RT107.-.S
$U_{s\,min}$ to $U_{s\,max}$	Sizes	S6 to S12	$U_{s\,min}$ to $U_{s\,max}$	Sizes	S6 to S12	
Sizes S6 to S12						
AC/DC operation (50/60 Hz AC or DC) and operating range 0.8 x $U_{s\,min}$ to 1.1 x $U_{s\,max}$						
Standard operating mechanism			**Solid-state operating mechanism**			
23 ... 26 V AC/DC		B3	21 ... 27.3 V AC/DC		B3	--
42 ... 48 V AC/DC		D3	96 ... 127 V AC/DC		F3	F3
110 ... 127 V AC/DC		F3	200 ... 277 V AC/DC		P3	P3
200 ... 220 V AC/DC		M3				
220 ... 240 V AC/DC		P3				
240 ... 277 V AC/DC		U3				
380 ... 420 V AC/DC		V3				
440 ... 480 V AC/DC		R3				
500 ... 550 V AC/DC		S3				
575 ... 600 V AC/DC		T3				

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Overview

Extensive accessories and spare parts are available for SIRIUS 3RT power contactors and SIRIUS 3RH2 contactor relays.

These components are easily fitted to the contactors without the use of any tools according to requirements.

Overview graphics with mountable accessories:

- 3RT2 contactors, see pages 3/8 to 3/11
- 3RT10, 3RT12 and 3RT14 contactors, see pages 3/12 to 3/16
- 3RH2 contactor relays, see page 5/5

More information

TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=Contactor

Version	For contactors 3RT2, sizes S00 to S3; 3RH2, size S00	3RT105 to 3RT107, 3RT126 and 3RT127, 3RT145 to 3RT147; sizes S6 to S12	Selection and ordering data Page
Accessories for 3RT contactors and 3RH2 contactor relays			
Auxiliary switches			
Instantaneous	3RH29.1	3RH19.1	3/81 ... 3/94
Delayed			
• Pneumatic time-delay auxiliary switches	3RT2927-2P..1	--	3/95
• Solid-state time-delay auxiliary switches	3RA2813, 3RA2814, 3RA2815	3RT1926-2E/-2F/-2G	3/95, 3/96
Surge suppressors			
• Without LED	3RT29.6-1B/-1C/-1D/-1E	3RT1956-1C	3/97, 3/98
• With LED	3RT29.6-1J/-1L/-1M	--	3/98
Modules for contactor control			
Coupling links for control by PLC	3RH29.4-.GP11	--	3/99
3RA28 function modules			
• For direct on-line starting: ON delay or OFF-delay	3RA2811, 3RA2812, 3RA2831, 3RA2832	--	3/100
• For star-delta (wye-delta) starting	3RA2816	--	3/100
3RA27 function modules for IO-Link or AS-Interface			
• For direct-on-line, reversing or star-delta (wye-delta) starting	3RA271.-.A/-.B/-.C	--	3/101, 3/102
Mechanical latching blocks	3RT2926-3A.31	--	3/103
OFF-delay devices for contactors with AC/DC and DC operation	3RT2916-2B.01	--	3/103
Link modules			
Link modules from motor starter protector to contactor	3RA.9.1	--	7/61
Safety main current connectors for two contactors	3RA29.6-1A	--	3/104
Assembly kits			
• For reversing contactor assemblies	3RA29.3-2AA.	3RA19.3-2A	3/104
• For contactor assemblies for star-delta (wye-delta) starting	3RA29..-2BB., 3RA29.3-2C	3RA1953-3G, 3RA19.3-2./-3.	3/105, 3/106
Single wiring modules	3RA.9.3-3.A.	3RA19.3-3.	3/107
Star jumpers (links for paralleling), 3-pole	3RT.9.6-4BA3.	3RT19.6-4BA31	3/107
Mechanical interlock kits for two contactors	3RA29.2-2H	--	3/108
Mechanical interlocks for contactor assemblies	3RA2934-2B	3RA1954-2.	3/108
Mechanical connectors for contactor assemblies	3RA29.2-2.	3RA1932-2D	3/108
Connection modules/adapters			
Links for paralleling for main conducting paths	3RT.9.6-4BB.1	--	3/109
1-phase infeed terminals	3RA2943-3L	--	3/110
3-phase infeed terminals	3RA2913-3K, 3RV29.5-5A.	--	3/110
• With increased clearance and creepage distances	3RV2935-5E	--	3/110
3-phase busbars	3RV1915-1AB	--	3/110
Terminal blocks for connecting auxiliary conductors to main terminals			
• Box terminal blocks	3RT2946-4G	3RT19..-4G	3/110
• Box terminal for auxiliary conductor connection, 1-pole	--	3TX7500-0A	3/110
• Auxiliary conductor terminals, 3-pole	3RT2946-4F	--	3/110
Solder pin adapters for mounting contactors on printed circuit boards	3RT1916-4KA.	--	3/111
Coil connection modules for connections from top or from bottom	3RT2926-4R.1.	--	3/111
Connection module (adapter and plug) for contactors with screw terminals			
• Adapters	3RT19.6-4RD01	--	3/111
• Motor feeder connector	3RT1900-4RE01	--	3/111

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Version	For contactors		Selection and ordering data
	3RT2, sizes S00 to S3; 3RH2, size S00	3RT105 to 3RT107, 3RT126 and 3RT127, 3RT145 to 3RT147; sizes S6 to S12	Page
Accessories for 3RT contactors and 3RH2 contactor relays (continued)			
Covers			
Terminal covers	3RT1946-4EA1, 3RT29.6-4EA.	3RT1956-4EA., 3RT1966-4EA., 3TX65.6-3B	3/112
Sealable covers	3RT2916-4MA10	3RT1926-4MA10	3/112
Miscellaneous accessories			
Base plates			
• For reversing contactor assemblies	--	3RT19.2-2A	3/113
• For contactor assemblies for star-delta (wye-delta) starting	3RA29.2-2F	3RA19.2-2.	3/113
Adapters for screw fixing	3RT1926-4P	--	3/113
Connection kit for one complete contactor	--	3RT19..-4PA00	3/113
EMC suppression modules	3RT2916-1P . .	--	3/113
Additional load modules	3RT2916-1GA00	--	3/114
LED modules for displaying contactor operation	3RT2926-1QT00	3RT1926-1QT00	3/114
Control kit	3RT29.6-4MC00	--	3/114
Insulation stop for securely holding back the conductor insulation for conductors up to 1 mm^2	3RT2916-4JA02	3RT1916-4JA02	3/115
Tools for opening spring-loaded terminals	3RA2908-1A	3RA2908-1A	3/115
Blank labels	3RT2900-1SB.0	3RT2900-1SB.0	3/115
Spare parts for 3RT2 contactors			
Solenoid coils	3RT29..-5...1	--	3/116, 3/117
Withdrawable coils	--	3RT19..-5....	3/118
Contacts with fixing parts	3RT29..-6.	3RT19..-6.	3/119
Arc chutes	--	3RT19..-7.	3/119

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Auxiliary switches

The auxiliary switches can be designed as force-guided contacts in 3RH contactor relays or also as mirror contacts in the case of 3RT power contactors.

For more information on force-guided operation and mirror contacts, see Manuals → "More information", page 3/76, and in the selection and ordering data, page 3/81 onwards.

Solid-state time-delay auxiliary switches for mounting on 3RT2 contactors and 3RH2 contactor relays

See pages 3/76 and 3/95

The 3RA28 solid-state time-delayed auxiliary switches which can be mounted on the contactor are designed for applications in the range from 24 to 240 V AC/DC (wide voltage range). Both the electrical and mechanical connection are made by simple snapping on and locking.

The time-delay auxiliary switch is supplied with power directly by two plug-in contacts through the coil terminals of the contactor, in parallel with A./A2.

A protection circuit (varistor) is integrated in each module.

A sealable cover is available to protect against careless adjustment of the set times.

Note:

Mounting more auxiliary switches on the contactor is not permitted.

Surge suppressors

- Without LED (also for spring-loaded terminals)
  Sizes S00 to S3, see page 3/97
- With LED (also for spring-loaded terminals)
  Sizes S00 to S3, see page 3/98

All 3RT2 contactors and 3RH2 contactor relays can be retrofitted with RC elements or varistors for damping switching overvoltages in the coil. Diodes or diode assemblies (combination of interference suppression diode and Zener diode for short break times) can also be used.

The surge suppressors are plugged onto the front of size S00 contactors. Space is provided for them next to a snap-on auxiliary switch.

Varistors, RC elements or diode assemblies can be plugged onto the front of size S0 to S3 contactors. Exception: For size S3, the RC element is inserted on the front into the recesses to the left of the connection block.

Coupling contactors are supplied either without overvoltage damping or with a suppressor diode, varistor or diode connected as standard, according to the version.

Note:

The break times of the contactor, the opening delay times of the NO contacts and the closing delay times of the NC contacts increase with damping.

For more detailed information about how damping affects the time response, see Equipment Manual.

Coupling links for control by PLC

See pages 3/78 and 3/99

- Operation with 24 V DC
- Operating range 17 to 30 V
- Low power consumption of 0.5 W
- An LED indicates the switching state.

The 3RH2924-1GP11 coupling link has an integrated surge suppressor (varistor) for the contactor coil being switched and is mounted on the size S0 contactor coil via a coil connection module.

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3RA28 function modules for mounting on 3RT2 contactors and 3RH2 contactor relays

See pages 3/79 and 3/100

Simply by being plugged in place, the SIRIUS function modules enable different functionalities required for the assembly of starters to be realized in the feeder. The function modules and wiring kits thus help to reduce the wiring work within the feeder practically to zero.

Protection of the device connections

The specifications for short-circuit protection (fuses, circuit breakers, or miniature circuit breakers) are available for the device connections of the main circuit and the auxiliary circuit.

In order to ensure a holistic view for the protection of the device connections, the manufacturer is obliged to provide all relevant information for short-circuit protection and overcurrent protection.

For more information, for example if device connections for the control supply voltage, the supply voltage, or digital inputs/digital outputs are not connected to self-limiting current sources or energy sources, see Equipment Manual or the technical product data sheet.

SIRIUS function modules for direct-on-line starting

The electronic timing relays which can be mounted on the contactor are available in these versions:

- Sizes S00 and S0 for applications in the range from 24 to 240 V AC/DC (wide voltage range)
- Sizes S2 and S3 for applications in either the range from 24 to 90 V AC/DC or 90 to 240 V AC/DC

Both the electrical and mechanical connection are made by simple snapping on and locking.

A protection circuit (varistor) is integrated in each module.

The electronic timing relay with semiconductor output uses two contact legs to actuate the contactor underneath by means of a semiconductor after the set time *t* has elapsed.

The switching state feedback is performed by a mechanical switching state indicator (plunger). In addition, the auxiliary switches in the contactors are freely accessible and can be used for feedbacks to the control system or for signal lamps.

A sealable cover is available to protect against careless adjustment of the set times.

The snap-on function modules for direct-on-line starting are used above all for realizing timing functions independently of the control system.

With the OFF-delay variant of the timing relay it is possible for example for the fan motor for cooling a main drive to be switched off with a delay so that sufficient cooling after operation is guaranteed; the programmer of the control system does not need to worry about such technical details of the plant.

The ON-delay timing relays enable for example the time-delayed starting of several drives so that the summation starting current does not rise too high, which could result in voltage failure.

The use of snap-on function modules for direct-on-line starting results in the following advantages:

- Reduction of control current wiring
- Prevention of wiring errors
- Reduction of testing costs
- Implementation of timing functions independently of the control system
- Less space required in the control cabinet compared to a separate timing relay
- No additive protection circuit required (varistor integrated)

Assembly of reversing starters

We offer ready-made wiring kits for the assembly of reversing starters. Use of these wiring kits offers further advantages, see page 3/148.

SIRIUS function modules for star-delta (wye-delta) starting

Both interlocking and timing functions are required for the assembly of star-delta (wye-delta) starters. With the function modules for star-delta (wye-delta) starting and the matching link modules for the main circuit, these starters can be assembled easily and with absolutely no errors.

The entire sequence in the control circuit is integrated in the snap-on modules. This covers:

- An adjustable star time *t* from 0.5 to 60 s
- A non-adjustable dead interval of 50 ms
- Electrical contacting of the contactors by means of coil pick-off (contact legs)
- Feedback of the switching state at the contactor using a mechanical switch position indicator (plunger)
- Electrical interlocking between the contactors

These modules do not require their own terminals and can therefore be used for contactors with both screw and spring-loaded terminals in all the sizes S00 to S3. To start the star-delta (wye-delta) starter, only the first of the three contactors (line contactor) is actuated, like in the case of a direct-on-line starter. All other functions then take place inside the individual modules.

This also offers advantages if the timing function was previously implemented in a controller, as it again results in a significant reduction in the number of PLC outputs, the programming work and the wiring outlay.

The kits for the main circuit include the mechanical interlock, the star jumper, the wiring modules at the top and at the bottom, and the required connectors or connecting clips.

A protection circuit (varistor) is integrated in the basic module.

The function modules for star-delta (wye-delta) starting are mostly used where current-limiting measures for starting a drive are required and a high level of availability is essential at the same time. This technology has been used with success for several decades and has the additional advantage of requiring relatively little know-how. Through the use of function modules, the assembly work with simple standard components is even easier and absolutely error-free.

The use of function modules for star-delta (wye-delta) starting results in the following advantages:

- Operation solely through the line contactor A1/A2 – no further control current wiring needed
- Prevention of wiring errors
- Reduction of testing costs
- Integrated electrical interlocking saves costs and prevents errors
- Less space needed in the control cabinet compared to using a separate timing relay
- Adjustable starting in star mode from 0.5 to 60 s
- Independent of the contactor's control supply voltage (24 to 240 V AC/DC)
- Varistor integrated – no additive protection circuit required
- Mechanically coded assembly enables easy configuration and reliable wiring
- Fewer versions – one module kit for screw and spring-loaded connection and for all the contactor sizes S00 to S3
- Mechanical interlocking (with wiring kit for the main circuit)

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SIRIUS 3RA27 function modules for IO-Link or AS-Interface for mounting on 3RT2 contactors

See pages 3/80 and 3/101

The SIRIUS 3RA27 function modules enable the assembly of starters and contactor assemblies for direct-on-line, reversing and star-delta (wye-delta) starting without any additional, complicated wiring of the individual components. They include the key control functions, e.g. timing and interlocking, required for the particular feeder and can be connected to the control system via either IO-Link or AS-Interface.

The electrical and mechanical connection to the contactor is established by snapping on and locking the respective modules. An additive protection circuit for the individual contactors can be dispensed with completely because a varistor is integrated in the modules. Feedback from the contactor contacts is performed with Hall sensors which provide reliable feedback on the switching state even under extremely dusty conditions.

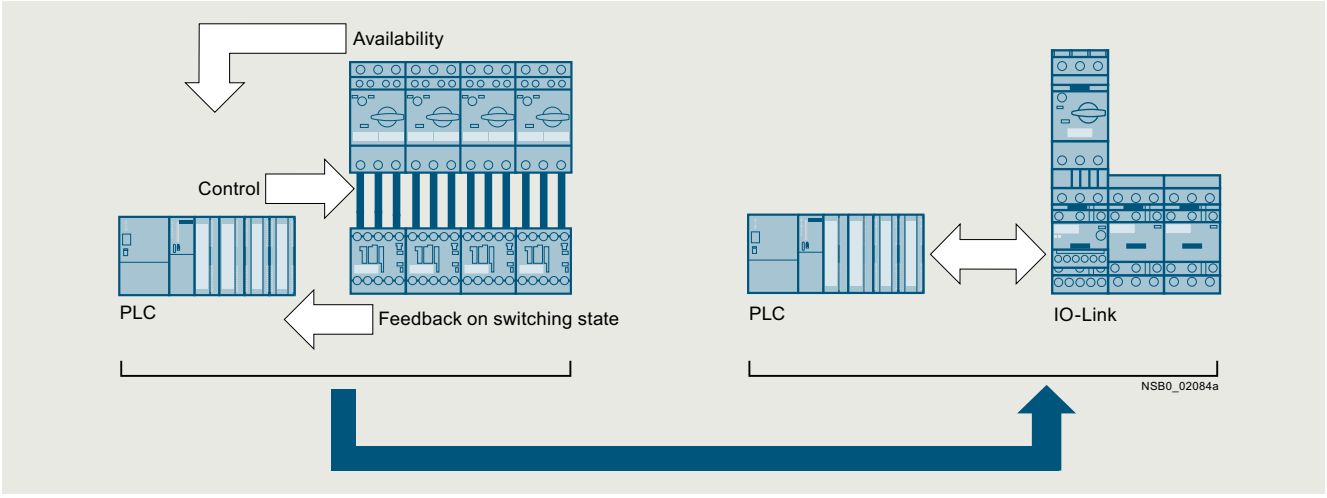
The starters are connected to the higher-level control system through IO-Link, with the possibility of connecting up to four starters as a group to one port of the IO-Link master,

Optionally, the connection can be made via AS-Interface (specification V2.1 or higher, in A/B technology). As a result, up to 62 starters can be connected to one master and the address is entered in the normal manner with an addressing unit.

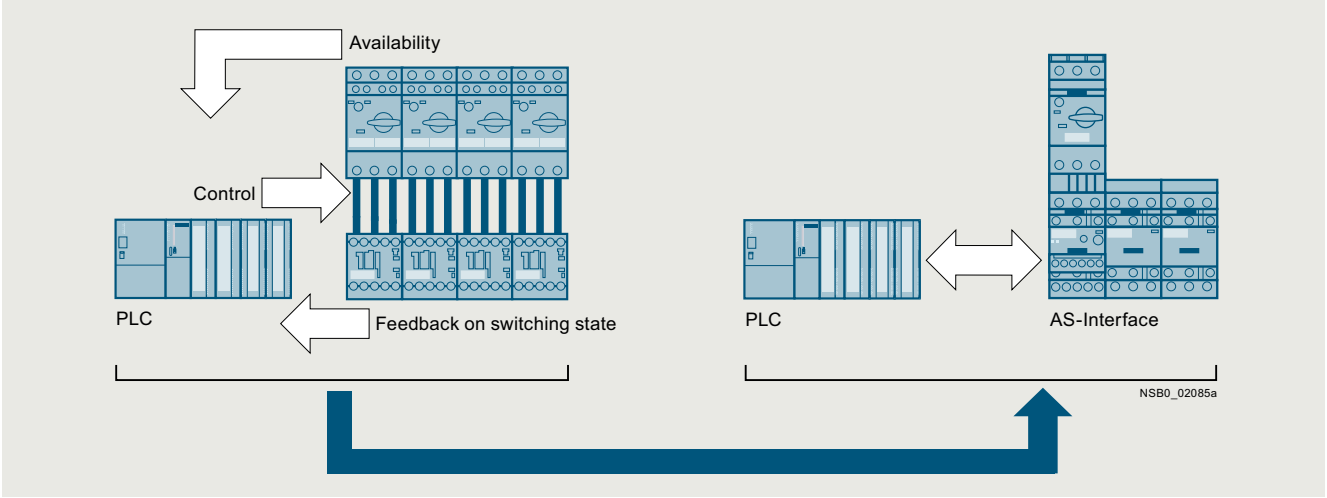
Through this type of connection to the control system, a maximum of wiring is saved. In the case of AS-Interface, the wiring amounts to the control supply voltage and the two individual wires for AS-Interface.

The following essential signals are thus transmitted:

- Availability of the feeder in response to an indirect inquiry from the motor starter protector/circuit breaker
- Starter control
- Feedback concerning the switching state of the starter



Signal transmission through IO-Link



Signal transmission through AS-Interface

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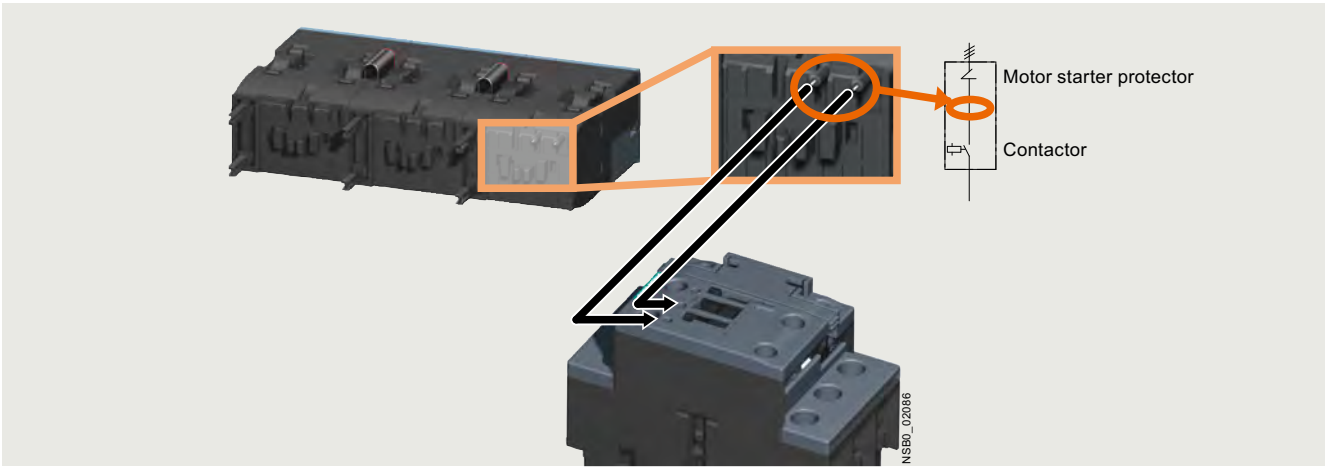
The inquiry from the motor starter protector/circuit breaker does not take place through additive wiring between the auxiliary switch and the module but by means of a voltage inquiry at the contactor input.

This requires special versions of the 3RT20..-.....-0CC0 contactors with voltage tap-off (see pages 3/53, 3/57, 3/61 and 3/63).



Availability signal through voltage tap-off

The following benefits result from the use of SIRIUS 3RA27 function modules:

- Reduction of control current wiring. In the case of IO-Link to no more than three cables for four feeders.
- Elimination of testing costs and wiring errors
- Reduction of configuration work
- Parameter server functionality
- Integration in TIA means unambiguous IO-Link diagnostics if a fault occurs
- Dispensing with IO modules saves space in the control cabinet
- All essential timing and interlocking functions for reversing duty and star-delta (wye-delta) starting are integrated
- No additive protection circuit required

For more information on IO-Link and AS-Interface, see "Industrial communication", page 2/1 onwards.

Protection of the device connections

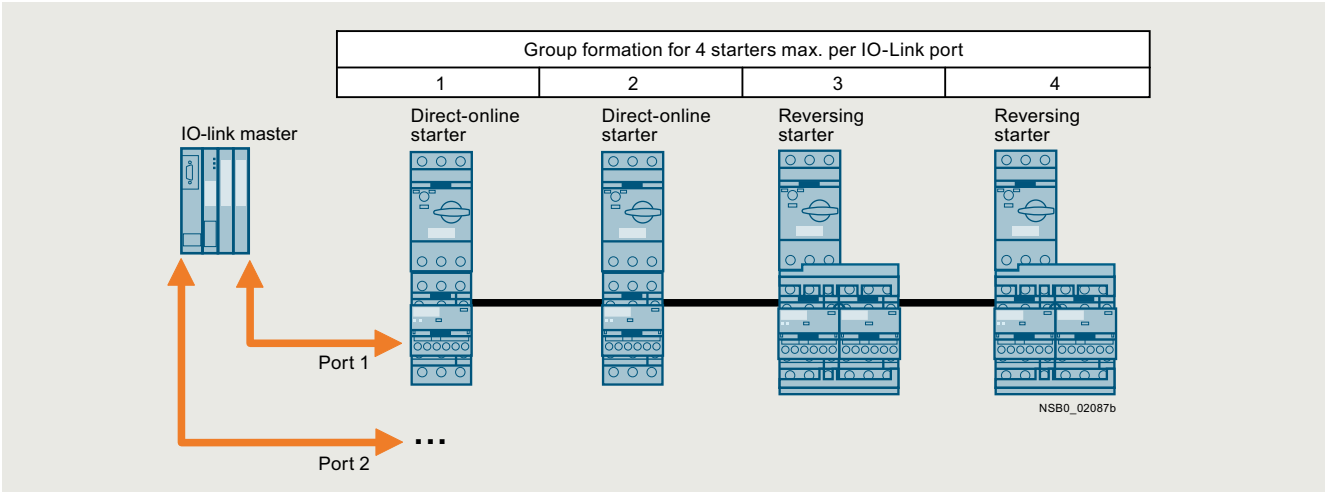
The specifications for short-circuit protection (fuses, circuit breakers, or miniature circuit breakers) are available for the device connections of the main circuit and the auxiliary circuit.

In order to ensure a holistic view for the protection of the device connections, the manufacturer is obliged to provide all relevant information for short-circuit protection and overcurrent protection.

For more information, for example if device connections for the control supply voltage, the supply voltage, or digital inputs/digital outputs are not connected to self-limiting current sources or energy sources, see Equipment Manual or the technical product data sheet.

SIRIUS 3RA2711 function modules for IO-Link for mounting on 3RT2 contactors

By grouping up to four starters, it is possible to connect up to 16 starters to one master of the ET 200SP or S7-1200. In this case all the signals of the individual controls are made available directly in the process image of the input through only three individual wires per starter group. If the same potential is present at the ET 200SP or S7-1200 master and at the switching devices, the wiring can be further reduced by connecting the supply voltage of the contactor coils to the communication wires via jumpers.



Group formation with IO-Link

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In case of a malfunction, the corresponding error signals are also sent directly to the PLC in acyclic mode. This is in addition to transmission of the switching signals and status signals.

Possible error signals:

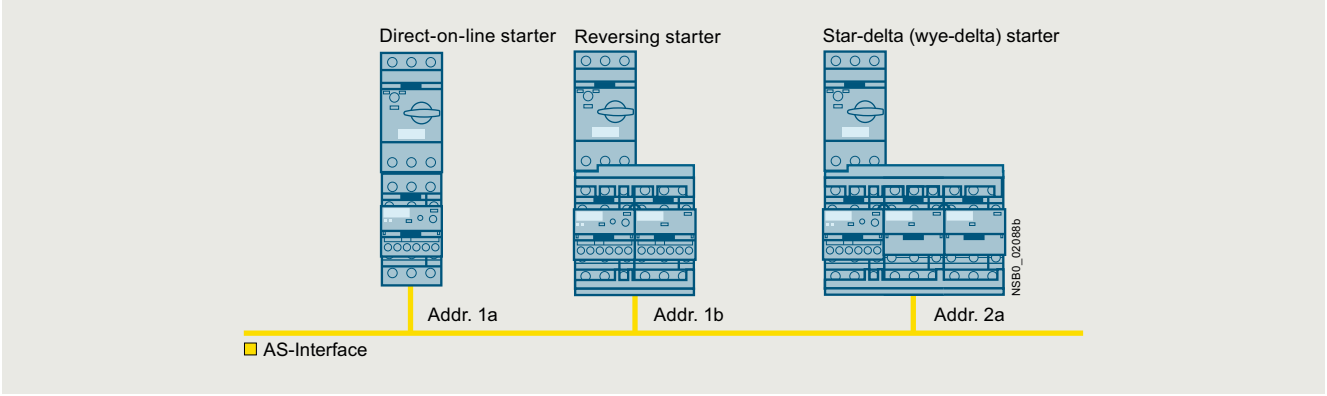
- Switching element defective
- No main voltage (motor starter protector tripped)
- No control supply voltage
- Limit position on the right/on the left
- Manual mode
- Process image fault

This easy integration of the starters in the TIA world does not limit the flexibility in the field in the least. For example, all function modules have special terminals in order to enable direct local disconnection. These terminals can be connected for example to a position switch. The input interrupts the voltage supply to the contactor coil directly, i.e. without going through the PLC. These terminals are jumpered in the delivery state.

Local manual operation of the complete starter group is also straightforward using a handheld device. The latter is easily connected to the last starter and can be built into the front panel of the control cabinet if required. This offers significant advantages particularly for commissioning.

SIRIUS function modules with IO-Link are used above all in machines and plants in which there are several motor feeders in one control cabinet. Using IO-Link, the connection of these feeders to the automation level is easy, quick and error-free. And with IO modules no longer needed, the width of the PLC is far smaller.

SIRIUS 3RA2712 function modules for AS-Interface for mounting on 3RT2 contactors



Topology with AS-Interface

This easy integration of the starters in the TIA world does not limit the flexibility in the field in the least. For example, all function modules have special terminals in order to enable direct local disconnection. These terminals can be connected for example to a position switch. The input interrupts the voltage supply to the contactor coil directly, i.e. without going through the PLC. These terminals are jumpered in the delivery state.

SIRIUS function modules with AS-Interface are recommended above all in machines and plants requiring easy connection of several different sensors and actuators both inside and outside the control cabinet to the higher-level control system. And with IO modules no longer needed, the width of the PLC is far smaller.

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3

Technical specifications

More information	
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=Contactor Technical specifications • SIRIUS 3RT2 contactors and SIRIUS 3RH2 contactor relays, see https://support.industry.siemens.com/cs/ww/en/ps/16208/td • SIRIUS 3RT1 contactors, see https://support.industry.siemens.com/cs/ww/en/ps/16209/td	FAQs • SIRIUS 3RT2 contactors and SIRIUS 3RH2 contactor relays, see https://support.industry.siemens.com/cs/ww/en/ps/16208/faq • SIRIUS 3RT1 contactors, see https://support.industry.siemens.com/cs/ww/en/ps/16209/faq System Manual for modular system, see https://support.industry.siemens.com/cs/ww/en/view/60311318 Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/60306557

Solid-state time-delay auxiliary switches for mounting on 3RT201 to 3RT204 (sizes S00 to S3) and 3RH2 contactor relays (size S00)

Type			3RA2813	3RA2814	3RA2815
Function			ON-delay	OFF-delay with control signal	OFF-delay without control signal
General data					
Dimensions (basic unit with mounted solid-state time-delay auxiliary switch)			See 3RT2 contactors (pages 3/29, 3/32, 3/35, 3/38) and 3RH2 contactor relays (page 5/8)		
Rated insulation voltage U_i Pollution degree 3, overvoltage category III		V AC	300		
Rated impulse withstand voltage U_{imp}		kV AC	4		
Permissible ambient temperature					
• During operation		°C	-25 ... +60		
• During storage		°C	-40 ... +80		
Electromagnetic compatibility (EMC)			IEC 61000-6-2, IEC 61000-6-4, IEC 61812-1, IEC 60947-4-1		
Overvoltage protection			Varistor integrated		
Control					
Operating range of excitation			0.85 ... 1.1 x U_s, 0.95 ... 1.05 times the rated frequency		
Rated power		W	1		
• Power consumption at 230 V AC, 50 Hz		VA	2		
Recovery time		ms	150		--
Minimum ON duration		ms	--	35	200
Setting accuracy, typ., with reference to upper limit of scale			± 15%		
Repeat accuracy, max.			± 1%		
Load side					
Rated operational currents I_e					
• AC-15 at 24 ... 250 V, 50 Hz		A	3		
• DC-13	- At 24 V	A	1		
	- At 125 V	A	0.2		
	- At 250 V	A	0.1		
Mechanical endurance		Operating cycles	10×10^6		
Electrical endurance at AC-15, 250 V, 3 A		Operating cycles	100 000		
Residual current, max.		mA	--		
Voltage drop, max., with conducting output		VA	--		
Short-circuit protection					
• Fuse links, operational class gG: DIAZED, type 5SB		A	4		

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Type		3RA2813	3RA2814	3RA2815
Function		ON-delay	OFF-delay with control signal	OFF-delay without control signal
Conductor cross-sections				
Connection type (1 or 2 conductors can be connected)		Screw terminals		
• Solid	mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)		
• Finely stranded with end sleeve (DIN 46228)	mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)		
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)		
• Terminal screws		M3 (for standard screwdriver size 2 or Pozidriv 2)		
• Tightening torque	Nm	0.8 ... 1.2		
Connection type (1 or 2 conductors can be connected)		Spring-loaded terminals		
• Solid	mm^2	2 x (0.25 ... 1.5)		
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.25 ... 1.5)		
• Finely stranded without end sleeve	mm^2	2 x (0.25 ... 1.5)		
• AWG cables, solid or stranded	AWG	2 x (24 ... 16)		
• Operating devices	mm	3.0 x 0.5		

Solid-state time-delay auxiliary switches, for snapping onto 3RT1 contactors

Type		3RT1926-2E, 3RT1926-2F, 3RT1926-2G
Sizes		S6 to S12
General data		
Dimensions (W x H x D)	mm	33 x 46 x 73
Rated insulation voltage U_i Pollution degree 3, overvoltage category III according to IEC 60664-1	V AC	300
Permissible ambient temperature		
• During operation	°C	-25 ... +60
• During storage	°C	-40 ... +85
Electromagnetic compatibility (EMC)		IEC 61812-1
Control		
Operating range of excitation		0.85 ... 1.1 x U_s, 0.95 ... 1.05 times the rated frequency
Rated power	W	2
Power consumption at 230 V AC, 50 Hz	VA	4
Recovery time	ms	150
Minimum ON duration	ms	200 (with OFF-delay)
Setting accuracy, typ., with reference to upper limit of scale	%	± 15
Repeat accuracy, max.	%	± 1

Type		3RT1926-2E, 3RT1926-2F, 3RT1926-2G
Sizes		S6 to S12
Load side		
Rated operational currents I_e		
• AC-15, 230 V, 50 Hz	A	3
• DC-13, 24 V	A	1
• DC-13, 110 V	A	0.2
• DC-13, 230 V	A	0.1
Short-circuit protection		
Fuse links, operational class gG: DIAZED, type 5SB	A	4
Mechanical endurance	Operating cycles	10 x 10^6
Conductor cross-sections		
Connection type (1 or 2 conductors can be connected)		Screw terminals
• Solid	mm^2	2 x (0.5 ... 1.5), 2 x (0.75 ... 4)
• Finely stranded with end sleeve	mm^2	2 x (0.5 ... 2.5)
• AWG cables, solid or stranded	AWG	2 x (18 ... 14)
• Terminal screws		M3
• Tightening torque	Nm	0.8 ... 1.2

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Coupling links for control by PLC

Type		3RH2924-1GP11	3RH2914-.GP11
Mounting on contactors of size		S0	S00 to S3
General data			
Standards		IEC 60947	
Rated insulation voltage U_i (pollution degree 3)	V	300	
Protective separation between coil and contacts According to IEC 60947-1, Annex N	V AC	Up to 300	
Permissible ambient temperature			
• During operation	°C	-25 ... +60	
• During storage	°C	-40 ... +80	
Control side			
Rated control supply voltage U_s	V DC	24	
Operating range	V DC	17 ... 30	
Power consumption at U_s	W	0.5	
Nominal current input	mA	20	
Release voltage	V	≥ 4	
Function display		Yellow LED	
Protection circuit		Varistors	
Load side			
Mechanical endurance	Operating cycles	20 million	10 million
Electrical endurance at I_e	Operating cycles	0.1 million	
Switching frequency	1/h	5 000	
Make-time	ms	Approx. 7	
Break-time	ms	Approx. 4	
Bounce time	ms	Approx. 2	
Contact material		AgSnO2	
Switching voltage	V AC/DC	24 ... 250	
Rated operational current I_e			
• AC-15/AC-14 at 230 V	A	3	
• DC-13 at 230 V	A	0.1	
Permissible residual current of the electronics (with 0 signal)	mA	2.5	
Conductor cross-sections			
Connection type (1 or 2 conductors can be connected)		**Screw terminals**	
• Solid	mm^2	2 x (0.5 ... 2.5)	
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)	
• Terminal screws		M3	
Connection type (1 or 2 conductors can be connected)		**Spring-loaded terminals**	
• Solid	mm^2	--	2 x (0.25 ... 1.5)
• Finely stranded with end sleeve (DIN 46228)	mm^2	--	2 x (0.25 ... 1.5)
• Finely stranded without end sleeve	mm^2	--	2 x (0.25 ... 1.5)
• AWG cables, solid or stranded	AWG	--	2 x (24 ... 16)
• Operating devices	mm	--	3.0 x 0.5

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3RA28 function modules for mounting on 3RT2 contactors and 3RH2 contactor relays

Type		**3RA2811**	**3RA2831**	**3RA2812**	**3RA2832**	**3RA2816**
Mounting on contactors of size		**S00, S0**	**S2, S3**	**S00, S0**	**S2, S3**	**S00 to S3**
Function		**For direct-on-line starting**				**For star-delta (wye-delta) starting**
		ON-delay		**OFF-delay with control signal**		
General data						
Dimensions (basic unit with mounted function module)		See 3RT2 contactors (pages 3/29, 3/32, 3/35, 3/38) and 3RH2 contactor relays (page 5/8)				
Rated insulation voltage U_i Pollution degree 3, overvoltage category III	V AC	300				
Rated impulse withstand voltage U_{imp}	kV AC	4				
Overvoltage protection		Varistor integrated				
Recovery time	ms	50				150
Minimum ON duration	ms	--		35		--
Setting accuracy, typ., with reference to upper limit of scale		± 15%				
Repeat accuracy, max.		± 1%				
Permissible ambient temperature						
• During operation	°C	-25 ... +60				
• During storage	°C	-40 ... +80				
Electromagnetic compatibility (EMC)		IEC 61000-6-2, IEC 61000-6-4, IEC 61812-1, IEC 60947-4-1				
Control side						
Operating range of excitation		0.85 ... 1.1 x U_s, 0.95 ... 1.05 times the rated frequency				
Rated power	W	1				
• Power consumption at 230 V AC, 50 Hz	VA	1				2
Load side						
Mechanical endurance	Operating cycles	100 x 10^6				10 x 10^6
Electrical endurance						
• With 3RT2028 contactor	Operating cycles	100 000				--
• At AC-15, 250 V, 3 A	Operating cycles	--				100 000
Residual current, max.	mA	5	--			--
Voltage drop, max., with conducting output	VA	3.5	--			--
Short-circuit protection						
Version of the fuse link required for short-circuit protection of the auxiliary switch	A	--				Fuse gL/gG: 4
Conductor cross-sections						
Connection type (1 or 2 conductors can be connected)		**Screw terminals**				
• Solid	mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)				--
• Finely stranded with end sleeve (DIN 46228)	mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)				--
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)				--
• Terminal screws		M3 (for standard screwdriver size 2 or Pozidriv 2)				--
• Tightening torque	Nm	0.8 ... 1.2				--
Connection type (1 or 2 conductors can be connected)		**Spring-loaded terminals**				
• Operating devices	mm	3.0 x 0.5				--
• Solid	mm^2	2 x (0.25 ... 1.5)				--
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.25 ... 1.5)				--
• Finely stranded without end sleeve	mm^2	2 x (0.25 ... 1.5)				--
• AWG cables, solid or stranded	AWG	2 x (24 ... 16)				--

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3RA27 function modules for IO-Link for mounting on 3RT2 contactors

Type			**3RA2711**
General data			
Dimensions			See 3RT2 contactors: pages 3/29, 3/32, 3/35 and 3/38
Suitable for IO-Link masters according to specification			1.1
Permissible ambient temperature			
• During operation	According to IEC 60947-1	°C	-25 ... +60
• During storage	According to IEC 60721-3-1	°C	-40 ... +80
• During transport	According to IEC 60721-3-2	°C	-40 ... +80
Operational voltage U_{Hi}		V DC	24 ± 20%
Max. length of the cables for the input Y1-Y2		m	30
Electromagnetic compatibility (EMC)			IEC 61000-6-2, IEC 61000-6-4, IEC 60947-4-1
Conductor cross-sections			
Connection type (1 or 2 conductors can be connected)			**Screw terminals**
• Solid		mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)
• Finely stranded with end sleeve (DIN 46228)		mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)
• AWG cables, solid or stranded		AWG	2 x (20 ... 14)
• Terminal screws			M3 (for standard screwdriver Ø 6 mm or Pozidriv 2)
• Tightening torque of the terminal screws		Nm	0.8 ... 1.2
Connection type (1 or 2 conductors can be connected)			**Spring-loaded terminals**
• Operating devices		mm	3.0 x 0.5
• Solid		mm^2	2 x (0.25 ... 1.5)
• Finely stranded with end sleeve (DIN 46228)		mm^2	2 x (0.25 ... 1.5)
• Finely stranded without end sleeve		mm^2	2 x (0.25 ... 1.5)
• AWG cables, solid or stranded		AWG	2 x (24 ... 16)

3RA27 function modules for AS-Interface for mounting on 3RT2 contactors

Type			**3RA2712**
General data			
Dimensions			See 3RT2 contactors: pages 3/29, 3/32, 3/35 and 3/38
Slave type			A/B slave
Suitable for AS-i masters according to specification			2.1 or higher
AS-i slave profile IO.ID.ID2			7.A.E
ID1 code (factory setting)			7
Permissible ambient temperature			
• During operation	According to IEC 60947-1	°C	-25 ... +60
• During storage	According to IEC 60721-3-1	°C	-40 ... +80
• During transport	According to IEC 60721-3-2	°C	-40 ... +80
Operational voltage			
• AS-Interface		V	26.5 ... 31.6
• AUX PWR 24 V DC		V	24 ± 20%
Current consumption, max.			
• AS-Interface		mA	30
• AUX PWR			
- Maximum pickup/hold current	Size S00	mA	200/200
	Size S0	mA	300/300
	Size S2	mA	1 300/50
	Size S3	mA	4 000/70
Max. length of the cables for the input Y1-Y2		m	30
Electromagnetic compatibility (EMC)			IEC 61000-6-2, IEC 61000-6-4, IEC 60947-4-1
Conductor cross-sections			
Connection type (1 or 2 conductors can be connected)			**Screw terminals**
• Solid		mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)
• Finely stranded with end sleeve (DIN 46228)		mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)
• AWG cables, solid or stranded		AWG	2 x (20 ... 14)
• Terminal screws			M3 (for standard screwdriver Ø 6 mm or Pozidriv 2)
• Tightening torque of the terminal screws		Nm	0.8 ... 1.2
Connection type (1 or 2 conductors can be connected)			**Spring-loaded terminals**
• Operating devices		mm	3.0 x 0.5
• Solid		mm^2	2 x (0.25 ... 1.5)
• Finely stranded with end sleeve (DIN 46228)		mm^2	2 x (0.25 ... 1.5)
• Finely stranded without end sleeve		mm^2	2 x (0.25 ... 1.5)
• AWG cables, solid or stranded		AWG	2 x (24 ... 16)

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Overview

Auxiliary switch: Terminal designations and identification numbers for auxiliary contacts

Terminal designations

The terminal designations are 2-digit, e.g. 13, 14, 21, 22:

- Tens digit: Sequence digit
  - Related terminals have the same sequence digit
- Units digit: Function digit
  - 1-2 for normally closed contacts (NC)
  - 3-4 for normally open contacts (NO)

Identification numbers

The identification number indicates the number and type of the auxiliary contacts, e.g. 40, 31, 22, 13:

- 1st digit: number of normally open contacts (NO)
- 2nd digit: number of normally closed contacts (NC)

Examples:

- 31 = 3 NO + 1 NC
- 40 = 4 NO

Selection aid for mountable auxiliary switches for power contactors and contactor relays

The auxiliary switches of the 3RH29 series for mounting on the front and side can be used for 3RT2 power contactors as well as for 3RH2 contactor relays.

The possible combinations of basic unit and mounted auxiliary switch can be found in the tables, see the following pages.

Where the columns and lines intersect (blue and green in the example) you will find the identification number for the combination of basic unit (column) and auxiliary switch (line).

Additional auxiliary switch			3-pole contactors		
Article number	Auxiliary contacts		3RT201	3RT201	3RT202 to 3RT204
	Version		S00	S00	S0 to S3
	NO	NC	10	01	11
			13 14	21 22	13 21 14 22
			2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.
			According to EN 50012[1)]		
Auxiliary switches without NO contact					
3RH2911-☐HA01	--	1	11	02	12
3RH2911-☐HA02	--	2	12	03	13
3RH2911-☐HA03	--	3	13	04	14
3RH2911-☐FA04	--	4	14	--	--
Auxiliary switch with 1 NO contact					
3RH2911-☐HA10	1	--	20	11	21

1 For screw terminals
2 For spring-loaded terminals

IC01_00716

[1)] Combinations according to EN 50012, EN 50011 and IEC 60947-5-1 are in **bold** print. All combinations comply with EN 50005.

	Example 1	*Example 2*
Type	3RT20 motor contactor, S00 with 1 NO	3RT20 motor contactor, S0 with 1 NO + 1 NC
Sequence digit	2. 3. 4. 5.	3. 4. 5. 6.
Type	Auxiliary switch with 4 NC, 3RH2911-.FA04	Auxiliary switch with 3 NC, 3RH2911-.HA03
Function digit	1. 1. 1. 1. 2. 2. 2. 2.	1. 1. 1. 2. 2. 2.
Combi-nation	3RT20 motor contactor, S00 with aux. switch	3RT20 motor contactor, S0 with aux. switch
Terminal designation	13 21 31 41 51 14 22 32 42 52	13 21 31 41 51 14 22 32 42 52
Result	Ident. No. 14	Ident. No. 14

IC01_00717a

Example 1
Basic unit: 3-pole 3RT2017 motor contactor with 1 NO
Required: 1 NO + 4 NC (Ident. No. 14)
Result: 3RH2911-.FA04 auxiliary switch

Example 2
Basic unit: 3-pole 3RT2023 motor contactor with 1 NO + 1 NC
Required: 1 NO + 4 NC (Ident. No. 14)
Result: 3RH2911-.HA03 auxiliary switch

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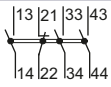
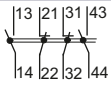
Additional auxiliary switches			3-pole contactors			4-pole contactors				Contactor relays		
Article number	Auxiliary contacts		S00		S0 to S3	S00		S0 to S3		S00		
	Version		3RT201		3RT202, 3RT203, 3RT204, 3RT244	3RT231	3RT251	3RT232, 3RT233, 3RT234	3RT252, 3RT253, 3RT254	3RH21, 3RH24		
	NO	NC	10	01	11	--	--	11	11	40E	31E	22E
												
			2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.	1. 2. 3. 4.	1. 2. 3. 4.	3. 4. 5. 6.	3. 4. 5. 6.	5. 6. 7. 8.	5. 6. 7. 8.	5. 6. 7. 8.
			According to EN 50012[1]			According to EN 50012[1]				According to EN 50011[1]		
Auxiliary switches, front												
Without NO contact												
3RH2911-☐HA01	--	1	**11**	02	**12**	01	01	**12**	**12**	**41X**	**32X**	**23X**
3RH2911-☐HA02	--	2	**12**	03	**13**	02	02	**13**	--	**42E**	**33X**	24
3RH2911-☐HA03	--	3	**13**	04	14	03	--	--	--	43	34	--
3RH2911-☐FA04	--	4	14	--	--	--	--	--	--	**44E**	--	--
With 1 NO contact												
3RH2911-☐HA10	1	--	20	11	**21**	**10**	**10**	**21**	**21**	**50E**	**41E**	**32E**
3RH2911-☐HA11	1	1	**21**	12	**22**	11	11	**22**	**22**	**51X**	**42X**	**33X**
3RH2911-☐HA12	1	2	**22**	13	**23**	12	12	**23**	--	52	43	34
3RH2911-☐HA13	1	3	**23**	14	24	13	--	--	--	**53X**	**44X**	--
With 2 NO contacts												
3RH2911-☐HA20	2	--	30	21	**31**	20	20	**31**	**31**	**60E**	**51X**	**42X**
3RH2911-☐HA21	2	1	**31**	22	**32**	21	21	**32**	**32**	61	52	43
3RH2911-☐HA22	2	2	**32**	23	33	22	22	33	--	**62X**	53	**44X**
3RH2911-☐FA22	2	2	32	23	33	**22**	**22**	33	--	**62X**	53	**44X**
With 3 NO contacts												
3RH2911-☐HA30	3	--	40	31	**41**	30	30	**41**	**41**	70	61	52
3RH2911-☐HA31	3	1	**41**	32	42	31	31	42	42	**71X**	**62X**	**53X**
With 4 NO contacts												
3RH2911-☐FA40	4	--	50	41	51	40	40	51	51	**80E**	**71X**	**62X**

[1] Combinations according to EN 50012, EN 50011 and IEC 60947-5-1 are in **bold** print. All combinations comply with EN 50005.

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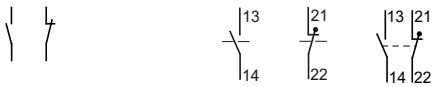
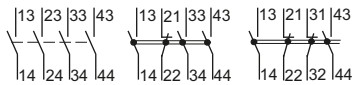
Additional auxiliary switches			3-pole contactors			4-pole contactors				Contactor relays		
Article number	Auxiliary contacts		S00		S0 to S3	S00		S0 to S3		S00		
	Version		3RT201		3RT202, 3RT203, 3RT204, 3RT244	3RT231	3RT251	3RT232, 3RT233, 3RT234	3RT252, 3RT253, 3RT254	3RH21, 3RH24		
	NO	NC	S00		S0 to S3	S00		S0 to S3		40E	31E	22E
												
			2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.	1. 2. 3. 4.	1. 2. 3. 4.	3. 4. 5. 6.	3. 4. 5. 6.	5. 6. 7. 8.	5. 6. 7. 8.	5. 6. 7. 8.
			According to EN 50005			According to EN 50005				According to EN 50005		
Auxiliary switches, front (continued)												
***With make-before-break*[1)]**												
3RH2911-□FB11	1	1	21	12	22	11	11	22	22	51	42	33
3RH2911-□FB22	2	2	32	23	33	22	22	33	--	62	53	44
3RH2911-□FC22	2	2	32	23	33	22	22	33	--	62	53	44
Complete inscription with terminals from top or bottom												
3RH2911-1AA10	1	--	20	11	21	10	10	21	21	50	41	32
3RH2911-1BA10	1	--	20	11	21	10	10	21	21	50	41	32
3RH2911-1AA01	--	1	11	02	12	01	01	12	12	41	32	23
3RH2911-1BA01	--	1	11	02	12	01	01	12	12	41	32	23
3RH2911-1LA11	1	1	21	12	22	11	11	22	22	51	42	33
3RH2911-1MA11	1	1	21	12	22	11	11	22	22	51	42	33
3RH2911-1LA20	2	--	30	21	31	20	20	31	31	60	51	42
3RH2911-1MA20	2	--	30	21	31	20	20	31	31	60	51	42

[1)] Contacts with make-before-break have no mirror contact function.

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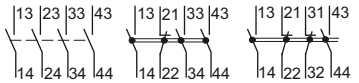
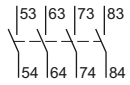
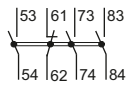
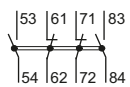
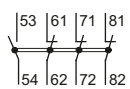
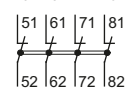
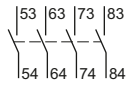
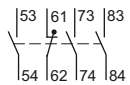
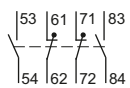
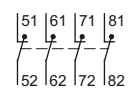
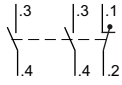
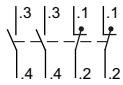
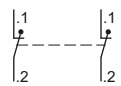
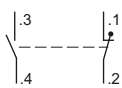
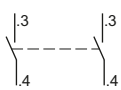
Additional auxiliary switches		3-pole contactors			4-pole contactors				Contactor relays		
Article number	Auxiliary contacts	S00		S0 to S3	S00		S0 to S3		S00		
	Version	3RT201		3RT202, 3RT203, 3RT204, 3RT244	3RT231	3RT251	3RT232, 3RT233, 3RT234	3RT252, 3RT253, 3RT254	3RH21, 3RH24		
	NO NC	10	01	11	--	--	11	11	40E	31E	22E
											
		2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.	1. 2. 3. 4.	1. 2. 3. 4.	3. 4. 5. 6.	3. 4. 5. 6.	5. 6. 7. 8.	5. 6. 7. 8.	5. 6. 7. 8.
		According to EN 50005			According to EN 50005				According to EN 50011[1]		
Auxiliary switches, front (continued)											
With complete inscription (for contactor relays)[2]											
3RH2911-□GA40	4 --				--	--	--	--	**80E**	--	--
3RH2911-□GA31	3 1				--	--	--	--	**71E**	--	--
3RH2911-□GA22	2 2				--	--	--	--	**62E**	--	--
3RH2911-□GA13	1 3				--	--	--	--	**53E**	--	--
3RH2911-□GA04	-- 4				--	--	--	--	**44E**	--	--
Complete inscription											
3RH2911-□XA40 -0MA0	4 --				50	41	51	40	40	51	51	**80E**	**71X**	**62X**
3RH2911-□XA31 -0MA0	3 1				41	32	42	31	31	42	42	**71E**	**62X**	53
3RH2911-□XA22 -0MA0	2 2				32	23	33	22	22	33	--	**62E**	53	**44X**
3RH2911-□XA04 -0MA0	-- 4				14	--	--	--	--	--	--	**44E**	--	--
Solid-state compatible[3]											
3RH2911-2NE21	2[4] 1				31	22	32	21	21	32	32	61	52	43
3RH2911-1NE22	2[4] 2[4]				32	23	33	22	22	33	--	62	53	44
3RH2911-□NF02	-- 2				12	03	13	02	02	13	--	42	33	24
3RH2911-□NF11	1 1				21	12	22	11	11	22	22	51	42	33
3RH2911-□NF20	2 --				30	21	31	20	20	31	31	60	51	42

1) Combinations according to EN 50011 and IEC 60947-5-1 are in **bold** print. All combinations comply with EN 50005.

2) For selection and ordering data, see page 3/89.

3) The internal circuit diagrams shown apply to sizes S00 to S3 (including mirror contacts). If size S00 is used for the contactor relays, the function of the mirror contact is not needed.

4) Of which one auxiliary contact is not solid-state compatible.

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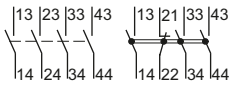
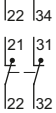
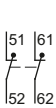
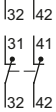
Additional auxiliary switches			3-pole contactors			4-pole contactors				Contactor relays		
Article number	Auxiliary contacts		S00		S0 to S3	S00		S0 to S3		S00		
	Version		3RT201		3RT202, 3RT203, 3RT204, 3RT244	3RT231	3RT251	3RT232, 3RT233, 3RT234	3RT252, 3RT253, 3RT254	3RH21		
	NO	NC	10	01	11	--	--	11	11	40E	31E	22E
												
			2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.	1. 2. 3. 4.	1. 2. 3. 4.	3. 4. 5. 6.	3. 4. 5. 6.	5. 6. 7. 8.	5. 6. 7. 8.	5. 6. 7. 8.
			According to EN 50012[1]			According to EN 50012[1]				According to EN 50011[1]		
Lateral auxiliary switches												
For size S00			Left	Right								
3RH2911-□DA02	--	2	--		**12**	--	--	02	02	--	--	--	--	--
3RH2911-□DA02 + **3RH2911-□DA02**	--	2			14	--	--	--	--	--	--	--	--	--
	--	2												
3RH2911-□DA11	1	1	--		**21**	--	--	11	11	--	--	--	--	--
3RH2911-□DA11 + **3RH2911-□DA11**	1	1			32	--	--	22	22	--	--	--	--	--
	1	1												
3RH2911-□DA20	2	--	--		30	--	--	20	20	--	--	--	--	--
3RH2911-□DA20 + **3RH2911-□DA20**	2	--			50	--	--	40	40	--	--	--	--	--
	2	--												
3RH2911-□DA20 + **3RH2911-□DA11**	2	--			**41**	--	--	31	31	--	--	--	--	--
	1	1												
3RH2911-□DA20 + **3RH2911-□DA02**	2	--			**32**	--	--	22	22	--	--	--	--	--
	--	2												
3RH2911-□DA11 + **3RH2911-□DA02**	1	1			**23**	--	--	13	--	--	--	--	--	--
	--	2												
For sizes S0 to S3			Left	Right										
3RH2921-□DA02	--	2	--		12	03	**13**	02	02	**13**	--	--	--	--
3RH2921-□DA02 + **3RH2921-□DA02**	--	2			14	--	--	--	--	--	--	--	--	--
	--	2												
3RH2921-□DA11	1	1	--		21	12	**22**	11	11	**22**	**22**	--	--	--
3RH2921-□DA11 + **3RH2921-□DA11**	1	1			32	23	33	22	22	--	--	--	--	--
	1	1												
3RH2921-□DA20	2	--	--		30	21	**31**	20	20	**31**	**31**	--	--	--
3RH2921-□DA20 + **3RH2921-□DA20**	2	--			50	41	51	40	40	--	--	--	--	--
	2	--												

[1] Combinations according to EN 50012, EN 50011 and IEC 60947-5-1 are in **bold** print. All combinations comply with EN 50005.

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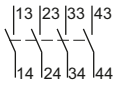
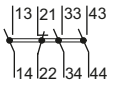
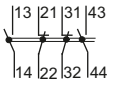
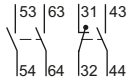
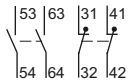
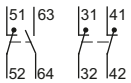
Additional auxiliary switches			3-pole contactors			4-pole contactors				Contactor relays		
Article number	Auxiliary contacts		S00		S0 to S3	S00		S0 to S3		S00		
	Version		3RT201		3RT202, 3RT203, 3RT204, 3RT244	3RT231	3RT251	3RT232, 3RT233, 3RT234	3RT252, 3RT253, 3RT254	3RH21		
	NO	NC	10	01	11	--	--	11	11	40E	31E	22E
												
			2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.	1. 2. 3. 4.	1. 2. 3. 4.	3. 4. 5. 6.	3. 4. 5. 6.	5. 6. 7. 8.	5. 6. 7. 8.	5. 6. 7. 8.
			According to EN 50012[1]			According to EN 50012[1]				According to EN 50011[1]		
Lateral auxiliary switches (continued)												
For sizes S00 to S3			Left	Right								
3RH2921-☐DA20 + **3RH2921-☐DA11**	2	--			41	32	42	31	31	--	--	--	--	--
	1	1												
3RH2921-☐DA20 + **3RH2921-☐DA02**	2	--			32	23	33	22	22	--	--	--	--	--
	--	2												
3RH2921-☐DA11 + **3RH2921-☐DA02**	1	1			23	14	24	13	--	--	--	--	--	--
	--	2												
For contactor relays[2]			Left											
3RH2921-☐DA02	--	2			--	--	--	--	--	--	--	--	**42Z**	**33X**	24
3RH2921-☐DA11	1	1			--	--	--	--	--	--	--	--	**51X**	**42X**	**33X**
3RH2921-☐DA20	2	--			--	--	--	--	--	--	--	--	**60Z**	**51X**	**42X**
Solid-state compatible															
For size S00			Left	Right											
3RH2911-2DE11	1	1	--		21	--	--	11	11	--	--	--	--	--	--
3RH2911-2DE11 + **3RH2911-2DE11**	1	1			32	--	--	22	22	--	--	--	--	--	--
	1	1													
For sizes S00 to S3			Left	Right											
3RH2921-☐DE11	1	1	--		21	12	22	11	11	22	22	--	--	--	--
3RH2921-☐DE11 + **3RH2921-☐DE11**	1	1			32	23	33	22	22	--	--	--	--	--	--
	1	1													
For contactor relays[2]			Left												
3RH2921-2DE11	1	1			--	--	--	--	--	--	--	--	**51X**	**42X**	**33X**

[1] Combinations according to EN 50012, EN 50011 and IEC 60947-5-1 are in **bold** print. All combinations comply with EN 50005.

[2] Without force-guided operation.

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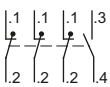
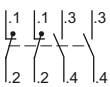
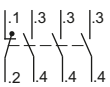
Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RH2911-1HA22

3RH2911-2HA22

For contactors/ contactor relays[1]	Auxiliary contacts Version			Screw terminals		Spring-loaded terminals	
				Article No.	Price per PU	Article No.	Price per PU
Type	NO	NC					
Auxiliary switches for snapping onto the front							
Sizes S00 to S3							
3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4, 3RH21, 3RH24	--	1		**3RH2911-1HA01**		**3RH2911-2HA01**	
	--	2		**3RH2911-1HA02**		**3RH2911-2HA02**	
	--	3		**3RH2911-1HA03**		**3RH2911-2HA03**	
	1	--		**3RH2911-1HA10**		**3RH2911-2HA10**	
	1	1		**3RH2911-1HA11**		**3RH2911-2HA11**	
	1	2		**3RH2911-1HA12**		**3RH2911-2HA12**	
	1	3		**3RH2911-1HA13**		**3RH2911-2HA13**	
	2	--		**3RH2911-1HA20**		**3RH2911-2HA20**	
	2	1		**3RH2911-1HA21**		**3RH2911-2HA21**	
	2	2		**3RH2911-1HA22**		**3RH2911-2HA22**	
	3	--		**3RH2911-1HA30**		**3RH2911-2HA30**	
	3	1		**3RH2911-1HA31**		**3RH2911-2HA31**	

[1] For detailed information on use, see page 3/82.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RH2911-1FC22

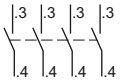
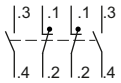
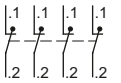
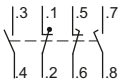
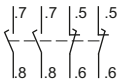
3RH2911-2FC22

3RH2911-1AA01

3RH2911-1BA01

3RH2911-1LA11

3RH2911-1MA11

For contactors/ contactor relays[1]	Connections Position	Auxiliary contacts Version					Screw terminals		Spring-loaded terminals	
Type		NO	NC	NO	NC		Article No.	Price per PU	Article No.	Price per PU
Auxiliary switches for snapping onto the front										
Sizes S00 to S3										
3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4, 3RH21, 3RH24	--	4	--	--	--		**3RH2911-1FA40**		**3RH2911-2FA40**	
	--	2	2	--	--		**3RH2911-1FA22**		**3RH2911-2FA22**	
	--	--	4	--	--		**3RH2911-1FA04**		**3RH2911-2FA04**	
	--	--	--	1	1		**3RH2911-1FB11**		**3RH2911-2FB11**	
	--	1	1	1	1		**3RH2911-1FB22**		**3RH2911-2FB22**	
	--	--	--	2	2		**3RH2911-1FC22**		**3RH2911-2FC22**	
1-pole and 2-pole auxiliary switches, cable entry from top or bottom										
3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4, 3RH21, 3RH24	Top	1	--	--	--		**3RH2911-1AA10**		**--**	
	Bottom	1	--	--	--		**3RH2911-1BA10**		**--**	
	Top	--	1	--	--		**3RH2911-1AA01**		**--**	
	Bottom	--	1	--	--		**3RH2911-1BA01**		**--**	
	Top	1	1	--	--		**3RH2911-1LA11**		**--**	
	Bottom	1	1	--	--		**3RH2911-1MA11**		**--**	
	Top	2	--	--	--		**3RH2911-1LA20**		**--**	
	Bottom	2	--	--	--		**3RH2911-1MA20**		**--**	

[1] For detailed information on use, see pages 3/82 and 3/83.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RH2911-1GA22

3RH2911-2GA22

For contactor relays[1]	Contactor relay with auxiliary switch Ident. No.	Auxiliary contacts Version			Screw terminals Article No.	Price per PU	Spring-loaded terminals Article No.	Price per PU
		NO	NC					
Type								
Auxiliary switches for snapping onto the front								
Size S00								
Blocks for the assembly of contactor relays with 8 contacts								
3RH2140, 3RH2440, Ident. No. 40E	**80E**	4	--	53 63 73 83 / 54 64 74 84	**3RH2911-1GA40**		**3RH2911-2GA40**	
	71E	3	1	53 61 73 83 / 54 62 74 84	**3RH2911-1GA31**		**3RH2911-2GA31**	
	62E	2	2	53 61 71 83 / 54 62 72 84	**3RH2911-1GA22**		**3RH2911-2GA22**	
	53E	1	3	53 61 71 81 / 54 62 72 82	**3RH2911-1GA13**		**3RH2911-2GA13**	
	44E	--	4	51 61 71 81 / 52 62 72 82	**3RH2911-1GA04**		**3RH2911-2GA04**	

[1] For detailed information on use, see page 3/84.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RH2911-1XA22-0MA0

3RH2911-2XA22-0MA0

For contactors/ contactor relays[1]	Auxiliary contacts Version			Screw terminals Article No.	Price per PU	Spring-loaded terminals Article No.	Price per PU
	NO	NC					
Type							
Auxiliary switches for snapping onto the front							
Sizes S00 to S3			S00 / S0 ... S3				
3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4, 3RH21[2], 3RH24[2]	4	--	53 63 73 83 / 54 64 74 84	**3RH2911-1XA40-0MA0**		**3RH2911-2XA40-0MA0**	
	3	1	53 61 73 83 / 54 62 74 84	**3RH2911-1XA31-0MA0**		**3RH2911-2XA31-0MA0**	
	2	2	53 61 71 83 / 54 62 72 84	**3RH2911-1XA22-0MA0**		**3RH2911-2XA22-0MA0**	
	--	4	51 61 71 81 / 52 62 72 82	**3RH2911-1XA04-0MA0**		**3RH2911-2XA04-0MA0**	

[1] For detailed information on use, see page 3/84.

[2] For size S00, positively driven operation only applies for the 3RH contactor relay, and there is no positively driven operation for 3RT2 power contactors.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

© Siemens 2023

3

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RH1921-1XA22-0MA0

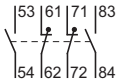
3RH1921-2XA22-0MA0

3RH1921-1CA10

3RH1921-1CD10

3RH1921-2CA10

3RH1921-2CA01

For contactors	Auxiliary contacts						Screw terminals		Spring-loaded terminals	
	Ident. No.	Version					Article No.	Price per PU	Article No.	Price per PU
Type		NO	NC	NO	NC					
Auxiliary switches for snapping onto the front										
Sizes S6 to S12										
	4-pole auxiliary switches									
	• According to EN 50012									
3RT1.5 ... 3RT1.7	**22**	2	2	--	--		**3RH1921-1XA22-0MA0**		**3RH1921-2XA22-0MA0**	
	1-pole auxiliary switches									
	• According to EN 50005 and EN 50012									
3RT1.5 ... 3RT1.7	**10**	1	--	--	--		**3RH1921-1CA10**		**3RH1921-2CA10**	
	01	--	1	--	--		**3RH1921-1CA01**		**3RH1921-2CA01**	
	10	--	--	1 (lead-ing)	--		**3RH1921-1CD10**		**--**	
	01	--	--	--	1 (lag-ging)		**3RH1921-1CD01**		**--**	

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RH2911-1DA02

3RH2911-2DA02

For contactors/ contactor relays[1]	Auxiliary contacts Version				Screw terminals		Spring-loaded terminals	
					Article No.	Price per PU	Article No.	Price per PU
Type	NO	NC						
Laterally mountable auxiliary switches, mounting on the right and/or the left, 2-pole								
Size S00			Left	Right				
3RT2.1	--	2	41 51 / 42 52	21 31 / 22 32	**3RH2911-1DA02**		**3RH2911-2DA02**	
	1	1	41 53 / 42 54	21 33 / 22 34	**3RH2911-1DA11**		**3RH2911-2DA11**	
	2	--	43 53 / 44 54	23 33 / 24 34	**3RH2911-1DA20**		**3RH2911-2DA20**	
3RH21, 3RH24	--	2	51 61 / 52 62	--	**3RH2921-1DA02**		**3RH2921-2DA02**	
	1	1	51 63 / 52 64	--	**3RH2921-1DA11**		**3RH2921-2DA11**	
	2	--	53 63 / 54 64	--	**3RH2921-1DA20**		**3RH2921-2DA20**	
Sizes S0 to S3			Left	Right				
3RT2.2[2], 3RT2.3[3], 3RT2.4[3]	--	2	51 61 / 52 62	31 41 / 32 42	**3RH2921-1DA02**		**3RH2921-2DA02**	
	1	1	51 63 / 52 64	31 43 / 32 44	**3RH2921-1DA11**		**3RH2921-2DA11**	
	2	--	53 63 / 54 64	33 43 / 34 44	**3RH2921-1DA20**		**3RH2921-2DA20**	

[1] For detailed information on use, see pages 3/85 and 3/86.

[2] With 3RT232. and 3RT252. contactors, mountable only on the right.

[3] 3RH2921-1DA.. lateral auxiliary switches can only be mounted on 3RT26 capacitor contactors of sizes S2 and S3.

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3

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

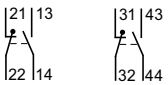
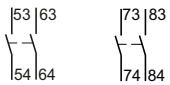
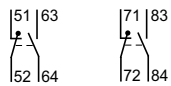
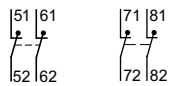
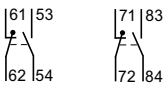
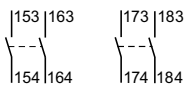
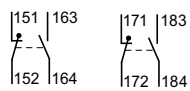
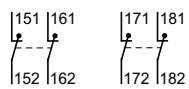
3RH1921-1DA11

3RH1921-1JA11

3RH1921-1EA02

3RH1921-1KA02

3RH1921-2DA11

For contactors	Auxiliary contacts Version			Screw terminals		Spring-loaded terminals	
Type	NO	NC		Article No.	Price per PU	Article No.	Price per PU
Lateral auxiliary switches, mounting on the right or left, 2-pole							
Sizes S6 to S12			Left / Right				
	First auxiliary switch						
	• According to EN 50012						
3RT1.5 ... 3RT1.7	1	1		**3RH1921-1DA11**		**3RH1921-2DA11**	
	• According to EN 50005						
3RT1.5 ... 3RT1.7	2	--		**3RH1921-1EA20**		**3RH1921-2EA20**	
	1	1		**3RH1921-1EA11**		**--**	
	--	2		**3RH1921-1EA02**		**3RH1921-2EA02**	
	Second auxiliary switch						
	• According to EN 50012						
3RT1.5 ... 3RT1.7	1	1		**3RH1921-1JA11**		**3RH1921-2JA11**	
	• According to EN 50005						
3RT1.5 ... 3RT1.7	2	--		**3RH1921-1KA20**		**3RH1921-2KA20**	
	1	1		**3RH1921-1KA11**		**--**	
	--	2		**3RH1921-1KA02**		**3RH1921-2KA02**	

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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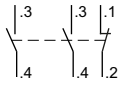
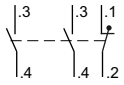
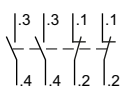
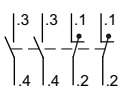
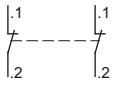
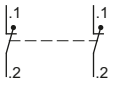
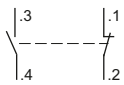
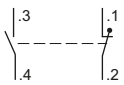
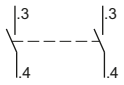
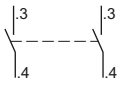
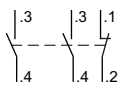
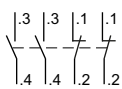
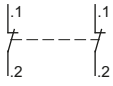
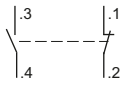
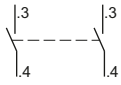
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RH2911-1NF..

3RH2911-2NF..

For contactors/ contactor relays[1]	Size	Contacts Version Type	NO	NC		Screw terminals Article No.	Price per PU	Spring-loaded terminals Article No.	Price per PU
Auxiliary switches for snapping onto the front									
Solid-state compatible auxiliary switches, 2-pole									
• For operation in dusty atmospheres • For solid-state circuits with rated operational currents I_e/AC-14 and DC-13 from 1 to 300 mA at 3 to 60 V • Hard gold-plated contacts • Auxiliary switches for snapping onto the front for 3RT2.2 to 3RT2.4 contactors are designed as mirror contacts according to IEC 60947-4-1, Annex F.									
Sizes S00 to S3				S00	S0 ... S3				
3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4	**S00 ... S3**	2[2]	1			NEW	--		**3RH2911-2NE21**
		2[2]	2[2]			NEW	**3RH2911-1NE22**		--
		--	2				**3RH2911-1NF02**		**3RH2911-2NF02**
		1	1				**3RH2911-1NF11**		**3RH2911-2NF11**
		2	--				**3RH2911-1NF20**		**3RH2911-2NF20**
3RH21, 3RH24	**S00**	2[2]	1		--	NEW	--		**3RH2911-2NE21**
		2[2]	2[2]		--	NEW	**3RH2911-1NE22**		--
		--	2		--		**3RH2911-1NF02**		**3RH2911-2NF02**
		1	1		--		**3RH2911-1NF11**		**3RH2911-2NF11**
		2	--		--		**3RH2911-1NF20**		**3RH2911-2NF20**

[1] For detailed information on use, see page 3/84.
[2] Of which one auxiliary contact is not solid-state compatible.

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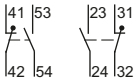
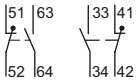
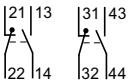
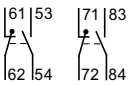
3

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RH2911-2DE11

3RH1921-2JE11

For contactors/ contactor relays[1]	Size	Contacts Version			Screw terminals		Spring-loaded terminals	
					Article No.	Price per PU	Article No.	Price per PU
Type		NO	NC					
Lateral auxiliary switches, mounting on the right and/or the left, according to EN 50012								
Solid-state compatible auxiliary switches, 2-pole								
• For operation in dusty atmospheres • For solid-state circuits with rated operational currents I_e/AC-14 and DC-13 from 1 to 300 mA at 3 to 60 V • Hard gold-plated contacts • Laterally mountable auxiliary switches for 3RT2.1 to 3RT2.4 and 3RT1.5 to 3RT1.7 contactors are designed as mirror contacts according to IEC 60947-4-1, Annex F.								
Sizes S00 to S3				Left / Right				
		Auxiliary switches						
3RT2.1	**S00**	1	1		--		**3RH2911-2DE11**	
3RH21, 3RH24	**S00**	1	1		--		**3RH2921-2DE11**	
3RT2.2, 3RT2.3, 3RT2.4	**S0 ... S3**	1	1		--		**3RH2921-2DE11**	
Sizes S6 to S12				Left / Right				
		First auxiliary switch						
3RT1.5 ... 3RT1.7	**S6 ... S12**	1	1		--		**3RH1921-2DE11**	
		Second auxiliary switch						
3RT1.5 ... 3RT1.7	**S6 ... S12**	1	1		--		**3RH1921-2JE11**	

[1] Applies to 3RT2 and 3RH2 contactors: For detailed information on use, see page 3/86.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

For contactors	Time setting range *t*	Screw terminals		PU (UNIT, SET, M)	PS*	PG
Type	s	Article No.	Price per PU			
Pneumatic time-delay auxiliary switches for mounting on 3RT2 contactors						
Size S0						
Auxiliary contacts 1 NO and 1 NC[1]						
ON-delay						
3RT202[2]	1 ... 30	**3RT2927-2PA01**		1	1 unit	41B
	10 ... 180	**3RT2927-2PA11**		1	1 unit	41B
OFF-delay						
3RT202[2]	1 ... 30	**3RT2927-2PR01**		1	1 unit	41B
	10 ... 180	**3RT2927-2PR11**		1	1 unit	41B

3RT2927-2P..1

1) In addition to these, no other auxiliary contacts are permitted.
2) Cannot be fitted onto coupling contactors and coupling contactor relays.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RA2813-1FW10

3RA2813-2AW10

For contactors	Rated control supply voltage U_s[1]	Time setting range *t*	Output/ auxiliary contacts	Screw terminals		Spring-loaded terminals	
Type	V	s		Article No.	Price per PU	Article No.	Price per PU
Solid-state time-delay auxiliary switches[2] for mounting on 3RT2 contactors and 3RH2 contactor relays							
Sizes S00 to S3							
	The electrical connection between the solid-state time-delay auxiliary switch and the contactor or contactor relay underneath is established automatically when it is snapped on and locked.						
	ON-delay (varistor integrated)						
3RT2[3][4], 3RH21[3], 3RH24	24 ... 240 AC/DC	0.05 ... 100 (1, 10, 100; selectable)	1 CO	**3RA2813-1AW10**		**3RA2813-2AW10**	
			1 NO + 1 NC	**3RA2813-1FW10**		**3RA2813-2FW10**	
	OFF-delay with control signal (varistor integrated)						
3RT2[3][4], 3RH21[3], 3RH24	24 ... 240 AC/DC	0.05 ... 100 (1, 10, 100; selectable)	1 CO	**3RA2814-1AW10**		**3RA2814-2AW10**	
			1 NO + 1 NC	**3RA2814-1FW10**		**3RA2814-2FW10**	
	OFF-delay without control signal[5] (varistor integrated)						
3RT2[3][4], 3RH21[3], 3RH24	24 ... 240 AC/DC	0.05 ... 100 (1, 10, 100; selectable)	1 CO	**3RA2815-1AW10**		**3RA2815-2AW10**	
			1 NO + 1 NC	**3RA2815-1FW10**		**3RA2815-2FW10**	

1) AC voltage values apply for 50 Hz and 60 Hz.
2) The solid-state time-delay auxiliary switches are also available as 3RA28 function modules for mounting on 3RT2 contactors and 3RH2 contactor relays, see page 3/100.
3) Cannot be fitted onto coupling contactors and coupling contactor relays.
4) From product version E04 onwards, 3RA281. solid-state time-delay auxiliary switches can be used for 3RT2.4 contactors.
5) Setting of output contacts in as-supplied state not defined (bistable relay). Application of the control supply voltage once results in contact changeover to the correct setting.

Technical specifications, see page 3/76.

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For contactors	Auxiliary contacts	Rated control supply voltage U_s[1]	Time setting range *t*	Screw terminals	PU (UNIT, SET, M)	PS*	PG
Type		V	s	Article No. / Price per PU			
Solid-state time-delay auxiliary switches for mounting on 3RT1 contactors							
Sizes S6 to S12							
	ON-delay[2]						
3RT10, 3RT14	1 NO + 1 NC	24 AC/DC	0.05 ... 1	**3RT1926-2EJ11**	1	1 unit	41H
			0.5 ... 10	**3RT1926-2EJ21**	1	1 unit	41H
			5 ... 100	**3RT1926-2EJ31**	1	1 unit	41H
		100 ... 127 AC	0.05 ... 1	**3RT1926-2EC11**	1	1 unit	41H
			0.5 ... 10	**3RT1926-2EC21**	1	1 unit	41H
			5 ... 100	**3RT1926-2EC31**	1	1 unit	41H
		200 ... 240 AC	0.05 ... 1	**3RT1926-2ED11**	1	1 unit	41H
			0.5 ... 10	**3RT1926-2ED21**	1	1 unit	41H
			5 ... 100	**3RT1926-2ED31**	1	1 unit	41H
	OFF-delay without control signal[2][3]						
3RT10, 3RT14	1 NO + 1 NC	24 AC/DC	0.05 ... 1	**3RT1926-2FJ11**	1	1 unit	41H
			0.5 ... 10	**3RT1926-2FJ21**	1	1 unit	41H
			5 ... 100	**3RT1926-2FJ31**	1	1 unit	41H
		100 ... 127 AC/DC	0.05 ... 1	**3RT1926-2FK11**	1	1 unit	41H
			0.5 ... 10	**3RT1926-2FK21**	1	1 unit	41H
			5 ... 100	**3RT1926-2FK31**	1	1 unit	41H
		200 ... 240 AC/DC	0.05 ... 1	**3RT1926-2FL11**	1	1 unit	41H
			0.5 ... 10	**3RT1926-2FL21**	1	1 unit	41H
			5 ... 100	**3RT1926-2FL31**	1	1 unit	41H
	Star-delta (wye-delta) starting (varistor integrated)[2]						
3RT10, 3RT14	1 NO delayed + 1 NO instantaneous, dead time 50 ms	24 AC/DC	1.5 ... 30	**3RT1926-2GJ51**	1	1 unit	41H
		100 ... 127 AC	1.5 ... 30	**3RT1926-2GC51**	1	1 unit	41H
		200 ... 240 AC	1.5 ... 30	**3RT1926-2GD51**	1	1 unit	41H

3RT1926-2E..1, 3RT1926-2F..1

3RT1926-2G.51

1) AC voltage values apply for 50 and 60 Hz.

2) Connecting terminals A1 and A2 for the control supply voltage of the solid-state time-delay auxiliary switch must be connected to the associated contactor by means of cables.

3) Setting of output contacts in as-supplied state not defined (bistable relay). Application of the control supply voltage once results in contact changeover to the correct setting.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

For contactors	Version	Rated control supply voltage U_s [1] AC operation	Rated control supply voltage U_s [1] DC operation	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		V AC	V DC					
Surge suppressors without LED (also for spring-loaded terminals)								
Size S00								
	For plugging onto the front of the contactors (with or without auxiliary switches)							
3RT2.1, 3RH2	**Varistors**	24 ... 48	24 ... 70	**3RT2916-1BB00**		1	1 unit	41B
		48 ... 127	70 ... 150	**3RT2916-1BC00**		1	1 unit	41B
		127 ... 240	150 ... 250	**3RT2916-1BD00**		1	1 unit	41B
		240 ... 400	--	**3RT2916-1BE00**		1	1 unit	41B
		400 ... 600	--	**3RT2916-1BF00**		1	1 unit	41B
3RT2.1, 3RH2	**RC elements**	24 ... 48	24 ... 70	**3RT2916-1CB00**		1	1 unit	41B
		48 ... 127	70 ... 150	**3RT2916-1CC00**		1	1 unit	41B
		127 ... 240	150 ... 250	**3RT2916-1CD00**		1	1 unit	41B
		240 ... 400	--	**3RT2916-1CE00**		1	1 unit	41B
		400 ... 600	--	**3RT2916-1CF00**		1	1 unit	41B
3RT2.1, 3RH2	**Interference suppression diode**	--	12 ... 250	**3RT2916-1DG00**		1	1 unit	41B
3RT2.1, 3RH2	**Diode assemblies** (diode and Zener diode) for DC operation	--	12 ... 250	**3RT2916-1EH00**		1	1 unit	41B
Size S0								
	For plugging into the front of the contactors (before mounting the auxiliary switch)							
3RT2.2	**Varistors** [2]	24 ... 48	24 ... 70	**3RT2926-1BB00**		1	1 unit	41B
		48 ... 127	70 ... 150	**3RT2926-1BC00**		1	1 unit	41B
		127 ... 240	150 ... 250	**3RT2926-1BD00**		1	1 unit	41B
		240 ... 400	--	**3RT2926-1BE00**		1	1 unit	41B
		400 ... 600	--	**3RT2926-1BF00**		1	1 unit	41B
3RT2.2	**RC elements**	24 ... 48	24 ... 70	**3RT2926-1CB00**		1	1 unit	41B
		48 ... 127	70 ... 150	**3RT2926-1CC00**		1	1 unit	41B
		127 ... 240	150 ... 250	**3RT2926-1CD00**		1	1 unit	41B
		240 ... 400	--	**3RT2926-1CE00**		1	1 unit	41B
		400 ... 600	--	**3RT2926-1CF00**		1	1 unit	41B
3RT2.2	**Diode assemblies** for DC operation	--	24	**3RT2926-1ER00**		1	1 unit	41B
		--	30 ... 250	**3RT2926-1ES00**		1	1 unit	41B
Size S2								
	For plugging into the front of the contactors (before mounting the auxiliary switch)							
3RT2.3	**Varistors** [2]	24 ... 48	--	**3RT2936-1BB00**		1	1 unit	41B
		48 ... 127	--	**3RT2936-1BC00**		1	1 unit	41B
		127 ... 240	--	**3RT2936-1BD00**		1	1 unit	41B
		240 ... 400	--	**3RT2936-1BE00**		1	1 unit	41B
		400 ... 600	--	**3RT2936-1BF00**		1	1 unit	41B
3RT2.3	**RC elements**	24 ... 48	24 ... 70	**3RT2936-1CB00**		1	1 unit	41B
		48 ... 127	70 ... 150	**3RT2936-1CC00**		1	1 unit	41B
		127 ... 240	150 ... 250	**3RT2936-1CD00**		1	1 unit	41B
		240 ... 400	--	**3RT2936-1CE00**		1	1 unit	41B
		400 ... 600	--	**3RT2936-1CF00**		1	1 unit	41B
3RT2.3	**Diode assemblies** for DC operation	--	24	**3RT2936-1ER00**		1	1 unit	41B
		--	30 ... 250	**3RT2936-1ES00**		1	1 unit	41B
Size S3								
	For plugging into the front of the contactors (before mounting the auxiliary switch)							
3RT2.4	**Varistors** [2]	24 ... 48	--	**3RT2936-1BB00**		1	1 unit	41B
		48 ... 127	--	**3RT2936-1BC00**		1	1 unit	41B
		127 ... 240	--	**3RT2936-1BD00**		1	1 unit	41B
		240 ... 400	--	**3RT2936-1BE00**		1	1 unit	41B
		400 ... 600	--	**3RT2936-1BF00**		1	1 unit	41B
3RT2.4	**Diode assemblies** for DC operation	--	24	**3RT2936-1ER00**		1	1 unit	41B
		--	30 ... 250	**3RT2936-1ES00**		1	1 unit	41B
	For plugging into the two recesses on the left next to the connection block for auxiliary switches and coils A1 and A2, the connecting cables are wired to A1 and A2 **(see also overview graphic on page 3/11)**							
3RT2.4	**RC elements**	24 ... 48	24 ... 70	**3RT2946-1CB00**		1	1 unit	41B
		48 ... 127	70 ... 150	**3RT2946-1CC00**		1	1 unit	41B
		127 ... 240	150 ... 250	**3RT2946-1CD00**		1	1 unit	41B
		240 ... 400	--	**3RT2946-1CE00**		1	1 unit	41B
		400 ... 600	--	**3RT2946-1CF00**		1	1 unit	41B

3RT2916-1B.00

3RT2926-1E.00

3RT2936-1BF00

3RT2936-1ER00

3RT2946-1C.00

[1] Can be used for AC operation for 50/60 Hz. Other voltages on request.

[2] The varistor is already integrated on the AC/DC contactors.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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For contactors Type	Version	Rated control supply voltage U_s [1] AC operation V AC	DC operation V DC	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Surge suppressors without LED								
Sizes S6 to S12								
	For connecting to withdrawable coil for contactors with • Standard operating mechanisms 3RT1...-.A... • Solid-state operating mechanisms 3RT1...-.N...			**Screw terminals**				
3RT1.5 ... 3RT1.7	**RC elements**	24 ... 48	24 ... 70	**3RT1956-1CB00**		1	1 unit	41B
		48 ... 127	70 ... 150	**3RT1956-1CC00**		1	1 unit	41B
		127 ... 240	150 ... 250	**3RT1956-1CD00**		1	1 unit	41B
		240 ... 400	--	**3RT1956-1CE00**		1	1 unit	41B
		400 ... 600	--	**3RT1956-1CF00**		1	1 unit	41B
				Spring-loaded terminals				
3RT1.5 ... 3RT1.7	**RC elements**	24 ... 48	24 ... 70	**3RT1956-1CB02**		1	1 unit	41B
		48 ... 127	70 ... 150	**3RT1956-1CC02**		1	1 unit	41B
		127 ... 240	150 ... 250	**3RT1956-1CD02**		1	1 unit	41B
		240 ... 400	--	**3RT1956-1CE02**		1	1 unit	41B
		400 ... 600	--	**3RT1956-1CF02**		1	1 unit	41B

3RT1956-1C.00

3RT1956-1C.02

[1] Can be used for AC operation for 50/60 Hz. Other voltages on request.

For contactors Type	Version	Rated control supply voltage U_s [1] AC operation V AC	DC operation V DC	Power consumption P of LED at U_s mW	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Surge suppressors with LED (also for spring-loaded terminals)									
Size S00									
	For plugging onto the front of the contactors (with or without auxiliary switches)								
3RT2.1, 3RH2	**Varistors**	24 ... 48	12 ... 24	10 ... 120	**3RT2916-1JJ00**		1	1 unit	41B
		48 ... 127	24 ... 70	20 ... 470	**3RT2916-1JK00**		1	1 unit	41B
		127 ... 240	70 ... 150	50 ... 700	**3RT2916-1JL00**		1	1 unit	41B
		--	150 ... 250	160 ... 950	**3RT2916-1JP00**		1	1 unit	41B
3RT2.1, 3RH2	**Interference suppression diodes**	--	24 ... 70	20 ... 470	**3RT2916-1LM00**		1	1 unit	41B
		--	50 ... 150	50 ... 700	**3RT2916-1LN00**		1	1 unit	41B
		--	150 ... 250	160 ... 950	**3RT2916-1LP00**		1	1 unit	41B
Size S0									
	For plugging into the front of the contactors (before mounting the auxiliary switch)								
3RT2.2	**Varistors**	24 ... 48	12 ... 24	10 ... 120	**3RT2926-1JJ00**		1	1 unit	41B
		48 ... 127	24 ... 70	20 ... 470	**3RT2926-1JK00**		1	1 unit	41B
		127 ... 240	70 ... 150	50 ... 700	**3RT2926-1JL00**		1	1 unit	41B
3RT2.2	**Diode assemblies**	--	24	20 ... 470	**3RT2926-1MR00**		1	1 unit	41B
Sizes S2 and S3									
	For plugging into the front of the contactors (before mounting the auxiliary switch)								
3RT2.3, 3RT2.4	**Varistors**	24 ... 48	12 ... 24	10 ... 120	**3RT2936-1JJ00**		1	1 unit	41B
		48 ... 127	24 ... 70	20 ... 470	**3RT2936-1JK00**		1	1 unit	41B
		127 ... 240	70 ... 150	50 ... 700	**3RT2936-1JL00**		1	1 unit	41B

3RT2916-1J.00

3RT2926-1MR00

3RT2936-1JJ00

[1] Can be used for AC operation for 50/60 Hz. Other voltages on request.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

	For contactors Type	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Coupling links for control by PLC							
			Screw terminals				
	Size S0						
3RH2924-1GP11		**For mounting on the coil terminals of the contactors (for contactors with screw terminals only)** With LED for the switching state and with integrated varistor for damping switching overvoltages					
	3RT2.2	• 24 V DC control, 17 ... 30 V DC operating range	**3RH2924-1GP11**		1	1 unit	41B
	Sizes S00 to S3						
3RH2914-1GP11		**For mounting on the front of contactors with AC, DC or AC/DC operation**					
	3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4 3RH2	• 24 V DC control, 17 ... 30 V DC operating range	**3RH2914-1GP11**		1	1 unit	41B
			Spring-loaded terminals				
3RH2914-2GP11	3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4 3RH2	• 24 V DC control, 17 ... 30 V DC operating range	**3RH2914-2GP11**		1	1 unit	41B

Technical specifications, see page 3/78.

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PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

More information

Equipment Manual for 3RA28 function modules, see https://support.industry.siemens.com/cs/ww/en/view/60279150

3RA2811-2CW10

3RA2812-1DW10

3RA2816-0EW20

For contactors	Size	Version	Rated control supply voltage U_s [1]	Time setting range t	Screw terminals		Spring-loaded terminals	
Type			V AC/DC	s	Article No.	Price per PU	Article No.	Price per PU
3RA28 function modules for mounting on 3RT2 contactors and 3RH2 contactor relays								
For direct-on-line starting								
3RT2.1[2], 3RT2.2[2], 3RH21[2], 3RH24	S00, S0	**ON-delay two-wire design, varistor integrated** The electrical connection between the function module and the contactor underneath is established automatically when it is snapped on and locked.	24 ... 240	0.05 ... 100 (1, 10, 100; selectable)	**3RA2811-1CW10**		**3RA2811-2CW10**	
3RT2.3[2] 3RT2.4[2][3]	S2, S3		24 ... 90 90 ... 240	0.05 ... 100 (1, 10, 100; selectable)	**3RA2831-1DG10** **3RA2831-1DH10**		**3RA2831-2DG10** **3RA2831-2DH10**	
3RT2.1[2], 3RT2.2[2], 3RH21[2], 3RH24	S00, S0	**OFF-delay with control signal, varistor integrated** The electrical connection between the function module and the contactor underneath is established automatically when it is snapped on and locked.	24 ... 240	0.05 ... 100 (1, 10, 100; selectable)	**3RA2812-1DW10**		**3RA2812-2DW10**	
3RT2.3[2] 3RT2.4[2][3]	S2, S3		24 ... 90 90 ... 240	0.05 ... 100 (1, 10, 100; selectable)	**3RA2832-1DG10** **3RA2832-1DH10**		**3RA2832-2DG10** **3RA2832-2DH10**	
For star-delta (wye-delta) starting								
3RT2.1, 3RT2.2 3RT2.3[2] 3RT2.4[2][4]	S00 ... S3	**Varistor integrated** Comprising one basic module and two coupling modules The electrical connection between the function module and the contactor assembly is established automatically by snapping on and plugging in the connecting cables.	24 ... 240	0.5 ... 60 (10, 30, 60; selectable)	**3RA2816-0EW20**		**3RA2816-0EW20**	
Accessories								
3RA28	S00 ... S3	**Cover, sealable**			**3RA2910-0**		**3RA2910-0**	

1) AC voltage values apply for 50 and 60 Hz.
2) Cannot be fitted onto coupling relays and coupling contactor relays.
3) From product version E03 onwards, 3RA283. function modules can be used for 3RT2.4 contactors.
4) From product version E04 onwards, 3RA2816 function modules can be used for 3RT2.4 contactors.

Technical specifications, see page 3/79.

Assembly of reversing starters

We offer ready-made wiring kits for the assembly of reversing starters. Use of these wiring kits offers further advantages, see page 3/148.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

More information

Equipment Manual for 3RA2711 function modules for IO-Link, see https://support.industry.siemens.com/cs/ww/en/view/39319600

Equipment Manual for 3RA2712 function modules for AS-Interface, see https://support.industry.siemens.com/cs/ww/en/view/39318922

3RA2711-1AA00 3RA2711-2AA00 3RA2711-1BA00 3RA2712-1CA00 3RA2711-2BA00 3RA2711-2CA00

For contactors Type	Size	Version	Screw terminals Article No.	Screw terminals Price per PU	Spring-loaded terminals Article No.	Spring-loaded terminals Price per PU
SIRIUS 3RA27 function modules for direct-on-line starting						
3RT201 ... 3RT204[1]	S00 ... S3	**IO-Link connection** Includes one module connector for creating an IO-Link group	**3RA2711-1AA00**		**3RA2711-2AA00**	
		AS-Interface integration	**3RA2712-1AA00**		**3RA2712-2AA00**	
SIRIUS 3RA27 function modules for reversing starting[2]						
3RT201 ... 3RT204[1]	S00 ... S3	**IO-Link connection** Comprising one basic and one coupling module and an additional module connector[3] for creating an IO-Link group	**3RA2711-1BA00**		**3RA2711-2BA00**	
		AS-Interface integration Comprising one basic and one coupling module	**3RA2712-1BA00**		**3RA2712-2BA00**	
		Assembly kits for making 3-pole contactor assemblies See page 3/104				
SIRIUS 3RA27 function modules for star-delta (wye-delta) starting[4]						
3RT201 ... 3RT204[1]	S00 ... S3	**IO-Link connection** Comprising one basic and two coupling modules and an additional module connector[3] for creating an IO-Link group	**3RA2711-1CA00**		**3RA2711-2CA00**	
		AS-Interface integration Comprising one basic and two coupling modules	**3RA2712-1CA00**		**3RA2712-2CA00**	
		Assembly kits for making 3-pole contactor assemblies See page 3/105				

1) From product version E06 onwards, 3RA271. function modules can be used for 3RT2.4 contactors.

2) For prewired reversing contactor assemblies with voltage tap-off, see pages 3/149 to 3/152. When these contactor assemblies are used, the assembly kit for the wiring is already integrated.

3) 3RA2711-0EE17 module connectors for size S3 must be ordered separately, see page 3/102.

4) For complete contactor assemblies for star-delta (wye-delta) starting including function modules, see pages 3/167 to 3/170.

Technical specifications for 3RA27 function modules, see page 3/80.

For contactors with voltage tap-off, see pages 3/53, 3/57, 3/61 and 3/63.

For IO-Link masters and AS-Interface masters, routers and power supply units, see "Industrial communication", page 2/1 onwards.

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3RA2711-0EE10

3RA2711-0EE06

3RA2711-0EE15

3RA2910-0

3RA2711-0EE11

3RA6935-0A

For function modules Type	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for 3RA27 function modules						
3RA271.-..A00	**Module connector set** Comprising: • Two module connectors (14-pole, short) • Two interface covers	**3RA2711-0EE10**		1	1 unit	41B
3RA271.-..A00	**Module connectors**					
	• 14-pole					
	- 6 cm	**3RA2711-0EE17**		1	1 unit	41B
	- 9 cm	**3RA2711-0EE06**		1	1 unit	41B
	- 13 cm	**3RA2711-0EE18**		1	1 unit	41B
	- 26 cm	**3RA2711-0EE07**		1	1 unit	41B
	- 33.5 cm	**3RA2711-0EE08**		1	1 unit	41B
	• 10-pole, 9 cm for the additional auxiliary voltage infeed	**3RA2711-0EE16**		1	1 unit	41B
	Note: Selection of module connectors, see Equipment Manual for 3RA2711 function modules for IO-Link.					
3RA271.-..A00	**Interface covers** (set of 5)	**3RA2711-0EE15**		1	1 unit	41B
3RA271.-..A00	**Cover, sealable**	**3RA2910-0**		1	5 units	41B
Operator panel for communication via IO-Link						
3RA2711-..A00	**Operator panel (set)** Comprising: • 1 x operator panel • 1 x enabling module • 1 x interface cover • 1 x fixing terminal	**3RA6935-0A**		1	1 unit	42F
3RA2711-..A00	**Connecting cable** For connecting the operator panel to the coupling module Length 2 m, 10- to 14-pole	**3RA2711-0EE11**		1	1 unit	41B
3RA2711-..A00	**Enabling modules** (replacement)	**3RA6936-0A**		1	1 unit	42F
3RA2711-..A00	**Interface covers** (replacement)	**3RA6936-0B**		1	5 units	42F

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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For contactors	Rated control supply voltage U_S	Time setting range t	Screw terminals	PU (UNIT, SET, M)	PS*	PG
Type	V	s	Article No. Price per PU			
Mechanical latching blocks (no switching state change in the event of voltage drop)						
Size S0						
For snapping onto the front of contactors						
The contactor remains in the energized state in the event of voltage drop.						
3RT202, 3RT232, 3RT252	24 AC/DC	--	**3RT2926-3AB31**	1	1 unit	41B
	110 AC/DC	--	**3RT2926-3AF31**	1	1 unit	41B
	230 AC/DC	--	**3RT2926-3AP31**	1	1 unit	41B
OFF-delay devices for contactors with AC/DC and DC operation						
Sizes S00 to S3						
Non-adjustable delay time						
3RT201.-1BF4., 3RT202.-1BF4., 3RT203.-1NF3., 3RH2...-1BF40	110 AC/DC	S00: > 0.1 S0: > 0.08 S2: > 0.25	**3RT2916-2BK01**	1	1 unit	41B
3RT201.-1BM4./-1BP4., 3RT202.-1BM4./-1BP4., 3RT203.-1NP3., 3RH2...-1BM40/-1BP40	220/230 AC/DC	S00: > 0.5 S0: > 0.3 S2: > 0.8	**3RT2916-2BL01**	1	1 unit	41B
3RT201.-1BB4., 3RT202.-1BB4., 3RT203.-1NB3., 3RT204.-1NB3., 3RT244.-1NB3., 3RH2...-1BB40	24 DC	S00: > 0.2 S0: > 0.1 S2: > 0.1 S3: > 0.05	**3RT2916-2BE01**	1	1 unit	41B

3RT2926-3A.31

3RT2916-2B.01

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Selection and ordering data

For contactors Type	Size	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Safety main circuit connectors for two contactors							
3RA2926-1A							
3RT2.1	**S00**	For series connection of two contactors	**3RA2916-1A**		1	1 unit	41B
3RT2.2	**S0**		**3RA2926-1A**		1	1 unit	41B
3RT2.3	**S2**		**3RA2936-1A**		1	1 unit	41B

PU (UNIT, SET, M) = 1
PS* = 1 unit (unless otherwise specified)
PG = 41B

For contactors Type	Size	Version	Article No. Screw terminals	Price per PU	Article No. Spring-loaded terminals	Price per PU
Assembly kits for reversing contactor assemblies for making 3-pole contactor assemblies						
3RA2923-2AA1						
3RT201	**S00-S00**	The assembly kit contains: Mechanical interlock, two connecting clips for two contactors, wiring modules on the top and bottom				
		• For main, auxiliary and control circuits	**3RA2913-2AA1**		**3RA2913-2AA2**	
3RA2923-2AA2						
3RT202	**S0-S0**	The assembly kit contains: Mechanical interlock, two connecting clips for two contactors, wiring modules on the top and bottom				
		• For main, auxiliary and control circuits[1]	**3RA2923-2AA1**		--	
		• Only for main circuit[2]	--		**3RA2923-2AA2**	
3RA2933-2AA1						
3RT203	**S2-S2**	The assembly kit contains: Two connectors for two contactors, wiring modules on the top and bottom (3RA2934-2B mechanical interlock must be ordered separately, see page 3/108)				
		• For main and auxiliary circuits	**3RA2933-2AA1**		--	
		• Only for main circuit[3]	--		**3RA2933-2AA2**	
3RA2943-2AA1						
3RT204	**S3-S3**	The assembly kit contains: Two connectors for two contactors, wiring modules on the top and bottom (3RA2934-2B mechanical interlock must be ordered separately, see page 3/108)				
		• For main and auxiliary circuits	**3RA2943-2AA1**		--	
		• Only for main circuit[3]	--		**3RA2943-2AA2**	
3RA2943-2AA2						
3RT1.5	**S6-S6**	The assembly kit contains: Wiring modules on the top and bottom	**3RA1953-2A**		**3RA1953-2A**	
3RT1.6	**S10-S10**		**3RA1963-2A**		**3RA1963-2A**	
3RT1.7	**S12-S12**		**3RA1973-2A**		**3RA1973-2A**	
3RA1953-2A						
3RA1963-2A						

[1] Use of the 3RA2923-2AA1 assembly kit in conjunction with the 3RT202.-.....-3MA0 contactors is limited because the auxiliary switches in the basic unit are not allowed to be used on account of the permanently mounted auxiliary switch.

[2] Version in size S0 with spring-loaded terminals: Only the wiring modules for the main circuit are included. No connecting clips are included for the auxiliary and control circuit.

[3] Version in sizes S2 and S3 with spring-loaded terminals in the auxiliary and control circuits: Only the wiring modules for the main circuit are included. A cable set is included for the auxiliary circuit.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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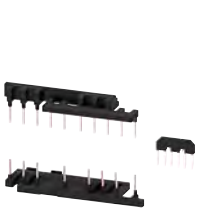
PU (UNIT, SET, M) = 1
PS* = 1 unit (unless otherwise specified)
PG = 41B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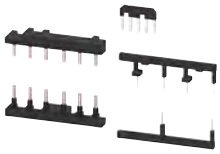
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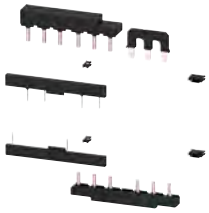
3RA2923-2BB2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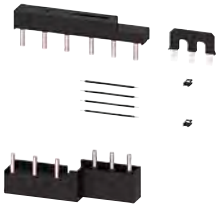
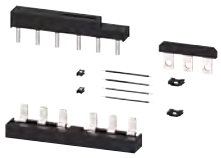

3RA2943-2C


3RA2943-2BB2

For contactors	Size	Version	Screw terminals		Spring-loaded terminals	
Type			Article No.	Price per PU	Article No.	Price per PU
Assembly kits[1] for contactor assemblies for star-delta (wye-delta) starting for making 3-pole contactor assemblies						
3RT201	**S00-S00-S00**	The assembly kit contains: Mechanical interlock, four connecting clips for three contactors, a star jumper, wiring modules on the top and bottom				
		• For main, auxiliary and control circuits	**3RA2913-2BB1**		**3RA2913-2BB2**	
3RT202	**S0-S0-S0**	The assembly kit contains: Mechanical interlock, four connecting clips for three contactors, a star jumper, wiring modules on the top and bottom				
		• For main, auxiliary and control circuits	**3RA2923-2BB1**		**--**	
		• Only for main circuit	**--**		**3RA2923-2BB2**	
3RT202	**S0-S0-S0**	The assembly kit contains: Mechanical interlock, four connecting clips for three contactors, a star jumper, wiring modules on the top and bottom, 3-phase infeed terminal				
		• For main, auxiliary and control circuits	**3RA2924-2BB1**		**--**	
3RT203	**S2-S2-S0**	The assembly kit[2] contains: Two connectors for three contactors, an S0 star jumper, a spacer, wiring modules on the top and bottom (S2-S0) for the main circuit, a cable set for the auxiliary circuit, a cable for connecting the A2 coil contact of the line contactor to the A2 coil contact of the delta contactor	**3RA2933-2C**		**3RA2933-2C**	
3RT203	**S2-S2-S2**	The assembly kit[2] contains: Four connectors for three contactors, an S2 star jumper, a cable for connecting the A2 coil contact of the line contactor to the A2 coil contact of the delta contactor and				
		• Wiring modules on the top and bottom for the main circuit and the auxiliary circuit	**3RA2933-2BB1**		**--**	
		• Wiring modules on the top and bottom for the main circuit, a cable set for the auxiliary circuit	**--**		**3RA2933-2BB2**	
3RT204	**S3-S3-S2**	The assembly kit[2] contains: Two connectors for three contactors, an S2 star jumper, a spacer, wiring modules on the top and bottom (S3-S2) for the main circuit, a cable set for the auxiliary circuit, a cable for connecting the A2 coil contact of the line contactor to the A2 coil contact of the delta contactor	**3RA2943-2C**		**3RA2943-2C**	
3RT204	**S3-S3-S3**	The assembly kit[2] contains: Four connectors for three contactors, an S3 star jumper, a cable for connecting the A2 coil contact of the line contactor to the A2 coil contact of the delta contactor and				
		• Wiring modules on the top and bottom for the main circuit and the auxiliary circuit	**3RA2943-2BB1**		**--**	
		• Wiring modules on the top and bottom for the main circuit, a cable set for the auxiliary circuit	**--**		**3RA2943-2BB2**	

[1] When using the function modules for contactor assemblies for star-delta (wye-delta) starting, the wiring modules for the auxiliary current are not required.

[2] The 3RA2934-2B mechanical interlock for sizes S2 and S3 must be ordered separately, see page 3/108.

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	For contactors Type	Size	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Assembly kits for contactor assemblies for star-delta (wye-delta) starting for making 3-pole contactor assemblies								
			The assembly kit contains: link rails at bottom (a double infeed between the line contactor and the delta contactor is recommended.)					
3RA1953-3G	3RT1.5, 3RT204	**S6-S6-S3** For connection with box terminal only	The S3 star jumper must be ordered separately, see page 3/107.	**3RA1953-3G**		1	1 unit	41B
3RA1953-2B	3RT1.5	**S6-S6-S6** For connection with box terminal only	--	**3RA1953-2B**		1	1 unit	41B
3RA1953-2N	3RT1.5	**S6-S6-S6** For connection without box terminal	--	**3RA1953-2N**		1	1 unit	41B
3RA1963-3E	3RT1.6, 3RT1.5	**S10-S10-S6** For connection with box terminal only	The S6 star jumper must be ordered separately, see page 3/107.	**3RA1963-3E**		1	1 unit	41B
3RA1963-2B	3RT1.6	**S10-S10-S10** For connection without box terminal	--	**3RA1963-2B**		1	1 unit	41B
3RA1973-3E	3RT1.7, 3RT1.6	**S12-S12-S10** For connection with box terminal only	The S10 star jumper must be ordered separately, see page 3/107.	**3RA1973-3E**		1	1 unit	41B
3RA1973-2B	3RT1.7	**S12-S12-S12** For connection without box terminal	--	**3RA1973-2B**		1	1 unit	41B

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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PU (UNIT, SET, M) = 1
PS* = 1 unit (unless otherwise specified)
PG = 41B

Single wiring modules for making 3-pole contactor assemblies

For contactors Type	Size	Version		Article No. Screw terminals	Price per PU	Article No. Spring-loaded terminals	Price per PU
3RT201	**S00-S00**	• Top (in-phase)	PS = 5 units	**3RA2913-3DA1**		**3RA2913-3DA2**	
		• Bottom (with phase reversal)	PS = 5 units	**3RA2913-3EA1**		**3RA2913-3EA2**	
3RT202	**S0-S0**	• Top (in-phase)	PS = 5 units	**3RA2923-3DA1**		**3RA2923-3DA2**	
		• Bottom (with phase reversal)	PS = 5 units	**3RA2923-3EA1**		**3RA2923-3EA2**	
3RT203	**S2-S2**	• Top (in-phase), contactor clearance 10 mm		**3RA1933-3D**		**3RA1933-3D**	
		• Bottom (with phase reversal), contactor clearance 10 mm		**3RA1933-3E**		**3RA1933-3E**	
3RT204	**S3-S3**	• Top (in-phase), contactor clearance 10 mm		**3RA1943-3D**		**3RA1943-3D**	
		• Bottom (with phase reversal), contactor clearance 10 mm		**3RA1943-3E**		**3RA1943-3E**	
3RT1.5	**S6-S6**	• Top (in-phase, for connection with box terminal), contactor clearance 10 mm		**3RA1953-3D**		**3RA1953-3D**	
		• Top (with phase reversal, for connection without box terminal), contactor clearance 10 mm		**3RA1953-3P**		**3RA1953-3P**	

3RA2913-3DA1

3RA2923-3DA1

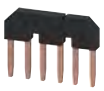
3RA1933-3D

3RA1943-3E

3RA1953-3D

Star jumpers (links for paralleling), 3-pole

				Article No. Screw terminals	Price per PU	Article No. Spring-loaded terminals	Price per PU
3RT201	**S00**	**With through-hole** The links for paralleling can be reduced by one pole.		**3RT1916-4BA31**		**3RT2916-4BA32**	
3RT202	**S0**	Without connecting terminal		**3RT1926-4BA31**		**3RT2926-4BA32**	
3RT203	**S2**			**3RT1936-4BA31**		**3RT1936-4BA31**	
3RT204	**S3**			**3RT1946-4BA31**		**3RT1946-4BA31**	
3RT1.5	**S6**			**3RT1956-4BA31**		**3RT1956-4BA31**	
3RT1.6, 3RT1.7	**S10, S12**			**3RT1966-4BA31**		**3RT1966-4BA31**	


3RT1916-4BA31

3RT2926-4BA32

3RT1936-4BA31

3RT1946-4BA31

3RT1956-4BA31

3RT1966-4BA31

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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	For contactors Type	Size	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mechanical interlock assembly kits for two contactors for making 3- and 4-pole contactor assemblies								
3RA2922-2H	3RT201, 3RT231	**S00-S00**	The interlocking assembly kits can be used without a contactor clearance. One assembly kit consists of a mechanical interlock and two connecting clips.	**3RA2912-2H**		1	10 units	41B
	3RT202, 3RT232	**S0-S0**		**3RA2922-2H**		1	10 units	41B

	For contactors Type	Size	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mechanical interlocks for contactor assemblies								
			A contactor clearance of 10 mm must be considered when using the following mechanical interlocks.					
3RA2934-2B	3RT202, 3RT203	**S2-S2, S3-S3**	**Mechanical interlocks** Note: The mechanical interlock for sizes S2 and S3 must be ordered separately.	**3RA2934-2B**		1	1 unit	41B
	3RT202, 3RT203, 3RT204	**S2-S2-S0, S2-S2-S2, S3-S3-S2, S3-S3-S3**						
3RA1954-2G	3RT1.5 with 3RT204[1)]	**S6 (3RT1)-S6 (3RT1)-S3 (3RT2)[1)]**	**Adapter in addition to the mechanical interlock** The mechanical interlock is only possible together with this 3RA1954-2G adapter and the 3RA1954-2A mechanical interlock. Two connectors are included with the adapter, the interlock must be ordered separately.	**3RA1954-2G**		1	1 unit	41B
3RA1954-2A	3RT1.5 3RT1.6 3RT1.7	**S6 S10 S12**	**Mechanical interlocks** Without auxiliary contacts; contactors in sizes S6, S10 and S12 can be interlocked with each other as required. No adaption of mounting depth is necessary.	**3RA1954-2A**		1	1 unit	41B
Mechanical connectors for contactor assemblies								
			Two connectors are required for each assembly. The contactor clearance must be considered when selecting the connectors.					
3RA1932-2D			**3-pole version**					
	3RT203, 3RT204	**S2-S2, S3-S3**	• Without contactor clearance	**3RA2932-2C**		1	10 units	41B
			• With 10 mm contactor clearance	**3RA2932-2D**		1	10 units	41B
	3RT105	**S6-S6**	• With 10 mm contactor clearance (1 unit corresponds to 2 parts for 1 assembly)	**3RA1932-2D**		1	10 units	41B
			4-pole version					
	3RT233	**S2-S2**	• With 20 mm contactor clearance	**3RA2932-2G**		1	10 units	41B
	3RT234.	**S3-S3**	• With 10 mm contactor clearance	**3RA2942-2G**		1	10 units	41B
3RA2942-2G								

[1)] The 3RA1954-2G adapter cannot be used in conjunction with 3RT204..-.KB coupling contactors, size S3.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Selection and ordering data

	For contactors Type	Size	Version	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Links for paralleling for main conducting paths								
			The links for paralleling (insulated) can be reduced by one pole. With connecting terminal					
			3-pole					
3RT1916-4BB31	3RT201	**S00**	• Max. conductor cross-section: 25 mm^2, stranded	**3RT1916-4BB31**		1	1 unit	41B
3RT2926-4BB31	3RT202	**S0**	• Max. conductor cross-section: 50 mm^2, stranded	**3RT2926-4BB31**		1	1 unit	41B
3RT1936-4BB31	3RT203	**S2**	• Max. conductor cross-section: 120 mm^2, stranded	**3RT1936-4BB31**		1	1 unit	41B
3RT1946-4BB31	3RT204, 3RT244	**S3**	• Max. conductor cross-section: 185 mm^2, stranded A cover plate is included for touch protection (can only be used when box terminal is removed).	**3RT1946-4BB31**		1	1 unit	41B
			4-pole					
3RT1916-4BB41	3RT231, 3RT251	**S00**	• Max. conductor cross-section: 25 mm^2, stranded	**3RT1916-4BB41**		1	1 unit	41B

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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	For contactors Type	Size	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
1-phase infeed terminals								
3RA2943-3L	3RT204, 3RT244, 3RT264	**S3**	Conductor cross-section: 95 mm²	**3RA2943-3L**		1	1 unit	41B
3-phase infeed terminals								
3RA2913-3K	3RT201	**S00**	Max. conductor cross-section: Up to 10 mm², AWG 12 ... 8	**3RA2913-3K**		1	10 units	41B
3RV2925-5AB	3RT202, 3RT262	**S0**	Max. conductor cross-section: Up to 25 mm², AWG 10 ... 2/0	**3RV2925-5AB**		1	1 unit	41E
3RV2935-5A	3RT203, 3RT263	**S2**	Max. conductor cross-section: Up to 70 mm², AWG 10 ... 2/0	**3RV2935-5A**		1	1 unit	41E
3-phase infeed terminals with increased clearance and creepage distances								
3RV2935-5E	3RT203	**S2**	Max. conductor cross-section: Up to 70 mm², AWG 10 ... 2/0	**3RV2935-5E**		1	1 unit	41E
3-phase busbars								
3RV1915-1AB	3RT202	**S0**	Bridging phase-by-phase of all input terminals of the line contactor (Q11) and delta contactor (Q13)	**3RV1915-1AB**		1	1 unit	41E
Terminal blocks for connecting auxiliary conductors to main terminals								
			Box terminal blocks For round and ribbon cables (Connectable cross-sections of the contactors for size S3, see page 3/40 and for sizes 6 to S12, see page 3/44)					
3RT2946-4G	3RT204	**S3**	• 3-pole, for connection of main contacts, 2.5 to 70 mm²	**3RT2946-4G**		1	1 unit	41B
3RT1956-4G	3RT1.5	**S6**	• Up to 70 mm², as standard on 3RT1054-1 contactor (55 kW)	**3RT1955-4G**		1	1 unit	41B
			• Up to 120 mm²	**3RT1956-4G**		1	1 unit	41B
3RT1966-4G	3RT1.6, 3RT1.7	**S10, S12**	• Up to 240 mm², with auxiliary conductor connection up to 2.5 mm²	**3RT1966-4G**		1	1 unit	41B
3TX7500-0A	3RT1.5	**S6**	**Box terminal for auxiliary conductor connection, 1-pole** For connection of auxiliary and control cables (0.5 ... 2.5 mm²) to the main conductor terminals	**3TX7500-0A**		1	1 unit	41B
3RT2946-4F	3RT204	**S3**	**Auxiliary conductor terminals, 3-pole** For connection of auxiliary and control cables (0.5 ... 2.5 mm²) to the main conductor terminals	**3RT2946-4F**		1	1 unit	41B

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Illustrations are approximate

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	For contactors Type	Size	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Solder pin adapters for mounting contactors on printed circuit boards up to 5.5 kW/12 A								
				Screw terminals				
3RT1916-4KA1	3RT2.1, 3RH21	**S00**	Assembly kit for soldering contactors with an integrated auxiliary contact onto a printed circuit board Note: One kit is required for one contactor.	**3RT1916-4KA1**		1	4 units	41B
3RT1916-4KA2	3RT2.1, 3RH21	**S00**	Assembly kit for soldering contactors with 4-pole mounted auxiliary switch onto a printed circuit board Note: One kit is required for one contactor.	**3RT1916-4KA2**		1	4 units	41B
Coil connection modules for connections from top or from below								
3RT2926-4RA11	3RT2.2, 3RT2.3, 3RT2.4	**S0 to S3**	• Connection from top	**3RT2926-4RA11**		1	1 unit	41B
			• Connection from below	**3RT2926-4RB11**		1	1 unit	41B
			• Connection diagonally	**3RT2926-4RC11**		1	1 unit	41B
				Spring-loaded terminals				
3RT2926-4RA12	3RT2.2	**S0**	• Connection from top	**3RT2926-4RA12**		1	1 unit	41B
			• Connection from below	**3RT2926-4RB12**		1	1 unit	41B

	For contactors Type	Size	Version	**Screw terminals** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Connection module (adapter and plug) for contactors with screw terminals								
			The connection module comprises an adapter and a motor feeder connector.					
3RT1926-4RD01			**Adapters** Ambient temperature $t_{u\ max.}$ = 60 °C					
	3RT201, 3RH2	**S00**	• Rated operational current I_e at AC-3/AC-3e/400 V: 20 A	**3RT1916-4RD01**		1	1 unit	41B
	3RT202	**S0**	• Rated operational current I_e at AC-3/AC-3e/400 V: 25 A	**3RT1926-4RD01**		1	1 unit	41B
3RT1900-4RE01	3RT201, 3RT202, 3RH2	**S00, S0**	**Motor feeder connector**	**3RT1900-4RE01**		1	1 unit	41B

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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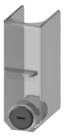
3

Selection and ordering data

	For contactors Type	Size	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal covers								
			Covers for contactors with screw terminals (box terminals) (2 units required per contactor)					
3RT2936-4EA2 3RT2946-4EA2	3RT203	**S2**	• For 3-pole contactors	**3RT2936-4EA2**		1	1 unit	41B
	3RT204, 3RT244	**S3**		**3RT2946-4EA2**		1	1 unit	41B
3RT1956-4EA2 3RT1966-4EA2	3RT1.5	**S6**[1]		**3RT1956-4EA2**		1	1 unit	41B
	3RT1.6, 3RT1.7	**S10**[1], **S12**[1]		**3RT1966-4EA2**		1	1 unit	41B
	3RT233, 3RT253	**S2**	• For 4-pole contactors (Scope of supply: one 3-pole and two 1-pole terminal covers are supplied)	**3RT2936-4EA4**		1	1 unit	41B
3RT2936-4EA4 3RT2946-4EA4	3RT234, 3RT254	**S3**		**3RT2946-4EA4**		1	1 unit	41B
			Covers for contactors with cable lugs and busbar connections					
3RT1946-4EA1			• For complying with the phase clearances and as touch protection if box terminal is removed (2 units required per contactor)					
	3RT2.4	**S3**	- Length: 100 mm	**3RT1946-4EA1**		1	1 unit	41B
	3RT1.5	**S6**[1]	- Length: 100 mm	**3RT1956-4EA1**		1	1 unit	41B
	3RT1.6, 3RT1.7	**S10**[1], **S12**[1]	- Length: 120 mm	**3RT1966-4EA1**		1	1 unit	41B
3RT1956-4EA1 3RT1966-4EA1			• For the assembly kits for 3RA1953-.. contactor assemblies for star-delta (wye-delta) starting (see page 3/106) or for the 3RA1953-3 single wiring modules. (see page 3/107)					
3RT1956-4EA4	3RT1.5	**S6**	- Length: 38 mm	**3RT1956-4EA4**		1	1 unit	41B
			• For the assembly kits for reversing contactor assemblies and contactor assemblies for star-delta (wye-delta) starting					
3RT1966-4EA3	3RT1.6, 3RT1.7	**S10, S12**	- Length: 42 mm	**3RT1966-4EA3**		1	1 unit	41B
			Terminal covers for busbar connections					
3RT1956-4EA3 3RT1966-4EA3			• Cover the three busbar connections, between the contactor and 3RB2 overload relay					
	3RT1.5	**S6**	- Length: 27 mm	**3RT1956-4EA3**		1	1 unit	41B
	3RT1.6, 3RT1.7	**S10, S12**	- Length: 42 mm	**3RT1966-4EA3**		1	1 unit	41B
3TX6526-3B  3TX6546-3B			• Can be screwed on free screw end; covers one busbar connection (1 set = 6 units)					
	3RT1.5	**S6**	- M8	**3TX6526-3B**		1	1 unit	41B
	3RT1.6, 3RT1.7	**S10, S12**	- M10	**3TX6546-3B**		1	1 unit	41B
Sealable covers								
3RT2916-4MA10 3RT1926-4MA10	3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4, 3RH2[2]	**S00 ... S3**	For preventing manual operation (Not suitable for coupling contactors)	**3RT2916-4MA10**		1	5 units	41B
	3RT1.5 ... 3RT1.7[2]	**S6 ... S12**		**3RT1926-4MA10**		1	5 units	41B

[1] Also fits on contactors of sizes S6 to S12 with box terminals.

[2] Exception: Contactors and contactor relays with auxiliary switch mounted on the front.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

	For contactors Type	Size	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Base plates								
	For reversing contactor assemblies							
3RA1952-2A	3RT1.5	**S6**	For customer assembly of reversing contactor assemblies	**3RA1952-2A**		1	1 unit	41B
	3RT1.6	**S10**		**3RA1962-2A**		1	1 unit	41B
	3RT1.7	**S12**		**3RA1972-2A**		1	1 unit	41B
	For contactor assemblies for star-delta (wye-delta) starting							
3RA2932-2F	3RT2/ 3RT2/ 3RT2	**S2-S2-S0, S2-S2-S2**	For configuring contactor assemblies for star-delta (wye-delta) starting	**3RA2932-2F**		1	1 unit	41B
		S3-S3-S2, S3-S3-S3		**3RA2942-2F**		1	1 unit	41B
3RA2942-2F								
3RA1952-2E	3RT1/ 3RT1/ 3RT2	**S6-S6-S3**	For customer assembly of contactor assemblies for star-delta (wye-delta) starting with a **laterally mounted** timing relay	**3RA1952-2E**		1	1 unit	41B
	3RT1/ 3RT1/ 3RT1	**S6-S6-S6**	10 mm clearance between the contactors	**3RA1952-2F**		1	1 unit	41B
		S10-S10-S6		**3RA1962-2E**		1	1 unit	41B
		S10-S10-S10		**3RA1962-2F**		1	1 unit	41B
		S12-S12-S10		**3RA1972-2E**		1	1 unit	41B
		S12-S12-S12		**3RA1972-2F**		1	1 unit	41B
3RA1952-2F								
Adapters for screw fixing								
3RT1926-4P	3RT2.2	**S0**	Screw adapters for securing the contactors, two units required per contactor (1 pack = 10 sets for 10 contactors)	**3RT1926-4P**		1	10 units	41B
Connection kit for one complete contactor								
			Each set includes 6 screws, spring washers and nuts.					
	3RT105	**S6**	M 8 x 25	**3RT1955-4PA00**		1	1 unit	41B
	3RT106, 3RT107	**S10, S12**	M 10 x 30	**3RT1966-4PA00**		1	1 unit	41B
3RT1955-4PA00								
EMC suppression modules; 3-phase, up to 7.5 kW								
	For contactors with AC or DC operation							
3RT2916-1PA.				**Screw terminals**				
	3RT201	**S00**	**RC elements** (3 x 220 Ω/0.22 µF)					
			• Up to 400 V	**3RT2916-1PA1**		1	1 unit	41B
			• Up to 575 V	**3RT2916-1PA2**		1	1 unit	41B
			• Up to 690 V	**3RT2916-1PA3**		1	1 unit	41B
	3RT201	**S00**	**Varistors**					
			• Up to 400 V	**3RT2916-1PB1**		1	1 unit	41B
			• Up to 575 V	**3RT2916-1PB2**		1	1 unit	41B
			• Up to 690 V	**3RT2916-1PB3**		1	1 unit	41B

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Miscellaneous accessories

	For contactors Type	Size	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Additional load modules								
3RT2916-1GA00	3RT2.1, 3RH2	**S00**	For plugging onto the front of the contactors with or without auxiliary switches For increasing the permissible residual current and for limiting the residual voltage, it ensures the safe opening of contactors with direct control via 230 V AC semiconductor outputs of SIMATIC controllers, simultaneously provides overvoltage damping Rated voltage: 50/60 Hz AC, 180 ... 255 V Operating range: 0.8 ... 1.1 x U_s	**3RT2916-1GA00**		1	1 unit	41B
LED modules for displaying contactor operation								
3RT2926-1QT00	3RT2, 3RT1	**S00 ... S12**	For snapping into the location hole of an inscription label on the front of a contactor either directly on the contactor or on the front auxiliary switch. The LED module is connected to coil terminals A1 and A2 of the contactor and indicates its energized state with a yellow LED. Connecting leads need to be extended as required. Rated voltage: 24 ... 240 V AC/DC with reverse polarity protection	**3RT2926-1QT00**		1	5 units	41B
Control kit								
3RT2916-4MC00	3RT2.1, 3RH2	**S00**	For manual operation of contactor contacts, for startup and service	**3RT2916-4MC00**		1	5 units	41B
	3RT2.2	**S0**		**3RT2926-4MC00**		1	5 units	41B
	3RT2.3, 3RT2.4	**S2, S3**		**3RT2936-4MC00**		1	5 units	41B

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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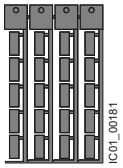
	For contactors Type	Size	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Insulation stop for securely holding back the conductor insulation for conductors up to 1 mm²								
				Spring-loaded terminals				
3RT2916-4JA02			**Insulation stop strip** Can be inserted in cable entry of the spring-loaded terminal (two strips per contactor required)					
	3RT2.1, 3RH2	**S00**	• For basic units, removable individually	**3RT2916-4JA02**		1	20 units	41B
3RT1916-4JA02	3RT2.2 ... 3RT2.4, 3RT1, 3RH29	**S0 ... S12**	• For auxiliary and control current on basic units and for mountable 3RH29 auxiliary switches, removable in pairs	**3RT1916-4JA02**		1	20 units	41B
Tools for opening spring-loaded terminals								
3RA2908-1A	3RT, 3RH	**S00 ... S12**	**Screwdrivers** For all SIRIUS devices with spring-loaded terminals Length: approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**3RA2908-1A**		1	1 unit	41B
Blank labels								
 3RT2900-1SB20			**Unit labeling plates**[1] For SIRIUS devices					
	3RT	**S00 ... S12**	• 10 mm x 7 mm, titanium gray	**3RT2900-1SB10**		100	816 units	41B
			• 20 mm x 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B
			Adhesive labels For SIRIUS devices					
	3RT	**S00 ... S12**	• 19 mm x 6 mm, titanium gray	**3RT2900-1SB60**		100	3060 units	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

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Selection and ordering data

Screw terminals and spring-loaded terminals

3RT2924-5A.01

For contactors	Rated control supply voltage U_s 50 Hz	50/60 Hz	60 Hz	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type	V	V	V					
Solenoid coils · AC operation								
Size S0								
3RT2023-.A, 3RT2024-.A, 3RT2025-.A	24	--	--	**3RT2924-5AB01**		1	1 unit	41B
	42	--	--	**3RT2924-5AD01**		1	1 unit	41B
	48	--	--	**3RT2924-5AH01**		1	1 unit	41B
	110	--	--	**3RT2924-5AF01**		1	1 unit	41B
	230	--	--	**3RT2924-5AP01**		1	1 unit	41B
	400	--	--	**3RT2924-5AV01**		1	1 unit	41B
	--	24	--	**3RT2924-5AC21**		1	1 unit	41B
	--	42	--	**3RT2924-5AD21**		1	1 unit	41B
	--	48	--	**3RT2924-5AH21**		1	1 unit	41B
	--	110	--	**3RT2924-5AG21**		1	1 unit	41B
	--	220	--	**3RT2924-5AN21**		1	1 unit	41B
	--	230	--	**3RT2924-5AL21**		1	1 unit	41B
	--	--	24	**3RT2924-5AC11**		1	1 unit	41B
	110	--	120	**3RT2924-5AK61**		1	1 unit	41B
	220	--	240	**3RT2924-5AP61**		1	1 unit	41B
	--	100	110	**3RT2924-5AG61**		1	1 unit	41B
	--	200	220	**3RT2924-5AN61**		1	1 unit	41B
	--	400	440	**3RT2924-5AR61**		1	1 unit	41B
3RT2026-.A, 3RT2027-.A, 3RT2028-.A 3RT2325-.A, 3RT2326-.A, 3RT2327-.A 3RT2526-.A	24	--	--	**3RT2926-5AB01**		1	1 unit	41B
	42	--	--	**3RT2926-5AD01**		1	1 unit	41B
	48	--	--	**3RT2926-5AH01**		1	1 unit	41B
	110	--	--	**3RT2926-5AF01**		1	1 unit	41B
	230	--	--	**3RT2926-5AP01**		1	1 unit	41B
	400	--	--	**3RT2926-5AV01**		1	1 unit	41B
	--	24	--	**3RT2926-5AC21**		1	1 unit	41B
	--	42	--	**3RT2926-5AD21**		1	1 unit	41B
	--	48	--	**3RT2926-5AH21**		1	1 unit	41B
	--	110	--	**3RT2926-5AG21**		1	1 unit	41B
	--	220	--	**3RT2926-5AN21**		1	1 unit	41B
	--	230	--	**3RT2926-5AL21**		1	1 unit	41B
	--	--	24	**3RT2926-5AC11**		1	1 unit	41B
	110	--	120	**3RT2926-5AK61**		1	1 unit	41B
	220	--	240	**3RT2926-5AP61**		1	1 unit	41B
	--	100	110	**3RT2926-5AG61**		1	1 unit	41B
	--	200	220	**3RT2926-5AN61**		1	1 unit	41B
	--	400	440	**3RT2926-5AR61**		1	1 unit	41B

Note:

Contactors with AC and AC/DC coils have different depths. It is only possible to replace the coils on AC contactors with AC coils. It is not possible to replace the coils on DC contactors.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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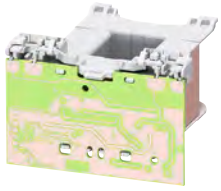
Screw terminals and spring-loaded terminals

3RT2934-5A.01

3RT2934-5N.31

3RT2944-5A..1



3RT2944-5N.31

For contactors	Rated control supply voltage U_s				Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	50 Hz	50/60 Hz	60 Hz	DC					
Type	V	V	V						
Solenoid coils · AC operation									
Size S2									
3RT203.-.A, 3RT233.-.A, 3RT243.-.A, 3RT253.-.A	24	--	--	--	**3RT2934-5AB01**		1	1 unit	41B
	42	--	--	--	**3RT2934-5AD01**		1	1 unit	41B
	48	--	--	--	**3RT2934-5AH01**		1	1 unit	41B
	110	--	--	--	**3RT2934-5AF01**		1	1 unit	41B
	230	--	--	--	**3RT2934-5AP01**		1	1 unit	41B
	400	--	--	--	**3RT2934-5AV01**		1	1 unit	41B
	--	24	--	--	**3RT2934-5AC21**		1	1 unit	41B
	--	42	--	--	**3RT2934-5AD21**		1	1 unit	41B
	--	48	--	--	**3RT2934-5AH21**		1	1 unit	41B
	--	110	--	--	**3RT2934-5AG21**		1	1 unit	41B
	--	208	--	--	**3RT2934-5AM21**		1	1 unit	41B
	--	220	--	--	**3RT2934-5AN21**		1	1 unit	41B
	--	230	--	--	**3RT2934-5AL21**		1	1 unit	41B
	110	--	120	--	**3RT2934-5AK61**		1	1 unit	41B
	220	--	240	--	**3RT2934-5AP61**		1	1 unit	41B
	--	--	480	--	**3RT2934-5AV61**		1	1 unit	41B
	--	--	600	--	**3RT2934-5AT61**		1	1 unit	41B
	--	100	110	--	**3RT2934-5AG61**		1	1 unit	41B
	--	200	220	--	**3RT2934-5AN61**		1	1 unit	41B
	--	--	277	--	**3RT2934-5AU61**		1	1 unit	41B
	--	400	440	--	**3RT2934-5AR61**		1	1 unit	41B
Size S3									
3RT204.-.A, 3RT234.-.A, 3RT244.-.A, 3RT254.-.A	24	--	--	--	**3RT2944-5AB01**		1	1 unit	41B
	42	--	--	--	**3RT2944-5AD01**		1	1 unit	41B
	48	--	--	--	**3RT2944-5AH01**		1	1 unit	41B
	110	--	--	--	**3RT2944-5AF01**		1	1 unit	41B
	230	--	--	--	**3RT2944-5AP01**		1	1 unit	41B
	400	--	--	--	**3RT2944-5AV01**		1	1 unit	41B
	--	24	--	--	**3RT2944-5AC21**		1	1 unit	41B
	--	42	--	--	**3RT2944-5AD21**		1	1 unit	41B
	--	48	--	--	**3RT2944-5AH21**		1	1 unit	41B
	--	110	--	--	**3RT2944-5AG21**		1	1 unit	41B
	--	220	--	--	**3RT2944-5AN21**		1	1 unit	41B
	--	230	--	--	**3RT2944-5AL21**		1	1 unit	41B
	110	--	120	--	**3RT2944-5AK61**		1	1 unit	41B
	220	--	240	--	**3RT2944-5AP61**		1	1 unit	41B
	--	--	480	--	**3RT2944-5AV61**		1	1 unit	41B
	--	--	600	--	**3RT2944-5AT61**		1	1 unit	41B
	--	100	110	--	**3RT2944-5AG61**		1	1 unit	41B
	--	200	220	--	**3RT2944-5AN61**		1	1 unit	41B
	--	400	440	--	**3RT2944-5AR61**		1	1 unit	41B
Solenoid coils · AC/DC operation, with varistor									
Size S2									
3RT203.-.N, 3RT233.-.N	--	20 ... 33	--	20 ... 33	**3RT2934-5NB31**		1	1 unit	41B
	--	30 ... 42	--	30 ... 42	**3RT2934-5ND31**		1	1 unit	41B
	--	48 ... 80	--	48 ... 80	**3RT2934-5NE31**		1	1 unit	41B
	--	83 ... 155	--	83 ... 155	**3RT2934-5NF31**		1	1 unit	41B
	--	175 ... 280	--	175 ... 280	**3RT2934-5NP31**		1	1 unit	41B
Size S3									
3RT204.-.N, 3RT234.-.N, 3RT244.-.N, 3RT254.-.N	--	20 ... 33	--	20 ... 33	**3RT2944-5NB31**		1	1 unit	41B
	--	30 ... 42	--	30 ... 42	**3RT2944-5ND31**		1	1 unit	41B
	--	48 ... 80	--	48 ... 80	**3RT2944-5NE31**		1	1 unit	41B
	--	83 ... 155	--	83 ... 155	**3RT2944-5NF31**		1	1 unit	41B
	--	175 ... 280	--	175 ... 280	**3RT2944-5NP31**		1	1 unit	41B

Notes:

It is only possible to replace the coils on AC contactors with AC coils, and on AC/DC contactors with AC/DC coils.

Coil replacement is not permitted for 3RT20..-.S contactors with fail-safe control.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Spare parts for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Solenoid coils

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

For contactors		Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
Size	Type	V	Article No.	Price per PU	Article No.	Price per PU
Withdrawable coils						
Standard operating mechanism for AC/DC						
S6	3RT105, 3RT145	23 ... 26 AC/DC	**3RT1955-5AB31**		**3RT1955-5AB32**	
		42 ... 48 AC/DC	**3RT1955-5AD31**		**3RT1955-5AD32**	
		110 ... 127 AC/DC	**3RT1955-5AF31**		**3RT1955-5AF32**	
		200 ... 220 AC/DC	**3RT1955-5AM31**		**3RT1955-5AM32**	
		220 ... 240 AC/DC	**3RT1955-5AP31**		**3RT1955-5AP32**	
		240 ... 277 AC/DC	**3RT1955-5AU31**		**3RT1955-5AU32**	
		380 ... 420 AC/DC	**3RT1955-5AV31**		**3RT1955-5AV32**	
		440 ... 480 AC/DC	**3RT1955-5AR31**		**3RT1955-5AR32**	
		500 ... 550 AC/DC	**3RT1955-5AS31**		**3RT1955-5AS32**	
		575 ... 600 AC/DC	**3RT1955-5AT31**		**3RT1955-5AT32**	
S10	3RT106, 3RT146	23 ... 26 AC/DC	**3RT1965-5AB31**		**3RT1965-5AB32**	
		42 ... 48 AC/DC	**3RT1965-5AD31**		**3RT1965-5AD32**	
		110 ... 127 AC/DC	**3RT1965-5AF31**		**3RT1965-5AF32**	
		200 ... 220 AC/DC	**3RT1965-5AM31**		**3RT1965-5AM32**	
		220 ... 240 AC/DC	**3RT1965-5AP31**		**3RT1965-5AP32**	
		240 ... 277 AC/DC	**3RT1965-5AU31**		**3RT1965-5AU32**	
		380 ... 420 AC/DC	**3RT1965-5AV31**		**3RT1965-5AV32**	
		440 ... 480 AC/DC	**3RT1965-5AR31**		**3RT1965-5AR32**	
		500 ... 550 AC/DC	**3RT1965-5AS31**		**3RT1965-5AS32**	
		575 ... 600 AC/DC	**3RT1965-5AT31**		**3RT1965-5AT32**	
S12	3RT107, 3RT147	23 ... 26 AC/DC	**3RT1975-5AB31**		**3RT1975-5AB32**	
		42 ... 48 AC/DC	**3RT1975-5AD31**		**3RT1975-5AD32**	
		110 ... 127 AC/DC	**3RT1975-5AF31**		**3RT1975-5AF32**	
		200 ... 220 AC/DC	**3RT1975-5AM31**		**3RT1975-5AM32**	
		220 ... 240 AC/DC	**3RT1975-5AP31**		**3RT1975-5AP32**	
		240 ... 277 AC/DC	**3RT1975-5AU31**		**3RT1975-5AU32**	
		380 ... 420 AC/DC	**3RT1975-5AV31**		**3RT1975-5AV32**	
		440 ... 480 AC/DC	**3RT1975-5AR31**		**3RT1975-5AR32**	
		500 ... 550 AC/DC	**3RT1975-5AS31**		**3RT1975-5AS32**	
		575 ... 600 AC/DC	**3RT1975-5AT31**		**3RT1975-5AT32**	
Solid-state operating mechanism for AC/DC with 24 V DC control signal input e.g. for control by PLC						
S6	3RT105, 3RT145	21 ... 27.3 AC/DC	**3RT1955-5NB31**		**3RT1955-5NB32**	
		96 ... 127 AC/DC	**3RT1955-5NF31**		**3RT1955-5NF32**	
		200 ... 277 AC/DC	**3RT1955-5NP31**		**3RT1955-5NP32**	
S10	3RT106, 3RT146	21 ... 27.3 AC/DC	**3RT1965-5NB31**		**3RT1965-5NB32**	
		96 ... 127 AC/DC	**3RT1965-5NF31**		**3RT1965-5NF32**	
		200 ... 277 AC/DC	**3RT1965-5NP31**		**3RT1965-5NP32**	
S12	3RT107, 3RT147	21 ... 27.3 AC/DC	**3RT1975-5NB31**		**3RT1975-5NB32**	
		96 ... 127 AC/DC	**3RT1975-5NF31**		**3RT1975-5NF32**	
		200 ... 277 AC/DC	**3RT1975-5NP31**		**3RT1975-5NP32**	
• **Additionally with PLC relay output and remaining lifetime indicator (RLT)** (withdrawable coil with laterally mounted solid-state module)						
S6	3RT105, 3RT145	96 ... 127 AC/DC	**3RT1955-5PF31**		--	
		200 ... 277 AC/DC	**3RT1955-5PP31**		--	
S10	3RT106, 3RT146	96 ... 127 AC/DC	**3RT1965-5PF31**		--	
		200 ... 277 AC/DC	**3RT1965-5PP31**		--	
S12	3RT107, 3RT147	96 ... 127 AC/DC	**3RT1975-5PF31**		--	
		200 ... 277 AC/DC	**3RT1975-5PP31**		--	
Solid-state operating mechanism for DC with 24 ... 110 V DC control signal input e.g. for control by PLC with extended application range						
(see also contactors for railway applications, page 4/61 onwards)						
S6	3RT105..-.X...-0LA2	24 DC	--		**3RT1955-5XB42**	
		72 DC	--		**3RT1955-5XJ42**	
		110 DC	--		**3RT1955-5XF42**	
S10	3RT106..-.X...-0LA2	24 DC	--		**3RT1965-5XB42**	
		72 DC	--		**3RT1965-5XJ42**	
		110 DC	--		**3RT1965-5XF42**	
S12	3RT107..-.X...-0LA2	24 DC	--		**3RT1975-5XB42**	
		72 DC	--		**3RT1975-5XJ42**	
		110 DC	--		**3RT1975-5XF42**	

3RT1955-5A.31

3RT1955-5A.32

3RT1955-5N.31

3RT1955-5P.31

3RT1955-5X.42

Note:

In the case of 3RT10..-.S contactors with fail-safe control inputs, removing and replacing the operating mechanism are not permitted.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

For contactors		Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Type						
Contacts with fixing parts							
For contactors with 3 main contacts							
3RT294.-6A							
S2[1]	3RT2035	Main contacts (3 NO contacts) for utilization category AC-3 and AC-3e (1 set = 3 movable and 6 fixed contacts with fixing parts)	**3RT2935-6A**		1	1 unit	41B
	3RT2036		**3RT2936-6A**		1	1 unit	41B
	3RT2037		**3RT2937-6A**		1	1 unit	41B
	3RT2038		**3RT2938-6A**		1	1 unit	41B
S3[1]	3RT2045		**3RT2945-6A**		1	1 unit	41B
	3RT2046		**3RT2946-6A**		1	1 unit	41B
	3RT2047		**3RT2947-6A**		1	1 unit	41B
S6	3RT1054		**3RT1954-6A**		1	1 unit	41B
	3RT1055		**3RT1955-6A**		1	1 unit	41B
	3RT1056		**3RT1956-6A**		1	1 unit	41B
S10	3RT1064		**3RT1964-6A**		1	1 unit	41B
	3RT1065		**3RT1965-6A**		1	1 unit	41B
	3RT1066		**3RT1966-6A**		1	1 unit	41B
S12	3RT1075		**3RT1975-6A**		1	1 unit	41B
	3RT1076		**3RT1976-6A**		1	1 unit	41B
3RT1954-6A							
S3	3RT2446	Main contacts (3 NO contacts) for utilization category AC-1 (1 set = 3 movable and 6 fixed contacts with fixing parts)	**3RT2946-6D**		1	1 unit	41B
	3RT2448		**3RT2948-6D**		1	1 unit	41B
S6	3RT1456		**3RT1956-6D**		1	1 unit	41B
S10	3RT1466		**3RT1966-6D**		1	1 unit	41B
	3RT1467		**3RT1967-6D**		1	1 unit	41B
S12	3RT1476		**3RT1976-6D**		1	1 unit	41B
3RT197.-6A, 3RT1976-6D							
For contactors with 4 main contacts							
3RT2936-6E							
S2	3RT2336	Main contacts (4 NO contacts) for utilization category AC-1 (1 set = 3 movable and 6 fixed contacts and spare pole with fixing parts)	**3RT2936-6E**		1	1 unit	41B
	3RT2337		**3RT2937-6E**		1	1 unit	41B
Arc chutes							
For contactors with 3 main contacts							
3RT195.-7.							
S6	3RT1054	Only for contactors with AC/DC coil	**3RT1954-7A**		1	1 unit	41B
	3RT1055		**3RT1955-7A**		1	1 unit	41B
	3RT1056		**3RT1956-7A**		1	1 unit	41B
	3RT1456		**3RT1956-7B**		1	1 unit	41B
3RT196.-7.							
S10	3RT1064		**3RT1964-7A**		1	1 unit	41B
	3RT1065		**3RT1965-7A**		1	1 unit	41B
	3RT1066		**3RT1966-7A**		1	1 unit	41B
	3RT1466		**3RT1966-7B**		1	1 unit	41B
3RT197.-7.							
S12	3RT1075		**3RT1975-7A**		1	1 unit	41B
	3RT1076		**3RT1976-7A**		1	1 unit	41B
	3RT1476		**3RT1976-7B**		1	1 unit	41B

[1] Switching of the spare contact is not permitted for 3RT20..-.S contactors with fail-safe control.

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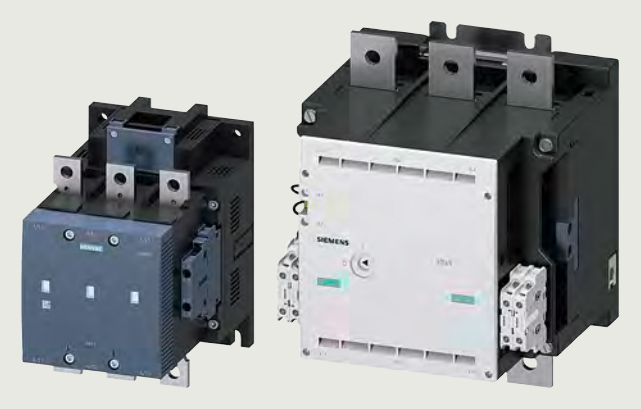
Overview



3RT12 and 3TF6 vacuum contactors

Our power range of vacuum contactors for switching IE2 motors and highly efficient IE3 and IE4 motors:

- Sizes S10 and S12: 3RT12 up to 250 kW
- Size 14: 3TF6 up to 450 kW

See from page 3/120 onwards

Standards

IEC 60947-1, IEC 60947-4-1, IEC 60947-5-1 (auxiliary switches)

Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices (see pages 3/112 and 3/134).

Operating conditions

Vacuum contactors are basically unsuitable for switching DC voltage. Vacuum contactors are only approved **for applications in the frequency range 45 to 60 Hz**. Help with applications > 60 Hz is available from our Technical Support, www.siemens.com/support-request.

Protection of the device connections from short circuit, overload and overvoltage

Appropriate steps must always be taken to protect device connections from overload and short circuit. There are different constraints depending on the type of connection:

Protection of main terminals from short circuit and overload

For information about protection of a single contactor, see the technical product data sheet.

For more information on complete units such as contactors with overload relays or contactors with motor starter protectors as the motor feeder, see Configuration Manual for load feeders.

Protection of auxiliary connections from short circuit and overload

For information about protection of auxiliary contacts, see the technical product data sheet.

Protection of control supply voltage or supply voltage connections from short circuit and overload

First of all, the relevant standards and regulations for configuring control panels and the parts and components installed in them must be taken into account, for example when dimensioning the cables.

One possible protection for these circuits could be the selection of a suitable power supply, i.e. one with a current-limiting function. In the selection of the source and the connecting cable, the load characteristics of the contactor must be considered (short-time inrush current peaks for solid-state contactor operating mechanisms, closing, closed).

If there are further switching elements in the circuit, such as the auxiliary contact system of an overload relay that operates the contactor, the short-circuit protection necessary for this must also be considered.

For further recommendations, e.g. the use of miniature circuit breakers or circuit breakers for equipment in control circuits, see Control panel tip – Fast, reliable selection and dimensioning of an appropriate power supply unit.

Protection of contactors with digital input from short circuit and overload

For the PLC input types according to IEC 60947-4-1 these inputs have a typical rated current of 20 mA.

These inputs can be protected accordingly (for 3RT12..-.N contactors marked with IN+/IN-).

The supply voltage connections A1 - A2 must be protected according to the load characteristics.

For information about power consumption, see the technical product data sheet.

Overvoltage protection at the control supply voltage connection

The 3RT12 contactors are already equipped with coil damping (varistor).

Note:

The break times of the contactor, the opening delay times of the NO contacts and the closing delay times of the NC contacts increase with damping.

For more detailed information about how damping affects the time response, see Equipment Manual.

Protection from overvoltage in the main circuit

The 3RT12 and 3TF6 vacuum contactors can be retrofitted with varistors for damping switching overvoltages in the coil.

The 3TF6 contactors have integrated damping depending on the version.

Note:

When the 3TF6 contactors are used in an **environment with frequency converters**, the overvoltage damping (if any) must always be removed.

For more information, see Equipment Manual.

Connection methods

Main circuit

3RT12 vacuum contactors are available with busbar connections. Box terminal blocks can be ordered separately as accessories for versions with screw terminals, see page 3/134.

The 3TF6 vacuum contactors are available with busbar connections.

Auxiliary and control circuits

The 3RT12 and 3TF6 contactors are available with screw terminals.

Motor protection

For protection against overload, 3RB2 electronic overload relays (see page 7/114 onwards) can be mounted on the 3RT12 vacuum contactors.

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Electromagnetic compatibility (EMC)

The contactors satisfy the conditions for environment A according to IEC 60947-1.

Contact reliability of the auxiliary contacts

If voltages ≤ 110 V and currents ≤ 100 mA are to be switched, the auxiliary contacts of the vacuum contactors or 3RH contactor relays should be used as they guarantee a high level of contact reliability.

These auxiliary contacts are particularly suitable for solid-state circuits with currents ≥ 1 mA at a voltage ≥ 17 V.

Vacuum interrupters

3RT12 vacuum contactors

The contact gaps of the vacuum contactors are contained in hermetically enclosed vacuum interrupters unlike the 3RT10 contactors – the main contacts operate in air under atmospheric conditions. The particular benefit of vacuum contactors, however, is that their electrical endurance is significantly higher.

They are especially suited to frequent switching in inching/mixed operation, e.g. in crane control systems.

3TF6 vacuum contactors

The switching contacts of the vacuum contactors are contained in hermetically enclosed vacuum interrupters.

With these contactors, the contact erosion of the vacuum interrupters can be checked in the energized state with the help of three white double slides below the connecting bars on the outgoing side.

Operating mechanism types

3RT12 vacuum contactors

The contactors can be operated with AC (50 to 60 Hz) as well as with DC.

Two types of solenoid operation are available:

- Standard operating mechanism for AC and DC operation (power consumption reduced from closing to closed), version 3RT12..-.**A**
- Solid-state operating mechanism, version 3RT12..-.**N**

3TF6 vacuum contactors

- Standard version 3TF6.44-.**C**.7 with AC operation
- Version 3TF6.33-.**Q**.7 for AC control supply voltage subject to strong interference:
  Contactors in this version are more robust against EMC interference and are therefore designed for operation in systems with AC control supply voltage that is subject to strong interference. A 3TC44 (3TY7684-0Q..) reversing contactor with a series resistor fitted is used to switch over to holding control. The reversing contactor can be mounted separately. It is connected to the 3TF6 main contactor by means of a pre-assembled connecting cable (approx. 1 m long) with plug-in connectors.
  This version is recommended in the environment of frequency converters and in the case of unshielded control cables.
- 3TF6.33-.**D**.4 contactors with DC control are supplied with a 3TC4417-4A.. reversing contactor and a series resistor.

Replacing operating mechanisms

3RT12 vacuum contactors

The operating mechanisms of the vacuum contactors are removable and can be replaced simply by unlocking and pulling them out.

3TF6 vacuum contactors

It is also possible replace the drive components of the vacuum contactor.

Fitting auxiliary contacts and mounting additional auxiliary switches

Features in the delivery state

- 3RT12 vacuum contactors:
  These contactors are supplied with two laterally mounted auxiliary switches with two contacts each (2 NO + 2 NC)
- 3TF6 vacuum contactors:
  These contactors are supplied with four laterally mounted auxiliary switches with two contacts each (4 NO + 4 NC). For operating mechanism versions with 3TC (3 NO + 3 NC) series contactor, two auxiliary contacts are already defined.

Expansion possibilities

- 3RT12 vacuum contactors:
  All basic devices can be expanded via auxiliary switches. The permitted configuration must be taken into account.
- Vacuum contactor 3TF6:
  These devices are already fully equipped and no expansion is possible.

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Technical specifications

Unless otherwise listed on subsequent pages, the technical specifications of the SIRIUS 3RT12 vacuum contactors correspond to those of the 3RT10 basic units; see pages 3/25, and 3/41 to 3/46.

More information

Technical specifications, see
https://support.industry.siemens.com/cs/ww/en/ps/16137/td

FAQs, see
https://support.industry.siemens.com/cs/ww/en/ps/16137/faq

System Manual for modular system, see
https://support.industry.siemens.com/cs/ww/en/view/60311318

Equipment Manual, see
https://support.industry.siemens.com/cs/ww/en/view/60306557

Application Manual - Switching devices with IE3 and IE4 motors, see
https://support.industry.siemens.com/cs/ww/en/view/94770820

Configuration Manual for load feeders, see
https://support.industry.siemens.com/cs/ww/en/view/39714188

Configuration Manual for UL, see
https://support.industry.siemens.com/cs/ww/en/view/53433538

Guide of use for contactors in safety applications, see
https://support.industry.siemens.com/cs/ww/en/view/109807687

	SIRIUS vacuum contactors
Type	**3RT12**
Size	**S10 and S12**

Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching low inductive or non-inductive AC loads (AC-1) and motor-driven loads (AC-3 and AC-3e) depending on the breaking current and rated operational voltage. It is assumed that the operating mechanisms are switched arbitrarily and not synchronously with the phase angle of the supply system switching operating mechanism.

The rated operational current I_e complies with utilization category AC-4 (breaking 6 times the rated operational current) and is intended for a contact endurance of approximately 200 000 operating cycles.

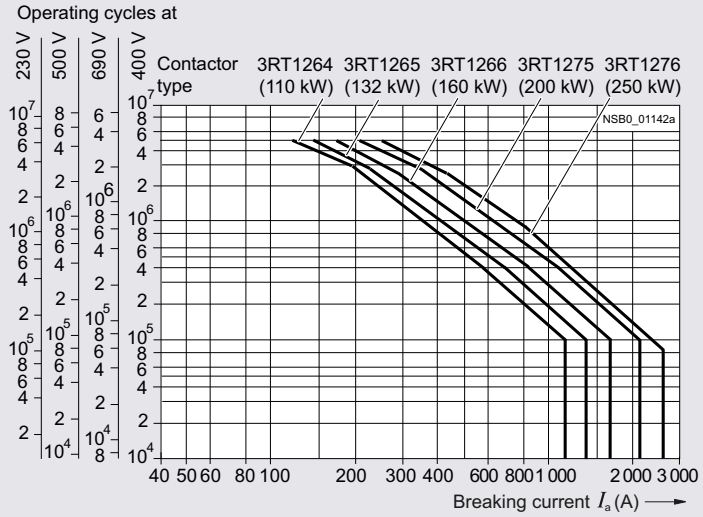
If a shorter contact endurance is sufficient, the rated operational current I_e/AC-4 can be increased.

If the contacts are used for mixed operation, i.e. normal switching (breaking the rated operational current according to utilization category AC-3 and AC-3e) in combination with intermittent inching (breaking several times the rated operational current according to utilization category AC-4), the contact endurance can be calculated approximately from the following equation:

$$X = \frac{A}{1 + \frac{C}{100}\left(\frac{A}{B} - 1\right)}$$

Characters in the equation:

- X Contact endurance for mixed operation in operating cycles
- A Contact endurance for normal operation ($I_a = I_e$) in operating cycles
- B Contact endurance for inching (I_a = multiple of I_e) in operating cycles
- C Inching operations as a percentage of total switching operations



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			Vacuum contactors		
Type			**3TF6**		
Size			**14**		
Rated data of the auxiliary contacts			According to IEC 60947-5-1		
Rated insulation voltage U_i (pollution degree 3)		V	690		
Conventional thermal current I_{th} = rated operational current I_e/AC-12		A	10		
AC load					
Rated operational current I_e/AC-15/AC-14					
• At rated operational voltage U_e	- At 24 V	A	10		
	- At 110 V	A	10		
	- At 125 V	A	10		
	- At 220 V	A	6		
	- At 230 V	A	5.6		
	- At 380 V	A	4		
	- At 400 V	A	3.6		
	- At 500 V	A	2.5		
	- At 660 V	A	2.5		
	- At 690 V	A	2.3		
DC load					
Rated operational current I_e/DC-12					
• At rated operational voltage U_e	- At 24 V	A	10	10	10
	- At 60 V	A	10	10	10
	- At 110 V	A	3.2	3.2	3.2
	- At 125 V	A	2.5	2.5	2.5
	- At 220 V	A	0.9	0.9	0.9
	- At 440 V	A	0.33	0.33	0.33
	- At 600 V	A	0.22	0.22	0.22
Rated operational current I_e/DC-13				Auxiliary contacts with delayed NC contact:	N S = No specification
• At rated operational voltage U_e	- At 24 V	A	10	6	
	- At 60 V	A	5	N S	
	- At 110 V	A	1.14	0.98	
	- At 125 V	A	0.98	N S	
	- At 220 V	A	0.48	N S	
	- At 440 V	A	0.13	N S	
	- At 600 V	A	0.07	0.07	
CSA and UL rated data of the auxiliary contacts					
Rated voltage, max.		V AC	600		
Switching capacity			A 600, P 600		

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SIRIUS 3RT12 and 3TF6 vacuum contactors

	Vacuum contactors
Type	**3TF6**
Size	**14**

Electrical endurance of auxiliary contacts

The electrical endurance for utilization category AC-12 or AC-15/AC-14 depends mainly on the breaking current. It is assumed that the operating mechanisms are switched arbitrarily and not synchronously with the phase angle of the supply system switching operating mechanism.

The characteristic curves apply to 230 V AC.

Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching low inductive or non-inductive AC loads (AC-1) and motor-driven loads (AC-3 and AC-3e) depending on the breaking current and rated operational voltage. It is assumed that the operating mechanisms are switched arbitrarily and not synchronously with the phase angle of the supply system switching operating mechanism.

The rated operational current I_e complies with utilization category AC-4 (breaking 6 times the rated operational current) and is intended for a contact endurance of approximately 200 000 operating cycles.

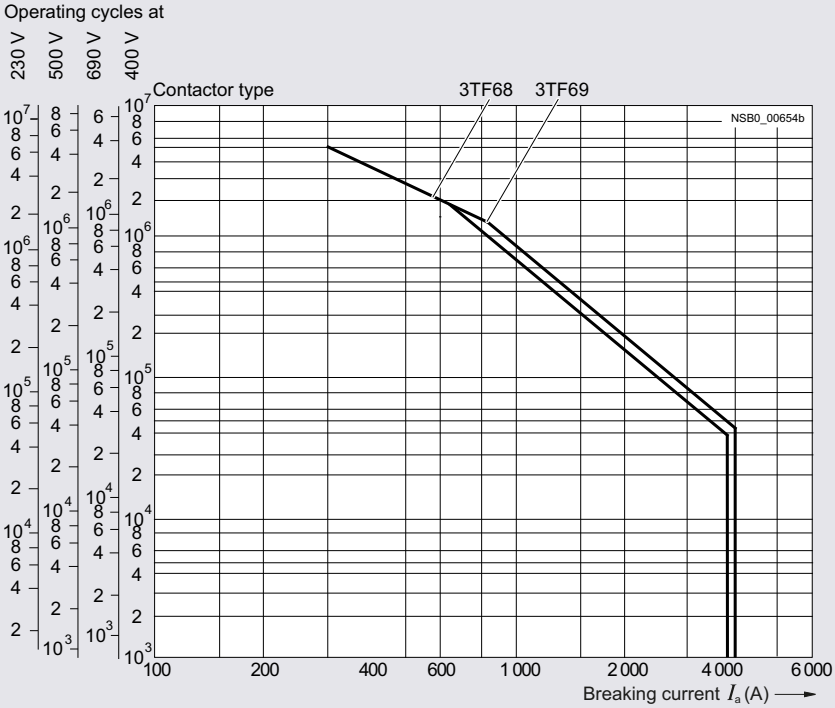
If a shorter contact endurance is sufficient, the rated operational current I_e/AC-4 can be increased.

If the contacts are used for mixed operation, i.e. normal switching (breaking the rated operational current according to utilization category AC-3 and AC-3e) in combination with intermittent inching (breaking several times the rated operational current according to utilization category AC-4), the contact endurance can be calculated approximately from the following equation:

$$X = \frac{A}{1 + \frac{C}{100}\left(\frac{A}{B} - 1\right)}$$

Characters in the equation:

- X Contact endurance for mixed operation in operating cycles
- A Contact endurance for normal operation ($I_a = I_e$) in operating cycles
- B Contact endurance for inching (I_a = multiple of I_e) in operating cycles
- C Inching operations as a percentage of total switching operations



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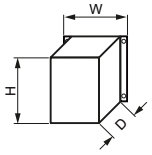
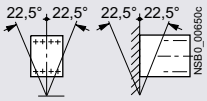
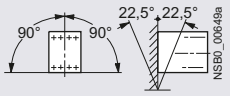
		SIRIUS vacuum contactors		Vacuum contactors	
Type		3RT126	3RT127	3TF68	3TF69
Size		S10	S12	14	
General data					
Dimensions (W x H x D) 	mm	145 x 210 x 206	160 x 214 x 225	230 x 276 x 237	230 x 295 x 237
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.					
• To easily replace the laterally mounted auxiliary switches it is recommended to maintain a minimum clearance of 30 mm between the contactors.		No		Yes	
• If mounted at a 90° angle (conducting paths are horizontally above each other), the switching frequency is reduced to 80% compared with the normal values.		No		Yes	
Mechanical endurance	Operating cycles	10 million		5 million	
Electrical endurance					
Contact endurance of the main contacts		See page 3/122		See page 3/124	
Rated insulation voltage U_i (pollution degree 3)	kV	1			
Rated impulse withstand voltage U_{imp}	kV	8			
Protective separation between the coil and the main contacts according to IEC 60947-1, Annex N	V	690		1 000	
Mirror contacts A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.		Yes, according to IEC 60947-4-1, Annex F		Yes, according to IEC 60947-4-1, Annex F One NC contact each must be connected in series for the left and right auxiliary switch respectively.	
Permissible ambient temperature					
• During operation	°C	-25 ... +60		-25 ... +55[1)]	
• During storage	°C	-55 ... +80		-55 ... +80	
Electromagnetic compatibility (EMC)		See page 3/121			
Short-circuit protection					
Main circuit Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE according to IEC 60947-4-1					
• Type of coordination "1"	A	500	800	1 000	1 250
• Type of coordination "2"	A	500	800	500	630
• Weld-free (test conditions according to IEC 60947-4-1)	A	400	500	400	500
Auxiliary circuit Short-circuit test					
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE (weld-free protection at $I_k \leq 1$ kA)	A	10			
• Miniature circuit breaker with C characteristic (short-circuit current $I_k \leq 400$ A)	A	10			
Short-circuit protection for contactors with overload relays		See Configuration Manual for load feeders			

[1)] For ambient temperatures > 55 °C, only 3TF6.33-.Q..-Z A02 contactors (= without connection of the main conducting paths) can be used.
However, derating must be taken into account for these contactors too:
- AC-1: I_e = 782 A, 644 operating cycles/h;
- AC-3/AC-3e: Operating range 0.85 to 1.05 x U_s, 460 operating cycles/h, mech. service life 5 million operating cycles, lateral clearance 10 mm.

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SIRIUS 3RT12 and 3TF6 vacuum contactors

				SIRIUS vacuum contactors		Vacuum contactors	
Type				3RT126	3RT127	3TF68	3TF69
Size				S10	S12	14	
Control							
Solenoid coil operating range		AC/DC		0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$		0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)							
• Standard operating mechanism (3RT10..-.A)							
- AC operation	Closing at $U_{s\,min}/U_{s\,max}$		VA	530/630	700/830	--	
	P.f.			0.9		--	
	Closed at $U_{s\,min}/U_{s\,max}$		VA	6.1/7.4	7.6/9.2	--	
	P.f.			0.9		--	
- DC operation	Closing at $U_{s\,min}/U_{s\,max}$		W	580/780	770/920	--	
	Closed at $U_{s\,min}/U_{s\,max}$		W	6.8/8.2	8.5/10	--	
• Solid-state operating mechanism (3RT10..-.N/-.P)							
- AC operation	Closing at $U_{s\,min}/U_{s\,max}$		VA	420/570	560/750	--	
	P.f.			0.8		--	
	Closed at $U_{s\,min}/U_{s\,max}$		VA	5.5/8.5	5.6/9	--	
	P.f.			0.5/0.4		--	
- DC operation	Closing at $U_{s\,min}/U_{s\,max}$		W	460/630	600/800	--	
	Closed at $U_{s\,min}/U_{s\,max}$		W	2.8/3.4	3/3.6	--	
• Solid-state operating mechanism							
- AC operation (3TF6...-.C)	Closing at $U_{s\,min}/U_{s\,max}$		VA	--		1 200/1 850	600/950
	P.f.			--		1	0.98
	Closed at $U_{s\,min}/U_{s\,max}$		VA	--		13.5/49	12.9/30.6
	P.f.			--		0.15	0.31
- AC operation (3TF6...-.Q)	Closing at $U_{s\,min}$		VA	--		1 000	1 150
	P.f.			--		0.99	
	Closed at $U_{s\,min}$		VA	--		11	
	P.f.			--		1	
- DC operation[1] (3TF6...-.D)	Closing at $U_{s\,min}$		W	--		1 010	960
	Closed at $U_{s\,min}$		W	--		28	20.6
PLC control input according to IEC 61131-2				Type 2		--	
• Rated voltage			V DC	24		--	
• Operating range			V DC	17 ... 30		--	
• Power consumption			mA	≤ 30		--	
Minimum command duration For closing	Standard		ms	--		120	
	Reduced make-time		ms	--		90	--
Minimum interval time between two ON commands			ms	--		100	300

[1] At 24 V DC; for further voltages, deviations of up to ± 10% are possible.

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			SIRIUS vacuum contactors					Vacuum contactors	
Type			3RT1264	3RT1265	3RT1266	3RT1275	3RT1276	3TF68	3TF69
Size			S10			S12		14	
Rated data of the main contacts									
Load rating with AC									
Utilization category AC-3 and AC-3e									
• Rated operational currents I_e	- Up to 690 V	A	225	265	300	400	500	630	820 (630)[1]
	- Up to 1 000 V	A	225	265	300	400	500	435	580
• Rated power for slip-ring or squirrel-cage motors at 50 and 60 Hz	- At 230 V	kW	55	75	90	132	160	200	260 (200)[1]
	- At 400 V	kW	110	132	160	200	250	335	450 (335)[1]
	- At 500 V	kW	160	160	200	250	335	--	--
	- At 690 V	kW	200	250	250	400	500	600	800 (600)[1]
	- At 1 000 V	kW	315	355	400	560	710	600	800
Thermal load capacity, 10 s current		A	1 800	2 120	2 400	3 200	4 000	5 040	7 000
Power loss per main conducting path at I_e/AC-3/AC-3e/400 V		W	9	12	14	21	32	45	70
Utilization category AC-4 (at I_a = 6 x I_e)									
Maximum values:									
• Rated operational current I_e	- Up to 690 V	A	195	230	280	350	430	610	690
• Rated power for squirrel-cage motors at 50 Hz and 60 Hz	- At 400 V	kW	110	132	160	200	250	355	400
The following applies to a contact endurance of about 200 000 operating cycles:									
• Rated operational currents I_e	- Up to 690 V	A	97	115	140	175	215	300	360
	- Up to 1 000 V	A	68	81	98	123	151	210	250
• Rated power for squirrel-cage motors at 50 Hz and 60 Hz	- At 230 V	kW	30	37	45	56	70	97	110
	- At 400 V	kW	55	65	79	98	122	168	191
	- At 500 V	kW	68	81	98	124	153	210[2]	250[2]
	- At 690 V	kW	94	112	138	172	212	278[2]	335[2]
	- At 1 000 V	kW	95	114	140	183	217	290[2]	350[2]

1) Value applies for utilization category AC-3e.

2) Max. permissible rated operational current I_e/AC-4 = I_e/AC-3/AC-3e up to 500 V, for reduced contact endurance and reduced switching frequency.

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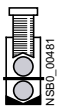
SIRIUS 3RT12 and 3TF6 vacuum contactors

		SIRIUS vacuum contactors		Vacuum contactors	
Type		3RT126	3RT127	3TF68	3TF69
Size		S10	S12	14	
Conductor cross-sections					
Main conductors (1 or 2 conductors can be connected)		Screw terminals			
With mounted box terminals	Type	3RT1966-4G		--	
• Terminal screws		M12 (hexagon socket, A/F 5)		--	
- Tightening torque	Nm	20 ... 22 (180 ... 195 lb.in)		--	
Front clamping point connected					
NSB0_00479					
• Finely stranded with end sleeve (DIN 46228)	mm^2	70 ... 240		--	
• Finely stranded without end sleeve	mm^2	70 ... 240		--	
• Stranded	mm^2	95 ... 300		--	
• AWG cables, solid or stranded	AWG	3/0 ... 600 kcmil		--	
• Ribbon cable conductors (number x width x thickness)	mm	Min. 6 x 9 x 0.8; max. 20 x 24 x 0.5		--	
Rear clamping point connected					
NSB0_00480					
• Finely stranded with end sleeve (DIN 46228)	mm^2	120 ... 185		--	
• Finely stranded without end sleeve	mm^2	120 ... 185		--	
• Stranded	mm^2	120 ... 240		--	
• AWG cables, solid or stranded	AWG	250 ... 500 kcmil		--	
• Ribbon cable conductors (number x width x thickness)	mm	Min. 6 x 9 x 0.8; max. 20 x 24 x 0.5		--	
Both clamping points connected					
 NSB0_00481					
• Finely stranded with end sleeve (DIN 46228)	mm^2	Min. 2 x 50, max. 2 x 185		--	
• Finely stranded without end sleeve	mm^2	Min. 2 x 50, max. 2 x 185		--	
• Stranded	mm^2	Min. 2 x 70, max. 2 x 240		--	
• AWG cables, solid or stranded	AWG	Min. 2 x 2/0, max. 1 x 500 kcmil		--	
• Ribbon cable conductors (number x width x thickness)	mm	Max. 2 x (20 x 24 x 0.5)		--	
Cable lug connection					
• Finely stranded with cable lug[1]	mm^2	50 ... 240		--	
• Stranded with cable lug[1]	mm^2	70 ... 240		--	
• AWG cables, solid or stranded	AWG	2/0 ... 500 kcmil		--	
• Terminal screws		M10 x 30 (A/F 17)		--	
- Tightening torque	Nm	14 ... 24 (124 ... 210 lb.in)		--	
Busbar connections					
• Finely stranded with cable lug	mm^2	--		50 ... 240	
• Stranded with cable lug	mm^2	--		70 ... 240	50 ... 240
• Solid or stranded	AWG	--		2/0 ... 500 MCM	2/0 ... 500 MCM
• Connecting bar (max. width)	mm	25		50	60 ($U_e \leq$ 690 V), 50 (U_e > 690 V)
• Terminal screws		--		M10 x 30	M12 x 40
- Tightening torque	Nm	--		14 ... 24	20 ... 35
	lb.in	--		124 ... 210	177 ... 310
With box terminal (see page 3/134)					
• Connectable laminated copper bars		--		Yes	
• Width	mm	--		15 ... 25	15 ... 38
• Max. thickness	mm	--		1 x 26 or 2 x 11	1 x 46 or 2 x 18
• Terminal screw		--		A/F 6 (hexagon socket)	A/F 8 (hexagon socket)
• Tightening torque	Nm	--		25 ... 40 (221 ... 354 lb.in)	35 ... 50 (266 ... 443 lb.in)
Auxiliary conductors (1 or 2 conductors can be connected)					
• Solid	mm^2	2 x (0.5 ... 1.5)[2]; 2 x (0.75 ... 2.5)[2] according to IEC 60947; max. 2 x (0.75 ... 4)		2 x (0.5 ... 1)[2]/2 x (1 ... 2.5)[2]	
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)[2]; 2 x (0.75 ... 2.5)[2]		2 x (0.5 ... 1)[2], 2 x (0.75 ... 2.5)[2]	
• Pin cable lug according to DIN 46231	mm^2	--		2 x (1 ... 1.5)	
• AWG cables, solid or stranded	AWG	2 x (18 ... 14)		2 x (18 ... 12)	
• Terminal screws		M3 (Pozidriv size 2)		--	
- Tightening torque	Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)		0.8 ... 1.4 (7 ... 12 lb.in)	

1) When connecting cable lugs according to DIN 46234 for conductor cross-sections larger than 240 mm^2 and according to DIN 46235 for conductor cross-sections larger than 185 mm^2, the 3RT1966-4EA1 terminal cover is required to maintain the phase clearance, see page 3/112.

2) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

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		SIRIUS vacuum contactors					Vacuum contactors	
Type		3RT1264	3RT1265	3RT1266	3RT1275	3RT1276	3TF68	3TF69
Size		S10			S12		14	
SP and UL rated data								
Rated insulation voltage	V AC	600					600	
Uninterrupted current at 40 °C, open and enclosed	A	330			540		630	820
Maximum horsepower ratings (from SP and UL approved values)								
• Rated power for three-phase motors at 60 Hz								
- At 200 V	hp	60	75	100	125	150	231	290
- At 230 V	hp	75	100	125	150	200	266	350
- At 460 V	hp	150	200	250	300	400	530	700
- At 575 V	hp	200	250	300	400	500	664	860
NEMA/EEMAC ratings								
SIZE	hp	--					6	7
• Uninterrupted current								
- Open	A	--					600	820
- Enclosed	A	--					540	810
• Rated power for three-phase motors at 60 Hz								
- At 200 V	hp	--					150	--
- At 230 V	hp	--					200	300
- At 460 V	hp	--					400	600
- At 575 V	hp	--					400	600
Short-circuit protection[1]	kA	10	18			30	100	
• CLASS L fuse	A	600	700	800	1 000	1 200	1 600	
• Circuit breakers according to UL 489	A	500	700	800	1 000	1 200	On request[1]	

1) For more information about short-circuit values, e.g. for protection against high short-circuit currents, see Certificate of Compliance for the individual devices.

For the selection and dimensioning of load feeders, see Configuration Manual for UL and the UL guide "Competitive control panels for the North American market".

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SIRIUS 3RT12 and 3TF6 vacuum contactors *IE3/IE4* **ready** **AC-3e**

Selection and ordering data

SIRIUS 3RT12 vacuum contactors, 3-pole, 110 to 250 kW

AC/DC operation

- Standard operating mechanism 3RT12..-.A
- 3RT12..-.N solid-state operating mechanism with 24 V DC control signal input
- For screw fixing
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts is enclosed.

3RT1264-6AF36

3RT127.-6N.36

Size	Rated data AC-3 and AC-3e, t_u: up to 60 °C					AC-1, t_u: 40 °C	Auxiliary contacts, lateral		Rated control supply voltage U_s 50/60 Hz AC or DC	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	Operational current I_e up to	Rating of three-phase motors at 50 Hz and				Operational current I_e up to				Article No.	Price per PU			
	1 000 V	230 V	**400 V**	500 V	690 V	1 000 V								
	A	kW	**kW**	kW	kW	A	NO	NC	V					
Standard operating mechanism for AC and DC operation (power consumption reduced from closing to closed)														
With integrated coil circuit (varistor integrated at the factory)														
S10	225	55	**110**	160	200	330	2	2	110 ... 127	**3RT1264-6AF36**		1	1 unit	41B
									220 ... 240	**3RT1264-6AP36**		1	1 unit	41B
	265	75	**132**	160	250	330	2	2	110 ... 127	**3RT1265-6AF36**		1	1 unit	41B
									220 ... 240	**3RT1265-6AP36**		1	1 unit	41B
	300	90	**160**	200	250	330	2	2	110 ... 127	**3RT1266-6AF36**		1	1 unit	41B
									220 ... 240	**3RT1266-6AP36**		1	1 unit	41B
S12	400	132	**200**	250	400	610	2	2	110 ... 127	**3RT1275-6AF36**		1	1 unit	41B
									220 ... 240	**3RT1275-6AP36**		1	1 unit	41B
	500	160	**250**	355	500	610	2	2	110 ... 127	**3RT1276-6AF36**		1	1 unit	41B
									220 ... 240	**3RT1276-6AP36**		1	1 unit	41B
Solid-state operating mechanism														
With 24 V DC control signal input e.g. for control by PLC														
With integrated coil circuit (varistor integrated in electronics at the factory)														
S10	225	55	**110**	160	200	330	2	2	96 ... 127	**3RT1264-6NF36**		1	1 unit	41B
									200 ... 277	**3RT1264-6NP36**		1	1 unit	41B
	265	75	**132**	160	250	330	2	2	96 ... 127	**3RT1265-6NF36**		1	1 unit	41B
									200 ... 277	**3RT1265-6NP36**		1	1 unit	41B
	300	90	**160**	200	250	330	2	2	96 ... 127	**3RT1266-6NF36**		1	1 unit	41B
									200 ... 277	**3RT1266-6NP36**		1	1 unit	41B
S12	400	132	**200**	250	400	610	2	2	96 ... 127	**3RT1275-6NF36**		1	1 unit	41B
									200 ... 277	**3RT1275-6NP36**		1	1 unit	41B
	500	160	**250**	355	500	610	2	2	96 ... 127	**3RT1276-6NF36**		1	1 unit	41B
									200 ... 277	**3RT1276-6NP36**		1	1 unit	41B

Other voltages according to page 3/68 on request.

For an overview of the 3RT12 vacuum contactors with mountable accessories, see pages 3/14 and 3/16.

The accessories for the 3RT1 vacuum contactors correspond to those for the basic units of the 3RT1 contactors, see page 3/69 onwards.

For spare parts, see page 3/136.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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3TF6 vacuum contactors, 3-pole, 335 to 450 kW

AC operation

- For screw fixing
- Main conductors: Busbar connections
- Auxiliary and control conductors: Screw terminals
- With overvoltage protection of the coil (varistor)

3TF68

3TF69

Size	Rated data AC-3 and AC-3e, t_u: up to 55 °C					AC-1, t_u: 40 °C	Auxiliary contacts, lateral		Rated control supply voltage U_s 50/60 Hz AC	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	Operational current I_e up to	Rating of three-phase motors at 50 Hz and				Operational current I_e up to				Article No.	Price per PU			
	690 V	230 V	**400 V**	690 V	1 000 V	690 V								
	A	kW	**kW**	kW	kW	A	NO	NC	V					
AC operation 50/60 Hz[1]														
14	630	200	**335**	600	--	700	4	4	110 ... 132	**3TF6844-0CF7**		1	1 unit	41B
									200 ... 240	**3TF6844-0CM7**		1	1 unit	41B
					600	700	4	4	110 ... 132	**3TF6844-8CF7**		1	1 unit	41B
									200 ... 240	**3TF6844-8CM7**		1	1 unit	41B
14	820 (630)[2]	260 (200)[2]	**450 (335)**[2]	800 (600)[2]	--	910	4	4	110 ... 132	**3TF6944-0CF7**		1	1 unit	41B
									200 ... 240	**3TF6944-0CM7**		1	1 unit	41B
					800	910	4	4	110 ... 132	**3TF6944-8CF7**		1	1 unit	41B
									200 ... 240	**3TF6944-8CM7**		1	1 unit	41B

[1] Please observe the information regarding the use of 3TF6 vacuum contactors in the environment of frequency converters, see page 3/120.

[2] Value applies for utilization category AC-3e.

For an overview of the 3TF6 vacuum contactors with mountable accessories, see page 3/17.

Accessories and spare parts, see pages 3/133 to 3/137.

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the article number)

Delivery time on request

Rated control supply voltage U_s	**Contactor type**	**3TF6844-.C.., 3TF6944-.C..**
	Size	**14**
AC operation		
Solenoid coils for 50/60 Hz		
110 ... 132 V AC		F7
200 ... 240 V AC		M7
230 ... 277 V AC		P7
380 ... 460 V AC		Q7
500 ... 600 V AC		S7

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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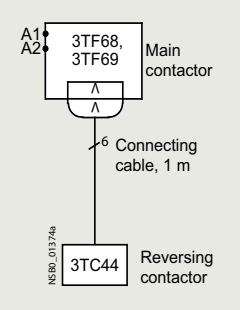
SIRIUS 3RT12 and 3TF6 vacuum contactors *IE3/IE4* ready AC-3e

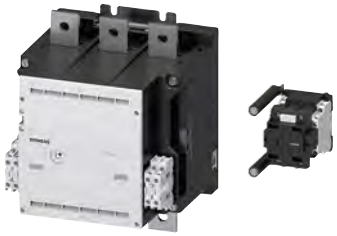
DC operation
and for AC control supply voltage subject to strong interference

- Main conductors: Busbar connections
- Auxiliary and control conductors: Screw terminals
- Power consumption reduced from closing to closed



Circuit diagram
for AC operation, 50/60 Hz,
for AC control supply voltage
subject to strong interference

3TF6833-1D.4
with reversing contactor 3TC4417-0A



3TF6933-1Q.7
with reversing contactor 3TC4417-0B

Size	Rated data AC-3 and AC-3e, t_u: up to 55 °C					AC-1, t_u: 40 °C	Auxiliary contacts, lateral		Rated control supply voltage U_s 50/60 Hz AC or DC	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Operational current I_e up to	Rating of three-phase motors at 50 Hz and				Operational current I_e up to								
	690 V	230 V	**400 V**	690 V	1 000 V	690 V								
	A	kW	**kW**	kW	kW	A	NO	NC	V					
DC operation[1]														
14	630	200	**335**	600	--	700	3	3	24 DC	**3TF6833-1DB4**		1	1 unit	41B
					600	700	3	3	24 DC	**3TF6833-8DB4**		1	1 unit	41B
14	820 (630)[2]	260 (200)[2]	**450 (335)**[2]	800 (600)[2]	--	910	3	3	24 DC	**3TF6933-1DB4**		1	1 unit	41B
					800	910	3	3	24 DC	**3TF6933-8DB4**		1	1 unit	41B
AC operation 50/60 Hz[1][3] **. For AC control supply voltage subject to strong interference**														
14	630	200	**335**	600	--	700	3	3	110 ... 120 AC	**3TF6833-1QG7**		1	1 unit	41B
									220 ... 240 AC	**3TF6833-1QL7**		1	1 unit	41B
									380 ... 420 AC	**3TF6833-1QV7**		1	1 unit	41B
					600	700	3	3	220 ... 240 AC	**3TF6833-8QL7**		1	1 unit	41B
14	820 (630)[2]	260 (200)[2]	**450 (335)**[2]	800 (600)[2]	--	910	3	3	110 ... 120 AC	**3TF6933-1QG7**		1	1 unit	41B
									220 ... 240 AC	**3TF6933-1QL7**		1	1 unit	41B
									380 ... 420 AC	**3TF6933-1QV7**		1	1 unit	41B
					800	910	3	3	110 ... 120 AC	**3TF6933-8QG7**		1	1 unit	41B
									220 ... 240 AC	**3TF6933-8QL7**		1	1 unit	41B

1) Please observe the information regarding the use of 3TF6 vacuum contactors in the environment of frequency converters, see page 3/120.
2) Value applies for utilization category AC-3e.
3) A DC solenoid system with rectifier is used in this version. Varistor integrated. A 3TC4417-.... reversing contactor with pre-assembled connecting cable (approx. 1 m) and plug-in connector is included in the scope of supply of the vacuum contactor.

For an overview of the 3TF6 vacuum contactors with mountable accessories, see page 3/17.

Accessories and spare parts, see pages 3/133 to 3/137.

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the article number)

Delivery time on request

Rated control supply voltage U_s	**Contactor type**	**3TF6833-.D.., 3TF6933-.D..**
	Size	**14**
DC operation		
Solenoid coils		
24 V DC		B4
110 V DC		F4
125 V DC		G4
220 V DC		M4
230 V DC		P4

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Accessories

For further accessories for the SIRIUS 3RT12 vacuum contactors, see 3RT10 basic units, page 3/69 onwards.

Overview graphics with mountable accessories:

- 3RT12 contactors, see pages 3/14 and 3/16
- 3TF68 and 3TF69 contactors, see page 3/17

	For contactors		Auxiliary contacts			Connections		Screw terminals		PU (UNIT, SET, M)	PS*	PG
			Version					Article No.	Price per PU			
	Size	Type	NO	NC	NC	Left	Right					
Auxiliary switches, instantaneous												
		For lateral mounting										
3TY7561-1AA00	14	3TF68, 3TF69	First auxiliary switch 1	1	--			**3TY7561-1AA00**		1	1 unit	41B
3TY7561-1EA00		3TF68, 3TF69	First auxiliary switch 1	--	1			**3TY7561-1EA00**		1	1 unit	41B
3TY7561-1KA00		3TF68, 3TF69	Second auxiliary switch 1	1	--			**3TY7561-1KA00**		1	1 unit	41B
		For switchover of the coil with DC circuit										
3TY7681-1G	14	3TF68, 3TF69	--	--	1		--	**3TY7681-1G**		1	1 unit	41B
		Solid-state compatible auxiliary switches										
		For lateral mounting										
5TY7561-1UA00	14	3TF68, 3TF69	Second auxiliary switch, left or right 1 CO contact					**3TY7561-1UA00**		1	1 unit	41B

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Accessories and spare parts for SIRIUS 3RT12 and 3TF6 vacuum contactors

	For contactors Size	Type	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Main conducting path surge suppression modules								
3RT1966-1PV3	S10/ S12	3RT12	For damping overvoltages and protecting motor windings against multiple re-ignition when switching off three-phase motors For connection on the outgoing contactor side (2-T1/4-T2/6-T3), for separate installation Rated operational voltage U_e					
3RT1966-1PV4			• 690 V AC	**3RT1966-1PV3**		1	1 unit	41B
			• 1 000 V AC	**3RT1966-1PV4**		1	1 unit	41B
Box terminal blocks for connecting auxiliary conductors to main terminals								
			For round and ribbon cables Connectable cross-sections of the contactors, see Technical specifications, page 3/128.					
3RT1966-4G	S10/ S12	3RT12	• Up to 240 mm^2, with auxiliary conductor connection up to 2.5 mm^2	**3RT1966-4G**		1	1 unit	41B
Surge suppressors								
3TX7572-3.	14	3TF68, 3TF69	**Varistors** AC operation The surge suppressor (varistor) is included in the scope of supply of the 3TF68 and 3TF69 contactors with AC operation. DC operation Varistor for snapping onto the side of the auxiliary switch (includes the peak value of the alternating voltage on the DC side), connection to A1 and A2 Rated control supply voltage U_s					
			• 24 ... 48 V DC	**3TX7572-3G**		1	1 unit	41B
			• 127 ... 240 V DC	**3TX7572-3J**		1	1 unit	41B
Terminal covers								
3TX76.6-0A	14	3TF68 3TF69	For protection against inadvertent contact, two units required per contactor (1 set = 2 units)	**3TX7686-0A** **3TX7696-0A**		1 1	1 unit 1 unit	41B 41B
3TX7686-0B		3TF68	On the outgoing side combined with overload relay, for protection against inadvertent contact with exposed busbar connections	**3TX7686-0B**		1	1 unit	41B
Links for paralleling (star jumpers), 3-pole								
3TX7680-0D	14	3TF68, 3TF69	without connecting terminal (the link for paralleling can be reduced by one pole)	**3TX7680-0D**		1	1 unit	41B
Box terminals for laminated copper bars								
3TX7570-1E	14	3TF68	**Without auxiliary conductor connection** (1 set = 3 units) With single covers for protection against inadvertent contact (IEC 60529)	**3TX7570-1E**		1	1 unit	41B
3TX7690-1F		3TF69	**With auxiliary conductor connection** (1 set = 3 units) Conductor cross-sections for auxiliary conductors: • Solid 2 x (0.75 ... 2.5) mm^2 • Finely stranded with end sleeve 2 x (0.5 ... 2.5) mm^2 • AWG, solid or stranded 2 x (18 ... 12) • Tightening torque 0.8 ... 1.4 Nm (7 ... 12 lb.in)	**3TX7690-1F**		1	1 unit	41B

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	For contactors Size	Type	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Locking devices for mechanical interlock								
3TX7686-1A	14	3TF68- 3TF68	For two contactors of the same size, for mounting on base plate	**3TX7686-1A**		1	1 unit	41B
Base plates								
			For reversing contactor assemblies					
3TX7681-1A	14	3TF68- 3TF68	For customer assembly of reversing contactor assemblies	**3TX7681-1A**		1	1 unit	41B
			For contactor assemblies for star-delta (wye-delta) starting					
3TX7681-1B	14	3TF68- 3TF68- 3RT1.7	For configuring contactor assemblies for star-delta (wye-delta) starting	**3TX7681-1B**		1	1 unit	41B
Assembly kits for contactor assemblies								
			For reversing contactor assemblies					
3TX7680-1A	14	3TF68- 3TF68	The assembly kit contains: wiring modules on the top and bottom	**3TX7680-1A**		1	1 unit	41B
			For contactor assemblies for star-delta (wye-delta) starting					
3TX7680-1B	14	3TF68- 3TF68- 3RT1.7	The assembly kit contains: Wiring modules on the top and bottom, Star jumper S12	**3TX7680-1B**		1	1 unit	41B

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Accessories and spare parts for SIRIUS 3RT12 and 3TF6 vacuum contactors

Spare parts

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

For contactors		Rated control supply voltage $U_{s\,min}$ to $U_{s\,max}$	Screw terminals		Spring-loaded terminals	
Size	Type	V AC/DC	Article No.	Price per PU	Article No.	Price per PU
Withdrawable coils						
		Standard operating mechanism for AC/DC				
S10	3RT126	23 ... 26	**3RT1966-5AB31**		**--**	
		42 ... 48	**3RT1966-5AD31**		**--**	
		110 ... 127	**3RT1966-5AF31**		**--**	
		200 ... 220	**3RT1966-5AM31**		**--**	
		220 ... 240	**3RT1966-5AP31**		**--**	
		240 ... 277	**3RT1966-5AU31**		**--**	
		380 ... 420	**3RT1966-5AV31**		**--**	
		440 ... 480	**3RT1966-5AR31**		**--**	
		500 ... 550	**3RT1966-5AS31**		**--**	
		575 ... 600	**3RT1966-5AT31**		**--**	
S12	3RT127	23 ... 26	**3RT1975-5AB31**		**3RT1975-5AB32**	
		42 ... 48	**3RT1975-5AD31**		**3RT1975-5AD32**	
		110 ... 127	**3RT1975-5AF31**		**3RT1975-5AF32**	
		200 ... 220	**3RT1975-5AM31**		**3RT1975-5AM32**	
		220 ... 240	**3RT1975-5AP31**		**3RT1975-5AP32**	
		240 ... 277	**3RT1975-5AU31**		**3RT1975-5AU32**	
		380 ... 420	**3RT1975-5AV31**		**3RT1975-5AV32**	
		440 ... 480	**3RT1975-5AR31**		**3RT1975-5AR32**	
		500 ... 550	**3RT1975-5AS31**		**3RT1975-5AS32**	
		575 ... 600	**3RT1975-5AT31**		**3RT1975-5AT32**	
		Solid-state operating mechanism for AC/DC with 24 V DC control signal input e.g. for control by PLC				
S10	3RT126	21 ... 27.3	**3RT1966-5NB31**		**--**	
		96 ... 127	**3RT1966-5NF31**		**--**	
		200 ... 277	**3RT1966-5NP31**		**--**	
S12	3RT127	21 ... 27.3	**3RT1975-5NB31**		**3RT1975-5NB32**	
		96 ... 127	**3RT1975-5NF31**		**3RT1975-5NF32**	
		200 ... 277	**3RT1975-5NP31**		**3RT1975-5NP32**	

3RT1975-5A.31

3RT1975-5A.32

3RT1975-5N.31

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Accessories and spare parts for SIRIUS 3RT12 and 3TF6 vacuum contactors

	For contactors		Version	Rated control supply voltage U_s	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Size	Type		V					
Solenoid coils									
			AC operation	50/60 Hz AC					
3TY76.3-0C..	14	3TF68	The solenoid coils are fitted as standard with varistors against overvoltage; the coil is supplied with switch-on electronics.	110 ... 132	**3TY7683-0CF7**		1	1 unit	41B
				200 ... 240	**3TY7683-0CM7**		1	1 unit	41B
				230 ... 277	**3TY7683-0CP7**		1	1 unit	41B
				200 ... 240	**3TY7683-0CQ7**		1	1 unit	41B
				380 ... 460	**3TY7683-0CS7**		1	1 unit	41B
		3TF69		110 ... 132	**3TY7693-0CF7**		1	1 unit	41B
				200 ... 240	**3TY7693-0CM7**		1	1 unit	41B
				230 ... 277	**3TY7693-0CP7**		1	1 unit	41B
				200 ... 240	**3TY7693-0CQ7**		1	1 unit	41B
				380 ... 460	**3TY7693-0CS7**		1	1 unit	41B
			DC operation						
3TY7683-0D..	14	3TF68	The solenoid coils are supplied without reversing contactor.	24 DC	**3TY7683-0DB4**		1	1 unit	41B
				110 DC	**3TY7683-0DF4**		1	1 unit	41B
				125 DC	**3TY7683-0DG4**		1	1 unit	41B
				220 DC	**3TY7683-0DM4**		1	1 unit	41B
				230 DC	**3TY7683-0DP4**		1	1 unit	41B
Vacuum interrupters									
3RT197.-6V	S10	3RT1264	Set with three vacuum interrupters with fixing parts	--	**3RT1964-6V**		1	1 unit	41B
		3RT1265		--	**3RT1965-6V**		1	1 unit	41B
		3RT1266		--	**3RT1966-6V**		1	1 unit	41B
	S12	3RT1275		--	**3RT1975-6V**		1	1 unit	41B
		3RT1276		--	**3RT1976-6V**		1	1 unit	41B
3TY7690-0B	14	3TF68	Set with three vacuum interrupters with components Note: In order to ensure reliable operation of the contactors, only **original replacement interrupters** should be used.	--	**3TY7680-0B**		1	1 unit	41B
		3TF69		--	**3TY7690-0B**		1	1 unit	41B

	For contactors		Version	Rated control supply voltage U_s 50/60 Hz AC	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Size	Type		V					
Solenoid coils for main contactors									
	14	3TF68..-.Q	With rectifier bridge	220 ... 240	**3TY7683-0QL7**		1	1 unit	41B
	14	3TF69..-.Q	With rectifier bridge	110 ... 120	**3TY7693-0QG7**		1	1 unit	41B
				220 ... 240	**3TY7693-0QL7**		1	1 unit	41B
3TC44 reversing contactors									
3TY7684-0Q.7	14	3TF68..-.Q, 3TF69..-.Q	Complete with series resistor, 1 m connecting cable and plug-in connector	110 ... 120	**3TY7684-0QG7**		1	1 unit	41B
				220 ... 240	**3TY7684-0QL7**		1	1 unit	41B
				380 ... 420	**3TY7684-0QV7**		1	1 unit	41B
AC solenoid operating mechanism with coil									
3TY7685-0C.7	14	3TF6844-.C	Solenoid operating mechanism with coil	200 ... 240	**3TY7685-0CM7**		1	1 unit	41B
				230 ... 276	**3TY7685-0CP7**		1	1 unit	41B
				380 ... 420	**3TY7685-0CS7**		1	1 unit	41B

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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3TG10 power relays/miniature contactors

Overview

Standards

IEC 60947-1, IEC 60947-4-1, IEC 60947-5-1

Version

The 3TG10 power relays/miniature contactors are available with screw terminals or 6.3 mm × 0.8 mm flat connectors.

The 3TG10 miniature contactors are characterized by their width of just 36 mm.

Protection of the device connections from overvoltage

The 3TG10 power relays/miniature contactors have an integrated protective circuit against switching overvoltages.

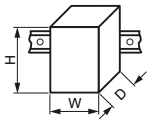
Application

Because they are hum-free they are suitable for use in household appliances and distribution boards in office and residential areas.

They can also be used for applications where there is little space, such as air conditioners, heating systems, pumps and fans, i.e. for simple electrical controls.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16186/td	Reference Manual for switching devices, see https://support.industry.siemens.com/cs/ww/en/view/35554359 FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16186/faq

Type			3TG10
General data			
Dimensions (W x H x D)		mm	36 x 56 x 56
Endurance			
• Mechanical	Operating cycles		3 million
• Electrical			
- AC-1 at I_e	Operating cycles		0.1 million
- AC-3/AC-3e at I_e	Operating cycles		0.4 million
Rated insulation voltage U_i (pollution degree 3)		V	400
Rated impulse withstand voltage U_{imp}		kV	4
Protective separation Between the coil and the contacts according to IEC 60947-1, Annex N		V	Up to 300
Permissible ambient temperature			
• During operation[1]		°C	-25 ... + 55
• During storage		°C	-50 ... + 80
Short-circuit protection			
Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE according to IEC 60947-4-1			
• Type of coordination "1"		A	25
• Type of coordination "2"		A	10
Miniature circuit breakers, C characteristic		A	10
Control			
Solenoid coil operating range			0.85 ... 1.1 x U_s
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)			
• AC operation, 45 ... 450 Hz		VA	4.4
- P.f.			0.9 (hum-free)
• DC operation		W	4
Rated data of the main contacts			
Load rating with AC			
Utilization category AC-1			
• Rated operational current I_e up to 400 V at 55 °C[1]		A	20 for screw terminals, 16 for flat connectors
• Rated power U_e for AC loads with p.f. = 1, 230/220 V			
- For screw terminals		kW	7.5 (13 at 400 V)
- For flat connectors		kW	6 (10 at 400 V)
• Minimum conductor cross-section for loads with I_e		mm^2	2.5

[1] If the three main conducting paths carry a load of 20 A, the following applies if I > 10 A in the fourth conducting path: Permissible ambient temperature 40 °C.

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Type						**3TG10**
Rated data of the main contacts (continued)						
Load rating with AC						
Utilization category AC-3 and AC-3e						
• Operational current for AC-3/AC-3e at $U_e \leq$ 400 V rated value					A	8.4/6.4
• Rated power for slip-ring or squirrel-cage motors for AC-3/AC-3e, at 50 and 60 Hz and at $U_e \leq$ 400 V					kW	4/3
Utilization category AC-5a (permissible nominal impedance: ≥ 0.5 Ω)						
Switching of gas discharge lamps						
Per main conducting path at 230 V, 50 Hz						
	Rated power per lamp	Rated operational current per lamp				
• Uncompensated	18 W	0.37 A			Unit(s)	43
	36 W	0.43 A			Unit(s)	37
	58 W	0.67 A			Unit(s)	24
• DUO switching	18 W	2 x 0.11 A			Unit(s)	2 x 81
	36 W	2 x 0.21 A			Unit(s)	2 x 42
	58 W	2 x 0.32 A			Unit(s)	2 x 28
Switching of gas discharge lamps with compensation or ECG						
Per main conducting path 230 V, 50 Hz						
Connection	Rated power per lamp	Capacitor capacitance	Rated operational current per lamp			
• Shunt compensation	L18 W	4.5 µF	0.11 A		Unit(s)	15
	L36 W	4.5 µF	0.21 A		Unit(s)	15
	L58 W	7 µF	0.32 A		Unit(s)	10
• With ECG (single lamp)	L18 W	6.8 µF	0.10 A		Unit(s)	39
	L36 W	6.8 µF	0.18 A		Unit(s)	39
	L58 W	10 µF	0.27 A		Unit(s)	26
• With ECG (two lamps)	L18 W	10 µF	0.18 A		Unit(s)	2 x 26
	L36 W	10 µF	0.35 A		Unit(s)	2 x 26
	L58 W	22 µF	0.52 A		Unit(s)	2 x 12
Utilization category AC-5b, switching incandescent lamps Per main conducting path at 230 V, 50 Hz					kW	1.6
Load rating with DC						
Utilization category DC-1, (*L/R* ≤ 15 ms)						
• Rated operational currents I_e						
- 1 conducting path				Up to 24 V	A	16
				60 V	A	6
				110 V	A	2
				220 V/240 V	A	0.8
- 2 conducting paths in series				Up to 24 V	A	16
				60 V	A	16
				110 V	A	6
				220 V/240 V	A	1.6
- 3 conducting paths in series				Up to 24 V	A	18
				60 V	A	18
				110 V	A	16
				220 V/240 V	A	6
Utilization category DC-3 and DC-5 Shunt-wound and series-wound motors (*L/R* ≤ 15 ms)						
• Rated operational currents I_e						
- 1 conducting path				Up to 24 V	A	10
				60 V	A	0.5
				110 V	A	0.15
				220 V/240 V	A	0
- 2 conducting paths in series				Up to 24 V	A	16
				60 V	A	5
				110 V	A	0.35
				220 V/240 V	A	0
- 3 conducting paths in series				Up to 24 V	A	16
				60 V	A	16
				110 V	A	10
				220 V/240 V	A	1.75

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3TG10 power relays/miniature contactors

Type			3TG10
Conductor cross-sections			
			Screw terminals
• Terminal screws			M3
• Finely stranded with end sleeve (DIN 46228 Form A/D/C)		mm^2	2 x (0.75 ... 2.5)
• Solid		mm^2	2 x (1 ... 2.5), 1 x 4
• Permissible opening tool (screwdriver)			3.0 mm x 0.5 mm (3RA2908-1A) or Pozidriv 2
			Flat connectors
• Finely stranded 6.3 mm plug-in sleeve according to DIN 46245/DIN 46247			
- 6.3 ... 1		mm^2	0.5 ... 1
- 6.3 ... 2.5		mm^2	1 ... 2.5
CSA and UL rating (screw terminals)			
Rated insulation voltage		V AC	600
Uninterrupted current	Open and enclosed	A	20
Maximum horsepower ratings (from CSA and UL approved values)			1-phase/3-phase
• Rated power for three-phase motors at 60 Hz	at 115 V	hp	0.5/--
	200 V	hp	1/3
	230 V	hp	1.5/3
	460 ... 600 V	hp	0/5

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Selection and ordering data

AC operation ~ ***or DC operation*** ⎓

For screw fixing and snap-on mounting on TH 35 DIN rail

Rated data Utilization category AC-1 at 55 °C: Operational current I_e up to 400 V	AC-1 at 55 °C: Power of AC loads at 50 Hz and 400 V	AC-3/AC-3e: Operational current I_e up to 400 V[1]	AC-3/AC-3e: Power of AC loads at 50 Hz and 400 V	Auxiliary contacts: Version NO	NC	Rated control supply voltage U_s	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	kW	A	kW			V					
Hum-free · with screw terminals							**Screw terminals**				
3TG10..-0...											
AC operation, 45 ... 450 Hz											
20	13	8.4/6.4	4/3	1	--	24 AC	**3TG1010-0AC2**		1	1 unit	41H
						110 AC	**3TG1010-0AG2**		1	1 unit	41H
						230 AC	**3TG1010-0AL2**		1	1 unit	41H
				--	1	24 AC	**3TG1001-0AC2**		1	1 unit	41H
						110 AC	**3TG1001-0AG2**		1	1 unit	41H
						230 AC	**3TG1001-0AL2**		1	1 unit	41H
DC operation											
20	13	8.4/6.4	4/3	1	--	24 DC	**3TG1010-0BB4**		1	1 unit	41H
				--	1	24 DC	**3TG1001-0BB4**		1	1 unit	41H
Hum-free · with 6.3 mm x 0.8 mm flat connectors							**Flat connectors**				
3TG10..-1...											
AC operation, 45 ... 450 Hz											
16	10	8.4/6.4	4/3	1	--	24 AC	**3TG1010-1AC2**		1	1 unit	41H
						110 AC	**3TG1010-1AG2**		1	1 unit	41H
						230 AC	**3TG1010-1AL2**		1	1 unit	41H
				--	1	24 AC	**3TG1001-1AC2**		1	1 unit	41H
						110 AC	**3TG1001-1AG2**		1	1 unit	41H
						230 AC	**3TG1001-1AL2**		1	1 unit	41H
DC operation											
16	10	8.4/6.4	4/3	1	--	24 DC	**3TG1010-1BB4**		1	1 unit	41H
				--	1	24 DC	**3TG1001-1BB4**		1	1 unit	41H

[1] The rated operational currents apply to each pole.

Accessories

Version	Max. rated operational currents I_e/AC-1 (at 55 °C) of the contactors	Max. conductor cross-sections	**Screw terminals** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	mm^2					
Links for paralleling (insulated star jumpers)[1]							
3RT1916-4BB31							
3-pole							
• Without connecting terminal	16	--	**3RT1916-4BA31**		1	1 unit	41B
• With connecting terminal	40	25	**3RT1916-4BB31**		1	1 unit	41B
4-pole							
• With connecting terminal	40	25	**3RT1916-4BB41**		1	1 unit	41B

[1] The links for paralleling can be reduced by one pole.
The rated operational currents apply to each pole.

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SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

Overview

More information	
Homepage, see www.siemens.com/sirius	TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=LoadFeeder
Industry Mall, see www.siemens.com/product?3RA23_3RT1	Guide of use for contactors in safety applications, see https://support.industry.siemens.com/cs/ww/en/view/109807687
Conversion tool, see www.siemens.com/conversion-tool	

The 3RA23 reversing contactor assemblies in sizes S00 to S3 can be ordered as follows:

- Fully wired and tested, with mechanical and electrical interlock, see page 3/149 onwards.
- For all individual parts for customer assembly, see page 3/69 onwards.

The 3RA23 reversing contactor assemblies have screw terminals or spring-loaded terminals (main and control circuits) and are suitable for screw fixing and snap-on mounting on TH 35 DIN rails.

Complete 3RA23 reversing contactor assemblies

The 3RA23 reversing contactor assemblies of size S00 to S3 each consist of two contactors with the same power, with one NC contact (S00) or one NO contact and one NC contact (S0 to S3) in the basic unit. The contactors are mechanically and electrically interlocked (NC contact interlock).

3RU2 overload relays (see page 7/89 onwards) or 3RB3 overload relays (see page 7/102 onwards) for contactor mounting or stand-alone installation, SIMOCODE pro 3UF7 motor management and control devices (see page 10/12 onwards) or 3RN2 thermistor motor protection relays (see page 10/136 onwards) can be used for motor protection.

3RA23 reversing contactor assemblies with voltage tap-off

The reversing contactor assemblies with voltage tap-off (see pages 3/149 to 3/152) are required for mounting the function modules for connection to the controller via the IO-Link or AS-Interface communications systems. The 3RA27 function modules must be ordered separately, see page 3/101.

For more information on IO-Link and AS-Interface, see "Industrial communication", page 2/1 onwards.

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SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

Sizes S00 to S3

Rated data for AC-3/AC-3e at AC 50 Hz 400 V		Size	Type		
Rating	Operational current		Contactor	Assembly kit	**Fully wired and tested reversing contactor assemblies**
P	I_e		(see page 3/47 onwards)	(see page 3/104)	
kW	A				
			Screw terminals		
3	7	**S00-S00**	3RT2015-1...2	3RA2913-2AA1	**3RA2315-8XB30-1...**
4	9		3RT2016-1...2	3RA2913-2AA1	**3RA2316-8XB30-1...**
5.5	12		3RT2017-1...2	3RA2913-2AA1	**3RA2317-8XB30-1...**
7.5	16		3RT2018-1...2	3RA2913-2AA1	**3RA2318-8XB30-1...**
5.5	12	**S0-S0**	3RT2024-1...0	3RA2923-2AA1	**3RA2324-8XB30-1...**
7.5	17		3RT2025-1...0	3RA2923-2AA1	**3RA2325-8XB30-1...**
11	25		3RT2026-1...0	3RA2923-2AA1	**3RA2326-8XB30-1...**
15	32		3RT2027-1...0	3RA2923-2AA1	**3RA2327-8XB30-1...**
18.5	38		3RT2028-1...0	3RA2923-2AA1	**3RA2328-8XB30-1...**
18.5	41	**S2-S2**	3RT2035-1...0	3RA2933-2AA1	**3RA2335-8XB30-1...**
22	51		3RT2036-1...0	3RA2933-2AA1	**3RA2336-8XB30-1...**
30	65		3RT2037-1...0	3RA2933-2AA1	**3RA2337-8XB30-1...**
37	80		3RT2038-1...0	3RA2933-2AA1	**3RA2338-8XB30-1…**
37	80	**S3-S3**	3RT2045-1...0	3RA2943-2AA1	**3RA2345-8XB30-1...**
45	95		3RT2046-1...0	3RA2943-2AA1	**3RA2346-8XB30-1...**
55	110		3RT2047-1...0	3RA2943-2AA1	**3RA2347-8XB30-1...**
			Spring-loaded terminals		
3	7	**S00-S00**	3RT2015-2...2	3RA2913-2AA2	**3RA2315-8XB30-2...**
4	9		3RT2016-2...2	3RA2913-2AA2	**3RA2316-8XB30-2...**
5.5	12		3RT2017-2...2	3RA2913-2AA2	**3RA2317-8XB30-2...**
7.5	16		3RT2018-2...2	3RA2913-2AA2	**3RA2318-8XB30-2...**
5.5	12	**S0-S0**	3RT2024-2...0	3RA2923-2AA2	**3RA2324-8XB30-2...**
7.5	17		3RT2025-2...0	3RA2923-2AA2	**3RA2325-8XB30-2...**
11	25		3RT2026-2...0	3RA2923-2AA2	**3RA2326-8XB30-2...**
15	32		3RT2027-2...0	3RA2923-2AA2	**3RA2327-8XB30-2...**
18.5	38		3RT2028-2...0	3RA2923-2AA2	**3RA2328-8XB30-2...**

Article number scheme

Product versions		**Article number**
SIRIUS reversing contactor assembly		**3RA23** □□ – □□□□□□ – □□□□
Size of the contactor	e.g. 4 = S3	□
Rating dependent on size	e.g. 5 = 37 kW for size S3	□
Type of overload relay	e.g. 8X = Without	□□
Assembly	e.g. E = Communication-capable installation	□
Interlock	e.g. 3 = Mechanical and electrical	□
Free auxiliary switches	e.g. 0 = S3: 2 NO total	□
Type of electrical connection	e.g. 1 = Screw terminals (main and auxiliary circuits)	□
Operating range/solenoid coil circuit	e.g. A = AC standard/without coil circuit	□
Rated control supply voltage	e.g. L2 = 230 V AC, 50/60 Hz	□□
Example		**3RA23 4 5 – 8 X E 3 0 – 1 A L 2**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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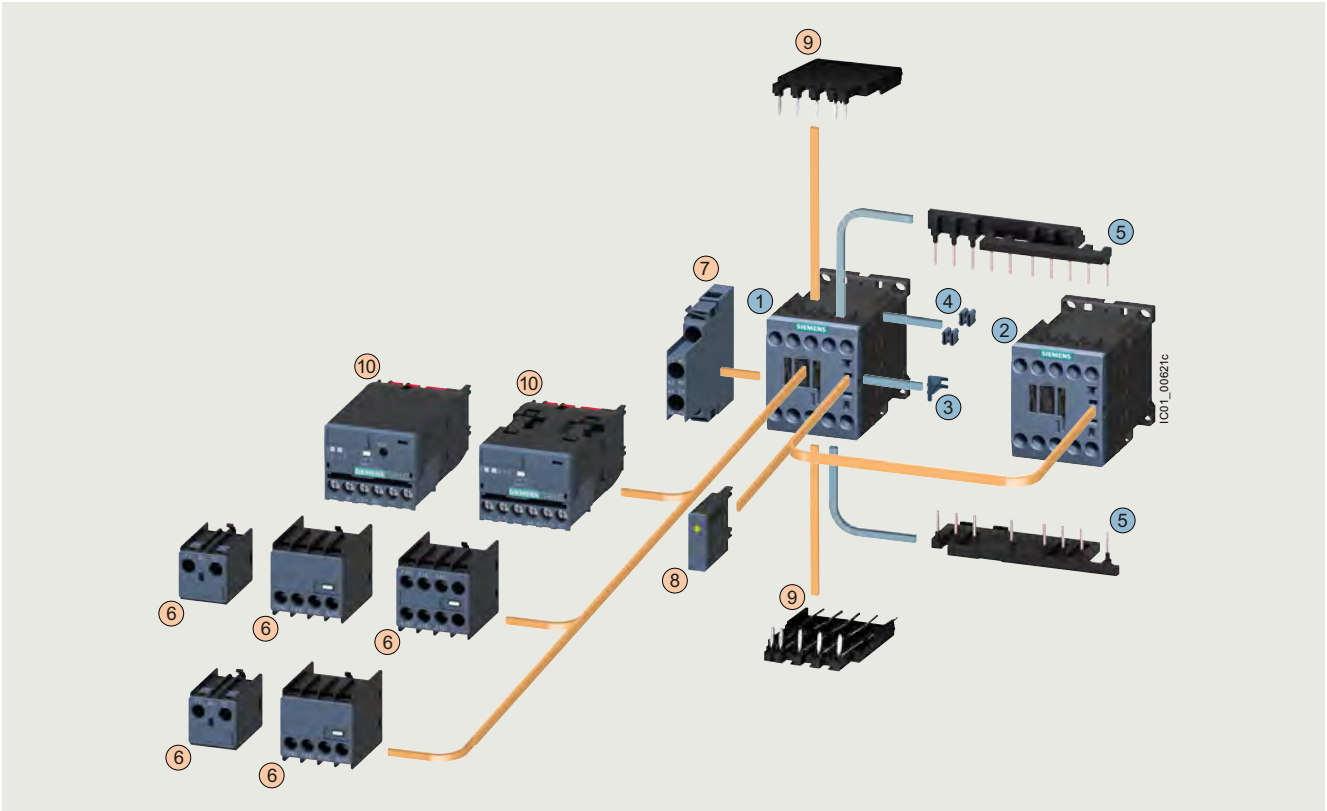
Switching devices – Contactors and contactor assemblies – for switching motors
Reversing contactor assemblies

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

Fully wired and tested reversing contactor assemblies · Size S00-S00 · Up to 7.5 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately		Type	Page
6	Auxiliary switch, front[1]	3RH2911	3/87 ... 3/89
7	Auxiliary switch, lateral	3RH2921	3/91
8	Surge suppressor	3RT2916	3/97, 3/98
9	Solder pin adapter	3RT1916-4KA1	3/111
10	Function module for connection to the control system	3RA271.-1BA00	3/101

Complete reversing contactor assembly

Individual parts		Type Q11	Type Q12	Page
1 2	Contactors, 3 kW	3RT2015	3RT2015	3/47, 3/52, 3/53
1 2	Contactors, 4 kW	3RT2016	3RT2016	3/47, 3/52, 3/53
1 2	Contactors, 5.5 kW	3RT2017	3RT2017	3/47, 3/52, 3/53
1 2	Contactors, 7.5 kW	3RT2018	3RT2018	3/47, 3/52, 3/53
3 ... 5	Assembly kit comprising:	3RA2913-2AA1		3/104
	3 Mechanical interlock[2]			
	4 Two connecting clips for two contactors[2]			
	5 Wiring modules on the top and bottom for connecting the main current paths, electrical interlock included[3], interruptible (NC contact interlock)			

[1] Auxiliary switch according to EN 50005 must be used.

[2] The parts 3 and 4 can only be ordered together as 3RA2912-2H mechanical connectors.

[3] 3RT201. contactors with one NC contact in the basic unit are required for the electrical interlock. An additional NO contact is required for momentary-contact operation.

For complete reversing contactor assemblies, see page 3/149.

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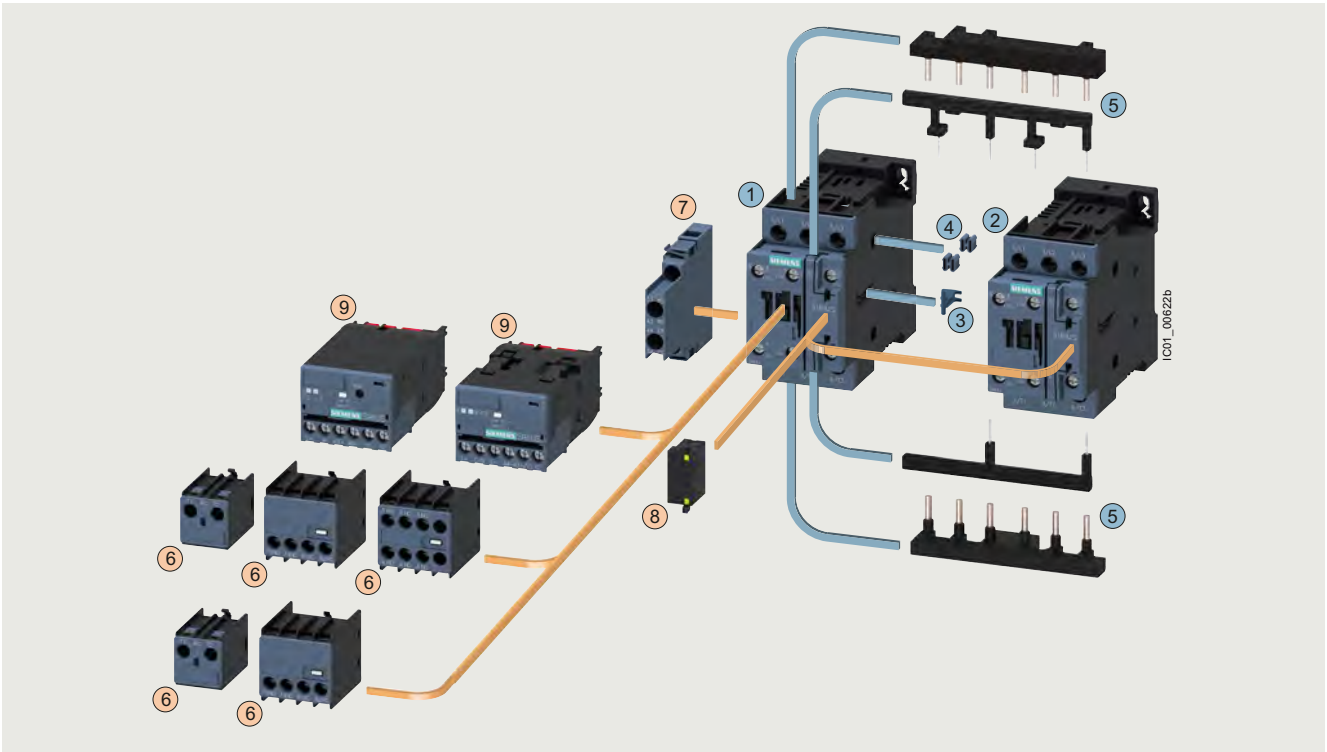
SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

Fully wired and tested reversing contactor assemblies · Size S0-S0 · Up to 18.5 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately		Type	Page
6	Auxiliary switch, front	3RH2911	3/87 ... 3/89
7	Auxiliary switch, lateral	3RH2921	3/91
8	Surge suppressor	3RT2926	3/97, 3/98
9	Function module for connection to the control system	3RA271.-1BA00	3/101

Complete reversing contactor assembly

Individual parts		Type Q11	Type Q12	Page
1 2	Contactors, 5.5 kW	3RT2024	3RT2024	3/48, 3/56, 3/57
1 2	Contactors, 7.5 kW	3RT2025	3RT2025	3/48, 3/56, 3/57
1 2	Contactors, 11 kW	3RT2026	3RT2026	3/48, 3/56, 3/57
1 2	Contactors, 15 kW	3RT2027	3RT2027	3/48, 3/56, 3/57
1 2	Contactors, 18.5 kW	3RT2028	3RT2028	3/48, 3/56, 3/57
3 ... 5	Assembly kit comprising:	3RA2923-2AA1		3/104
	3 Mechanical interlock[1)]			
	4 Two connecting clips for two contactors[1)]			
	5 Wiring modules on the top and bottom for connecting the main current paths, electrical interlock included (NC contact interlock)			

[1)] The parts 3 and 4 can only be ordered together as 3RA2922-2H mechanical connectors.

For complete reversing contactor assemblies, see page 3/150.

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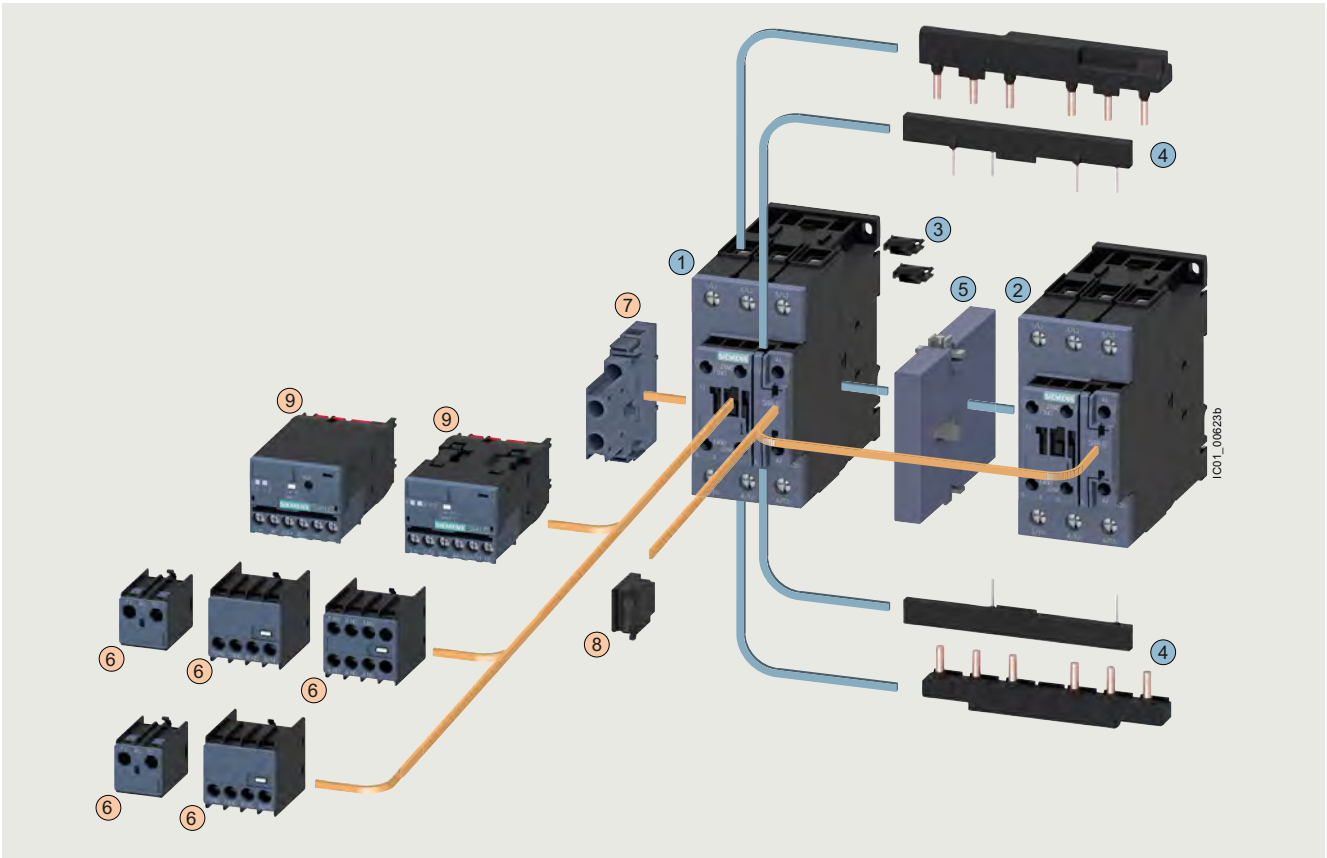
SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

Fully wired and tested reversing contactor assemblies · Size S2-S2 · Up to 37 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately		Type	Page
6	Auxiliary switch, front	3RH2911	3/87 ... 3/89
7	Auxiliary switch, lateral	3RH2921	3/91
8	Surge suppressor	3RT2936	3/97, 3/98
9	Function module for connection to the control system	3RA271.-1BA00	3/101

Complete reversing contactor assembly

Individual parts		Type Q11	Type Q12	Page
1 2	Contactors, 18.5 kW	3RT2035	3RT2035	3/50, 3/61
1 2	Contactors, 22 kW	3RT2036	3RT2036	3/50, 3/61
1 2	Contactors, 30 kW	3RT2037	3RT2037	3/50, 3/61
1 2	Contactors, 37 kW	3RT2038	3RT2038	3/50, 3/61
3 4	Assembly kit comprising:	3RA2933-2AA1		3/104
	3 Two connectors for two contactors			
	4 Wiring modules on the top and bottom for connecting the main and auxiliary circuits, electrical interlock included (NC contact interlock)			
5	Mechanical interlock	3RA2934-2B		3/108

For complete reversing contactor assemblies, see page 3/151.

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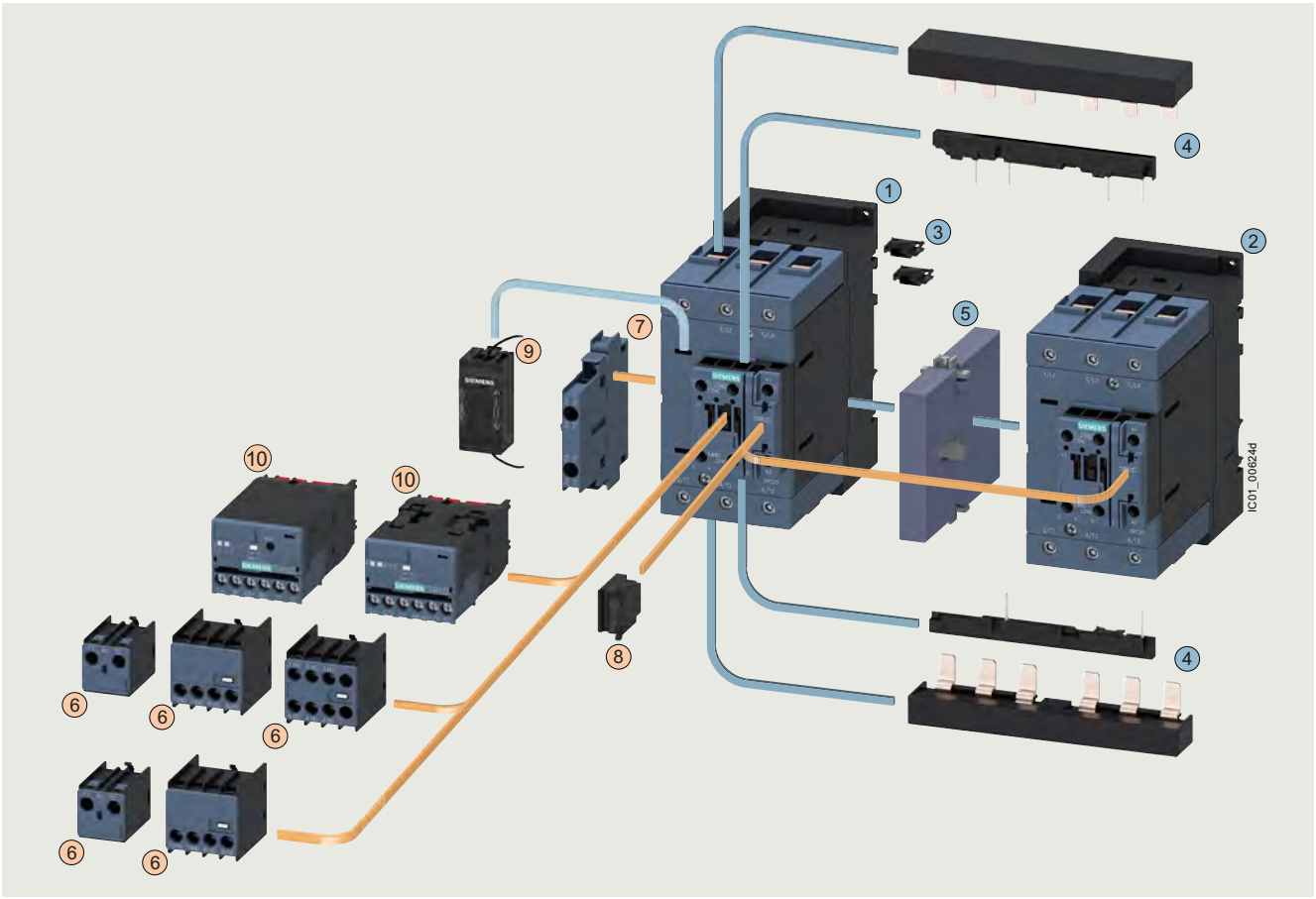
Fully wired and tested reversing contactor assemblies · Size S3-S3 · Up to 55 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately		Type	Page
6	Auxiliary switch, front	3RH2911	3/87 ... 3/89
7	Auxiliary switch, lateral	3RH2921	3/91
8	Surge suppressor (varistor, diode assembly)	3RT2936	3/97, 3/98
9	Surge suppressor (RC element)	3RT2946	3/97
10	Function module for connection to the control system (the associated module connectors 3RA2711-0EE17 must be ordered separately, see page 3/102)	3RA271.-1BA00	3/101

Complete reversing contactor assembly

Individual parts		Type Q11	Type Q12	Page
1 2	Contactors, 37 kW	3RT2045	3RT2045	3/51, 3/63
1 2	Contactors, 45 kW	3RT2046	3RT2046	3/51, 3/63
1 2	Contactors, 55 kW	3RT2047	3RT2047	3/51, 3/63
3 4	Assembly kit comprising:	3RA2943-2AA1		3/104
	3 Two connectors for two contactors			
	4 Wiring modules on the top and bottom for connecting the main and auxiliary circuits, electrical interlock included (NC contact interlock)			
5	Mechanical interlock	3RA2934-2B		3/108

For complete reversing contactor assemblies, see page 3/152.

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SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

Benefits

Using wiring kits for reversing contactor assemblies has the following advantages:

- Notable reduction of wiring in the control circuit
- Integrated mechanical interlock for sizes S00 to S3
- Prevention of wiring errors in the main circuit

Connecting combs for screw terminals also result in:

- Prevention of wiring errors in the control circuit
- Reduction of testing costs
- Ready-jumpered actuation of the auxiliary switches and the frame (A2)
- Integrated electrical interlocking

Accessories

Selecting the auxiliary switches

The following points should be noted:

Size S00

- For maintained-contact operation:
  Use contactors with an NC contact in the basic unit for the electrical interlock.
- For momentary-contact operation:
  Use contactors with an NC contact in the basic unit for the electrical interlock; in addition, an auxiliary switch with at least one NO contact for self-locking is required per contactor.

Sizes S0 to S3

- For maintained-contact operation:
  The contactors have two integrated auxiliary contacts (1 NO contact + 1 NC contact); the NC contact can be used for electrical interlocking.
- For momentary-contact operation:
  Electrical interlock as for maintained-contact operation; the NO contact in the basic unit can be used for the latching.

Surge suppression

Sizes S00 to S3

All reversing contactor assemblies can be fitted with RC elements or varistors for damping switching overvoltages in the coil.

As with the individual contactors, the surge suppressors can either be plugged onto the top of the contactors (S00) or be plugged into the front of the contactors (S0 to S3).

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16146/td	System Manual for modular system, see https://support.industry.siemens.com/cs/ww/en/view/60311318
FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16146/faq	Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/60306557
	Application Manual - Switching devices with IE3 and IE4 motors, see https://support.industry.siemens.com/cs/ww/en/view/94770820
	Guide of use for contactors in safety applications, see https://support.industry.siemens.com/cs/ww/en/view/109807687

The technical specifications are the same as for the individual contactors (see page 3/25 onwards).

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Selection and ordering data

Fully wired and tested reversing contactor assemblies*[1] · *Size S00-S00 · Up to 7.5 kW
AC operation ~ or DC operation ⎓

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RA231.-8XB30-1A.0

3RA231.-8XE30-1BB4

3RA231.-8XB30-2A.0

Rated data AC-3 and AC-3e				Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and 60 Hz				Article No.	Price per PU	Article No.	Price per PU
400 V	230 V	**400 V**	690 V					
A	kW	**kW**	kW	V				
AC operation, 50/60 Hz								
7	2.2	**3**	4	24 AC	**3RA2315-8XB30-1AB0**		**3RA2315-8XB30-2AB0**	
				110 AC	**3RA2315-8XB30-1AF0**		**3RA2315-8XB30-2AF0**	
				230 AC	**3RA2315-8XB30-1AP0**		**3RA2315-8XB30-2AP0**	
9	3	**4**	5.5	24 AC	**3RA2316-8XB30-1AB0**		**3RA2316-8XB30-2AB0**	
				110 AC	**3RA2316-8XB30-1AF0**		**3RA2316-8XB30-2AF0**	
				230 AC	**3RA2316-8XB30-1AP0**		**3RA2316-8XB30-2AP0**	
12	3	**5.5**	5.5	24 AC	**3RA2317-8XB30-1AB0**		**3RA2317-8XB30-2AB0**	
				110 AC	**3RA2317-8XB30-1AF0**		**3RA2317-8XB30-2AF0**	
				230 AC	**3RA2317-8XB30-1AP0**		**3RA2317-8XB30-2AP0**	
16	4	**7.5**	7.5	24 AC	**3RA2318-8XB30-1AB0**		**3RA2318-8XB30-2AB0**	
				110 AC	**3RA2318-8XB30-1AF0**		**3RA2318-8XB30-2AF0**	
				230 AC	**3RA2318-8XB30-1AP0**		**3RA2318-8XB30-2AP0**	
DC operation								
7	2.2	**3**	4	24 DC	**3RA2315-8XB30-1BB4**		**3RA2315-8XB30-2BB4**	
9	3	**4**	5.5	24 DC	**3RA2316-8XB30-1BB4**		**3RA2316-8XB30-2BB4**	
12	3	**5.5**	5.5	24 DC	**3RA2317-8XB30-1BB4**		**3RA2317-8XB30-2BB4**	
16	4	**7.5**	7.5	24 DC	**3RA2318-8XB30-1BB4**		**3RA2318-8XB30-2BB4**	
With voltage tap-off								
7	2.2	**3**	4	24 DC	**3RA2315-8XE30-1BB4**		**3RA2315-8XE30-2BB4**	
9	3	**4**	5.5	24 DC	**3RA2316-8XE30-1BB4**		**3RA2316-8XE30-2BB4**	
12	3	**5.5**	5.5	24 DC	**3RA2317-8XE30-1BB4**		**3RA2317-8XE30-2BB4**	
16	4	**7.5**	7.5	24 DC	**3RA2318-8XE30-1BB4**		**3RA2318-8XE30-2BB4**	

[1] The contactors integrated in the reversing contactor assemblies have no unassigned auxiliary contacts. When used with a voltage tap-off and function module, the auxiliary contacts are unassigned.

Representation of the complete reversing contactor assemblies with optionally mountable accessories, see page 3/144.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Switching devices – Contactors and contactor assemblies – for switching motors
Reversing contactor assemblies

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW *IE3/IE4* ready AC-3e

Fully wired and tested reversing contactor assemblies · Size S0-S0 · Up to 18.5 kW
AC operation ~ or DC operation ⎓

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RA232.-8XB30-1A.2

3RA2324-8XE30-1BB4

3RA232.-8XB30-2A.2

Rated data AC-3 and AC-3e				Rated control supply voltage	Screw terminals		Spring-loaded terminals	
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and 60 Hz			U_s	Article No.	Price per PU	Article No.	Price per PU
400 V	230 V	**400 V**	690 V					
A	kW	**kW**	kW	V				
AC operation, 50/60 Hz								
12	3	**5.5**	7.5	24 AC	**3RA2324-8XB30-1AC2**		**3RA2324-8XB30-2AC2**	
				110 AC	**3RA2324-8XB30-1AG2**		**3RA2324-8XB30-2AG2**	
				230 AC	**3RA2324-8XB30-1AL2**		**3RA2324-8XB30-2AL2**	
17	4	**7.5**	11	24 AC	**3RA2325-8XB30-1AC2**		**3RA2325-8XB30-2AC2**	
				110 AC	**3RA2325-8XB30-1AG2**		**3RA2325-8XB30-2AG2**	
				230 AC	**3RA2325-8XB30-1AL2**		**3RA2325-8XB30-2AL2**	
25	5.5	**11**	11	24 AC	**3RA2326-8XB30-1AC2**		**3RA2326-8XB30-2AC2**	
				110 AC	**3RA2326-8XB30-1AG2**		**3RA2326-8XB30-2AG2**	
				230 AC	**3RA2326-8XB30-1AL2**		**3RA2326-8XB30-2AL2**	
32	7.5	**15**	18.5	24 AC	**3RA2327-8XB30-1AC2**		**3RA2327-8XB30-2AC2**	
				110 AC	**3RA2327-8XB30-1AG2**		**3RA2327-8XB30-2AG2**	
				230 AC	**3RA2327-8XB30-1AL2**		**3RA2327-8XB30-2AL2**	
38	11	**18.5**	18.5	24 AC	**3RA2328-8XB30-1AC2**		**3RA2328-8XB30-2AC2**	
				110 AC	**3RA2328-8XB30-1AG2**		**3RA2328-8XB30-2AG2**	
				230 AC	**3RA2328-8XB30-1AL2**		**3RA2328-8XB30-2AL2**	
DC operation								
12	3	**5.5**	7.5	24 DC	**3RA2324-8XB30-1BB4**		**3RA2324-8XB30-2BB4**	
17	4	**7.5**	11	24 DC	**3RA2325-8XB30-1BB4**		**3RA2325-8XB30-2BB4**	
25	5.5	**11**	11	24 DC	**3RA2326-8XB30-1BB4**		**3RA2326-8XB30-2BB4**	
32	7.5	**15**	18.5	24 DC	**3RA2327-8XB30-1BB4**		**3RA2327-8XB30-2BB4**	
38	11	**18.5**	18.5	24 DC	**3RA2328-8XB30-1BB4**		**3RA2328-8XB30-2BB4**	
With voltage tap-off								
12	3	**5.5**	7.5	24 DC	**3RA2324-8XE30-1BB4**		**3RA2324-8XE30-2BB4**	
17	4	**7.5**	11	24 DC	**3RA2325-8XE30-1BB4**		**3RA2325-8XE30-2BB4**	
25	5.5	**11**	11	24 DC	**3RA2326-8XE30-1BB4**		**3RA2326-8XE30-2BB4**	
32	7.5	**15**	18.5	24 DC	**3RA2327-8XE30-1BB4**		**3RA2327-8XE30-2BB4**	
38	11	**18.5**	18.5	24 DC	**3RA2328-8XE30-1BB4**		**3RA2328-8XE30-2BB4**	

Representation of the complete reversing contactor assemblies with optionally mountable accessories, see page 3/145.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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AC-3e **IE3/IE4 ready** **SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW**

Fully wired and tested reversing contactor assemblies · Size S2-S2 · Up to 37 kW
AC operation ~ or AC/DC operation ≂

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RA233.-8XB30-1A.2

3RA233.-8XE30-1NB3

Rated data AC-3 and AC-3e				Rated control supply voltage U_s	**Screw terminals**		**Spring-loaded terminals**	
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and 60 Hz				Article No.	Price per PU	Article No.	Price per PU
400 V	230 V	**400 V**	690 V					
A	kW	**kW**	kW	V				
AC operation, 50/60 Hz								
41	11	**18.5**	22	110 AC	**3RA2335-8XB30-1AG2**		**--**	
				230 AC	**3RA2335-8XB30-1AL2**		**--**	
51	15	**22**	22	110 AC	**3RA2336-8XB30-1AG2**		**--**	
				230 AC	**3RA2336-8XB30-1AL2**		**--**	
65	18.5	**30**	37	110 AC	**3RA2337-8XB30-1AG2**		**--**	
				230 AC	**3RA2337-8XB30-1AL2**		**--**	
80	22	**37**	45	110 AC	**3RA2338-8XB30-1AG2**		**--**	
				230 AC	**3RA2338-8XB30-1AL2**		**--**	
AC/DC operation								
With integrated coil circuit (varistor integrated in electronics at the factory)								
41	11	**18.5**	22	20 ... 33 AC/DC	**3RA2335-8XB30-1NB3**		**--**	
51	15	**22**	22	20 ... 33 AC/DC	**3RA2336-8XB30-1NB3**		**--**	
65	18.5	**30**	37	20 ... 33 AC/DC	**3RA2337-8XB30-1NB3**		**--**	
80	22	**37**	45	20 ... 33 AC/DC	**3RA2338-8XB30-1NB3**		**--**	
With voltage tap-off								
41	11	**18.5**	22	20 ... 33 AC/DC	**3RA2335-8XE30-1NB3**		**--**	
51	15	**22**	22	20 ... 33 AC/DC	**3RA2336-8XE30-1NB3**		**--**	
65	18.5	**30**	37	20 ... 33 AC/DC	**3RA2337-8XE30-1NB3**		**--**	
80	22	**37**	45	20 ... 33 AC/DC	**3RA2338-8XE30-1NB3**		**--**	

Representation of the complete reversing contactor assemblies with optionally mountable accessories, see page 3/146.

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SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW *IE3/IE4* ready AC-3e

Fully wired and tested reversing contactor assemblies · Size S3-S3 · Up to 55 kW
AC operation ~ or AC/DC operation ≂

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RA234.-8XB30-1A.2

3RA234.-8XE30-1NB3

Rated data AC-3 and AC-3e				Rated control supply voltage U_s [1]	Screw terminals		Spring-loaded terminals	
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and 60 Hz				Article No.	Price per PU	Article No.	Price per PU
400 V	230 V	**400 V**	690 V					
A	kW	**kW**	kW	V				
AC operation, 50/60 Hz								
80	22	**37**	55	110 AC	**3RA2345-8XB30-1AG2**		**--**	
				230 AC	**3RA2345-8XB30-1AL2**		**--**	
95	22	**45**	75	110 AC	**3RA2346-8XB30-1AG2**		**--**	
				230 AC	**3RA2346-8XB30-1AL2**		**--**	
110	30	**55**	75	110 AC	**3RA2347-8XB30-1AG2**		**--**	
				230 AC	**3RA2347-8XB30-1AL2**		**--**	
AC/DC operation								
With integrated coil circuit (varistor integrated in electronics at the factory)								
80	22	**37**	55	20 ... 33 AC/DC	**3RA2345-8XB30-1NB3**		**--**	
95	22	**45**	75	20 ... 33 AC/DC	**3RA2346-8XB30-1NB3**		**--**	
110	30	**55**	75	20 ... 33 AC/DC	**3RA2347-8XB30-1NB3**		**--**	
With voltage tap-off [1]								
80	22	**37**	55	20 ... 33 AC/DC	**3RA2345-8XE30-1NB3**		**--**	
95	22	**45**	75	20 ... 33 AC/DC	**3RA2346-8XE30-1NB3**		**--**	
110	30	**55**	75	20 ... 33 AC/DC	**3RA2347-8XE30-1NB3**		**--**	

[1] The associated module connectors 3RA2711-0EE17 for the 3RA271. function modules must be ordered separately, see page 3/102.

Representation of the complete reversing contactor assemblies with optionally mountable accessories, see page 3/147.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Reversing contactor assemblies consisting of SIRIUS 3RT1 and 3TF6 contactors, up to 335 kW

Overview

The individual parts for the reversing contactor assemblies for customer assembly must be ordered separately.

- 3RT1 contactors (see page 3/64 onwards) and 3RT12 and 3TF6 vacuum contactors (see page 3/130 onwards):
  The operating times of the individual contactors are rated in such a way that no overlapping of the contact connection and the arcing time between two contactors can occur on reversing, provided they are interlocked by way of their auxiliary switches (NC contact interlock) and the mechanical interlock.
  For assemblies with AC operation and 50/60 Hz, a dead interval of 50 ms must be provided when used with voltages over 500 V; a dead interval of 30 ms is recommended for use with voltages up to and including 400 V. These dead times do not apply to assemblies with DC operation.
  The operating times of the individual contactors are not affected by the mechanical interlock.
- Mechanical interlocks
  - 3RT1 contactors: see page 3/108
  - 3TF68 vacuum contactors: Locking device for mechanical interlock, see page 3/135.
- Wiring kits consisting of wiring modules on the top and bottom
  - 3RT1 contactors: see page 3/104
  - 3TF68 vacuum contactors: see page 3/135
- Base plates
  - 3RT1 contactors: see page 3/113
  - 3TF68 vacuum contactors: see page 3/135

Additional components

- For momentary-contact operation: auxiliary switch (NO contact) for self-locking
- 3RB2 overload relays (see page 7/114 onwards), SIMOCODE pro 3UF7 motor management and control devices (see page 10/12 onwards) or 3RN2 thermistor motor protection relays (see page 10/136 onwards) can be used for overload protection.

More information

Homepage, see www.siemens.com/sirius

Industry Mall, see www.siemens.com/product?3RA23_3RT1

Guide of use for contactors in safety applications, see https://support.industry.siemens.com/cs/ww/en/view/109807687

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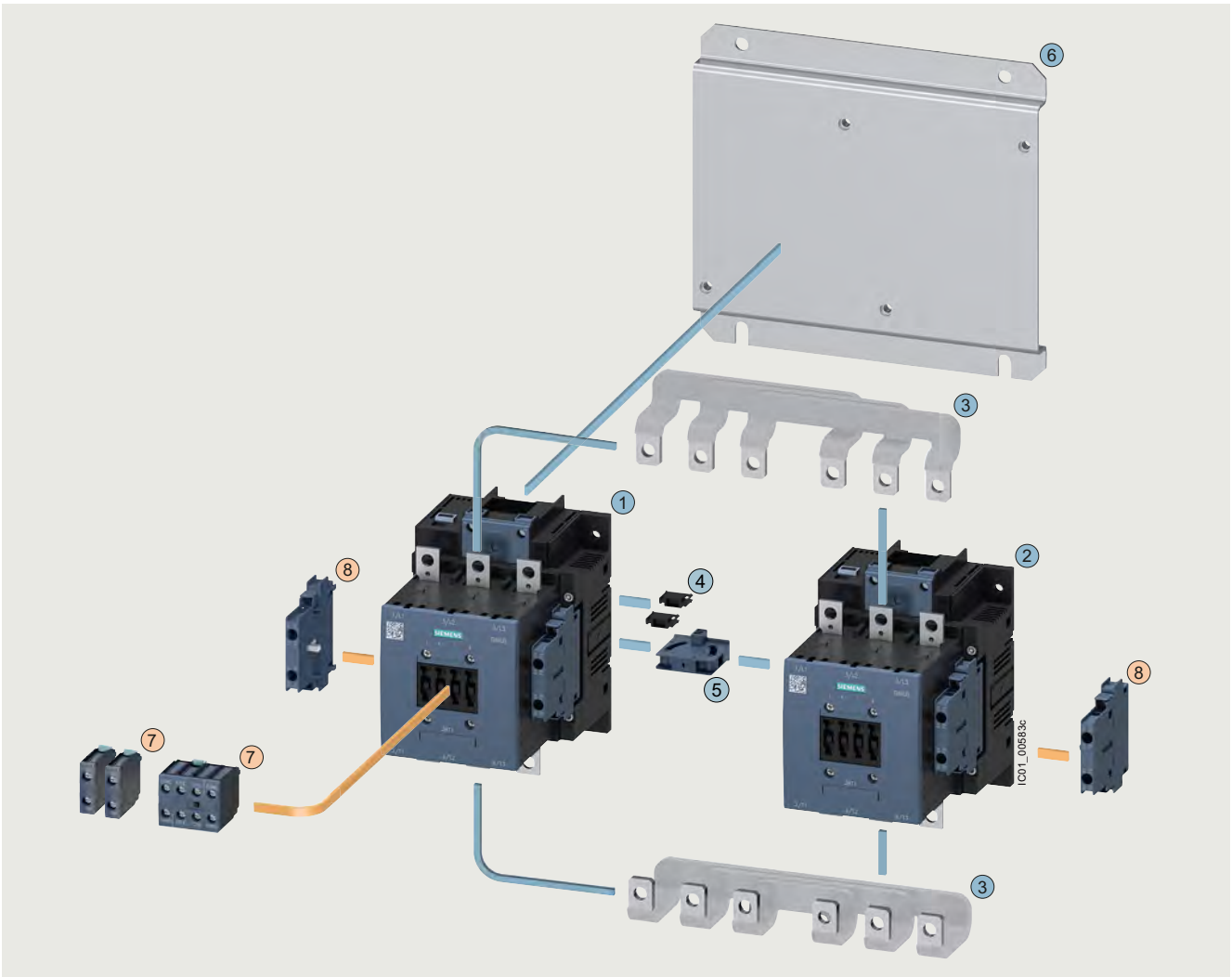
Reversing contactor assemblies consisting of SIRIUS 3RT1 and 3TF6 contactors, up to 335 kW

Reversing contactor assemblies for customer assembly · Size S6-S6 · Up to 90 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
⑦ Auxiliary switch, front	3RH1921	3/90
⑧ Auxiliary switch, lateral	3RH1921	3/92

Reversing contactor assembly for customer assembly

Individual parts	Type Q11	Type Q12	Page
①② Contactors, 55 kW	3RT1054	3RT1054	3/64 ... 3/66
①② Contactors, 75 kW	3RT1055	3RT1055	3/64 ... 3/66
①② Contactors, 90 kW	3RT1056	3RT1056	3/64 ... 3/66
③ Assembly kit consisting of: Wiring modules on the top and bottom for contactors without box terminals for connecting the main and auxiliary circuits, electrical interlock included (NC contact interlock)	3RA1953-2A		3/104
④ Two connectors for two contactors	3RA1932-2D		3/108
⑤ Mechanical interlock	3RA1954-2A		3/108
⑥ Base plate for reversing contactor assemblies	3RA1952-2A		3/113

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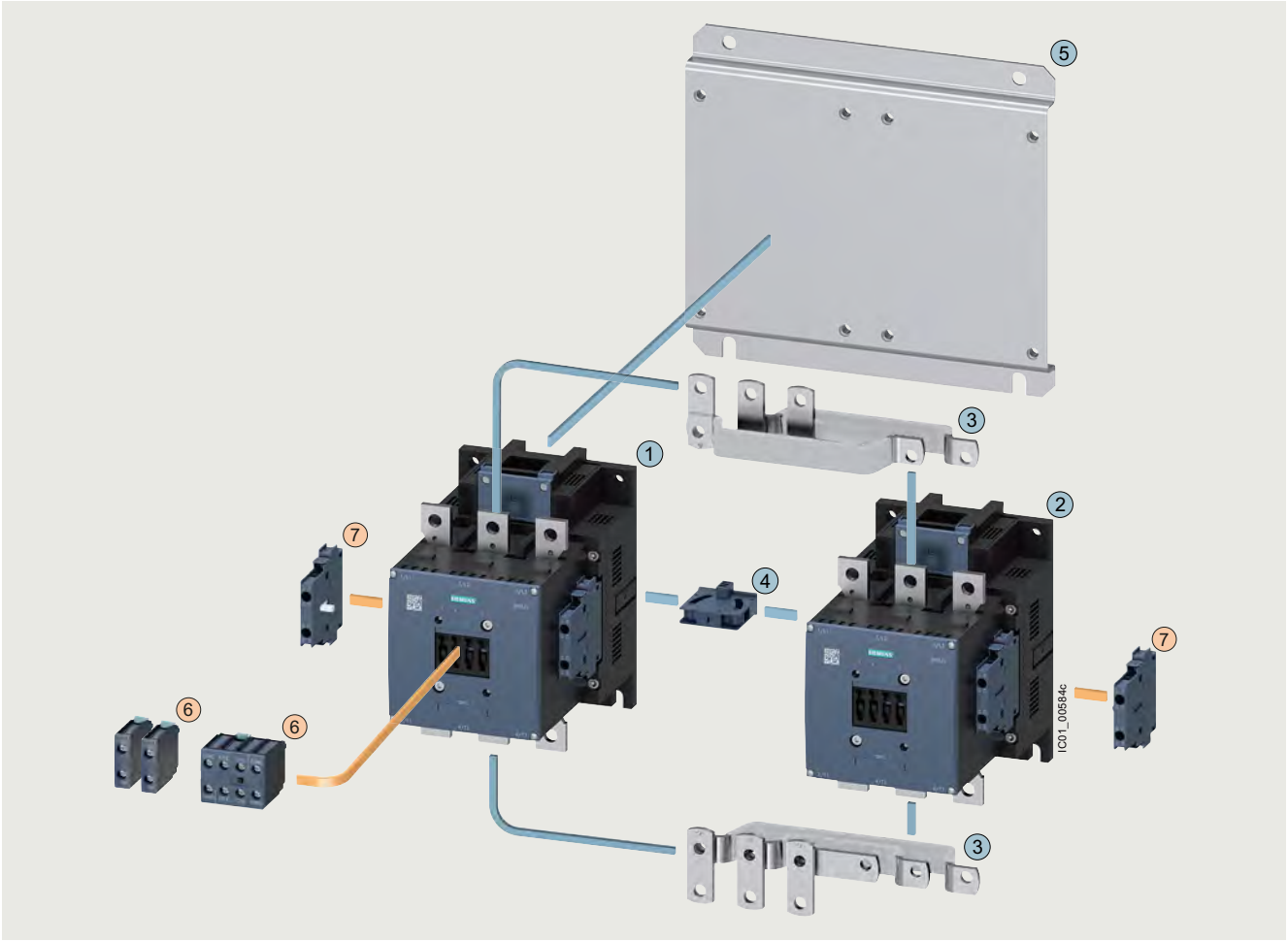
Reversing contactor assemblies consisting of SIRIUS 3RT1 and 3TF6 contactors, up to 335 kW

Reversing contactor assemblies for customer assembly · Size S10-S10 · Up to 160 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
⑥ Auxiliary switch, front	3RH1921	3/90
⑦ Auxiliary switch, lateral	3RH1921	3/92

Reversing contactor assembly for customer assembly

Individual parts		Type Q11	Type Q12	Page
①②	Contactors, 110 kW	3RT1.64	3RT1.64	3/64 ... 3/66, 3/130
①②	Contactors, 132 kW	3RT1.65	3RT1.65	3/64 ... 3/66, 3/130
①②	Contactors, 160 kW	3RT1.66	3RT1.66	3/64 ... 3/66, 3/130
③	Assembly kit consisting of: Wiring modules on the top and bottom for contactors without box terminals for connecting the main and auxiliary circuits, electrical interlock included (NC contact interlock)	3RA1963-2A		3/104
④	Mechanical interlock	3RA1954-2A		3/108
⑤	Base plate for reversing contactor assemblies	3RA1962-2A		3/113

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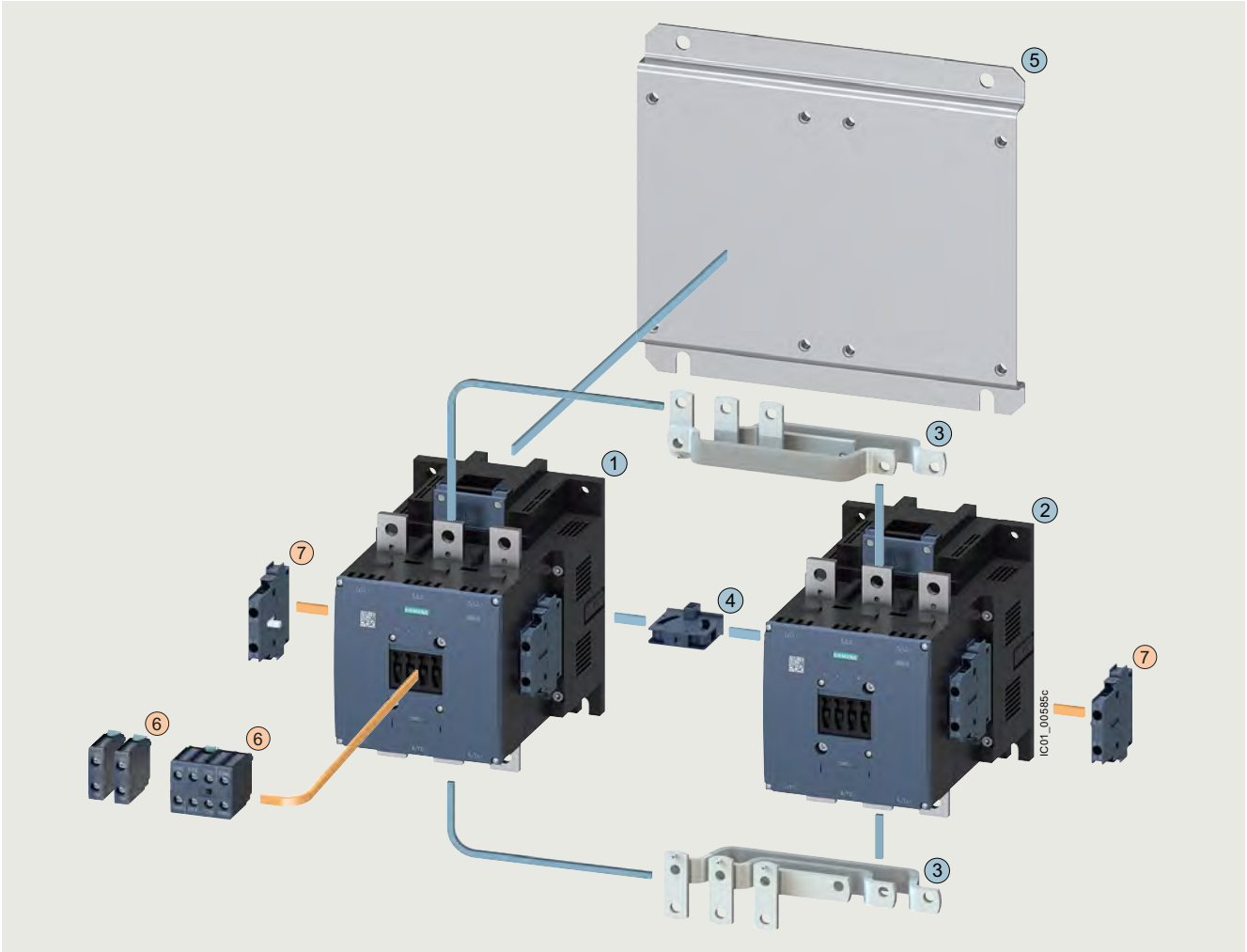
Reversing contactor assemblies consisting of SIRIUS 3RT1 and 3TF6 contactors, up to 335 kW

Reversing contactor assemblies for customer assembly · Size S12-S12 · Up to 250 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
⑥ Auxiliary switch, front	3RH1921	3/90
⑦ Auxiliary switch, lateral	3RH1921	3/92

Reversing contactor assembly for customer assembly

Individual parts	Type Q11	Type Q12	Page
①② Contactors, 200 kW	3RT1.75	3RT1.75	3/64 ... 3/66, 3/130
①② Contactors, 250 kW	3RT1.76	3RT1.76	3/64 ... 3/66, 3/130
③ Assembly kit consisting of: Wiring modules on the top and bottom for contactors without box terminals for connecting the main and auxiliary circuits, electrical interlock included (NC contact interlock)	3RA1973-2A		3/104
④ Mechanical interlock	3RA1954-2A		3/108
⑤ Base plate for reversing contactor assemblies	3RA1972-2A		3/113

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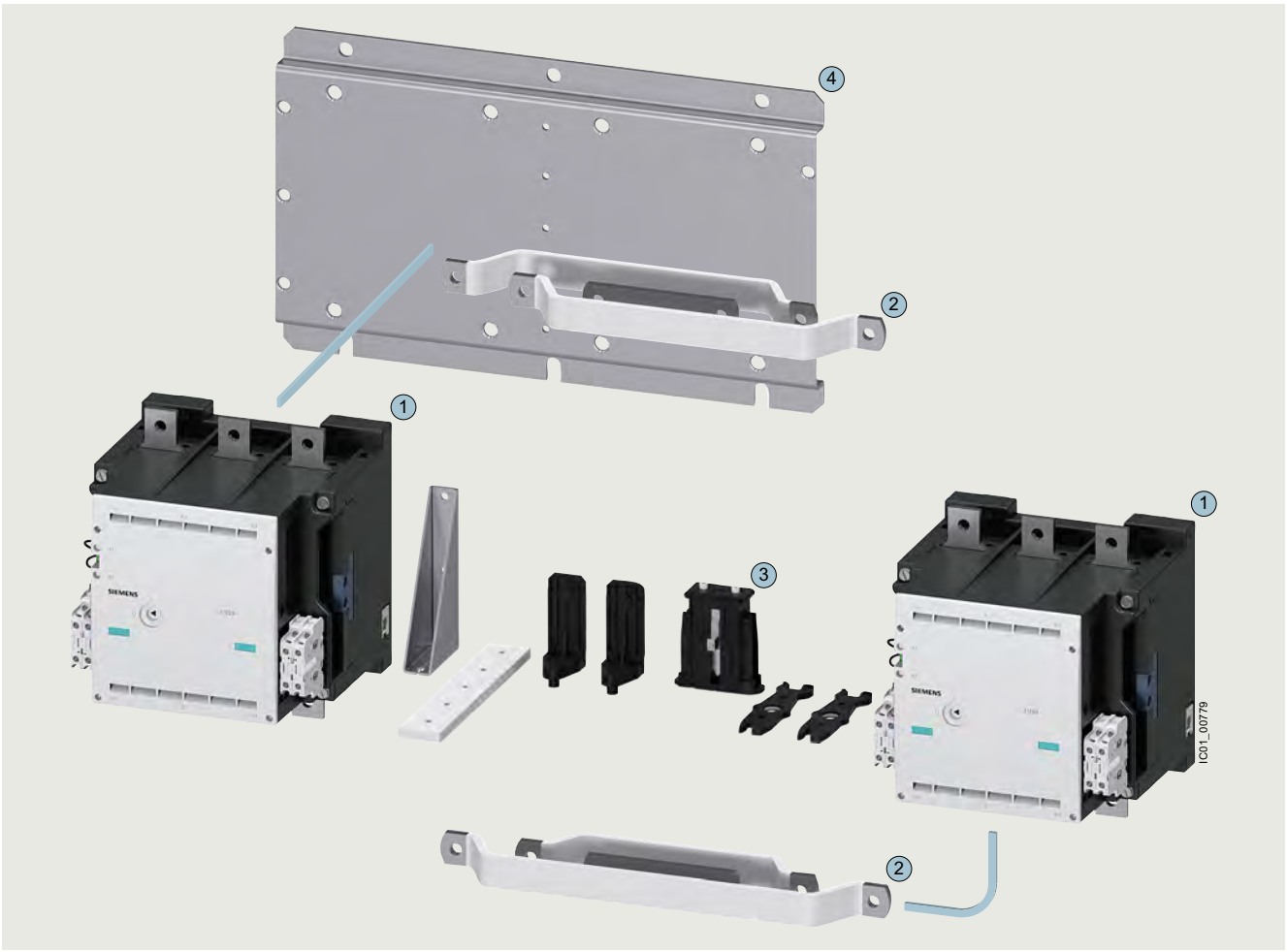
Reversing contactor assemblies consisting of SIRIUS 3RT1 and 3TF6 contactors, up to 335 kW

Reversing contactor assemblies for customer assembly · Size 14-14 · Up to 335 kW



Reversing contactor assembly for customer assembly

Individual parts		Type		Page
		Q11	Q12	
①	Vacuum contactors, 335 kW	3TF68	3TF68	3/131, 3/132
②	Assembly kit consisting of: Wiring modules on the top and bottom for connecting the main and auxiliary circuits, electrical interlock included (NC contact interlock)	3TX7680-1A		3/135
③	Locking device for mechanical interlock	3TX7686-1A		3/135
④	Base plate for reversing contactor assemblies	3TX7681-1A		3/135

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SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Overview

More information	
Homepage, see www.siemens.com/sirius Industry Mall, see www.siemens.com/product?3RA24_3RT Conversion tool, see www.siemens.com/conversion-tool	TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=LoadFeeder Guide of use for contactors in safety applications, see https://support.industry.siemens.com/cs/ww/en/view/109807687

The 3RA24 contactor assemblies for star-delta (wye-delta) starting in sizes S00 to S3 can be ordered as follows:

- Fully wired and tested, with electrical and mechanical interlock, see page 3/167 onwards.
- For all individual parts for customer assembly, see page 3/69 onwards.

The 3RA24 contactor assemblies for star-delta (wye-delta) starting have screw terminals or spring-loaded terminals and are suitable for screw fixing and snap-on mounting on TH 35 DIN rails.

A base plate is also available for the size S2 and S3 assemblies.

A dead interval of 50 ms on reversing is already integrated in the 3RA28 function module for star-delta (wye-delta) starting.

With the fully wired and tested 3RA24 contactor assemblies for star-delta (wye-delta) starting, the auxiliary contacts included in the basic units are unassigned.

The 3RA24 contactor assemblies for star-delta (wye-delta) starting are designed for standard applications.

Note:

Contactor assemblies for star-delta (wye-delta) starting in special applications such as very heavy starting[1] or star-delta (wye-delta) starting of special motors must be customized. Help with designing such special applications is available from our Technical Support, www.siemens.com/support-request.

[1] For effective assistance from Technical Support, you must provide the following details:
- Rated motor voltage,
- Rated motor current,
- Service factor, operating values
- Motor starting current factor
- Starting time
- Ambient temperature

Surge suppression

Surge suppression (varistor) is included in the 3RA28 function modules for star-delta (wye-delta) starting.

Motor protection

3RU2 overload relays (see page 7/89 onwards) or 3RB3 overload relays (see page 7/102 onwards) for contactor mounting or stand-alone installation, SIMOCODE pro 3UF7 motor management and control devices (see page 10/12 onwards) or 3RN2 thermistor motor protection relays (see page 10/136 onwards) can be used for motor protection.

The overload relay can either be mounted on the line contactor or fitted separately. It must be set to 0.58 times the rated motor current.

SIRIUS 3RA28 function module for star-delta (wye-delta) starting

The 3RA2816-0EW20 star-delta (wye-delta) function module (see page 3/100) replaces the complete wiring in the control circuit and can be used in the voltage range from 24 to 240 V AC/DC. It is snapped onto the front of the contactor assembly for star-delta (wye-delta) starting size S00, S0, S2 or S3.

One function module comprises a complete module kit:

- Basic module with integrated control logic and time setting
- Two coupling modules with corresponding connecting cables

The scope of supply thus comprises a complete module kit for one contactor assembly for star-delta (wye-delta) starting in size S00, S0, S2 or S3, regardless of the connection method.

Data of the control circuit:

- Wide voltage range 24 to 240 V AC/DC
- Time setting range 0.5 to 60 s (3 selectable settings)
- Dead interval of 50 ms, non-adjustable

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Complete units

Note:

The selection of contactor types refers to fused designs.

Rated data at 50 Hz 400 V AC			Size	Type		
Rating ***P*** **kW**	Operational current I_e A	Motor current A		Line/delta contactor	Star contactor	**Fully wired and tested contactor assemblies for star-delta (wye-delta) starting**
				Screw terminals		
5.5	12	9.5 ... 13.8	**S00-S00-S00**	3RT2015-1....	3RT2015-1....	**3RA2415-8XF31-1...**
7.5	16	12.1 ... 17		3RT2017-1....	3RT2015-1....	**3RA2416-8XF31-1...**
11	25	19 ... 25		3RT2018-1....	3RT2016-1....	**3RA2417-8XF31-1...**
11	25	19 ... 25	**S0-S0-S0**	3RT2024-1...0	3RT2024-1...0	**3RA2423-8XF32-1...**
15	32	24.1 ... 34		3RT2026-1...0	3RT2024-1...0	**3RA2425-8XF32-1...**
18.5	40	34.5 ... 40		3RT2026-1...0	3RT2024-1...0	**3RA2425-8XF32-1...**
22	50	31 ... 43		3RT2027-1...0	3RT2026-1...0	**3RA2426-8XF32-1...**
22/30	50	31 ... 43	**S2-S2-S0**	3RT2035-1...0	3RT2026-1...0	**3RA2434-8XF32-1...**
37	80	62.1 ... 77.8		3RT2035-1...0	3RT2027-1...0	**3RA2435-8XF32-1...**
45	86	69 ... 86		3RT2036-1...0	3RT2028-1...0	**3RA2436-8XF32-1...**
55	115	77.6 ... 108.6	**S2-S2-S2**	3RT2037-1...0	3RT2035-1...0	**3RA2437-8XF32-1...**
55	115	77.6 ... 108.6	**S3-S3-S2**	3RT2045-1...0	3RT2035-1...0	**3RA2444-8XF32-1...**
75	150	120.7 ... 150		3RT2045-1...0	3RT2036-1...0	**3RA2445-8XF32-1...**
90	160	86 ... 160		3RT2046-1...0	3RT2037-1...0	**3RA2446-8XF32-1...**
				Spring-loaded terminals		
5.5	12	9.5 ... 13.8	**S00-S00-S00**	3RT2015-2....	3RT2015-2....	**3RA2415-8XF31-2...**
7.5	16	12.1 ... 17		3RT2017-2....	3RT2015-2....	**3RA2416-8XF31-2...**
11	25	19 ... 25		3RT2018-2....	3RT2016-2....	**3RA2417-8XF31-2...**
11	25	19 ... 25	**S0-S0-S0**	3RT2024-2...0	3RT2024-2...0	**3RA2423-8XF32-2...**
15	32	24.1 ... 34		3RT2026-2...0	3RT2024-2...0	**3RA2425-8XF32-2...**
18.5	40	34.5 ... 40		3RT2026-2...0	3RT2024-2...0	**3RA2425-8XF32-2...**
22	50	31 ... 43		3RT2027-2...0	3RT2026-2...0	**3RA2426-8XF32-2...**

Article number scheme

Product versions		**Article number**
SIRIUS contactor assembly for star-delta (wye-delta) starting		**3RA24** □ □ – □ □ □ □ □ □ – □ □ □ □
Size of the contactor	e.g. 4 = S3	□
Rating dependent on size	e.g. 5 = 75 kW for size S3	□
Type of overload relay	e.g. 8X = Without	□ □
Assembly	e.g. F = Ready-assembled with function modules	□
Interlock	e.g. 3 = Mechanical and electrical	□
Free auxiliary switches	e.g. 2 = S3: 3 NO + 3 NC total	□
Type of electrical connection	e.g. 1 = Screw terminals (main and auxiliary circuits)	□
Operating range/solenoid coil circuit	e.g. A = AC standard/without coil circuit	□
Rated control supply voltage	e.g. L2 = 230 V AC, 50/60 Hz	□ □
Example		**3RA24 4 5 – 8 X F 3 2 – 1 A L 2**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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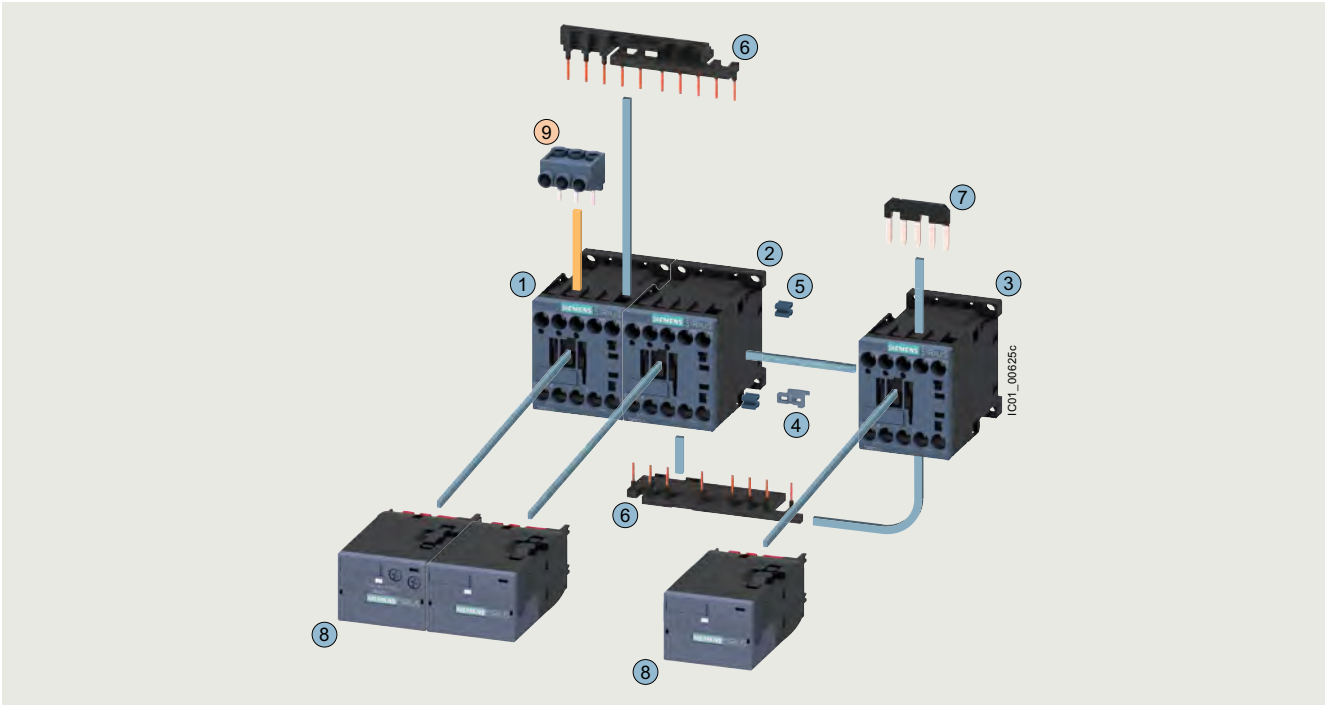
SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S00-S00-S00 · Up to 11 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately	Type	Page
(9) 3-phase infeed terminal[1]	3RA2913-3K	3/110

Complete contactor assembly for star-delta (wye-delta) starting

Individual parts		Type Q11[2]	Type Q13	Type Q12	Page
(1)(2)(3)	Contactors, 5.5 kW	3RT2015	3RT2015	3RT2015	3/47, 3/52
(1)(2)(3)	Contactors, 7.5 kW	3RT2017	3RT2017	3RT2015	3/47, 3/52
(1)(2)(3)	Contactors, 11 kW	3RT2018	3RT2018	3RT2016	3/47, 3/52
(4) ... (7)	Assembly kit S00-S00-S00 comprising: (4) Mechanical interlock (5) Four connecting clips for three contactors (6) Wiring modules on top and bottom for connecting the main and auxiliary circuits (7) Star jumper	3RA2913-2BB1			3/105
(8)	Function modules for star-delta (wye-delta) starting	3RA2816-0EW20			3/100

[1] Part (9) can only be mounted for contactors with screw terminals.
[2] The version with 1 NO is required for momentary-contact operation.

Complete contactor assemblies for star-delta (wye-delta) starting, see page 3/167.

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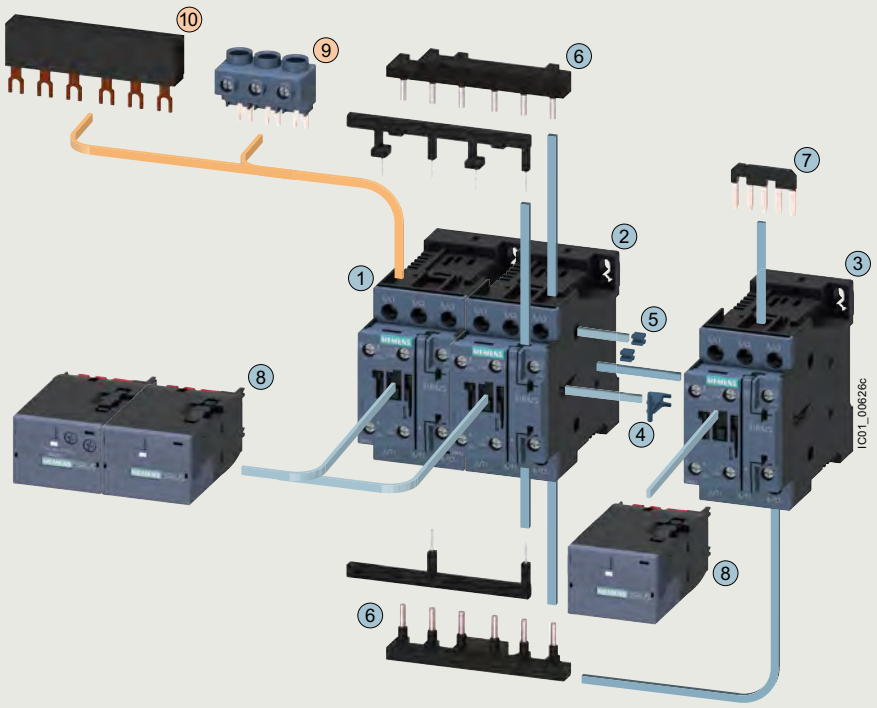
SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S0-S0-S0 · Up to 22 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately	Type	Page
(9) 3-phase infeed terminal[1)]	3RV2925-5AB	3/110
(10) 3-phase busbar[1)]	3RV1915-1AB	3/110

Complete contactor assembly for star-delta (wye-delta) starting

Individual parts	Type			Page
	Q11	Q13	Q12	
(1)(2)(3) Contactors, 11 kW	3RT2024	3RT2024	3RT2024	3/48, 3/56
(1)(2)(3) Contactors, 15/18.5 kW	3RT2026	3RT2026	3RT2024	3/48, 3/56
(1)(2)(3) Contactors, 22 kW	3RT2027	3RT2027	3RT2026	3/48, 3/56
(4) ... (7) Assembly kit S0-S0-S0 comprising:	3RA2923-2BB1			3/105
(4) Mechanical interlock				
(5) Four connecting clips for three contactors				
(6) Wiring modules on top and bottom for connecting the main and auxiliary circuits				
(7) Star jumper				
(8) Function modules for star-delta (wye-delta) starting	3RA2816-0EW20			3/100

[1)] The parts (9) and (10) can only be mounted for contactors with screw terminals, the wiring modules (6) must be removed beforehand.

Complete contactor assemblies for star-delta (wye-delta) starting, see page 3/168.

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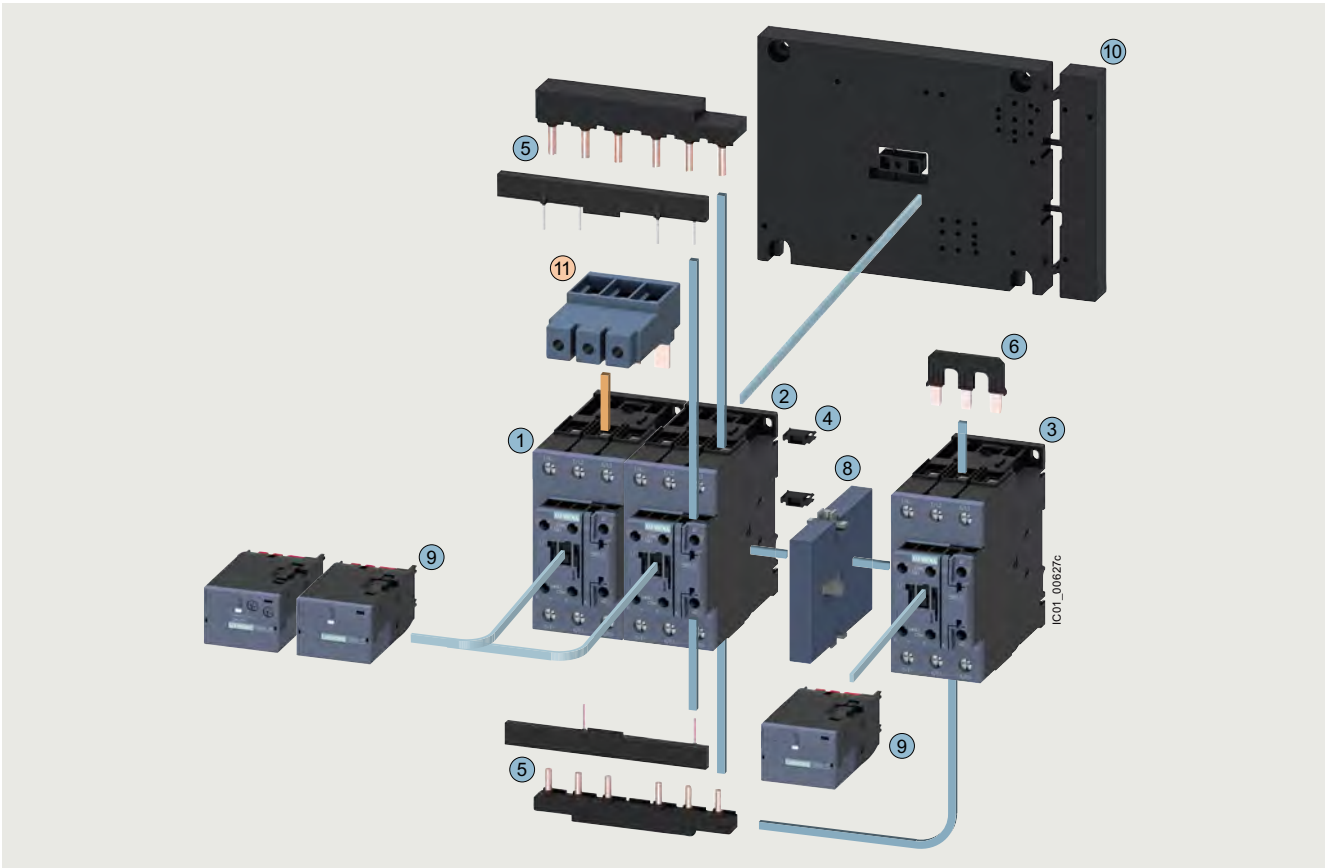
SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S2-S2-S0[1] · Up to 45 kW and S2-S2-S2 · 55 kW

The figure shows the version with screw terminals in S2-S2-S2



Mountable accessories (optional)

To be ordered separately	Type	Page
(11) 3-phase infeed terminal	3RV2935-5A	3/110

Complete contactor assembly for star-delta (wye-delta) starting

Individual parts		Type Q11	Q13	Q12	Page
(1)(2)(3)	Contactors, 22/30 kW	3RT2035	3RT2035	3RT2026	3/50, 3/61
(1)(2)(3)	Contactors, 37 kW	3RT2035	3RT2035	3RT2027	3/50, 3/61
(1)(2)(3)	Contactors, 45 kW	3RT2036	3RT2036	3RT2028	3/50, 3/61
(1)(2)(3)	Contactors, 55 kW	3RT2037	3RT2037	3RT2035	3/50, 3/61
(4) ... (7)	Assembly kit S2-S2-S2 comprising:	3RA2933-2BB1			3/105
	(4) Four connectors for three contactors (not required for fully pre-wired contactor assemblies for star-delta (wye-delta) starting)				
	(5) Wiring modules on top and bottom for connecting the main and auxiliary circuits				
	(6) Star jumper S2				
	(7) Cable for connecting the A2 coil contact of the line contactor with the A2 coil contact of the delta contactor (not shown in the drawing)				
(8)	Mechanical interlock	3RA2934-2B			3/108
(9)	Function modules for star-delta (wye-delta) starting	3RA2816-0EW20			3/100
(10)	Base plate star-delta (wye-delta)	3RA2932-2F			3/113

[1] Complete contactor assembly for star-delta (wye-delta) starting in size S2-S2-S0 (not shown): The 3RA2933-2C assembly kit is to be used here, see page 3/105.

Complete contactor assemblies for star-delta (wye-delta) starting, see page 3/169.

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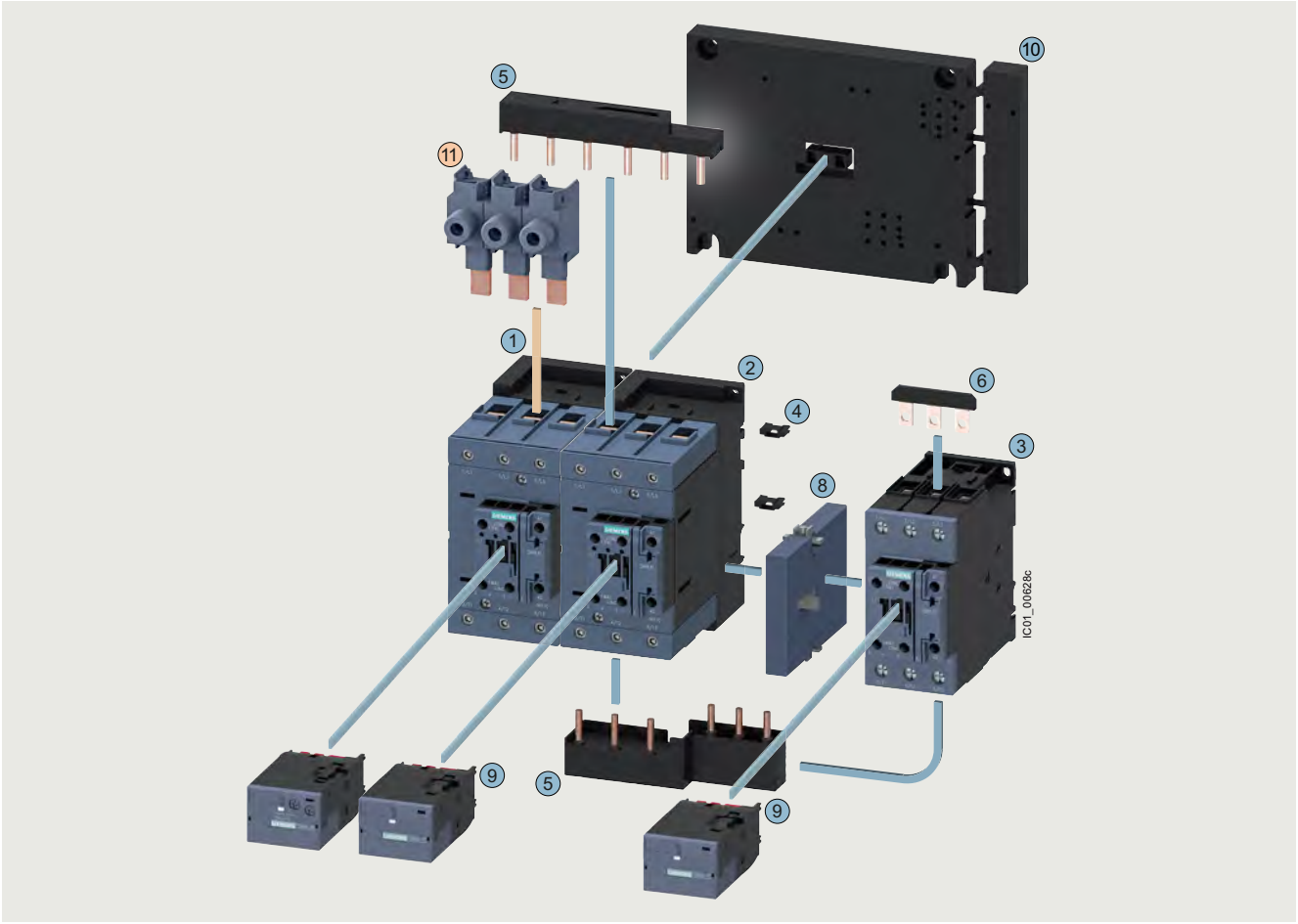
SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S3-S3-S2[1] · Up to 90 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
(11) 1-phase infeed terminal (three units are required)	3RA2943-3L	3/110

Complete contactor assembly for star-delta (wye-delta) starting

Individual parts		Type Q11	Type Q13	Type Q12	Page
(1)(2)(3)	Contactors, 55 kW	3RT2045	3RT2045	3RT2035	3/51, 3/63
(1)(2)(3)	Contactors, 75 kW	3RT2045	3RT2045	3RT2036	3/51, 3/63
(1)(2)(3)	Contactors, 90 kW	3RT2046	3RT2046	3RT2037	3/51, 3/63
(4) ... (7)	Assembly kit S3-S3-S2 comprising:	3RA2943-2C			3/105
	(4) Two connectors for three contactors (not required for fully pre-wired contactor assemblies for star-delta (wye-delta) starting)				
	(5) Wiring modules on top and bottom (S3-S2) for connecting the main and auxiliary circuits and a cable set for the auxiliary circuit				
	(6) Star jumper S2				
	(7) Cable for connecting the A2 coil contact of the line contactor with the A2 coil contact of the delta contactor (not shown in the drawing)				
(8)	Mechanical interlock	3RA2934-2B			3/108
(9)	Function modules for star-delta (wye-delta) starting	3RA2816-0EW20			3/100
(10)	Base plate star-delta (wye-delta)	3RA2942-2F			3/113

[1] Contactor assembly for star-delta (wye-delta) starting for customer assembly in size S3-S3-S3 (not shown): The 3RA2943-2BB. assembly kit is to be used here, see page 3/105.

Complete contactor assemblies for star-delta (wye-delta) starting, see page 3/170.

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SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Technical specifications

More information

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16150/td

FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16150/faq

System Manual for modular system, see https://support.industry.siemens.com/cs/ww/en/view/60311318

Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/60306557

Application Manual - Switching devices with IE3 and IE4 motors, see https://support.industry.siemens.com/cs/ww/en/view/94770820

Guide of use for contactors in safety applications, see https://support.industry.siemens.com/cs/ww/en/view/109807687

Unless otherwise indicated below, the technical specifications correspond to those of the 3RT individual contactors (see page 3/25 onwards) and 3RU2 overload relays (see page 7/85 onwards).

Type		3RA2415	3RA2416	3RA2417	3RA2423	3RA2425	3RA2426
Sizes		S00-S00-S00	S00-S00-S00	S00-S00-S00	S0-S0-S0	S0-S0-S0	S0-S0-S0
General data							
Dimensions (W x H x D) with function module							
• AC operation							
- Screw terminals	mm	135 x 68 x 145			135 x 101 x 171		
- Spring-loaded terminals	mm	135 x 84 x 145			135 x 114 x 171		
• DC operation							
- Screw terminals	mm	135 x 68 x 145			135 x 101 x 181		
- Spring-loaded terminals	mm	135 x 84 x 145			135 x 114 x 181		
Individual contactors							
• Q11 line contactor	Type	3RT2015	3RT2017	3RT2018	3RT2024	3RT2026	3RT2027
• Q13 delta contactor	Type	3RT2015	3RT2017	3RT2018	3RT2024	3RT2026	3RT2027
• Q12 star contactor	Type	3RT2015	3RT2015	3RT2016	3RT2024	3RT2024	3RT2026
Mechanical endurance	Operating cycles	3 million					
Unassigned auxiliary contacts of the individual contactors		For circuit diagrams of the control circuit, see Equipment Manual for contactors/contactor assemblies					
Short-circuit protection							
Main circuit without overload relays							
Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE with single or double infeed							
• Highest rated current of the fuse according to IEC 60947-4-1							
- Type of coordination "1"	A	35		63		100	125
- Type of coordination "2"	A	20		25		35	63
Auxiliary circuit							
Short-circuit test							
• With fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA according to IEC 60947-5-1	A A	10 6 (up to I_k < 0.5 kA; ≤ 260 V), if the auxiliary contact of the overload relay is connected in the contactor coil circuit					
• With miniature circuit breaker, C characteristic with short-circuit current I_k = 400 A	A A	10 6 (up to I_k < 0.5 kA; ≤ 260 V), if the auxiliary contact of the overload relay is connected in the contactor coil circuit					
Short-circuit protection with overload relay		See Configuration Manual for load feeders					

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SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Type			3RA2415	3RA2416	3RA2417	3RA2423	3RA2425	3RA2426
Sizes			S00-S00-S00	S00-S00-S00	S00-S00-S00	S0-S0-S0	S0-S0-S0	S0-S0-S0
Rated data of the main contacts								
Current-carrying capacity with reversing time up to 10 s								
• Rated operational current I_e	at 400 V	A	12	17	25		40	55
	690 V	A	6.9	9	20.8		22.5	35
• Rated power for three-phase motors at 50 Hz and 60 Hz	at 230 V	kW	3.3	4.7	7.2		12	16.6
	400 V	kW	5.8	8.2	12.5		21	30.1
	690 V	kW	5.8	7.5	18		20.4	33
• **Switching frequency** with overload relay		1/h	15					
Current-carrying capacity with reversing time up to 15 s								
• Rated operational current I_e	at 400 V	A	12	17	25		31	44
	690 V	A	6.9	9	20.8		22.5	35
• Rated power for three-phase motors at 50 Hz and 60 Hz	at 230 V	kW	3.3	4.7	7.2		9.4	13.8
	400 V	kW	5.8	8.2	12.5		16.3	24
	690 V	kW	5.8	7.5	18		20.4	33
• **Switching frequency** with overload relay		1/h	15					
Current-carrying capacity with reversing time up to 20 s								
• Rated operational current I_e	at 400 V	A	12	17	25		28	39
	690 V	A	6.9	9	20.8		22.5	35
• Rated power for three-phase motors at 50 Hz and 60 Hz	at 230 V	kW	3.3	4.7	7.2		8.5	12.2
	400 V	kW	5.8	8.2	12.5		14.7	21.3
	690 V	kW	5.8	7.5	18		20.4	33
• **Switching frequency** with overload relay		1/h	15					

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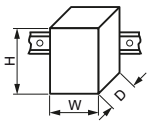
SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Type			3RA2434	3RA2435	3RA2436	3RA2437	3RA2444	3RA2445	3RA2446
Sizes			S2-S2-S0	S2-S2-S0	S2-S2-S0	S2-S2-S2	S3-S3-S2	S3-S3-S2	S3-S3-S2
General data									
Dimensions (W x H x D) with function module 									
• AC and DC operation									
- Screw terminals		mm	177.5 x 142 x 223				220 x 180 x 244		
Individual contactors									
• Q11 line contactor		Type	3RT2035	3RT2035	3RT2036	3RT2037	3RT2045	3RT2045	3RT2046
• Q13 delta contactor		Type	3RT2035	3RT2035	3RT2036	3RT2037	3RT2045	3RT2045	3RT2046
• Q12 star contactor		Type	3RT2026	3RT2027	3RT2028	3RT2035	3RT2035	3RT2036	3RT2037
Mechanical endurance		Operating cycles	1 million						
Unassigned auxiliary contacts of the individual contactors			For circuit diagrams of the control circuit, see Equipment Manual.						
Short-circuit protection									
Main circuit without overload relays									
Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE with single or double infeed									
• Highest rated current of the fuse according to IEC 60947-4-1									
- Type of coordination "1"		A	160			250			
- Type of coordination "2"		A	80			125	160		
Auxiliary circuit									
Short-circuit test									
• With fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA according to IEC 60947-5-1		A A	10 6 (up to I_k < 0.5 kA; ≤ 260 V), if the auxiliary contact of the overload relay is connected in the contactor coil circuit						
• With miniature circuit breaker, C characteristic with short-circuit current I_k = 400 A		A A	10 6 (up to I_k < 0.5 kA; ≤ 260 V), if the auxiliary contact of the overload relay is connected in the contactor coil circuit						
Short-circuit protection with overload relay			See Configuration Manual for load feeders				On request		
Rated data of the main contacts									
Current-carrying capacity with reversing time up to 10 s									
• Rated operational current I_e	at 400 V	A	On request						
	690 V	A	On request						
• Rated power for three-phase motors at 50 Hz and 60 Hz	at 230 V	kW	On request						
	400 V	kW	On request						
	690 V	kW	On request						
• **Switching frequency** with overload relay		1/h	15						
Current-carrying capacity with reversing time up to 15 s									
• Rated operational current I_e	at 400 V	A	On request						
	690 V	A	On request						
• Rated power for three-phase motors at 50 Hz and 60 Hz	at 230 V	kW	On request						
	400 V	kW	On request						
	690 V	kW	On request						
• **Switching frequency** with overload relay		1/h	15						
Current-carrying capacity with reversing time up to 20 s									
• Rated operational current I_e	at 400 V	A	On request						
	690 V	A	On request						
• Rated power for three-phase motors at 50 Hz and 60 Hz	at 230 V	kW	On request						
	400 V	kW	On request						
	690 V	kW	On request						
• **Switching frequency** with overload relay		1/h	15						

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Selection and ordering data

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S00-S00-S00 · Up to 11 kW
AC operation ~ or DC operation ⎓

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RA241.-8XF31-1A.0

3RA241.-8XF31-2A.0

3RA241.-8XE31-2BB4

Rated data AC-3				Rated control supply voltage U_s	**Screw terminals**		**Spring-loaded terminals**	
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and 60 Hz at				Article No.	Price per PU	Article No.	Price per PU
400 V	230 V	**400 V**	690 V					
A	kW	**kW**	kW	V				
AC operation, 50/60 Hz								
12	3.3	**5.5**	9.2	24 AC	**3RA2415-8XF31-1AB0**		**3RA2415-8XF31-2AB0**	
				110 AC	**3RA2415-8XF31-1AF0**		**3RA2415-8XF31-2AF0**	
				230 AC	**3RA2415-8XF31-1AP0**		**3RA2415-8XF31-2AP0**	
16	4.7	**7.5**	9.2	24 AC	**3RA2416-8XF31-1AB0**		**3RA2416-8XF31-2AB0**	
				110 AC	**3RA2416-8XF31-1AF0**		**3RA2416-8XF31-2AF0**	
				230 AC	**3RA2416-8XF31-1AP0**		**3RA2416-8XF31-2AP0**	
25	5.5	**11**	11	24 AC	**3RA2417-8XF31-1AB0**		**3RA2417-8XF31-2AB0**	
				110 AC	**3RA2417-8XF31-1AF0**		**3RA2417-8XF31-2AF0**	
				230 AC	**3RA2417-8XF31-1AP0**		**3RA2417-8XF31-2AP0**	
DC operation								
12	3.3	**5.5**	9.2	24 DC	**3RA2415-8XF31-1BB4**		**3RA2415-8XF31-2BB4**	
16	4.7	**7.5**	9.2	24 DC	**3RA2416-8XF31-1BB4**		**3RA2416-8XF31-2BB4**	
25	5.5	**11**	11	24 DC	**3RA2417-8XF31-1BB4**		**3RA2417-8XF31-2BB4**	
For IO-Link connection								
12	3.3	**5.5**	9.2	24 DC	**3RA2415-8XE31-1BB4**		**3RA2415-8XE31-2BB4**	
16	4.7	**7.5**	9.2	24 DC	**3RA2416-8XE31-1BB4**		**3RA2416-8XE31-2BB4**	
25	5.5	**11**	11	24 DC	**3RA2417-8XE31-1BB4**		**3RA2417-8XE31-2BB4**	
For AS-Interface integration								
12	3.3	**5.5**	9.2	24 DC	**3RA2415-8XH31-1BB4**		**3RA2415-8XH31-2BB4**	
16	4.7	**7.5**	9.2	24 DC	**3RA2416-8XH31-1BB4**		**3RA2416-8XH31-2BB4**	
25	5.5	**11**	11	24 DC	**3RA2417-8XH31-1BB4**		**3RA2417-8XH31-2BB4**	

Representation of the complete contactor assemblies for star-delta (wye-delta) starting with optionally mountable accessories, see page 3/160.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW *IE3/IE4* ready

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S0-S0-S0 · Up to 22 kW
AC operation or DC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RA242.-8XF32-1A.2

3RA242.-8XE32-1BB4

3RA242.-8XF32-2A.2

Rated data AC-3				Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and 60 Hz at				Article No.	Price per PU	Article No.	Price per PU
400 V	230 V	**400 V**	690 V					
A	kW	**kW**	kW	V				
AC operation, 50/60 Hz								
25	7.1	**11**	19	24 AC	**3RA2423-8XF32-1AC2**		**3RA2423-8XF32-2AC2**	
				110 AC	**3RA2423-8XF32-1AG2**		**3RA2423-8XF32-2AG2**	
				230 AC	**3RA2423-8XF32-1AL2**		**3RA2423-8XF32-2AL2**	
32/40	11.4	**15/18.5**	19	24 AC	**3RA2425-8XF32-1AC2**		**3RA2425-8XF32-2AC2**	
				110 AC	**3RA2425-8XF32-1AG2**		**3RA2425-8XF32-2AG2**	
				230 AC	**3RA2425-8XF32-1AL2**		**3RA2425-8XF32-2AL2**	
50	--	**22**	19	24 AC	**3RA2426-8XF32-1AC2**		**3RA2426-8XF32-2AC2**	
				110 AC	**3RA2426-8XF32-1AG2**		**3RA2426-8XF32-2AG2**	
				230 AC	**3RA2426-8XF32-1AL2**		**3RA2426-8XF32-2AL2**	
DC operation								
25	7.1	**11**	19	24 DC	**3RA2423-8XF32-1BB4**		**3RA2423-8XF32-2BB4**	
32/40	11.4	**15/18.5**	19	24 DC	**3RA2425-8XF32-1BB4**		**3RA2425-8XF32-2BB4**	
50	--	**22**	19	24 DC	**3RA2426-8XF32-1BB4**		**3RA2426-8XF32-2BB4**	
For IO-Link connection								
25	7.1	**11**	19	24 DC	**3RA2423-8XE32-1BB4**		**3RA2423-8XE32-2BB4**	
32/40	11.4	**15/18.5**	19	24 DC	**3RA2425-8XE32-1BB4**		**3RA2425-8XE32-2BB4**	
50	--	**22**	19	24 DC	**3RA2426-8XE32-1BB4**		**3RA2426-8XE32-2BB4**	
For AS-Interface integration								
25	7.1	**11**	19	24 DC	**3RA2423-8XH32-1BB4**		**3RA2423-8XH32-2BB4**	
32/40	11.4	**15/18.5**	19	24 DC	**3RA2425-8XH32-1BB4**		**3RA2425-8XH32-2BB4**	
50	--	**22**	19	24 DC	**3RA2426-8XH32-1BB4**		**3RA2426-8XH32-2BB4**	

Representation of the complete contactor assemblies for star-delta (wye-delta) starting with optionally mountable accessories, see page 3/161.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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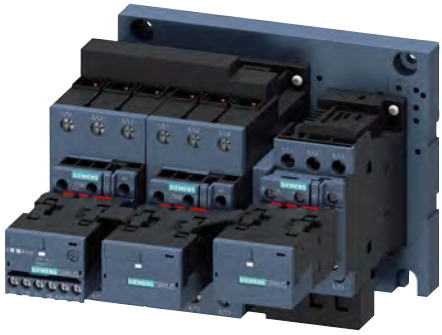
IE3/IE4 ready **SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW**

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S2-S2-S0 · Up to 45 kW and S2-S2-S2 · 55 kW
AC operation or AC/DC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RA2437-8XF32-1A.2



3RA2434-8XE32-1NB3

Rated data AC-3				Rated control supply voltage U_s	**Screw terminals**		**Spring-loaded terminals**	
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and 60 Hz at				Article No.	Price per PU	Article No.	Price per PU
400 V	230 V	**400 V**	690 V					
A	kW	**kW**	kW	V				
AC operation, 50/60 Hz								
50/65	19.6	**22/30**	34	24 AC	**3RA2434-8XF32-1AC2**		**--**	
				110 AC	**3RA2434-8XF32-1AG2**		**--**	
				230 AC	**3RA2434-8XF32-1AL2**		**--**	
80	25	**37**	63	24 AC	**3RA2435-8XF32-1AC2**		**--**	
				110 AC	**3RA2435-8XF32-1AG2**		**--**	
				230 AC	**3RA2435-8XF32-1AL2**		**--**	
86	27	**45**	63	24 AC	**3RA2436-8XF32-1AC2**		**--**	
				110 AC	**3RA2436-8XF32-1AG2**		**--**	
				230 AC	**3RA2436-8XF32-1AL2**		**--**	
115	37	**55**	93	24 AC	**3RA2437-8XF32-1AC2**		**--**	
				110 AC	**3RA2437-8XF32-1AG2**		**--**	
				230 AC	**3RA2437-8XF32-1AL2**		**--**	
AC/DC operation, 50/60 Hz AC or DC								
With integrated coil circuit (varistor integrated in electronics at the factory)								
50/65	19.6	**22/30**	34	20 ... 33 AC/DC	**3RA2434-8XF32-1NB3**		**--**	
80	25	**37**	63	20 ... 33 AC/DC	**3RA2435-8XF32-1NB3**		**--**	
86	27	**45**	63	20 ... 33 AC/DC	**3RA2436-8XF32-1NB3**		**--**	
115	37	**55**	93	20 ... 33 AC/DC	**3RA2437-8XF32-1NB3**		**--**	
For IO-Link connection								
50/65	19.6	**22/30**	34	20 ... 33 AC/DC	**3RA2434-8XE32-1NB3**		**--**	
80	25	**37**	63	20 ... 33 AC/DC	**3RA2435-8XE32-1NB3**		**--**	
86	27	**45**	63	20 ... 33 AC/DC	**3RA2436-8XE32-1NB3**		**--**	
115	37	**55**	93	20 ... 33 AC/DC	**3RA2437-8XE32-1NB3**		**--**	
For AS-Interface integration								
50/65	19.6	**22/30**	34	20 ... 33 AC/DC	**3RA2434-8XH32-1NB3**		**--**	
80	25	**37**	63	20 ... 33 AC/DC	**3RA2435-8XH32-1NB3**		**--**	
86	27	**45**	63	20 ... 33 AC/DC	**3RA2436-8XH32-1NB3**		**--**	
115	37	**55**	93	20 ... 33 AC/DC	**3RA2437-8XH32-1NB3**		**--**	

Representation of the complete contactor assemblies for star-delta (wye-delta) starting in size S2-S2-S2 with optionally mountable accessories, see page 3/162.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW *IE3/IE4* ready

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S3-S3-S2 · Up to 90 kW
AC operation ~ or AC/DC operation ≂

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RA244.-8XF32-1A.2

3RA244.-8XE32-1NB3

3RA244.-8XH32-1NB3

Rated data AC-3				Rated control supply voltage U_s	**Screw terminals**		**Spring-loaded terminals**	
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and 60 Hz at				Article No.	Price per PU	Article No.	Price per PU
400 V	230 V	**400 V**	690 V					
A	kW	**kW**	kW	V				
AC operation, 50/60 Hz								
115	30	**55**	90	24 AC	**3RA2444-8XF32-1AC2**		--	
				110 AC	**3RA2444-8XF32-1AG2**		--	
				230 AC	**3RA2444-8XF32-1AL2**		--	
150	37	**75**	110	24 AC	**3RA2445-8XF32-1AC2**		--	
				110 AC	**3RA2445-8XF32-1AG2**		--	
				230 AC	**3RA2445-8XF32-1AL2**		--	
160	45	**90**	132	24 AC	**3RA2446-8XF32-1AC2**		--	
				110 AC	**3RA2446-8XF32-1AG2**		--	
				230 AC	**3RA2446-8XF32-1AL2**		--	
AC/DC operation, 50/60 Hz AC or DC								
With integrated coil circuit (varistor integrated in electronics at the factory)								
115	30	**55**	90	20 ... 33 AC/DC	**3RA2444-8XF32-1NB3**		--	
150	37	**75**	110	20 ... 33 AC/DC	**3RA2445-8XF32-1NB3**		--	
160	45	**90**	132	20 ... 33 AC/DC	**3RA2446-8XF32-1NB3**		--	
For IO-Link connection								
115	30	**55**	90	20 ... 33 AC/DC	**3RA2444-8XE32-1NB3**		--	
150	37	**75**	110	20 ... 33 AC/DC	**3RA2445-8XE32-1NB3**		--	
160	45	**90**	132	20 ... 33 AC/DC	**3RA2446-8XE32-1NB3**		--	
For AS-Interface integration								
115	30	**55**	90	20 ... 33 AC/DC	**3RA2444-8XH32-1NB3**		--	
150	37	**75**	110	20 ... 33 AC/DC	**3RA2445-8XH32-1NB3**		--	
160	45	**90**	132	20 ... 33 AC/DC	**3RA2446-8XH32-1NB3**		--	

Representation of the complete contactor assemblies for star-delta (wye-delta) starting with optionally mountable accessories, see page 3/163.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT and 3TF6 contactors, up to 710 kW

Overview

The individual parts for the contactor assemblies for star-delta (wye-delta) starting for customer assembly must be ordered separately.

- 3RT contactors (see page 3/64 onwards) and 3RT12 and 3TF6 vacuum contactors (see page 3/135 onwards):
  The operating times of the individual contactors are rated in such a way that no overlapping of the contact connection and the arcing time between two contactors can occur on reversing, provided they are interlocked by way of their auxiliary switches (NC contact interlock) and the mechanical interlock.
  For assemblies with AC operation and 50/60 Hz, a dead interval of 50 ms must be provided when used with voltages over 500 V; a dead interval of 30 ms is recommended for use with voltages up to and including 400 V. These dead times do not apply to assemblies with DC operation.
  The operating times of the individual contactors are not affected by the mechanical interlock.
- Mechanical interlocks
  - 3RT contactors and 3RT12 vacuum contactors: Adapter and mechanical interlock to interlock S6 and S3, see page 3/108.
  - 3TF68 vacuum contactors: Locking device for mechanical interlock, see page 3/135.
- Wiring kits consisting of wiring modules or link rails and star jumpers
  - 3RT contactors and 3RT12 vacuum contactors: see page 3/106 onwards
  - 3TF68 vacuum contactors: see page 3/135
- Base plates
  - 3RT contactors and 3RT12 vacuum contactors: see page 3/113
  - 3TF68 vacuum contactors: see page 3/135

Additional components

- For momentary-contact operation: auxiliary switch (NO contact) for self-locking
- 3RB2 overload relays (see page 7/114 onwards), SIMOCODE pro 3UF7 motor management and control devices (see page 10/12 onwards) or 3RN2 thermistor motor protection relays (see page 10/136 onwards) can be used for overload protection.
  The overload relay can either be mounted on the line contactor or separately fitted. It must be set to 0.58 times the rated motor current.
- Optional surge suppression for the S3 contactors; the contactors in sizes S6 to S12 are wired as standard with varistors.

The contactor assemblies for star-delta (wye-delta) starting for customer assembly are designed for standard applications.

Note:

Contactor assemblies for star-delta (wye-delta) starting in special applications such as very heavy starting[1)] or star-delta (wye-delta) starting of special motors must be customized. Help with designing such special applications is available from our Technical Support, www.siemens.com/support-request.

Video: SIRIUS contactor assembly for star-delta (wye-delta) starting – configuration example with 75 kW contactors

More information

Homepage, see www.siemens.com/sirius

Industry Mall, see www.siemens.com/product?3RA24_3RT

Guide of use for contactors in safety applications, see https://support.industry.siemens.com/cs/ww/en/view/109807687

1) For effective assistance from Technical Support, you must provide the following details:
- Rated motor voltage,
- Rated motor current,
- Service factor, operating values
- Motor starting current factor
- Starting time
- Ambient temperature

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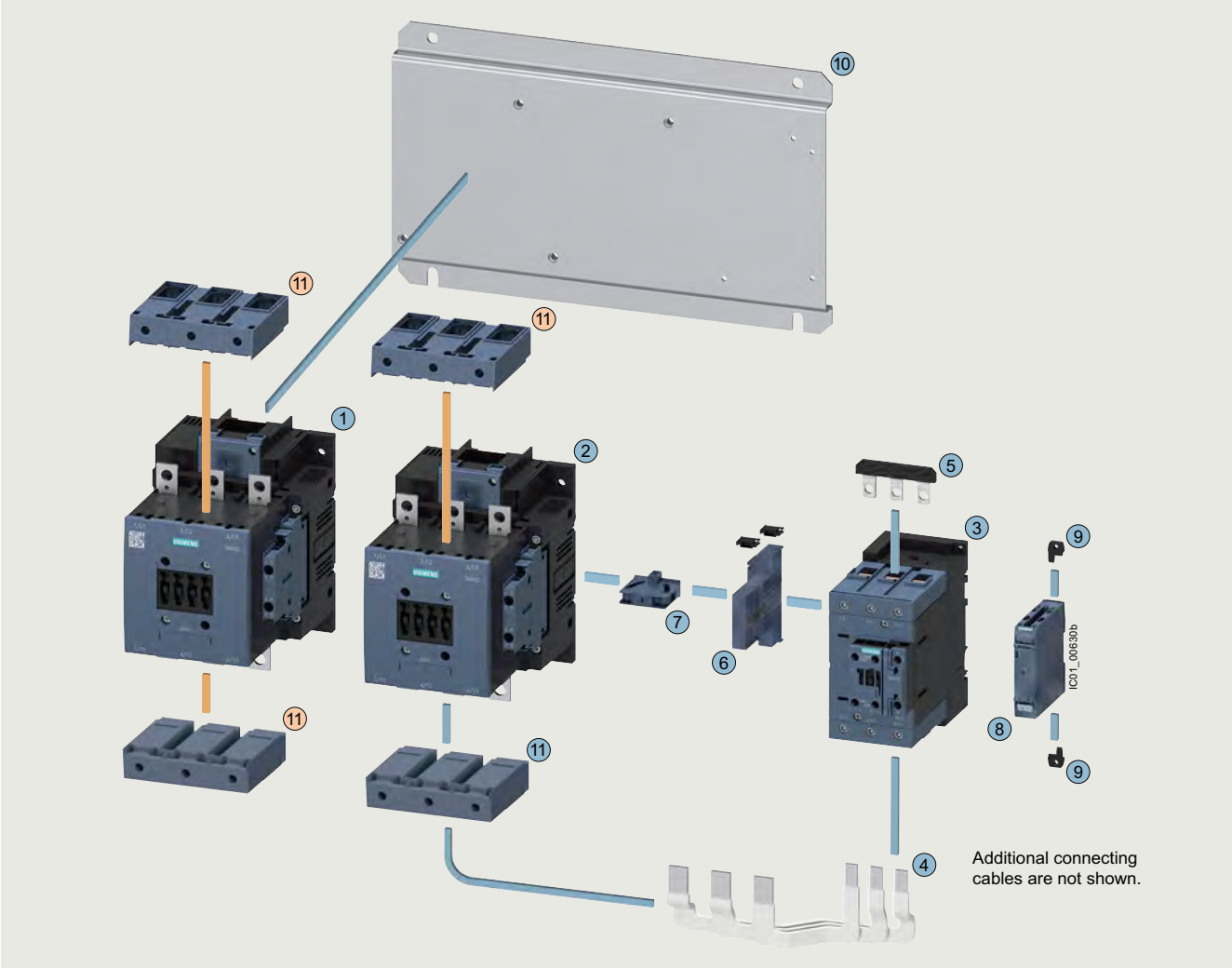
Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT and 3TF6 contactors, up to 710 kW

Contactor assemblies for star-delta (wye-delta) starting for customer assembly · Size S6-S6-S3 · Up to 160 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
(11) Box terminal blocks	3RT1955-4G	3/110

Contactor assemblies for star-delta (wye-delta) starting for customer assembly

Individual parts		Type Q11	Type Q13	Type Q12	Page
(1)(2)(3)	Contactors, 110 kW	3RT1054	3RT1054	3RT2045	3/51, 3/59, 3/63 ... 3/66
(1)(2)(3)	Contactors, 132 kW	3RT1055	3RT1055	3RT2046	3/51, 3/59, 3/63 ... 3/66
(1)(2)(3)	Contactors, 160 kW	3RT1056	3RT1056	3RT2047	3/51, 3/59, 3/63 ... 3/66
(4)	Assembly kit S6-S6-S3 for contactors with box terminals consisting of: Wiring modules, bottom	3RA1953-3G			3/106
(5)	Star jumper S3	3RT1946-4BA31			3/107
(6)	Adapter for the mechanical interlock between S6 and S3 (including two connectors)	3RA1954-2G[1)]			3/108
(7)	Mechanical interlock between S6 and S3	3RA1954-2A			3/108
(8)	Timing relay with star-delta (wye-delta) function	3RP257.			10/34
(9)	Push-in lugs for star-delta (wye-delta) timing relays	3ZY1311-0AA00			10/35
(10)	Base plate star-delta (wye-delta)	3RA1952-2E			3/113
(11)	Box terminal block	3RT1955-4G			3/110

[1)] The 3RA1954-2G adapter cannot be used in conjunction with 3RT204..-.KB coupling contactors, size S3.

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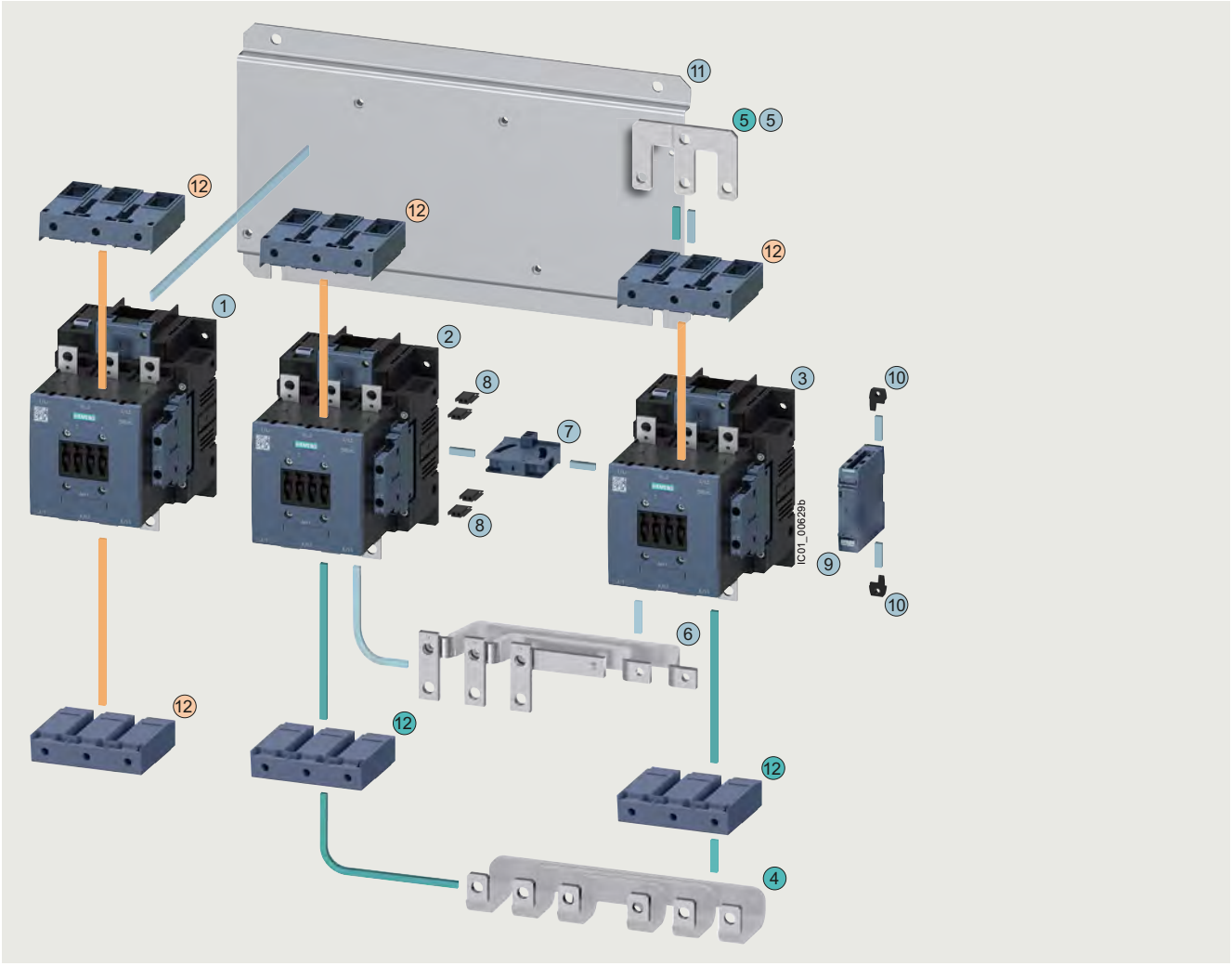
Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT and 3TF6 contactors, up to 710 kW

Contactor assemblies for star-delta (wye-delta) starting for customer assembly · Size S6-S6-S6 · Up to 160 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
12 Box terminal blocks	3RT1955-4G	3/110

Contactor assemblies for star-delta (wye-delta) starting for customer assembly

Individual parts		Type Q11	Q13	Q12	Page
1 2 3	Contactors, 110 kW	3RT1054	3RT1054	3RT1054	3/64 ... 3/66
1 2 3	Contactors, 132 kW	3RT1055	3RT1055	3RT1055	3/64 ... 3/66
1 2 3	Contactors, 160 kW	3RT1056	3RT1056	3RT1056	3/64 ... 3/66
4 5	Assembly kit S6-S6-S6 for contactors with box terminals consisting of: 4 Link rails, bottom 5 Star jumper S6	3RA1953-2B			3/106
5 6	Assembly kit S6-S6-S6 for contactors without box terminals consisting of: 6 Link rails, bottom 5 Star jumper S6	3RA1953-2N			3/106
7	Mechanical interlock	3RA1954-2A			3/108
8	Four connectors	3RA1932-2D			3/108
9	Timing relay with star-delta (wye-delta) function	3RP257.			10/34
10	Push-in lugs for star-delta (wye-delta) timing relays	3ZY1311-0AA00			10/35
11	Base plate star-delta (wye-delta)	3RA1952-2F			3/113
12	Box terminal block	3RT1955-4G			3/110

Video: SIRIUS contactor assembly for star-delta (wye-delta) starting – configuration example with 75 kW contactors

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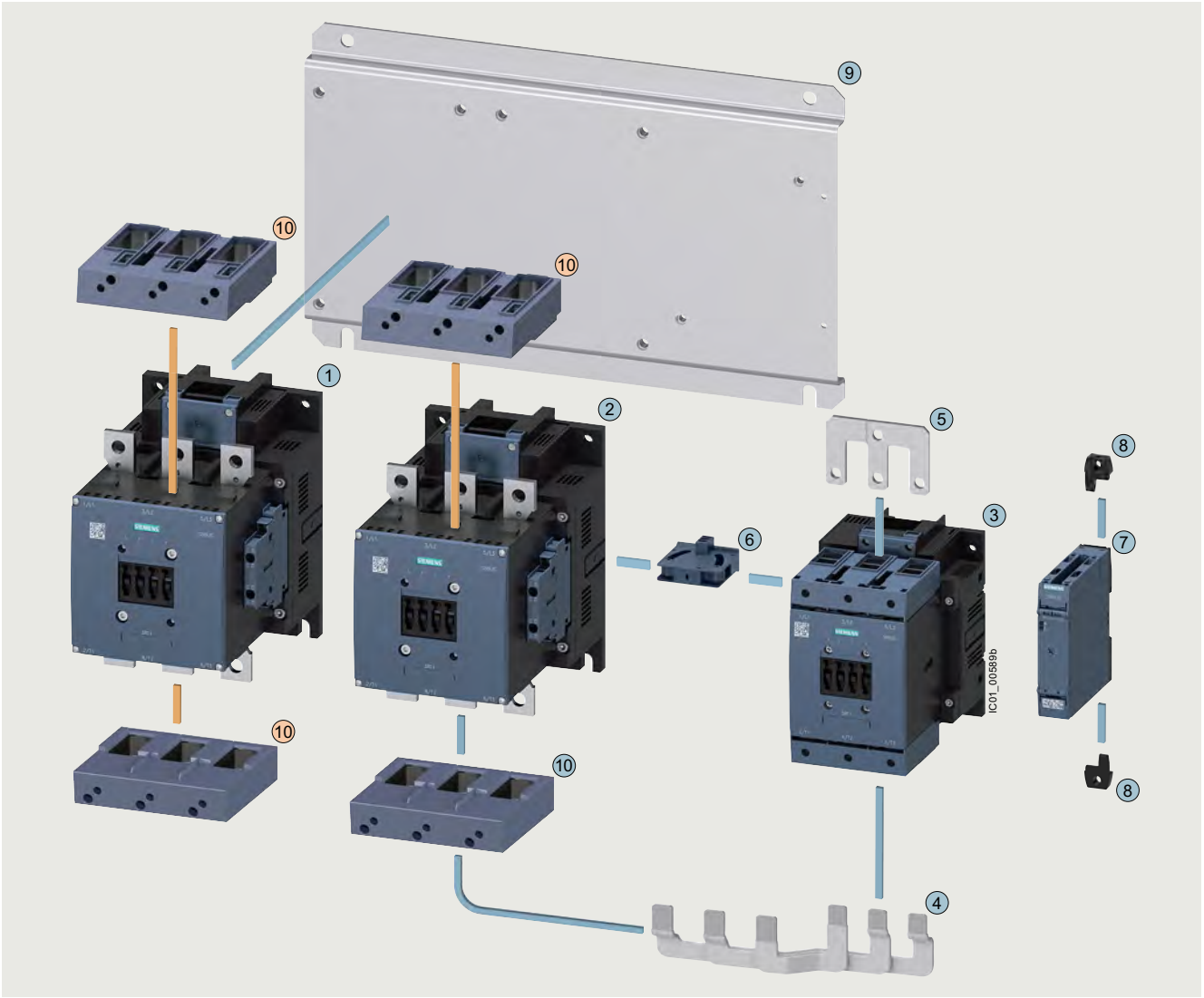
Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT and 3TF6 contactors, up to 710 kW

Contactor assemblies for star-delta (wye-delta) starting for customer assembly · Size S10-S10-S6 · Up to 250 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
10 Box terminal blocks	3RT1966-4G	3/110

Contactor assemblies for star-delta (wye-delta) starting for customer assembly

Individual parts		Type Q11	Q13	Q12	Page
1 2 3	Contactors, 200 kW	3RT1.64	3RT1.64	3RT1054	3/64 ... 3/66, 3/130
1 2 3	Contactors, 250 kW	3RT1.65	3RT1.65	3RT1055	3/64 ... 3/66, 3/130
4	Assembly kit S10-S10-S6 for contactors with box terminals consisting of: Wiring modules, bottom	3RA1963-3E			3/106
5	Star jumper S6	3RT1956-4BA31			3/107
6	Mechanical interlock between S10 and S6	3RA1954-2A			3/108
7	Timing relay with star-delta (wye-delta) function	3RP257.			10/34
8	Push-in lugs for star-delta (wye-delta) timing relays	3ZY1311-0AA00			10/35
9	Base plate star-delta (wye-delta)	3RA1962-2E			3/113
10	Box terminal block	3RT1966-4G			3/110

Video: SIRIUS contactor assembly for star-delta (wye-delta) starting – configuration example with 75 kW contactors

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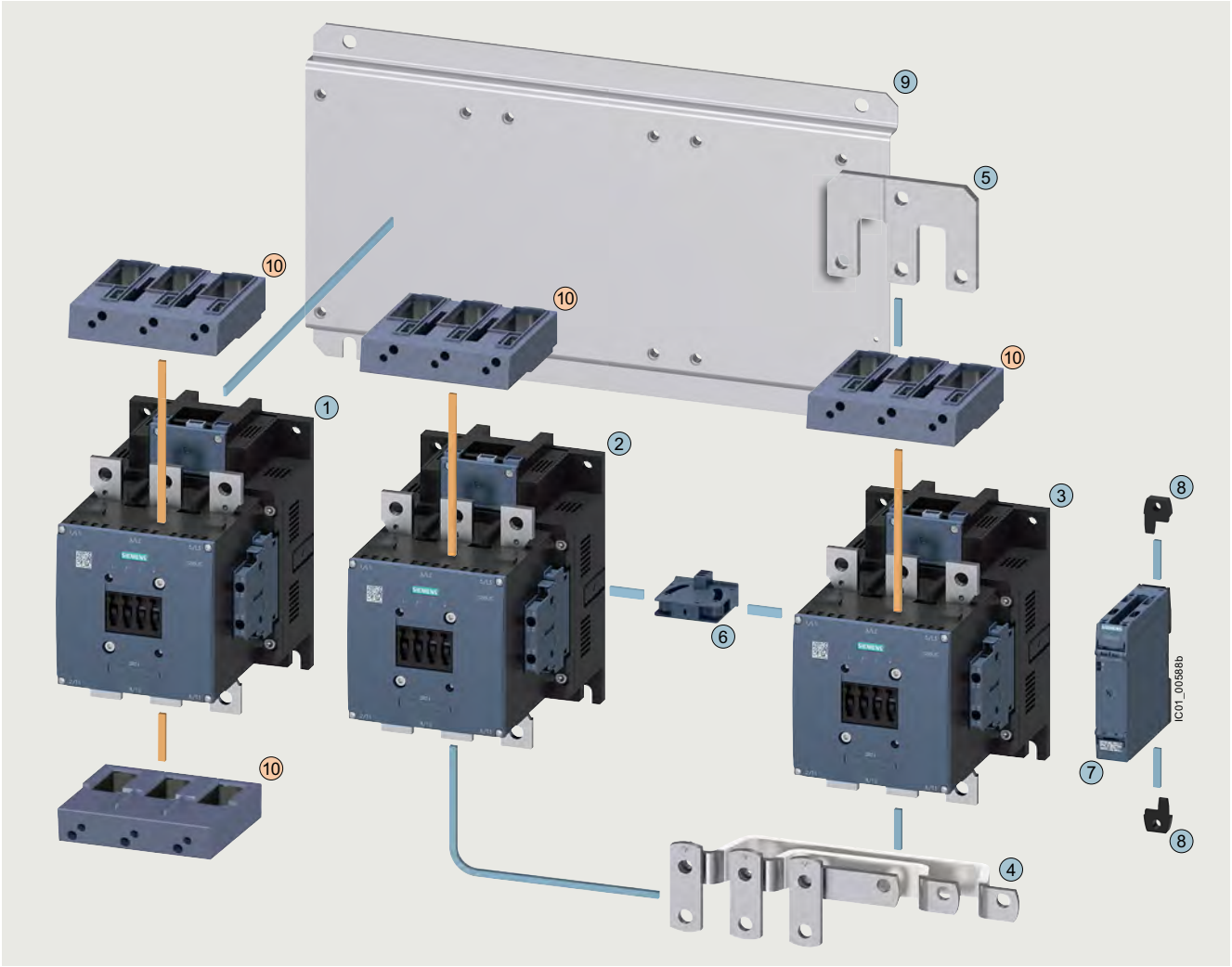
Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT and 3TF6 contactors, up to 710 kW

Contactor assemblies for star-delta (wye-delta) starting for customer assembly · Size S10-S10-S10 · Up to 250 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
(10) Box terminal blocks	3RT1966-4G	3/110

Contactor assemblies for star-delta (wye-delta) starting for customer assembly

Individual parts		Type Q11	Type Q13	Type Q12	Page
(1)(2)(3)	Contactors, 200 kW	3RT1.64	3RT1.64	3RT1.64	3/64 ... 3/66, 3/130
(1)(2)(3)	Contactors, 250 kW	3RT1.65	3RT1.65	3RT1.65	3/64 ... 3/66, 3/130
(4)(5)	Assembly kit S10-S10-S10 for contactors without box terminals consisting of:	3RA1963-2B			3/106
	(4) Link rails, bottom				
	(5) Star jumper S10				
(6)	Mechanical interlock	3RA1954-2A			3/108
(7)	Timing relay with star-delta (wye-delta) function	3RP257.			10/34
(8)	Push-in lugs for star-delta (wye-delta) timing relays	3ZY1311-0AA00			10/35
(9)	Base plate star-delta (wye-delta)	3RA1962-2F			3/113

Video: SIRIUS contactor assembly for star-delta (wye-delta) starting – configuration example with 75 kW contactors

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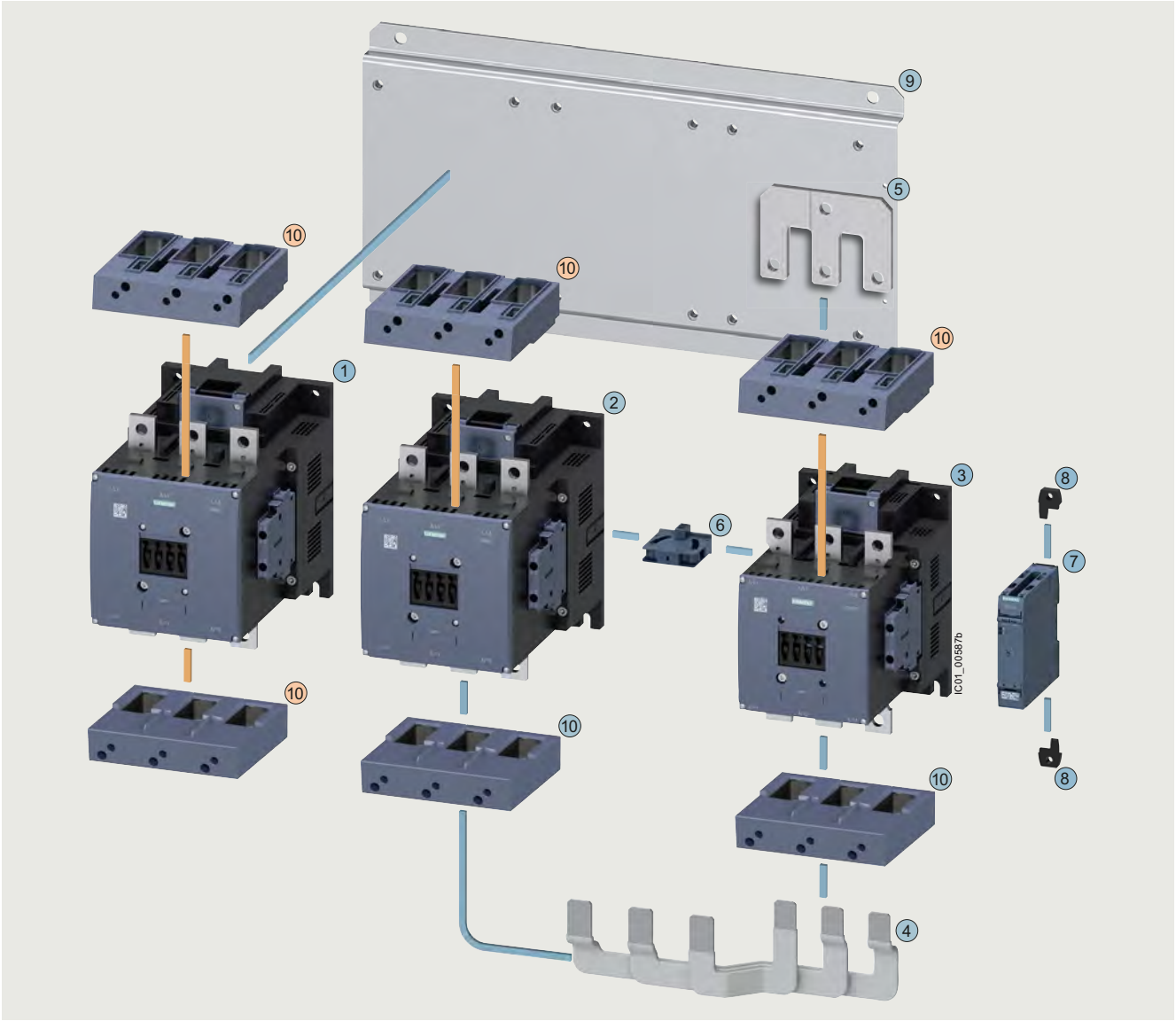
Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT and 3TF6 contactors, up to 710 kW

Contactor assemblies for star-delta (wye-delta) starting for customer assembly · Size S12-S12-S10 · Up to 500 kW

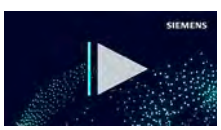


Mountable accessories (optional)

To be ordered separately	Type	Page
(10) Box terminal blocks	3RT1966-4G	3/110

Contactor assemblies for star-delta (wye-delta) starting for customer assembly

Individual parts		Type Q11	Q13	Q12	Page
(1)(2)(3)	Contactors, 355 kW	3RT1.75	3RT1.75	3RT1.64	3/64 ... 3/66, 3/130
(1)(2)(3)	Contactors, 400 kW	3RT1.75	3RT1.75	3RT1.65	3/64 ... 3/66, 3/130
(1)(2)(3)	Contactors, 500 kW	3RT1.76	3RT1.76	3RT1.66	3/64 ... 3/66, 3/130
(4)	Assembly kit S12-S12-S10 for contactors with box terminals consisting of: Wiring modules, bottom	3RA1973-3E			3/106
(5)	Star jumper S10	3RT1966-4BA31			3/107
(6)	Mechanical interlock between S12 and S10	3RA1954-2A			3/108
(7)	Timing relay with star-delta (wye-delta) function	3RP257.			10/34
(8)	Push-in lugs for star-delta (wye-delta) timing relays	3ZY1311-0AA00			10/35
(9)	Base plate star-delta (wye-delta)	3RA1972-2E			3/113
(10)	Box terminal blocks	3RT1966-4G			3/110



Video: SIRIUS contactor assembly for star-delta (wye-delta) starting – configuration example with 75 kW contactors

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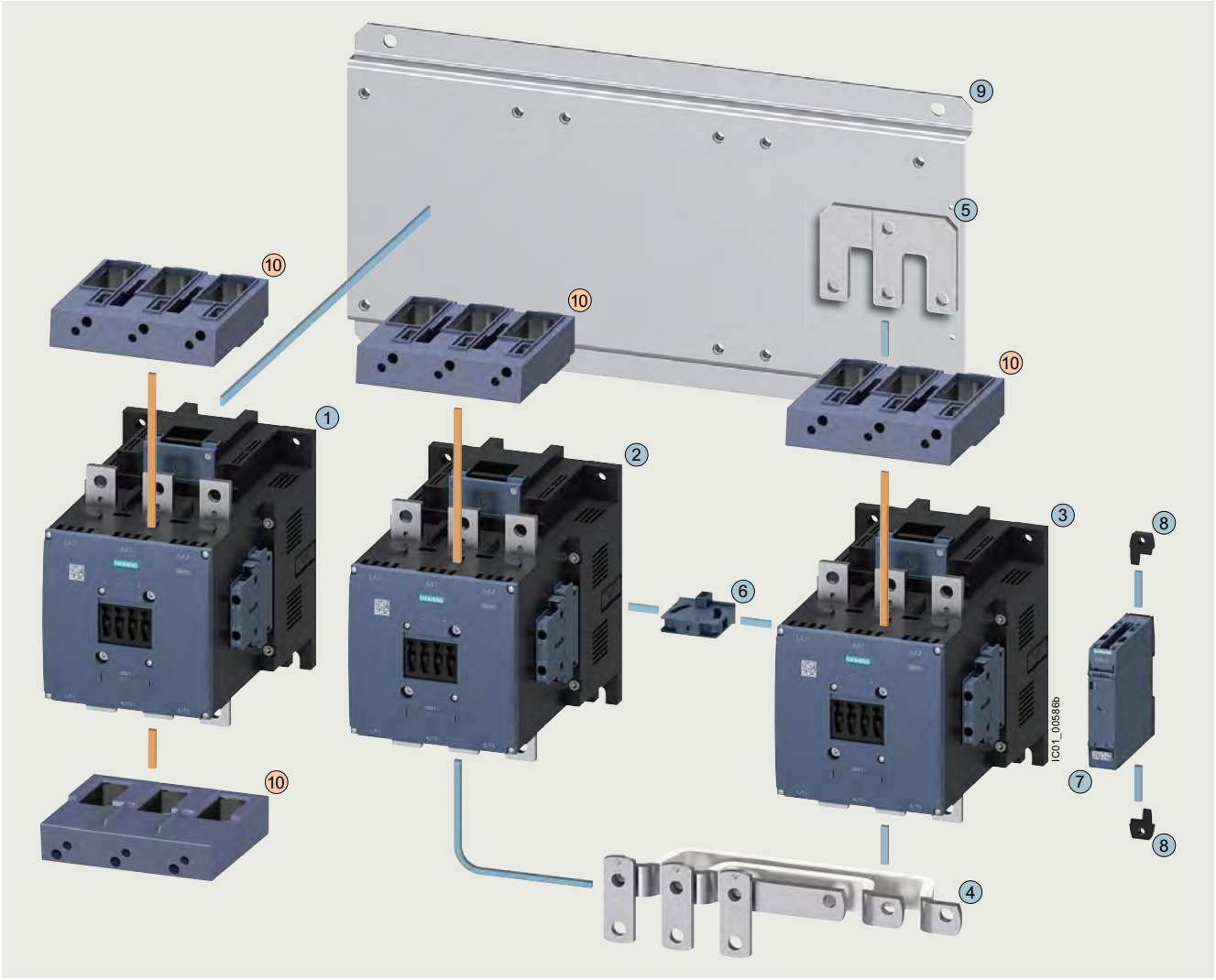
Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT and 3TF6 contactors, up to 710 kW

Contactor assemblies for star-delta (wye-delta) starting for customer assembly · Size S12-S12-S12 · Up to 500 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
⑩ Box terminal blocks	3RT1966-4G	3/110

Contactor assemblies for star-delta (wye-delta) starting for customer assembly

Individual parts		Type Q11	Q13	Q12	Page
①②③	Contactors, 400 kW	3RT1.75	3RT1.75	3RT1.75	3/64 ... 3/66, 3/130
①②③	Contactors, 500 kW	3RT1.76	3RT1.76	3RT1.76	3/64 ... 3/66, 3/130
④⑤	Assembly kit S12-S12-S12 for contactors without box terminals consisting of:	3RA1973-2B			3/106
	④ Link rails, bottom				
	⑤ Star jumper S12				
⑥	Mechanical interlock	3RA1954-2A			3/108
⑦	Timing relay with star-delta (wye-delta) function	3RP257.			10/34
⑧	Push-in lugs for star-delta (wye-delta) timing relays	3ZY1311-0AA00			10/35
⑨	Base plate star-delta (wye-delta)	3RA1972-2F			3/113

Video: SIRIUS contactor assembly for star-delta (wye-delta) starting – configuration example with 75 kW contactors

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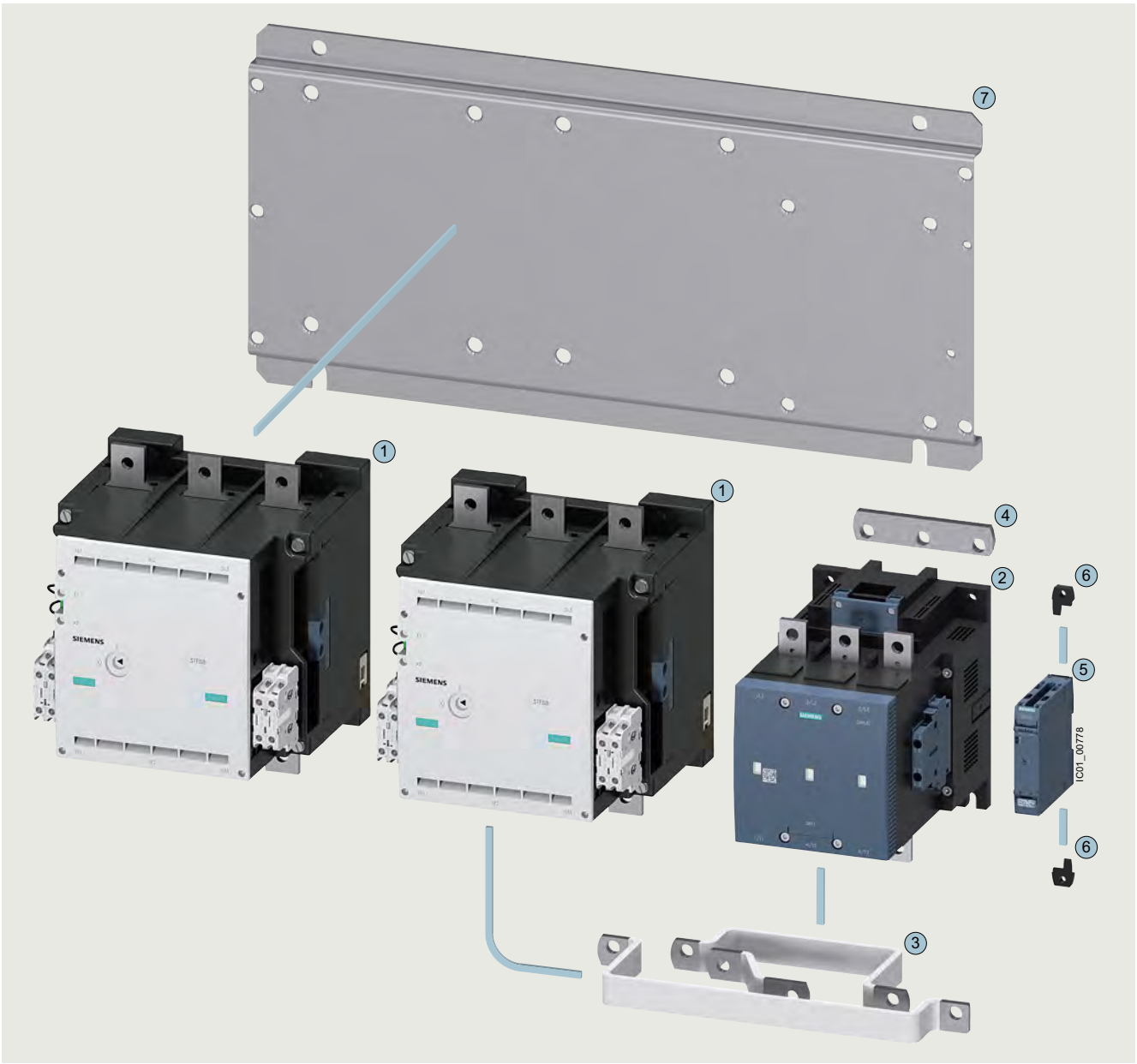
Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT and 3TF6 contactors, up to 710 kW

Contactor assemblies for star-delta (wye-delta) starting for customer assembly · Sizes 14-14-S12 · Up to 710 kW



Contactor assemblies for star-delta (wye-delta) starting for customer assembly

Individual parts		Type			Page
		Q11	Q13	Q12	
①②	Contactors, 710 kW	3TF68	3TF68	3RT127.	3/130 ... 3/132
③④	Assembly kit 14-14-S12 for contactors without box terminals consisting of:	3TX7680-1B			3/135
	③ Wiring modules on the top and bottom				
	④ Star jumper S12				
⑤	Timing relay with star-delta (wye-delta) function	3RP257.			10/34
⑥	Push-in lugs for star-delta (wye-delta) timing relays	3ZY1311-0AA00			10/35
⑦	Base plate star-delta (wye-delta)	3TX7681-1B			3/135

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	Price groups PG 41A, 41B
4/2	**Introduction**
	Contactors for special applications
4/7	SIRIUS 3RT.4 contactors for low or non-inductive loads (AC-1), 3-pole up to 2 650 A
4/21	SIRIUS 3RT.3 contactors, 4-pole, up to 525 A
4/36	SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC
4/42	SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole
4/52	SIRIUS 3RT23 to 3RT26, 3RT14 contactors
	Contactors for railway applications
4/54	- SIRIUS 3RT contactors with extended operating range, 3-pole
4/63	- SIRIUS 3RH2 contactor relays with extended operating range
4/66	- 3TH4 contactor relays, 8-pole
4/68	- 3TC contactors for switching DC voltage, 2-pole
4/70	3TC contactors for switching DC voltage, 1- and 2-pole
3/138	**3TG10 power relays/miniature contactors**

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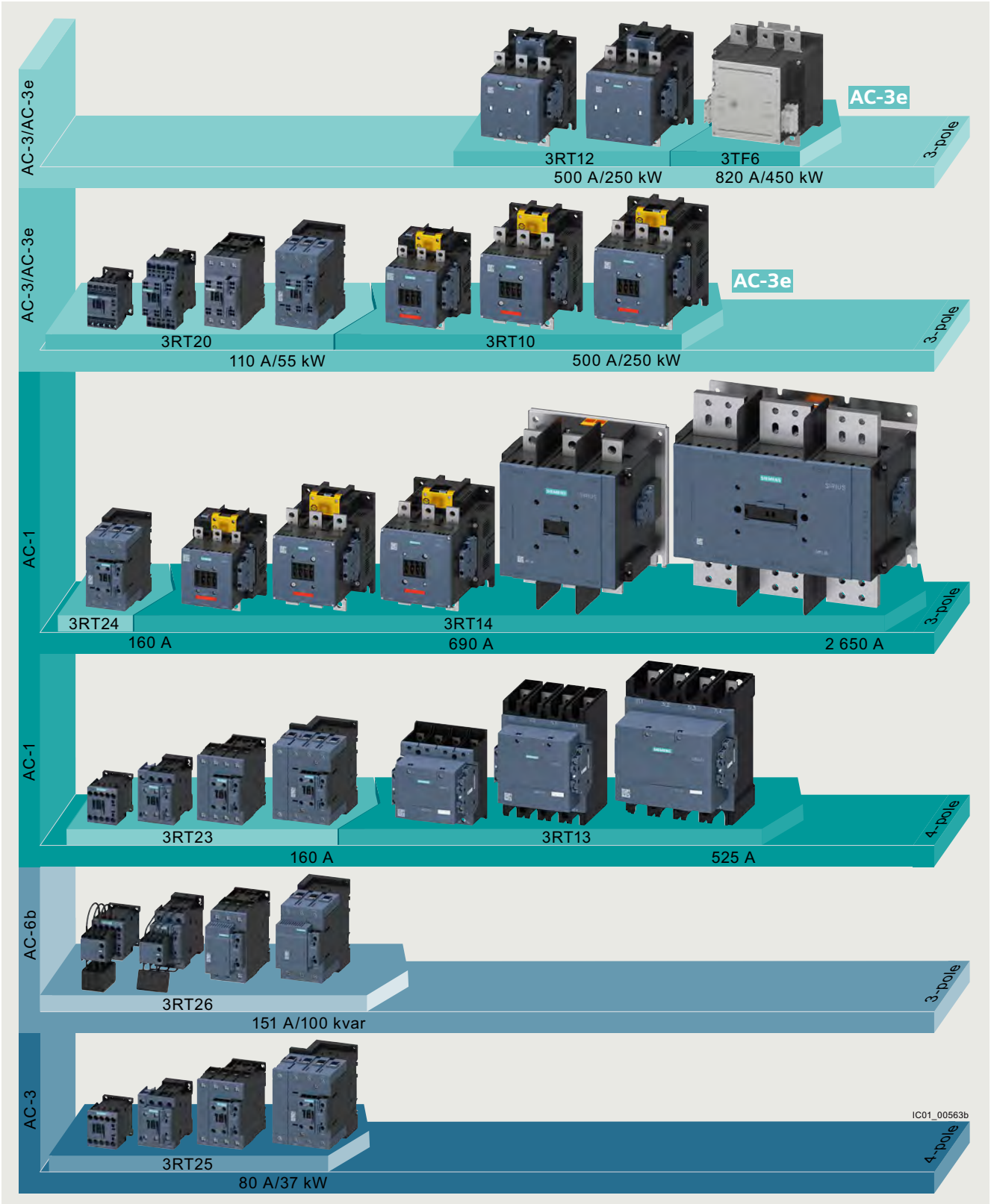
Overview



Overview of the 3RT and 3TF contactors

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More information	
Homepage, see www.siemens.com/sirius	Conversion tool, see www.siemens.com/conversion-tool
Industry Mall, see www.siemens.com/product?3RT_3TK_3TC	TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=Contactor

Size			**S3**		**S6**	**S10**		**S12**	
Type			3RT244.		3RT1456	3RT146.		3RT1476	
3-pole 3RT244 and 3RT145 to 3RT147 contactors									
Type			**3RT2446**	**3RT2448**	**3RT1456**	**3RT1466**	**3RT1467**	**3RT1476**	
Number of main contacts			3 NO		3 NO	3 NO		3 NO	
AC, AC/DC operation			(p. 4/16)		(p. 4/17, 4/18)	(p. 4/17, 4/18)		(p. 4/17, 4/18)	
AC-1									
U_i		V	1 000						
U_e		V	690						
I_e **up to 690 V**	**40 °C**	**A**	**140**	**160**	**275**	**400**	**500**	**690**	
	60 °C	A	130	140	250	380	450	Standard operating mechanism: 650, solid-state operating mechanism: 600	

Accessories for contactors				
Auxiliary switches	**3RH29, 3RA28**	(p. 3/87 ... 3/95)	**3RH19, 3RT1926**	(p. 3/90, 3/92, 3/94, 3/96)
Function modules (direct-on-line starting, star-delta (wye-delta) starting)	**3RA281.**	(p. 3/100)	**--**	
Terminal covers	**3RT2946-4EA4**	(p. 3/112)	**3RT1956-4EA.**	(p. 3/112)
Box terminal blocks	**--**		**3RT1955/56-4G**	(p. 3/110)
Surge suppressors	**3RT2936, 3RT2946**	(p. 3/97, 3/98)	**3RT1956-1C** (RC element)	(p. 3/98)

Type			3RT1481, 3RT1482		3RT1483	3RT1485, 3RT1486		3RT1487	
3-pole 3RT148 contactors									
Type			**3RT1481**	**3RT1482**	**3RT1483**	**3RT1485**	**3RT1486**	**3RT1487**	
Number of main contacts			3 NO						
AC/DC operation			(p. 4/19)						
AC-1									
U_i		V	1 000						
U_e		V	1 000						
I_e	**40 °C**	**A**	**900**	**1 050**	**1 260**	**1 700**	**2 100**	**2 650**	

Accessories for contactors		
Second auxiliary switch, lateral	**3RH1981-1JA11**	(p. 4/19)
Spare parts for contactors		
First auxiliary switch, lateral	**3RH1981-1DA11**	(p. 4/20)
Phase barriers	**3RT1983-4AA1** (p. 4/20)	**3RT1987-4AA1** (p. 4/20)
Withdrawable coils	**3RT1982-5A.31** (p. 4/20)	**3RT1983-5AP31** (p. 4/20) **3RT1987-5AP31** (p. 4/20)

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Introduction

Size		**S00**		**S0**			**S2**		**S3**		
Type		3RT231.		3RT232.			3RT233.		3RT234.		
4-pole 3RT23 contactors											
Type		**3RT2316**	**3RT2317**	**3RT2325**	**3RT2326**	**3RT2327**	**3RT2336**	**3RT2337**	**3RT2344**	**3RT2346**	**3RT2348**
Number of main contacts		4 NO		4 NO			4 NO		4 NO		
AC, DC and AC/DC operation		(p. 4/29, 4/31)		(p. 4/29 ... 4/31)			(p. 4/29 ... 4/33)		(p. 4/29 ... 4/33)		
AC-1											
U_i	V	690									
U_e	V	690									
I_e up to 690 V	40 °C A	**18**	**22**	**35**	**40**	**50**	**60**	**110**	**110**	**140**	**160**
	60 °C A	16	20	30	35	42	55	95	100	130	140
AC-3											
I_e up to 400 V	A	9	12	15.5	15.5	15.5	--	--	--	--	--
P at 400 V	kW	**4**	**5.5**	**7.5**	**7.5**	**7.5**	**--**	**--**	**--**	**--**	**--**
Accessories for contactors											
Auxiliary switches		**3RH29, 3RA28**									(p. 3/87 ... 3/95)
Function modules (direct-on-line starting, star-delta (wye-delta) starting)		**3RA281.**									(p. 3/100)
Terminal covers		**--**					**3RT2936-4EA4**	(p. 3/112)	**3RT2946-4EA4**		(p. 3/112)
Surge suppressors		**3RT2916**	(p. 3/97, 3/98)				**3RT2936**	(p. 3/97, 3/98)	**3RT2936, 3RT2946**		(p. 3/97, 3/98)

Size		**S6**		**S10**			**S12**	
Type		3RT1355		3RT136.			3RT137.	
4-pole 3RT13 contactors								
Type		**3RT1355**		**3RT1363**	**3RT1364**		**3RT1373**	**3RT1374**	**3RT1375**
Number of main contacts		4 NO		4 NO			4 NO		
AC/DC operation		(p. 4/34)		(p. 4/34)			(p. 4/34)		
AC-1									
U_i	V	1 000							
U_e	V	690		1 000					
I_e	40 °C A	200		275	350		400	500	525
Accessories for contactors									
Second auxiliary switch, lateral		**3RH1951-1SA11**							(p. 4/35)
Terminal covers		**3RT1956-4EB10**	(p. 4/35)	**3RT1966-4EB10**		(p. 4/35)	**3RT1976-4EB10**		(p. 4/35)
Mechanical interlocks		**3RA1954-3A**							(p. 4/35)
Bus connectors offset		**--**		**3RT1966-4D**		(p. 4/35)	**3RT1976-4D**		(p. 4/35)
Spare parts for contactors									
First auxiliary switch, lateral		**3RH1951-1TA11**							(p. 4/35)

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Size			**S00**			**S0**	**S2**		**S3**	
Type			3RT251.			3RT252.	3RT253.		3RT254.	
4-pole 3RT25 contactors										
Type			**3RT2516**	**3RT2517**	**3RT2518**	**3RT2526**	**3RT2535**	**3RT2536**	**3RT2544**	**3RT2545**
Number of main contacts			2 NO + 2 NC			2 NO + 2 NC	2 NO + 2 NC		2 NO + 2 NC	
AC, DC and AC/DC operation			(p. 4/39, 4/40)			(p. 4/39, 4/40)	(p. 4/39, 4/41)		(p. 4/39, 4/41)	
AC-1										
U_i		V	690							
U_e		V	690							
I_e up to 690 V	**40 °C**	**A**	**18**	**22**	**22**	**40**	**60**	**70**	**100**	**125**
	60 °C	A	16	20	20	35	55	60	90	105
AC-3										
I_e up to 400 V	NO	A	9	12	16	25	35	41	65	80
	NC	A	9	9	9	25 (20)[1]	35	41	65	80
P										
At 400 V	**NO**	**kW**	**4**	**5.5**	**7.5**	**11**	**18.5**	**22**	**30**	**37**
	NC	**kW**	**4**	**4**	**4**	**11 (7.5)[1]**	**18.5**	**22**	**30**	**37**
At 230 V	NO	kW	2.2	3/2.2	4/2.2	5.5	11	11	18.5	22
	NC	kW	2.2	3/2.2	4/2.2	5.5	11	11	18.5	22
Accessories for contactors										
Auxiliary switches			**3RH29, 3RA28**							(p. 3/87 ... 3/95)
Function modules (direct-on-line starting, star-delta (wye-delta) starting)			**3RA281.**							(p. 3/100)
Terminal covers			**--**				**3RT2936-4EA4** (p. 3/112)		**3RT2946-4EA4** (p. 3/112)	
Surge suppressors			**3RT2916** (p. 3/97, 3/98)			**3RT2926** (p. 3/97, 3/98)	**3RT2936** (p. 3/97, 3/98)		**3RT2936, 3RT2946** (p. 3/97, 3/98)	

[1] The value in brackets applies to the NC for DC operation.

Further contactors

- SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole, see page 4/42 onwards
- 3TC contactors for switching DC voltage, 1-pole and 2-pole, see page 4/70 onwards
- Contactors for railway applications
  - SIRIUS 3RT contactors with extended operating range, 3-pole, see page 4/54 onwards
  - SIRIUS 3RH2 contactor relays with extended operating range, see page 4/65
  - 3TH4 contactor relays, 8-pole, see page 4/66 onwards

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Introduction

Connection methods

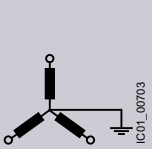
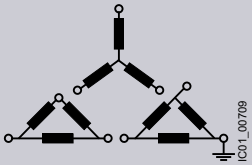
The following connection options are available for 3RT contactors depending on the size and version:

- 3RT2 contactors
  - Sizes S00 and S0: screw terminals or spring-loaded terminals both for the main as well as for the auxiliary and control circuits
  - Sizes S2 and S3: screw terminals (complete devices) or spring-loaded terminals (auxiliary circuit only)
- 3RT13 contactors, sizes S6 to S12: Busbar connections (partly with bus connectors offset), auxiliary and control circuits with screw terminals
- 3RT14 contactors: Busbar connections

	Screw terminals
	Spring-loaded terminals
	Busbar connections
	The connection method is indicated in the corresponding tables by the symbols shown on orange backgrounds.

Voltage data

The data for 3-phase power systems according to IEC 60947-4-1 are valid for the following forms of power supply:

Voltage data U_e	**Line system configurations**	
	Three-phase four-wire systems 	**Three-phase three-wire systems** 
V	V	V
230	--	230
400	230/400	400
440	260/440	440
500	--	500
690	400/690	690 (only from size S3)
1 000	--	1 000

-- Not specified

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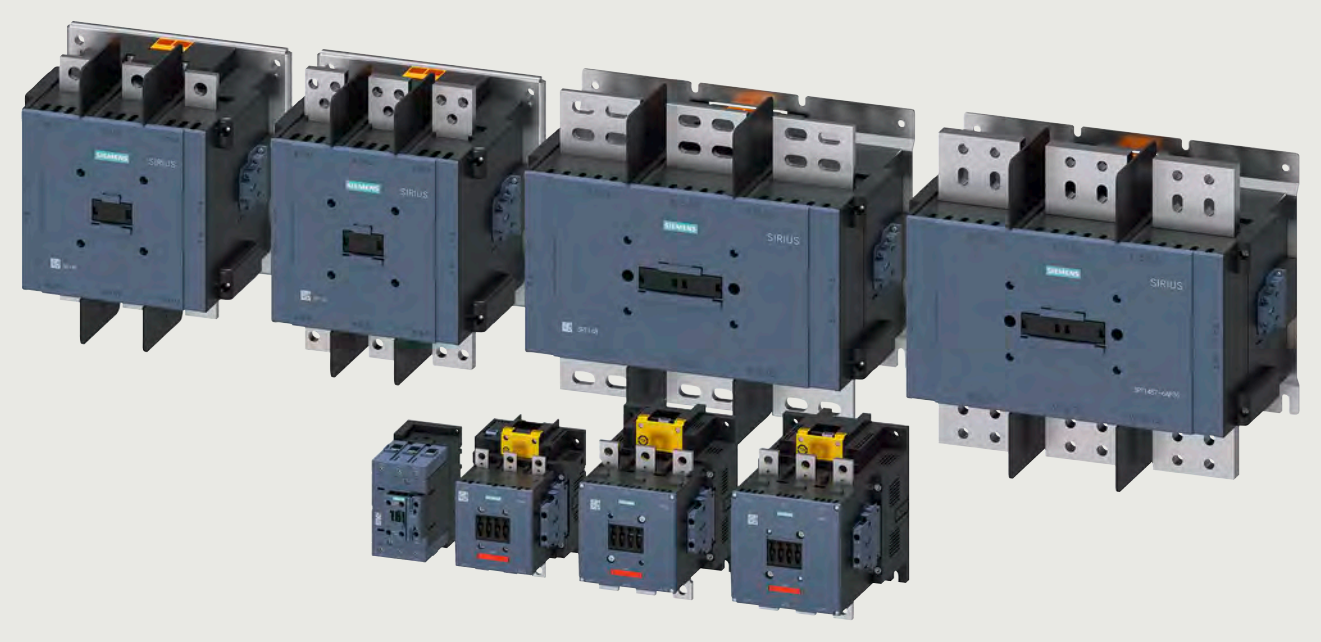
Overview



3-pole AC-1 contactors
top row: 3RT148 contactors
bottom row: 3RT244, 3RT145 to 3RT147 contactors

Standards

IEC 60947-1, IEC 60947-4-1, IEC 60947-5-1 (auxiliary switches)

Contactors with increased tamper protection

Increased tamper protection is ensured either by using our contactor versions with factory-installed, permanently mounted auxiliary switches which are protected against mechanical external actuation (e.g. 3RT14..-.....-3PA0 contactors), or by using the 3RT1926-4MA10 sealable cover as an accessory, (see page 3/112).

Protecting connections against short circuit, overload and overvoltage

All connections must generally be protected against overload and short circuits using suitable measures. Different constraints must be considered depending on the type of connection:

Short-circuit and overload protection of main connections

For information on the protection of a free-standing contactor, see the technical product data sheet.

For more information on complete units such as contactors with overload relays or contactors with motor starter protectors as the motor feeder, see Configuration Manual for load feeders.

Short-circuit and overload protection of auxiliary connections

For information on the protection of auxiliary contacts, see the technical product data sheet

Short-circuit and overload protection of control supply voltage connections or supply voltage connections

First of all, the relevant standards and regulations for configuring control panels and the parts and components installed in them must be taken into account, for example for cable dimensioning.

One possible protection for these circuits could be the selection of a suitable power supply, i.e. one with a current-limiting function. In the selection of the source and the connecting cable, the load characteristics of the contactor must be considered (short-time inrush current peaks for solid-state operating mechanisms, switch-on power, holding power).

If there are further switching elements in the circuit, such as the auxiliary contact system of an overload relay that operates the contactor, the short-circuit protection necessary for this must also be considered.

For further recommendations, e.g. the use of miniature circuit breakers or circuit breakers for equipment in control circuits, see Control panel tip – Selecting and dimensioning suitable power supplies quickly and reliably.

Short-circuit and overload protection of contactors with a digital input

A typical rated current of 20 mA applies to these inputs according to the PLC input types according to IEC 60947-4-1. The inputs can be protected accordingly.

- Contactors with PLC and F-PLC inputs:
  - For 3RT14..-.S and 3RT14..-.N, marked with +/-
- Supply voltage connections A1 - A2:
  - For 3RT14..-.N, protection based on the load characteristics must be employed.
    For information on power consumption, see the technical product data sheet.
  - For 3RT14..-.S, protection is already integrated.

Short-circuit and overload protection of other connections

The 3RT14..-.P contactor version with remaining lifetime indicator (RLT) also has additional connections H1 - H2 and R1 - R2.

If A1 - A2 is already protected, further protection of H1 - H2 is not required.

For protection specifications for protecting R1 - R2, see the technical product data sheet.

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Protection against overvoltage at the control supply voltage connection

3RT244 contactors supplied without a coil circuit can be retrofitted with RC elements, varistors, diodes or diode assemblies (combination of diode and Zener diode for short break times) for damping switching overvoltages in the coil and can be ordered separately as accessories, see page 3/97 onwards.

3RT14 contactors are already equipped with coil damping (varistor).

Note:

The break times of the contactor, the opening delay times of the NO contacts and the closing delay times of the NC contacts increase with damping.

For more information about influencing the time response using damping, see Equipment Manual.

Connection methods

Main circuit

- 3RT244 contactors:
  Screw terminals with box terminal;
  direct connection to the connecting bar possible with cable lugs when the box terminal is removed.
- 3RT145 to 3RT147 contactors:
  Screw terminals with connecting bars that the cables can be connected to using either cable lugs or flexible or rigid busbars. Alternatively, box terminals are available as accessories.
- 3RT148 contactors:
  Screw terminals with connecting bars

Auxiliary and control circuits

- 3RT24, 3RT145 to 3RT147:
  Screw or spring-loaded terminals
- 3RT148:
  Screw terminals

Electromagnetic compatibility (EMC)

The contactors comply with the conditions for environment A according to IEC 60947-1.

Note:

When the contactors are used in an environment with frequency converters, the configuration notes must be observed, see Equipment Manual.

Contact reliability of the auxiliary contacts

If voltages ≤ 110 V and currents ≤ 100 mA are to be switched, the auxiliary contacts of the 3RT contactors or 3RH contactor relays should be used as they guarantee a high level of contact reliability.

These auxiliary contacts are particularly suitable for solid-state circuits with currents ≥ 1 mA at a voltage ≥ 17 V.

Operating mechanism types

3RT244 contactors

The contactors are available as versions with conventional AC or DC operating mechanisms or as versions with a wide-range solid-state operating mechanism and a universal actuating voltage (AC or DC operation).

With an operating range from 0.8 to 1.1 x U_S, control takes place via the control supply voltage connection A1 - A2.

3RT145 to 3RT147 contactors

The contactors are powered via a supply voltage with an operating range from 0.8 to 1.1 x U_S, optionally also controlled depending on the chosen mode of operation. Alternatively, control is via the separate 24 V DC control signal input. Various rated voltage ranges for AC/DC control are available.

The following control and/or operating mechanism versions are available:

- 3RT14..-.A contactors:
  Standard operating mechanism for AC and DC operation (power consumption reduced from closing to closed)
- Solid-state operating mechanisms:
  Overvoltage damping of the operating mechanism coil is already integrated in the electronics for contactors with solid-state operating mechanisms.
  The following versions are available:
  - 3RT14..-.N contactors:
    With two operating modes: direct control or via PLC input (24 V DC)
  - 3RT14..-.P contactors:
    Control via PLC input (24 V DC) only, but with additional remaining lifetime indicator (RLT)
  - 3RT14..-.S contactors:
    Control via fail-safe PLC input (24 V DC) only, for simplification of safety applications

3RT148 contactors

The contactors are equipped with a solid-state operating mechanism for AC/DC control; coil damping is integrated. The operating range is 0.85 to 1.1 x U_S.

Replacing solenoid coils, operating mechanisms or spare contacts

3RT244 contactors

Solenoid coil or spare contact replacement is possible.

3RT145 to 3RT147 contactors

The operating mechanisms for 3RT14..-.A/-.N/-.P contactors are removable and can be replaced simply by unlocking and pulling them out. The spare contacts can also be replaced.

NOTICE:
Removal or changing of the operating mechanism is not permitted for 3RT14..-.S contactors with fail-safe control.

3RT148 contactors

The operating mechanisms are removable and can be replaced simply by unlocking and pulling them out.

Fitting auxiliary contacts and mounting additional auxiliary switches

Features in delivery condition

- 3RT244 contactors:
  Two auxiliary contacts (1 NO + 1 NC) are integrated in the basic unit.
- 3RT14 contactors:
  These contactors are supplied with two laterally mounted auxiliary switches with two contacts each (2 NO + 2 NC).

Expansion possibilities

All basic units can be expanded using auxiliary switches; the permissible configuration must be observed.

For detailed information about the fitting of auxiliary switches for 3RT244 contactors, see pages 3/81 to 3/86.

Accessories and spare parts

- 3RT244 and 3RT145 to 3RT147 contactors, see Basic units, page 3/69 onwards
- 3RT148 contactors, see page 4/19 onwards

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Connection of contactors to fail-safe control modules

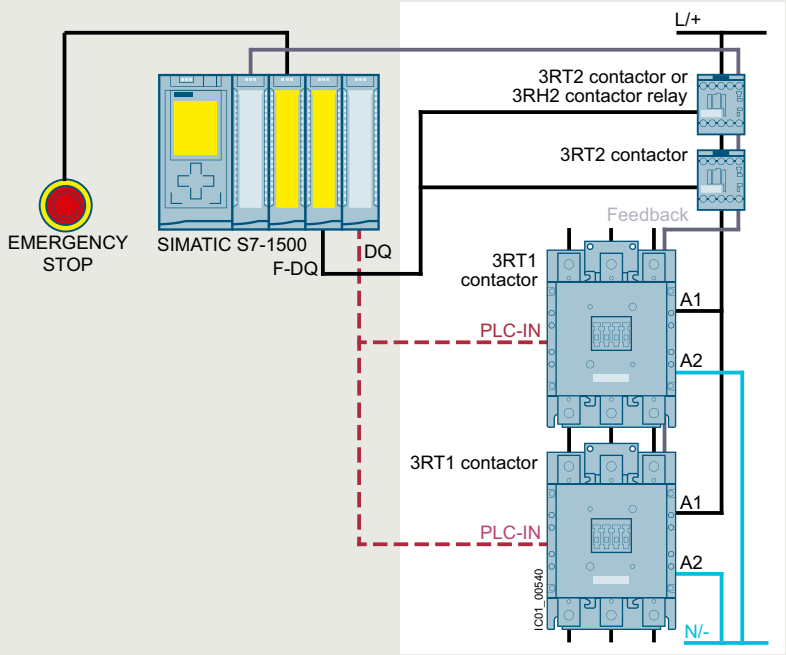
While contactors with smaller power ratings can be connected directly to the outputs of fail-safe controllers, implementing safety-related applications with standard contactors with higher power is much more complicated and elaborate because of the necessary coupling links.

Due to their fail-safe control input, the special versions from size S6 to S12 (3RT14..-.S) provide a much simpler way of doing this.

More information, see

- Safety technology, page 11/1 onwards
- Guide of use for contactors in safety applications

Example for SIL 2 and SIL 3/PL e application – previously:

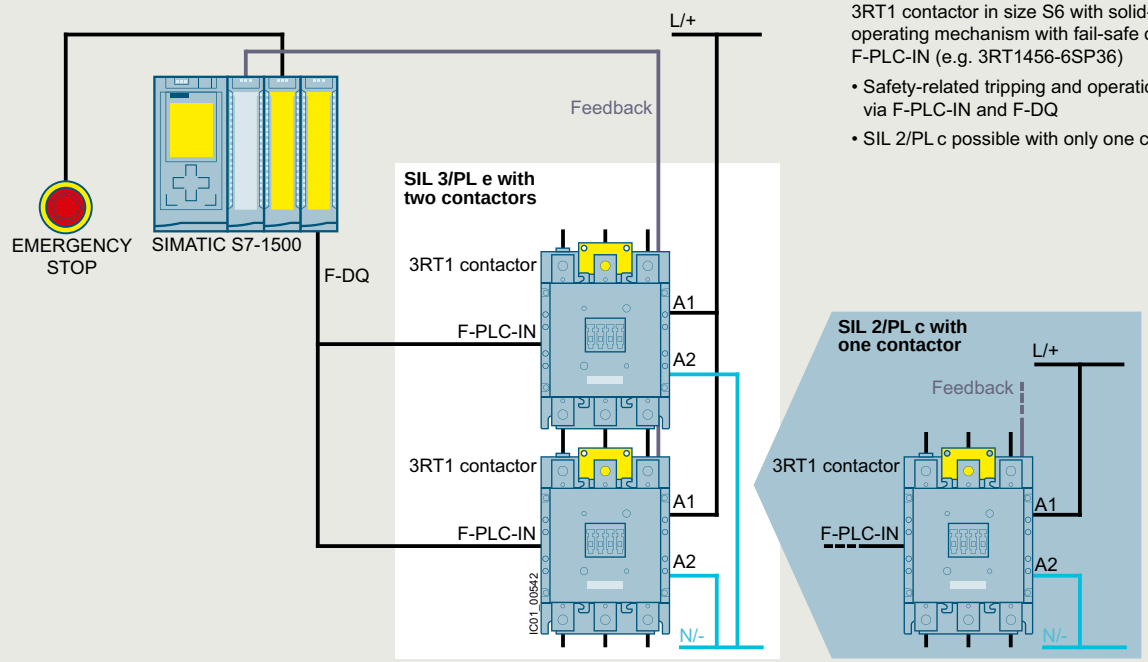


3RT1 contactor in size S6 with standard or solid-state operating mechanism with PLC-IN

- Safety-related tripping only possible via coupling links and F-DQ
- Standard operating mechanism: operational switching via coupling links and F-DQ
- Solid-state operating mechanism: operational switching with PLC-IN and DQ

Application with safety-related disconnection with standard contactors using the example of a 3RT145 contactor

Example for SIL 3/PL e (left-hand side) or SIL 2/PL c (right-hand side) application – new:



3RT1 contactor in size S6 with solid-state operating mechanism with fail-safe control input F-PLC-IN (e.g. 3RT1456-6SP36)

- Safety-related tripping and operational switching via F-PLC-IN and F-DQ
- SIL 2/PL c possible with only one contactor

Application with safety-related disconnection with contactors with fail-safe control using the example of a 3RT145 contactor

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SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

Overview graphics with mountable accessories

- 3RT244 contactors, see page 3/11
- 3RT145 to 3RT147 contactors, see page 3/12 onwards
- 3RT148 contactors, see following graphic

1 3RT1481 to 3RT1487 contactors
(3RT1487 contactor is shown)

Can be mounted onto side of contactor
2 3RH1981-1JA11 second auxiliary switch

3RT1481 to 3RT1487 contactors with mountable accessories

Application

The 3RT.4 contactors can be used for the following applications:

- For switching weak or non-inductive loads (AC-1)
- Disconnecting loads or power generation plants from the grid (e.g. wind turbines or photovoltaic systems)
- Disconnecting frequency converters from the grid

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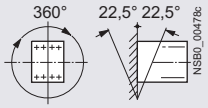
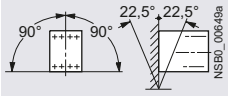
Technical specifications

More information

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/24229/td
For FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/24229/faq

Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/24229/man
Guide of use for contactors in safety applications, see https://support.industry.siemens.com/cs/ww/en/view/109807687

Type		3RT2446, 3RT2448	3RT1456	3RT1466	3RT1467	3RT1476
Size		S3	S6	S10		S12
General data						
Dimensions (W x H x D)						
• Basic units - Screw/spring-loaded terminals	mm	70 x 140 x 152	120 x 172 x 170	145 x 210 x 202		160 x 214 x 225
• Basic unit with mounted auxiliary switch - Screw terminals	mm	70 x 140 x 196	120 x 172 x 217	145 x 210 x 251		160 x 214 x 271
- Spring-loaded terminals	mm	70 x 140 x 200	--			
• Basic unit with mounted function module or solid-state time-delayed auxiliary switch - Screw/spring-loaded terminals	mm	70 x 140 x 226	--			
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.						
Upright mounting position		 Special version required	--			
Mechanical endurance						
• Basic units and basic units with mounted auxiliary switch	Operating cycles	10 million				
• Basic units with solid-state compatible auxiliary switch	Operating cycles	5 million	--			
Electrical endurance for utilization category AC-1, at U_e = 400 V	Operating cycles	0.5 million			0.35 million	0.5 million
Rated insulation voltage U_i (pollution degree 3)	V	1 000				
Rated impulse withstand voltage U_{imp}	kV	6	8			
Protective separation between the coil and the main contacts according to IEC 60947-1, Annex N	V	690				
Mirror contacts according to IEC 60947-4-1, Annex F A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.						
• Integrated auxiliary switches		Yes	--			
• Removable auxiliary switches		--	Yes			
Permissible ambient temperature						
• During operation	°C	-25 ... +60				
• During storage	°C	-55 ... +80				
Short-circuit protection						
Main circuit						
• Version of the fuse link required for short-circuit protection of the main circuit						
- For type of coordination 1		gG: 250 A (690 V, 100 kA)	gG: 355 A (690 V, 100 kA)	gG: 500 A (690 V, 100 kA)		gG: 800 A (690 V, 50 kA)
- For type of coordination 2		gG: 250 A (690 V, 100 kA)	gG: 350 A (690 V, 100 kA)	gG: 500 A (690 V, 100 kA)		gG: 710 A (690 V, 100 kA)
Auxiliary circuit						
• Version of the fuse link required for short-circuit protection of the auxiliary switch	A	Fuse gG: 10				
• Version of the miniature circuit breaker required for short-circuit protection of the auxiliary switch	A	On request				
Short-circuit protection for contactors with overload relays		See Configuration Manual for load feeders				
Short-circuit protection for fuseless load feeders		See • 3RA2 load feeders, page 8/5 onwards • Configuration Manual for load feeders				

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SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

Type			3RT2446, 3RT2448 -.A	3RT2446, 3RT2448 -.N	3RT1456 -.A	3RT1456 -.N/-.P/-.S	3RT1466, 3RT1467 -.A	3RT1466, 3RT1467 -.N/-.P/-.S	3RT1476 -.A	3RT1476 -.N/-.P/-.S
Size			S3		S6		S10		S12	
Control										
Solenoid coil operating range (AC/DC)			0.8 ... 1.1 x U_s	0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$						
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)										
• AC operation, 50 Hz, standard version	Closing	VA	296	--						
	P.f. φ		0.61	--						
	Closed	VA	19	--						
	P.f. φ		0.38	--						
• AC operation, 50/60 Hz, standard version	Closing	VA	348/296	--						
	P.f. φ		0.62/0.55	--						
	Closed	VA	25/18	--						
	P.f. φ		0.35/0.41	--						
• AC operation, 50/60 Hz, for USA/Canada	Closing	VA	326/326	--						
	P.f. φ		0.62/0.55	--						
	Closed	VA	22/22	--						
	P.f. φ		0.38/0.4	--						
• AC/DC operation	Closing for AC operation	VA	--	163	300	280	590	530	830	750
	P.f. φ		--		0.9	0.8	0.9	0.8	0.9	0.8
	Closed for AC operation	VA	--	3.1	5.8	4.8	6.7	8.5	9.2	9
	P.f. φ		--		0.8	0.6	0.9	0.4	0.9	0.4
	Closing for DC operation	W	--	76	360	320	650	580	920	800
	Closed for DC operation	W	--	1.8	5.2	2.8	7.4	3.4	10	3.6
Type of PLC control input according to IEC 60947-1										
• Solid-state operating mechanism	3RT14..-.N/-.P		--		Type 2					
	3RT14..-.S		--		Type 1					
• Rated voltage		V DC	--		24					
• Operating range		V DC	--		17 ... 30					
• Power consumption		mA	--		≤ 30					
• Recovery time after mains failure, typical (applicable only for fail-safe version 3RT14..-.S)		s	--		2					

Type			3RT2446	3RT2448	3RT1456	3RT1466	3RT1467	3RT1476
Size			S3		S6	S10		S12
Rated data of the main contacts								
Load rating with AC								
Utilization category AC-1								
• Rated operational currents I_e	At 40 °C up to 690 V	A	140	160	275	400	500	690
	At 60 °C up to 690 V	A	130	140	250	380	450	Standard operating mechanism: 650, solid-state operating mechanism: 600
	At 40 °C up to 1 000 V	A	60	80	--			
	At 60 °C up to 1 000 V	A	60	80	--			
• Minimum cross-section in the main circuit at maximum AC-1 rated value		mm^2	50	70	140	240	300	480
Power loss per main conducting path	At I_e/AC-1/40 °C	W	9.8	12.8	28.8	35.2	35.2	61.9

Type		3RT2446, 3RT2448
Size		S3
Conductor cross-sections		
Main conductors (1 or 2 conductors can be connected)		Screw terminals
• Solid	mm^2	2 x (2.5 ... 16)[1]
• Stranded	mm^2	2 x (6 ... 16)[1]; 2 x (10 ... 50)[1]; 1 x (10 ... 70)[1]
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (2.5 ...35)[1]; 1 x (2.5 ... 50)[1]
• AWG cables, solid or stranded	AWG	2 x (10 ... 1/0)[1]; 1 x (10 ... 2/0)[1]
• Terminal screws		Hexagon socket, size 4
- Tightening torque	Nm	4.5 ... 6 (40 ... 53 lb.in)
Auxiliary conductors and control conductors (1 or 2 conductors can be connected)		
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1]; 2 x (18 ... 14)[1]
• Terminal screws		M3 (for Pozidriv size 2; ∅ 5 ... 6 mm)
- Tightening torque	Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

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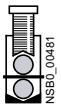
SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

Type		3RT1456		3RT1466, 3RT1467	3RT1476
Size		S6		S10	S12
Conductor cross-sections					
Main conductors (1 or 2 conductors can be connected)		Screw terminals			
With mounted box terminals	Type	3RT1955-4G	3RT1956-4G	3RT1966-4G	
Terminal screws		M10 (hexagon socket, A/F 4)	M10 (hexagon socket, A/F 4)	M12 (hexagon socket, A/F 5)	
• Tightening torque	Nm lb.in	10 ... 12 90 ... 110	10 ... 12 90 ... 110	20 ... 22 180 ... 195	
Front clamping point connected					
• Finely stranded with end sleeve (DIN 46228) • Finely stranded without end sleeve • Stranded	mm^2 mm^2 mm^2	16 ... 70 16 ... 70 16 ... 70	16 ... 120 16 ... 120 16 ... 120	70 ... 240 70 ... 240 95 ... 300	
• AWG cables, solid or stranded	AWG	6 ... 2/0	6 ... 250 kcmil	3/0 ... 600 kcmil	
• Ribbon cable conductors (Number x Width x Thickness)	mm	Min. 3 x 9 x 0.8, max. 6 x 15.5 x 0.8	Min. 3 x 9 x 0.8, max. 10 x 15.5 x 0.8	Min. 6 x 9 x 0.8, max. 20 x 24 x 0.5	
Rear clamping point connected					
• Finely stranded with end sleeve (DIN 46228) • Finely stranded without end sleeve • Stranded	mm^2 mm^2 mm^2	16 ... 70 16 ... 70 16 ... 70	16 ... 120 16 ... 120 16 ... 120	120 ... 185 120 ... 185 120 ... 240	
• AWG cables, solid or stranded	AWG	6 ... 2/0	6 ... 250 kcmil	250 ... 500 kcmil	
• Ribbon cable conductors (Number x Width x Thickness)	mm	Min. 3 x 9 x 0.8, max. 6 x 15.5 x 0.8	Min. 3 x 9 x 0.8, max. 10 x 15.5 x 0.8	Min. 6 x 9 x 0.8, max. 20 x 24 x 0.5	
Both clamping points connected (minimum cross-section 16 mm^2)					
 • Finely stranded with end sleeve (DIN 46228) • Finely stranded without end sleeve • Stranded	mm^2 mm^2 mm^2	Max. 1 x 50, 1 x 70 Max. 1 x 50, 1 x 70 Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120 Max. 1 x 95, 1 x 120 Max. 1 x 95, 1 x 120	Min. 2 x 50, max. 2 x 185 Min. 2 x 50, max. 2 x 185 Min. 2 x 70, max. 2 x 240	
• AWG cables, solid or stranded	AWG	Max. 2 x 1/0	Max. 2 x 3/0	Min. 2 x 2/0, max. 2 x 500 kcmil	
• Ribbon cable conductors (Number x Width x Thickness)	mm	Max. 2 x (6 x 15.5 x 0.8)	Max. 2 x (10 x 15.5 x 0.8)	Max. 2 x (20 x 24 x 0.5)	
Busbar connections					
• Connecting bar (max. width) - Bore diameter	mm mm	17 9		25 11	
Cable lug connection		[1]		[2]	
• Finely stranded with cable lug	mm^2	16 ... 95		50 ... 240	
• Stranded with cable lug	mm^2	25 ... 120		70 ... 240	
• AWG cables, solid or stranded	AWG	4 ... 250 kcmil		2/0 ... 500 kcmil	
• Terminal screws - Tightening torque	 Nm lb.in	M8 x 25 (A/F 13) 10 ... 14 90 ... 124		M10 x 30 (A/F 17) 14 ... 24 124 ... 210	
Auxiliary conductors (1 or 2 conductors can be connected)					
• Solid	mm^2	2 x (0.5 ... 1.5)[3], 2 x (0.75 ... 2.5)[3] according to IEC 60947; max. 2 x (0.75 ... 4)[3]			
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)[3]; 2 x (0.75 ... 2.5)[3]			
• AWG cables, solid or stranded	AWG	2 x (18 ... 14)			
• Terminal screws - Tightening torque	 Nm lb.in	M3 (Pozidriv size 2) 0.8 ... 1.2 7 ... 10.3			
Auxiliary conductors[4] (1 or 2 conductors can be connected)		Spring-loaded terminals			
• Operating devices		3.0 x 0.5; 3.5 x 0.5			
• Solid	mm^2	2 x (0.25 ... 2.5)			
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.25 ... 1.5)			
• Finely stranded without end sleeve	mm^2	2 x (0.25 ... 2.5)			
• AWG cables, solid or stranded	AWG	2 x (24 ... 14)			

1) 3RT1456: When connecting cable lugs according to DIN 46235, use the 3RT1956-4EA1 terminal cover for conductor cross-sections from 95 mm^2 to maintain the phase clearance, see page 3/112.

2) 3RT1466, 3RT1467 and 3RT1476: When connecting cable lugs according to DIN 46234 for conductor cross-sections larger than 240 mm^2 and according to DIN 46235 for conductor cross-sections larger than 185 mm^2, the 3RT1966-4EA1 terminal cover is required to maintain the phase clearance, see page 3/112.

3) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

4) Max. external diameter of the conductor insulation: 3.6 mm. On spring-loaded terminals with conductor cross-sections ≤ 1 mm^2 an insulation stop is recommended, see page 3/115.

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SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

Type		3RT1481-6A.36	3RT1482-6A.36	3RT1483-6AP36	3RT1485-6AP36	3RT1486-6AP36	3RT1487-6AP36
General data							
Dimensions							
• Width	mm	285			431		
• Height	mm	352			403		
• Depth	mm	250			246		
Mounting position		For vertical mounting surface can be rotated ± 30°, for vertical mounting surface can be tilted ± 30° forward or backward					
Installation altitude at height above sea level, maximum	m	2 000					
Insulation voltage at pollution degree 3							
• Of the main circuit	V	1 000					
• Of the auxiliary circuit	V	600					
Impulse withstand voltage							
• Of the main circuit	kV	8					
• Of the auxiliary circuit	kV	6					
Product function, mirror contact according to IEC 60947-4-1		Yes					
Ambient temperature							
• During operation	°C	-25 ... +55					
• During storage	°C	-40 ... +80					
Short-circuit protection							
Version of the fuse link required							
• For short-circuit protection of the main circuit for type of coordination 2		aR: 1 000 A (1 000 V, 30 kA)	aR: 1 100 A (1 000 V, 42 kA)	aR: 1 400 A (1 000 V, 42 kA)	aR: 2 200 A (1 000 V, 42 kA)	aR: 2 500 A (1 000 V, 42 kA)	aR: 2 800 A (1 000 V, 50 kA)
• For short-circuit protection of the auxiliary switch		gG: 16 A (600 V, 1 kA)					

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SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

Type		3RT1481-6AF36	6AP36	3RT1482-6AF36	6AP36	3RT1483-6AP36	3RT1485-6AP36	3RT1486-6AP36	3RT1487-6AP36
Control circuit/control									
Operating range factor of the control supply voltage, rated value of the solenoid coil									
• At AC at 50 Hz		0.85 ... 1.1							
• At AC at 60 Hz		0.85 ... 1.1							
• At DC		0.85 ... 1.1							
Solenoid coil closing power for DC	W	1 400	2 000	1 400	2 000	2 700	2 800		
Closing apparent power of the solenoid coil for AC									
• At 50 Hz	VA	1 000				1 700	1 800		
• At 60 Hz	VA	1 000				1 700	1 800		
Solenoid coil closed for DC	W	6	7	6	7	8	11		
Closed apparent power of the solenoid coil for AC									
• At 50 Hz	VA	18	23	18	23	20	33		
• At 60 Hz	VA	18	23	18	23	20	33		
Main circuit									
Operational current at AC-1									
• Up to 690 V									
- At an ambient temperature of 40 °C	A	900		1 050		1 260	1 700	2 100	2 650
- At an ambient temperature of 55 °C	A	900		1 050		1 260	1 700	2 100	2 650
• Up to 1000 V									
- At an ambient temperature of 40 °C	A	900		1 050		1 260	1 700	2 100	2 650
- At an ambient temperature of 55 °C	A	900		1 050		1 260	1 700	2 100	2 650
Type of electrical connection for the main circuit		Busbar connections							
Minimum cross-section in the main circuit for max. AC-1 rated value	mm^2	600		800		1 000	1 500	2 000	3 000

Type		3RT1481-6A.36, 3RT1482-6A.36	3RT1483-6AP36	3RT1485-6AP36, 3RT1486-6AP36	3RT1487-6AP36
Conductor cross-sections					
Control circuit/control					
Type of connectable conductor cross-sections for auxiliary contacts					
• Solid		2x (1 ... 2.5 mm^2)			
• Solid or stranded		2x (1 ... 2.5 mm^2)			
• Finely stranded with end sleeve		2x (1 ... 2.5 mm^2)			
Main circuit					
Width of connecting bar	mm	40	50	103	
Thickness of connecting bar	mm	10	13	10	20
Diameter of hole	mm	17	13	15	13

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SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

Selection and ordering data

Size S3: AC operation or AC/DC operation

- Coil circuits (varistors, diodes, etc.) retrofittable
- Auxiliary switches can be retrofitted
- Main and control conductors: Screw terminals

3RT244.-1...0

Size	Rated data AC-1, t_u: 40 °C Operational current I_e up to **690 V** **A**	Rated data AC-1, t_u: 60 °C Operational current I_e up to 690 V A	Auxiliary contacts Ident. No.	Auxiliary contacts Version NO	Auxiliary contacts Version NC	Rated control supply voltage U_s 50 Hz AC V	Rated control supply voltage U_s 50 Hz AC or DC V	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
For screw fixing and snap-on mounting on TH 35-15 and TH 75-15 DIN rails												
AC operation												
S3	**140**	130	**11**	1	1	24	--	**3RT2446-1AB00**		1	1 unit	41B
						110	--	**3RT2446-1AF00**		1	1 unit	41B
						230	--	**3RT2446-1AP00**		1	1 unit	41B
	160	140	**11**	1	1	24	--	**3RT2448-1AB00**		1	1 unit	41B
						110	--	**3RT2448-1AF00**		1	1 unit	41B
						230	--	**3RT2448-1AP00**		1	1 unit	41B
AC/DC operation												
With integrated coil circuit (varistor integrated in electronics at the factory)												
S3	**140**	130	**11**	1	1	--	20 ... 33	**3RT2446-1NB30**		1	1 unit	41B
						--	83 ... 155	**3RT2446-1NF30**		1	1 unit	41B
						--	175 ... 280	**3RT2446-1NP30**		1	1 unit	41B
	160	140	**11**	1	1	--	20 ... 33	**3RT2448-1NB30**		1	1 unit	41B
						--	83 ... 155	**3RT2448-1NF30**		1	1 unit	41B
						--	175 ... 280	**3RT2448-1NP30**		1	1 unit	41B

Other voltages according to page 4/52 on request.
Accessories and spare parts, see page 3/69 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

Sizes S6 to S12: AC/DC operation

- 3RT14..-.A standard operating mechanism
- Solid-state operating mechanism
  - 3RT14..-.N with 24 V DC control signal input
  - 3RT14..-.P with 24 V DC control signal input and remaining lifetime indicator (RLT)
- For screw fixing
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts is enclosed.

3RT1456-6A.36

3RT1466-6A.36

3RT1476-6A.36

3RT1476-6N.36

3RT1476-6P.35

Size	Rated data AC-1, t_u: 40 °C	60 °C	Auxiliary contacts, lateral		Rated control supply voltage U_s	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Operational current I_e up to		Version		50/60 Hz AC or DC					
	690 V	690 V	NO	NC	V					
	A	A								
Standard operating mechanism for AC and DC operation (power consumption reduced from closing to closed)										
With integrated coil circuit (varistor integrated at the factory)										
S6	**275**	250	2	2	110 ... 127	**3RT1456-6AF36**		1	1 unit	41B
					220 ... 240	**3RT1456-6AP36**		1	1 unit	41B
S10	**400**	380	2	2	110 ... 127	**3RT1466-6AF36**		1	1 unit	41B
					220 ... 240	**3RT1466-6AP36**		1	1 unit	41B
	500	450	2	2	110 ... 127	**3RT1467-6AF36**		1	1 unit	41B
					220 ... 240	**3RT1467-6AP36**		1	1 unit	41B
S12	**690**	650	2	2	110 ... 127	**3RT1476-6AF36**		1	1 unit	41B
					220 ... 240	**3RT1476-6AP36**		1	1 unit	41B
Solid-state operating mechanism										
With 24 V DC control signal input e.g. for control by PLC										
With integrated coil circuit (varistor integrated in electronics at the factory)										
S6	**275**	250	2	2	96 ... 127	**3RT1456-6NF36**		1	1 unit	41B
					200 ... 277	**3RT1456-6NP36**		1	1 unit	41B
S10	**400**	380	2	2	96 ... 127	**3RT1466-6NF36**		1	1 unit	41B
					200 ... 277	**3RT1466-6NP36**		1	1 unit	41B
	500	450	2	2	96 ... 127	**3RT1467-6NF36**		1	1 unit	41B
					200 ... 277	**3RT1467-6NP36**		1	1 unit	41B
S12	**690**	650	2	2	96 ... 127	**3RT1476-6NF36**		1	1 unit	41B
					200 ... 277	**3RT1476-6NP36**		1	1 unit	41B
With 24 V DC control signal input · with remaining lifetime indicator (RLT) e.g. for control by PLC										
With integrated coil circuit (varistor integrated in electronics at the factory)										
S6	**275**	250	1	1	96 ... 127	**3RT1456-6PF35**		1	1 unit	41B
					200 ... 277	**3RT1456-6PP35**		1	1 unit	41B
S10	**400**	380	1	1	96 ... 127	**3RT1466-6PF35**		1	1 unit	41B
					200 ... 277	**3RT1466-6PP35**		1	1 unit	41B
	500	450	1	1	96 ... 127	**3RT1467-6PF35**		1	1 unit	41B
					200 ... 277	**3RT1467-6PP35**		1	1 unit	41B
S12	**690**	650	1	1	96 ... 127	**3RT1476-6PF35**		1	1 unit	41B
					200 ... 277	**3RT1476-6PP35**		1	1 unit	41B

Other voltages according to page 4/53 on request.
Accessories and spare parts, see page 3/69 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

Sizes S6 to S12: AC/DC operation

- Certified and fail-safe 24 V DC control input with max. 20 mA, e.g. for control via the fail-safe output module of a controller (F-PLC) or safety relay
- Achievable Safety Integrity Level (SIL) according to IEC 62061 and Performance Level (PL) according to ISO 13849-1 with corresponding fault diagnostics:
  - With one contactor: SIL 2/PL c
  - With two contactors in series: SIL 3/PL e
  - Fail-safe applications can be implemented using this contactor.
- Version with removable lateral auxiliary switches or permanently mounted auxiliary switches
- For screw fixing
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts is enclosed.

More information, see
- Safety technology, page 11/1 onwards
- Guide of use for contactors in safety applications

3RT1456-6S.36

3RT1466-6S.36

3RT1476-6S.36

3RT1456-6S.36-3PA0

3RT1476-6S.36-3PA0

Size	Rated data according to IEC 60947-4-1 AC-1, t_u: 40 °C	60 °C	Auxiliary contacts, lateral		Rated control supply voltage U_s	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	Operational current I_e up to		Version		50/60 Hz AC or DC					
	690 V	690 V	NO	NC	V	Article No.	Price per PU			
	A	A								
Solid-state operating mechanism										
With two removable laterally mounted auxiliary switches										
With integrated coil circuit (varistor integrated in electronics at the factory)										
S6	**275**	250	2	2	96 ... 127	**3RT1456-6SF36**		1	1 unit	41B
					200 ... 277	**3RT1456-6SP36**		1	1 unit	41B
S10	**400**	380	2	2	96 ... 127	**3RT1466-6SF36**		1	1 unit	41B
					200 ... 277	**3RT1466-6SP36**		1	1 unit	41B
	500	450	2	2	96 ... 127	**3RT1467-6SF36**		1	1 unit	41B
					200 ... 277	**3RT1467-6SP36**		1	1 unit	41B
S12	**690**	650	2	2	96 ... 127	**3RT1476-6SF36**		1	1 unit	41B
					200 ... 277	**3RT1476-6SP36**		1	1 unit	41B
With two permanently laterally mounted auxiliary switches										
With integrated coil circuit (varistor integrated in electronics at the factory)										
S6	**275**	250	2	2	96 ... 127	**3RT1456-6SF36-3PA0**		1	1 unit	41B
					200 ... 277	**3RT1456-6SP36-3PA0**		1	1 unit	41B
S10	**400**	380	2	2	96 ... 127	**3RT1466-6SF36-3PA0**		1	1 unit	41B
					200 ... 277	**3RT1466-6SP36-3PA0**		1	1 unit	41B
	500	450	2	2	96 ... 127	**3RT1467-6SF36-3PA0**		1	1 unit	41B
					200 ... 277	**3RT1467-6SP36-3PA0**		1	1 unit	41B
S12	**690**	650	2	2	96 ... 127	**3RT1476-6SF36-3PA0**		1	1 unit	41B
					200 ... 277	**3RT1476-6SP36-3PA0**		1	1 unit	41B

Accessories and spare parts, see page 3/69 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

AC/DC operation ≂

- Solid-state operating mechanism
- Version with two laterally mounted auxiliary switches (2 NO + 2 NC each)
- For screw fixing
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections

3RT1481-6A.36, 3RT1482-6A.36

3RT1483-6AP36

3RT1485-6AP36, 3RT1486-6AP36

3RT1487-6AP36

Rated data according to IEC 60947-4-1	Auxiliary contacts, lateral		Rated control supply voltage U_s		**Busbar connections**		PU (UNIT, SET, M)	PS*	PG
AC-1, t_u: 40 °C	Version		50/60 Hz AC	DC					
Operational current I_e up to **1 000 V**					Article No.	Price per PU			
A	NO	NC	V	V					
Solid-state operating mechanism									
With integrated coil circuit									
900	2	2	100 ... 127 200 ... 240	100 ... 110 200 ... 220	**3RT1481-6AF36** **3RT1481-6AP36**		1 1	1 unit 1 unit	41B 41B
1 050	2	2	100 ... 127 200 ... 240	100 ... 110 200 ... 220	**3RT1482-6AF36** **3RT1482-6AP36**		1 1	1 unit 1 unit	41B 41B
1 260	2	2	100 ... 240	100 ... 220	**3RT1483-6AP36**		1	1 unit	41B
1 700	2	2	100 ... 240	100 ... 220	**3RT1485-6AP36**		1	1 unit	41B
2 100	2	2	100 ... 240	100 ... 220	**3RT1486-6AP36**		1	1 unit	41B
2 650	2	2	100 ... 240	100 ... 220	**3RT1487-6AP36**		1	1 unit	41B

Accessories, see next table; spare parts, see page 4/19.

Accessories

Overview graphics for 3RT148 contactors with mountable accessories, see page 4/10.

More information

Manuals, see
https://support.industry.siemens.com/cs/ww/en/ps/24229/man

For contactors	Auxiliary contacts Version				**Screw terminals**		PU (UNIT, SET, M)	PS*	PG
					Article No.	Price per PU			
Type	NO	NC	Left	Right					
Second auxiliary switch (1 NO + 1 NC)									
Lateral mounting on the right and/or the left									
3RT148.	1	1	61 53 62 54	71 83 72 84	**3RH1981-1JA11**		1	1 unit	41B

3RH1981-1JA11

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

Spare parts

For contactors	Auxiliary contacts				Rated control supply voltage U_s		Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Version				50/60 Hz AC	DC					
Type	NO	NC	Left	Right	V	V					
First auxiliary switch (1 NO + 1 NC)											
	Lateral mounting on the right and/or the left						**Screw terminals**				
3RT148.	1	1	21 13 22 14	31 43 32 44	--	--	**3RH1981-1DA11**		1	1 unit	41B
Phase barriers											
	(1 set = 4 units)										
3RT1481 ... 3RT1483	--	--	--	--	--	--	**3RT1983-4AA1**		1	1 unit	41B
3RT1485 ... 3RT1487	--	--	--	--	--	--	**3RT1987-4AA1**		1	1 unit	41B
Withdrawable coils · AC/DC operation											
3RT1481, 3RT1482	--	--	--	--	100 ... 127	100 ... 110	**3RT1982-5AF31**		1	1 unit	41B
	--	--	--	--	200 ... 240	200 ... 220	**3RT1982-5AP31**		1	1 unit	41B
3RT1483	--	--	--	--	100 ... 240	100 ... 220	**3RT1983-5AP31**		1	1 unit	41B
3RT1485 ... 3RT1487	--	--	--	--	100 ... 240	100 ... 220	**3RT1987-5AP31**		1	1 unit	41B

3RH1981-1DA11

3RT1983-4AA1

3RT1987-4AA1

3RT1982-5A.31, 3RT1983-5AP31

3RT1987-5AP31

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

3RT231 to 3RT234 and 3RT135 to 3RT137 contactors, with screw terminals

Standards

IEC 60947-1, IEC 60947-4-1, IEC60947-5-1 (auxiliary switches)

Protecting connections against short circuit, overload and overvoltage

All connections must generally be protected against overload and short circuits using suitable measures. Different constraints must be considered depending on the type of connection:

Short-circuit and overload protection of main connections

For information on the protection of a free-standing contactor, see the technical product data sheet.

For more information on complete units such as contactors with overload relays or contactors with motor starter protectors as the motor feeder, see Configuration Manual for load feeders.

Short-circuit and overload protection of auxiliary connections

For information on the protection of auxiliary contacts, see the technical product data sheet.

Short-circuit and overload protection of control supply voltage connections or supply voltage connections

First of all, the relevant standards and regulations for configuring control panels and the parts and components installed in them must be taken into account, for example for cable dimensioning.

One possible protection for these circuits could be the selection of a suitable power supply, i.e. one with a current-limiting function. In the selection of the source and the connecting cable, the load characteristics of the contactor must be considered (short-time inrush current peaks for solid-state operating mechanisms, switch-on power, holding power).

If there are further switching elements in the circuit, such as the auxiliary contact system of an overload relay that operates the contactor, the short-circuit protection necessary for this must also be considered.

For further recommendations, e.g. the use of miniature circuit breakers or circuit breakers for equipment in control circuits, see Control panel tip – Selecting and dimensioning suitable power supplies quickly and reliably.

Protection against overvoltage at the control supply voltage connection

3RT23 contactors supplied without a coil circuit can be retrofitted with RC elements, varistors, diodes or diode assemblies (combination of diode and Zener diode for short break times) for damping switching overvoltages in the coil and can be ordered separately as accessories, see page 3/97 onwards.

3RT13 contactors are already equipped with coil damping (varistor).

Note:

The break times of the contactor, the opening delay times of the NO contacts and the closing delay times of the NC contacts increase with damping.

For more information about influencing the time response using damping, see Equipment Manual.

Connection methods

Main circuit

- 3RT231 and 3RT232 contactors:
  Screw terminals or spring-loaded terminals;
  spring-loaded terminals with convenient plug-in design for device connectors
- 3RT233 and 3RT234 contactors:
  Screw terminals with box terminal;
  direct connection to the connecting bar possible with cable lugs for 3RT234 when the box terminal is removed.
- 3RT135 to 3RT137 contactors:
  Screw terminals with connecting bars that the cables can be connected to using either cable lugs or flexible or rigid busbars.
- 3RT136 and 3RT137 contactors:
  These can be fitted with bus connectors offset, see page 4/35.

Auxiliary and control circuits

Screw terminals

Electromagnetic compatibility

The contactors fulfill the requirements for environment category A.

Note:

When the contactors are used in an environment with frequency converters, the configuration notes must be observed, see Equipment Manual.

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Contact reliability of the auxiliary contacts

If voltages ≤ 110 V and currents ≤ 100 mA are to be switched, the auxiliary contacts of the 3RT contactors or 3RH contactor relays should be used as they guarantee a high level of contact reliability.

These auxiliary contacts are particularly suitable for solid-state circuits with currents ≥ 1 mA at a voltage ≥ 17 V.

Motor protection

3RT23 contactors

For protection against overload, 3RU2 thermal overload relays (see page 7/89 onwards) or 3RB3 electronic overload relays (see page 7/102 onwards) can be mounted on the 3RT23 contactors.

3RT13 contactors

For protection against overload, 3RB2 electronic overload relays (see page 7/114 onwards) can be mounted on the 3RT13 contactors.

Operating mechanism types

3RT23 contactors

The contactors are available as versions with conventional AC or DC operating mechanisms or as versions with a wide-range solid-state operating mechanism and a universal actuating voltage (AC or DC operation possible).

Control takes place via the control supply voltage connection A1 - A2 with varying operating ranges (see relevant product data sheet for further details).

3RT13 contactors

The contactors are fitted with a wide-range solid-state operating mechanism that can be controlled with both 50/60 Hz AC and DC.

The operating range of the DC control is 0.8 x $U_{s\,min}$ and 1.1 x $U_{s\,max}$, and for AC operation 0.85 x $U_{s\,min}$ and 1.1 x $U_{s\,max}$.

Replacing solenoid coils, operating mechanisms or spare contacts

3RT23 contactors

Solenoid coil replacement is possible. Only the contacts for 3RT233 contactors can be replaced.

3RT13 contactors

It is not possible to change the operating mechanism or contacts.

Fitting auxiliary contacts and mounting additional auxiliary switches

Features in the delivery state

- 3RT23 contactors
  - 3RT231 contactor:
    An auxiliary contact is integrated in the basic unit.
  - 3RT232 to 3RT234 contactors:
    The basic units contain two integrated auxiliary contacts (1 NO + 1 NC).
- 3RT13 contactors
  These contactors are supplied with two laterally mounted auxiliary switches.

Expansion possibilities

All basic units can be expanded using auxiliary switches; the permissible configuration must be observed.

For detailed information about the fitting of auxiliary switches for 3RT23 contactors, see pages 3/81 to 3/86.

Accessories and spare parts

- 3RT231 to 3RT234 contactors, see page 3/69 onwards
- 3RT135 to 3RT137 contactors, see page 4/35

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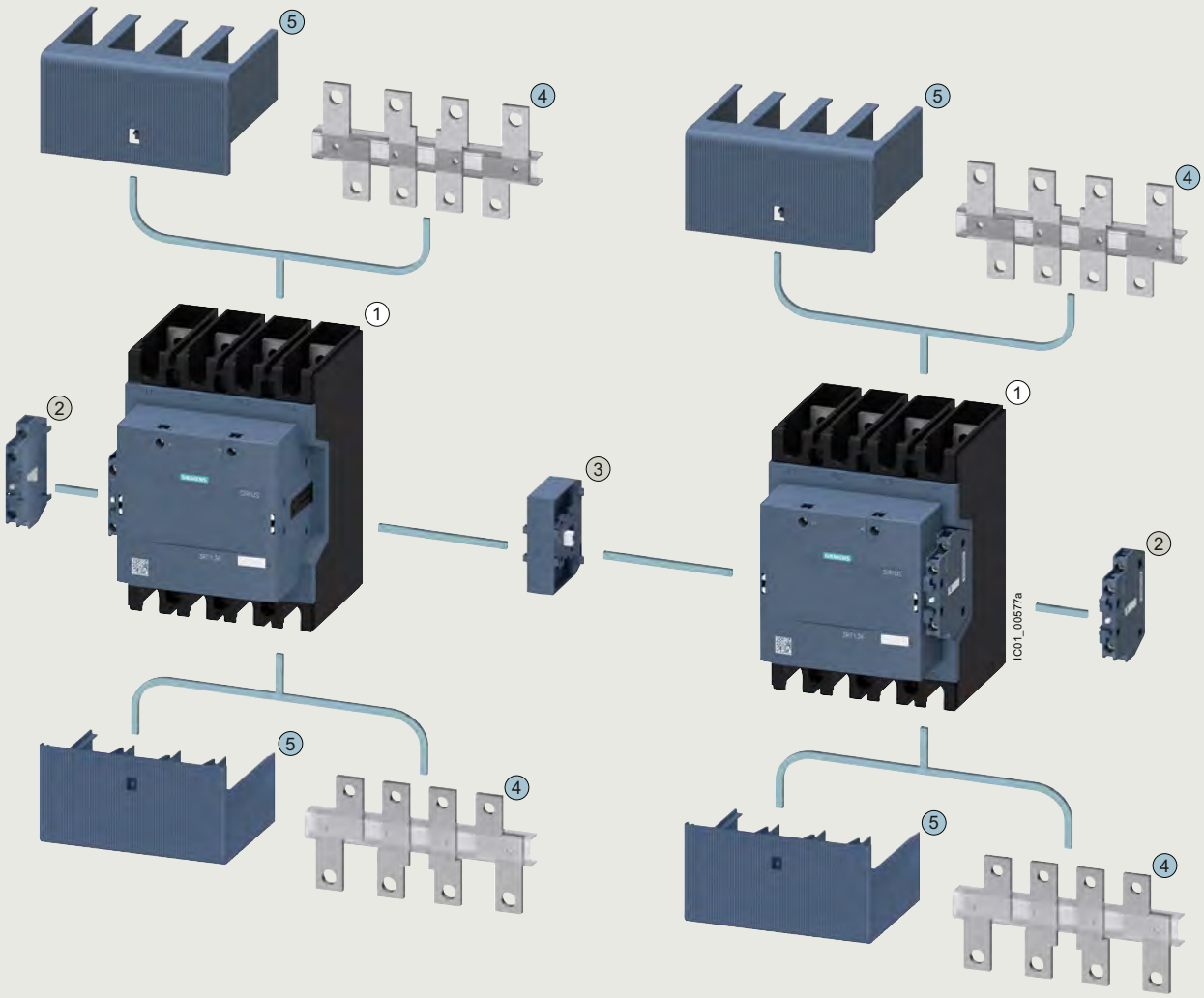
Overview graphic with mountable accessories

- 3RT23 contactors, see page 3/8 onwards
- 3RT135 to 3RT137 contactors, see following graphic



(1) 4-pole 3RT13 contactors, sizes S6 to S12
(scope of supply: The contactors are supplied with two laterally mounted auxiliary switch blocks)

(2) 3RH1951-1SA11 second auxiliary switch block, can be laterally mounted on the left or right

(3) 3RA1954-3A mechanical interlock for configuring contactor assemblies:
Two 3RT13 contactors of the same size (S6, S10 and S12) can be interlocked with each other. The laterally mounted auxiliary switches of the contactors must be removed beforehand.
The mechanical interlock cannot be used in conjunction with the bus connectors offset (4).

(4) 3RT19.6-4D bus connectors offsets, can be mounted on the top or bottom (providing no terminal cover (5) is mounted)

(5) 3RT19.6-4EB10 terminal covers, can be mounted on the top or bottom (providing no bus connectors offset (4) is mounted)

◯ Same accessories for sizes S6 to S12
◯ Different accessories depending on size

	Size	S6	S10		S12		
(1)	Contactor	3RT1355 (I_e = 200 A)	3RT1363 (I_e = 275 A)	3RT1364 (I_e = 350 A)	3RT1373 (I_e = 400 A)	3RT1374 (I_e = 500 A)	3RT1375 (I_e = 525 A)
(2)	Second auxiliary switch block	3RH1951-1SA11					
(3)	Mechanical interlock	3RA1954-3A					
(4)	Bus connectors offset	--	3RT1966-4D (from I > 275 A)		3RT1976-4D (from I > 450 A)		
(5)	Terminal cover	3RT1956-4EB10	3RT1966-4EB10		3RT1976-4EB10		

3RT135 to 3RT137 contactors with mountable accessories

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SIRIUS 3RT.3 contactors, 4-pole, up to 525 A

Application

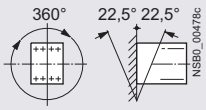
The 3RT.3 contactors can be used for the following applications:

- 4-pole switching of weak or non-inductive loads (AC-1)
- Disconnecting loads or power generation plants from the grid
- For system transfers

We additionally offer special versions of the 3RT23 contactors for switching motor-driven loads (AC-3).

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16165/td FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16165/faq	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16165/man

Type		3RT2316, 3RT2317	3RT2325 to 3RT2327	3RT2336, 3RT2337	3RT2344, 3RT2346, 3RT2348
Size		S00	S0	S2	S3
General data					
Dimensions (W x H x D)			(The values in brackets apply for DC operation)		
AC or DC operation					
• Basic units					
- Screw terminals	mm	45 x 58 x 73	60 x 85 x 97 (107)	75 x 114 x 130	96 x 140 x 152
- Spring-loaded terminals	mm	45 x 70 x 73	61 x 102 x 97 (107)	--	--
• Basic unit with mounted auxiliary switch					
- Screw terminals	mm	45 x 58 x 117	60 x 85 x 141 (151)	75 x 114 x 174	96 x 140 x 196
- Spring-loaded terminals	mm	45 x 70 x 121	61 x 102 x 145 (155)	--	--
• Basic unit with mounted function module or solid-state time-delayed auxiliary switch					
- Screw terminals	mm	45 x 58 x 147	60 x 85 x 171 (181)	75 x 114 x 204	96 x 140 x 226
- Spring-loaded terminals	mm	45 x 70 x 147	61 x 102 x 171 (181)	--	--
Permissible mounting position					
The contactors are designed for operation on a vertical mounting surface.					
Upright mounting position		Special version required			
Mechanical endurance	Operating cycles	30 million	10 million		
Electrical endurance at I_e/AC-1	Operating cycles	Approx. 0.5 million			
Rated insulation voltage U_i (pollution degree 3)	V	690			
Protective separation between the coil and the main contacts according to IEC 60947-1, Annex N	V	400			690
Permissible ambient temperature					
• During operation	°C	-25 ... +60			
• During storage	°C	-55 ... +80			

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Type	3RT2316, 3RT2317	3RT2325, 3RT2326	3RT2326-1...0-4AA0	3RT2327
Size	S00	S0		
Short-circuit protection				
Main circuit				
• Version of the fuse link required for short-circuit protection of the main circuit				
- For type of coordination 1	gG: 35 A (690 V, 100 kA)	gG: 63 A (690 V, 100 kA)	gG: 100 A (690 V, 100 kA), aM: 50 A (690 V, 100 kA), BS88: 100 A (415 V, 80 kA)	gG: 63 A (690 V, 100 kA)
- For type of coordination 2	gG: 20 A (690 V, 100 kA)		gG: 35 A (690 V, 100 kA), aM: 20 A (690 V, 100 kA), BS88: 35 A (415 V, 80 kA)	gG: 20 A (690 V, 100 kA)
Auxiliary circuit				
• Version of the fuse link required for short-circuit protection of the auxiliary switch	Fuse gG: 10 A (690 V, 1 kA)			
• Miniature circuit breaker version required for short-circuit protection of the auxiliary switch	6 A (230 V, 400 A, C characteristic)			

Type	3RT2336, 3RT2337		3RT2344, 3RT2346	3RT2346-1...0-4AA0	3RT2348
Size	S2		S3		
Short-circuit protection					
Main circuit					
• Version of the fuse link required for short-circuit protection of the main circuit					
- For type of coordination 1	gG: 160 A (690 V, 100 kA)		gG: 250 A (690 V, 100 kA)	gG: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA)	gG: 250 A (690 V, 100 kA)
- For type of coordination 2	gG: 63 A (690 V, 100 kA)	gR: 80 A (690 V, 100 kA)	gR: 250 A (690 V, 100 kA)	gG: 160 A (690 V, 100 kA), aM: 100 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA)	gR: 250 A (690 V, 100 kA)
Auxiliary circuit					
• Version of the fuse link required for short-circuit protection of the auxiliary switch	Fuse gG: 10 A (690 V, 1 kA)				
• Miniature circuit breaker version required for short-circuit protection of the auxiliary switch	6 A (230 V, 400 A, C characteristic)				

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SIRIUS 3RT.3 contactors, 4-pole, up to 525 A

Type			3RT2316	3RT2317	3RT2325	3RT2326, 3RT2327	3RT2336, 3RT2337	3RT2344, 3RT2346, 3RT2348
Size			S00		S0		S2	S3
Control								
Solenoid coil operating range								
• AC operation	At 50 Hz		0.8 ... 1.1 x U_s					
	At 60 Hz		0.85 ... 1.1 x U_s		0.8 ... 1.1 x U_s			
• DC operation	At 50 °C		0.8 ... 1.1 x U_s				--	
	At 60 °C		0.85 ... 1.1 x U_s				--	
• AC/DC operation			--				0.8 ... 1.1 x U_s	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)								
• AC operation, 50 Hz, standard version								
- Closing		VA	--		77		190	296
- P.f. φ			--		0.82		0.72	0.61
- Closed		VA	--		9.8		16	19
- P.f. φ			--		0.25		0.37	0.38
• AC operation, 50/60 Hz, standard version								
- Closing		VA	27/24.3	37/33	81/79		210/188	348/296
- P.f. φ			0.8/0.75		0.72/0.74		0.69/0.65	0.62/0.55
- Closed		VA	4.2/3.3	5.7/4.4	10.5/8.5		17.2/16.5	25/18
- P.f. φ			0.25/0.25		0.25/0.28		0.36/0.39	0.35/0.41
• AC operation, 60 Hz, USA, Canada								
- Closing		VA	31.7	43	87		188	326
- P.f. φ			0.77		0.76		0.67	0.55
- Closed		VA	4.8	6.5	9.4		16.5	22
- P.f. φ			0.25		0.28		0.37	0.4
• AC/DC operation								
- Closing for AC operation		VA	--				40	151
- P.f. φ			--				0.95	0.95
- Closed for AC operation		VA	--				2	3.5
- P.f. φ			--				0.95	0.95
- Closing for DC operation		W	--				23	76
- Closed for DC operation		W	--				1	2.7
• DC operation (closing = closed)		W	4		5.9		--	--[1]

[1] In the case of AC/DC coils, increased pickup currents (6.5 A on average) arise during the first 200 ms.

Type			3RT2316	3RT2317	3RT2325	3RT2326	3RT2327	3RT2336	3RT2337	3RT2344	3RT2346	3RT2348
Size			S00		S0			S2		S3		
Rated data of the main contacts												
Load rating with AC												
Utilization category AC-1												
• Rated operational currents I_e	At 40 °C, up to 690 V	A	18	22	35	40	50	60	110	110	140 (110)[1]	160
	At 60 °C, up to 690 V	A	16	20	30	35	42	55	95	100	130 (100)[1]	140
• Rated power for AC loads P.f. φ = 0.95 (at 60 °C)	At 230 V	kW	6	7.5	11	13	16	21	36	38	49	53
	400 V	kW	10.5	13	20	23	28	36	63	72	92	105
• Minimum cross-section in the main circuit at maximum AC-1 rated value		mm^2	2.5	4	10			16	35		50 (35)[1]	70
Power loss per main conducting path												
• At I_e/AC-1	At 40 °C	W	1.1	1.6	1.8	2.4	3	3.2	9.7	7.3	11.8	15.4
• At I_e/AC-3	At 400 V	W	--	--	--	(2.6)[1]	--	(4.3)[1]	--	--	(6.8)[1]	--

[1] The values in brackets apply for 3RT23.6-1...0-4AA0 versions.

Data for North America

Technical specifications of 3RT contactors, see page 3/45 onwards.

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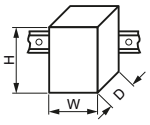
Type		3RT1355-6A.36	3RT1363-6A.36	3RT1364-6A.36	3RT1373-6A.36, 3RT1374-6A.36, 3RT1375-6A.36
Size		S6	S10		S12
General data					
Dimensions 					
• Width	mm	120	140		184
• Height	mm	150	196		225
• Depth	mm	128	153		180
Mounting position		For vertical mounting surface can be rotated ± 180°, and with 0° rotation can be tilted forward or backward ± 30°, or standing			
Installation altitude at height above sea level, maximum	m	2 000			
Insulation voltage at pollution degree 3					
• Of the main circuit	V	1 000			
• Of the auxiliary circuit	V	690			
Impulse withstand voltage					
• Of the main circuit	kV	8			
• Of the auxiliary circuit	kV	6			
Product function, mirror contact according to IEC 60947-4-1		Yes			
Ambient temperature					
• During operation	°C	-40 ... +60			
• During storage	°C	-40 ... +70			
Short-circuit protection					
Version of the fuse link required					
• For short-circuit protection of the main circuit for type of coordination 2		gG: 250 A (500 V, 100 kA)	gG: 355 A (500 V, 100 kA)	gG: 400 A (500 V, 100 kA)	gG: 630 A (500 V, 100 kA)
• For short-circuit protection of the auxiliary switch		gG: 10 A (690 V, 1 kA)			

Type		3RT1355-				3RT1363-				3RT1364-			
		6AE36	6AF36	6AP36	6AR36	6AE36	6AF36	6AP36	6AR36	6AE36	6AF36	6AP36	6AR36
Size		S6				S10							
Control circuit/control													
Operating range factor of the control supply voltage, rated value of the solenoid coil													
• At AC at 50 Hz		0.85 ... 1.1											
• At AC at 60 Hz		0.85 ... 1.1											
• At DC		0.8 ... 1.1											
Solenoid coil closing for DC	W	210	130	135	205		130	190		205	130	190	
Closing apparent power of the solenoid coil for AC													
• At 50 Hz	VA	225	170	130	205	165	175	220	185	165	175	220	185
• At 60 Hz	VA	225	170	130	205	165	175	220	185	165	175	220	185
Solenoid coil closed for DC	W	2.5		3	4	2.5			4	2.5			4
Closed apparent power of the solenoid coil for AC													
• At 50 Hz	VA	5.5	4	6	16	6	4	7	16	6	4	7	16
• At 60 Hz	VA	5.5	4	6	16	6	4	7	16	6	4	7	16
Main circuit													
Operational current at AC-1													
• Up to 690 V													
- At an ambient temperature of 40 °C	A	200				275				350			
- At an ambient temperature of 60 °C	A	175				250				300			
• Up to 1000 V													
- At an ambient temperature of 40 °C	A	--				250				275			
- At an ambient temperature of 60 °C	A	--				225				250			

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SIRIUS 3RT.3 contactors, 4-pole, up to 525 A

Type		3RT1373-				3RT1374-				3RT1375-			
		6AE36	6AF36	6AP36	6AR36	6AE36	6AF36	6AP36	6AR36	6AE36	6AF36	6AP36	6AR36
Size		S12											
Control circuit/control													
Operating range factor of the control supply voltage, rated value of the solenoid coil													
• At AC at 50 Hz		0.85 ... 1.1											
• At AC at 60 Hz		0.85 ... 1.1											
• At DC		0.8 ... 1.1											
Solenoid coil closing for DC	W	400	360	410	600	400	360	410	600	400	360	410	600
Closing apparent power of the solenoid coil for AC													
• At 50 Hz	VA	475	340	385	420	475	340	385	420	475	340	385	420
• At 60 Hz	VA	475	340	385	420	475	340	385	420	475	340	385	420
Solenoid coil closed for DC	W	3.5	2.5	4.5	4.7	3.5	2.5	4.5	4.7	3.5	2.5	4.5	4.7
Closed apparent power of the solenoid coil for AC													
• At 50 Hz	VA	8.5	17	17.5	21	8.5	17	17.5	21	8.5	17	17.5	21
• At 60 Hz	VA	8.5	17	17.5	21	8.5	17	17.5	21	8.5	17	17.5	21
Main circuit													
Operational current at AC-1													
• Up to 690 V													
- At an ambient temperature of 40 °C	A	400				500				525			
- At an ambient temperature of 60 °C	A	350				400				425			
• Up to 1000 V													
- At an ambient temperature of 40 °C	A	350				375				400			
- At an ambient temperature of 60 °C	A	300				325				350			

Type		3RT1355-6A.36	3RT1363-6A.36	3RT1364-6A.36	3RT1373-6A.36	3RT1374-6A.36	3RT1375-6A.36
Size		S6	S10		S12		
Conductor cross-sections							
Type of electrical connection for the main circuit		Connecting bar		Connecting bar, bus connectors offset > 275 A required	Connecting bar	Connecting bar, bus connectors offset > 450 A required	
Minimum cross-section in the main circuit at maximum AC-1 rated value	mm^2	95	150	240		300	370

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Selection and ordering data

AC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT231.-1A.00

3RT231.-2A.00

3RT232.-1A.00

3RT232.-2A.00

3RT233.-1A.00

3RT234.-1A.00

Rated data AC-1, t_u: 40/60 °C		Auxiliary contacts		Rated control supply voltage U_s		Screw terminals		Spring-loaded terminals	
Operational current I_e up to 690 V	Ident. No.	Version		50/60 Hz AC	50 Hz AC	Article No.	Price per PU	Article No.	Price per PU
A		NO	NC	V	V				
For screw fixing and snap-on mounting on TH 35 DIN rail									
Size S00									
18/16	**--**	--	--	24	--	**3RT2316-1AB00**		**3RT2316-2AB00**	
				110	--	**3RT2316-1AF00**		**3RT2316-2AF00**	
				230		**3RT2316-1AP00**		**3RT2316-2AP00**	
22/20	**--**	--	--	24	--	**3RT2317-1AB00**		**3RT2317-2AB00**	
				110	--	**3RT2317-1AF00**		**3RT2317-2AF00**	
				230	--	**3RT2317-1AP00**		**3RT2317-2AP00**	
Size S0									
35/30[1]	**11**	1	1	--	24	**3RT2325-1AB00**		**3RT2325-2AB00**	
				--	110	**3RT2325-1AF00**		**3RT2325-2AF00**	
				--	230	**3RT2325-1AP00**		**3RT2325-2AP00**	
40/35[1]	**11**	1	1	--	24	**3RT2326-1AB00**		**3RT2326-2AB00**	
				--	110	**3RT2326-1AF00**		**3RT2326-2AF00**	
				--	230	**3RT2326-1AP00**		**3RT2326-2AP00**	
50/42[1]	**11**	1	1	--	24	**3RT2327-1AB00**		**3RT2327-2AB00**	
				--	110	**3RT2327-1AF00**		**3RT2327-2AF00**	
				--	230	**3RT2327-1AP00**		**3RT2327-2AP00**	
Size S2									
60/55	**11**	1	1	--	24	**3RT2336-1AB00**		**--**	
				--	110	**3RT2336-1AF00**		**--**	
				--	230	**3RT2336-1AP00**		**--**	
110/95	**11**	1	1	--	24	**3RT2337-1AB00**		**--**	
				--	110	**3RT2337-1AF00**		**--**	
				--	230	**3RT2337-1AP00**		**--**	
For screw fixing and snap-on mounting on TH 35-15 and TH 75-15 DIN rails									
Size S3									
110/100	**11**	1	1	--	24	**3RT2344-1AB00**		**--**	
				--	110	**3RT2344-1AF00**		**--**	
				--	230	**3RT2344-1AP00**		**--**	
140/130	**11**	1	1	--	24	**3RT2346-1AB00**		**--**	
				--	110	**3RT2346-1AF00**		**--**	
				--	230	**3RT2346-1AP00**		**--**	
160/140	**11**	1	1	--	24	**3RT2348-1AB00**		**--**	
				--	110	**3RT2348-1AF00**		**--**	
				--	230	**3RT2348-1AP00**		**--**	

[1] Required conductor cross-section 10 mm^2.

Other voltages according to page 4/52 on request.
Accessories and spare parts, see page 3/69 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RT.3 contactors, 4-pole, up to 525 A AC-3e

AC operation

Version for AC-3 and AC-3e motor loads

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT2326-1AP00-4AA0

3RT2336-1AP00-4AA0

3RT2346-1AP00-4AA0

Rated data		Auxiliary contacts			Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
AC-3/AC-3e, t_u: up to 60 °C	AC-1, t_u: 40/60 °C								
Operational current I_e up to 400 V	Operational current I_e up to 690 V	Ident. No.	Version		50 Hz AC	Article No.	Price per PU	Article No.	Price per PU
			NO	NC					
A	A				V				
For screw fixing and snap-on mounting on TH 35 DIN rail									
Size S0									
32	40/35	**11**	1	1	230	**3RT2326-1AP00-4AA0**		--	
Size S2									
50	60/55	**11**	1	1	230	**3RT2336-1AP00-4AA0**		--	
For screw fixing and snap-on mounting on TH 35-15 and TH 75-15 DIN rails									
Size S3									
95	110/100	**11**	1	1	230	**3RT2346-1AP00-4AA0**		--	

Other voltages according to page 4/52 on request.

Accessories and spare parts, see page 3/69 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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DC operation ⎓

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT231.-1B.40

3RT231.-2B.40

3RT232.-1B.40

3RT232.-2B.40

Rated data AC-1, t_u: 40/60 °C Operational current I_e up to 690 V	Auxiliary contacts			Rated control supply voltage U_s	**Screw terminals**		**Spring-loaded terminals**	
	Ident. No.	Version		DC	Article No.	Price per PU	Article No.	Price per PU
A		NO	NC	V				
For screw fixing and snap-on mounting on TH 35 DIN rail								
Size S00								
18/16	**--**	--	--	24 220	**3RT2316-1BB40** **3RT2316-1BM40**		**3RT2316-2BB40** **3RT2316-2BM40**	
22/20	**--**	--	--	24 220	**3RT2317-1BB40** **3RT2317-1BM40**		**3RT2317-2BB40** **3RT2317-2BM40**	
Size S0								
35/30[1)]	**11**	1	1	24 220	**3RT2325-1BB40** **3RT2325-1BM40**		**3RT2325-2BB40** **3RT2325-2BM40**	
40/35[1)]	**11**	1	1	24 220	**3RT2326-1BB40** **3RT2326-1BM40**		**3RT2326-2BB40** **3RT2326-2BM40**	
50/42[1)]	**11**	1	1	24 220	**3RT2327-1BB40** **3RT2327-1BM40**		**3RT2327-2BB40** **3RT2327-2BM40**	

[1)] Required conductor cross-section 10 mm^2.

Other voltages according to page 4/52 on request.

Accessories and spare parts, see page 3/69 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RT.3 contactors, 4-pole, up to 525 A

AC/DC operation ≂

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT233.-1N.30

3RT234.-1N.30

Rated data AC-1, t_u: 40/60 °C Operational current I_e up to 690 V	Auxiliary contacts Ident. No.	Version		Rated control supply voltage U_s 50/60 Hz AC or DC	**Screw terminals** Article No.	Price per PU	**Spring-loaded terminals** Article No.	Price per PU
A		NO	NC	V				
For screw fixing and snap-on mounting on TH 35 DIN rail								
Size S2								
With integrated coil circuit (varistor integrated in electronics at the factory)								
60/55	**11**	1	1	20 ... 33 175 ... 280	**3RT2336-1NB30** **3RT2336-1NP30**		**--** **--**	
110/95	**11**	1	1	20 ... 33 175 ... 280	**3RT2337-1NB30** **3RT2337-1NP30**		**--** **--**	
For screw fixing and snap-on mounting on TH 35-15 and TH 75-15 DIN rails								
Size S3								
With integrated coil circuit (varistor integrated in electronics at the factory)								
110/100	**11**	1	1	20 ... 33 175 ... 280	**3RT2344-1NB30** **3RT2344-1NP30**		**--** **--**	
140/130	**11**	1	1	20 ... 33 175 ... 280	**3RT2346-1NB30** **3RT2346-1NP30**		**--** **--**	
160/140	**11**	1	1	20 ... 33 175 ... 280	**3RT2348-1NB30** **3RT2348-1NP30**		**--** **--**	

Other voltages according to page 4/52 on request.

Accessories and spare parts, see page 3/69 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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AC/DC operation

Version for AC-3 and AC-3e motor loads

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT2336-1NB30-4AA0

3RT2346-1NB30-4AA0

Rated data		Auxiliary contacts			Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
AC-3/AC-3e, t_u: up to 60 °C	AC-1, t_u: 40/60 °C	Ident. No.	Version		50/60 Hz AC or DC	Article No.	Price per PU	Article No.	Price per PU
Operational current I_e up to 400 V	Operational current I_e up to 690 V		NO	NC					
A	A				V				
For screw fixing and snap-on mounting on TH 35 DIN rail									
Size S2									
With integrated coil circuit (varistor integrated in electronics at the factory)									
50	60/55	**11**	1	1	20 ... 33	**3RT2336-1NB30-4AA0**		--	
For screw fixing and snap-on mounting on TH 35-15 and TH 75-15 DIN rails									
Size S3									
With integrated coil circuit (varistor integrated in electronics at the factory)									
95	110/100	**11**	1	1	20 ... 33	**3RT2346-1NB30-4AA0**		--	

Other voltages according to page 4/52 on request.

Accessories and spare parts, see page 3/69 onwards.

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SIRIUS 3RT.3 contactors, 4-pole, up to 525 A

Sizes S6 to S12: AC/DC operation ≂

- Solid-state operating mechanism
- Version with two laterally mounted auxiliary switches (2 NO + 2 NC each)
- For screw fixing
- Auxiliary and control circuits: Screw terminals
- Main conductors: Busbar connections; a connection kit is enclosed.

3RT1355-6A.36

3RT1363-6A.36

3RT1373-6A.36

Size	Rated data AC-1, t_u: 40 °C	Auxiliary contacts, lateral		Operating range 0.85 ... 1.1 x U_s	0.8 ... 1.1 x U_s	**Busbar connections**	PU (UNIT, SET, M)	PS*	PG
				Rated control supply voltage U_s					
	Operational current I_e at 690 V	Version		50/60 Hz AC	DC	Article No. / Price per PU			
	A	NO	NC	V	V				
Solid-state operating mechanism									
With integrated coil circuit (varistor integrated in electronics at the factory)									
S6	200	2	2	24 ... 60	20 ... 60	**3RT1355-6AE36**	1	1 unit	41B
				48 ... 130	48 ... 130	**3RT1355-6AF36**	1	1 unit	41B
				100 ... 250	100 ... 250	**3RT1355-6AP36**	1	1 unit	41B
				250 ... 500	250 ... 500	**3RT1355-6AR36**	1	1 unit	41B
S10	275	2	2	24 ... 60	20 ... 60	**3RT1363-6AE36**	1	1 unit	41B
				48 ... 130	48 ... 130	**3RT1363-6AF36**	1	1 unit	41B
				100 ... 250	100 ... 250	**3RT1363-6AP36**	1	1 unit	41B
				250 ... 500	250 ... 500	**3RT1363-6AR36**	1	1 unit	41B
	350	2	2	24 ... 60	20 ... 60	**3RT1364-6AE36**	1	1 unit	41B
				48 ... 130	48 ... 130	**3RT1364-6AF36**	1	1 unit	41B
				100 ... 250	100 ... 250	**3RT1364-6AP36**	1	1 unit	41B
				250 ... 500	250 ... 500	**3RT1364-6AR36**	1	1 unit	41B
S12	400	2	2	24 ... 60	20 ... 60	**3RT1373-6AE36**	1	1 unit	41B
				48 ... 130	48 ... 130	**3RT1373-6AF36**	1	1 unit	41B
				100 ... 250	100 ... 250	**3RT1373-6AP36**	1	1 unit	41B
				250 ... 500	250 ... 500	**3RT1373-6AR36**	1	1 unit	41B
	500	2	2	24 ... 60	20 ... 60	**3RT1374-6AE36**	1	1 unit	41B
				48 ... 130	48 ... 130	**3RT1374-6AF36**	1	1 unit	41B
				100 ... 250	100 ... 250	**3RT1374-6AP36**	1	1 unit	41B
				250 ... 500	250 ... 500	**3RT1374-6AR36**	1	1 unit	41B
	525	2	2	24 ... 60	20 ... 60	**3RT1375-6AE36**	1	1 unit	41B
				48 ... 130	48 ... 130	**3RT1375-6AF36**	1	1 unit	41B
				100 ... 250	100 ... 250	**3RT1375-6AP36**	1	1 unit	41B
				250 ... 500	250 ... 500	**3RT1375-6AR36**	1	1 unit	41B

Depending on the operational current, bus connectors offset must be used for sizes S10 and S12, see page 4/35:

- 3RT136: For more than 275 A, the 3RT1966-4D bus connectors offset must be used.
- 3RT137: For more than 450 A, the 3RT1976-4D bus connectors offset must be used.

Accessories and spare parts, see page 4/35 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Accessories

Overview graphic for 3RT135 to 3RT137 contactors with mountable accessories, see page 4/23.

More information

Equipment Manual, see
https://support.industry.siemens.com/cs/ww/en/view/60306557

	For contactors	Auxiliary contacts Version				Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Type	NO	NC	Left	Right					
Second auxiliary switch (1 NO + 1 NC)										
	Lateral mounting on the right and/or the left, 2-pole					**Screw terminals**				
3RH1951-1SA11	3RT135 ... 3RT137	1	1	53 61 / 54 62	71 83 / 72 84	**3RH1951-1SA11**		1	1 unit	41B
Terminal covers										
	Two units required per contactor (1 set = 2 units)									
	Either bus connectors offset or terminal covers can be used.									
3RT1956-4EB10	3RT135	--	--	--	--	**3RT1956-4EB10**		1	1 unit	41B
3RT1966-4EB10	3RT136	--	--	--	--	**3RT1966-4EB10**		1	1 unit	41B
3RT1976-4EB10	3RT137	--	--	--	--	**3RT1976-4EB10**		1	1 unit	41B
Bus connectors offset										
	(Two units required per contactor)									
	Either terminal covers or bus connectors offset can be used.									
3RT1966-4D	3RT136	--	--	--	--	**3RT1966-4D**		1	1 unit	41B
3RT1976-4D	3RT137	--	--	--	--	**3RT1976-4D**		1	1 unit	41B
Mechanical interlocks for contactor assemblies										
	Enables two 3RT13 contactors of the same size (S6, S10 and S12) to be interlocked with each other. The laterally mounted auxiliary switches of the contactor must be removed beforehand.									
	The mechanical interlock cannot be used in conjunction with the bus connectors offset.									
3RA1954-3A	3RT135 ... 3RT137	--	--	--	--	**3RA1954-3A**		1	1 unit	41B

Spare parts

	For contactors	Auxiliary contacts Version				Screw terminals		PU (UNIT, SET, M)	PS*	PG
	Type	NO	NC	Left	Right	Article No.	Price per PU			
First auxiliary switch (1 NO + 1 NC)										
	Lateral mounting on the right and/or the left, 2-pole									
3RH1951-1TA11	3RT135 ... 3RT137	1	1	13 21 / 14 22	31 43 / 32 44	**3RH1951-1TA11**		1	1 unit	41B

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC

Overview

Standards

IEC 60947-1, IEC 60947-4-1, IEC 60947-5-1 (auxiliary switches)

Protecting connections against short circuit, overload and overvoltage

All connections must generally be protected against overload and short circuits using suitable measures. Different constraints must be considered depending on the type of connection:

Short-circuit and overload protection of main connections

For information on the protection of a free-standing contactor, see the technical product data sheet.

For more information on complete units such as contactors with overload relays or contactors with motor starter protectors as the motor feeder, see Configuration Manual for load feeders.

Short-circuit and overload protection of auxiliary connections

For information on the protection of auxiliary contacts, see the technical product data sheet.

Short-circuit and overload protection of control supply voltage connections or supply voltage connections

First of all, the relevant standards and regulations for configuring control panels and the parts and components installed in them must be taken into account, for example for cable dimensioning.

One possible protection for these circuits could be the selection of a suitable power supply, i.e. one with a current-limiting function. In the selection of the source and the connecting cable, the load characteristics of the contactor must be considered (short-time inrush current peaks for solid-state operating mechanisms, switch-on power, holding power).

If there are further switching elements in the circuit, such as the auxiliary contact system of an overload relay that operates the contactor, the short-circuit protection necessary for this must also be considered.

For further recommendations, e.g. the use of miniature circuit breakers or circuit breakers for equipment in control circuits, see Control panel tip – Selecting and dimensioning suitable power supplies quickly and reliably.

Protection against overvoltage at the control supply voltage connection

3RT25 contactors supplied without a coil circuit can be retrofitted with RC elements, varistors, diodes or diode assemblies (combination of diode and Zener diode for short break times) for damping switching overvoltages in the coil and can be ordered separately as accessories, see page 3/97 onwards.

Note:

The break times of the contactor, the opening delay times of the NO contacts and the closing delay times of the NC contacts increase with damping.

For more information about influencing the time response using damping, see Equipment Manual.

Replacing solenoid coils or spare contacts

Solenoid coil or contact replacement is possible.

Fitting auxiliary contacts and mounting additional auxiliary switches

Features in the delivery state

The 3RT252 to 3RT254 basic units contain two integrated auxiliary contacts (1 NO + 1 NC).

Expansion possibilities

All basic units can be expanded using auxiliary switches; the permissible configuration must be observed.

For detailed information about the fitting of auxiliary switches for 3RT25 contactors, see pages 3/81 to 3/86.

Accessories

The accessories for the 3-pole SIRIUS 3RT2 contactors can also be used for the 4-pole versions, see page 3/69 onwards.

Use of 3RT contactors with IE3 and IE4 motors

Note:

For the use of 3RT25 contactors in conjunction with highly efficient IE3 and IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

More information, see page 1/8.

Application

The contactors are suitable:

- For changing the polarity of hoisting gear motors
- For switching two separate loads

Note:

Single device for pole reversal; not suitable for reversing operation. 3RT25 contactors are not suitable for switching a load between two current sources.

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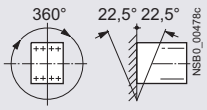
Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16169/td FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16169/faq	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16169/man

Type		3RT2516 to 3RT2518	3RT2526	3RT2535	3RT2536	3RT2544, 3RT2545
Size		S00	S0	S2		S3
General data						
Dimensions (W x H x D)		See 3RT231., page 4/24	See 3RT232., page 4/24	See 3RT233., page 4/24		See 3RT234., page 4/24
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.						
Upright mounting position		 Special version required				
Mechanical endurance	Operating cycles	30 million	10 million			
Electrical endurance at I_e/AC-1	Operating cycles	Approx. 0.5 million				
Rated insulation voltage U_i (pollution degree 3)	V	690				
Protective separation between the coil and the main contacts according to IEC 60947-1, Annex N	V	400				690
Permissible ambient temperature						
• During operation	°C	-25 ... +60				
• During storage	°C	-55 ... +80				
Short-circuit protection						
Main circuit						
• Version of the fuse link required for short-circuit protection of the main circuit						
- For type of coordination 1		gG: 35 A (690 V, 100 kA)	gG: 63 A (690 V, 100 kA)	gG: 125 A (690 V, 100 kA)	gG: 160 A (690 V, 100 kA)	gG: 250 A (690 V, 100 kA)
- For type of coordination 2		gG: 20 A (690 V, 100 kA)	gG: 35 A (690 V, 50 kA)	gG: 63 A (690 V, 100 kA)	gG: 80 A (690 V, 100 kA)	gR: 250 A (690 V, 100 kA)
Auxiliary circuit						
• Version of the fuse link required for short-circuit protection of the auxiliary switch		Fuse gG: 10 A (690 V, 1 kA)				
• Version of the miniature circuit breaker required for short-circuit protection of the auxiliary switch		6 A (230 V, 400 A, C characteristic)				

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SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC

Type			3RT2516-1A	3RT2517-1A, 3RT2518-1A	3RT2516-1B, 3RT2517-1B, 3RT2518-1B	3RT2526-1A	3RT2526-1B	3RT253.-1A	3RT253.-1N	3RT254.-1A	3RT254.-1N
Size			S00			S0		S2		S3	
Control											
Type of operating mechanism			AC		DC	AC	DC	AC	AC/DC	AC	AC/DC
Solenoid coil operating range											
• AC operation	At 50 Hz		0.8 ... 1.1 x U_s		--	0.8 ... 1.1 x U_s	--	0.8 ... 1.1 x U_s	--	0.8 ... 1.1 x U_s	--
	At 60 Hz		0.85 ... 1.1 x U_s		--	0.8 ... 1.1 x U_s	--	0.8 ... 1.1 x U_s	--	0.8 ... 1.1 x U_s	--
• DC operation	Up to 50 °C		--		0.8 ... 1.1 x U_s	--	0.8 ... 1.1 x U_s	--			
	Up to 60 °C		--		0.85 ... 1.1 x U_s	--	0.8 ... 1.1 x U_s	--			
• AC/DC operation			--						0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$	--	0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)											
• AC operation, 50/60 Hz, standard version											
- Closing		VA	27/24.3	37/33	--	81/79	--	210/188	110	348/296	--
- P.f. φ			0.8/0.75		--	0.72/0.74	--	0.69/0.65	0.95	0.62/0.55	--
- Closed		VA	4.2/3.3	5.7/4.4	--	10.5/8.5	--	17.2/16.5	2.5	25/18	--
- P.f. φ			0.25/0.25		--	0.25/0.28	--	0.36/0.39	0.95	0.35/0.41	--
• DC operation											
- Closing		W	--		4	--	5.9	23	70	--	76
- Closed		W	--		4	--	5.9	1	1.5	--	1.8

Type				3RT2516	3RT2517	3RT2518	3RT2526		3RT2535	3RT2536	3RT2544	3RT2545
Size				S00			S0		S2		S3	
Rated data of the main contacts												
Load rating with AC												
Utilization category AC-1												
• Rated operational currents I_e	At 40 °C up to 690 V		A	18	22		40		60	70	100	125
	At 60 °C up to 690 V		A	16	20		35		55	60	90	105
• Rated power for AC loads P.f. φ = 0.95 (at 60 °C)		At 230 V	kW	6	7.5		13.3		21	23	34	59
		400 V	kW	10.5	13		23		36	39	40	69
• Minimum cross-section in the main circuit at maximum AC-1 rated value			mm^2	2.5	4		10		16	25	35	50
Utilization category AC-3							AC[1]	DC[1]				
• Rated operational currents I_e (at 60 °C)	NO up to 400 V		A	9	12	16	25		35	41	65	80
	NC up to 400 V		A	9			25	20	35	41	65	80
• Rated power for slip-ring or squirrel-cage motors at 50 and 60 Hz	NO at 230 V		kW	2.2	3	4	5.5		11		18.5	22
	NC at 230 V		kW	2.2			5.5		11		18.5	22
	NO at 400 V		kW	4	5.5	7.5	11		18.5	22	30	37
	NC at 400 V		kW	4			11	7.5	18.5	22	30	37

[1] Values for devices with AC and DC operation: For 3RT2526 with DC operation, different values apply to AC-3 for the NC.

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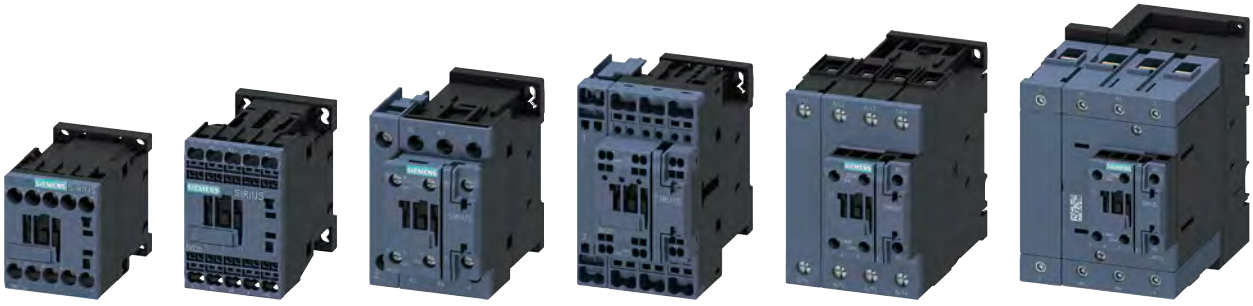
Selection and ordering data

AC operation

Single device for pole reversal (not suitable for reversing operation)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B



3RT251.-1A.00 3RT251.-2A.00 3RT252.-1A.00 3RT252.-2A.00 3RT253.-1A.00 3RT254.-1A.00

Rated data			Auxiliary contacts			Rated control supply voltage U_s		Screw terminals		Spring-loaded terminals	
AC-3, t_u: up to 60 °C		AC-1, t_u: 40/60 °C	Ident. No.	Version		50/60 Hz AC	50 Hz AC				
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to						Article No.	Price per PU	Article No.	Price per PU
400 V	**400 V**	690 V									
A	**kW**	A		NO	NC	V	V				
For screw fixing and snap-on mounting on TH 35 DIN rail											
Size S00											
9	**4**	18/16	**--**	--	--	24	--	**3RT2516-1AB00**		**3RT2516-2AB00**	
						110	--	**3RT2516-1AF00**		**3RT2516-2AF00**	
						230	--	**3RT2516-1AP00**		**3RT2516-2AP00**	
12/9[1]	**5.5/4[1]**	22/20	**--**	--	--	24	--	**3RT2517-1AB00**		**3RT2517-2AB00**	
						110	--	**3RT2517-1AF00**		**3RT2517-2AF00**	
						230	--	**3RT2517-1AP00**		**3RT2517-2AP00**	
16/9[1]	**7.5/4[1]**	22/20	**--**	--	--	24	--	**3RT2518-1AB00**		**3RT2518-2AB00**	
						110	--	**3RT2518-1AF00**		**3RT2518-2AF00**	
						230	--	**3RT2518-1AP00**		**3RT2518-2AP00**	
Size S0											
25	**11**	40/35	**11**	1	1	--	24	**3RT2526-1AB00**		**3RT2526-2AB00**	
						--	110	**3RT2526-1AF00**		**3RT2526-2AF00**	
						--	230	**3RT2526-1AP00**		**3RT2526-2AP00**	
Size S2											
35	**18.5**	60/55	**11**	1	1	--	24	**3RT2535-1AB00**		**--**	
						--	110	**3RT2535-1AF00**		**--**	
						--	230	**3RT2535-1AP00**		**--**	
41	**22**	70/60	**11**	1	1	--	24	**3RT2536-1AB00**		**--**	
						--	110	**3RT2536-1AF00**		**--**	
						--	230	**3RT2536-1AP00**		**--**	
For screw fixing and snap-on mounting on TH 35-15 and TH 75-15 DIN rails											
Size S3											
65	**30**	100/90	**11**	1	1	--	24	**3RT2544-1AB00**		**--**	
						--	110	**3RT2544-1AF00**		**--**	
						--	230	**3RT2544-1AP00**		**--**	
80	**37**	125/105	**11**	1	1	--	24	**3RT2545-1AB00**		**--**	
						--	110	**3RT2545-1AF00**		**--**	
						--	230	**3RT2545-1AP00**		**--**	

[1] Values for NO contact/NC contact. The NC contact can switch no more than 4 kW.

Other voltages according to page 4/52 on request.
Accessories and spare parts, see page 3/69 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC

DC operation

Single device for pole reversal (not suitable for reversing operation)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT251.-1B.40

3RT251.-2B.40

3RT252.-1B.40

3RT252.-2B.40

Rated data			Auxiliary contacts			Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
AC-3, t_u: up to 60 °C		AC-1, t_u: 40/60 °C	Ident. No.	Version		DC				
Operational current I_e up to 400 V	Ratings of three-phase motors at 50 Hz and **400 V**	Operational current I_e up to 690 V		NO	NC		Article No.	Price per PU	Article No.	Price per PU
A	**kW**	A				V				
For screw fixing and snap-on mounting on TH 35 DIN rail										
Size S00										
9	**4**	18/16	**--**	--	--	24 220	**3RT2516-1BB40** **3RT2516-1BM40**		**3RT2516-2BB40** **3RT2516-2BM40**	
12/9[1]	**5.5/4[1]**	22/20	**--**	--	--	24 220	**3RT2517-1BB40** **3RT2517-1BM40**		**3RT2517-2BB40** **3RT2517-2BM40**	
16/9[1]	**7.5/4[1]**	22/20	**--**	--	--	24 220	**3RT2518-1BB40** **3RT2518-1BM40**		**3RT2518-2BB40** **3RT2518-2BM40**	
Size S0										
25 (20)[2]	**11 (7.5)[2]**	40/35	**11**	1	1	24 220	**3RT2526-1BB40** **3RT2526-1BM40**		**3RT2526-2BB40** **3RT2526-2BM40**	

[1] Values for NO contact/NC contact. The NC contact can switch no more than 4 kW.

[2] Value in brackets for NC contact (the deviating value for the NC contact applies only for devices with DC operation).

Other voltages according to page 4/52 on request.
Accessories and spare parts, see page 3/69 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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AC/DC operation

Single device for pole reversal (not suitable for reversing operation)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT253.-1N.30

3RT254.-1N.30

Rated data			Auxiliary contacts			Rated control supply voltage U_s	**Screw terminals**		**Spring-loaded terminals**	
AC-3, t_u: up to 60 °C		AC-1, t_u: 40/60 °C	Ident. No.	Version		50/60 Hz AC or DC	Article No.	Price per PU	Article No.	Price per PU
Operational current I_e up to 400 V	Ratings of three-phase motors at 50 Hz and **400 V**	Operational current I_e up to 690 V		NO	NC	V				
A	**kW**	A								
For screw fixing and snap-on mounting on TH 35 DIN rail										
Size S2										
With integrated coil circuit (varistor integrated in electronics at the factory)										
35	**18.5**	60/55	**11**	1	1	20 ... 33 83 ... 155 175 ... 280	**3RT2535-1NB30** **3RT2535-1NF30** **3RT2535-1NP30**		**--** **--** **--**	
41	**22**	70/60	**11**	1	1	20 ... 33 83 ... 155 175 ... 280	**3RT2536-1NB30** **3RT2536-1NF30** **3RT2536-1NP30**		**--** **--** **--**	
For screw fixing and snap-on mounting on TH 35-15 and TH 75-15 DIN rails										
Size S3										
With integrated coil circuit (varistor integrated in electronics at the factory)										
65	**30**	100/90	**11**	1	1	20 ... 33 175 ... 280	**3RT2544-1NB30** **3RT2544-1NP30**		**--** **--**	
80	**37**	125/105	**11**	1	1	20 ... 33 175 ... 280	**3RT2545-1NB30** **3RT2545-1NP30**		**--** **--**	

Other voltages according to page 4/52 on request.
Accessories and spare parts, see page 3/69 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

Overview

Standards

IEC 60947-1, IEC 60947-4-1, IEC 60947-5-1, IEC 60831-1, IEC 61921

Function

The 3RT26 contactors are special versions of the 3RT2, designed for switching capacitive loads (AC-6b) up to 100 kvar at 400 V.

Characteristic components of the 3RT26 contactors are the precharging resistors switched on via leading auxiliary contacts, which are closed before the main contacts. This limits the peak charging current of capacitive loads and thus minimizes negative impacts on the power supply network.

The 3RT26 contactors are suitable for switching choked or unchoked capacitors in reactive current compensation systems and are also used to switch converters.

Protecting connections against short circuit, overload and overvoltage

All connections must generally be protected against overload and short circuits using suitable measures. Different constraints must be considered depending on the type of connection:

Short-circuit and overload protection of main connections

For information on the protection of a free-standing contactor, see the technical product data sheet.

For more information on complete units such as contactors with overload relays or contactors with motor starter protectors as the motor feeder, see Configuration Manual for load feeders.

Short-circuit and overload protection of auxiliary connections

For information on the protection of auxiliary contacts, see the technical product data sheet.

Short-circuit and overload protection of control supply voltage connections or supply voltage connections

First of all, the relevant standards and regulations for configuring control panels and the parts and components installed in them must be taken into account, for example for cable dimensioning.

One possible protection for these circuits could be the selection of a suitable power supply, i.e. one with a current-limiting function. In the selection of the source and the connecting cable, the load characteristics of the contactor must be considered (short-time inrush current peaks for solid-state operating mechanisms, switch-on power, holding power).

If there are further switching elements in the circuit, such as the auxiliary contact system of an overload relay that operates the contactor, the short-circuit protection necessary for this must also be considered.

For further recommendations, e.g. the use of miniature circuit breakers or circuit breakers for equipment in control circuits, see Control panel tip – Selecting and dimensioning suitable power supplies quickly and reliably.

Protection against overvoltage at the control supply voltage connection

3RT26 contactors supplied without a coil circuit can be retrofitted with RC elements, varistors, diodes or diode assemblies (combination of diode and Zener diode for short break times) for damping switching overvoltages in the coil and can be ordered separately as accessories, see page 3/97 onwards.

Note:

The break times of the contactor, the opening delay times of the NO contacts and the closing delay times of the NC contacts increase with damping.

For more information about influencing the time response using damping, see Equipment Manual.

Fitting auxiliary contacts and mounting additional auxiliary switches

Features in the delivery state

- 3RT261 contactors:
  The basic units are equipped with a 4-pole front-mounted auxiliary switch with one freely accessible contact. The other three contacts are assigned to the precharging resistors. Additional free auxiliary contacts are provided in the basic unit (depending on the version, 1 NO + 1 NC or 2 NO).
- 3RT262 contactors:
  The basic units are equipped with a 4-pole front-mounted auxiliary switch with one freely accessible contact. The other three contacts are assigned to the precharging resistors. Two additional free auxiliary contacts are provided in the basic unit (1 NO + 1 NC).
- 3RT263 and 3RT264 contactors:
  The auxiliary contacts for the resistors are already integrated in the basic units, which do not have any additional integrated and freely assignable auxiliary contacts. A 2-pole lateral auxiliary switch is already mounted on the left (depending on the version, 1 NO + 1 NC or 2 NC).

Expansion possibilities

All 3RT263 and 3RT264 contactors can be expanded using lateral auxiliary switches; the permissible configuration must be observed.

Type	3RT261	3RT262	3RT263, 3RT264
Size	S00	S0	S2, S3
Number of unassigned auxiliary contacts as delivered from the factory	2	3	2
Number of expansion auxiliary contacts that can be fitted	0	0	2

Conductor cross-sections

In order to connect the required minimum cross-section, the use of 3RV2935-5A 3-phase infeed terminal may be necessary for 3RT263 contactors and of 3RA2943-3L 1-phase infeed terminal for 3RT264 contactors, see page 3/110. These infeed terminals enable the clamping of larger cross-sections than the device connection itself actually allows.

For 3RT2628 contactors, this infeed terminal is included in the scope of supply and is mounted on the contactor.

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Technical specifications

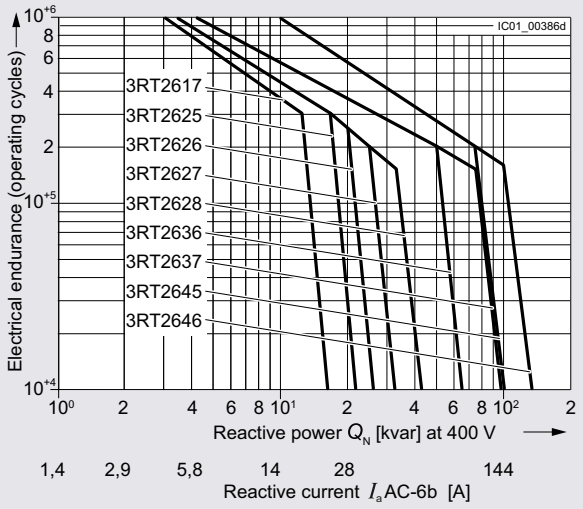
More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16171/td	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16171/man

Type	**3RT26**
Size	**S00 to S3**

Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching capacitive loads (AC-6b) depending on the reactive power Q_N and the rated operational voltage.

The rated operational current I_e complies with utilization category AC-6b (breaking of 1.35 times the rated operational current) and is intended for a contact endurance of approximately 150 000 to 200 000 operating cycles.



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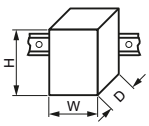
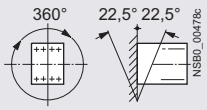
SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

All technical specifications not mentioned in the table below are identical to those of the 3RT20 contactors:

- For size S00 as for the 3RT201 contactors
- For size S0 as for the 3RT202 contactors
- For size S2 as for the 3RT203 contactors
- For size S3 as for the 3RT204 contactors

See page 3/25 onwards.

Type		3RT2617	3RT2625	3RT2626	3RT2627	3RT2628	3RT2636	3RT2637	3RT2645	3RT2646
Size		S00	S0				S2		S3	
General data										
Dimensions (W x H x D) Including auxiliary switches and connecting cables										
• AC operation	mm	45 x 125 x 120	45 x 135 x 155			45 x 150 x 155	65 x 114 x 130		80 x 140 x 152	
• DC operation, AC/DC operation	mm	45 x 125 x 120	45 x 135 x 165			45 x 150 x 165	65 x 114 x 130		80 x 140 x 152	
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.										
Mechanical endurance										
Basic units with mounted auxiliary switch	Operating cycles	3 million								
Electrical endurance For apparent power at 400 V	kvar	12.5	16.7	20	25	33	50	75		100
	Operating cycles	300 000	200 000			150 000	200 000	150 000	200 000	150 000
Rated insulation voltage U_i (pollution degree 3)	V	690							1 000[2]	
Rated impulse withstand voltage U_{imp}	kV	6							8[2]	
Protective separation between the coil and the main contacts according to IEC 60947-1, Annex N	V	400							690	
Permissible ambient temperature										
• During operation[1]	°C	-25 ... +60								
• During storage	°C	-55 ... +80								
Short-circuit protection										
Main circuit Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE according to IEC 60947-4-1										
• Type of coordination "1"	A	25 ... 40	32 ... 80	40 ... 80	50 ... 100	63 ... 100	100 ... 160	160 ... 200		200 ... 250
Auxiliary circuit										
• With fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE With short-circuit current I_k = 1 kA according to IEC 60947-5-1	A	10								
• With miniature circuit breakers with C characteristic with short-circuit current I_k = 400 A	A	10								

1) A clearance of 10 mm is required for side-by-side mounting.

2) Only applies for main conducting paths, otherwise U_i = 690 V; U_{imp} = 6 kV.

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SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

Type			3RT2617-1A, -1B	3RT2625-1A, -1B, 3RT2626-1A, -1B, 3RT2627-1A, -1B, 3RT2628-1A, -1B	3RT2636-1A, 3RT2637-1A	3RT2645-1A, 3RT2646-1A
Size			S00	S0	S2	S3
Control						
Solenoid coil operating range						
• AC operation	50 Hz		0.8 ... 1.1 x U_s			
	60 Hz		0.85 ... 1.1 x U_s	0.8 ... 1.1 x U_s		
• DC operation	At 50 °C		0.8 ... 1.1 x U_s		--	
	At 60 °C		0.85 ... 1.1 x U_s	0.8 ... 1.1 x U_s	--	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)						
• AC operation, 50 Hz, standard version						
- Closing		VA	--	77	190	296
- P.f. φ			--	0.82	0.72	0.61
- Closed		VA	--	9.8	16	19
- P.f. φ			--	0.25	0.37	0.38
• AC operation, 50/60 Hz, standard version						
- Closing		VA	49	81/79	210/188	348/296
- P.f. φ			0.8	0.72/0.74	0.69/0.65	0.62/0.55
- Closed		VA	7.8	10.5/8.5	17.2/16.5	25/18
- P.f. φ			0.25	0.25/0.28	0.36/0.39	0.35/0.41
• DC operation						
- Closing		W	4	5.9	--	
- Closed		W	4	5.9	--	

Type		3RT262.-1NB35	3RT262.-1NF35	3RT262.-1NP35	3RT263.-1N.35	3RT264.-1N.35
Size		S0			S2	S3
Control						
Solenoid coil operating range						
• AC/DC operation (50/60 Hz AC or DC)		0.7 ... 1.3 x U_s			0.8 ... 1.1 x U_s	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)						
• AC operation, 50/60 Hz, standard version						
- Closing	VA	6.6/6.7	11.9/12.0	12.7/14.7	110	163
- P.f. φ		0.98/0.98			0.95	--
- Closed	VA	1.9/2.0	1.6/1.8	3.9/4.3	2.5	3.1
- P.f. φ		0.86/0.82	0.79/0.74	0.51/0.56	0.95	--
• DC operation						
- Closing	W	5.9	10.2	14.3	70	76
- Closed	W	1.4	1.3	1.9	1.5	1.8
Maximum permissible residual current of the electronics (with 0 signal)						
• AC operation (230 V/U_s)	mA	7			< 20	
• DC operation (24 V/U_s)	mA	16			< 20	

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SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

Type			3RT2617	3RT2625	3RT2626	3RT2627	3RT2628	3RT2636	3RT2637	3RT2645	3RT2646
Size			S00	S0				S2		S3	
Auxiliary circuit											
Auxiliary contacts (unassigned)			1 NO + 1 NC, 2 NC	1 NO + 2 NC				1 NO + 1 NC, 2 NC			
Further auxiliary switches, laterally mountable			--					No more than one lateral auxiliary switch can be mounted.			
Technical specifications including CSA and UL rated data of the auxiliary contacts, see "3RT20 contactors", page 3/25 onwards.											
Rated data of the main contacts											
Load rating with AC											
Utilization category AC-6b Switching of AC capacitors											
• Rated operational current I_e at AC-6b											
- Up to 690 V at ambient temperature	40 °C	A	18.9	25.3	30.2	37.8	50	75.8	113.4	113	151
	60 °C	A	18	24	29	36	47.6	72.2	108		144
- Up to 1 000 V at ambient temperature	60 °C	A	--							54	68
• Rated operational reactive power at rated operational voltage	230 V, 50/60 Hz	kvar	7.2	9.6	11.5	14	19	29	43		57
	400 V, 50/60 Hz	**kvar**	**12.5**	**16.7**	**20**	**25**	**33**	**50**	**75**		**100**
	500 V, 50/60 Hz	kvar	15	21	25	31	41	63	94		125
	690 V, 50/60 Hz	kvar	21	29	34	43	57	86	129		172
	1 000 V, 50/60 Hz	kvar	--							94	125
• Minimum cross-section in the main circuit for max. AC-6b rated value			See • Product data sheets of the relevant capacitor contactors and capacitors • Operating instructions and manuals, https://support.industry.siemens.com/cs/ww/en/ps/16171/man								
cULus and cULus rated data											
Rated insulation voltage		V AC	600								
Operational reactive power at AC-6b, 3-phase, at operational voltage	110 ... 120 V	kvar	3.4	4.6	5.5	6.3	8.3	14	19	20	25
	200 ... 208 V	kvar	6.2	8.3	10	11	15	25	34	37	45
	220 ... 230 V	kvar	6.9	9.2	11	13	17	27	38	41	50
	460 ... 480 V	kvar	14	18	22	25	33	55	75	82	100
	575 ... 600 V	kvar	17	23	27	31	41	69	94	103	125
Short-circuit protection	At 600 V	kA	5					10			
Fuse for main circuit	Class RK5	A	40	80			100	250			

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SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

Type		3RT2617	3RT2625, 3RT2626, 3RT2627	3RT2628	3RT2636	3RT2637	3RT2645, 3RT2646
Size		S00	S0		S2		S3
Conductor cross-sections							
Main conductors (1 or 2 conductors can be connected)		**Screw terminals**					
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]; max. 2 x 4	2 x (1 ... 2.5)[1]; 2 x (2.5 ... 10)[1]		2 x (2.5 ... 35); 1 x (2.5 ... 50)		2 x (10 ... 70); 1 x (10 ... 70)
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]	2 x (1 ... 2.5)[1]; 2 x (2.5 ... 6)[1]; 1 x 10	1 x (2.5 ... 16)	2 x (1 ... 25); 1 x (1 ... 35)	--	2 x (10 ... 50); 1 x (10 ... 50)
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1]; 2 x (18 ... 14)[1]; 2 x 12	2 x (16 ... 12)[1]; 2 x (14 ... 8)[1]	1 x (10 ... 4)	2 x (18 ... 2); 1 x (18 ... 0)		2 x (8 ... 3/0); 1 x (8 ... 3/0)
• Terminal screw		M3 (for Pozidriv size 2; ∅ 5 ... 6 mm)	M4 (for Pozidriv size 2; ∅ 5 ... 6 mm)	M8	M6 (for Pozidriv size 2; ∅ 5 ... 6 mm)		M8 (hexagon socket, A/F 4)
• Tightening torque	Nm	0.8 ... 1.2	2 ... 2.5	3 ... 4	3 ... 4.5		4.5 ... 6
	lb.in	7 ... 10.3	18 ... 22	27 ... 36	27 ... 40		40 ... 53
Auxiliary conductors (1 or 2 conductors can be connected)							
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]; max. 2 x 4					
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]					
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1]; 2 x (18 ... 14)[1]; 2 x 12					
• Terminal screw		M3 (for Pozidriv size 2; ∅ 5 ... 6 mm)					
• Tightening torque	Nm	0.8 ... 1.2					
	lb.in	7 ... 10.3					

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

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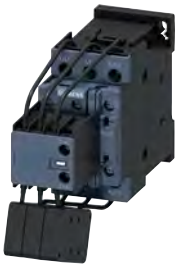
SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

Selection and ordering data

AC operation

Main, auxiliary and control conductors: Screw terminals

3RT2617-1A.05



3RT262.-1A.05

3RT2628-1A.05
with infeed terminal

Utilization category AC-6b Switching AC capacitors at an ambient temperature of 60 °C				Auxiliary contacts, unassigned		Rated control supply voltage U_s		**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
				Version		50 Hz AC	50/60 Hz AC				
Capacitor rating at operational voltage 50/60 Hz								Article No. Price per PU			
at 230 V	**at 400 V**	at 500 V	at 690 V								
kvar	**kvar**	kvar	kvar	NO	NC	V	V				
For screw fixing and snap-on mounting on TH 35 DIN rail											
Size S00											
7.2	**12.5**	15	21	1	1	--	24	**3RT2617-1AB03**	1	1 unit	41B
						--	110	**3RT2617-1AF03**	1	1 unit	41B
						--	230	**3RT2617-1AP03**	1	1 unit	41B
7.2	**12.5**	15	21	0	2	--	24	**3RT2617-1AB05**	1	1 unit	41B
						--	110	**3RT2617-1AF05**	1	1 unit	41B
						--	230	**3RT2617-1AP05**	1	1 unit	41B
Size S0											
9.6	**16.7**	21	29	1	2	24	--	**3RT2625-1AB05**	1	1 unit	41B
						110	--	**3RT2625-1AF05**	1	1 unit	41B
						230	--	**3RT2625-1AP05**	1	1 unit	41B
11.5	**20**	25	34	1	2	24	--	**3RT2626-1AB05**	1	1 unit	41B
						110	--	**3RT2626-1AF05**	1	1 unit	41B
						230	--	**3RT2626-1AP05**	1	1 unit	41B
14	**25**	31	43	1	2	24	--	**3RT2627-1AB05**	1	1 unit	41B
						110	--	**3RT2627-1AF05**	1	1 unit	41B
						230	--	**3RT2627-1AP05**	1	1 unit	41B
19	**33**	41	57	1	2	24	--	**3RT2628-1AB05**	1	1 unit	41B
						110	--	**3RT2628-1AF05**	1	1 unit	41B
						230	--	**3RT2628-1AP05**	1	1 unit	41B

Other voltages according to page 4/52 on request.
Accessories and spare parts, see page 3/69 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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AC operation

Main, auxiliary and control conductors: Screw terminals

3RT263.-1A.05

3RT264.-1A.05

Utilization category AC-6b Switching AC capacitors at an ambient temperature of 60 °C				Auxiliary contacts, unassigned Version		Rated control supply voltage U_s 50 Hz AC	**Screw terminals**		PU (UNIT, SET, M)	PS*	PG
Capacitor rating at operational voltage 50/60 Hz							Article No.	Price per PU			
at 230 V	**at 400 V**	at 500 V	at 690 V								
kvar	**kvar**	kvar	kvar	NO	NC	V					
For screw fixing and snap-on mounting on TH 35 DIN rail											
Size S2											
29	**50**	63	86	1	1	24	**3RT2636-1AB03**		1	1 unit	41B
						110	**3RT2636-1AF03**		1	1 unit	41B
						230	**3RT2636-1AP03**		1	1 unit	41B
29	**50**	63	86	0	2	24	**3RT2636-1AB05**		1	1 unit	41B
						110	**3RT2636-1AF05**		1	1 unit	41B
						230	**3RT2636-1AP05**		1	1 unit	41B
43	**75**	94	129	1	1	24	**3RT2637-1AB03**		1	1 unit	41B
						110	**3RT2637-1AF03**		1	1 unit	41B
						230	**3RT2637-1AP03**		1	1 unit	41B
43	**75**	94	129	0	2	24	**3RT2637-1AB05**		1	1 unit	41B
						110	**3RT2637-1AF05**		1	1 unit	41B
						230	**3RT2637-1AP05**		1	1 unit	41B
For screw fixing and snap-on mounting on TH 35-15 and TH 75-15 DIN rails											
Size S3											
43	**75**	94	129	1	1	24	**3RT2645-1AB03**		1	1 unit	41B
						110	**3RT2645-1AF03**		1	1 unit	41B
						230	**3RT2645-1AP03**		1	1 unit	41B
43	**75**	94	129	0	2	24	**3RT2645-1AB05**		1	1 unit	41B
						110	**3RT2645-1AF05**		1	1 unit	41B
						230	**3RT2645-1AP05**		1	1 unit	41B
57	**100**	125	172	1	1	24	**3RT2646-1AB03**		1	1 unit	41B
						110	**3RT2646-1AF03**		1	1 unit	41B
						230	**3RT2646-1AP03**		1	1 unit	41B
57	**100**	125	172	0	2	24	**3RT2646-1AB05**		1	1 unit	41B
						110	**3RT2646-1AF05**		1	1 unit	41B
						230	**3RT2646-1AP05**		1	1 unit	41B

Other voltages according to page 4/52 on request.
Accessories, see page 3/69 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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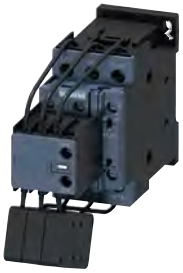
SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

DC operation ⎓

Main, auxiliary and control conductors: Screw terminals

3RT2617-1B.45



3RT262.-1B.45

3RT2628-1B.45
with infeed terminal

Utilization category AC-6b Switching AC capacitors at an ambient temperature of 60 °C				Auxiliary contacts, unassigned		Rated control supply voltage U_s	**Screw terminals**		PU (UNIT, SET, M)	PS*	PG
				Version		DC					
Capacitor rating at operational voltage 50/60 Hz							Article No.	Price per PU			
at 230 V	**at 400 V**	at 500 V	at 690 V								
kvar	**kvar**	kvar	kvar	NO	NC	V					
For screw fixing and snap-on mounting on TH 35 DIN rail											
Size S00											
7.2	**12.5**	15	21	1	1	24	**3RT2617-1BB43**		1	1 unit	41B
						110	**3RT2617-1BF43**		1	1 unit	41B
7.2	**12.5**	15	21	0	2	24	**3RT2617-1BB45**		1	1 unit	41B
						110	**3RT2617-1BF45**		1	1 unit	41B
Size S0											
9.6	**16.7**	21	29	1	2	24	**3RT2625-1BB45**		1	1 unit	41B
						110	**3RT2625-1BF45**		1	1 unit	41B
11.5	**20**	25	34	1	2	24	**3RT2626-1BB45**		1	1 unit	41B
						110	**3RT2626-1BF45**		1	1 unit	41B
14	**25**	31	43	1	2	24	**3RT2627-1BB45**		1	1 unit	41B
						110	**3RT2627-1BF45**		1	1 unit	41B
19	**33**	41	57	1	2	24	**3RT2628-1BB45**		1	1 unit	41B
						110	**3RT2628-1BF45**		1	1 unit	41B

Other voltages according to page 4/52 on request.
Accessories, see page 3/69 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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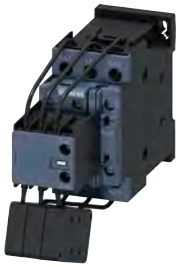
AC/DC operation ≂

Main, auxiliary and control conductors: Screw terminals



3RT262.-1N.35

3RT2628-1N.35
with infeed terminal

3RT263.-1N.35

3RT264.-1N.35

Utilization category AC-6b Switching AC capacitors at an ambient temperature of 60 °C				Auxiliary contacts, unassigned		Rated control supply voltage U_s	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
				Version		50/60 Hz AC or DC				
Capacitor rating at operational voltage 50/60 Hz							Article No.	Price per PU		
at 230 V	**at 400 V**	at 500 V	at 690 V							
kvar	**kvar**	kvar	kvar	NO	NC	V				
For screw fixing and snap-on mounting on TH 35 DIN rail										
Size S0										
9.6	**16.7**	21	29	1	2	21 ... 28	**3RT2625-1NB35**	1	1 unit	41B
						95 ... 130	**3RT2625-1NF35**	1	1 unit	41B
						200 ... 280	**3RT2625-1NP35**	1	1 unit	41B
11.5	**20**	25	34	1	2	21 ... 28	**3RT2626-1NB35**	1	1 unit	41B
						95 ... 130	**3RT2626-1NF35**	1	1 unit	41B
						200 ... 280	**3RT2626-1NP35**	1	1 unit	41B
14	**25**	31	43	1	2	21 ... 28	**3RT2627-1NB35**	1	1 unit	41B
						95 ... 130	**3RT2627-1NF35**	1	1 unit	41B
						200 ... 280	**3RT2627-1NP35**	1	1 unit	41B
19	**33**	41	57	1	2	21 ... 28	**3RT2628-1NB35**	1	1 unit	41B
						95 ... 130	**3RT2628-1NF35**	1	1 unit	41B
						200 ... 280	**3RT2628-1NP35**	1	1 unit	41B
Size S2										
29	**50**	63	86	0	2	20 ... 33	**3RT2636-1NB35**	1	1 unit	41B
						83 ... 155	**3RT2636-1NF35**	1	1 unit	41B
						175 ... 280	**3RT2636-1NP35**	1	1 unit	41B
43	**75**	94	129	0	2	20 ... 33	**3RT2637-1NB35**	1	1 unit	41B
						83 ... 155	**3RT2637-1NF35**	1	1 unit	41B
						175 ... 280	**3RT2637-1NP35**	1	1 unit	41B
For screw fixing and snap-on mounting on TH 35-15 and TH 75-15 DIN rails										
Size S3										
43	**75**	94	129	0	2	20 ... 33	**3RT2645-1NB35**	1	1 unit	41B
						83 ... 155	**3RT2645-1NF35**	1	1 unit	41B
						175 ... 280	**3RT2645-1NP35**	1	1 unit	41B
57	**100**	125	172	0	2	20 ... 33	**3RT2646-1NB35**	1	1 unit	41B
						83 ... 155	**3RT2646-1NF35**	1	1 unit	41B
						175 ... 280	**3RT2646-1NP35**	1	1 unit	41B

Other voltages according to page 4/52 on request.
Accessories, see page 3/69 onwards.

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Illustrations are approximate

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4

Options

Rated control supply voltages for 3RT2 contactors, possible on request (change of the 10th and 11th digits of the article number)

Delivery time on request

Rated control supply voltage U_s	Contactor type	3RT231, 3RT251	3RT232, 3RT252	3RT233, 3RT253	3RT234, 3RT244, 3RT254	3RT2617, 3RT262, 3RT263, 3RT264
	Size	S00	S0	S2	S3	S00 to S3
Sizes S00 to S3						
AC operation[1]						
Solenoid coils for 50 Hz (exception: Size S00: 50 and 60 Hz[2])						
24 V AC		B0	B0	B0	B0	B0
42 V AC		D0	D0	D0	D0	--
48 V AC		H0	--	--	H0	--
110 V AC		F0	F0	F0	F0	F0
230 V AC		P0	P0	P0	P0	P0
240 V AC		--	--	U0	U0	--
400 V AC		V0	V0	V0	V0	--
Solenoid coils for 50 and 60 Hz[2]						
24 V AC		B0	C2	C2	C2	C2
42 V AC		D0	D2	D2	D2	--
48 V AC		H0	H2	H2	H2	--
110 V AC		F0	G2	G2	G2	--
220 V AC		N2	N2	N2	N2	N2
230 V AC		P0	L2	L2	L2	L2
Solenoid coils (for USA and Canada[3])						
50 Hz	**60 Hz**					
110 V AC	120 V AC	K6	K6	K6	K6	--
220 V AC	240 V AC	P6	P6	P6	P6	--
Solenoid coils (for Japan)						
50/60 Hz[4]	**60 Hz[5]**					
100 V AC	110 V AC	G6	G6	G6	G6	G6
200 V AC	220 V AC	N6	N6	N6	N6	N6
400 V AC	440 V AC	R6	R6	R6	R6	R6
DC operation[1]						
12 V DC		A4	A4	--	--	--
24 V DC		B4	B4	--	--	B4
42 V DC		D4	D4	--	--	--
48 V DC		W4	W4	--	--	--
60 V DC		--	--	--	--	--
110 V DC		F4	F4	--	--	F4
125 V DC		G4	G4	--	--	--
220 V DC		M4	M4	--	--	--
230 V DC		P4	--	--	--	--

Examples

AC operation	3RT2325-1A**P0**0	Contactor with screw terminals; with solenoid coil for 50 Hz for rated control supply voltage 230 V AC
	3RT2325-1A**G2**0	Contactor with screw terminals; with solenoid coil for 50/60 Hz for rated control supply voltage 110 V AC
DC operation	3RT2526-2B**B4**0	Contactor with spring-loaded terminals; for rated control supply voltage of 24 V DC
	3RT2526-2B**G4**0	Contactor with spring-loaded terminals; for rated control supply voltage 125 V DC

1) For deviating coil voltages and operating ranges of sizes S00 and S0, a SITOP 24 V DC power supply with wide-range input can be used for the coil control, see page 15/1 and Catalog KT 10.1.

2) Coil operating range
- at 50 Hz: 0.8 to 1.1 x U_s,
- at 60 Hz: 0.85 to 1.1 x U_s.

3) Coil operating range
- Size S00:
  at 50 Hz: 0.85 to 1.1 x U_s,
  at 60 Hz: 0.8 to 1.1 x U_s,
- Sizes S0 to S3: at 50 Hz and 60 Hz: 0.8 to 1.1 x U_s.

4) Coil operating range
- Size S00:
  at 50/60 Hz: 0.85 to 1.1 x U_s,
- Sizes S0 to S3:
  at 50 Hz: 08 to 1.1 x U_s,
  at 60 Hz: 0.85 to 1.1 x U_s.

5) Coil operating range at 60 Hz: 0.8 to 1.1 x U_s.

Rated control supply voltage	Contactor type	3RT2.2.-.N	Rated control supply voltage	Contactor type	3RT2.3.-.N	3RT2.4.-.N
$U_{s\,min}$ to $U_{s\,max}$[1]	Size	S0	$U_{s\,min}$ to $U_{s\,max}$[1]	Size	S2	S3
Sizes S0 to S3						
AC/DC operation (50/60 Hz AC or DC)						
21 ... 28 V AC/DC		B3	20 ... 33 V AC/DC		B3	B3
95 ... 130 V AC/DC		F3	48 ... 80 V AC/DC		E3	E3
200 ... 280 V AC/DC		P3	83 ... 155 V AC/DC		F3	F3
			175 ... 280 V AC/DC		P3	P3

1) Coil operating range: 0.8 x $U_{s\,min}$ to 1.1 x $U_{s\,max}$.

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Rated control supply voltages for 3RT14 contactors, possible on request (change of the 10th and 11th digits of the article number)

Delivery time on request

Rated control supply voltage	**Contactor type**	**3RT145.-.A, 3RT146.-.A, 3RT147.-.A**	Rated control supply voltage	**Contactor type**	**3RT145.-.N, 3RT146.-.N, 3RT147.-.N**	**3RT145.-.P, 3RT145.-.S, 3RT146.-.P, 3RT146.-.S, 3RT147.-.P, 3RT147.-.S**
$U_{s\,min}$ to $U_{s\,max}$	**Sizes**	**S6 to S12**	$U_{s\,min}$ to $U_{s\,max}$	**Sizes**	**S6 to S12**	
Sizes S6 to S12						
AC/DC operation (50/60 Hz AC or DC) and operating range 0.8 x $U_{s\,min}$ to 1.1 x $U_{s\,max}$						
Standard operating mechanism			**Solid-state operating mechanism**			
23 ... 26 V AC/DC		B3	21 ... 27.3 V AC/DC		B3	--
42 ... 48 V AC/DC		D3	96 ... 127 V AC/DC		F3	F3
110 ... 127 V AC/DC		F3	200 ... 277 V AC/DC		P3	P3
200 ... 220 V AC/DC		M3				
220 ... 240 V AC/DC		P3				
240 ... 277 V AC/DC		U3				
380 ... 420 V AC/DC		V3				
440 ... 480 V AC/DC		R3				
500 ... 550 V AC/DC		S3				
575 ... 600 V AC/DC		T3				

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SIRIUS 3RT contactors with extended operating range, 3-pole

Overview

Standards

IEC 60947-4-1, IEC 60077-2, EN 50155

Performance range

Sizes S00 to S3

- 3RT20 contactors for motor loads (AC-3 and AC-3e) up to 110 A/55 kW

Sizes S6 to S12

- 3RT10 contactors for motor loads (AC-3 and AC-3e) from 55 kW to 500 A/250 kW
- 3RT14 contactors for weak or non-inductive loads (AC-1) up to 690 A

Application

Besides standard approval in compliance with IEC 60947-4-1, the contactors with an extended operating range are also approved in compliance with the relevant parts of IEC 60077-2, thus fulfilling the requirement for use in railway applications.

Thus, their suitability for increased requirements such as an

- extended temperature range compared to the IEC 60947-4-1 product standard or
- extended operating range of the contactor operating mechanisms or also
- increased resistance to mechanical oscillations and vibrations is warranted. The design of the terminals in the spring-loaded connection system also contributes toward vibration resistance.

Operating range of contactor operating mechanisms

The contactors with extended operating range and railway approval are available with a solid-state DC operating mechanism in all sizes from S00 to S12.

This operating mechanism version has an operating range from 0.7 to 1.25 x U_s in the temperature range -40 to 70 °C.

As from size S6, the operating mechanisms are equipped with an additional control input that can be operated between 24 DC and 110 V. This function can optionally be switched on or off via a selector switch.

Protecting connections against short circuit, overload and overvoltage

All connections must generally be protected against overload and short circuits using suitable measures. Different constraints must be considered depending on the type of connection:

Short-circuit and overload protection of main connections

For information on the protection of a free-standing contactor, see the technical product data sheet.

For more information on complete units such as contactors with overload relays or contactors with motor starter protectors as the motor feeder, see Configuration Manual for load feeders.

Short-circuit and overload protection of auxiliary connections

For information on the protection of auxiliary contacts, see the technical product data sheet.

Short-circuit and overload protection of control supply voltage connections or supply voltage connections

First of all, the relevant standards and regulations for configuring control panels and the parts and components installed in them must be taken into account, for example for cable dimensioning.

One possible protection for these circuits could be the selection of a suitable power supply, i.e. one with a current-limiting function. In the selection of the source and the connecting cable, the load characteristics of the contactor must be considered (short-time inrush current peaks for solid-state operating mechanisms, switch-on power, holding power).

If there are further switching elements in the circuit, such as the auxiliary contact system of an overload relay that operates the contactor, the short-circuit protection necessary for this must also be considered.

For further recommendations, e.g. the use of miniature circuit breakers or circuit breakers for equipment in control circuits, see Control panel tip – Selecting and dimensioning suitable power supplies quickly and reliably.

Short-circuit and overload protection of contactors with a digital input

A typical rated current of 20 mA applies to these inputs based on the PLC input types according to IEC 60947-4-1.

The inputs can be protected accordingly (for 3RT1...-.X contactors, marked with IN+/IN-). The supply voltage connections A1 - A2 must be protected based on the load characteristics.

For information on power consumption, see the technical product data sheet.

Protection against overvoltage at the control supply voltage connection

3RT contactors are already equipped with coil damping (varistor).

Note:

The break times of the contactor, the opening delay times of the NO contacts and the closing delay times of the NC contacts increase with damping.

For more information about influencing the time response using damping, see Equipment Manual.

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Fitting auxiliary contacts and mounting additional auxiliary switches

Features in the delivery state

- 3RT20 contactors:
  - 3RT201 contactors:
    An auxiliary contact is integrated in the basic unit.
  - Contactors 3RT202 to 3RT204:
    The basic units contain two integrated auxiliary contacts (1 NO + 1 NC).
- 3RT10 and 3RT14 contactors:
  These contactors are supplied with two laterally mounted auxiliary switches. The fitting of auxiliary switches is possible on the front and on the side.

Expansion possibilities

All basic units (with the exception of coupling contactors in size S00) can be expanded using auxiliary switches; the permissible configuration must be observed.

Detailed information about the fitting of auxiliary switches for 3RT20 contactors, see pages 3/81 to 3/86.

Ambient temperature

The permissible ambient temperature for operation of the contactors (across the full operating range of the operating mechanisms) is -40 to +70 °C.

Side-by-side mounting

Contactors with conventional operating mechanism

- Sizes S00 and S0:
  Side-by-side mounting is permissible at ambient temperatures up to 60 °C. At > 60 to 70 °C, a clearance of at least 10 mm shall be provided.

Contactors with series resistor

- Size S00:
  Side-by-side mounting is permissible at ambient temperatures up to 70 °C.

Contactors with solid-state operating mechanism (version: 3RT....-.....-0LA2)

- Sizes S00 to S3:
  Side-by-side mounting is permissible at ambient temperatures up to 70 °C.
- Sizes S6 to S12:
  Side-by-side mounting is permissible at ambient temperatures up to 60 °C. At > 60 to 70 °C, a clearance of at least 10 mm shall be provided.

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SIRIUS 3RT contactors with extended operating range, 3-pole

Technical specifications

More information

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16177/td
FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16177/faq

Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16177/man
Guide of use for contactors in safety applications, see https://support.industry.siemens.com/cs/ww/en/view/109807687

Type			3RT2017	3RT2017-2XB4.-0LA2	2XF4.-0LA2	3RT2018-2XB4.-0LA2	2XF4.-0LA2	3RT202.	3RT202.-2XB40-0LA2	2XF40-0LA2
Size			S00					S0		
General data										
Upright mounting position										
• Contactors with series resistor			Special version (on request)							
• Contactors with conventional coil			Special version (on request)							
Ambient temperature										
• During operation		°C	-40 ... +70[1]	-40 ... +70						
• During storage		°C	-55 ... +80							
Control										
Solenoid coil operating range	DC		0.7 ... 1.25 x U_s							
Power consumption of the solenoid coils			For cold coil and 1.0 x U_s							
• Contactors with series resistor	Closing	W	13	--						
	Closed	W	4.0	--						
• Contactors with conventional coil	Closing	W	2.8	--				4.5	--	
	Closed	W	2.8	--				4.5	--	
• Contactors with solid-state operating mechanism	Closing	W	--	4.0	4.5	4.0	4.5	--	6.7	13.2
	Closed	W	--	0.95	0.75	0.95	0.75	--	1.4	1.3
Rated data of the main contacts										
Load rating with AC										
Minimum cross-section in the main circuit										
• At maximum AC-1 rated value		mm^2	4					10		
• At maximum I_{th} rated value		mm^2	--	4				--	10	

[1] 3RT20..-.K contactors without the article number suffix "-0LA2" are coupling contactors that are certified for the -25 to +60 °C standard temperature range. For railway applications, an additional certification approves these contactors with a minimum clearance of 10 mm for the extended temperature range from -40 to +70 °C.

All details and technical specifications not mentioned here are identical to those of the basic units, see page 3/25 onwards.

Type			3RT2035-3XB40-0LA2	3XF40-0LA2	3RT2036-3XB40-0LA2	3XF40-0LA2	3RT2037-3XB40-0LA2	3XF40-0LA2	3RT2038-3XB40-0LA2	3XF40-0LA2	3RT204.-3XB40-0LA2	3XF40-0LA2
Size			S2								S3	
General data												
Ambient temperature												
• During operation		°C	-40 ... +70									
• During storage		°C	-55 ... +80									
Control												
Solenoid coil operating range	DC		0.7 ... 1.25 x U_s									
Power consumption of the solenoid coils			For cold coil and 1.0 x U_s									
• Contactors with solid-state operating mechanism	Closing	W	23								76	64
	Closed	W	1								1.8	1.0
Rated data of the main contacts												
Load rating with AC												
Minimum cross-section in the main circuit												
• At maximum AC-1 rated value		mm^2	16		25				35		50	
• At maximum I_{th} rated value		mm^2	16		25				35		50	

All details and technical specifications not mentioned here are identical to those of the basic units, see page 3/25 onwards.

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Type		3RT1054-.X.46-0LA2	3RT1055-.X.46-0LA2	3RT1056-.X.46-0LA2	3RT1064-.X.46-0LA2	3RT1065-.X.46-0LA2	3RT1066-.X.46-0LA2	3RT1075-.X.46-0LA2	3RT1076-.X.46-0LA2
Size		S6			S10			S12	
General data									
Ambient temperature									
• During operation	°C	-40 ... +70							
• During storage	°C	-55 ... +80							
Control									
• Solenoid coil closing for DC	W	320			580			800	
• Solenoid coil closed for DC	W	2.8			3.4			3.6	
• Control version of the switch operating mechanism		PLC-IN or standard A1 - A2 (can be set)							
Actuated via A1/A2									
• Rated control supply voltage	V DC	24, 72 or 110							
• Operating range		0.7 ... 1.25							
Actuated via PLC input									
• Rated voltage	V DC	24 ... 110							
• Operating range		0.7 ... 1.25							
• Consumed current at PLC control input according to IEC 60947-1, maximum	mA	2							
Rated data of the main contacts									
Load rating with AC									
Minimum cross-section in the main circuit									
• At maximum AC-1 rated value	mm^2	70	95		150	185		300	370
• At maximum I_{th} rated value	mm^2	70	95		150	185		300	370

All details and technical specifications not mentioned here, see https://support.industry.siemens.com/cs/ww/en/ps/16177/td.

Type		3RT1456-.X.46-0LA2	3RT1466-.X.46-0LA2	3RT1467-.X.46-0LA2	3RT1476-.X.46-0LA2
Size		S6	S10		S12
General data					
Ambient temperature					
• During operation	°C	-40 ... +70			
• During storage	°C	-55 ... +80			
Control					
• Solenoid coil closing for DC		320	580		800
• Solenoid coil closed for DC		2.8	3.4		3.6
• Control version of the switch operating mechanism		PLC-IN or standard A1 - A2 (can be set)			
Actuated via A1/A2					
• Rated control supply voltage	V DC	24, 72 or 110			
• Operating range		0.7 ... 1.25			
Actuated via PLC input					
• Rated voltage	V DC	24 ... 110			
• Operating range		0.7 ... 1.25			
• Consumed current at PLC control input according to IEC 60947-1, maximum	mA	2			
Rated data of the main contacts					
Load rating with AC					
Minimum cross-section in the main circuit					
• At maximum AC-1 rated value	mm^2	140	240	300	480
• At maximum I_{th} rated value	mm^2	140	240		480

All details and technical specifications not mentioned here, see https://support.industry.siemens.com/cs/ww/en/ps/16177/td.

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SIRIUS 3RT contactors with extended operating range, 3-pole *IE3/IE4* ready AC-3e

Selection and ordering data

DC operation ⎓

3RT201.-2K.4.

3RT201.-2K.42-0LA0

Rated data according to IEC 60947-4-1 AC-3 and AC-3e, t_u: 70 °C					Auxiliary contacts			Rated control supply voltage U_s	**Spring-loaded terminals**	PU (UNIT, SET, M)	PS*	PG
Operational current I_e up to	Rating of three-phase motors at				Ident. No.	Version			Article No. Price per PU			
400 V	230 V	**400 V**	500 V	690 V		NO	NC					
A	kW	**kW**	kW	kW				V DC				
For screw fixing and snap-on mounting on TH 35 DIN rail												
Size S00												
Coupling contactors with integrated coil circuit												
• Suppressor diode integrated at the factory												
12	3	**5.5**	5.5	5.5	**10**[1]	1	--	24	**3RT2017-2KB41**	1	1 unit	41B
								110	**3RT2017-2KF41**	1	1 unit	41B
12	3	**5.5**	5.5	5.5	**01**[1]	--	1	24	**3RT2017-2KB42**	1	1 unit	41B
								110	**3RT2017-2KF42**	1	1 unit	41B
• Varistor integrated at the factory												
12	3	**5.5**	5.5	5.5	**10**[1]	1	--	24	**3RT2017-2LB41**	1	1 unit	41B
								110	**3RT2017-2LF41**	1	1 unit	41B
12	3	**5.5**	5.5	5.5	**01**[1]	--	1	24	**3RT2017-2LB42**	1	1 unit	41B
								110	**3RT2017-2LF42**	1	1 unit	41B
With plug-on series resistor and integrated coil circuit												
• Suppressor diode integrated at the factory												
12	3	**5.5**	5.5	5.5	**--**[2]	--	1[3]	24	**3RT2017-2KB42-0LA0**	1	1 unit	41B
								110	**3RT2017-2KF42-0LA0**	1	1 unit	41B
16	4	**7.5**	10	11	**--**[2]	--	1[3]	24	**3RT2018-2KB42-0LA0**	1	1 unit	41B
								110	**3RT2018-2KF42-0LA0**	1	1 unit	41B
• Varistor integrated at the factory												
12	3	**5.5**	5.5	5.5	**--**[2]	--	1[3]	24	**3RT2017-2LB42-0LA0**	1	1 unit	41B
								110	**3RT2017-2LF42-0LA0**	1	1 unit	41B
16	4	**7.5**	10	11	**--**[2]	--	1[3]	24	**3RT2018-2LB42-0LA0**	1	1 unit	41B
								110	**3RT2018-2LF42-0LA0**	1	1 unit	41B

1) It is not possible to mount an auxiliary switch. A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 60 °C.

2) One 4-pole auxiliary switch according to EN 50005 can be mounted from -40 to 70 °C; no clearance required.

3) NC contact cannot be used because it is used for switching of the series resistor.

Accessories and spare parts, see page 3/69 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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AC-3e ***IE3/IE4 ready*** **SIRIUS 3RT contactors with extended operating range, 3-pole**

DC operation ⎓

3RT201.-2X.41-0LA2

3RT201.-2X.42-0LA2

3RT202.-2K.40

3RT202.-2X.40-0LA2

Rated data according to IEC 60077-2 t_u: 70 °C						Auxiliary contacts			Rated control supply voltage U_s	**Spring-loaded terminals**		PU (UNIT, SET, M)	PS*	PG
Conventional thermal current I_{th} up to	Operational current I_e up to	Rating of three-phase motors at				Ident. No.	Version			Article No.	Price per PU			
690 V	400 V	230 V	**400 V**	500 V	690 V		NO	NC						
A	A	kW	**kW**	kW	kW				V DC					
For screw fixing and snap-on mounting on TH 35 DIN rail														
Size S00														
With integrated coil circuit (varistor integrated in electronics at the factory)														
18	12	3	**5.5**	5.5	5.5	**10**	1	--	24 ... 34	**3RT2017-2XB41-0LA2**		1	1 unit	41B
									72 ... 125	**3RT2017-2XF41-0LA2**		1	1 unit	41B
18	12	3	**5.5**	5.5	5.5	**01**	--	1	24 ... 34	**3RT2017-2XB42-0LA2**		1	1 unit	41B
									72 ... 125	**3RT2017-2XF42-0LA2**		1	1 unit	41B
18	16	4	**7.5**	10	11	**10**	1	--	24 ... 34	**3RT2018-2XB41-0LA2**		1	1 unit	41B
									72 ... 125	**3RT2018-2XF41-0LA2**		1	1 unit	41B
18	16	4	**7.5**	10	11	**01**	--	1	24 ... 34	**3RT2018-2XB42-0LA2**		1	1 unit	41B
									72 ... 125	**3RT2018-2XF42-0LA2**		1	1 unit	41B
Size S0														
With integrated coil circuit														
• Coupling contactors with varistor integrated at the factory														
--	17	4	**7.5**	10	11	**11**[1)]	1	1	24	**3RT2025-2KB40**		1	1 unit	41B
									110	**3RT2025-2KF40**		1	1 unit	41B
--	25	5.5	**11**	11	11	**11**[1)]	1	1	24	**3RT2026-2KB40**		1	1 unit	41B
									110	**3RT2026-2KF40**		1	1 unit	41B
--	32	7.5	**15**	18.5	18.5	**11**[1)]	1	1	24	**3RT2027-2KB40**		1	1 unit	41B
									110	**3RT2027-2KF40**		1	1 unit	41B
• Varistor integrated in electronics at the factory														
30	17	4	**7.5**	10	11	**11**	1	1	24	**3RT2025-2XB40-0LA2**		1	1 unit	41B
									110	**3RT2025-2XF40-0LA2**		1	1 unit	41B
30	25	5.5	**11**	11	11	**11**	1	1	24	**3RT2026-2XB40-0LA2**		1	1 unit	41B
									110	**3RT2026-2XF40-0LA2**		1	1 unit	41B
36	32	7.5	**15**	18.5	18.5	**11**	1	1	24	**3RT2027-2XB40-0LA2**		1	1 unit	41B
									110	**3RT2027-2XF40-0LA2**		1	1 unit	41B
38	38	7.5	**18.5**	18.5	18.5	**11**	1	1	24	**3RT2028-2XB40-0LA2**		1	1 unit	41B
									110	**3RT2028-2XF40-0LA2**		1	1 unit	41B

[1)] It is not possible to mount an auxiliary switch. A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 60 °C.

Accessories and spare parts, see page 3/69 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RT contactors with extended operating range, 3-pole *IE3/IE4* ready AC-3e

DC operation

3RT203.-3X.40-0LA2

3RT204.-3X.40-0LA2

Rated data according to IEC 60077-2 t_u: 70 °C							Auxiliary contacts		Rated control supply voltage U_s	**Spring-loaded terminals** for auxiliary and control circuits	PU (UNIT, SET, M)	PS*	PG
IEC 60947-4-1 AC-3 and AC-3e t_u: 60 °C													
Conventional thermal current I_{th} up to	Operational current I_e up to	Rating of three-phase motors at					Ident. No.	Version		Article No. / Price per PU			
690 V	400 V	230 V	**400 V**	500 V	690 V								
A	A	kW	**kW**	kW	kW		NO	NC	V DC				
For screw fixing and snap-on mounting on TH 35 DIN rail													
Size S2													
With integrated coil circuit (varistor integrated in electronics at the factory)													
50	40	11	**18.5**	22	22	**11**	1	1	24	**3RT2035-3XB40-0LA2**	1	1 unit	41B
									110	**3RT2035-3XF40-0LA2**	1	1 unit	41B
55	50	15	**22**	30	22	**11**	1	1	24	**3RT2036-3XB40-0LA2**	1	1 unit	41B
									110	**3RT2036-3XF40-0LA2**	1	1 unit	41B
60	65	18.5	**30**	37	37	**11**	1	1	24	**3RT2037-3XB40-0LA2**	1	1 unit	41B
									110	**3RT2037-3XF40-0LA2**	1	1 unit	41B
75	80	22	**37**	37	45	**11**	1	1	24	**3RT2038-3XB40-0LA2**	1	1 unit	41B
									110	**3RT2038-3XF40-0LA2**	1	1 unit	41B
For screw fixing and snap-on mounting on TH 35-15 and TH 75-15 DIN rails													
Size S3													
With integrated coil circuit (varistor integrated in electronics at the factory)													
90	80	22	**37**	45	55	**11**	1	1	24	**3RT2045-3XB40-0LA2**	1	1 unit	41B
									110	**3RT2045-3XF40-0LA2**	1	1 unit	41B
95	95	22	**45**	55	75	**11**	1	1	24	**3RT2046-3XB40-0LA2**	1	1 unit	41B
									110	**3RT2046-3XF40-0LA2**	1	1 unit	41B
95	110	30	**55**	75	75	**11**	1	1	24	**3RT2047-3XB40-0LA2**	1	1 unit	41B
									110	**3RT2047-3XF40-0LA2**	1	1 unit	41B

Accessories and spare parts, see page 3/69 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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AC-3e ***IE3/IE4* ready** **SIRIUS 3RT contactors with extended operating range, 3-pole**

DC operation

- Solid-state operating mechanism with 24 to 110 V DC control signal input
- For screw fixing
- Auxiliary and control conductors: Spring-loaded terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts is enclosed.

3RT105.-2X.46-0LA2

3RT106.-2X.46-0LA2

3RT107.-2X.46-0LA2

Size	Rated data according to IEC 60077-2 t_u: 70 °C Conventional thermal current I_{th} up to 690 V	Rated data according to IEC 60947-4-1 AC-3 and AC-3e t_u: 60 °C Operational current I_e up to 400 V	Auxiliary contacts, lateral Version NO	Auxiliary contacts, lateral Version NC	Rated control supply voltage U_s	Spring-loaded terminals Article No.	Spring-loaded terminals Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	A			V DC					
Solid-state operating mechanism										
With control signal input 24 ... 110 V DC e. g. for control by PLC										
With integrated coil circuit (varistor integrated in electronics at the factory)										
S6	120	115	2	2	24	**3RT1054-2XB46-0LA2**		1	1 unit	41B
					72	**3RT1054-2XJ46-0LA2**		1	1 unit	41B
					110	**3RT1054-2XF46-0LA2**		1	1 unit	41B
	140	150	2	2	24	**3RT1055-2XB46-0LA2**		1	1 unit	41B
					72	**3RT1055-2XJ46-0LA2**		1	1 unit	41B
					110	**3RT1055-2XF46-0LA2**		1	1 unit	41B
	145	185	2	2	24	**3RT1056-2XB46-0LA2**		1	1 unit	41B
					72	**3RT1056-2XJ46-0LA2**		1	1 unit	41B
					110	**3RT1056-2XF46-0LA2**		1	1 unit	41B
S10	215	225	2	2	24	**3RT1064-2XB46-0LA2**		1	1 unit	41B
					72	**3RT1064-2XJ46-0LA2**		1	1 unit	41B
					110	**3RT1064-2XF46-0LA2**		1	1 unit	41B
	265	265	2	2	24	**3RT1065-2XB46-0LA2**		1	1 unit	41B
					72	**3RT1065-2XJ46-0LA2**		1	1 unit	41B
					110	**3RT1065-2XF46-0LA2**		1	1 unit	41B
	265	300	2	2	24	**3RT1066-2XB46-0LA2**		1	1 unit	41B
					72	**3RT1066-2XJ46-0LA2**		1	1 unit	41B
					110	**3RT1066-2XF46-0LA2**		1	1 unit	41B
S12	350	400	2	2	24	**3RT1075-2XB46-0LA2**		1	1 unit	41B
					72	**3RT1075-2XJ46-0LA2**		1	1 unit	41B
					110	**3RT1075-2XF46-0LA2**		1	1 unit	41B
	475	500	2	2	24	**3RT1076-2XB46-0LA2**		1	1 unit	41B
					72	**3RT1076-2XJ46-0LA2**		1	1 unit	41B
					110	**3RT1076-2XF46-0LA2**		1	1 unit	41B

Accessories and spare parts, see page 3/69 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RT contactors with extended operating range, 3-pole

DC operation ⎓

- Solid-state operating mechanism with 24 to 110 V DC control signal input
- For screw fixing
- Auxiliary and control conductors: Spring-loaded terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts is enclosed.

3RT1456-2X.46-0LA2

3RT146.-2X.46-0LA2

3RT1476-2X.46-0LA2

Size	Rated data according to IEC 60077-2 t_u: 70 °C Conventional thermal current I_{th} up to 690 V	Rated data according to IEC 60947-4-1 AC-1 t_u: 40 °C Operational current I_e up to 400 V	Auxiliary contacts, lateral Version		Rated control supply voltage U_s	Spring-loaded terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	A	NO	NC	V DC					
Solid-state operating mechanism										
With control signal input 24 ... 110 V DC e. g. for control by PLC										
With integrated coil circuit (varistor integrated in electronics at the factory)										
S6	190	275	2	2	24	**3RT1456-2XB46-0LA2**		1	1 unit	41B
					72	**3RT1456-2XJ46-0LA2**		1	1 unit	41B
					110	**3RT1456-2XF46-0LA2**		1	1 unit	41B
S10	330	400	2	2	24	**3RT1466-2XB46-0LA2**		1	1 unit	41B
					72	**3RT1466-2XJ46-0LA2**		1	1 unit	41B
					110	**3RT1466-2XF46-0LA2**		1	1 unit	41B
	330	500	2	2	24	**3RT1467-2XB46-0LA2**		1	1 unit	41B
					72	**3RT1467-2XJ46-0LA2**		1	1 unit	41B
					110	**3RT1467-2XF46-0LA2**		1	1 unit	41B
S12	520	690	2	2	24	**3RT1476-2XB46-0LA2**		1	1 unit	41B
					72	**3RT1476-2XJ46-0LA2**		1	1 unit	41B
					110	**3RT1476-2XF46-0LA2**		1	1 unit	41B

Accessories and spare parts, see page 3/69 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

Standards

IEC 60947-5-1

Ambient temperature

The permissible ambient temperature for operation of the contactor relays (across the full operating range of the operating mechanisms) is -40 to +70 °C.

Uninterrupted duty at temperatures > +60 °C reduces the mechanical endurance, the current carrying capacity of the conducting paths and the switching frequency.

Control and auxiliary circuits

The solenoid coils of the contactor relays have an extended coil operating range from 0.7 to 1.25 x U_s and are fitted as standard with surge suppressors. The opening delay time is consequently 2 to 5 ms longer than for standard contactors.

Application

For operation in installations that are subject both to considerable variations in the control voltage and to high ambient temperatures, e. g. railway applications under extreme climatic conditions, rolling mills, etc.

Also for control supply voltages with battery buffering to extend the operating time in the event of battery charge failure.

Operating mechanism types

Contactor relays with conventional coil

These auxiliary contactors have an extended operating range of 0.7 to 1.25 x U_s. An additional auxiliary switch is not required.

Contactor relays with series resistor

These auxiliary contactors have an extended operating range of 0.7 to 1.25 x U_s.

The DC solenoid system is modified to holding operation by means of a series resistor. This is plugged on in a prewired module.

A 4-pole auxiliary switch can be fitted additionally.

Contactor relays with solid-state operating mechanism

Thanks to the integrated electronics, these auxiliary contactors have an extended operating range of 0.7 to 1.25 x U_s.

Protecting connections against short circuit, overload and overvoltage

All connections must generally be protected against overload and short circuits using suitable measures. Different constraints must be considered depending on the type of connection:

Short-circuit and overload protection of auxiliary connections

For information on the protection of auxiliary contacts, see the technical product data sheet.

Short-circuit and overload protection of control supply voltage connections or supply voltage connections

First of all, the relevant standards and regulations for configuring control panels and the parts and components installed in them must be taken into account, for example for cable dimensioning.

One possible protection for these circuits could be the selection of a suitable power supply, i.e. one with a current-limiting function. In the selection of the source and the connecting cable, the load characteristics of the contactor relay must be considered (short-time inrush current peaks for solid-state operating mechanisms, switch-on power, holding power).

If there are further switching elements in the circuit, such as the auxiliary contact system of an overload relay that operates the auxiliary contactor, the short-circuit protection necessary for this must also be considered.

For further recommendations, e.g. the use of miniature circuit breakers or circuit breakers for equipment in control circuits, see Control panel tip – Selecting and dimensioning suitable power supplies quickly and reliably.

Protection against overvoltage at the control supply voltage connection

- Contactor relays with conventional coil:
  A surge suppressor (suppressor diode) is integrated.
- Contactor relays with series resistor:
  A surge suppressor (a suppressor diode or varistor as preferred) is integrated.
- Contactor relays with solid-state operating mechanism:
  A surge suppressor (varistor) is integrated.

Connection methods

The 3RH2 contactor relays are available with screw terminals.

Side-by-side mounting

Contactor relays with conventional coil

A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 60 °C ≤ 70 °C.

Contactor relays with series resistor

Side-by-side mounting is permissible at ambient temperatures up to 70 °C.

Contactor relays with solid-state operating mechanism

Side-by-side mounting is permissible at ambient temperatures up to 70 °C.

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SIRIUS 3RH2 contactor relays with extended operating range

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16174/td FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16174/faq	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16174/man

Contactor relays		Type	3RH21..-2K, -2L	3RH2122-2XB40-0LA2	3RH2122-2XF40-0LA2
General data					
Upright mounting position					
• Contactors with series resistor			Special version (on request)		
• Contactors with conventional coil			Special version (on request)		
Ambient temperature					
• During operation		°C	-40 ... +70[1)]		
• During storage		°C	-55 ... +80		
Control					
Solenoid coil operating range	DC operation		0.7 ... 1.25 x U_s		
Power consumption of the solenoid coils			For cold coil and 1.0 x U_s		
• Contactors with series resistor	Closing	W	13	--	--
	Closed	W	4	--	--
• Contactors with conventional coil	Closing	W	2.8	--	--
	Closed	W	2.8	--	--
• Contactors with solid-state operating mechanism	Closing	W	--	4	4.5
	Closed	W	--	0.95	0.75

1) 3RH21..-.K contactor relays without article number suffix "-0LA." are coupling contactor relays that are certified for the temperature range -25 to +60 °C. For railway applications, an additional certification approves these contactors with a minimum clearance of 10 mm for the extended temperature range from -40 to +70 °C.

All details and technical specifications not mentioned here are identical to those of the 3RH2 basic units, see page 5/5 onwards.

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Selection and ordering data

DC operation

3RH2122-2K.40

3RH2122-2K.40-0LA0

Rated operational current I_e/AC-15/AC-14 t_u: 70 °C at				Contacts Ident. No. according to EN 50011	Version		Rated control supply voltage U_s	Spring-loaded terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
230 V	400 V	500 V	690 V		NO	NC						
A	A	A	A				V DC					
For screw fixing and snap-on mounting on TH 35 DIN rail												
Size S00												
With integrated coil circuit												
• Suppressor diode integrated at the factory												
10	3	2	1	**22E**	2	2[1]	24	**3RH2122-2KB40**		1	1 unit	41A
							110	**3RH2122-2KF40**		1	1 unit	41A
				31E	3	1[1]	24	**3RH2131-2KB40**		1	1 unit	41A
				40E	4	0[1]	24	**3RH2140-2KB40**		1	1 unit	41A
• Varistor integrated at the factory												
10	3	2	1	**22E**	2	2[1]	24	**3RH2122-2LB40**		1	1 unit	41A
							110	**3RH2122-2LF40**		1	1 unit	41A
With plug-on series resistor and integrated coil circuit												
• Suppressor diode integrated at the factory												
10	3	2	1	**21X**	2	1[2]	24	**3RH2122-2KB40-0LA0**		1	1 unit	41A
							110	**3RH2122-2KF40-0LA0**		1	1 unit	41A
• Varistor integrated at the factory												
10	3	2	1	**21X**	2	1[2]	24	**3RH2122-2LB40-0LA0**		1	1 unit	41A
							110	**3RH2122-2LF40-0LA0**		1	1 unit	41A
With integrated coil circuit (varistor integrated in electronics at the factory)												
10	3	2	1	**22E**	2	2[2]	24 ... 34	**3RH2122-2XB40-0LA2**		1	1 unit	41A
							72 ... 125	**3RH2122-2XF40-0LA2**		1	1 unit	41A

1) It is not possible to mount an auxiliary switch.
2) 4-pole auxiliary switch according to EN 50005 can be mounted.

Accessories, see page 3/69 onwards.
Other voltages according to page 3/67 on request.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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3TH4 contactor relays, 8-pole

Overview

Standards

IEC 60947-5-1

Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices.

Ambient temperature

The permissible ambient temperature for operation of the contactors (across the full solenoid coil operating range) is -50 to +70 °C. Uninterrupted duty at temperatures < -25 °C and > +55 °C reduces the mechanical endurance, the current carrying capacity of the conducting paths and the switching frequency.

A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 55 °C. There is no need to reduce the technical specifications.

Application

For operation in installations which are subject both to considerable variations in the control voltage and to high ambient temperatures, e.g. in railway applications.

Control and auxiliary circuits

The solenoid coils of the contactor relays have an extended coil operating range from 0.7 to 1.25 x U_s and are fitted as standard with varistors to provide protection against overvoltage. The opening delay time is consequently 2 to 5 ms longer than for standard contactors.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16176/td FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16176/faq	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16176/man

Contactor relays		Type	3TH42
General data			
Permissible ambient temperature			
• During operation		°C	-50 ... +70[1]
• During storage		°C	-55 ... +80
Control			
Solenoid coil operating range			0.7 ... 1.25 x U_s
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s) For cold coil: Closing = Closed		W	5.2
Permissible residual current of the electronics (with 0 signal)			
• DC operation			≤ 10 mA x (24 V/U_s)
Operating times within operating range			
Total break time = Opening delay time + Arcing time			
• DC operation	Closing delay Opening delay time	ms ms	40 ... 200 20 ... 30
• Arcing time		ms	10 ... 20

1) Side-by-side mounting with 10 mm clearance.

All details and technical specifications not mentioned here are identical to those of the 3TH4 basic units, see page 5/14 onwards.

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Selection and ordering data

DC operation ⎓

3TH4244-0L..

Contacts	Rated operational current I_e/AC-15/AC-14				Contacts[1] Ident. No. according to EN 50011	Version		Rated control supply voltage U_s	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	230 V	400 V	500 V	690 V					Article No.	Price per PU			
Number	**A**	A	A	A		NO	NC	V DC					
For screw fixing and snap-on mounting on TH 35 DIN rail													
With integrated coil circuit (varistor integrated at the factory)													
8	**10**	6	4	2	**44E**	4	4	24	**3TH4244-0LB4**		1	1 unit	41A
								110	**3TH4244-0LF4**		1	1 unit	41A
8	**10**	6	4	2	**53E**	5	3	24	**3TH4253-0LB4**		1	1 unit	41A
								110	**3TH4253-0LF4**		1	1 unit	41A
8	**10**	6	4	2	**62E**	6	2	24	**3TH4262-0LB4**		1	1 unit	41A
								110	**3TH4262-0LF4**		1	1 unit	41A

[1] No expansion contacts can be fitted.

Other voltages according to page 5/19 on request.

Accessories, see page 5/20.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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3TC contactors for switching DC voltage, 2-pole

Overview

Standards

IEC 60947-4-1

Protecting connections against short circuit, overload and overvoltage

All connections must generally be protected against overload and short circuits using suitable measures. Different constraints must be considered depending on the type of connection:

Short-circuit and overload protection of main connections

For information on the protection of a free-standing contactor, see the technical product data sheet.

For more information on complete units such as contactors with overload relays or contactors with motor starter protectors as the motor feeder, see Configuration Manual for load feeders.

Short-circuit and overload protection of auxiliary connections

For information on the protection of auxiliary contacts, see the technical product data sheet.

Short-circuit and overload protection of control supply voltage connections or supply voltage connections

First of all, the relevant standards and regulations for configuring control panels and the parts and components installed in them must be taken into account, for example for cable dimensioning.

One possible protection for these circuits could be the selection of a suitable power supply, i.e. one with a current-limiting function. In the selection of the source and the connecting cable, the load characteristics of the contactor must be considered (short-time inrush current peaks for solid-state operating mechanisms, switch-on power, holding power).

If there are further switching elements in the circuit, such as the auxiliary contact system of an overload relay that operates the contactor, the short-circuit protection necessary for this must also be considered.

For further recommendations, e.g. the use of miniature circuit breakers or circuit breakers for equipment in control circuits, see Control panel tip – Selecting and dimensioning suitable power supplies quickly and reliably.

Protection against overvoltage at the control supply voltage connection

The 3TC contactors for railway applications are fitted as standard with varistors against overvoltage.

Ambient temperature

The permissible ambient temperature for operation of the contactors (across the full solenoid coil operating range) is -50 to +70 °C. Uninterrupted duty at temperatures < -25 °C and > +55 °C reduces the mechanical endurance, the current carrying capacity of the conducting paths and the switching frequency.

A clearance of 10 mm is required for side-by-side mounting of size 2 contactors at ambient temperatures > 55 °C. There is no need to reduce the technical specifications.

Series resistor

The DC solenoid systems of the 3TC contactors must be modified (to holding coil) by means of a series resistor. This series resistor is supplied separately packed with the contactors.

With types 3TC48, the series resistor must be attached onto the right-hand side of the auxiliary switch by means of the enclosed mounting parts and sets of links provided, while in the case of the 3TC44 it must be mounted and wired between the contactor poles. With types 3TC52 and 3TC56, the series resistor must be attached separately next to the contactors.

Fitting auxiliary contacts and mounting additional auxiliary switches

Features in the delivery state

The 3TC contactors are equipped with two lateral auxiliary switches with four auxiliary contacts. Of those contacts, one NC contact is required if a series resistor is used (2 NO + 1 NC).

Expansion possibilities

Contactors with AC operation can be expanded using auxiliary switches; the permissible configuration must be observed.

Reversing contactors

With the 3TC52 and 3TC56 contactors, the series resistor must be connected using an additional K2 reversing contactor. This contactor is automatically included in the scope of supply.

Application

For operation in installations which are subject both to considerable variations in the control voltage and to high ambient temperatures, e.g. in railway applications.

Control and auxiliary circuits

The solenoid coils of the contactors have an extended coil operating range from 0.7 to 1.25 x U_s.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16180/td	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16180/man

Type		3TC44	3TC48	3TC52	3TC56
Size		2	4	8	12
General data					
Ambient temperature					
• During operation	°C	-40 ... +70			
Control					
Solenoid coil operating range		0.7 ... 1.25 x U_s			
Power consumption of the solenoid coils		For cold coil and 1.0 x U_s			
• Closing	W	48	26	40	130
• Closed	W	13	14	21	59

All details and technical specifications not mentioned here are identical to those of the basic units of the 3TC contactors, see page 4/71.

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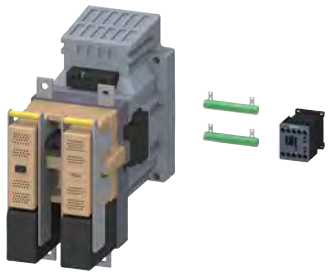
Selection and ordering data

DC operation ⎓

3TC44: For screw fixing and snap-on mounting on 35 mm DIN rail
3TC48 to 3TC56: For screw fixing

3TC48



3TC56 with reversing contactor

Size	Utilization category	Rated operational current I_e at 750 V	Rated power of loads at 220 V	440 V	600 V	750 V	Auxiliary contacts[1] Version NO	NC	Rated control supply voltage U_s	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		A	kW	kW	kW	kW			V DC					
Contactors for switching DC voltage														
With integrated coil circuit (varistor integrated at the factory)														
2	DC-1	32	7	14	19.2	24	2	1[2]	24	**3TC4417-0LB4**		1	1 unit	41B
	DC-3/DC-5	7.5	5	9	9	4			110	**3TC4417-0LF4**		1	1 unit	41B
With laterally mounted coil circuit (varistor mounted externally in additional auxiliary switch enclosure on the contactor)														
4	DC-1	75	16.5	33	45	56	2	1[2]	24	**3TC4817-0LB4**		1	1 unit	41B
	DC-3/DC-5	75	13	27	38	45			110	**3TC4817-0LF4**		1	1 unit	41B
8	DC-1	170	48	97	132	165	2	1[2]	24	**3TC5217-0LB4**		1	1 unit	41B
	DC-3/DC-5	170	41	82	110	110			110	**3TC5217-0LF4**		1	1 unit	41B
12	DC-1	400	88	176	240	300	2	1[2]	24	**3TC5617-0LB4**		1	1 unit	41B
	DC-3/DC-5	400	70	140	200	250			110	**3TC5617-0LF4**		1	1 unit	41B

[1] No expansion auxiliary contacts can be fitted.
[2] One NC contact used for series resistor.

Other rated control supply voltages according to page 4/78 on request.

Accessories

Accessories, see basic units of the 3TC contactors, page 4/78 onwards.

Spare parts for contactors with extended operating range

For contactors Size	Type	Remarks	Rated control supply voltage U_s V DC	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Arc chutes								
2	3TC4417-0L..	With recess for resistor mounting	--	**3TY2442-0B**		1	1 unit	41B
Solenoid coils								
2	3TC44	With series resistor, without varistor	24	**3TY6443-0LB4**		1	1 unit	41B
			110	**3TY6443-0LF4**		1	1 unit	41B
4	3TC48		24	**3TY6483-0LB4**		1	1 unit	41B
			110	**3TY6483-0LF4**		1	1 unit	41B

All spare parts not mentioned here are identical to those of the basic units of the 3TC contactors, see page 4/78.

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3TC contactors for switching DC voltage, 1- and 2-pole

Overview

3TC4 and 3TC5

IEC 60947-1, IEC 60947-4-1, IEC 60947-5-1 (auxiliary switches)

The DC motor ratings given in the tables are applicable to the DC-3 and DC-5 utilization categories with 2-pole switching of the load or with the two conducting paths of the contactor connected in series.

One contactor conducting path can switch full power up to 220 V. For voltages over 220 V, the two conducting paths are to be switched in series, see Rated data of the main contacts, page 4/73.

Surge suppression

Contactors (not for railway applications) supplied without a coil circuit can be retrofitted with RC elements, varistors, diodes or diode assemblies (combination of diode and Zener diode for short break times) for damping switching overvoltages in the coil, see page 4/79 onwards.

Fitting auxiliary contacts and mounting additional auxiliary switches

- Features in the delivery state:
  The 3TC contactors are equipped with two lateral auxiliary switches with four auxiliary contacts. Of those contacts, one NC contact is required if a series resistor is used (2 NO + 1 NC).
- Expansion possibilities:
  Contactors with AC operation can be expanded using auxiliary switches; the permissible configuration must be observed.

3TC7

IEC 60947-4-1

The contactors are suitable for switching and controlling DC motors as well as all other DC loads.

The solenoid excitation is configured for a particularly large operating range. It is between 0.7 or 0.8 and 1.2 × U_s.

3TC74 contactors can be used at up to 750 V/400 A and 50 Hz in AC-1 operation. For voltages over 750 V, the two conducting paths (3TC74: two contactors) are to be switched in series, see Rated data of the main contacts, page 4/75.

Application

The contactors are suitable for switching and controlling DC motors as well as all other DC circuits.

A version with a particularly large solenoid coil operating range is available for operation in electrically driven vehicles and in switchgear subject to large fluctuations in actuating voltage (see page 4/69).

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Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16181/td FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16181/faq	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16181/man

Type			3TC4 and 3TC7	3TC5
Rated data of the auxiliary contacts				
Rated insulation voltage U_i (pollution degree 3)		V	690	
Conventional thermal current I_{th} = rated operational current I_e/AC-12		A	10	10
AC load				
Rated operational current I_e/AC-15/AC-14				
• At rated operational voltage U_e	24 V	A	10	10
	110 V	A	10	10
	125 V	A	10	10
	220 V	A	6	6
	230 V	A	5.6	5.6
	380 V	A	4	4
	400 V	A	3.6	3.6
	500 V	A	2.5	2.5
	660 V	A	2.5	2.5
	690 V	A	--	--
DC load				
Rated operational current I_e/DC-12				
• At rated operational voltage U_e	24 V	A	10	10
	60 V	A	10	10
	110 V	A	3.2	8
	125 V	A	2.5	6
	220 V	A	0.9	2
	440 V	A	0.33	0.6
	600 V	A	0.22	0.4
Rated operational current I_e/DC-13				
• At rated operational voltage U_e	24 V	A	10	10
	48 V	A	5	5
	110 V	A	1.14	2.4
	125 V	A	0.98	2.1
	220 V	A	0.48	1.1
	440 V	A	0.13	0.32
	600 V	A	0.07	0.21

Type		3TC44 to 3TC56
CSA and UL rated data of the auxiliary contacts		
Rated voltage, max.	V AC	600
Switching capacity		A 600, P 600

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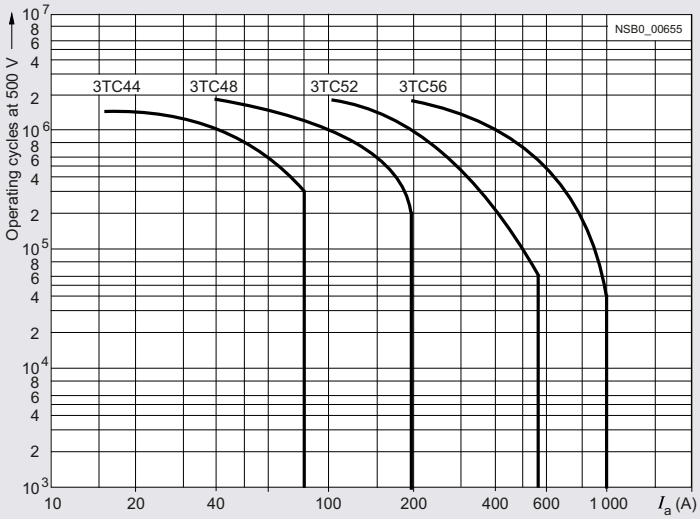
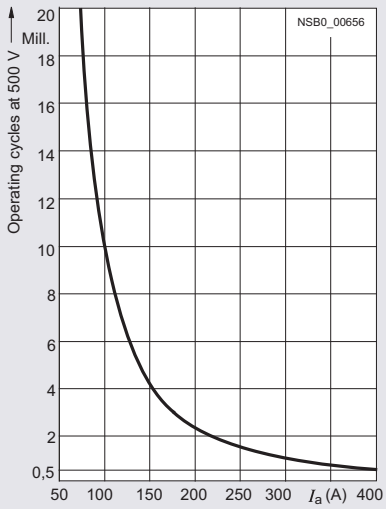
3TC contactors for switching DC voltage, 1- and 2-pole

Type	3TC44 to 3TC78

Contact endurance of the main contacts

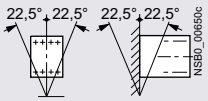


3TC44 to 3TC56 contactors



3TC74 and 3TC78 contactors

Legend for the diagrams:
I_a = Breaking current

Contactor	Type		3TC44	3TC48	3TC52	3TC56
	Size		2	4	8	12
General data						
Dimensions (W x H x D)						
• DC operation		mm	70 x 85 x 141	100 x 183 x 180	135 x 238 x 232	160 x 279 x 310
• AC operation		mm	70 x 85 x 100	100 x 183 x 154	135 x 238 x 200	160 x 279 x 251
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.						
Mechanical endurance	Operating cycles		10 million			
Electrical endurance			See the endurance diagram above			
Rated insulation voltage U_i (pollution degree 3)		V	800		1 000	
Rated impulse withstand voltage U_{imp}		kV	8			
Protective separation between the coil and the main contacts according to IEC 60947-1, Annex N		V	Up to 300		Up to 660	
Mirror contacts[1] A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.			Yes, according to IEC 60947-4-1, Annex F			
Permissible ambient temperature						
• During operation		°C	-25 ... +55			
• During storage		°C	-50 ... +80			
Short-circuit protection						
Main circuit						
• Type of coordination "1"			2 x 3NA3020 (50 A) in series	2 x 3NA31.. (160 A) in series	3NE1332-4D (400 A)	2 x 3NE1330-4D (315 A) parallel
• Type of coordination "2"			2 x 3NA3020 (50 A) in series	2 x 3NA31.. (63 A) in series	3NE1332-4D (400 A)	2 x 3NE1330-4D (315 A) parallel
Auxiliary circuit (short-circuit current $I_k \leq 1$ kA)						
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE		A	16			
• Miniature circuit breaker with C characteristic		A	10			

[1] For 3TC44, one NC contact each must be connected in series for the right and left auxiliary switch respectively.

Rated data of the auxiliary contacts, see page 4/71.

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Type				3TC44	3TC48	3TC52	3TC56
Size				2	4	8	12
Control							
Solenoid coil operating range							
• DC operation				0.7 ... 1.25 x U_s			
• AC operation				0.8 ... 1.1 x U_s			
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)							
• DC operation	Closing = Closed		W	10	19	30	86
• AC operation, 50 Hz coil	Closing		VA/p.f. φ	68/0.86	300/0.5	640/0.48	1 780/0.3
	Closed		VA/p.f. φ	10/0.29	26/0.24	46/0.23	121/0.22
• AC operation, 60 Hz coil	Closing		VA/p.f. φ	95/0.79	365/0.45	730/0.38	2 140/0.3
	Closed		VA/p.f. φ	12/0.3	35/0.26	56/0.24	140/0.29
• AC operation, 50/60 Hz coil	Closing at 50/60 Hz		VA/p.f. φ	79/73/0.83/0.78	--		
	Closed at 50/60 Hz		VA/p.f. φ	11/9/0.28/0.27	--		
Rated data of the main contacts							
Load rating with DC							
Utilization category DC-1 (*L/R* ≤ 1 ms)							
• Rated operational currents I_e (at 55 °C)		Up to U_e 750 V	A	32	75	220	400
• Minimum conductor cross-section			mm^2	6	25	95	240
• Rated power at U_e (≤ 220 V DC: one conducting path, > 220 V DC: two conducting paths in series)		At 220 V	kW	7	16.5	48	88
		440 V	kW	14	33	97	176
		600 V	kW	19.2	45	132	240
		750 V	kW	24	56	165	300
Utilization category DC-3 and DC-5, shunt-wound and series-wound motors (*L/R* ≤ 15 ms)							
• Rated operational currents I_e (at 55 °C)		Up to 220 V	A	32	75	220	400
		440 V	A	29	75	220	400
		600 V	A	21	75	220	400
		750 V	A	7.5	75	170	400
• Rated power at U_e (≤ 220 V DC: one conducting path, > 220 V DC: two conducting paths in series)		At 110 V	kW	2.5	6.5	20	35
		220 V	kW	5	13	41	70
		440 V	kW	9	27	82	140
		600 V	kW	9	38	110	200
		750 V	kW	4	45	110	250
Conductor cross-sections							
Main conductors (1 or 2 conductors can be connected)				**Screw terminals**			
• Solid			mm^2	2 x (2.5 ... 10)	2 x (6 ... 16)	--	
• Finely stranded with end sleeve			mm^2	2 x (1.5 ... 4)	--		
• Stranded with cable lug			mm^2	2 x 16	2 x 35	2 x 120	2 x 150
• Pin cable lug according to DIN 46231			mm^2	2 x (1 ... 6)	--		
• Busbars			mm	--	15 x 2.5	25 x 4	2 x (25 x 3)
• Terminal screw				M5	M6	M10	
Auxiliary conductors (1 or 2 conductors can be connected)							
• Solid			mm^2	2 x (1 ... 2.5)			
• Finely stranded with end sleeve			mm^2	2 x (0.75 ... 1.5)			

Rated data of the auxiliary contacts, see page 4/71.

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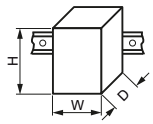
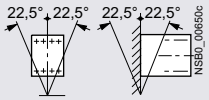
3TC contactors for switching DC voltage, 1- and 2-pole

Type			3TC74	3TC78
Design			1-pole contactors	2-pole contactors
General data				
Dimensions (W x H x D) 		mm	78 x 352 x 276	160 x 366 x 290
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.				
Mechanical endurance		Operating cycles	30 million	
Electrical endurance			See page 4/72	
Rated insulation voltage U_i (pollution degree 3)		V	1 500	
Rated impulse withstand voltage U_{imp}		kV	8	
Protective separation between the coil and the main contacts according to IEC 60947-1, Annex N		V	630	
Mirror contacts[1)] A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.			Yes, according to IEC 60947-4-1, Annex F	
Permissible ambient temperature		°C	-25 ... +55	
Short-circuit protection				
Main circuit				
• Type of coordination "1"		A	2 x 3NE1330-4D (315 A) parallel	2 x 3NE1330-5E (315 A) parallel
• Type of coordination "2"		A	2 x 3NE1330-4D (315 A) parallel	2 x 3NE1330-5E (315 A) parallel
Auxiliary circuit (short-circuit current $I_k \leq 1$ kA)				
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE		A	16	
• Miniature circuit breaker with C characteristic		A	10	
Control				
Solenoid coil operating range				
• DC operation	At U_c = 24 V		0.8 ... 1.2 x U_s	
	At U_c > 24 V		0.7 ... 1.2 x U_s	
• AC operation	At U_c = 24 V		0.7 ... 1.15 x U_s	
	At U_c > 24 V		0.7 ... 1.14 x U_s	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)				
• DC operation	Closing = Closed	W	46	92
• AC operation, 50 Hz	Closing = Closed	VA	80	160
		P.f. φ	0.95	

[1)] For 3TC78, one auxiliary NC contact each of the right and left conducting paths must be connected in series.

Rated data of the auxiliary contacts, see page 4/71.

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Type			3TC74	3TC78
Design			1-pole contactors	2-pole contactors
Rated data of the main contacts				
Load rating with DC				
Utilization category DC-1 (*L/R* ≤ 1 ms)				
• Rated operational current I_e/DC-1 (at 55 °C)		A	500	
• Minimum conductor cross-section		mm^2	2 x 150	
• Rated power	At 220 V	kW	110	
(≤ 750 V DC: one conducting path,	440 V	kW	220	
> 750 V DC: two conducting paths in series)	600 V	kW	300	
	750 V	kW	375	
	1 200 V	kW	--	600
	1 500 V	kW	--	750
• Critical currents, without arc extinction	At 440 V	A	≤ 7	--
	600 V	A	≤ 13	--
	750 V	A	≤ 15	--
	≤ 800 V	A	--	≤ 7
	1 200 V	A	--	≤ 13
	1 500 V	A	--	≤ 15
Utilization category DC-3 and DC-5, shunt-wound and series-wound motors (*L/R* ≤ 15 ms)				
• Rated operational current I_e (at 55 °C)		A	400	
• Rated power at U_e	At 110 V	kW	35	
(≤ 750 V DC: one conducting path,	220 V	kW	70	
> 750 V DC: two conducting paths in series)	440 V	kW	140	
	600 V	kW	200	
	750 V	kW	250	
	1 200 V	kW	--	400
	1 500 V	kW	--	500
Permissible rated current for regenerative braking At 110 ... 600 V		A	400	
Conductor cross-sections				
Main conductors (1 or 2 conductors can be connected)			**Screw terminals**	
• Stranded with cable lug		mm^2	2 x ... 150	
• Busbars		mm	2 x (30 x 4)	
Auxiliary conductors (1 or 2 conductors can be connected)				
• Solid		mm^2	1 ... 2.5	
• Finely stranded with end sleeve		mm^2	0.75 ... 1.5	

Rated data of the auxiliary contacts, see page 4/71.

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3TC contactors for switching DC voltage, 1- and 2-pole

Selection and ordering data

DC operation ⎓ or AC operation, 50 Hz ∿

3TC44

3TC48

Size	Utilization category[1]	Operational current I_e[2]	Ratings of DC motors at 110 V	220 V	440 V	600 V	750 V	Auxiliary contacts[3] Version NO	NC	Rated control supply voltage U_s	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		A	kW	kW	kW	kW	kW			V					
3TC44 to 3TC56 2-pole contactors · Operational voltage up to 750 V															
DC operation															
For screw fixing and snap-on mounting on TH 35 DIN rail															
2	DC-3, DC-5	32	2.5	5	9	9	4	2	2	24 DC	**3TC4417-0AB4**		1	1 unit	41B
										110 DC	**3TC4417-0AF4**		1	1 unit	41B
										220 DC	**3TC4417-0AM4**		1	1 unit	41B
For screw fixing															
4	DC-3, DC-5	75	6.5	13	27	38	45	2	2	24 DC	**3TC4817-0AB4**		1	1 unit	41B
										110 DC	**3TC4817-0AF4**		1	1 unit	41B
										220 DC	**3TC4817-0AM4**		1	1 unit	41B
8	DC-3, DC-5	220[4]	20	41	82	110	110	2	2	24 DC	**3TC5217-0AB4**		1	1 unit	41B
										110 DC	**3TC5217-0AF4**		1	1 unit	41B
										220 DC	**3TC5217-0AM4**		1	1 unit	41B
12	DC-3, DC-5	400	35	70	140	200	250	2	2	24 DC	**3TC5617-0AB4**		1	1 unit	41B
										110 DC	**3TC5617-0AF4**		1	1 unit	41B
										220 DC	**3TC5617-0AM4**		1	1 unit	41B
AC operation, 50 Hz															
For screw fixing and snap-on mounting on TH 35 DIN rail															
2	DC-3, DC-5	32	2.5	5	9	9	4	2	2	220/230 AC[5]	**3TC4417-0BP0**		1	1 unit	41B
										110/110 AC	**3TC4417-0BF0**		1	1 unit	41B
For screw fixing															
4	DC-3, DC-5	75	6.5	13	27	38	45	2	2	220/230 AC[5]	**3TC4817-0BP0**		1	1 unit	41B
										110 AC	**3TC4817-0BF0**		1	1 unit	41B
8	DC-3, DC-5	220[4]	20	41	82	110	110	2	2	220/230 AC[5]	**3TC5217-0BP0**		1	1 unit	41B
										110 AC	**3TC5217-0BF0**		1	1 unit	41B
12	DC-3, DC-5	400	35	70	140	200	250	2	2	220/230 AC[5]	**3TC5617-0BP0**		1	1 unit	41B
										110 AC	**3TC5617-0BF0**		1	1 unit	41B

[1] Permissible load for DC-1 utilization category, see detailed technical specifications in the Reference Manual.

[2] The following rated operational currents are permitted for reversing duty with 3TC44 to 3TC56 contactors:

Contactor Type	Rated operational voltage 110 V, 220 V	440 V
3TC44	32 A	7 A
3TC48	75 A	75 A
3TC52	170 A	170 A
3TC56	400 A	400 A

[3] The fitting of auxiliary switches cannot be altered on DC-operated contactors.

[4] At > 600 V: I_e = 170 A.

[5] Operating range at 220 V AC: 0.85 to 1.15 × U_s; lower operating range limit according to IEC 60947.

Other rated control supply voltages according to page 4/78 on request.

Accessories, see page 4/78 onwards.

Spare parts, see page 4/80.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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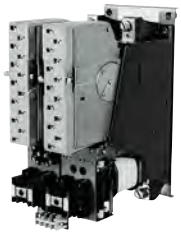
DC operation ⎓ or AC operation, 50 Hz ~

For screw fixing

3TC74



3TC78

Size	Utilization category[1]	Operational current I_e	Ratings of DC motors at 110 V	220 V	440 V	600 V	750 V	1 200 V	1 500 V	Auxiliary contacts[2] Version NO	NC	Rated control supply voltage U_s	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		A	kW	kW	kW	kW	kW	kW	kW	NO	NC	V					
3TC74 1-pole contactors · Operational voltage up to 750 V																	
DC operation																	
12	DC-3, DC-5	400	35	70	140	200	250	--	--	4	4	24 DC	**3TC7414-0EB**		1	1 unit	41B
												110 DC	**3TC7414-0EF**		1	1 unit	41B
AC operation, 50 Hz																	
12	DC-3, DC-5	400	35	70	140	200	250	--	--	4	4	230/220 AC[3]	**3TC7414-1CM**		1	1 unit	41B
3TC78 2-pole contactors · Operational voltage up to 1 500 V																	
DC operation																	
12	DC-3, DC-5	400	35	70	140	200	250	400	500	4	4	24 DC	**3TC7814-0EB**		1	1 unit	41B
												110 DC	**3TC7814-0EF**		1	1 unit	41B
AC operation, 50 Hz																	
12	DC-3, DC-5	400	35	70	140	200	250	400	500	4	4	230/220 AC[3]	**3TC7814-1CM**		1	1 unit	41B

[1] Permissible load for DC-1 utilization category, see detailed technical specifications in the Reference Manual.

[2] The fitting of auxiliary switches cannot be altered on DC-operated contactors.

[3] Upper operating range limit at 230 V AC: 1.14 x U_s.

Other rated control supply voltages according to page 4/78 on request.

Spare parts, see page 4/80.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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3TC contactors for switching DC voltage, 1- and 2-pole

Options

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the article number)

Delivery time on request

Rated control supply voltage U_s	Contactor type	3TC44	3TC48	3TC52/3TC56	3TC74/3TC78
DC operation					
24 V DC		B4	B4	B4	B
48 V DC		W4	W4	--	--
60 V DC		E4	E4	--	--
110 V DC		F4	F4	F4	F
125 V DC		G4	G4	--	--
220 V DC		M4	M4	M4	M
230 V DC		P4	P4	--	--
AC operation					
Solenoid coils for 50 Hz					
24 V AC		B0	B0	--	--
110 V AC		F0	F0	F0	--
230/220 V AC		P0[1)]	P0[1)]	P0[1)]	M[2)]
240 V AC		U0	U0	--	--
Solenoid coils for 50/60 Hz					
24 V AC		C2	--	--	--
110 V AC		G2	--	--	--
120 V AC		K2	--	--	--
220 V AC		N2	--	--	--
230 V AC		L2	--	--	--

[1)] Operating range at 220 V AC: 0.85 to 1.15 × U_s; lower operating range limit according to IEC 60947.

[2)] Upper operating range limit at 230 V AC: 1.14 x U_s.

Accessories

For contactors		Version	Auxiliary switches		Screw terminals		PU (UNIT, SET, M)	PS*	PG
		Auxiliary contacts	Left	Right	Article No.	Price per PU			
Size	Type	NO	NC						
Second auxiliary switch (for AC operation only)									
4	3TC48	2nd auxiliary switch, left			**3TY6501-1K**		1	1 unit	41B
		1	1	--					
		2nd auxiliary switch, right			**3TY6501-1L**		1	1 unit	41B
		1	1	--					
8 and 12	3TC52, 3TC56	2nd auxiliary switch, left			**3TY6561-1K**		1	1 unit	41B
		1	1	--					
		2nd auxiliary switch, right			**3TY6561-1L**		1	1 unit	41B
		1	1	--					
Solid-state compatible auxiliary switches									
		For operation in dusty atmospheres and in solid-state circuits with rated operational currents I_e/AC-14 and DC-13 of 1 ... 300 mA at 3 ... 60 V							
2 and 4	3TC44, 3TC48	2nd auxiliary switch, left or right (replacement for 3TY6561-1U, 3TY6561-1V)			**3TY7561-1UA00**		1	1 unit	41B
		1 CO contact							

5TY7561-1.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	For contactors		Version	Rated control supply voltage U_s		Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Size	Type		V AC	V DC					
Surge suppressors · Varistors										
3TX7402-3.	2	3TC44[1]	**Varistors**[2] With line spacer, for mounting on the coil terminal	24 ... 48	24 ... 70	**3TX7402-3G**		1	1 unit	41B
				48 ... 127	70 ... 150	**3TX7402-3H**		1	1 unit	41B
				127 ... 240	150 ... 250	**3TX7402-3J**		1	1 unit	41B
				240 ... 400	--	**3TX7402-3K**		1	1 unit	41B
				400 ... 600	--	**3TX7402-3L**		1	1 unit	41B
3TX7462-3.	4	3TC48	**Varistors**[2] For sticking onto the contactor base or for mounting separately	24 ... 48	24 ... 70	**3TX7462-3G**		1	1 unit	41B
				48 ... 127	70 ... 150	**3TX7462-3H**		1	1 unit	41B
				127 ... 240	150 ... 250	**3TX7462-3J**		1	1 unit	41B
				240 ... 400	--	**3TX7462-3K**		1	1 unit	41B
				400 ... 600	--	**3TX7462-3L**		1	1 unit	41B
	8 and 12	3TC52, 3TC56	**Varistors** For sticking onto the contactor base or for mounting separately	24 ... 48	--	**3TX7462-3G**		1	1 unit	41B
				48 ... 127	--	**3TX7462-3H**		1	1 unit	41B
				127 ... 240	--	**3TX7462-3J**		1	1 unit	41B
				240 ... 400	--	**3TX7462-3K**		1	1 unit	41B
				400 ... 600	--	**3TX7462-3L**		1	1 unit	41B
3TX7522-3.	8 and 12	3TC52, 3TC56	**Varistors**[2] For separate screw fixing or snapping onto TH 35 DIN rail	--	24 ... 70	**3TX7522-3G**		1	1 unit	41B
				--	70 ... 150	**3TX7522-3H**		1	1 unit	41B
				--	150 ... 250	**3TX7522-3J**		1	1 unit	41B
Surge suppressors · RC elements										
3TX7462-3., 3TX7522-3.	4	3TC48	**RC elements** For lateral snapping onto auxiliary switch or TH 35 DIN rail	24 ... 48	--	**3TX7462-3R**		1	1 unit	41B
				--	24 ... 70	**3TX7522-3R**		1	1 unit	41B
				48 ... 127	--	**3TX7462-3S**		1	1 unit	41B
				--	70 ... 150	**3TX7522-3S**		1	1 unit	41B
				127 ... 240	--	**3TX7462-3T**		1	1 unit	41B
				--	150 ... 250	**3TX7522-3T**		1	1 unit	41B
				240 ... 400	--	**3TX7462-3U**		1	1 unit	41B
				400 ... 600	--	**3TX7462-3V**		1	1 unit	41B
	8 and 12	3TC52, 3TC56	**RC elements** For lateral snapping onto auxiliary switch or TH 35 DIN rail	24 ... 48	--	**3TX7522-3R**		1	1 unit	41B
				48 ... 127	--	**3TX7522-3S**		1	1 unit	41B
				127 ... 240	--	**3TX7522-3T**		1	1 unit	41B
				240 ... 400	--	**3TX7522-3U**		1	1 unit	41B
				400 ... 600	--	**3TX7522-3V**		1	1 unit	41B
Surge suppressors · Diodes										
3TX7462-3.	4 to 12	3TC48, 3TC52, 3TC56	**Diode assemblies**[3] (Diode and Zener diode) for DC solenoid system, for sticking onto the contactor base or for mounting separately	--	24 ... 250	**3TX7462-3D**		1	1 unit	41B

[1] The connection piece for mounting the surge suppressor must be bent slightly.

[2] Includes the peak value of the alternating voltage on the DC side.

[3] Not for DC operation.

	For contactors		Version		Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Size	Type							
Terminal covers									
3TX6546-3B	2	3TC44	For protection against inadvertent contact with exposed busbar connections (1 set = 2 units)	--	**3TY2444-0B**		1	1 unit	41B
	6	3TC48	For protection against inadvertent contact with exposed busbar connections Can be screwed on free screw end; covers one busbar connection (1 set = 6 units)	M6	**3TX6506-3B**		1	1 unit	41B
	8 and 12	3TC52, 3TC56		M10	**3TX6546-3B**		1	1 unit	41B

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3TC contactors for switching DC voltage, 1- and 2-pole

Spare parts

Auxiliary switches

For lateral mounting

3TY6561-1A

For contactors Size	Type	Version	Auxiliary contacts NO	NC	Auxiliary switches Left	Right	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
2 and 4	3TC44, 3TC48	Auxiliary switch (replacement for 3TY6501-1A, 3TY6501-1B)	1	1	13 21 / 14 22	31 43 / 32 44	**3TY6501-1AA00**		1	1 unit	41B
8 and 12	3TC52, 3TC56	Auxiliary switch, left	1	1	13 21 / 14 22	--	**3TY6561-1A**		1	1 unit	41B
		Auxiliary switch, right	1	1	--	31 43 / 32 44	**3TY6561-1B**		1	1 unit	41B
12	3TC74	Auxiliary switches	4	4	13 21 31 43 / 14 22 32 44	53 61 71 83 / 54 62 72 84	**3TY2741-2J**		1	1 unit	41B
12	3TC78	Auxiliary switch, left	2	2	13 21 31 43 / 14 22 32 44	--	**3TY2781-2C**		1	1 unit	41B
		Auxiliary switch, right	2	2	--	53 61 71 83 / 54 62 72 84	**3TY2781-2D**		1	1 unit	41B

Surge suppressors · Varistors

For contactors Size	Type	Version	Rated control supply voltage U_s V AC/DC	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
12	3TC7	For sticking onto the contactor base	24	**3TX2746-2F**		1	1 unit	41B
			110	**3TX2746-2G**		1	1 unit	41B

Solenoid coils

For contactors Size	Type	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
DC operation[1]							
2	3TC44	--	**3TY6443-0B..**				
4	3TC48		**3TY6483-0B..**				
8	3TC52		**3TY6523-0B..**				
12	3TC56		**3TY6563-0B..**				
AC operation[1]							
2	3TC44	--	**3TY7403-0A..**				
4	3TC48		**3TY6483-0A..**				
8	3TC52		**3TY6523-0A..**				
12	3TC56		**3TY6566-0A..**				

Contacts with fixing parts

3TY2520-0A

In order to ensure reliable operation of the contactors, only **original spare contacts** should be used.

For contactors Size	Type	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
2	3TC44	(1 set = 2 moving and 4 fixed contacts)	**3TY2440-0A**		1	1 unit	41B
4	3TC48		**3TY2480-0A**		1	1 unit	41B
8	3TC52		**3TY2520-0A**		1	1 unit	41B
12	3TC56		**3TY2560-0A**		1	1 unit	41B
12	3TC7	Main contacts (1 set) For 3TC78: 2 units required per contactor	**3TY2740-0E**		1	1 unit	41B

Arc chutes

3TY2482-0A

For contactors Size	Type	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
2	3TC44	Arc chutes, 2-pole	**3TY2442-0A**		1	1 unit	41B
4	3TC48		**3TY2482-0A**		1	1 unit	41B
8	3TC52		**3TY2522-0A**		1	1 unit	41B
12	3TC56		**3TY2562-0A**		1	1 unit	41B
12	3TC7	For 3TC78: 2 units required per contactor	**3TY2742-0C**		1	1 unit	41B

[1] Rated control supply voltages, see page 4/78. The 10th and 11th digits of the article number must be supplemented accordingly.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Price groups
	PG 41A, 41B, 41H, 41L
5/2	**Introduction**
	Contactor relays
5/5	SIRIUS 3RH2 contactor relays, 4- and 8-pole
5/14	3TH4 contactor relays, 8- and 10-pole
5/20	- Accessories for 3TH4 contactor relays
	Contactors for railway applications
4/63	- SIRIUS 3RH2 contactor relays with extended operating range
4/66	- 3TH4 contactor relays, 8-pole
	Coupling relays
5/21	SIRIUS 3RQ1 force-guided coupling relays, fail-safe up to SIL 3/PL e NEW
5/29	SIRIUS 3RQ2 coupling relays with industrial enclosure
5/33	SIRIUS 3RQ3 coupling relays, narrow design
5/42	LZS coupling relays with plug-in relays
3/138	**3TG10 power relays/miniature contactors**

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Introduction

Overview

More information	
Homepage, see www.siemens.com/sirius	Conversion tool, see www.siemens.com/conversion-tool
Industry Mall, see www.siemens.com/product?3RH_3TH	

The advantages at a glance

Size	**S00**	**S00**	**--**	**--**
Type	3RH21	3RH22	3TH42	3TH43

		Article No.	Page
SIRIUS 3RH2 contactor relays			
4-pole	• Screw or spring-loaded terminals	**3RH21**	5/10, 5/11
8-pole		**3RH22**	5/10, 5/11
4-pole, latched		**3RH24**	5/10, 5/11
Coupling contactor relays	• Coils for control by the PLC	**3RH21**	5/12, 5/13
Contactor relays for railway applications	• Coils with extended voltage range	**3RH21**	4/65
3TH4 contactor relays			
8-pole	• Screw terminals	**3TH42**	5/17
10-pole		**3TH43**	5/18
Contactor relays for railway applications	• Coils with extended voltage range	**3TH42**	4/66
Accessories for SIRIUS 3RH2 contactor relays			
Auxiliary switches	• On the front	**3RH29, 3RA281.**	from 3/81 onwards, 3/95
	• Lateral	**3RH29**	3/91
Function modules (direct-on-line starting, star-delta (wye-delta) starting)	• On the front	**3RA281., 3RA283.**	3/100
Surge suppressors	• On the front	**3RT2916**	3/97, 3/98
Additional load modules	• On the front	**3RT2916**	3/114

Note:

Safety characteristics for contactors, see "Standards and approvals", page 16/9.

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More information
Homepage, see www.siemens.com/sirius-coupling-relays
Industry Mall, see www.siemens.com/product?3RQ_3RS_LZ
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=SIRIUSRelais
Conversion tool, see www.siemens.com/conversion-tool

Video: Overview of SIRIUS coupling relays

The advantages at a glance

Type 3RQ1

3RQ2

3RQ3

LZS/LZX

		Article No.	Page
SIRIUS 3RQ1 force-guided coupling relays, fail-safe up to SIL 3/PL e			
Coupling relays with force-guided contacts	• Widths 17.5 and 22.5 mm • Safety certification according to functional safety SIL 3/PL e • Can be used as output extension for SIRIUS 3SK safety relays via device connectors	**3RQ1**	5/21
SIRIUS 3RQ2 coupling relays with industrial enclosure			
Coupling relays with relay output	• 1, 2 or 3 changeover contacts with wide voltage range • Also available with hard gold-plated contacts	**3RQ2**	5/29
SIRIUS 3RQ3 coupling relays, narrow design			
Coupling relays with relay output (not plug-in)	• Width 6.2 mm, 1 CO, versions with hard gold-plated contacts optionally available - Output coupling links - Input coupling links	 **3RQ301** **3RQ303**	 5/33 5/33
Coupling relays with plug-in relays	• Width 6.2 mm, 1 CO, versions with hard gold-plated contacts optionally available - Output coupling links	 **3RQ311**	 5/33
Coupling relays with semiconductor output (not plug-in)	• Width 6.2 mm, output 1 semiconductor, triac or transistor - Output coupling links - Input coupling links	 **3RQ305, 3RQ306** **3RQ307**	 5/33 5/33
LZS coupling relays with plug-in relays			
Coupling relays with plug-in relays with 2, 3 and 4 changeover contacts	• Switching capacity 12 A/10 A/6 A • Width 27 mm • Base with or without logical separation	**LZS:PT, LZX:PT**	5/48 ... 5/50
Coupling relays with plug-in relays with 3 changeover contacts and circular base	• Switching capacity 10 A • 11-pole circular base • Width 38 mm	**LZS:MT, LZX:MT**	5/48
Coupling relays with plug-in relays with 1 or 2 changeover contacts	• Switching capacity 16 A/8 A • Width 15.5 mm • Base with or without logical separation	**LZS:RT, LZX:RT**	5/49

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Introduction

Connection methods

The contactor relays and the relays are available with screw terminals (box terminals) or with spring-loaded terminals.

The 3RQ coupling relays are supplied with screw terminals or spring-loaded (push-in) terminals. The plug-in sockets for LZS/LZX coupling relays are also available with plug-in (push-in) terminals.

	Screw terminals
	Spring-loaded terminals, spring-loaded terminals (push-in)
	Flat connectors
	Plug-in terminals (push-in)
	The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

3RQ coupling relays: Spring-loaded terminals (push-in) with TOP wiring

Push-in terminals are a form of spring-loaded terminals allowing fast wiring without tools for rigid conductors or conductors equipped with end sleeves.

As with other spring-type terminals, a screwdriver (with 3.0 x 0.5 mm blade) is required to disconnect the conductor. The same tool can also be used to wire finely-stranded or stranded conductors with no end finishing.

The advantages of the push-in terminals are found, as with all spring-loaded terminals, in speed of assembly and disassembly and vibration-proof connection. There is no need for the checking and tightening required with screw terminals.

With the TOP wiring method, the wire inlet and terminals can be reached from the front. This helps to speed up the wiring process and eliminate wiring errors.

Video: SIRIUS spring-loaded terminals - Strong, flexible, safe, fast

Ordering notes for multi-unit packaging

On request, 3RQ1 and 3RQ2 coupling relays can also be ordered in practical and environmentally friendly multi-unit packaging.

Multi-unit packaging with order code X90

When ordering products in multi-unit packaging, the article number of the product concerned must be supplemented with **"-Z"** and, in addition, the order code **"X90"** must be specified.

Ordering examples:

- 3RQ10 coupling relays with a width of 17.5 mm
  3RQ1000-1EB00-Z X90;
  Order quantity 16 units → Delivered in one package containing 16 units
- 3RQ20 coupling relays with a width of 22.5 mm
  3RQ2000-1AW00-Z X90;
  Order quantity 12 units → Delivered in one package containing 12 units

For more information, see page 16/7.

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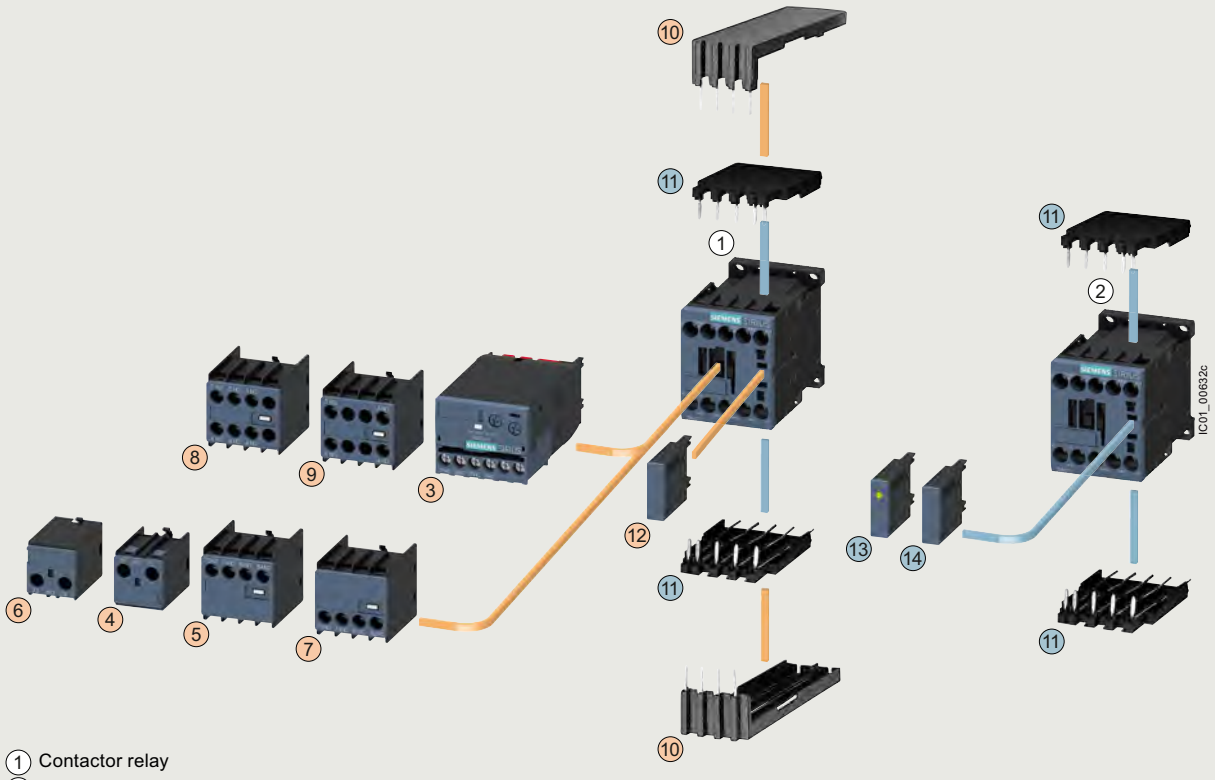
Overview

Contactor relays,
size S00, with accessories



(1) Contactor relay
(2) Coupling contactor relay for auxiliary circuits

(3) 3RA28 function module
(4) 1-pole auxiliary switch, cable entry from the top
(5) 2-pole auxiliary switch, cable entry from the top
(6) 1-pole auxiliary switch, cable entry from the bottom
(7) 2-pole auxiliary switch, cable entry from the bottom
(8) 4-pole auxiliary switch
(terminal designations according to EN 50011 or EN 50005)
(9) 2-pole auxiliary switch, solid-state compatible version
(terminal designations according to EN 50005)

(10) Solder pin adapter for contactor relays with 4-pole auxiliary switch
(11) Solder pin adapter
(12) Additional load module for increasing the permissible residual current
(13) Surge suppressor with LED
(14) Surge suppressor without LED

For contactor relays
For contactor relays and coupling contactor relays

Accessories, see page 3/69 onwards.

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SIRIUS 3RH2 contactor relays, 4- and 8-pole

Standards

IEC 60947-1, IEC 60947-4-1, IEC 60947-5-1

The 3RH2 contactor relays are available with screw or spring-loaded terminals. The basic unit contains four contacts with terminal designations according to EN 50011.

The 3RH21 coupling contactor relays for switching auxiliary circuits are tailored to the special requirements of working with electronic controls.

Contact reliability of auxiliary contacts

High contact stability at low voltages and currents, suitable for solid-state circuits with currents ≥ 1 mA at a voltage of ≥ 17 V.

Protection of the device connections against overvoltage

Protection against overvoltage at the control supply voltage connection

RC elements, varistors, diodes or diode assemblies (combination of a diode and a Zener diode) can be plugged onto all 3RH2 contactor relays from the front for damping opening surges in the coil. The plug-in direction is determined by a coding device.

Coupling contactor relays have a low power consumption and an extended solenoid coil operating range.

Depending on the version, the solenoid coils of the coupling contactor relays are supplied either without overvoltage damping (versions 3RH21..-.HB40 or 3RH21..-.MB40-0KT0) or with a diode or suppressor diode connected as standard.

Note:

The break times of the contactor, the opening delay times of the NO contacts and the closing delay times of the NC contacts increase with damping.

For more information on how damping influences the time response, see the Equipment Manual.

Accessories

The accessories for the 3RT2 contactors in size S00 can also be used for the 3RH2 contactor relays (see page 3/69 onwards).

Mounting of additional auxiliary switches

Expansion possibilities

All 3RH21 contactor relays (except for coupling contactor relays) can be expanded using auxiliary switches; the permissible configuration must be observed.

For detailed information about fitting of auxiliary switches, see pages 3/81 to 3/86.

The auxiliary switch can easily be snapped onto the front of the contactor relays. The auxiliary switch has a centrally positioned release lever for disassembly.

The conventional front auxiliary contacts fulfill the characteristics of force-guided operation and are therefore suitable for safety applications.

Contactor relays in safety-related applications

Contactor relays are a significant part of safety-related applications. They are generally the actuators that perform the switching operation leading to the safe disconnection of the corresponding application or system.

Contactor relays with force-guided operation according to IEC 60947-5-1 are generally required for use in safety-related applications. Most of our contactors meet this requirement; a corresponding note can be found in the technical product data sheet.

Contactor relays with increased tamper protection

Increased tamper protection is ensured either by using our contactor relay versions with permanently mounted auxiliary switches installed in the factory (e.g. 3RH22 contactor relays), or by using the 3RT2916-4MA10 sealable cover as an accessory (see page 3/112).

Article number scheme

Product versions		Article number
SIRIUS contactor relays		**3RH2** □ □ □ **–** □ □ □ □ **0 –** □ □ □ □
Device type	e.g. 1 = 4-pole contactor relay	□
Number of NO contacts	e.g. 2 = 2 NO	□
Number of NC contacts	e.g. 2 = 2 NC	□
Type of electrical connection	Screw terminals	**1**
	Spring-loaded terminals	**2**
Operating range/solenoid coil circuit	e.g. A = AC standard/without coil circuit	□
Rated control supply voltage	e.g. P0 = 50/60 Hz 230 V AC	□ □
Special version		□ □ □ □
Example		**3RH2 1 2 2 – 1 A P 0 0**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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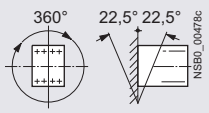
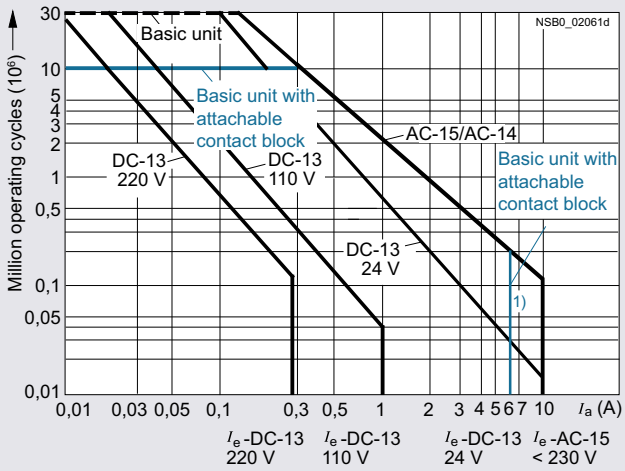
Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16188/td FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16188/faq	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16188/man

	Contactor relays
Type	**3RH2**
Size	**S00**
Permissible mounting position	
The contactor relays are designed for operation on a vertical mounting surface.	
Upright mounting position	Special version required (in the case of coupling contactor relays and contactor relays with extended operating range 3RH2122-2K.40 on request)
Force-guided operation of contacts in contactor relays	
3RH2: **Yes,** in the basic unit and the auxiliary switch as well as between the basic unit and the mounted auxiliary switch **(removable)** according to: • ZH1/457 • IEC 60947-5-1, Annex L **3RH22:** **Yes,** in the basic unit and the auxiliary switch as well as between the basic unit and the mounted auxiliary switch **(permanently mounted)** according to: • ZH1/457 • IEC 60947-5-1, Annex L Note: 3RH2911-.NF. solid-state-compatible auxiliary switches have no force-guided contacts.	Explanations: There is force-guided operation if it is ensured that the NC and NO contacts cannot be closed at the same time. **ZH1/457** Safety Rules for Controls on Power-Operated Metalworking Presses. **IEC 60947-5-1, Annex L** Standard for low-voltage switchgear and controlgear; "Special requirements for mechanically linked contact elements"
Contact reliability	
Contact reliability at 17 V, 1 mA according to IEC 60947-5-4	Frequency of contact faults $<10^{-8}$, i.e. < 1 fault per 100 million operating cycles
Contact endurance for AC-15/AC-14 and DC-13 utilization categories	
The contact endurance is mainly dependent on the breaking current. It is assumed that the operating mechanisms are switched arbitrarily and not synchronously with the phase angle of the supply system switching operating mechanism. If magnetic circuits other than the contactor operating mechanisms or solenoid valves are present, e.g. magnetic brakes, protective measures for the load circuits are necessary, e.g. in the form of RC elements and freewheeling diodes. The characteristic curves apply to • 3RH21/3RH22 contactor relays[1)] • 3RH24 latched contactor relays • 3RH2911 auxiliary switches[1)] • Auxiliary switches for snapping onto the front, max. 4-pole and for mounting on the side in size S00	 Diagram legend: I_a = Breaking current I_e = Rated operational current

[1)] 3RH22, 3RH2911: I_e = 6 A for AC-15/AC-14 and DC-13.

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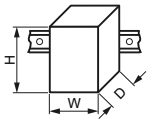
SIRIUS 3RH2 contactor relays, 4- and 8-pole

Type			Contactor relays 3RH21	3RH22	3RH24
Size			S00		
General data					
Dimensions (W x H x D)					
• Basic units					
- Screw terminals		mm	45 x 58 x 73	--	90 x 58 x 73
- Spring-loaded terminals		mm	45 x 70 x 73	--	
• Basic unit with mounted auxiliary switch					
- Screw terminals		mm	45 x 58 x 117		--
- Spring-loaded terminals		mm	45 x 70 x 121		--
• Basic unit with mounted function module or solid-state time-delay auxiliary switch					
- Screw terminals		mm	45 x 58 x 147	--	
- Spring-loaded terminals		mm	45 x 70 x 147	--	
Mechanical endurance					
• Basic units		Operating cycles	30 million		5 million
• Basic unit with mounted auxiliary switch		Operating cycles	10 million		5 million
• Solid-state-compatible auxiliary switch		Operating cycles	5 million		
Rated insulation voltage U_i (pollution degree 3)		V	690		
Rated impulse withstand voltage U_{imp}		kV	6		
Protective separation between coil and contacts in the basic unit, according to IEC 60947-1, Annex N		V	400		
Permissible ambient temperature					
• During operation		°C	-25 ... +60		
• During storage		°C	-55 ... +80		
Short-circuit protection					
• Short-circuit test					
- With fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA according to IEC 60947-5-1		A	10		
- With miniature circuit breakers with C characteristic with short-circuit current I_k = 400 A according to IEC 60947-5-1		A	6		

Type			Contactor relays 3RH21	3RH22	3RH24
Size			S00		
Conductor cross-sections					
Auxiliary conductors and coil terminals (1 or 2 conductors can be connected)			**Screw terminals**		
• Solid or stranded		mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1], max. 2 x 4		
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]		
• AWG cables, solid or stranded		AWG	2 x (20 ... 16)[1]; 2 x (18 ... 14)[1]		
• Terminal screw			M3 (for Pozidriv size 2, ∅ 5 ... 6 mm)		
- Tightening torque		Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)		
Auxiliary conductors and coil terminals[2] (1 or 2 conductors can be connected)			**Spring-loaded terminals**		
• Operating devices		mm	3.0 x 0.5; 3.5 x 0.5		
• Solid or stranded		mm^2	2 x (0.5 ... 4)		
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 2.5)		
• Finely stranded without end sleeve		mm^2	2 x (0.5 ... 2.5)		
• AWG cables, solid or stranded		AWG	2 x (20 ... 12)		
Auxiliary conductors for front and laterally mounted auxiliary switches[2]					
• Operating devices		mm	3.0 x 0.5; 3.5 x 0.5		
• Solid or stranded		mm^2	2 x (0.5 ... 2.5)		
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 1.5)		
• Finely stranded without end sleeve		mm^2	2 x (0.5 ... 2.5)		
• AWG cables, solid or stranded		AWG	2 x (20 ... 14)		

1) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

2) Max. external diameter of the conductor insulation: 3.6 mm. On spring-loaded terminals with conductor cross-sections ≤ 1 mm^2 an insulation stop is recommended, see page 3/115.

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			Contactor relays
Type			**3RH2**
Size			**S00**
Control			
Solenoid coil operating range			
• AC operation	at 50 Hz at 60 Hz		0.8 ... 1.1 x U_s 0.85 ... 1.1 x U_s
• DC operation	at +50 °C at +60 °C		0.8 ... 1.1 x U_s 0.85 ... 1.1 x U_s
Power consumption of the solenoid coil (for cold coil and 1.0 x U_s)			
• AC operation, 50 Hz			
- Closing		VA/p.f.	37/0.8
- Closed		VA/p.f.	5.7/0.25
• AC operation, 60 Hz			
- Closing		VA/p.f.	33/0.75
- Closed		VA/p.f.	4.4/0.25
• DC operation Closing = Closed		W	4.0
Permissible residual current of the electronics (with 0 signal)			
• For AC operation[1)]			< 4 mA x (230 V/U_s)
• For DC operation			< 10 mA x (24 V/U_s)

1) The 3RT2916-1GA00 additional load module is recommended for higher residual currents, see page 3/114.

		Coupling contactor relays							
Type		**3RH21..**							
		-.HB40	**-.JB40**	**-.KB40**	**-.MB40-0KT0**	**-.VB40**	**-.SB40**		
Size		**S00**							
Control									
Solenoid coil operating range		0.7 ... 1.25 x U_s			0.85 ... 1.85 x U_s				
Power consumption of the solenoid coil (for cold coil and 1.0 x U_s) Closing = Closed at U_s = 24 V	W	2.8			1.6				
Permissible residual current of the electronics with 0 signal		<10 mA x (24 V/U_s)			< 8 mA x (24 V/U_s)				
Overvoltage configuration of the solenoid coil		No overvoltage damping	Inte-grated diode	Integrated suppressor diode	No overvoltage damping	Inte-grated diode	Integrated suppressor diode		

			Contactor relays
Type			**3RH2**
Size			**S00**
Rated data of the auxiliary contacts			
Load rating with AC			
Rated operational currents I_e			
AC-12		A	10
AC-15/AC-14, at rated operational voltage U_e	Up to 230 V	A	10[1)]
	400 V	A	3
	500 V	A	2
	690 V	A	1
cULus and CSA rated data			
Basic units and auxiliary switches			
• Rated control supply voltage		V AC	max. 600
• Rated voltage		V AC	600
• Switching capacity			A 600, Q 600
• Uninterrupted current at 240 V AC		A	10

1) 3RH22, 3RH29: I_e = 6 A for AC-15/AC-14 and DC-13.

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SIRIUS 3RH2 contactor relays, 4- and 8-pole

Selection and ordering data

AC operation

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41A

3RH2122-1A..0

3RH2122-2A..0

3RH2244-1A..0

3RH2244-2A..0

3RH2422-1A..0

Rated operational current I_e/AC-15/AC-14 at **230 V**	Contacts Ident. No.	Version		Rated control supply voltage U_s at 50/60 Hz[1]	**Screw terminals**		**Spring-loaded terminals**	
					Article No.	Price per PU	Article No.	Price per PU
A		NO	NC	V AC				
For screw and snap-on mounting on TH 35 DIN rail								
Size S00								
10	**40E**	4	--	24	**3RH2140-1AB00**		**3RH2140-2AB00**	
				110	**3RH2140-1AF00**		**3RH2140-2AF00**	
				230	**3RH2140-1AP00**		**3RH2140-2AP00**	
	31E	3	1	24	**3RH2131-1AB00**		**3RH2131-2AB00**	
				110	**3RH2131-1AF00**		**3RH2131-2AF00**	
				230	**3RH2131-1AP00**		**3RH2131-2AP00**	
	22E	2	2	24	**3RH2122-1AB00**		**3RH2122-2AB00**	
				110	**3RH2122-1AF00**		**3RH2122-2AF00**	
				230	**3RH2122-1AP00**		**3RH2122-2AP00**	
With permanently mounted auxiliary switch								
6	**44E**	4	4	230	**3RH2244-1AP00**		**3RH2244-2AP00**	
	62E	6	2	230	**3RH2262-1AP00**		**3RH2262-2AP00**	
Latched								
No lateral auxiliary switches can be mounted								
10	**40 E**	4	--	24	**3RH2440-1AB00**		--	
				110	**3RH2440-1AF00**		--	
				230	**3RH2440-1AP00**		--	
	31 E	3	1	24	**3RH2431-1AB00**		--	
				110	**3RH2431-1AF00**		--	
				230	**3RH2431-1AP00**		--	
	22 E	2	2	24	**3RH2422-1AB00**		--	
				110	**3RH2422-1AF00**		--	
				230	**3RH2422-1AP00**		--	

[1] Coil operating range
- at 50 Hz: 0.8 to 1.1 x U_s
- at 60 Hz: 0.85 to 1.1 x U_s.

Other voltages according to page 3/67 on request.
Accessories, see page 3/69 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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DC operation ⎓

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41A

3RH2122-1B..0

3RH2122-2B..0

3RH2244-1B..0

3RH2244-2B..0

3RH2422-1B.40

Rated operational current I_e/AC-15/AC-14 at **230 V**	Contacts Ident. No.	Version		Rated control supply voltage U_s	**Screw terminals**		**Spring-loaded terminals**	
					Article No.	Price per PU	Article No.	Price per PU
A		NO	NC	V DC				
For screw and snap-on mounting on TH 35 DIN rail								
Size S00								
10	**40E**	4	--	24	**3RH2140-1BB40**		**3RH2140-2BB40**	
				220	**3RH2140-1BM40**		**3RH2140-2BM40**	
	31E	3	1	24	**3RH2131-1BB40**		**3RH2131-2BB40**	
				220	**3RH2131-1BM40**		**3RH2131-2BM40**	
	22E	2	2	24	**3RH2122-1BB40**		**3RH2122-2BB40**	
				220	**3RH2122-1BM40**		**3RH2122-2BM40**	
With integrated coil circuit (diode integrated at the factory)								
10	**40E**	4	--	24	**3RH2140-1FB40**		**3RH2140-2FB40**	
	31E	3	1	24	**3RH2131-1FB40**		**3RH2131-2FB40**	
	22E	2	2	24	**3RH2122-1FB40**		**3RH2122-2FB40**	
With permanently mounted auxiliary switch								
6	**44E**	4	4	24	**3RH2244-1BB40**		**3RH2244-2BB40**	
	62E	6	2	24	**3RH2262-1BB40**		**3RH2262-2BB40**	
Latched								
No lateral auxiliary switches can be mounted								
10	**40E**	4	--	24	**3RH2440-1BB40**		**--**	
				110	**3RH2440-1BF40**		**--**	
				220	**3RH2440-1BM40**		**--**	
	31E	3	1	24	**3RH2431-1BB40**		**--**	
				110	**3RH2431-1BF40**		**--**	
				220	**3RH2431-1BM40**		**--**	
	22E	2	2	24	**3RH2422-1BB40**		**--**	
				110	**3RH2422-1BF40**		**--**	
				220	**3RH2422-1BM40**		**--**	

Other voltages according to page 3/67 on request.

Accessories, see page 3/69 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RH2 contactor relays, 4- and 8-pole

DC operation for direct control by PLC ⎓

- Coupling contactor relays with adapted power consumption
- Suitable for solid-state PLC outputs
- Cannot be expanded with auxiliary switches

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41A

3RH21..-1.B40

3RH21..-2.B40

Rated operational current I_e/AC-15/ AC-14 at **230 V**	Auxiliary contacts		Rated control supply voltage U_s	**Screw terminals**		**Spring-loaded terminals**	
	Ident. No. according to EN 50011	Version		Article No.	Price per PU	Article No.	Price per PU
A	NO	NC	V DC				
For screw and snap-on mounting on TH 35 DIN rail							
Size S00							
Cannot be expanded with auxiliary switches							
Operating range **0.7 to 1.25 x U_s**, power consumption of the solenoid coils **2.8 W** at 24 V							
10	**40E**	4	--	24	**3RH2140-1HB40**		**3RH2140-2HB40**	
	31E	3	1	24	**3RH2131-1HB40**		**3RH2131-2HB40**	
	22E	2	2	24	**3RH2122-1HB40**		**3RH2122-2HB40**	
Operating range **0.85 to 1.85 x U_s**, power consumption of the solenoid coils **1.6 W** at 24 V							
10	**40E**	4	--	24	**3RH2140-1MB40-0KT0**		**3RH2140-2MB40-0KT0**	
	31E	3	1	24	**3RH2131-1MB40-0KT0**		**3RH2131-2MB40-0KT0**	
	22E	2	2	24	**3RH2122-1MB40-0KT0**		**3RH2122-2MB40-0KT0**	

Other voltages according to page 3/67 on request.

Accessories, see page 3/69 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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DC operation for direct control by PLC ⎓

- Coupling contactor relays with adapted power consumption
- Suitable for solid-state PLC outputs
- Cannot be expanded with auxiliary switches

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41A

3RH21..-1.B40

3RH21..-2.B40

Rated operational current I_e/AC-15/ AC-14 at **230 V**	Auxiliary contacts			Rated control supply voltage U_s	**Screw terminals**		**Spring-loaded terminals**	
	Ident. No. according to EN 50011	Version			Article No.	Price per PU	Article No.	Price per PU
A		NO	NC	V DC				
For screw and snap-on mounting on TH 35 DIN rail								
Size S00								
With integrated coil circuit (diode integrated at factory)								
Cannot be expanded with auxiliary switches								
Operating range **0.7 to 1.25 x U_s** Power consumption of the solenoid coils **2.8 W** at 24 V								
10	**40E**	4	--	24	**3RH2140-1JB40**		**3RH2140-2JB40**	
	31E	3	1	24	**3RH2131-1JB40**		**3RH2131-2JB40**	
	22E	2	2	24	**3RH2122-1JB40**		**3RH2122-2JB40**	
Operating range **0.85 to 1.85 x U_s** Power consumption of the solenoid coils **1.6 W** at 24 V								
10	**40E**	4	--	24	**3RH2140-1VB40**		**3RH2140-2VB40**	
	31E	3	1	24	**3RH2131-1VB40**		**3RH2131-2VB40**	
	22E	2	2	24	**3RH2122-1VB40**		**3RH2122-2VB40**	
With integrated coil circuit (suppressor diode integrated at factory)								
Cannot be expanded with auxiliary switches								
Operating range **0.7 to 1.25 x U_s** Power consumption of the solenoid coils **2.8 W** at 24 V								
10	**40E**	4	--	24	**3RH2140-1KB40**		**3RH2140-2KB40**	
	31E	3	1	24	**3RH2131-1KB40**		**3RH2131-2KB40**	
	22E	2	2	24	**3RH2122-1KB40**		**3RH2122-2KB40**	
Operating range **0.85 to 1.85 x U_s** Power consumption of the solenoid coils **1.6 W** at 24 V								
10	**40E**	4	--	24	**3RH2140-1SB40**		**3RH2140-2SB40**	
	31E	3	1	24	**3RH2131-1SB40**		**3RH2131-2SB40**	
	22E	2	2	24	**3RH2122-1SB40**		**3RH2122-2SB40**	

Other voltages according to page 3/67 on request.

Accessories, see page 3/69 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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3TH4 contactor relays, 8- and 10-pole

Overview

Standards

IEC 60947-1, IEC 60947-5-1

Note:

The 3TH42 and 3TH43 contactor relays feature force-guided operation in accordance with IEC 60947-5-1, Ed. 3.1.

Terminal designations according to EN 50011

In terms of their terminal designations, identification numbers and identification letters, the 3TH42 and 3TH43 contactor relays conform to the standard EN 50011 for "Particular Contactor Relays".

Contact reliability of auxiliary contacts

High contact stability at low voltages and currents as a result of double-break contacts, suitable for solid-state circuits with currents ≥ 1 mA at a voltage of ≥ 17 V.

Protection of the device connections against overvoltage

Protection against overvoltage at the control supply voltage connection

The 3TH42 and 3TH43 contactor relays can be equipped with RC elements, varistors, diodes or diode assemblies (combination of a diode and a Zener diode) for damping opening surges. The surge suppressors can be mounted directly on the coil, see page 5/20.

Note:

The break times of the contactor, the opening delay times of the NO contacts and the closing delay times of the NC contacts increase with damping.

For more information on how damping influences the time response, see the Equipment Manual.

Mounting

Note:

With 3TH4 contactor relays with AC operation, an overvoltage of 1.1 x U_S, an ambient temperature ≥ 45 °C and 100% ON period of all contactors, a minimum clearance of 5 mm between the contactors shall be observed in the case of side-by-side mounting.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16176/td FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16176/faq	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16176/man

Contactor relays	Type	3TH42, 3TH43

Contact endurance for AC-15/AC-14 and DC-13 utilization categories

The contact endurance is mainly dependent on the breaking current. It is assumed that the operating mechanisms are switched arbitrarily and not synchronously with the phase angle of the supply system switching operating mechanism.

If magnetic circuits other than the contactor operating mechanisms or solenoid valves are present, e.g. magnetic brakes, protective measures for the load circuits are necessary.

RC elements or freewheeling diodes are suitable as protective measures for the circuits.

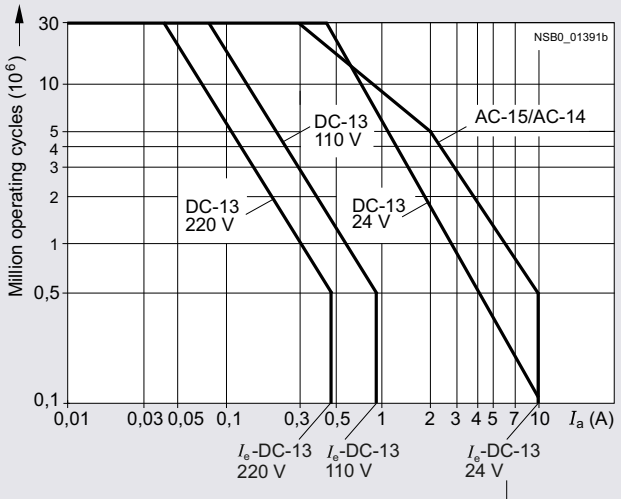

Diagram legend:
I_a = Breaking current
I_e = Rated operational current

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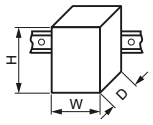
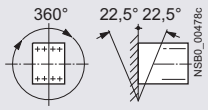
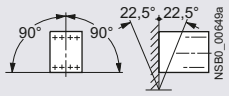
Contactor relays		Type	3TH42	3TH43
General data				
Dimensions (W x H x D)				
• AC operation		mm	45 x 78 x 97	55 x 78 x 97
• DC operation		mm	45 x 78 x 130	55 x 78 x 130
Permissible mounting position				
The contactor relays are designed for operation on a vertical mounting surface.				
• AC operation				
• DC operation				
Upright mounting position AC and DC operation			Special version required	
Mechanical endurance	Basic units	Operating cycles	30 million	
Rated insulation voltage U_i (pollution degree 3)		V	690	
Rated impulse withstand voltage U_{imp}		kV	8	
Protective separation between the coil and the main contacts according to IEC 60947-1, Annex N		V	Up to 500	
Permissible ambient temperature				
• During operation		°C	-25 ... +55	
• During storage		°C	-55 ... +80	
Short-circuit protection				
Short-circuit test				
• With fuse links of operational class gG With short-circuit current I_k = 1 kA according to IEC 60947-5-1				
- LV HRC, type 3NA		A	16	
- DIAZED, type 5SB		A	16	
- NEOZED, type 5SE, quick		A	20	
• With miniature circuit breakers With short-circuit current I_k = 400 A according to IEC 60947-5-1				
- C characteristic		A	16	
- B characteristic		A	16	
CSA and UL rated data				
Basic units				
Rated control supply voltage U_s			Max. 600 V AC, 230 V DC (according to UL 240 V DC)	
Rated voltage			600 V AC, 600 V DC	
Switching capacity			A 600, P 600	
Conductor cross-sections				
Auxiliary conductors and coil terminals (1 or 2 conductors can be connected)			**Screw terminals**	
• Solid or stranded		mm^2	2 x (0.5 ... 1)[1]; 2 x (1 ... 2.5)[1]; 1 x 4	
• Finely stranded with end sleeve		mm^2	2 x (0.75 ... 2.5)	
• Terminal screw			M3.5	

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

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3TH4 contactor relays, 8- and 10-pole

Contactor relays	Type		3TH42, 3TH43
Control			
Solenoid coil operating range			
• AC operation			0.8 ... 1.1 x U_s [1]
• DC operation (except 24 V)			0.8 ... 1.1 x U_s
- At 24 V DC			0.8 ... 1.2 x U_s
Power consumption of the solenoid coil (for cold coil and 1.0 x U_s)			
• AC operation, 50 Hz, standard version			
- Closing		VA/p.f.	68/0.82
- Closed		VA/p.f.	10/0.29
• AC operation, 50/60 Hz, standard version			
- Closing, 50 Hz		VA/p.f.	77/0.81
- Closed, 50 Hz		VA/p.f.	11/0.28
- Closing, 60 Hz		VA/p.f.	71/0.75
- Closed, 60 Hz		VA/p.f.	9/0.27
• AC operation, 50 Hz, USA/Canada			
- Closing		VA/p.f.	68/0.82
- Closed		VA/p.f.	10/0.29
• AC operation, 60 Hz, USA/Canada			
- Closing		VA/p.f.	75/0.76
- Closed		VA/p.f.	9.4/0.29 ... 0.3
• AC operation, 50 Hz, Japan			
- Closing		VA/p.f.	80/0.8
- Closed		VA/p.f.	10.7/0.29
• AC operation, 60 Hz, Japan			
- Closing		VA/p.f.	75 ... 90/0.73
- Closed		VA/p.f.	8.5 ... 10.7/0.29 ... 0.3
• DC operation up to 250 V Closing = Closed		W	6.2
Permissible residual current of the electronics (with 0 signal)			
• For AC operation			≤ 8 mA x (220 V/U_s)
• For DC operation			≤ 1.25 mA x (220 V/U_s)
Rated data of the auxiliary contacts			
Load rating with AC			
Rated operational currents I_e			
• AC-12		A	16
• AC-15/AC-14, at rated operational voltage U_e	230 V	A	10
	400 V	A	6
	500 V	A	4
	690 V	A	2
Rated power of three-phase motors According to utilization categories AC-3 and AC-3e, 50 Hz	230/220 V	kW	2.4
	400/380 V	kW	4
	500 V	kW	4
	690/660 V	kW	4

[1] Coils for USA, Canada and Japan: 0.85 to 1.1 x U_s at 60 Hz.

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Selection and ordering data

8-pole contactor relays
AC operation or DC operation

3TH4280-0AP0

3TH4244-0BB4

Contacts	Rated operational current I_e/AC-15/AC-14 at				Contacts					Screw terminals		PU (UNIT, SET, M)	PS*	PG
	230/ 220 V	400/ 380 V	500 V	690/ 660 V	Ident. No. according to EN 50011	Version				Article No.	Price per PU			
						NO	NC	NO	NC					
Number	**A**	A	A	A										
For screw and snap-on mounting on TH 35 DIN rail														
AC operation, rated control supply voltage U_s = 50 Hz 230/220 V AC[1]														
8	**10**	6	4	2	**80E**	8	--	--	--	**3TH4280-0AP0**		1	1 unit	41A
					71E	7	1	--	--	**3TH4271-0AP0**		1	1 unit	41A
					62E	6	2	--	--	**3TH4262-0AP0**		1	1 unit	41A
					53E	5	3	--	--	**3TH4253-0AP0**		1	1 unit	41A
					44E	4	4	--	--	**3TH4244-0AP0**		1	1 unit	41A
					44E, U	3	3	1	1	**3TH4293-0AP0**		1	1 unit	41A
DC operation, rated control supply voltage U_s = 24 V DC														
8	**10**	6	4	2	**80E**	8	--	--	--	**3TH4280-0BB4**		1	1 unit	41A
					71E	7	1	--	--	**3TH4271-0BB4**		1	1 unit	41A
					62E	6	2	--	--	**3TH4262-0BB4**		1	1 unit	41A
					53E	5	3	--	--	**3TH4253-0BB4**		1	1 unit	41A
					44E	4	4	--	--	**3TH4244-0BB4**		1	1 unit	41A
					44E, U	3	3	1	1	**3TH4293-0BB4**		1	1 unit	41A

[1] Operating range at 220 V: 0.85 to 1.1 × U_s; lower operating range limit according to IEC 60947.

Other voltages according to page 5/19 on request.

Accessories, see page 5/20.

Note:

The solenoid coils of the 3TH42 contactor relays are available in various voltages as spare parts (on request).

- AC operation: 3TY7403-0A..
- DC operation: 3TY4803-0B..

The contacts cannot be replaced on 3TH42 contactor relays.

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3TH4 contactor relays, 8- and 10-pole

10-pole contactor relays
AC operation ~ or DC operation ⎓

3TH4355-0AP0

3TH4355-0BB4

Contacts	Rated operational current I_e/AC-15/AC-14 at				Contacts					Screw terminals		PU (UNIT, SET, M)	PS*	PG
	230 V	400 V	500 V	690 V	Ident. No. according to EN 50011	Version				Article No.	Price per PU			
Number	A	A	A	A		NO	NC	NO	NC					
For screw and snap-on mounting on TH 35 DIN rail														
AC operation, rated control supply voltage U_s = 50 Hz 230/220 V AC[1]														
10	**10**	6	4	2	**100E**	10	--	--	--	**3TH4310-0AP0**		1	1 unit	41A
					91E	9	1	--	--	**3TH4391-0AP0**		1	1 unit	41A
					82E	8	2	--	--	**3TH4382-0AP0**		1	1 unit	41A
					73E	7	3	--	--	**3TH4373-0AP0**		1	1 unit	41A
					73E, U	6	2	1	1	**3TH4346-0AP0**		1	1 unit	41A
					64E	6	4	--	--	**3TH4364-0AP0**		1	1 unit	41A
					55E	5	5	--	--	**3TH4355-0AP0**		1	1 unit	41A
					55E, U	4	4	1	1	**3TH4394-0AP0**		1	1 unit	41A
DC operation, rated control supply voltage U_s = 24 V DC														
10	**10**	6	4	2	**100E**	10	--	--	--	**3TH4310-0BB4**		1	1 unit	41A
					91E	9	1	--	--	**3TH4391-0BB4**		1	1 unit	41A
					82E	8	2	--	--	**3TH4382-0BB4**		1	1 unit	41A
					73E	7	3	--	--	**3TH4373-0BB4**		1	1 unit	41A
					73E, U	6	2	1	1	**3TH4346-0BB4**		1	1 unit	41A
					64E	6	4	--	--	**3TH4364-0BB4**		1	1 unit	41A
					55E	5	5	--	--	**3TH4355-0BB4**		1	1 unit	41A
					55E, U	4	4	1	1	**3TH4394-0BB4**		1	1 unit	41A

[1] Operating range at 220 V: 0.85 to 1.1 × U_s;
lower operating range limit according to IEC 60947.

Other voltages according to page 5/19 on request.

Accessories, see page 5/20.

Note:

The solenoid coils of the 3TH43 contactor relays are available in various voltages as spare parts (on request).

- AC operation: 3TY7403-0A..
- DC operation: 3TY4803-0B..

The contacts cannot be replaced on 3TH43 contactor relays.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Options

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the article number)

Delivery time on request

Rated control supply voltage U_s	Contactor type Control supply voltage at	3TH42/3TH43
AC operation		
Solenoid coils for 50 and 60 Hz AC		
50 Hz	**60 Hz**	
24 V AC	29 V AC	B0
36 V AC	42 V AC	G0
42 V AC	50 V AC	D0
48 V AC	58 V AC	H0
60 V AC	72 V AC	E0
110 V AC	132 V AC	F0
125/127 V AC	150/152 V AC	L0
230/220 V AC	276 V AC	P0[1]
240 V AC	288 V AC	U0
400/380 V AC	480/460 V AC	V0[1]
415 V AC	500 V AC	R0
500 V AC	600 V AC	S0
50/60 Hz		
24 V AC		C2
42 V AC		D2
110 V AC		G2
115 V AC		J2
120 V AC		K2
220 V AC		N2
230 V AC		L2
240 V AC		P2
440 V AC		R2
For Japan		
50 Hz	**60 Hz**	
100 V AC	100 ... 110 V AC	G6[2]
200 V AC	200 ... 220 V AC	N6[2]
For USA and Canada		
50 Hz	**60 Hz**	
110 V AC	120 V AC	K6[2]
220 V AC	240 V AC	P6[2]

[1] Operating range at 220 V or 380 V: 0.85 to 1.1 x U_s.

[2] Operating range at 60 Hz: 0.85 to 1.1 x U_s.

Rated control supply voltage U_s	Contactor type	3TH42/3TH43
DC operation		
12 V DC		A4
24 V DC		B4
30 V DC		C4
36 V DC		V4
42 V DC		D4
48 V DC		W4
60 V DC		E4
110 V DC		F4
125 V DC		G4
220 V DC		M4
230 V DC		P4
240 V DC		Q4

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Selection and ordering data

Surge suppressors for 3TH4 contactor relays

3TX7402-3.

Version	Rated control supply voltage U_s AC V	Rated control supply voltage U_s DC V	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Interference suppression diodes With line spacer, for mounting on the coil terminal	--	24 ... 250	**3TX7402-3A**		1	1 unit	41B
Diode assemblies (diode and Zener diode) With line spacer, DC operation, for mounting on the coil terminal	--	24 ... 250	**3TX7402-3D**		1	1 unit	41B
Varistors[1)] With line spacer, for mounting on the coil terminal	24 ... 48	24 ... 70	**3TX7402-3G**		1	1 unit	41B
	48 ... 127	70 ... 150	**3TX7402-3H**		1	1 unit	41B
	127 ... 240	150 ... 250	**3TX7402-3J**		1	1 unit	41B
	240 ... 400	--	**3TX7402-3K**		1	1 unit	41B
	400 ... 600	--	**3TX7402-3L**		1	1 unit	41B
RC elements With line spacer, for mounting on the coil terminal	24 ... 48	24 ... 70	**3TX7402-3R**		1	1 unit	41B
	48 ... 127	70 ... 150	**3TX7402-3S**		1	1 unit	41B
	127 ... 240	150 ... 250	**3TX7402-3T**		1	1 unit	41B
	240 ... 400	--	**3TX7402-3U**		1	1 unit	41B
	400 ... 600	--	**3TX7402-3V**		1	1 unit	41B
Covers for switch position indicator	--	--	**3TX4210-0P**		1	1 unit	41B

1) Includes the peak value of the alternating voltage on the DC side.

ON-delay devices

3TX4180-0A

For contactors Type	Version	Rated control supply voltage U_s 50/60 Hz AC V	Time setting range (minimum times) s	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3TH42, 3TH43	**NTC thermistors** Time tolerance +100%, -50%	220 ... 230	0.1	**3TX4180-0A**		1	1 unit	41B

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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NEW **SIRIUS 3RQ1 force-guided coupling relays, fail-safe up to SIL 3/PL e**

Overview

Picture on left: 3RQ1000-1EW00 coupling relay,
1 NO contact + 1 NC contact, screw terminal
Picture on right: 3RQ1000-2LW00 coupling relay,
4 NO contacts + 1 NC contact, spring-loaded terminal (push-in)

3RQ1 coupling relay in the 3SK system

More information

Homepage, see www.siemens.com/sirius-coupling-relays

Industry Mall, see www.siemens.com/product?3RQ1

Technical specifications, see
https://support.industry.siemens.com/cs/ww/en/ps/26008/td

Manuals, see
https://support.industry.siemens.com/cs/ww/en/ps/26008/man

TIA Selection Tool Cloud (TST Cloud), see
www.siemens.com/tstcloud/?node=SIRIUSRelais

SIRIUS 3SK safety relays, see
https://mall.industry.siemens.com/mall/en/ww/Catalog/Products/10143262?tree=CatalogTree

Video: SIRIUS 3RQ1 coupling relays

The force-guided SIRIUS 3RQ1 coupling relays in a modern titanium gray industrial enclosure are available in widths of 17.5 mm and 22.5 mm, and each with a supply voltage of 24 V DC (120 mm mounting depth) and 24 to 240 V AC/DC (90 mm mounting depth).

They are used for safe coupling up to SIL 3/PL e of control signals to and from a control system or as an output expansion for the SIRIUS 3SK safety relays (see page 11/13 onwards).

Further fields of application are based on the force-guided operation of relays according to IEC 60947-5-1 and EN 61810-3 for reading back relay states, for reliable diagnostics or signaling, or for the use of antivalent signals. Typical fields of application here are railways, signaling technology and elevators.

The series consists of devices with up to five outputs and can be supplied with screw or spring-loaded (push-in) terminals.

International standards and certifications including CE, UL/CSA, EAC and railway approvals ensure international usability and exportability.

An extensive range of accessories is also available, such as device connectors for easy and safe connection of the 3RQ1 devices, replacement terminals, push-in lugs for wall mounting and coding pins, see page 5/27 onwards.

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SIRIUS 3RQ1 force-guided coupling relays, fail-safe up to SIL 3/PL e NEW

Article number scheme

Product versions		Article number										
Coupling relays with force-guided contacts		**3RQ1**	**□**	**0**	**0**	**–**	**□**	**□**	**□**	**0**	**0**	
Version	Performance Level (SIL): c (SIL 2)		**0**									
	Performance Level (SIL): e (SIL 3)		**2**									
Connection methods	Screw terminals						**1**					
	Spring-loaded terminals (push-in)						**2**					
Outputs	1 NO + 1 NC							**E**				Width 17.5 mm
	2 NO + 1 NC							**G**				Width 17.5 mm
	2 NO + 2 NC							**H**				Width 22.5 mm
	4 NO + 1 NC							**L**				Width 22.5 mm
Rated control supply voltage	24 V DC								**B**			Depth 120 mm
	24 to 240 V AC/DC								**W**			Depth 90 mm
Example		**3RQ1**	**0**	**0**	**0**	**–**	**1**	**E**	**W**	**0**	**0**	

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Wide-range voltage versions from 24 to 240 V AC/DC available with a mounting depth of 90 mm for all variants
- Permanent wiring thanks to removable terminals in screw or spring-loaded technology (push-in)
- Replacement of individual terminals minimizes wiring effort
- Can be used as output extension for SIRIUS 3SK safety relays via device connectors
- All versions with real load contacts, also in the NC circuit
- Safety certification according to functional safety SIL 3/PL e
- International standards and certifications including CE, UL/CSA, EAC, railway approvals, and more

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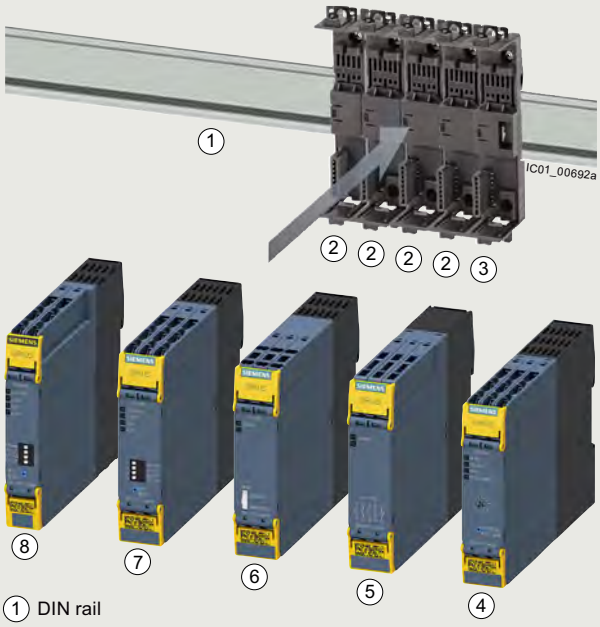
NEW **SIRIUS 3RQ1 force-guided coupling relays, fail-safe up to SIL 3/PL e**

Application



1. DIN rail
2. Device connector
3. Device termination connector
4. SIRIUS 3RM1 motor starter
5. Force-guided 3RQ1 coupling relay as output expansion up to SIL 3/PL e
6. SIRIUS 3SK1211 output expansion
7. SIRIUS 3SK1121 Advanced basic unit
8. SIRIUS 3SK1220 sensor expansion

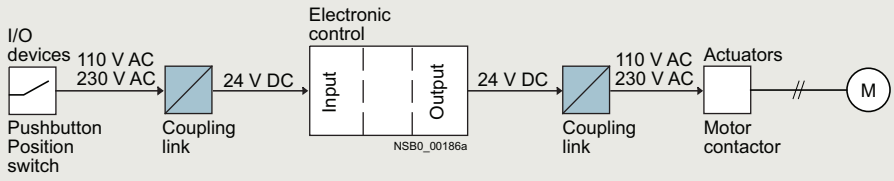
System configuration example with SIRIUS 3SK safety relays

- Safe coupling up to SIL 3/PL e of control signals from and to a control system
- Output expansion for 3SK safety relays
- Use of force-guided contacts for reading back relay states
- For reliable diagnostics or signaling or for antivalent switching of loads
- Safe coupling:
  - Electrical separation between the input and output circuit
  - Adjustment of different signal levels
  - Signal amplification
  - Contact multiplication

3RQ1 output expansion (up to SIL 3/PL e) for the 3SK system

The force-guided 3RQ1 coupling relays with a mounting depth of 120 mm can be used as an output expansion up to SIL 3/PL e and can be connected by wiring to all 3SK basic units and by using the 3ZY12 device connector to all 3SK1 and 3SK2 Advanced basic units.

They have a switching capacity of AC-15 5/3 A (like 3SK1211) at a switching voltage of 230 V and are available in widths of 17.5 mm and 22.5 mm. Furthermore, they have NC contacts with a switching capacity of AC-15 2/1.5 A for direct switching of loads (anti-parallel switching, signaling, etc.).



Typical application with a fail-safe control system

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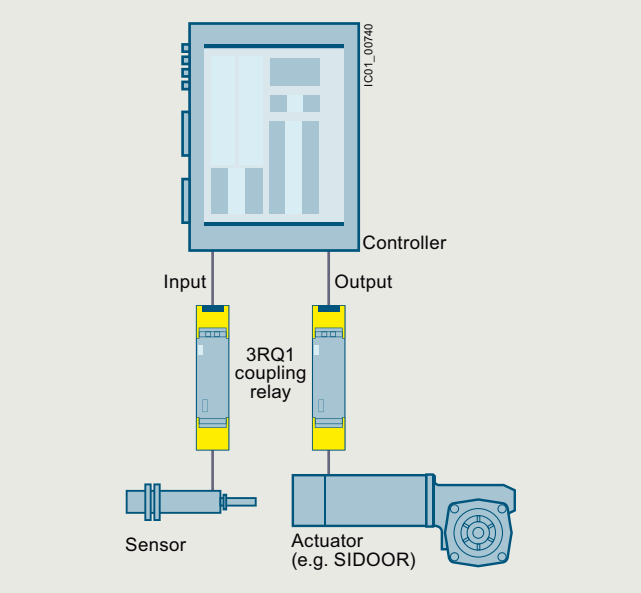
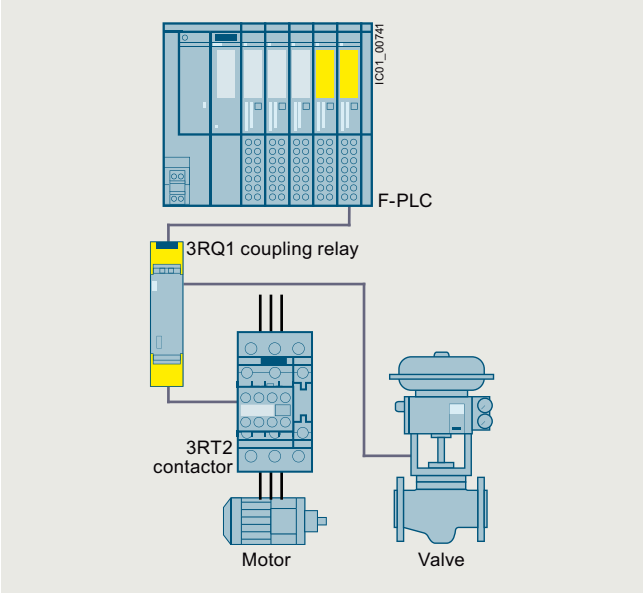
SIRIUS 3RQ1 force-guided coupling relays, fail-safe up to SIL 3/PL e NEW

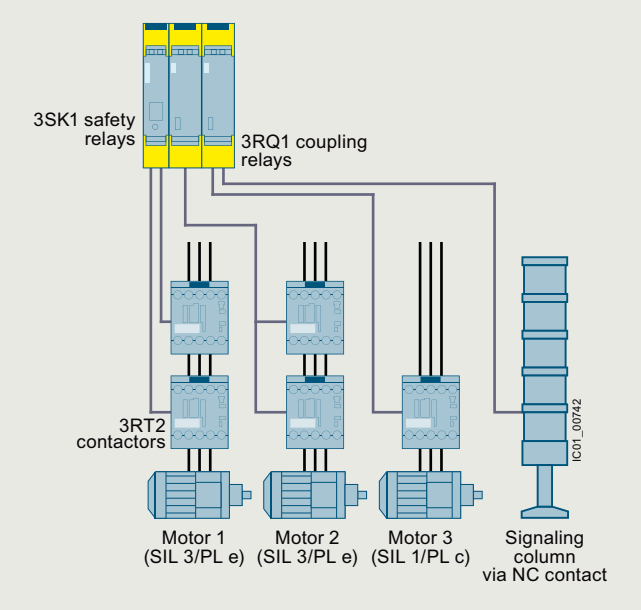
Applications



Application based on force-guided operation



3RQ1 as coupling link for signals, e.g. for a fail-safe control system



3RQ1 as output expansion (SIL 1 to 3) for 3SK with direct control of actuators and signaling elements

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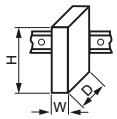
NEW **SIRIUS 3RQ1 force-guided coupling relays, fail-safe up to SIL 3/PL e**

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/26008/td	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/26008/man Equipment Manual 3SK1/3RQ1, see https://support.industry.siemens.com/cs/ww/en/view/67585885

Article number		3RQ1000-.EB00, 3RQ1000-.GB00	3RQ1200-.EB00	3RQ1000-.EW00, 3RQ1000-.GW00	3RQ1200-.EW00	3RQ1000-.HB00, 3RQ1000-.LB00	3RQ1000-.HW00, 3RQ1000-.LW00
General data							
Dimensions (W x H x D) 	mm	17.5 x 100 x 120		17.5 x 100 x 90		22.5 x 100 x 120	22.5 x 100 x 90
Safety Integrity Level (SIL) according to IEC 62061		2	3	2	3	2	
Performance Level (PL) according to ISO 13849-1		c	e	c	e	c	
Certificate of suitability							
• UL approval		Yes					
• TÜV approval		Yes					
Insulation voltage for overvoltage category III according to IEC 60664 for pollution degree 3	V	300					
Ambient temperature							
• During operation	°C	-25 ... +60					
• During storage	°C	-40 ... +80					
Degree of protection IP		IP20					
Control circuit							
Control supply voltage							
• At AC							
- At 50 Hz	V	--		24 ... 240		--	24 ... 240
- At 60 Hz	V	--		24 ... 240		--	24 ... 240
• At DC	V	24		24 ... 240		24	24 ... 240
Operating range factor of the control supply voltage, rated value							
• At DC		0.8 ... 1.2		0.7 ... 1.1		0.8 ... 1.2	0.7 ... 1.1
Load circuit							
Thermal current of the non-solid-state contact blocks, maximum	A	5					
Mechanical endurance (operating cycles) typical		10 000 000					

Article number		3RQ1000-1, 3RQ1200-1	3RQ1000-2, 3RQ1200-2
Type of electrical connection		**Screw terminals**	**Spring-loaded terminals (push-in)**
Type of connectable conductor cross-sections			
• Solid		1x (0.5 ... 4.0 mm^2), 2x (0.5 ... 2.5 mm^2)	1x (0.5 ... 4 mm^2)
• Finely stranded with end sleeve		1x (0.5 ... 4 mm^2), 2x (0.5 ... 1.5 mm^2)	1x (0.5 ... 2.5 mm^2)
• Solid for AWG cables	AWG	1x (20 ... 12), 2x (20 ... 14)	1x (20 ... 12)
Tightening torque	Nm	0.6 ... 0.8	--

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SIRIUS 3RQ1 force-guided coupling relays, fail-safe up to SIL 3/PL e NEW

Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H

Multi-unit packaging, see page 16/7.

Control supply voltage at AC at 50/60 Hz	Control supply voltage at DC	Number of auxiliary contacts NO	Number of auxiliary contacts NC	Depth	Suitable for use with 3ZY12 device connector	Screw terminals Article No.	Screw terminals Price per PU	Spring-loaded terminals (push-in) Article No.	Spring-loaded terminals (push-in) Price per PU
V	V			mm					
Width 17.5 mm									
Fail-safe up to SIL 2/PL c									
--	24	1	1	120	✓	**3RQ1000-1EB00**		**3RQ1000-2EB00**	
--	24	2	1	120	✓	**3RQ1000-1GB00**		**3RQ1000-2GB00**	
24 ... 240	24 ... 240	1	1	90	--	**3RQ1000-1EW00**		**3RQ1000-2EW00**	
24 ... 240	24 ... 240	2	1	90	--	**3RQ1000-1GW00**		**3RQ1000-2GW00**	
Fail-safe up to SIL 3/PL e									
--	24	1	--[1]	120	✓	**3RQ1200-1EB00**		**3RQ1200-2EB00**	
24 ... 240	24 ... 240	1	1	90	--	**3RQ1200-1EW00**		**3RQ1200-2EW00**	
Width 22.5 mm									
Fail-safe up to SIL 2/PL c									
--	24	2	2	120	✓	**3RQ1000-1HB00**		**3RQ1000-2HB00**	
--	24	4	1	120	✓	**3RQ1000-1LB00**		**3RQ1000-2LB00**	
24 ... 240	24 ... 240	2	2	90	--	**3RQ1000-1HW00**		**3RQ1000-2HW00**	
24 ... 240	24 ... 240	4	1	90	--	**3RQ1000-1LW00**		**3RQ1000-2LW00**	

3RQ1000-1EW00

3RQ1000-2EW00

3RQ1000-1LW00

3RQ1000-2LW00

✓ Yes
-- No
[1] NC contact designed to act as feedback contact.

Note:

All force-guided 3RQ1 coupling relays have safety certification up to SIL 2/PL c or SIL 3/PL e according to IEC 62061/ISO 13849.

To achieve SIL 3/PL e, two 3RQ10 devices can also be wired in series, see Equipment Manual.

In addition, the 3SK1211 devices (output expansions for 3SK) provide force-guided coupling relays with 4 NO contacts and 1 NC contact up to SIL 3/PL e with 24 V AC, 24 V DC, and 110 to 240 V AC/DC.

For applications with high currents up to a switching capacity of 10 A AC-15, the 3SK1213 output expansions are also available with 24 V AC, 24 V DC and 110 to 240 V AC/DC.

These devices can be used in the same way as the 3RQ1 coupling relays for coupling to and from safe control systems, they feature 4 NO contacts and 1 NC contact, and are available as variants with 24 V AC, 24 V DC and 110 to 240 V AC/DC (see page 11/27).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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NEW **SIRIUS 3RQ1 force-guided coupling relays, fail-safe up to SIL 3/PL e**

Accessories

More information

Manuals, see
https://support.industry.siemens.com/cs/ww/en/ps/26008/man

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Device connectors for the electrical connection of SIRIUS devices in the industrial DIN-rail enclosure						
3ZY1212-1BA00 3ZY1212-2BA00	**Device connectors**					
	• Width 17.5 mm (for 3RQ1000-.EB00/-.GB00, 3RQ1200-.EB00)	**3ZY1212-1BA00**		1	1 unit	41L
	• Width 22.5 mm (for 3RQ1000-.HB00/-.LB00)	**3ZY1212-2BA00**		1	1 unit	41L
3ZY1212-2DA00	**Device termination connectors**					
	• Width 17.5 mm (for 3RQ1000-.EB00/-.GB00, 3RQ1200-.EB00)	**3ZY1212-1DA00**		1	1 unit	41L
	• Width 22.5 mm (for 3RQ1000-.HB00/-.LB00)	**3ZY1212-2DA00**		1	1 unit	41L
	Note: Observe positions of the slide switch for width 22.5 mm, see Equipment Manual.					
	Device daisy chain connectors 24 V DC, 22.5 mm, for implementation of distances between devices according to the installation guidelines	**3ZY1212-2AB00**		1	1 unit	41L
	Device connectors For height adjustment for device arrangements without electrical connection via device connector, with a width of 22.5 mm or greater	**3ZY1210-2AA00**		1	1 unit	41L
Terminals for SIRIUS devices in the industrial DIN-rail enclosure						
3ZY1122-1BA00 3ZY1122-2BA00	**Removable terminals**	**Screw terminals**				
	• 2-pole, up to 1 x 4 mm² or 2 x 2.5 mm²	**3ZY1122-1BA00**		1	6 units	41L
		Spring-loaded terminals (push-in)				
	• 2-pole, up to 1 x 4 mm² or 2 x 1.5 mm² (in shared end sleeve)	**3ZY1122-2BA00**		1	6 units	41L

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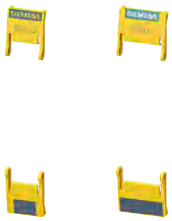
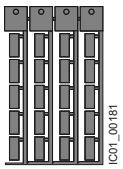
SIRIUS 3RQ1 force-guided coupling relays, fail-safe up to SIL 3/PL e NEW

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for enclosures						
3ZY1321-2AA00	**Sealing covers**					
	• 17.5 mm	**3ZY1321-1AA00**		1	5 units	41L
	• 22.5 mm	**3ZY1321-2AA00**		1	5 units	41L
3ZY1311-0AA00	**Push-in lugs** For wall mounting	**3ZY1311-0AA00**		1	10 units	41L
3ZY1440-1AA00	**Coding pins** For removable terminals of SIRIUS devices in the industrial DIN-rail enclosure; they enable the mechanical coding of terminals, see Equipment Manual.	**3ZY1440-1AA00**		1	12 units	41L
 3ZY1450-1BA00 3ZY1450-1BB00	**Hinged cover** Replacement cover, without terminal labeling, yellow					
	• 17.5 mm wide	**3ZY1450-1BA00**		1	5 units	41L
	• 22.5 mm wide	**3ZY1450-1BB00**		1	5 units	41L
Blank labels						
 3RT2900-1SB20	**Unit labeling plates**[1] For SIRIUS devices					
	• 17.5 mm: 10 mm x 7 mm, titanium gray	**3RT2900-1SB10**		100	816 units	41B
	• 22.5 mm: 20 mm x 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B
Tools for opening spring-loaded terminals						
3RA2908-1A	**Screwdriver** For all SIRIUS devices with spring-loaded terminals 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated	**Spring-loaded terminals (push-in)** **3RA2908-1A**		1	1 unit	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

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Overview

SIRIUS 3RQ2 coupling relay, screw terminals, 3 changeover contacts

More information

Homepage, see www.siemens.com/sirius-coupling-relays
Industry Mall, see www.siemens.com/product?3RQ2
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=SIRIUSRelais
Conversion tool, see www.siemens.com/conversion-tool

3RQ2 coupling relays in their 22.5 mm industrial enclosure serve to couple control signals to and from a controller and replace the 3RS18 coupling relays. The 3RQ2 has an impressively high-quality industrial enclosure finished in modern titanium gray so that it fits in visually with the SIRIUS series of relays.

The series consists of devices with up to three changeover contacts with screw or spring-loaded terminals (push-in) and, with its wide voltage range from 24 to 240 V AC/DC, is a genuine highlight in the coupling relay market.

Thanks to terminal assignment that is identical to the previous version, existing products can easily be converted.

The reduced variety of components simplifies product selection and standardization.

Numerous accessories are available for the 3RQ2 coupling relays, for example replacement terminals, push-in lugs for wall mounting and coding pins.

5

Article number scheme

Product versions		Article number
Coupling relays, standard		**3RQ2000 – □ □ □ 0 □**
Connection methods	Screw terminals	**1**
	Spring-loaded terminals (push-in)	**2**
Outputs	1 CO contact	**A**
	2 CO contacts	**B**
	3 CO contacts	**C**
Rated control supply voltage	24 ... 240 V AC/DC	**W**
Material of switching contacts	0 = AgSnO2	**0**
	1 = AgNi + Au	**1**
Example		**3RQ2000 – 1 C W 0 1**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

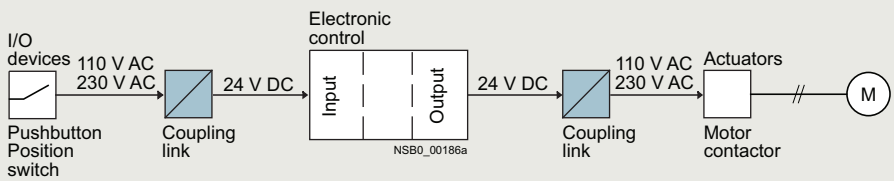
For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Permanent wiring thanks to removable terminals in screw or spring-loaded technology (push-in)
- Replacement of individual terminals minimizes wiring effort
- A product for all voltages from 24 to 240 V AC/DC
- Reduced costs thanks to fewer versions
- Especially high contact reliability even at low currents thanks to versions with hard gold-plated contacts
- International standards and certifications including CE, UL/CSA, EAC, railway approvals, and more

Application

- Electrical separation between the input and output circuit
- Adjustment of different signal levels
- Signal amplification
- Contact multiplication



Application example motor controller

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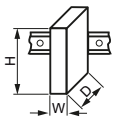
SIRIUS 3RQ2 coupling relays with industrial enclosure

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/25158/td	Operating Instructions, see https://support.industry.siemens.com/cs/ww/en/ps/25158/man

Article number		3RQ2000-.AW00 3RQ2000-.BW00 3RQ2000-.CW00	3RQ2000-.CW01
General data			
Width x height x depth 	mm	22.5 x 100 x 90	
Insulation voltage for overvoltage category III according to IEC 60664 for pollution degree 3	V	300	
Max. permissible voltage for protective separation between control circuit and auxiliary circuit according to IEC 60947-1	V	300	
Ambient temperature			
• During operation	°C	-40 ... +60	
• During storage	°C	-40 ... +80	
Degree of protection IP		IP20	
Control circuit			
Control supply voltage	V	24 ... 240 AC/DC; 50/60 Hz	
Operating range factor of control supply voltage		0.7 ... 1.1	
Load circuit			
Thermal current of the non-solid-state contact blocks, maximum	A	5	
Current-carrying capacity of the output relay			
• At AC-15 at 250 V	A	3	
• At DC-13 at 24 V	A	1	
• At DC-13 at 125 V	A	0.2	
• At DC-13 at 250 V	A	0.1	
Mechanical endurance (operating cycles) typical		10 000 000	
Electrical endurance (operating cycles) for AC-15 at 230 V, typical		100 000	
Material of switching contacts		AgSnO2	AgNi + Au

Article number		3RQ2000-1	3RQ2000-2
Type of electrical connection		**Screw terminals**	**Spring-loaded terminals (push-in)**
Type of connectable conductor cross-sections			
• Solid		1x (0.5 ... 4 mm²), 2x (0.5 ... 2.5 mm²)	1x (0.5 ... 4 mm²)
• Finely stranded with end sleeve		1x (0.5 ... 4 mm²), 2x (0.5 ... 1.5 mm²)	1x (0.5 ... 2.5 mm²)
• Solid for AWG cables		1x (20 ... 12), 2x (20 ... 14)	1x (20 ... 12)
Tightening torque	Nm	0.6 ... 0.8	--

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Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H

Multi-unit packaging, see page 16/7.

Control supply voltage at AC at 50 Hz	Control supply voltage at DC	Number of CO contacts for auxiliary contacts	Material of switching contacts	Screw terminals Article No.	Screw terminals Price per PU	Spring-loaded terminals (push-in) Article No.	Spring-loaded terminals (push-in) Price per PU
V	V	W					
Coupling relays with industrial enclosure, 22.5 mm							
24 ... 240	24 ... 240	1	AgSnO2	**3RQ2000-1AW00**		**3RQ2000-2AW00**	
		2	AgSnO2	**3RQ2000-1BW00**		**3RQ2000-2BW00**	
		3	AgSnO2	**3RQ2000-1CW00**		**3RQ2000-2CW00**	
		3	AgNi + Au	**3RQ2000-1CW01**		**3RQ2000-2CW01**	

3RQ2000-1CW00

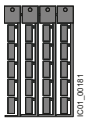
3RQ2000-2CW00

Accessories

More information

Operating Instructions, see https://support.industry.siemens.com/cs/ww/en/ps/25158/man

Conversion tool, see www.siemens.com/conversion-tool

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminals for SIRIUS devices in the industrial DIN-rail enclosure						
	Removable terminals	**Screw terminals**				
3ZY1122-1BA00	• 2-pole, up to 1 x 4 mm² or 2 x 2.5 mm²	**3ZY1122-1BA00**		1	6 units	41L
		Spring-loaded terminals (push-in)				
	• 2-pole, up to 1 x 4 mm² or 2 x 1.5 mm² (in shared end sleeve)	**3ZY1122-2BA00**		1	6 units	41L
Accessories for enclosures						
3ZY1450-1AB00	**Hinged cover** Replacement cover, without terminal labeling, titanium gray, 22.5 mm wide	**3ZY1450-1AB00**		1	5 units	41L
3ZY1311-0AA00	**Push-in lugs** For wall mounting	**3ZY1311-0AA00**		1	10 units	41L
3ZY1440-1AA00	**Coding pins** For removable terminals of SIRIUS devices in the industrial DIN-rail enclosure; they enable the mechanical coding of terminals	**3ZY1440-1AA00**		1	12 units	41L
Blank labels						
 3RT2900-1SB20	**Unit labeling plates** For SIRIUS devices 20 mm x 7 mm, titanium gray[1)]	**3RT2900-1SB20**		100	340 units	41B
Tools for opening spring-loaded terminals						
3RA2908-1A	**Screwdriver** For all SIRIUS devices with spring-loaded terminals 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated	**Spring-loaded terminals (push-in)** **3RA2908-1A**		1	1 unit	41B

1) PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RQ2 coupling relays with industrial enclosure

More information

Code conversion table

SIRIUS 3RS18 coupling relays				Comparison type SIRIUS 3RQ2 coupling relays			
Screw terminals	Spring-loaded terminals	Version	Contacts	Screw terminals	Spring-loaded terminals (push-in)	Version	Contacts
3RS1800-1AQ00	3RS1800-2AQ00	24 V AC/DC; 110 ... 120 V AC	1 CO contact	3RQ2000-1AW00	3RQ2000-2AW00	24 ... 240 V AC/DC	1 CO contact
3RS1800-1AP00	3RS1800-2AP00	24 V AC/DC; 220 ... 240 V AC					
3RS1800-1BW00	3RS1800-2BW00	24 ... 240 V AC/DC	2 CO contacts	3RQ2000-1BW00	3RQ2000-2BW00	24 ... 240 V AC/DC	2 CO contacts
3RS1800-1BQ00	3RS1800-2BQ00	24 V AC/DC; 110 ... 120 V AC					
3RS1800-1BP00	3RS1800-2BP00	24 V AC/DC; 220 ... 240 V AC					
3RS1800-1HW00	3RS1800-2HW00	24 ... 240 V AC/DC	3 CO contacts	3RQ2000-1CW00	3RQ2000-2CW00	24 ... 240 V AC/DC	3 CO contacts
3RS1800-1HQ00	3RS1800-2HQ00	24 V AC/DC; 110 ... 120 V AC					
3RS1800-1HP00	3RS1800-2HP00	24 V AC/DC; 220 ... 240 V AC					
3RS1800-1HW01	3RS1800-2HW01	24 ... 240 V AC/DC	3 CO contacts, hard gold-plated	3RQ2000-1CW01	3RQ2000-2CW01	24 ... 240 V AC/DC	3 CO contacts, hard gold-plated
3RS1800-1HQ01	3RS1800-2HQ01	24 V AC/DC; 110 ... 120 V AC					
3RS1800-1HP01	3RS1800-2HP01	24 V AC/DC; 220 ... 240 V AC					

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Overview

SIRIUS 3RQ3 coupling relays

More information

Homepage, see www.siemens.com/sirius-coupling-relays

Industry Mall, see www.siemens.com/product?3RQ3

TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=SIRIUSRelais

Conversion tool, see www.siemens.com/conversion-tool

SIRIUS 3RQ3 coupling relays in narrow design are used for coupling control signals from and to a controller, and they are available in different versions:

- Coupling relays with relay output (not plug-in)
- Coupling relays with plug-in relays
- Coupling relays with semiconductor output (not plug-in)

Coupling relays with relay output (not plug-in)

AC and DC operation

IEC 60947-5-1

The input and output coupling relays differ with regard to the positioning of the terminals and the LEDs.

Coupling relays with plug-in relays

AC and DC operation

IEC 60947-1

The coupling relays are plug-in, so the relay can be replaced quickly at the end of its service life without detaching the wiring.

Coupling relays with semiconductor output (not plug-in)

AC and DC operation

IEC 60947-1, EN 60664-1 and EN 50005;
coupling relays with semiconductor output: EN 60747-5;
programmable logic controllers: IEC 61131-2

The input and output coupling relays differ with regard to the positioning of the terminals and the LEDs.

The coupling relays with semiconductor output have extremely high contact reliability, so they are especially suitable for solid-state systems.

For test purposes, versions are available with manual-off-automatic switches.

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SIRIUS 3RQ3 coupling relays, narrow design

Article number schemes

Product versions		Article number
Coupling relays with relay output (not plug-in)		**3RQ30 ☐ 8 – ☐ A ☐ 0 ☐**
Design and type of output	Output coupler, without manual-off-automatic switch	**1**
	Input coupler	**3**
Type of electrical connection	Screw terminals	**1**
	Spring-loaded terminals (push-in)	**2**
Control supply voltage	24 V AC/DC	**B**
	115 V AC/DC	**E**
	230 V AC/DC	**F**
Material of switching contacts	e.g.	
	0 = AgSnO2	☐
	1 = AgSnO2 hard gold-plated	☐
Example		**3RQ30 1 8 – 1 A B 0 1**

Product versions		Article number
Coupling relays with relay output (not plug-in)		**3RQ30 1 8 – 2 A ☐ 0 8 – 0 A ☐ 0**
Railway version with extended operating range 0.7 ... 1.2 x U_s		
Control supply voltage	24 V DC	**M**
	110 V DC	**N**
Standard printed circuit board		**A**
Protective coating on printed circuit board		**X**
Example		**3RQ30 1 8 – 2 A M 0 8 – 0 A A 0**

Product versions		Article number
Coupling relays with plug-in relays		**3RQ31 1 8 – ☐ A ☐ 0 ☐**
Type of electrical connection	Screw terminals	**1**
	Spring-loaded terminals (push-in)	**2**
Control supply voltage	24 V AC/DC	**B**
	115 V AC/DC	**E**
	230 V AC/DC	**F**
	24 V DC	**M**
Material of switching contacts	AgSnO2	**0**
	AgSnO2 hard gold-plated	**1**
Example		**3RQ31 1 8 – 1 A B 0 1**

Product versions		Article number		
Coupling relays with semiconductor output (not plug-in)		**3RQ30 ☐ ☐ – ☐ S ☐ ☐ 0**		
	Current-carrying capacity of the semiconductor output		Control supply voltage	Switching voltage of the semiconductor output
Output coupler				
• Without manual-off-automatic switch	1 mA ... 0.5 A	**5 0 ☐ M 5**	11 ... 30 V DC	10 ... 60 V DC
	5 mA ... 2 A	**5 2 ☐ M 3**	11 ... 30 V DC	10 ... 30 V DC
	1 mA ... 2 A	**5 2 ☐ M 4**	11 ... 30 V DC	10 ... 60 V DC
	5 mA ... 2 A	**5 2 ☐ M 5**	11 ... 30 V DC	20 ... 264 V AC
	1 mA ... 3 A	**5 3 ☐ G 3**	110 ... 230 V AC/DC	10 ... 30 V DC
	5 mA ... 5 A	**5 5 ☐ M 3**	11 ... 30 V DC	10 ... 30 V DC
• With manual-off-automatic switch	5 mA ... 5 A	**6 5 ☐ M 3**	11 ... 30 V DC	10 ... 30 V DC
Input coupler	10 mA ... 0.5 A	**7 0 ☐ B 3**	11 ... 30 V AC/DC	10 ... 30 V DC
		7 0 ☐ G 3	110 ... 230 V AC/DC	10 ... 30 V DC
Type of electrical connection	Screw terminals	**1**		
	Spring-loaded terminals (push-in)	**2**		
Example		**3RQ30 7 0 – 1 S B 3 0**		

Note:

The article number schemes show an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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Benefits

General

- All versions with screw terminals or spring-loaded terminals (push-in technology)
- TOP wiring with spring-loaded terminals (push-in) for quick and reliable wiring
- Low space requirements in the control cabinet thanks to a consistent width of 6.2 mm
- Reduced stock-keeping due to fewer variants
- Clearly visible functional state of the coupling relay by green LED
- Integrated reverse polarity protection and EMC suppressor diode
- Standardized accessories across the entire 3RQ3 series
- Universal bridging option using connecting combs for all terminals
- Galvanic isolation plate for isolating different voltages for neighboring units
- Clip-on labels available as set for individual labeling

Coupling relays with relay output (not plug-in)

- Relays fixed in enclosure for increased contact reliability
- Device variants with hard gold-plated contacts, hence high contact reliability at low currents

Coupling relays with plug-in relays

- Fast replacement of the relays with existing wiring
- Shorter installation times thanks to certified complete units
- Individual relays available as spare parts
- Device variants with hard gold-plated contacts, hence high contact reliability at low currents

Coupling relays with semiconductor output (not plug-in)

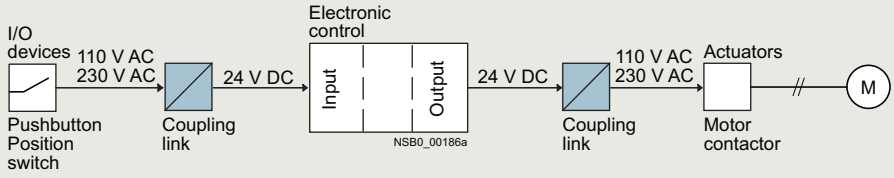
- Long service life since there is no mechanical wear
- High switching frequency thanks to short make-break times
- Vibration-resistant
- No contact bounce
- Extremely high contact reliability
- Noise-free switching
- Low control power required
- Switching of DC and capacitive loads

Note:

With semiconductors, the switching current is not dependent on the inductance of the load, i.e. the switching current for an inductive DC-13 load is the same as that for a DC-12 load. This means that coupling links with a semiconductor output are particularly suitable for inductive loads such as solenoid valves. It is not relevant to specify the number of operating cycles, because this does not affect the endurance of the semiconductor, provided it is not overheated.

Application

- Electrical separation between the input and output circuit
- Adjustment of different signal levels
- Signal amplification



Application example motor controller

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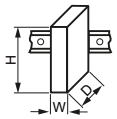
SIRIUS 3RQ3 coupling relays, narrow design

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16198/td	Operating Instructions, see https://support.industry.siemens.com/cs/ww/en/ps/16198/man FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16198/faq

Coupling relays with relay output (not plug-in)

Article number		3RQ30.8-.AB00	3RQ30.8-.AB01	3RQ30.8-.AE00	3RQ30.8-.AE01	3RQ30.8-.AF00	3RQ30.8-.AF01	3RQ3018-2AM08-0A.0	3RQ3018-2AN08-0A.0
General technical specifications									
Width x height x depth 	mm	6.2 x 93 x 72.5							
Insulation voltage for overvoltage category III according to IEC 60664 for pollution degree 3	V	300							
Max. permissible voltage for protective separation between control circuit and auxiliary circuit	V	300							
Ambient temperature									
• During operation	°C	-25 ... +60						-40 ... +70	
• During storage	°C	-40 ... +85							
Degree of protection IP		IP20							
Version of the fuse link required for short-circuit protection of the auxiliary switch		Fuse gG: 4 A							
Operational current of the auxiliary contacts									
• At AC-15									
- At 24 V	A	3							
- At 250 V	A	3							
• At DC-13									
- At 24 V	A	1							
- At 125 V	A	0.2							
- At 250 V	A	0.1							
Contact reliability of the auxiliary contacts (one contact failure per 100 million)		17 V, 5 mA	5 V, 1 mA	17 V, 5 mA	5 V, 1 mA	17 V, 5 mA	5 V, 1 mA	17 V, 5 mA	
Mechanical endurance (operating cycles) typical		10 000 000							
Electrical endurance (operating cycles) for AC-15 at 250 V typical		100 000							
Operating range factor of the control supply voltage, rated value									
• At AC									
- At 50 Hz		0.8 ... 1.25		0.8 ... 1.1				--	
- At 60 Hz		0.8 ... 1.25		0.8 ... 1.1				--	
• At DC		0.8 ... 1.25		0.8 ... 1.1				0.7 ... 1.25	
Active power input	W	0.3		0.5		1		0.3	0.6
Thermal current	A	6							
• Note		--						Derating, see characteristic curves	

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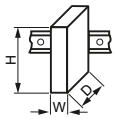
Coupling relays with plug-in relays

Article number		3RQ3118-.AB00	3RQ3118-.AB01	3RQ3118-.AE00	3RQ3118-.AE01	3RQ3118-.AF00	3RQ3118-.AF01	3RQ3118-.AM00	3RQ3118-.AM01
General technical specifications									
Width x height x depth 	mm	6.2 x 93 x 76							
Insulation voltage for overvoltage category III according to IEC 60664 for pollution degree 3	V	300							
Max. permissible voltage for protective separation between control circuit and auxiliary circuit	V	300							
Ambient temperature									
• During operation	°C	-25 ... +60							
• During storage	°C	-40 ... +85							
Degree of protection IP		IP20							
Version of the fuse link required for short-circuit protection of the auxiliary switch		Fuse gG: 4 A							
Operational current of the auxiliary contacts									
• At AC-15									
- At 24 V	A	3							
- At 250 V	A	3							
• At DC-13									
- At 24 V	A	1							
- At 125 V	A	0.2							
- At 250 V	A	0.1							
Contact reliability of the auxiliary contacts (one contact failure per 100 million)		17 V, 5 mA	5 V, 1 mA	17 V, 5 mA	5 V, 1 mA	17 V, 5 mA	5 V, 1 mA	17 V, 5 mA	5 V, 1 mA
Mechanical endurance (operating cycles) typical		10 000 000							
Electrical endurance (operating cycles) for AC-15 at 250 V typical		100 000							
Operating range factor of the control supply voltage, rated value									
• At AC									
- At 50 Hz		0.8 ... 1.25		0.8 ... 1.1				--	
- At 60 Hz		0.8 ... 1.25		0.8 ... 1.1				--	
• At DC		0.8 ... 1.25		0.8 ... 1.1				0.8 ... 1.25	
Active power input	W	0.3		0.5		1		0.3	
Thermal current	A	6							

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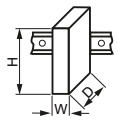
SIRIUS 3RQ3 coupling relays, narrow design

Coupling relays with semiconductor output (not plug-in)

Article number		3RQ3050-.SM50	3RQ3052-.SM30	3RQ3052-.SM40	3RQ3052-.SM50	3RQ3053-.SG30	3RQ3055-.SM30	3RQ3065-.SM30	3RQ3070-.SB30	3RQ3070-.SG30
General technical specifications										
Width x height x depth 	mm	6.2 x 93 x 72.5						6.2 x 93 x 75	6.2 x 93 x 72.5	
Insulation voltage for overvoltage category III according to IEC 60664 for pollution degree 3	V	50			300		50			--
Ambient temperature										
• During operation	°C	-25 ... +60								
• During storage	°C	-40 ... +85								
Degree of protection IP		IP20								
Switching voltage of the semiconductor output										
• At AC	V	--			20 ... 264	--				
• At DC	V	10 ... 60	10 ... 30	10 ... 60	--	10 ... 30				
Current-carrying capacity of the semiconductor output										
• At AC		--			5 mA ... 2 A	--				
• At DC		1 mA ... 0.5 A	5 mA ... 2 A	1 mA ... 2 A	--	1 mA ... 3 A	5 mA ... 5 A		10 mA ... 0.5 A	
Operating range factor of the control supply voltage, rated value										
• At AC										
- At 50 Hz		--				0.7 ... 1.1	--		1 ... 1	0.7 ... 1.1
- At 60 Hz		--				0.7 ... 1.1	--		1 ... 1	0.7 ... 1.1
• At DC		1 ... 1				0.7 ... 1.1	1 ... 1			0.7 ... 1.1
Active power input	W	0.3			0.25	0.3			0.5	
Thermal current	A	0.5	2			3	5		0.5	

Article number		3RQ3...-1....	3RQ3...-2....
Type of electrical connection for auxiliary and control circuits		**Screw terminals**	**Spring-loaded terminals (push-in)**
Type of connectable conductor cross-sections			
• Solid		1x (0.25 ... 2.5 mm^2)	
• Finely stranded			
- Without end sleeves		--	1x (0.25 ... 2.5 mm^2)
- With end sleeves		1x (0.25 ... 1.5 mm^2)	
• Solid for AWG cables		1x (20 ... 14)	

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Selection and ordering data

Type of voltage	Control supply voltage at AC at 50 Hz	at AC at 60 Hz	at DC	Number of CO contacts for auxiliary contacts	Material of switching contacts	Protective coating on printed circuit board	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V	V	V								
Coupling relays with relay output (not plug-in)											
	Output coupling links										
AC/DC	24	24	24	1	AgSnO2	--	**3RQ3018-☐AB00**		1	5 units	41H
					AgSnO2 Hard gold-plated	--	**3RQ3018-☐AB01**		1	5 units	41H
	115	115	115	1	AgSnO2	--	**3RQ3018-☐AE00**		1	5 units	41H
	230	230	230	1	AgSnO2	--	**3RQ3018-☐AF00**		1	5 units	41H
DC	--	--	24	1	AgSnO2	--	**3RQ3018-2AM08-0AA0**		1	5 units	41H
					AgSnO2	Yes NEW	**3RQ3018-2AM08-0AX0**				
			110	1	AgSnO2	--	**3RQ3018-2AN08-0AA0**		1	5 units	41H
					AgSnO2	Yes NEW	**3RQ3018-2AN08-0AX0**				
	Input coupling links										
AC/DC	24	24	24	1	AgSnO2	--	**3RQ3038-☐AB00**		1	5 units	41H
					AgSnO2 Hard gold-plated	--	**3RQ3038-☐AB01**		1	5 units	41H
	115	115	115	1	AgSnO2	--	**3RQ3038-☐AE00**		1	5 units	41H
					AgSnO2 Hard gold-plated	--	**3RQ3038-☐AE01**		1	5 units	41H
	230	230	230	1	AgSnO2	--	**3RQ3038-☐AF00**		1	5 units	41H
					AgSnO2 Hard gold-plated	--	**3RQ3038-☐AF01**		1	5 units	41H
Coupling relays with plug-in relays											
	Output coupling links										
AC/DC	24	24	24	1	AgSnO2	--	**3RQ3118-☐AB00**		1	5 units	41H
					AgSnO2 Hard gold-plated	--	**3RQ3118-☐AB01**		1	5 units	41H
	115	115	115	1	AgSnO2	--	**3RQ3118-☐AE00**		1	5 units	41H
					AgSnO2 Hard gold-plated	--	**3RQ3118-☐AE01**		1	5 units	41H
	230	230	230	1	AgSnO2	--	**3RQ3118-☐AF00**		1	5 units	41H
					AgSnO2 Hard gold-plated	--	**3RQ3118-☐AF01**		1	5 units	41H
DC	--	--	24	1	AgSnO2	--	**3RQ3118-☐AM00**		1	5 units	41H
					AgSnO2 Hard gold-plated	--	**3RQ3118-☐AM01**		1	5 units	41H

3RQ30.8-2....

3RQ3118-2....

Type of electrical connection

- Screw terminals
- Spring-loaded terminals (push-in)

1
2

5

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RQ3 coupling relays, narrow design

Type of voltage	Control supply voltage at AC at 50 Hz	Control supply voltage at AC at 60 Hz	Control supply voltage at DC	Current-carrying capacity of the semiconductor output at AC	Current-carrying capacity of the semiconductor output at DC	Operating mode selectable via switch position	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Coupling relays with semiconductor output (not plug-in)											
Output coupling links											
3RQ3050-2SM50											
DC	--	--	11 ... 30 V	--	1 mA ... 0.5 A	--	**3RQ3050-☐SM50**		1	5 units	41H
					5 mA ... 2 A	--	**3RQ3052-☐SM30**		1	5 units	41H
					1 mA ... 2 A	--	**3RQ3052-☐SM40**		1	5 units	41H
				5 mA ... 2 A	--	--	**3RQ3052-☐SM50**		1	5 units	41H
				--	5 mA ... 5 A	--	**3RQ3055-☐SM30**		1	5 units	41H
						Manual/ Off/ Automatic	**3RQ3065-☐SM30**		1	5 units	41H
AC/DC	110 ... 230 V	110 ... 230 V	110 ... 230 V	--	1 mA ... 3 A	--	**3RQ3053-☐SG30**		1	5 units	41H
Input coupling links											
AC/DC	11 ... 30 V	11 ... 30 V	11 ... 30 V	--	10 mA ... 0.5 A	--	**3RQ3070-☐SB30**		1	5 units	41H
	110 ... 230 V	110 ... 230 V	110 ... 230 V	--	10 mA ... 0.5 A	--	**3RQ3070-☐SG30**		1	5 units	41H

Type of electrical connection

- Screw terminals
- Spring-loaded terminals (push-in)

1
2

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Accessories

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Galvanic isolation plates					
3RQ3900-0A For electrical separation of different potentials when devices of different types are installed side by side	**3RQ3900-0A**		1	10 units	41H
Connecting combs					
3RQ3901-0B For linking the same potentials, current carrying capacity for infeed max. 6 A					
• 2-pole	**3RQ3901-0A**		1	10 units	41H
• 4-pole	**3RQ3901-0B**		1	10 units	41H
• 8-pole	**3RQ3901-0C**		1	10 units	41H
• 16-pole	**3RQ3901-0D**		1	10 units	41H
Clip-on labels[1]					
3RQ3902-0A For terminal and equipment labeling, white					
• 5 x 5 mm	**3RQ3902-0A**		100	2000 units	41H
• 6 x 12 mm (for 3RQ31 only)	**3RQ3902-0B**		100	1200 units	41H
Tools for opening spring-loaded terminals					
3RA2908-1A **Screwdriver** For all SIRIUS devices with spring-loaded terminals 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated	**Spring-loaded terminals (push-in)** **3RA2908-1A**		1	1 unit	41B

[1] PC labeling system for individual inscription of unit labeling plates available from:
Conta-Clip Verbindungstechnik GmbH
(see page 16/18).

Coupling relays with plug-in relays	Control supply voltage	Material of switching contacts	Number of CO contacts for auxiliary contacts	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type	V							
Replacement modules for 3RQ3118 coupling relays with plug-in relays								
3RQ3118-.AM00	24 DC	AgSnO2	1	**3TX7014-7BM00**		1	15 units	41H
3RQ3118-.AM01		AgSnO2 Hard gold-plated		**3TX7014-7BM02**		1	15 units	41H
3RQ3118-.AB00	24 AC/DC	AgSnO2	1	**3TX7014-7BM00**		1	15 units	41H
3RQ3118-.AB01		AgSnO2 Hard gold-plated		**3TX7014-7BM02**		1	15 units	41H
3RQ3118-.AE00	115 AC/DC	AgSnO2	1	**3TX7014-7BP00**		1	20 units	41H
3RQ3118-.AF00	230 AC/DC	AgSnO2						
3RQ3118-.AE01	115 AC/DC	AgSnO2 Hard gold-plated	1	**3TX7014-7BP02**		1	20 units	41H
3RQ3118-.AF01	230 AC/DC	AgSnO2 Hard gold-plated						

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LZS coupling relays with plug-in relays

Overview

More information
Homepage, see www.siemens.com/sirius-coupling-relays
Industry Mall, see www.siemens.com/product?3RQ_3RS_LZ
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=SIRIUSRelais

LZS coupling relays with plug-in relays can be ordered as complete units or as individual modules for customer assembly.

Function

The coupling relays with semiconductor output have low power consumption and are therefore particularly well-suited to solid-state systems. In the versions equipped with LEDs, these indicate the switching state. The LZS:PT/MT coupling relays have a test button. This can be used to force the relays into the switching state and to lock it without electrical control. This is indicated by a raised petrol-colored lever.

Control with solid-state output

In the case of solid-state outputs (e.g. proximity switch) with overload and short-circuit protection, you must make allowance during configuration for the temporarily flowing capacitor charging currents! This is possible, for example, by using a suitable LZS coupling relay with plug-in relay.

Surge suppression

The 24 V DC relays LZX:RT and LZX:PT with LEDs can be supplied with, all others without integral surge suppression (freewheeling diode connected in parallel with A1/A2). The positive control supply voltage must be connected to coil terminal A1.

Mounting

The relays are plugged into the base and this is snapped onto a TH 35 DIN rail according to IEC 60715.

A fixing bracket can be ordered for the MT series that additionally fixes the relay into a plug-in socket (under conditions of increased mechanical stress). For the RT and PT series, a combined fixing and ejection bracket is available which can be used to disassemble the relays when they are mounted side-by-side.

They can be mounted as required.

Logical separation

The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for coil. Logical separation is not necessarily protective separation.

Protective separation

For protective separation, transfer of the voltage of one circuit to another circuit is prevented to a suitable degree of safety (requirements and tests are described in IEC 60947-1 in Annex N).

Notes on the previous LZX series

The lower-cost complete units of the LZS series are fully compatible with the corresponding complete units of the previous LZX series.

The LZX plug-in relays are available unchanged and are used accordingly in both the LZS and the LZX series.

Note:

Due to differences in geometry, the LED modules, plug-in sockets, fixing brackets and labels can be combined and/or used only in the respective series, LZS or LZX.

The LZS series offers not only service-proven screw connections but also versions with plug-in terminals (push-in).

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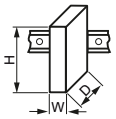
Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16204/td	Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16204/man

Relay type			**LZX:RT print relay, 8-pole, (12.7 mm) 1 CO/2 CO**				**LZX:PT industrial relay, 8-, 11- and 14-pole, (22.5 mm) 2 CO/3 CO/4 CO**			
General data										
Dimensions (W x H x D)										
• LZS:RT.A4/LZS:PT.A5		mm	15.5 x 78 x 71				28 x 74 x 72			
• LZS:RT.B4/LZS:PT.B5		mm	15.5 x 77 x 71				28 x 77 x 79			
• LZS:RT.D4/LZS:PT.D5		mm	15.5 x 98 x 71				28 x 98 x 79			
Rated control supply voltage U_s [1]		V	24 DC	24 AC	115 AC	230 AC	24 DC	24 AC	115 AC	230 AC
Rated insulation voltage U_i (Pollution degree 3)		V	250							
Overvoltage category According to IEC 60664-1			III							
Protective separation Between coil and contacts According to IEC 60947-1, Annex N			Up to 250 V (with plug-in socket LZS:RT78726) No (for complete units with standard socket)				No			
Degree of protection										
• Relays			IP67				IP50			
• Bases			IP20							
Permissible ambient temperature										
• During operation		°C	-40 ... +70							
• During storage		°C	-40 ... +80							
Conductor cross-sections										
Connection type			**Screw terminals**							
• Solid		mm^2	2 x 2.5							
• Finely stranded with end sleeve		mm^2	2 x 1.5							
• Corresponding opening tool			Screwdriver, size 3.0 ... 3.5 mm x 0.5 mm (3RA2908-1A)							
Connection type			**Plug-in terminals (push-in)**							
• Solid		mm^2	1 x (0.75 ... 1.5), 2 x (0.75 ... 1.0), 2 x 1.5							
• Finely stranded without end sleeve		mm^2	1 x (0.75 ... 1.5), 2 x (0.75 ... 1.0), 2 x 1.5							
• Finely stranded with end sleeve		mm^2	1 x (0.75 ... 1.0), 2 x 0.75, 1 x 1.5							

[1] AC voltages, 50 Hz; for 60 Hz operation, the lower response value must be increased by 10%; the power loss will decrease slightly.

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LZS coupling relays with plug-in relays

Relay type		LZX:RT print relay, 8-pole, (12.7 mm) 1 CO/2 CO				LZX:PT industrial relay, 8-, 11- and 14-pole, (22.5 mm) 2 CO/3 CO/4 CO			
Rated control supply voltage U_s [1]	V	24 DC	24 AC	115 AC	230 AC	24 DC	24 AC	115 AC	230 AC
Control side									
Operating range factor		0.9 ... 1.4	0.9 ... 1.1			0.9 ... 1.4	0.9 ... 1.1		
Power consumption at U_s									
• AC	VA	--	0.75			--	1		
• DC	W	0.4	--			0.75	--		
Release voltage	V	2.4	3.6	17.3	34.5	2.4	7.2	34.5	69
Protection circuit		Freewheeling diode for complete unit	--			Freewheeling diode in LED module	--		
Load side									
Switching voltage AC/DC	V	24 ... 250							
Rated currents [2]									
• Conventional thermal current I_{th}									
- 1 CO contact	A	16				--			
- 2 CO contacts	A	8				12			
- 3 CO contacts	A	--				10			
- 4 CO contacts	A	--				6			
• Rated operational current I_e/AC-15 according to utilization categories (IEC 60947-5-1)									
- 1 CO contact	A	6	3			4	2		
- 2 CO contacts	A	3				4	2		
- 3 CO contacts	A	--				4	2		
- 4 CO contacts	A	--				4	2		
• Rated operational current I_e/DC-13 with suppressor diode according to utilization categories (IEC 60947-5-1)	A	2 at 24 V, 0.27 at 230 V				PT2, PT3, PT5: 4 at 24 V, 0.5 at 230 V			
Short-circuit protection Short-circuit test with fuse links of operational class gG with short-circuit current I_k = 1 kA according to IEC 60947-5-1									
• DIAZED, type 5SB	A	10				6			
Min. contact load (reliability: 1 ppm)		Standard 17 V, 10 mA; hard gold-plated 17 V/0.1 mA				Standard 17 V, 10 mA; hard gold-plated 20 V/1 mA			
Mechanical endurance									
• 1 CO contact	Operating cycles	30×10^6	10×10^6	1×10^5	7×10^4	30×10^6	20×10^6		
• 2 CO contacts	Operating cycles	30×10^6	5×10^6	1×10^5	8×10^4	30×10^6	20×10^6		
• 3 CO contacts	Operating cycles	--				30×10^6	20×10^6		
• 4 CO contacts	Operating cycles	--				30×10^6	20×10^6		
Electrical endurance (resistive load at 250 V AC)									
• 1 CO contact	Operating cycles	1×10^5	7×10^4			--			
• 2 CO contacts	Operating cycles	1×10^5	8×10^4			180×10^3			
• 3 CO contacts	Operating cycles	--				180×10^3			
• 4 CO contacts	Operating cycles	--				250×10^3			

1) AC voltages, 50 Hz; for 60 Hz operation, the lower response value must be increased by 10%; the power loss will decrease slightly.
2) Capacitive loads can result in micro-welding on the contacts.

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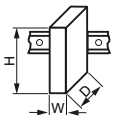
Relay type			LZS industrial relay: MT, 11-pole (35.5 mm) 3 CO contacts			
General data						
Dimensions (W x H x D)		mm	36 x 69 x 36			
Rated control supply voltage U_s[1]		V	24 DC	24 AC	115 AC	230 AC
Rated insulation voltage U_i (Pollution degree 3)		V	250			
Overvoltage category According to IEC 60664-1			III			
Protective separation Between coil and contacts According to IEC 60947-1, Annex N			No			
Degree of protection of relays/bases						
• Relays			IP50			
• Bases			IP20			
Permissible ambient temperature						
• During operation		°C	-40 ... +60	-45 ... +50		
• During storage		°C	-45 ... +80			
Conductor cross-sections						
Connection type			**Screw terminals**			
• Solid		mm^2	2 x 2.5			
• Finely stranded with or without end sleeve		mm^2	2 x 1.5			
• Corresponding opening tool			Screwdriver, size 1 or Pozidriv 1			
Control side						
Operating range		V	18 ... 38	19.2 ... 38	92 ... 137	184 ... 264
Power consumption						
• AC		VA	--	2.3		
• DC		W	1.2	--		
Release voltage		V	2.4	9.6	46	92
Protection circuit			--			
Load side						
Switching voltage						
• AC/DC		V	24 ... 250			
Rated currents[2]						
• Conventional thermal current I_{th}		A	10			
• Rated operational current I_e/DC-13 according to utilization categories (IEC 60947-5-1)		A	2 at 24 V, 0.27 at 230 V			
• Rated operational current I_e/AC-15 according to utilization categories (IEC 60947-5-1)		A	5 at 24 V and 230 V			
Short-circuit protection						
Short-circuit test with fuse links of operational class gG with short-circuit current I_k = 1 kA according to IEC 60947-5-1						
• DIAZED, type 5SB		A	10			
Min. contact load (reliability: 1 ppm)			12 V DC/10 mA			
Mechanical endurance		Operating cycles	20×10^6			
Electrical endurance (resistive load at 250 V AC)		Operating cycles	3×10^5			

1) AC voltages, 50 Hz; for 60 Hz operation, the lower response value must be increased by 10%; the power loss will decrease slightly.

2) Capacitive loads can result in micro-welding on the contacts.

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LZS coupling relays with plug-in relays

Selection and ordering data

Version	Rated control supply voltage U_s at 50/60 Hz AC	Contacts, number of CO contacts	Width	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V		mm					
Complete units, 11- and 14-pole, PT series								
LZS:PT3A5L24								
Complete units with plug-in socket For snap-on mounting on TH 35 DIN rail Comprising: • Coupling relays with plug-in relays • Standard plug-in socket with screw terminals • LED module (24 V DC version: LED module with freewheeling diode) • Fixing/ejection brackets • Labels				**Screw terminals**				
3 CO contacts	24 DC	3	28	**LZS:PT3A5L24**		1	5 units	41H
	24 AC			**LZS:PT3A5R24**		1	5 units	41H
	115 AC			**LZS:PT3A5S15**		1	5 units	41H
	230 AC			**LZS:PT3A5T30**		1	5 units	41H
4 CO contacts	24 DC	4	28	**LZS:PT5A5L24**		1	5 units	41H
	24 AC			**LZS:PT5A5R24**		1	5 units	41H
	115 AC			**LZS:PT5A5S15**		1	5 units	41H
	230 AC			**LZS:PT5A5T30**		1	5 units	41H
Complete units with plug-in socket **With logical separation** For snap-on mounting on TH 35 DIN rail Comprising: • Coupling relays with plug-in relays • Plug-in socket with logical separation and screw terminals • LED module (24 V DC version: LED module with freewheeling diode) • Fixing/ejection brackets • Labels								
4 CO contacts	24 DC	4	28	**LZS:PT5B5L24**		1	5 units	41H
	24 AC			**LZS:PT5B5R24**		1	5 units	41H
	115 AC			**LZS:PT5B5S15**		1	5 units	41H
	230 AC			**LZS:PT5B5T30**		1	5 units	41H
Complete units, 8- and 14-pole, PT series								
LZS:PT5D5L24								
Complete units with plug-in socket **With logical separation** For snap-on mounting on TH 35 DIN rail Comprising: • Coupling relays with plug-in relays • Plug-in socket with logical separation and plug-in terminals (push-in) • LED module (24 V DC version: LED module with freewheeling diode) • Fixing/ejection brackets • Labels				**Plug-in terminals (push-in)**				
2 CO contacts	24 DC	2	28	**LZS:PT2D5L24**		1	5 units	41H
	230 AC			**LZS:PT2D5T30**		1	5 units	41H
4 CO contacts	24 DC	4	28	**LZS:PT5D5L24**		1	5 units	41H
	24 AC			**LZS:PT5D5R24**		1	5 units	41H
	115 AC			**LZS:PT5D5S15**		1	5 units	41H
	230 AC			**LZS:PT5D5T30**		1	5 units	41H

Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Version	Rated control supply voltage U_s at 50/60 Hz AC	Contacts, number of CO contacts	Width	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V		mm					
Individual modules for customer assembly, PT series								
Industrial relays, 8-, 11-, and 14-pole								
Mini industrial relays								
• With test bracket and mechanical switch position indicator, without LED[1)]								
	24 DC	2	22.5	**LZX:PT270024**		1	1 unit	41H
		3		**LZX:PT370024**		1	1 unit	41H
		4		**LZX:PT570024**		1	1 unit	41H
	24 AC	2	22.5	**LZX:PT270524**		1	1 unit	41H
		3		**LZX:PT370524**		1	1 unit	41H
		4		**LZX:PT570524**		1	1 unit	41H
	115 AC	2	22.5	**LZX:PT270615**		1	1 unit	41H
		3		**LZX:PT370615**		1	1 unit	41H
		4		**LZX:PT570615**		1	1 unit	41H
	230 AC	2	22.5	**LZX:PT270730**		1	1 unit	41H
		3		**LZX:PT370730**		1	1 unit	41H
		4		**LZX:PT570730**		1	1 unit	41H
• With hard gold-plating								
	24 DC	4	22.5	**LZX:PT580024**		1	1 unit	41H
	230 AC			**LZX:PT580730**		1	1 unit	41H
• Without test bracket								
	24 DC	4	22.5	**LZX:PT520024**		1	1 unit	41H
	230 AC			**LZX:PT520730**		1	1 unit	41H
Plug-in sockets for PT relays								
Standard plug-in sockets For mounting on TH 35 DIN rail				**Screw terminals**				
	--	2	28	**LZS:PT78720**		1	1 unit	41H
		3		**LZS:PT78730**		1	1 unit	41H
		4		**LZS:PT78740**		1	1 unit	41H
Plug-in sockets with logical separation For mounting on TH 35 DIN rail								
	--	2	28	**LZS:PT78722**		1	1 unit	41H
		4		**LZS:PT78742**		1	1 unit	41H
Plug-in sockets with logical separation For mounting on TH 35 DIN rail				**Plug-in terminals (push-in)**				
	--	2	28	**LZS:PT7872P**		1	1 unit	41H
		4		**LZS:PT7874P**		1	1 unit	41H

LZX:PT370024

LZS:PT78740

LZS:PT78722

LZS:PT7874P

1) The test bracket is designed to be non-latching. If the test bracket is pressed further until 90° has been reached, two small lugs break off and the test bracket can be latched in position.

Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).

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LZS coupling relays with plug-in relays

Version	Rated control supply voltage U_s at 50/60 Hz AC	Contacts, number of CO contacts	Width	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V		mm					
Individual modules for customer assembly, PT series								
More individual modules								
LED modules								
• Red								
- With freewheeling diode	24 DC	--	12.5	**LZS:PTML0024**		1	1 unit	41H
- Without freewheeling diode	24 AC/DC			**LZS:PTML0524**		1	1 unit	41H
	110 … 230 AC			**LZS:PTML0730**		1	1 unit	41H
• Green								
- With freewheeling diode	24 DC	--	12.5	**LZS:PTMG0024**		1	1 unit	41H
- Without freewheeling diode	24 AC/DC			**LZS:PTMG0524**		1	1 unit	41H
	110 … 230 AC			**LZS:PTMG0730**		1	1 unit	41H
Fixing/ejection brackets for PT base With logical separation								
Screw terminals and plug-in terminals (push-in)	--	--	26	**LZS:PT17021**		100	10 units	41H
Fixing/ejection brackets for standard plug-in socket Without logical separation								
Screw terminals	--	--	26	**LZS:PT17024**		100	10 units	41H
Labels								
	--	--	26	**LZS:PT17040**		100	10 units	41H
RC elements								
	6 ... 60 AC	--	26	**LZS:PTMU0524**		1	1 unit	41H
	110 … 230 AC			**LZS:PTMU0730**		1	1 unit	41H
Freewheeling diodes with connection to A1								
	6 … 230 DC	--	26	**LZS:PTMT00A0**		1	1 unit	41H
Connecting combs for PT screw base 6-pole, 10 A current-carrying capacity, natural-colored								
	--	--	--	**LZS:PT170R6**		1	10 units	41H
Connecting brackets for PT push-in base 2-pole, 10 A current-carrying capacity, natural-colored								
	--	--	--	**LZS:PT170P1**		1	10 units	41H
Individual modules for customer assembly, MT series								
Industrial relays, 11-pole								
Industrial relays with test bracket								
Without LED	24 DC	3	35.5	**LZX:MT321024**		1	1 unit	41H
With LED				**LZX:MT323024**		1	1 unit	41H
Without LED	24 AC	3	35.5	**LZX:MT326024**		1	1 unit	41H
With LED				**LZX:MT328024**		1	1 unit	41H
Without LED	115 AC	3	35.5	**LZX:MT326115**		1	1 unit	41H
With LED				**LZX:MT328115**		1	1 unit	41H
Without LED	230 AC	3	35.5	**LZX:MT326230**		1	1 unit	41H
With LED				**LZX:MT328230**		1	1 unit	41H
Plug-in sockets For mounting on TH 35 DIN rail				**Screw terminals**				
	--	--	38	**LZS:MT78750**		1	1 unit	41H
Fixing brackets								
	--	--	38	**LZS:MT28800**		1	1 unit	41H

LZS:PTML0024

LZS:PT17021

LZS:PT17024

LZS:PT17040

LZS:PTMU0730

LZX:MT326024

LZS:MT78750

Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).

SITOP DC power supplies such as 6EP1331-5BA00 or 6EP1331-5BA10 can be used for unavailable coil voltages, see page 15/1 or Catalog KT 10.1.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Version	Rated control supply voltage U_s at 50/60 Hz AC	Contacts, number of CO contacts	Width	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V		mm					
Complete units, 8-pole, 5 mm pinning, RT series								
LZS:RT4A4T30								
Complete units with standard plug-in socket For snap-on mounting on TH 35 DIN rail Comprising: • Coupling relays with plug-in relays • Standard plug-in socket with screw terminals • LED module (24 V DC version: LED module with freewheeling diode) • Fixing/ejection brackets • Labels				**Screw terminals**				
1 CO contact	24 DC	1	15.5	**LZS:RT3A4L24**		1	5 units	41H
	24 AC			**LZS:RT3A4R24**		1	5 units	41H
	115 AC			**LZS:RT3A4S15**		1	5 units	41H
	230 AC			**LZS:RT3A4T30**		1	5 units	41H
2 CO contacts	24 DC	2	15.5	**LZS:RT4A4L24**		1	5 units	41H
	24 AC			**LZS:RT4A4R24**		1	5 units	41H
	115 AC			**LZS:RT4A4S15**		1	5 units	41H
	230 AC			**LZS:RT4A4T30**		1	5 units	41H
LZS:RT4B4T30								
Complete units with plug-in socket **With logical separation** For snap-on mounting on TH 35 DIN rail Comprising: • Coupling relays with plug-in relays • Plug-in socket with logical separation and screw terminals • LED module (24 V DC version: LED module with freewheeling diode) • Fixing/ejection brackets • Labels								
1 CO contact	24 DC	1	15.5	**LZS:RT3B4L24**		1	5 units	41H
	24 AC			**LZS:RT3B4R24**		1	5 units	41H
	115 AC			**LZS:RT3B4S15**		1	5 units	41H
	230 AC			**LZS:RT3B4T30**		1	5 units	41H
2 CO contacts	24 DC	2	15.5	**LZS:RT4B4L24**		1	5 units	41H
	24 AC			**LZS:RT4B4R24**		1	5 units	41H
	115 AC			**LZS:RT4B4S15**		1	5 units	41H
	230 AC			**LZS:RT4B4T30**		1	5 units	41H
LZS:RT3D4L24								
Complete units with plug-in socket **With logical separation** For snap-on mounting on TH 35 DIN rail Comprising: • Coupling relays with plug-in relays • Plug-in socket with logical separation and plug-in terminals (push-in) • LED module (24 V DC version: LED module with freewheeling diode) • Fixing/ejection brackets • Labels				**Plug-in terminals (push-in)**				
1 CO contact	24 DC	1	15.5	**LZS:RT3D4L24**		1	5 units	41H
	24 AC			**LZS:RT3D4R24**		1	5 units	41H
	115 AC			**LZS:RT3D4S15**		1	5 units	41H
	230 AC			**LZS:RT3D4T30**		1	5 units	41H
2 CO contacts	24 DC	2	15.5	**LZS:RT4D4L24**		1	5 units	41H
	24 AC			**LZS:RT4D4R24**		1	5 units	41H
	115 AC			**LZS:RT4D4S15**		1	5 units	41H
	230 AC			**LZS:RT4D4T30**		1	5 units	41H

Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).

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LZS coupling relays with plug-in relays

Version	Rated control supply voltage U_s at 50/60 Hz AC	Contacts, number of CO contacts	Width	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V		mm					
Individual modules for customer assembly, RT series								
Print relays, 8-pole, 5 mm pinning								
Print relays With hard gold-plating Version with 1 CO contact								
	24 DC	1	12.7	**LZX:RT315024**		1	1 unit	41H
	230 AC			**LZX:RT315730**		1	1 unit	41H
Print relays Version with 1 CO contact								
	24 DC	1	12.7	**LZX:RT314024**		1	1 unit	41H
	24 AC			**LZX:RT314524**		1	1 unit	41H
	115 AC			**LZX:RT314615**		1	1 unit	41H
	230 AC			**LZX:RT314730**		1	1 unit	41H
Version with 2 CO contacts								
	12 DC	2	12.7	**LZX:RT424012**		1	1 unit	41H
	24 DC			**LZX:RT424024**		1	1 unit	41H
	24 AC			**LZX:RT424524**		1	1 unit	41H
	115 AC			**LZX:RT424615**		1	1 unit	41H
	230 AC			**LZX:RT424730**		1	1 unit	41H
Standard plug-in sockets For mounting on TH 35 DIN rail				**Screw terminals**				
	--	--	15.5	**LZS:RT78725**		1	1 unit	41H
Plug-in sockets with logical separation For mounting on TH 35 DIN rail								
	--	--	15.5	**LZS:RT78726**		1	1 unit	41H
Plug-in sockets with logical separation For mounting on TH 35 DIN rail				**Plug-in terminals (push-in)**				
	--	--	15.5	**LZS:RT7872P**		1	1 unit	41H
LED modules								
• Red								
With freewheeling diode	24 DC	--	15.5	**LZS:PTML0024**		1	1 unit	41H
Without freewheeling diode	24 AC/DC	--		**LZS:PTML0524**		1	1 unit	41H
	110 ... 230 AC	--		**LZS:PTML0730**		1	1 unit	41H
• Green								
With freewheeling diode	24 DC	--	15.5	**LZS:PTMG0024**		1	1 unit	41H
Without freewheeling diode	24 AC/DC	--		**LZS:PTMG0524**		1	1 unit	41H
	110 ... 230 AC	--		**LZS:PTMG0730**		1	1 unit	41H
Fixing/ejection brackets For RT base								
	--	--	15.5	**LZS:RT17016**		100	10 units	41H
Labels								
	--	--	15.5	**LZS:RT17040**		100	10 units	41H
RC elements								
	6 ... 60 AC	--	15.5	**LZS:PTMU0524**		1	1 unit	41H
	110 ... 230 AC			**LZS:PTMU0730**		1	1 unit	41H
Freewheeling diodes with connection to A1								
	6 ... 230 DC	--	15.5	**LZS:PTMT00A0**		1	1 unit	41H
Connecting combs for RT screw base								
8-pole, 10 A current-carrying capacity, natural-colored	--	--	--	**LZS:RT170R8**		1	10 units	41H
Connecting brackets for push-in base								
2-pole, 10 A current-carrying capacity, natural-colored	--	--	--	**LZS:RT170P1**		100	10 units	41H

LZX:RT314024

LZS:RT78725

LZS:RT78726

LZS:RT7872P

LZS:PTML0024

LZS:RT17016

LZS:RT17040

LZS:PTMU0730

Note:

SITOP DC power supplies such as 6EP1331-5BA00 or 6EP1331-5BA10 can be used for unavailable coil voltages, see page 15/1 or Catalog KT 10.1.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Price groups

PG 14O, 41B, 41C, 41E, 41H, 41L, 42G, 42J, 42S

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High Performance soft starters

3RW55 soft starters

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6/29 - Standard (inline) circuit
6/33 - Inside-delta circuit
6/37 - Accessories

3RW55 Failsafe soft starters

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6/51 - Standard (inline) circuit
6/52 - Inside-delta circuit
6/53 - Accessories

General Performance soft starters

3RW52 soft starters

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6/67 - Standard (inline) circuit
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Basic Performance soft starters

3RW50 soft starters

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3RW40 soft starters

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3RW30 soft starters

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Spare parts

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6/110 For 3RW55 Failsafe
6/112 For 3RW52
6/115 For 3RW50

Software

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14/5 SIRIUS Soft Starter ES (TIA Portal)
14/8 SIRIUS 3RW soft starter block library for SIMATIC PCS 7
14/25 SIRIUS Sim

Solid-state switching devices for resistive/inductive loads

SIRIUS 3RF2 solid-state relays and contactors

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Solid-state relays

6/121 - General data
6/122 - SIRIUS 3RF21 solid-state relays, 1-phase, 22.5 mm
6/128 - SIRIUS 3RF20 solid-state relays, 1-phase, 45 mm
6/132 - SIRIUS 3RF22 solid-state relays, 3-phase, 45 mm

Solid-state contactors

6/135 - General data
6/136 - SIRIUS 3RF23 solid-state contactors, 1-phase
6/146 - SIRIUS 3RF24 solid-state contactors, 3-phase

SIRIUS 3RF29 function modules

6/150 General data
6/152 SIRIUS converters for 3RF2
6/153 SIRIUS load monitoring for 3RF2
6/154 SIRIUS heating current monitoring for 3RF2
6/155 SIRIUS power controllers for 3RF2
6/157 SIRIUS power regulators for 3RF2

SIRIUS 3RF34 solid-state switching devices for switching motors

Solid-state contactors

6/159 General data
6/162 SIRIUS 3RF34 solid-state contactors, 3-phase
6/165 SIRIUS 3RF34 solid-state reversing contactors, 3-phase

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Introduction

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Homepage, see www.siemens.com/sirius-soft-starter	Industry Online Support (SIOS) topic page, see https://support.industry.siemens.com/cs/ww/en/view/109747404
Industry Mall, see www.siemens.com/product?3RW	Simulation Tool for Soft Starters (STS), see page 6/9 or https://support.industry.siemens.com/cs/ww/en/view/101494917
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=Sirius3rwFolder	Conversion tool, see www.siemens.com/conversion-tool

3RW55

3RW55 Failsafe

3RW52

3RW50

3RW40

3RW30

3RW soft starters		Article No.	Page
High Performance soft starters			
3RW55 soft starters	• TIA integration optional • Plug-in communications modules for PROFINET, PROFIBUS, EtherNet/IP and Modbus • Removable HMI module with color display, local interface and slot for a micro SD memory card • Extended protection functions • Up to 1 200 kW at 400 V (can be used in supply systems up to 690 V) • Automatic parameterization for simple commissioning and reliability even under changing load conditions • Hybrid switching technology for minimum power loss and 3-phase motor control for optimum/symmetrical motor control • Pump stop for reduced mechanical loading and optimum pump stop control • ATEX/IECEx certification • System redundancy S2 (with PROFINET High-Feature communications module)	3RW55..-.HA..	6/15
3RW55 Failsafe soft starters	• TIA integration optional • Plug-in communications modules for PROFINET, PROFIBUS, EtherNet/IP and Modbus • Removable HMI module with color display, local interface and slot for a micro SD memory card • Extended protection functions • Up to 560 kW at 400 V (can be used in supply systems up to 480 V) • SIL 1/PL c/STO without additional components • SIL 3/PL e/STO with additional contactor and safety relay • Hybrid switching technology for minimum power loss and 3-phase motor control for optimum/symmetrical motor control • Pump stop for reduced mechanical loading and optimum pump stop control • ATEX/IECEx certification • System redundancy S2 (with PROFINET High-Feature communications module)	3RW55..-.HF..	6/39
General Performance soft starters			
3RW52 soft starters	• TIA integration optional • Plug-in communications modules for PROFINET, PROFIBUS, EtherNet/IP and Modbus • HMI modules optional • Soft starting and stopping • Current limiting • Motor overload protection (optionally with thermistor motor protection) • Analog output (optional) • Up to 560 kW at 400 V (can be used in supply systems up to 600 V) • Hybrid switching technology for minimum power loss and 3-phase motor control for optimum/symmetrical motor control • Soft Torque for reduced mechanical loading and optimum pump stop • Parameterization using potentiometers	3RW52	6/55

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3RW55

3RW55 Failsafe

3RW52

3RW50

3RW40

3RW30

		Article No.	Page
3RW soft starters			
Basic Performance soft starters			
3RW50 soft starters	• TIA integration optional • Communications modules for PROFINET, PROFIBUS, EtherNet/IP and Modbus • HMI modules optional • Soft starting and stopping • Current limiting • Motor overload protection (optionally with thermistor motor protection) • Analog output (optional) • Up to 315 kW at 400 V (can be used in supply systems up to 600 V) • Hybrid switching technology for minimum power loss and 2-phase motor control • Soft Torque for reduced mechanical loading and optimum pump stop • Parameterization using potentiometers • ATEX/IECEx certification	3RW50	6/73
3RW40 soft starters	• Soft starting and stopping • Current limiting • Motor overload protection (optionally with thermistor motor protection) • Up to 55 kW at 400 V (can be used in supply systems up to 600 V) • Hybrid switching technology for minimum power loss and 2-phase motor control • ATEX certification	3RW40	6/84
3RW30 soft starters	• Soft starting with voltage ramp • Up to 55 kW at 400 V (can be used in supply systems up to 480 V)	3RW30	6/96

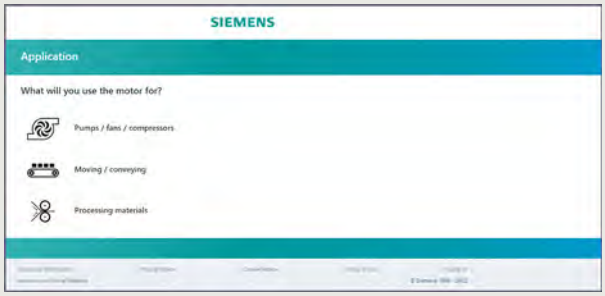
Use of SIRIUS 3RW soft starters in conjunction with IE3 and IE4 motors

Note:

For the use of SIRIUS 3RW soft starters in conjunction with highly efficient IE3 and IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

More information, see page 1/8.

Decision-making support for motor starting – Starting and running three-phase asynchronous motors efficiently



Decision-making support tool for motor starting

By asking some short questions about the application, this tool provides the optimum individual drive solution.

Based on this approach, you are taken to the correct product configurator where you can select suitable products, see www.siemens.com/motorstart-guide.

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Introduction

More information	
Industry Mall, see www.siemens.com/product?3RF	Online configurator, see www.siemens.com/sirius/configurators Conversion tool, see www.siemens.com/conversion-tool

3RF21

3RF20

3RF22

3RF23

3RF24

3RF29

3RF34 (motor)

		Article No.	Page
SIRIUS solid-state switching devices for switching resistive/inductive loads			
Solid-state relays			
Solid-state relays	• Widths of 22.5 mm and 45 mm • Compact and space-saving design • "Zero-point switching" version • Mounting on existing cooling surfaces	**3RF21** **3RF20** **3RF22**	6/122 6/128 6/132
Solid-state contactors			
Solid-state contactors	• Complete units comprising a solid-state relay and an optimized heat sink, "ready to use" • Compact and space-saving design • Versions for resistive loads "zero-point switching" and inductive loads "instantaneous switching" • Special "low noise" and "short-circuit-proof" versions	**3RF23** **3RF24**	6/136 6/146
Function modules			
	For extending the functionality of the 3RF21 solid-state relays and the 3RF23 solid-state contactors for many different applications		
Converters	• For converting an analog input signal into an on/off ratio; can also be used on 3RF22 and 3RF24 3-phase switching devices	**3RF2900-0EA18**	6/152
Load monitoring	• For load monitoring of one or more loads (partial loads)	**3RF29..-0FA08, 3RF29.0-0GA1.**	6/153
Heating current monitoring	• For load monitoring of one or more loads (partial loads); remote teach	**3RF29..-0JA..**	6/154
Power controllers	• For setting the current by means of a solid-state switching device depending on a setpoint value set by the power controller. There is a choice of full-wave control and generalized phase control.	**3RF29..-0KA..**	6/155
Power regulators	• For regulating the current by means of a solid-state switching device, depending on a setpoint value set by the power regulator. Closed-loop control: full-wave control or generalized phase control	**3RF29.0-0HA..**	6/157
SIRIUS solid-state switching devices for switching motors			
Solid-state contactors			
Solid-state contactors, solid-state reversing contactors	• Complete units in the insulated enclosure with integrated heat sink, "ready to use" • Compact and space-saving design • Version for motors, "instantaneous switching"	**3RF34**	6/162, 6/165

Use of SIRIUS solid-state switching devices for switching motors in conjunction with IE3 and IE4 motors

Note:

For the use of SIRIUS 3RF solid-state switching devices for switching motors in conjunction with highly efficient IE3 and IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

For more information, see page 1/8.

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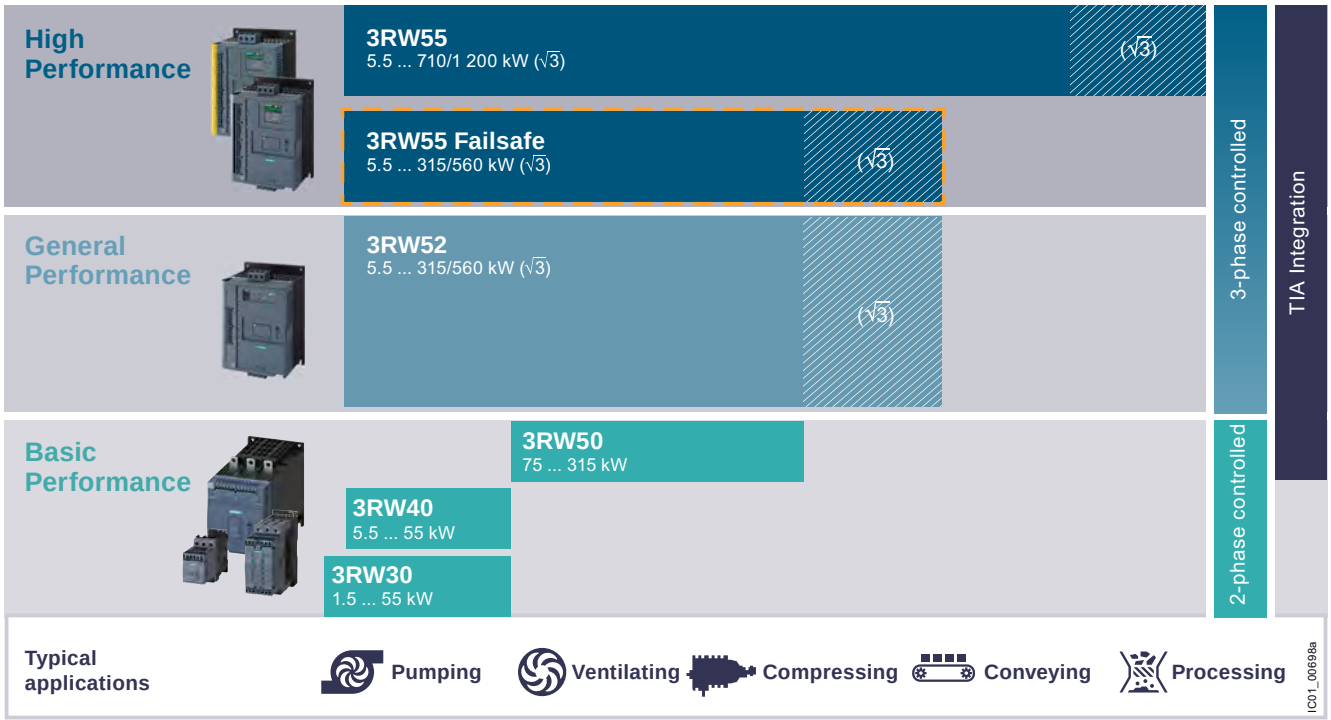
Overview

More information	
Homepage, see www.siemens.com/sirius-soft-starter	Simulation Tool for Soft Starters (STS), see page 6/9 or https://support.industry.siemens.com/cs/ww/en/view/101494917
Industry Mall, see www.siemens.com/product?3RW	SIRIUS Soft Starter ES (TIA Portal), see page 6/9 or https://support.industry.siemens.com/cs/ww/en/ps/24230/dl
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=Sirius3rwFolder	Decision-making support for motor starting – Starting and running three-phase asynchronous motors efficiently see www.siemens.com/motorstart-guide
Industry Online Support (SIOS) topic page, see https://support.industry.siemens.com/cs/ww/en/view/109747404	Conversion tool, see www.siemens.com/conversion-tool

Video: Soft starter teaser

SIRIUS 3RW soft starters – as versatile as your application



SIRIUS 3RW soft starters

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General data

Applications	High Performance	General Performance	Basic Performance		
SIRIUS soft starters	3RW55/3RW55-F	3RW52	3RW50	3RW40	3RW30
Selection aid for soft starters					
Normal starting (CLASS 10)					
Pumps	●	●	●	●	●
Pumps with special pump stop (to prevent water hammer)	●	❍	❍		
Heat pumps	●	●	●	●	●
Hydraulic pumps	●	●	●	●	❍
Presses	●	●	●	●	❍
Conveyor belts	●	●	●	●	❍
Roller conveyors	●	●	●	●	❍
Screw conveyors	●	●	●	●	❍
Escalators	●	●	●	●	
Piston compressors	●	●	●	●	
Screw compressors	●	●	●	●	
Small fans[1]	●	●	●	●	
Centrifugal blowers	●	●	●	●	
Bow thrusters	●	●	●	●	
Heavy starting (CLASS 20)					
Stirrers	●	❍	❍	❍	
Extruders	●	❍	❍	❍	
Lathes	●	❍	❍	❍	
Milling machines	●	❍	❍	❍	
Heavy starting (CLASS 30)					
Large fans[2]	●				
Circular saws/bandsaws	●				
Centrifuges	●				
Mills	●				
Crushers	●				

● Recommended soft starter
❍ Possible soft starter

[1] The mass inertia of the fan is <10 times the mass inertia of the motor.
[2] The mass inertia of the fan is ≥10 times the mass inertia of the motor.

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Applications		High Performance		General Performance	Basic Performance		
SIRIUS soft starters		**3RW55**	**3RW55-F**	**3RW52**	**3RW50**	**3RW40**	**3RW30**
General technical specifications							
Operational current at 40 °C	A	13 ... 2 217	13 ... 987	13 ... 987	143 ... 570	12.5 ... 106	3 ... 106
Operational voltage	V	200 ... 690[1]	200 ... 480	200 ... 600	200 ... 600	200 ... 600	200 ... 480
Operating power for three-phase motors							
• At 400 V, at 40 °C							
- Standard (inline) circuit	kW	5.5 ... 710	5.5 ... 315	5.5 ... 315	75 ... 315	5.5 ... 55	1.5 ... 55
- Inside-delta circuit	kW	11 ... 1 200	11 ... 560	11 ... 560	--	--	--
• At 460/480 V at 50 °C							
- Standard (inline) circuit	hp	7.5 ... 1 000	7.5 ... 400	7.5 ... 400	100 ... 400	7.5 ... 75	1.5 ... 75
- Inside-delta circuit	hp	10 ... 1 700	10 ... 750	10 ... 750	--	--	--
Ambient temperature[2]	°C	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60
Soft starting/stopping		✓	✓	✓	✓	✓	✓[3]
Voltage ramp		✓	✓	✓	✓	✓	✓
Starting voltage	%	20 ... 100	20 ... 100	30 ... 100	30 ... 100	40 ... 100	40 ... 100
Ramp-up and ramp-down time	s	0 ... 360	0 ... 360	0 ... 20	0 ... 20	0 ... 20	0 ... 20[3]
Pump stop (torque control)[4]		✓	✓	--	--	--	--
• Starting torque	%	10 ... 100	10 ... 100	--	--	--	--
• Torque limit	%	20 ... 200	20 ... 200	--	--	--	--
Soft Torque (torque limit)		--	--	✓	✓	--	--
Integral bypass contact system		✓	✓	✓	✓	✓	✓
Intrinsic device protection		✓	✓	✓	✓	✓	--
Motor overload protection		✓[5]	✓[5]	✓	✓[5]	✓[5]	--
Thermistor motor protection evaluation		✓	✓	✓[6]	✓[6]	✓[6]	--
Analog output		✓	✓	✓[6]	✓[6]	--	--
Remote RESET		✓	✓	✓	✓	✓	--
Adjustable current limiting		✓	✓	✓	✓	✓	--
Inside-delta circuit[1]		✓	✓	✓	--	--	--
Breakaway pulse		✓	✓	--	--	--	--
Automatic parameterization		✓	✓	--	--	--	--
Pump cleaning		✓	✓	--	--	--	--
Condition monitoring		✓	✓	--	--	--	--
User account administration[7]		✓	✓	--	--	--	--
Creep speed in both directions of rotation		✓	--	--	--	--	--
Reversing operation		✓	✓	--	--	--	--
Reversing DC braking[4][8]		✓	--	--	--	--	--
DC braking[4][8]		✓	--	--	--	--	--
Dynamic DC braking[4][8]		✓	--	--	--	--	--
Motor heating		✓	--	--	--	--	--
Communication function[9]		✓	✓	✓	✓	--	--
HMI module installable in the control cabinet door		✓	✓	✓[9]	✓[9]	--	--
Operating measured value display		✓	✓	✓[9]	✓[9]	--	--
Logbooks		✓	✓	✓[9]	✓[9]	--	--
Statistical data and slave pointer function		✓	✓	✓[9]	✓[9]	--	--
Trace function[7]		✓	✓	--	--	--	--
Programmable control inputs and outputs		✓	✓	--	--	--	--
Number of parameter sets		3	3	1	1	1	1
Parameterizable via software[7]		✓	✓	--	--	--	--
Number of controlled phases		3	3	3	2	2	2
Heavy starting CLASS 30[4]		✓	✓	--	--	--	--

✓ Function available
-- Function not available

1) Inside-delta circuit only up to operational voltage 600 V.
2) Note derating above 40 °C.
3) Only soft starting available for 3RW30.
4) Calculate soft starter and motor with overdimension where required.
5) When using the motor overload protection according to ATEX/IECEx, an upstream contactor may be required, see page 6/13.
6) Special device versions only.
7) With software Soft Starter ES (TIA Portal).
8) Not possible in inside-delta circuit.
9) Only in conjunction with special accessories.

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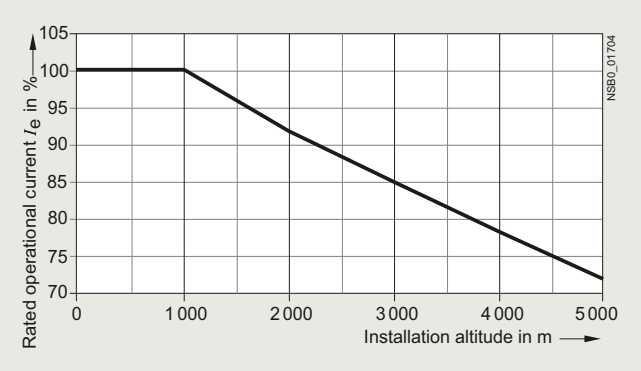
General data

Constraints

The 3RW soft starters should always be designed on the basis of the required rated operational current of the motor.
The motor ratings listed in the selection and ordering data are rough guide values and designed for basic starting conditions (CLASS 10). For other starting conditions, we recommend the Simulation Tool for Soft Starters (STS).

Motor rating data in kW and hp are based on IEC 60947-4-1.

At an installation altitude above 2 000 m, the max. permissible operational voltage is reduced to 480 V.



Installation altitude for SIRIUS 3RW soft starters

The selection and ordering data were determined for the following constraints (stand-alone installation without auxiliary fan)

Applications		High Performance	General Performance	Basic Performance		
SIRIUS soft starters		**3RW55/3RW55-F**	**3RW52**	**3RW50**	**3RW40**	**3RW30**
Constraints						
Maximum starting time	s	20	10			3
Maximum starting current in % of motor current	I_e	300				
Maximum number of starts per hour	1/h	5				20

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Simulation Tool for Soft Starters (STS) (see page 14/4)

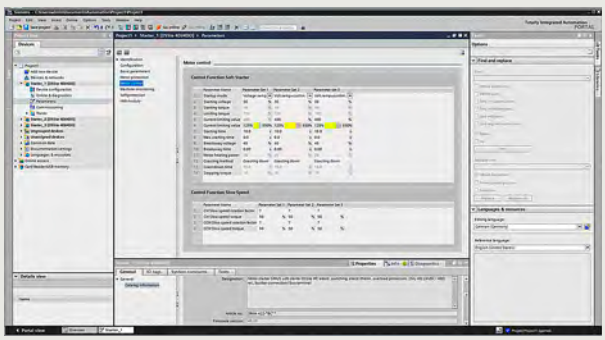
Easy input of motor and load data

The Simulation Tool for Soft Starters (STS) provides a convenient means of designing soft starters using a simple, quick and easy-to-use interface. Entering the motor and load data will simulate the application and prompt suggestions for suitable soft starters.

- Simple, quick and user-friendly interface
- Detailed and up-to-date Siemens motor database, including IE3 and IE4 motors.
- Simulation of heavy starting up to CLASS 30
- Update-capable (e.g. motors, load types, functions)
- Fast simulations with minimum input data
- Immediate, graphical curve charts of start operations with limit values
- Table view of suitable soft starters for the application

The Simulation Tool for Soft Starters (STS) is available as a free download for Windows and as an app (for Android and iOS).

SIRIUS Soft Starter ES (TIA Portal) (see page 14/5 onwards)



Easy and clearly arranged parameter setting of the SIRIUS 3RW44 and 3RW55 soft starters with SIRIUS Soft Starter ES (TIA Portal)

The SIRIUS Soft Starter ES (TIA Portal) software permits quick and easy parameterization, monitoring and diagnostics of SIRIUS 3RW44 and 3RW5 soft starters for service purposes.

- Transparent setting of the device functions and their parameters – online and offline
- Effective diagnostics functions on the soft starter and display of the most important measured values
- Trace function (oscilloscope function) for recording measured values and events (only in the Professional software version)
- Time savings through shorter startup times
- Fast, low-cost licensing using a simple licensing procedure (also available online)

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General data

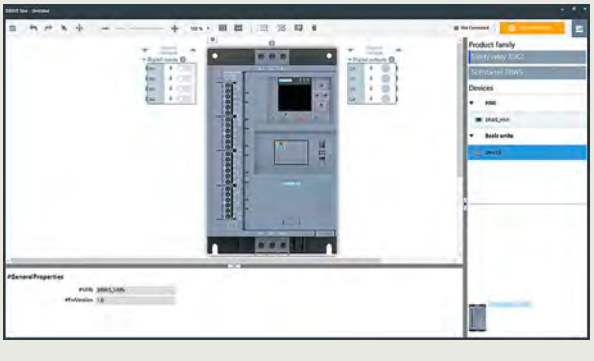
SIRIUS 3RW soft starter block library for SIMATIC PCS 7
(see page 14/7 onwards)

Faceplate of the motor block

The PCS 7 block library for SIRIUS 3RW soft starter can be used for simple and convenient integration of SIRIUS 3RW44, 3RW52 and 3RW55 soft starters into the SIMATIC PCS 7 process control system.

The PCS 7 block library for SIRIUS 3RW soft starter contains the diagnostics and driver blocks that correspond to the SIMATIC PCS 7 diagnostics and driver concept as well as the elements (symbols and faceplates) required for operator control and process monitoring.

SIRIUS Sim (see page 14/25 onwards)



SIRIUS Sim 3RW55

The SIRIUS simulation tool can be used to quickly and easily test functions and configurations in an office environment. These configurations can then be loaded directly into real devices.

SIRIUS Sim V2.0 integrates the SIRIUS 3RW55 and SIRIUS 3RW55 Failsafe soft starters with the following features:

- Complete parameterization of the SIRIUS 3RW55 High Performance soft starters
- Complete navigation with the same menu structure as on the HMI
- Optional storage of the parameterization on a micro SD memory card for transfer to the real soft starter
- Simulation of starting and stopping, including operating phases as well as different fault conditions

SIRIUS Sim is available as a free download.

SIRIUS 3RW55 and 3RW55 Failsafe system redundancy S2 with PROFINET High-Feature communications module
(see pages 6/37 and 6/53)

PROFINET High-Feature communications module 3RW5950-0CH00

The PROFINET High-Feature communications module for the SIRIUS 3RW55 and SIRIUS 3RW55 Failsafe soft starters supports the S2 system redundancy mechanisms of PROFINET IO from firmware version 3.0 and can therefore be operated directly on fault-tolerant systems, such as SIMATIC S7-400H and S7-1500H. As such, 3RW55 and 3RW55 Failsafe soft starters can provide decisive added value also for the field level of plants in which plant availability and control system redundancy are priorities.

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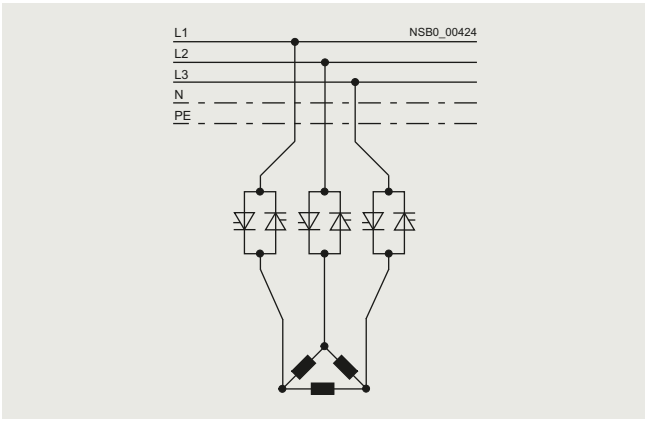
Circuit concept

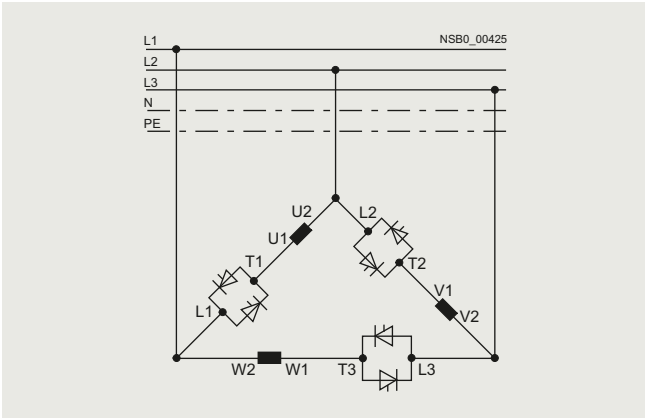
3-phase controlled SIRIUS 3RW soft starters can be operated in two different types of circuit:

- Standard (inline) circuit
  The controls for isolating and protecting the motor are simply connected in series with the soft starter. The motor is connected to the soft starter with three cables.
- Inside-delta circuit
  The wiring is similar to that of star-delta (wye-delta) starters. The phases of the soft starter are connected in series with the individual motor windings. The soft starter then only has to carry the phase current, amounting to about 58% of the rated motor current (conductor current).

Comparison of the types of circuit



Standard (inline) circuit: Rated current I_e corresponds to the rated motor current I_n, three cables to the motor



Inside-delta circuit: Rated current I_e corresponds to approx. 58% of the rated motor current I_n, six cables to the motor (as for star-delta (wye-delta) starters)

Which circuit?

Using the standard (inline) circuit involves the lowest wiring outlay. If the soft starter to motor connections are long, this circuit is preferable.

The wiring complexity is twice as high when using the inside-delta circuit, but a smaller device can be used with the same rating. Thanks to the choice of operating mode between the standard (inline) circuit and inside-delta circuit, it is always possible to select the most favorable solution.

The braking function is possible only in the standard (inline) circuit. The inside-delta circuit cannot be used in 690 V line supplies.

Configuration

The solid-state 3RW soft starters are designed for normal starting. In case of heavy starting or increased starting frequency, a larger unit must be selected. The 3RW50 and 3RW52 soft starters may be used in isolated supply networks (IT systems) up to 600 V AC and the 3RW55 soft starters even up to 690 V.

For long starting times it is recommended to have a PTC sensor or temperature switch in the motor. This also applies for the ramp-down modes torque control, pump stop and DC braking, because during the ramp-down time in these modes, an additional current loading applies in contrast to free ramp-down.

No capacitive elements are permitted in the motor feeder between the SIRIUS 3RW soft starter and the motor (e.g. no reactive-power compensation equipment). In addition, neither static systems for reactive power compensation nor dynamic PFC (Power Factor Correction) must be operated in parallel during starting and stopping of the soft starter. This is important to prevent faults arising on the compensation equipment and/or the soft starter.

All elements of the main circuit (such as fuses and switching devices) should be dimensioned for direct-on-line starting, following the local short-circuit conditions. Fuses and switching devices must be ordered separately. The harmonic component load of the starting current must be taken into consideration for the selection of motor starter protectors/circuit breakers (selection of release). Please observe the maximum switching frequencies specified in the technical specifications.

Notes:

When three-phase motors are switched on, voltage drops occur as a rule on starters of all types (direct-on-line starters, star-delta (wye-delta) starters, soft starters). The infeed transformer must always be dimensioned such that the voltage dip when starting the motor remains within the permissible tolerance. If the infeed transformer is dimensioned with only a small margin, it is best for the control voltage to be supplied from a separate circuit (independently of the main voltage) in order to avoid the potential switching off of the soft starter.

For dimensioning soft starters, we recommend our Simulation Tool for Soft Starters (STS), see page 6/9 or our Technical Support, www.siemens.com/support-request.

Recommended parameters for the initial commissioning of our SIRIUS 3RW soft starters are listed in every report of our Simulation Tool for Soft Starters (STS). In addition, our High Performance soft starters provide support by means of their commissioning wizards.

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General data

Motor feeders with soft starters

The type of coordination according to which the motor feeder with soft starter is mounted depends on the application-specific requirements. Normally, fuseless mounting (combination of motor starter protector/circuit breaker and soft starter) is sufficient.

If type of coordination "2" is to be fulfilled, then semiconductor fuses must be fitted in the motor feeder.

ToC 1	Type of coordination "1" according to IEC 60947-4-1: After a short-circuit incident, the unit is defective and therefore unsuitable for further use (protection of persons and system guaranteed).
ToC 2	Type of coordination "2" according to IEC 60947-4-1: After a short-circuit incident the unit is suitable for further use (protection of persons and system guaranteed). The type of coordination refers to soft starters in combination with the stipulated protective device (motor starter protector/circuit breaker, fuse), not to any additional components in the feeder.
	The types of coordination are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Feeder tests and results

To keep the scope of feeder tests with SIRIUS 3RW soft starters within economically reasonable limits, tests were conducted with feeder components (motor starter protectors/circuit breakers, fuses) that cover the greatest number of use cases (different soft starter versions depending on, for example, line voltage, type of circuit, or necessary overdimensioning). For the combined tests that were conducted, the values for the short-circuit breaking capacity I_q in kA were determined and documented.

If the short-circuit breaking capacity is the same, of course, smaller motor starter protectors/circuit breakers or fuses can also be used for the selected soft starter provided the dimensioning of the short-circuit components is suitable for the connected three-phase motor and the line protection for the cables used. For type of coordination "2" (with semiconductor protection), it is also necessary to compare the characteristics because the protection function would no longer be completely ensured if too small a fuse were selected. If the soft starter does not have a motor protection function, the motor protection must also be dimensioned appropriately.

Setting the motor current

If circuit breakers with an overload release are used (e.g. SIRIUS 3RV20 motor starter protector), we recommend activating the motor protection function of the SIRIUS 3RW soft starter to protect the motor and setting the soft starter to the rated operational current I_e of the motor. We recommend setting the motor starter protector/circuit breaker in such a way that it provides line protection but does not usually trip before the soft starter when a motor overload occurs.

Line protection and motor protection

Line protection and motor protection are not ensured in all operating cases, depending on:

- How the motor feeder is constructed (e.g. with fuses or motor starter protectors/circuit breakers)
- Whether the SIRIUS 3RW soft starters are operated within the specification relevant for the tests (IEC 60947-4-2)
- Or whether the documented constraints (see page 6/8) have been observed

There are operating states of the thyristors (caused, for example, by high starting frequencies or heavy starting) that do not permit an overload to be disconnected by the SIRIUS 3RW soft starter. These cases are very rare but can not be ruled out in all cases.

In accordance with IEC 60947-4-2, the SIRIUS 3RW soft starters are dimensioned and checked for operation with up to 8 times the rated operational current I_e. For currents larger than this, reliable disconnection of an overcurrent by the SIRIUS 3RW soft starter is not ensured. Such large overcurrents have to be disconnected by a switching device at a higher level (e.g. by a motor starter protector/circuit breaker or a fuse in conjunction with an optional line contactor).

Motor protection by the SIRIUS 3RW soft starter is ensured for currents up to 8 times the rated operational current I_e in any case. Line protection is covered by the line-side motor starter protector/circuit breaker or fuse.
These motor feeder components must be dimensioned accordingly and the cable cross-sections must be chosen to match.

Line protection

Line protection in motor feeders with soft starters is always covered by a fuse or a circuit breaker both in case of an overload and in case of a short circuit. The circuit breaker must have an overload release. That is the case for motor starter protectors (e.g. SIRIUS 3RV20).

Circuit breakers without an overload release (e.g. SIRIUS 3RV23 motor starter protectors) must not be used because they do not provide overload protection. The feeder tests for these were therefore not performed. If the motor feeder with SIRIUS 3RW soft starters is configured without a fuse, motor starter protectors must be used that ensure tripping on an overload in all cases.

Motor protection

If fuses are used to provide protection against overload and short circuit of the cables, the motor is protected by the SIRIUS 3RW soft starter. If the constraints (simple starting conditions CLASS 10, listed maximum values for starting current, starting time and number of starts per hour) of page 6/8 are observed, the motor feeders can be configured according to IEC as described in the section about soft starters (an optional line contactor is not required). If these preconditions are met, the SIRIUS 3RW soft starters are able to trip on overloads to protect the motor in any case.

In other starting conditions and on heavy starting, the following must be considered:

Trip classes

Tested fuseless switchgear assemblies comprising SIRIUS 3RW soft starters and motor starter protectors only comply with CLASS 10.
To configure tested motor feeders, for example, for CLASS 20 or CLASS 30, fuses must be used together with SIRIUS 3RW soft starters.

Line contactor

In applications with high starting frequencies or heavy starting as of CLASS 20, we recommend combining fuses with the use of a line contactor on the line side so that a motor overload is disconnected by the fault signaling contact of the soft starter in any case (that is, even in rare cases in which disconnection by the SIRIUS 3RW soft starter is no longer possible due to the operating state of the thyristors).

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ATEX/IECEx-certified motor overload protection

Ambient temperature during operation

The SIRIUS 3RW soft starters are approved for operation in a temperature range of -25 to +60 °C.

The derating of the rated operational current must be taken into account for ambient temperatures above 40 °C.

For more information, see Equipment Manual and the technical product data sheet of the selected soft starter.

Trip class (electronic overload protection)

The motor and cables must be dimensioned for the selected trip class.

The rated data of the soft starters refers to normal starting (CLASS 10). For heavy starting (> CLASS 10), the soft starter may need to be overdimensioned as only a rated motor current that is lower than the soft starter rated current can be set.

Short-circuit protection

The SIRIUS 3RW soft starter does not have short-circuit protection. Short-circuit protection must be ensured.

Line protection

Avoid impermissibly high cable surface temperatures by correctly dimensioning the cross-sections.

The cable cross-section must be adequately dimensioned.

Line contactor or additional undervoltage release on the motor starter protector/circuit breaker

In many ATEX/IECEx applications no additional measures (e.g. the use of a line contactor) are necessary with regard to the motor feeder configuration.

The operation of the selected soft starter may, depending on the amplitude of the line voltage and the type of motor connection (standard (inline) circuit or inside-delta circuit), result in the loss of the certified motor overload protection according to ATEX/IECEx if one of the two remedial measures listed below is not implemented.

Remedial measures

- An additional line contactor in the main circuit
- An additional undervoltage release for a motor feeder configuration with a motor starter protector/circuit breaker

The line contactor or the undervoltage release are connected to error outputs 95, 96 and 98 of the selected soft starter.

Note:

For ATEX/IECEx applications, the accompanying information on parameterization and commissioning must be observed in the ATEX/IECEx chapters of the Equipment Manual for the selected soft starter.

Article number scheme

Product versions		Article number									
Device type	**High Performance soft starters**	**3RW55**	□	□	–	□	□	□	□	□	
	General Performance soft starters	**3RW52**	□	□	–	□	□	□	□	□	
	Basic Performance soft starters	**3RW50**	□	□	–	□	□	□	□	□	
		3RW40	□	□	–	□	□	□	□	□	
		3RW30	□	□	–	□	□	□	□	□	
Size/rated operational current I_e	e.g. 15 = 25 A in size S1		□	□							
Connection type	e.g. 1 = screw terminal					□					
Soft starter functionality	e.g. AC = with bypass and analog output, 3-phase controlled						□	□			
Rated control supply voltage U_s	e.g. 0 = 24 V AC/DC								□		
Rated operational voltage U_e	e.g. 4 = 200 ... 480 V AC									□	
Example		**3RW52**	**1**	**5**	**–**	**1**	**A**	**C**	**0**	**4**	

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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General data

Benefits

Can be flexibly deployed in many applications

**Strong portfolio:
wide range of matching products**

- The right hardware for all requirements,
  soft starters for tasks ranging from simple to demanding starting in Basic, General and High Performance versions
- Extensive portfolio for individual expansion:
  Optional HMIs for installation in the device or mounting on the control cabinet door
- Communication via PROFINET, PROFIBUS, EtherNet/IP and Modbus
- Design enclosure with removable terminals, space-saving thanks to compact design and rugged thanks to coated printed circuit boards
- Can be used worldwide thanks to numerous certificates and approvals:
  IEC, UL, CSA, CCC, ATEX/IECEx, shipbuilding

**Intelligent operation:
concentrated, application-specific functionality**

- Can be used in a wide variety of applications:
  Pumping, ventilating, compressing, conveying and processing
- Integrated, self-learning automatic parameterization depending on motor starting conditions
- Application-specific functionality such as pump cleaning and pump stop
- Condition monitoring:
  Current and power monitoring with warning and alarm limits, starting time monitoring

**Efficient switching:
hybrid switching technology on board**

- Energy-efficient switching and mechanical protection of the drive train thanks to soft starters with hybrid switching technology
- Low-wear switching extends the service life of the devices
- Soft starting prevents current peaks, thereby increasing the network stability
- Protection against disturbances in the application:
  Mechanical protection for the drive train

**Ready for a digital future:
data available whenever and wherever needed**

- Support from tools and data during engineering
- Simulation Tool for Soft Starters for support during product selection
- Very simple, standardized commissioning and configuration via Soft Starter ES in TIA Portal
- Integration in the automation system via communication links
- Data availability and analysis:
  large volumes of data at any time and anywhere, even into MindSphere

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Overview

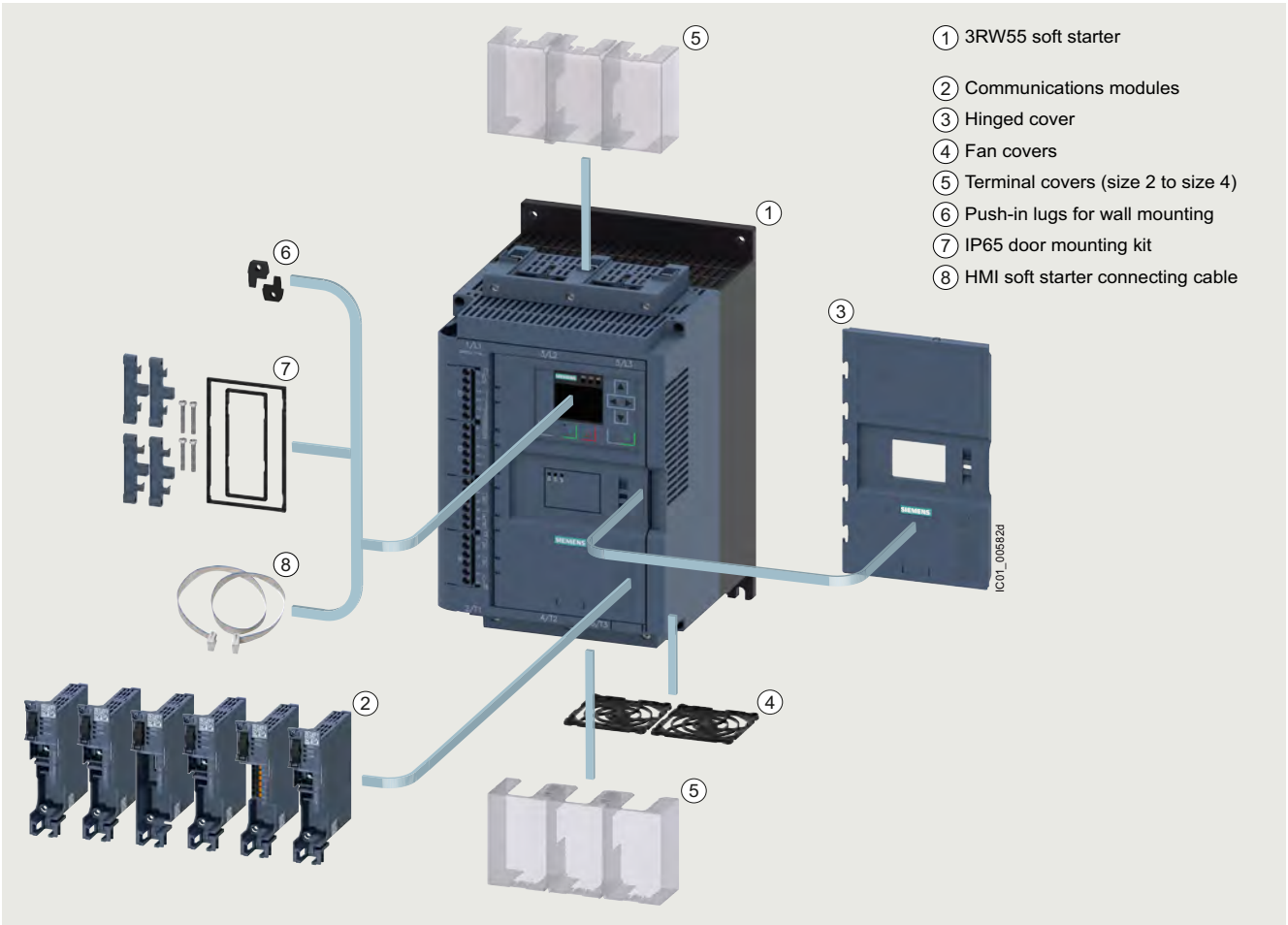
More information	
Homepage, see www.siemens.com/sirius-soft-starter	SIRIUS Soft Starter ES (TIA Portal), see page 6/9 or https://support.industry.siemens.com/cs/ww/en/ps/24230/dl
Industry Mall, see www.siemens.com/product?3RW55	SIRIUS 3RW soft starter block library for SIMATIC PCS 7, see page 6/10 or https://support.industry.siemens.com/cs/ww/en/view/109770336
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=3rw55	Decision-making support for motor starting – Starting and running three-phase asynchronous motors efficiently, see www.siemens.com/motorstart-guide
Industry Online Support (SIOS) topic page, see https://support.industry.siemens.com/cs/ww/en/view/109747404	SIRIUS Sim, see page 6/10 or https://support.industry.siemens.com/cs/ww/en/view/109763750
Simulation Tool for Soft Starters (STS), see page 6/9 or https://support.industry.siemens.com/cs/ww/en/view/101494917	Conversion tool, see www.siemens.com/conversion-tool

SIRIUS 3RW55 soft starters device family

Equipped with the utmost functionality, the SIRIUS 3RW55 High Performance soft starters confidently handle even difficult starting and stopping operations. Thanks to innovative torque control, the device can be used for drives with an output of between 5.5 kW and 1 200 kW (at 400 V).

The functions have been specially designed to offer maximum user friendliness. The HMI (with color display, local interface and a slot for micro SD memory card) and plug-in communications modules (PROFINET, PROFIBUS, EtherNet/IP and Modbus) ensure maximum flexibility.

With their modern hybrid switching technology, the SIRIUS 3RW55 soft starters offer efficient switching for long-term, energy-saving use.



SIRIUS 3RW55 High Performance soft starter with accessories (see page 6/37)

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Benefits

Product characteristics/function	Performance features/benefits
Automatic parameterization	Extremely easy commissioning and reliability even under changing load conditions
Hybrid switching technology and 3-phase motor control	Minimum power loss and optimum/symmetrical motor control
TIA integration – communications modules optional	Efficient configuration and maximum flexibility in automation engineering
Removable HMI with color display, local interface, slot for micro SD memory card	Maximum flexibility with regard to user interface and intuitive menu guidance
Pump stop and torque control	Reduced mechanical loading and optimum pump stop control
Certified according to ATEX/IECEx directive	Suitable for the starting of explosion-proof motors
System redundancy S2	Simple and straight-forward integration into fault-tolerant automation systems
Direct integration into MindSphere via the OPC UA server	Worldwide data availability for optimal plant operation

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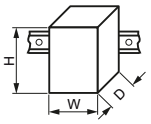
Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/25099/td	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/25099/faq
Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/109753752	Simulation Tool for Soft Starters (STS), see page 6/9 or https://support.industry.siemens.com/cs/ww/en/view/101494917

Type		3RW551.		3RW552., 3RW553.		3RW554.		3RW555.	
		-.HA.4	-.HA.5	-.HA.4	-.HA.6	-.HA.4	-.HA.6	-.HA.4	-.HA.6
Installation/fixing/dimensions									
Width x height x depth	mm	170 x 275 x 152		185 x 306 x 203		210 x 393 x 203		478 x 764 x 241	
									
Type of mounting		Screw fixing							
Mounting position		Vertical (can be rotated +/- 90° and tilted +/- 22.5° forward or backward)							
Distance to be maintained with side-by-side mounting									
• Above	mm	100							
• At the side	mm	5							
• Below	mm	75							
Installation altitude at height above sea level, maximum[1]	m	5 000		2 000		5 000	2 000	5 000	2 000
Degree of protection IP on the front according to IEC 60529		IP20		IP00 (IP20 with cover)				IP00	
Touch protection on the front according to IEC 60529		Finger-safe for vertical touching from the front		Finger-safe for vertical touching from the front with cover				--	
Ambient conditions									
Ambient temperature									
• During operation[2]	°C	-25 ... +60							
• During storage and transport	°C	-40 ... +80	-25 ... +80	-40 ... +80					
Environmental category according to IEC 60721									
• During operation		3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6							
• During storage		1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get into the devices), 1M4							
• During transport		2K2, 2C1, 2S1, 2M2 (max. height of fall 0.3 m)							

1) Derating from 1 000 m, see characteristic curve on page 6/8.
2) Note derating above 40 °C.

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Type		3RW55..-.HA0.	3RW55..-.HA1.
Control circuit/control			
Control supply voltage			
• At AC/DC	V	24/24	--/--
• At AC	V	--	110 ... 250
• Relative negative tolerance/relative positive tolerance with AC	%	-20/20	-15/10
• Relative negative tolerance/relative positive tolerance with DC	%	-20/20	--/--
Frequency of the control supply voltage	Hz	50 ... 60	
• Relative negative tolerance/relative positive tolerance	%	-10/10	
Type of overvoltage protection		Varistors	
Type of short-circuit protection for control circuit[1]		Fuse 4 A gG (I_{cu} =1 kA), fuse 6 A quick-response (I_{cu} =1 kA), MCB C1 (I_{cu} = 600 A), MCB C6 (I_{cu} = 300 A)	

1) Not included in scope of supply.

Type		3RW55..-.HA.4	3RW55..-.HA.5	3RW55..-.HA.6
Power electronics				
Operational voltage	V	200 ... 480	200 ... 600	200 ... 690
• Relative negative tolerance/relative positive tolerance	%	-15/10		
Operational voltage for inside-delta circuit	V	200 ... 480	200 ... 600	
• Relative negative tolerance/relative positive tolerance	%	-15/10		
Operating frequency	Hz	50 ... 60		
• Relative negative tolerance/relative positive tolerance	%	-10/10		
Minimum load [% of I_M][1]	%	10		
Maximum cable length between soft starter and motor	m	800		

1) Relative to set I_e.

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Type		3RW5513	3RW5514	3RW5515	3RW5516	3RW5517
Rated operational current I_e	A	13	18	25	32	38
Power electronics						
Load rating with rated operational current I_e						
IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	32/28.4/26	38/33.5/30.5
Permissible rated motor current and starts/h						
Normal starting (CLASS 10A)						
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	32/28.4/26	38/33.5/30.5
• 300% I_M						
- Start-up time 5 s	1/h	43	43	43	43	43
- Start-up time 10 s	1/h	18	18	18	18	18
• 350% I_M						
- Start-up time 5 s	1/h	28	28	28	28	28
- Start-up time 10 s	1/h	10	10	10	10	10
Normal starting (CLASS 10E)						
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	32/28.4/26	38/33.5/30.5
• 300% I_M						
- Start-up time 10 s	1/h	21	21	21	21	21
- Start-up time 20 s	1/h	8	8	8	8	8
• 350% I_M						
- Start-up time 10 s	1/h	13	13	13	13	13
- Start-up time 20 s	1/h	4	4	4	4	4
Heavy starting (CLASS 20E)						
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	29.6/27.2/23.6	33.5/30.5/27.5
• 300% I_M						
- Start-up time 20 s	1/h	10	10	10	10	10
- Start-up time 40 s	1/h	4	4	4	4	4
• 350% I_M						
- Start-up time 20 s	1/h	7	7	7	7	7
- Start-up time 40 s	1/h	2.5	2.5	2.5	2.5	2.5
Heavy starting (CLASS 30E)						
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	26/23.6/21.2	29/26/23
• 300% I_M						
- Start-up time 30 s	1/h	7	7	7	7	7
- Start-up time 60 s	1/h	3	3	3	3	3
• 350% I_M						
- Start-up time 30 s	1/h	4	4	4	4	4
- Start-up time 60 s	1/h	1.8	1.8	1.8	1.8	1.8
Adjustable rated motor current I_M						
• Minimum/maximum	A	2.5/13	3.5/18	5/25	6.5/32	7.5/38
• Minimum/maximum in inside-delta circuits	A	4.3/22.5	6.1/31.1	8.7/43.3	11.3/55.4	13/65.8

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Type		3RW5521	3RW5524	3RW5525	3RW5526	3RW5527
Rated operational current I_e	A	25	47	63	77	93
Power electronics						
Load rating with rated operational current I_e						
IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a	A	25/22.3/19.6	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
Permissible rated motor current and starts/h						
Normal starting (CLASS 10A)						
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	25/22.3/19.6	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
• 300% I_M						
- Start-up time 5 s	1/h	43	43	43	43	43
- Start-up time 10 s	1/h	18	18	18	18	18
• 350% I_M						
- Start-up time 5 s	1/h	28	28	28	28	28
- Start-up time 10 s	1/h	10	10	10	10	10
Normal starting (CLASS 10E)						
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	25/22.3/19.6	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
• 300% I_M						
- Start-up time 10 s	1/h	21	21	21	21	21
- Start-up time 20 s	1/h	8	8	8	8	8
• 350% I_M						
- Start-up time 10 s	1/h	13	13	13	13	13
- Start-up time 20 s	1/h	4	4	4	4	4
Heavy starting (CLASS 20E)						
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	25/22.3/19.6	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
• 300% I_M						
- Start-up time 20 s	1/h	10	10	10	10	10
- Start-up time 40 s	1/h	4	4	4	4	4
• 350% I_M						
- Start-up time 20 s	1/h	7	7	7	7	7
- Start-up time 40 s	1/h	2.5	2.5	2.5	2.5	2.5
Heavy starting (CLASS 30E)						
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	25/22.3/19.6	43.4/38/34.4	53/48/43	68/62/56	82.5/75.5/65
• 300% I_M						
- Start-up time 30 s	1/h	7	7	7	7	7
- Start-up time 60 s	1/h	3	3	3	3	3
• 350% I_M						
- Start-up time 30 s	1/h	4	4	4	4	4
- Start-up time 60 s	1/h	1.8	1.8	1.8	1.8	1.8
Adjustable rated motor current I_M						
• Minimum/maximum	A	5/25	10/47	13/63	16/77	19/93
• Minimum/maximum in inside-delta circuits	A	8.7/43.3	17.3/81.4	22.5/109	27.7/133	32.9/161

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Type		3RW5534	3RW5535	3RW5536
Rated operational current I_e	A	113	143	171
Power electronics				
Load rating with rated operational current I_e				
IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a	A	113/101/89	143/128/118	171/153/141
Permissible rated motor current and starts/h				
Normal starting (CLASS 10A)				
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	113/101/89	143/128/118	171/153/141
• 300% I_M				
- Start-up time 5 s	1/h	43	43	43
- Start-up time 10 s	1/h	18	18	18
• 350% I_M				
- Start-up time 5 s	1/h	28	28	28
- Start-up time 10 s	1/h	10	10	10
Normal starting (CLASS 10E)				
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	113/101/89	143/128/118	171/153/141
• 300% I_M				
- Start-up time 10 s	1/h	21	21	21
- Start-up time 20 s	1/h	8	8	8
• 350% I_M				
- Start-up time 10 s	1/h	13	13	13
- Start-up time 20 s	1/h	4	4	4
Heavy starting (CLASS 20E)				
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	109/97/85	128/113/103	141/129/117
• 300% I_M				
- Start-up time 20 s	1/h	10	10	10
- Start-up time 40 s	1/h	4	4	4
• 350% I_M				
- Start-up time 20 s	1/h	7	7	7
- Start-up time 40 s	1/h	2.5	2.5	2.5
Heavy starting (CLASS 30E)				
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	89/81/74	108/98/88	117/105/93
• 300% I_M				
- Start-up time 30 s	1/h	7	7	7
- Start-up time 60 s	1/h	3	3	3
• 350% I_M				
- Start-up time 30 s	1/h	4	4	4
- Start-up time 60 s	1/h	1.8	1.8	1.8
Adjustable rated motor current I_M				
• Minimum/maximum	A	23/113	29/143	34/171
• Minimum/maximum in inside-delta circuits	A	39.8/195	50.2/247	58.9/296

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Type		3RW5543	3RW5544	3RW5545	3RW5546	3RW5547	3RW5548
Rated operational current I_e	A	210	250	315	370	470	570
Power electronics							
Load rating with rated operational current I_e							
IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a	A	210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	570/504/460
Permissible rated motor current and starts/h							
Normal starting (CLASS 10A)							
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	570/504/460
• 300% I_M							
- Start-up time 5 s	1/h	43	43	43	43	40	20
- Start-up time 10 s	1/h	18	18	18	18	17	6
• 350% I_M							
- Start-up time 5 s	1/h	28	28	28	28	26	9
- Start-up time 10 s	1/h	10	10	10	10	10	1
Normal starting (CLASS 10E)							
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	551/490/445
• 300% I_M							
- Start-up time 10 s	1/h	21	21	21	21	17	8
- Start-up time 20 s	1/h	8	8	8	8	6	1
• 350% I_M							
- Start-up time 10 s	1/h	13	13	13	13	10	2
- Start-up time 20 s	1/h	4	4	4	4	2	--
Heavy starting (CLASS 20E)							
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	162/146/130	200/180/160	231/207/183	258/230/202	272/254/236	284/262/240
• 300% I_M							
- Start-up time 20 s	1/h	10	10	10	10	10	10
- Start-up time 40 s	1/h	4	4	4	4	4	4
• 350% I_M							
- Start-up time 20 s	1/h	7	7	7	7	7	7
- Start-up time 40 s	1/h	2.5	2.5	2.5	2.5	2.5	2.5
Heavy starting (CLASS 30E)							
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	138/122/106	160/140/120	183/159/135	202/174/160	210/190/170	220/200/180
• 300% I_M							
- Start-up time 30 s	1/h	7	7	7	7	7	7
- Start-up time 60 s	1/h	3	3	3	3	3	3
• 350% I_M							
- Start-up time 30 s	1/h	4	4	4	4	4	4
- Start-up time 60 s	1/h	1.8	1.8	1.8	1.8	1.8	1.8
Adjustable rated motor current I_M							
• Minimum/maximum	A	42/210	50/250	63/315	74/370	94/470	114/570
• Minimum/maximum in inside-delta circuits	A	72.7/363	86.6/433	109.1/545	128.2/640	162.8/814	197.5/987

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Type		3RW5552	3RW5553	3RW5554	3RW5556	3RW5558
Rated operational current I_e	A	630	720	840	1 100	1 280
Power electronics						
Load rating with rated operational current I_e						
IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a	A	630/561/510	720/641/580	840/748/670	1 100/979/890	1 280/1 139/1 030
Permissible rated motor current and starts/h						
Normal starting (CLASS 10A)						
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	630/561/510	720/641/580	840/748/670	1 100/979/890	1 280/1 139/1 030
• 300% I_M						
- Start-up time 5 s	1/h	43	43	42	43	32
- Start-up time 10 s	1/h	18	18	18	18	12
• 350% I_M						
- Start-up time 5 s	1/h	28	28	25	27	17
- Start-up time 10 s	1/h	10	10	10	9	4
Normal starting (CLASS 10E)						
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	630/561/510	720/641/580	840/748/670	1 100/979/890	1 225/1 130/1 030
• 300% I_M						
- Start-up time 10 s	1/h	21	21	19	18	15
- Start-up time 20 s	1/h	8	8	7	7	5
• 350% I_M						
- Start-up time 10 s	1/h	13	13	10	9	1
- Start-up time 20 s	1/h	4	4	2	2	1
Heavy starting (CLASS 20E)						
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	500/450/400	520/470/420	570/520/470	920/840/760	980/900/810
• 300% I_M						
- Start-up time 20 s	1/h	10	10	10	10	10
- Start-up time 40 s	1/h	4	4	4	4	4
• 350% I_M						
- Start-up time 20 s	1/h	7	7	7	7	7
- Start-up time 40 s	1/h	2.5	2.5	2.5	2.5	2.5
Heavy starting (CLASS 30E)						
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	380/340/300	400/360/320	420/380/340	740/670/600	790/720/650
• 300% I_M						
- Start-up time 30 s	1/h	7	7	7	7	7
- Start-up time 60 s	1/h	3	3	3	3	3
• 350% I_M						
- Start-up time 30 s	1/h	4	4	4	4	4
- Start-up time 60 s	1/h	1.8	1.8	1.8	1.8	1.8
Adjustable rated motor current I_M						
• Minimum/maximum	A	114/630	144/720	168/840	220/1 100	258/1 280
• Minimum/maximum in inside-delta circuits	A	197.5/987	249.4/1 247	291/1 454	381.1/1 905	446.9/2 217

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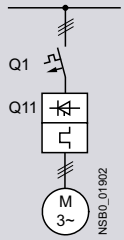
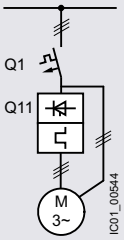
Motor feeders according to IEC with 3RV2 motor starter protectors/3VA circuit breakers (without semiconductor protection)

Type of coordination "1", CLASS 10,
short-circuit breaking capacity I_q in kA, see table

Note:

For general recommendations for constructing motor feeders
with soft starters, see page 6/12.





Soft starters	Motor starter protectors/circuit breakers				Motor starter protectors/circuit breakers			
	for 400 V systems		for 500 V systems		for 400 V systems		for 500 V systems	
Q11	Q1	I_q	Q1	I_q	Q1	I_q	Q1	I_q
Type	Type	kA	Type	kA	Type	kA	Type	kA
Type of coordination "1" ToC 1	**Standard (inline) circuit**				**Inside-delta circuit**			
3RW5513	3RV2032-4TA10	65	3RV2032-4TA10	18	3RV2032-4DA10	65	3RV2032-4DA10	18
3RW5514	3RV2032-4DA10	65	3RV2032-4DA10	15	3RV2032-4EA10	65	3RV2032-4EA10	15
3RW5515	3RV2032-4EA10	65	3RV2032-4EA10	15	3RV2032-4VA10	65	3RV2032-4VA10	15
3RW5516	3RV2032-4VA10	65	3RV2032-4VA10	10	3RV2032-4JA10	65	3RV2032-4JA10	10
3RW5517	3RV2032-4WA10	65	3RV2032-4WA10	10	3RV2032-4RA10	65	3RV2032-4RA10	10
3RW5521	--	--	--	--	--	--	--	--
3RW5524	3RV2032-4JA10	65	3RV2032-4JA10	10	3RV2032-4RA10	65	3RV2032-4RA10	10
3RW5525	3VA2163-7MN32-0AA0	65	3VA2163-7MN32-0AA0	20	3VA2110-7MN32-0AA0	65	3VA2110-7MN32-0AA0	20
3RW5526	3VA2110-7MN32-0AA0	65	3VA2110-7MN32-0AA0	20	3VA2216-7MN32-0AA0	65	3VA2216-7MN32-0AA0	20
3RW5527	3VA2216-7MN32-0AA0	15	3VA2216-7MN32-0AA0	10	3VA2220-7MN32-0AA0	15	3VA2220-7MN32-0AA0	10
3RW5534	3VA2216-7MN32-0AA0	65	--	--	3VA2220-7MN32-0AA0	65	--	--
3RW5535	3VA2220-7MN32-0AA0	65	--	--	3VA2325-7MN32-0AA0	65	--	--
3RW5536	3VA2325-7MN32-0AA0	30	3VA2325-7MN32-0AA0	10	3VA2440-7MN32-0AA0	30	3VA2440-7MN32-0AA0	10
3RW5543	3VA2325-7MN32-0AA0	65	3VA2325-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65
3RW5544	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65
3RW5545	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65
3RW5546	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65
3RW5547	3VA2450-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65	3VA2510-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65
3RW5548	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65
3RW5552	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2716-7AB05-0AA0	65	3VA2716-7AB05-0AA0	65
3RW5553	3VA2510-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65	3VA2716-7AB05-0AA0	65	3VA2716-7AB05-0AA0	65
3RW5554	3VA2510-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65	3VA2716-7AB05-0AA0	65	3VA2716-7AB05-0AA0	65
3RW5556	3VA2716-7AB05-0AA0	65	3VA2716-7AB05-0AA0	65	--	--	--	--
3RW5558	3VA2716-7AB05-0AA0	65	3VA2716-7AB05-0AA0	65	--	--	--	--

Note:

The service factor and measurement inaccuracies, for example, have been taken into account for the selection of the specified motor starter protectors/circuit breakers; the specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller motor starter protectors/circuit breakers from the same series can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must match the connected three-phase motor, the short-circuit and overload requirements of the application, and the line protection for the cables used.

When using braking functions, the use of fuses is recommended to avoid the risk of false tripping of 3VA circuit breakers with electronic motor protection function during braking.

In motor feeder tests with soft starters conducted in 690 V systems, demonstrable short-circuit breaking capacities could only be achieved using fuses (I_q > 5 to 10 kA).

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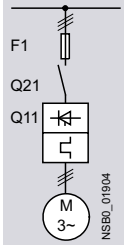
Motor feeders according to IEC with 3NA3 fuses

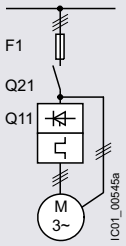
gG class full-range fuses for cable and line protection according to IEC 60269-2, without semiconductor protection

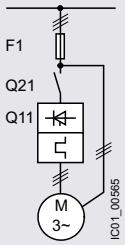
Type of coordination "1",
short-circuit breaking capacity I_q = 65 kA

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.







Soft starters	**gG class fuse**	**Line contactor (optional)**		**gG class fuse**	**Line contactor (optional)**			
	for systems up to 690 V	for systems up to 480 V	for systems up to 690 V	for systems up to 600 V	for systems up to 480 V in the supply cable	for systems up to 600 V in the supply cable	for systems up to 480 V in the delta	for systems up to 600 V in the delta
Q11	F1	Q21	Q21	F1	Q21	Q21	Q21	Q21
Type	Type	Type	Type	Type	Type	Type	Type	Type
Type of coordination "1" ToC 1	**Standard (inline) circuit**			**Inside-delta circuit**				
3RW5513	3NA3820-6	3RT2025	3RT2025	3NA3820-6	3RT2027	3RT2035	3RT2025	3RT2025
3RW5514	3NA3820-6	3RT2026	3RT2027	3NA3820-6	3RT2027	3RT2037	3RT2026	3RT2027
3RW5515	3NA3822-6	3RT2027	3RT2037	3NA3822-6	3RT2036	3RT2037	3RT2027	3RT2037
3RW5516	3NA3824-6	3RT2035	3RT2037	3NA3824-6	3RT2037	3RT2038	3RT2035	3RT2037
3RW5517	3NA3824-6	3RT2035	3RT2037	3NA3824-6	3RT2038	3RT2046	3RT2035	3RT2037
3RW5521	3NA3824-6	3RT2027	3RT2037	3NA3824-6	3RT2036	3RT2037	3RT2027	3RT2037
3RW5524	3NA3824-6	3RT2036	3RT2037	3NA3824-6	3RT2046	3RT2047	3RT2036	3RT2037
3RW5525	3NA3830-6	3RT2037	3RT2046	3NA3830-6	3RT2047	3RT1054	3RT2037	3RT2046
3RW5526	3NA3132-6	3RT2038	3RT2046	3NA3132-6	3RT1055	3RT1055	3RT2038	3RT2046
3RW5527	3NA3136-6	3RT2046	3RT2047	3NA3136-6	3RT1056	3RT1056	3RT2046	3RT2047
3RW5534	3NA3244-6	3RT1054	3RT1054	3NA3244-6	3RT1064	3RT1064	3RT1054	3RT1054
3RW5535	3NA3244-6	3RT1055	3RT1055	3NA3244-6	3RT1065	3RT1065	3RT1055	3RT1055
3RW5536	3NA3365-6	3RT1056	3RT1064	3NA3365-6	3RT1066	3RT1075	3RT1056	3RT1064
3RW5543	2 x 3NA3354-6	3RT1064	3RT1064	2 x 3NA3354-6	3RT1075	3RT1075	3RT1064	3RT1064
3RW5544	2 x 3NA3354-6	3RT1065	3RT1065	2 x 3NA3354-6	3RT1076	3RT1076	3RT1065	3RT1065
3RW5545	2 x 3NA3365-6	3RT1075	3RT1075	2 x 3NA3365-6	3TF68	3TF68	3RT1075	3RT1075
3RW5546	2 x 3NA3365-6	3RT1075	3RT1075	2 x 3NA3365-6	3TF69	3TF69	3RT1075	3RT1075
3RW5547	2 x 3NA3365-6	3RT1076	3RT1276	2 x 3NA3365-6	3TF69	3TF69	3RT1076	3RT1276
3RW5548	2 x 3NA3365-6	3TF68	3TF68	2 x 3NA3365-6	--	--	3TF68	3TF68
3RW5552	2 x 3NA3365-6	3TF68	3TF69	--	--	--	3TF68	3TF69
3RW5553	2 x 3NA3365-6	3TF69	3TF69	--	--	--	3TF69	3TF69
3RW5554	2 x 3NA3365-6	--	--	--	--	--	--	--
3RW5556	3 x 3NA3365-6	--	--	--	--	--	--	--
3RW5558	3 x 3NA3365-6	--	--	--	--	--	--	--

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

In inside-delta circuits, motor feeders with soft starters can only be operated in systems with up to 600 V.

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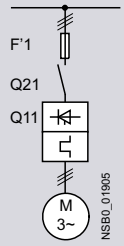
Motor feeders according to IEC with 3NE1/3NB3 SITOR fuses

gR/gS class full-range fuses for semiconductor protection, cable and line protection (gS)

Type of coordination "2",
short-circuit breaking capacity I_q = 65 kA

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.



Soft starters	gR/gS class fuse	Line contactor (optional)	
	for systems up to 690 V	for systems up to 480 V	for systems up to 690 V
Q11	F'1	Q21	Q21
Type	Type	Type	Type
Type of coordination "2" ToC 2	**Standard (inline) circuit**		
3RW5513	3NE1815-0	3RT2025	3RT2025
3RW5514	3NE1802-0	3RT2026	3RT2027
3RW5515	3NE1817-0	3RT2027	3RT2037
3RW5516	3NE1818-0	3RT2035	3RT2037
3RW5517	3NE1820-0	3RT2035	3RT2037
3RW5521	3NE1817-0	3RT2027	3RT2037
3RW5524	3NE1021-2	3RT2036	3RT2037
3RW5525	3NE1022-0	3RT2037	3RT2046
3RW5526	3NE1224-0	3RT2038	3RT2046
3RW5527	3NE1224-0	3RT2046	3RT2047
3RW5534	3NE1225-0	3RT1054	3RT1054
3RW5535	3NE1227-0	3RT1055	3RT1055
3RW5536	3NE1230-0	3RT1056	3RT1064
3RW5543	3NE1230-2[1)]	3RT1064	3RT1064
3RW5544	3NE1331-0	3RT1065	3RT1065
3RW5545	3NE1334-2	3RT1075	3RT1075
3RW5546	3NE1334-2	3RT1075	3RT1075
3RW5547	3NE1436-2	3RT1076	3RT1276
3RW5548	3NE1437-2	3TF68	3TF68
3RW5552	3NB3350-1KK26	3TF68	3TF69
3RW5553	3NB3351-1KK26	3TF69	3TF69
3RW5554	3NB3351-1KK26	--	--
3RW5556	3NB3354-1KK26	--	--
3RW5558	3NB3357-1KK26	--	--

[1)] For systems up to 500 V.

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

In inside-delta circuits, a gR/gS class full-range fuse could not provide the semiconductor protection of the delta-connected soft starter with a short-circuit breaking capacity that is adequate for practical use. In this case, we recommend using aR class partial-range fuses for semiconductor protection for type of coordination "2" (see page 6/27).

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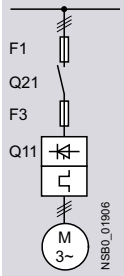
Motor feeders according to IEC with 3NE8/3NE3/3NC3 fuses

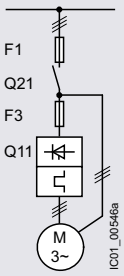
aR class partial-range fuses for semiconductor protection

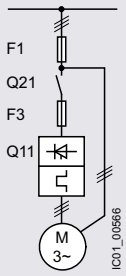
Type of coordination "2",
short-circuit breaking capacity I_q = 65 kA

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.







Soft starters	gG class fuse	aR class fuse	Line contactor (optional)		gG class fuse	aR class fuse	Line contactor (optional)			
	for systems up to 690 V	for systems up to 690 V	for systems up to 480 V	for systems up to 690 V	for systems up to 600 V	for systems up to 600 V	for systems up to 480 V in the supply cable	for systems up to 600 V in the supply cable	for systems up to 480 V in the delta	for systems up to 600 V in the delta
Q11	F1	F3	Q21	Q21	F1	F3	Q21	Q21	Q21	Q21
Type	Type	Type	Type	Type	Type	Type	Type	Type	Type	Type
Type of coordination "2" ToC 2	**Standard (inline) circuit**				**Inside-delta circuit**					
3RW5513	3NA3820-6	3NE8017-1	3RT2025	3RT2025	3NA3820-6	3NE8017-1	3RT2027	3RT2035	3RT2025	3RT2025
3RW5514	3NA3820-6	3NE8020-1	3RT2026	3RT2027	3NA3820-6	3NE8020-1	3RT2027	3RT2037	3RT2026	3RT2027
3RW5515	3NA3822-6	3NE8021-1	3RT2027	3RT2037	3NA3822-6	3NE8021-1	3RT2036	3RT2037	3RT2027	3RT2037
3RW5516	3NA3824-6	3NE8022-1	3RT2035	3RT2037	3NA3824-6	3NE8022-1	3RT2037	3RT2038	3RT2035	3RT2037
3RW5517	3NA3824-6	3NE8024-1	3RT2035	3RT2037	3NA3824-6	3NE8024-1	3RT2038	3RT2046	3RT2035	3RT2037
3RW5521	3NA3824-6	3NE8021-1	3RT2027	3RT2037	3NA3824-6	3NE8021-1	3RT2036	3RT2037	3RT2027	3RT2037
3RW5524	3NA3824-6	3NE8024-1	3RT2036	3RT2037	3NA3824-6	3NE8024-1	3RT2046	3RT2047	3RT2036	3RT2037
3RW5525	3NA3830-6	3NE3227	3RT2037	3RT2046	3NA3830-6	3NE3227	3RT2047	3RT1054	3RT2037	3RT2046
3RW5526	3NA3132-6	3NE3227	3RT2038	3RT2046	3NA3132-6	3NE3227	3RT1055	3RT1055	3RT2038	3RT2046
3RW5527	3NA3136-6	3NE3227	3RT2046	3RT2047	3NA3136-6	3NE3227	3RT1056	3RT1056	3RT2046	3RT2047
3RW5534	3NA3244-6	3NE3231	3RT1054	3RT1054	3NA3244-6	3NE3231	3RT1064	3RT1064	3RT1054	3RT1054
3RW5535	3NA3244-6	3NE3233	3RT1055	3RT1055	3NA3244-6	3NE3233	3RT1065	3RT1065	3RT1055	3RT1055
3RW5536	3NA3365-6	3NE3334-0B	3RT1056	3RT1064	3NA3365-6	3NE3334-0B	3RT1066	3RT1075	3RT1056	3RT1064
3RW5543	2 x 3NA3354-6	3NE3333	3RT1064	3RT1064	2 x 3NA3354-6	3NE3333	3RT1075	3RT1075	3RT1064	3RT1064
3RW5544	2 x 3NA3354-6	3NE3335	3RT1065	3RT1065	2 x 3NA3354-6	3NE3335	3RT1076	3RT1076	3RT1065	3RT1065
3RW5545	2 x 3NA3365-6	--	3RT1075	3RT1075	2 x 3NA3365-6	--	3TF68	3TF68	3RT1075	3RT1075
3RW5546	2 x 3NA3365-6	--	3RT1075	3RT1075	2 x 3NA3365-6	--	3TF69	3TF69	3RT1075	3RT1075
3RW5547	2 x 3NA3365-6	3NE3340-8	3RT1076	3RT1276	2 x 3NA3365-6	3NE3340-8	3TF69	3TF69	3RT1076	3RT1276
3RW5548	2 x 3NA3365-6	3NC3342-1U	3TF68	3TF68	2 x 3NA3365-6	3NC3342-1U	--	--	3TF68	3TF68
3RW5552	2 x 3NA3365-6	3NC3343-1U	3TF68	3TF69	--	3NC3343-1U	--	--	3TF68	3TF69
3RW5553	2 x 3NA3365-6	3NC3343-1U	3TF69	3TF69	--	3NC3343-1U	--	--	3TF69	3TF69
3RW5554	2 x 3NA3365-6	3NC3343-1U	--	--	--	3NC3343-1U	--	--	--	--
3RW5556	3 x 3NA3365-6	3 x 3NE3340-8	--	--	--	3 x 3NE3340-8	--	--	--	--
3RW5558	3 x 3NA3365-6	3 x 3NE3340-8	--	--	--	3 x 3NE3340-8	--	--	--	--

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

For CLASS 10 applications, as an alternative to the 3NA3 gG class full-range fuses for cable and line protection (F1), 3RV2 motor starter protectors/3VA circuit breakers can also be used, possibly with reduced short-circuit breaking capacity (see page 6/24). In these cases, optional line contactors can be dispensed with.

In inside-delta circuits, motor feeders with soft starters can only be operated in systems with up to 600 V.

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Reversing operation with reversing contactors

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.

(Example circuit, see 3RW55 Equipment Manual, Appendix A.3)

Soft starters	Reversing contactor assembly		Reversing contactor	
	for systems up to 480 V	for systems up to 690 V	for systems up to 480 V	for systems up to 690 V
Q11	Q21/Q22	Q21/Q22	Q21/Q22	Q21/Q22
Type	Type	Type	Type	Type
3RW5513	3RA2325	3RA2325	3RT2025	3RT2025
3RW5514	3RA2326	3RA2327	3RT2026	3RT2027
3RW5515	3RA2327	3RA2337	3RT2027	3RT2037
3RW5516	3RA2335	3RA2337	3RT2035	3RT2037
3RW5517	3RA2335	3RA2337	3RT2035	3RT2037
3RW5521	3RA2327	3RA2337	3RT2027	3RT2037
3RW5524	3RA2336	3RA2337	3RT2036	3RT2037
3RW5525	3RA2337	3RA2346	3RT2037	3RT2046
3RW5526	3RA2338	3RA2346	3RT2038	3RT2046
3RW5527	3RA2346	3RA2347	3RT2046	3RT2047
3RW5534	--	--	3RT1054	3RT1054
3RW5535	--	--	3RT1055	3RT1055
3RW5536	--	--	3RT1056	3RT1064
3RW5543	--	--	3RT1064	3RT1064
3RW5544	--	--	3RT1065	3RT1065
3RW5545	--	--	3RT1075	3RT1075
3RW5546	--	--	3RT1075	3RT1075
3RW5547	--	--	3RT1076	3RT1276
3RW5548	--	--	3TF68	3TF68
3RW5552	--	--	3TF68	3TF69
3RW5553	--	--	3TF69	3TF69
3RW5554	--	--	--	--
3RW5556	--	--	--	--
3RW5558	--	--	--	--

DC braking with braking contactors

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.

(Example circuit, see 3RW55 Equipment Manual, Appendix A.3)

Soft starters	DC braking contactor	DC braking contactor assembly			
	for systems up to 400 V	for systems up to 480 V		for systems up to 690 V	
	with 2 NC contacts + 2 NO contacts parallel	with 3 NO contacts parallel	with 3 NO contacts parallel	with 3 NO contacts parallel	with 3 NO contacts parallel
Q11	Q93	Q91	Q92	Q91	Q92
Type	Type	Type	Type	Type	Type
3RW5513	3RT2517	3RT2015	3RT2016	3RT2015	3RT2016
3RW5514	3RT2518	3RT2015	3RT2017	3RT2015	3RT2023
3RW5515	3RT2526	3RT2015	3RT2025	3RT2015	3RT2025
3RW5516	3RT2526	3RT2015	3RT2025	3RT2015	3RT2027
3RW5517	3RT2535	3RT2015	3RT2027	3RT2015	3RT2027
3RW5521	3RT2526	3RT2015	3RT2025	3RT2015	3RT2025
3RW5524	3RT2535	3RT2016	3RT2027	3RT2016	3RT2035
3RW5525	--	3RT2024	3RT2027	3RT2024	3RT2037
3RW5526	--	3RT2025	3RT2035	3RT2025	3RT2037
3RW5527	--	3RT2027	3RT2036	3RT2027	3RT2037
3RW5534	--	3RT2035	3RT2037	3RT2035	3RT2038
3RW5535	--	3RT2036	3RT2038	3RT2036	3RT2046
3RW5536	--	3RT2037	3RT2046	3RT2037	3RT2047
3RW5543	--	3RT2045	3RT2047	3RT2045	3RT1054
3RW5544	--	3RT2045	3RT1055	3RT2045	3RT1055
3RW5545	--	3RT2446	3RT1056	3RT2446	3RT1056
3RW5546	--	3RT1055	3RT1056	3RT1055	3RT1064
3RW5547	--	3RT1456	3RT1065	3RT1456	3RT1065
3RW5548	--	3RT1456	3RT1066	3RT1456	3RT1075
3RW5552	--	3RT1065	3RT1075	3RT1065	3RT1075
3RW5553	--	3RT1065	3RT1075	3RT1065	3RT1075
3RW5554	--	3RT1466	3RT1076	3RT1466	3RT1076
3RW5556	--	3RT1476	3TF68	3RT1476	3TF68
3RW5558	--	3RT1476	3TF69	3RT1476	3TF69

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Selection and ordering data

For normal starting (CLASS 10E)

3RW551

3RW552.

At 40 °C					At 50 °C					Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	at 500 V	at 690 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V	at 575/600 V					
A	kW	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 480 V														
13	3	**5.5**	--	--	11.5	2	3	**7.5**	--	**3RW5513-□HA□4**		1	1 unit	42S
18	4	**7.5**	--	--	15.9	3	5	**10**	--	**3RW5514-□HA□4**		1	1 unit	42S
25	5.5	**11**	--	--	22.3	5	7.5	**15**	--	**3RW5515-□HA□4**		1	1 unit	42S
32	7.5	**15**	--	--	28.4	7.5	10	**20**	--	**3RW5516-□HA□4**		1	1 unit	42S
38	11	**18.5**	--	--	33.5	10	10	**20**	--	**3RW5517-□HA□4**		1	1 unit	42S
47	11	**22**	--	--	41.6	10	10	**30**	--	**3RW5524-□HA□4**		1	1 unit	42S
63	18.5	**30**	--	--	55.5	15	20	**40**	--	**3RW5525-□HA□4**		1	1 unit	42S
77	22	**37**	--	--	68	20	25	**50**	--	**3RW5526-□HA□4**		1	1 unit	42S
93	22	**45**	--	--	82.5	25	30	**60**	--	**3RW5527-□HA□4**		1	1 unit	42S

Type of electrical connection for the control circuit
Screw terminals → **1**
Spring-loaded terminals → **3**

Control supply voltage
24 V AC/DC → **0**
110 ... 250 V AC → **1**

Note:

For the constraints for the motor outputs specified here,
see page 6/8.

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3RW55 soft starters > Standard (inline) circuit *IE3/IE4 ready*

For normal starting (CLASS 10E)

3RW553.

3RW554.

3RW555.

At 40 °C					At 50 °C					Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	at 500 V	at 690 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V	at 575/600 V					
A	kW	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 480 V														
113	30	**55**	--	--	101	30	30	**75**	--	**3RW5534-☐HA☐4**		1	1 unit	42S
143	37	**75**	--	--	128	40	40	**100**	--	**3RW5535-☐HA☐4**		1	1 unit	42S
171	45	**90**	--	--	153	50	50	**100**	--	**3RW5536-☐HA☐4**		1	1 unit	42S
210	55	**110**	--	--	186	60	60	**150**	--	**3RW5543-☐HA☐4**		1	1 unit	42S
250	75	**132**	--	--	220	60	75	**150**	--	**3RW5544-☐HA☐4**		1	1 unit	42S
315	90	**160**	--	--	279	75	100	**200**	--	**3RW5545-☐HA☐4**		1	1 unit	42S
370	110	**200**	--	--	328	100	125	**250**	--	**3RW5546-☐HA☐4**		1	1 unit	42S
470	132	**250**	--	--	416	150	150	**350**	--	**3RW5547-☐HA☐4**		1	1 unit	42S
570	160	**315**	--	--	504	150	200	**400**	--	**3RW5548-☐HA☐4**		1	1 unit	42S
630	200	**355**	--	--	561	200	200	**450**	--	**3RW5552-☐HA☐4**		1	1 unit	42S
720	200	**400**	--	--	641	200	250	**500**	--	**3RW5553-☐HA☐4**		1	1 unit	42S
840	250	**450**	--	--	748	250	300	**600**	--	**3RW5554-☐HA☐4**		1	1 unit	42S
1 100	315	**560**	--	--	979	350	400	**850**	--	**3RW5556-☐HA☐4**		1	1 unit	42S
1 280	400	**710**	--	--	1 139	400	450	**1 000**	--	**3RW5558-☐HA☐4**		1	1 unit	42S

Type of electrical connection for the control circuit
Spring-loaded terminals
Screw terminals

2
6

Control supply voltage
24 V AC/DC
110 ... 250 V AC

0
1

Note:

For the constraints for the motor outputs specified here,
see page 6/8.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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For normal starting (CLASS 10E)

3RW551.

3RW552.

At 40 °C					At 50 °C					Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	at 500 V	at 690 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V	at 575/600 V					
A	kW	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 600 V														
13	3	**5.5**	7.5	--	11.5	2	3	**7.5**	10	**3RW5513-□HA□5**		1	1 unit	42S
18	4	**7.5**	11	--	15.9	3	5	**10**	10	**3RW5514-□HA□5**		1	1 unit	42S
25	5.5	**11**	15	--	22.3	5	7.5	**15**	20	**3RW5515-□HA□5**		1	1 unit	42S
32	7.5	**15**	18.5	--	28.4	7.5	10	**20**	25	**3RW5516-□HA□5**		1	1 unit	42S
38	11	**18.5**	22	--	33.5	10	10	**20**	30	**3RW5517-□HA□5**		1	1 unit	42S
Operational voltage 200 ... 690 V														
25	5.5	**11**	15	22	22.3	5	7.5	**15**	20	**3RW5521-□HA□6**		1	1 unit	42S
47	11	**22**	30	45	41.6	10	10	**30**	40	**3RW5524-□HA□6**		1	1 unit	42S
63	18.5	**30**	37	55	55.5	15	20	**40**	50	**3RW5525-□HA□6**		1	1 unit	42S
77	22	**37**	45	75	68	20	25	**50**	60	**3RW5526-□HA□6**		1	1 unit	42S
93	22	**45**	55	90	82.5	25	30	**60**	75	**3RW5527-□HA□6**		1	1 unit	42S

Type of electrical connection for the control circuit
Screw terminals
Spring-loaded terminals

Control supply voltage
24 V AC/DC
110 ... 250 V AC

Article No. 3RW5513-**1**HA**3**5 (1 = Screw terminals, 3 = 24 V AC/DC)
Article No. 3RW5513-**2**HA**1**5 (2 = Spring-loaded terminals, 1 = 110 ... 250 V AC)

Note:

For the constraints for the motor outputs specified here,
see page 6/8.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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3RW55 soft starters > Standard (inline) circuit *IE3/IE4 ready*

For normal starting (CLASS 10E)

3RW553.

3RW554.

3RW555.

At 40 °C					At 50 °C					Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	at 500 V	at 690 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V	at 575/600 V					
A	kW	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 690 V														
113	30	**55**	75	110	101	30	30	**75**	100	**3RW5534-□HA□6**		1	1 unit	42S
143	37	**75**	90	132	128	40	40	**100**	125	**3RW5535-□HA□6**		1	1 unit	42S
171	45	**90**	110	160	153	50	50	**100**	150	**3RW5536-□HA□6**		1	1 unit	42S
210	55	**110**	132	200	186	60	60	**150**	150	**3RW5543-□HA□6**		1	1 unit	42S
250	75	**132**	160	250	220	60	75	**150**	200	**3RW5544-□HA□6**		1	1 unit	42S
315	90	**160**	200	315	279	75	100	**200**	250	**3RW5545-□HA□6**		1	1 unit	42S
370	110	**200**	250	355	328	100	125	**250**	300	**3RW5546-□HA□6**		1	1 unit	42S
470	132	**250**	315	400	416	150	150	**350**	450	**3RW5547-□HA□6**		1	1 unit	42S
570	160	**315**	355	560	504	150	200	**400**	500	**3RW5548-□HA□6**		1	1 unit	42S
630	200	**355**	400	630	561	200	200	**450**	600	**3RW5552-□HA□6**		1	1 unit	42S
720	200	**400**	500	710	641	200	250	**500**	700	**3RW5553-□HA□6**		1	1 unit	42S
840	250	**450**	560	800	748	250	300	**600**	800	**3RW5554-□HA□6**		1	1 unit	42S
1 100	315	**560**	710	1 000	979	350	400	**850**	1 100	**3RW5556-□HA□6**		1	1 unit	42S
1 280	400	**710**	900	1 200	1 139	400	450	**1 000**	1 250	**3RW5558-□HA□6**		1	1 unit	42S

Type of electrical connection for the control circuit
Spring-loaded terminals
Screw terminals

2 6

Control supply voltage
24 V AC/DC
110 ... 250 V AC

0 1

Note:

For the constraints for the motor outputs specified here,
see page 6/8.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Selection and ordering data

For normal starting (CLASS 10E)

3RW551.

3RW552.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	at 500 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V	at 575/600 V					
A	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 480 V													
22.5	5.5	**11**	--	19.9	5	5	**10**	--	**3RW5513-□HA□4**		1	1 unit	42S
31.5	7.5	**15**	--	28	7.5	7.5	**20**	--	**3RW5514-□HA□4**		1	1 unit	42S
43.3	11	**18.5**	--	39	10	10	**25**	--	**3RW5515-□HA□4**		1	1 unit	42S
55.4	15	**22**	--	49	15	15	**30**	--	**3RW5516-□HA□4**		1	1 unit	42S
65.8	18.5	**30**	--	58	15	20	**40**	--	**3RW5517-□HA□4**		1	1 unit	42S
81.4	22	**45**	--	72	20	25	**50**	--	**3RW5524-□HA□4**		1	1 unit	42S
109	30	**55**	--	96	30	30	**75**	--	**3RW5525-□HA□4**		1	1 unit	42S
133	37	**75**	--	118	30	40	**75**	--	**3RW5526-□HA□4**		1	1 unit	42S
161	45	**90**	--	143	40	50	**100**	--	**3RW5527-□HA□4**		1	1 unit	42S

Type of electrical connection for the control circuit
Screw terminals → **1 3**
Spring-loaded terminals

Control supply voltage
24 V AC/DC → **0 1**
110 ... 250 V AC

Note:

For the constraints for the motor outputs specified here, see page 6/8.

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3RW55 soft starters > Inside-delta circuit *IE3/IE4 ready*

For normal starting (CLASS 10E)

3RW553.

3RW554.

3RW555.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	at 500 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V	at 575/600 V					
A	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 480 V													
196	55	**110**	--	175	50	60	**125**	--	**3RW5534-☐HA☐4**		1	1 unit	42S
248	75	**132**	--	222	75	75	**150**	--	**3RW5535-☐HA☐4**		1	1 unit	42S
296	90	**160**	--	265	75	100	**200**	--	**3RW5536-☐HA☐4**		1	1 unit	42S
364	110	**200**	--	322	100	125	**250**	--	**3RW5543-☐HA☐4**		1	1 unit	42S
433	132	**250**	--	381	125	150	**300**	--	**3RW5544-☐HA☐4**		1	1 unit	42S
546	160	**315**	--	483	150	200	**400**	--	**3RW5545-☐HA☐4**		1	1 unit	42S
641	200	**355**	--	568	200	200	**450**	--	**3RW5546-☐HA☐4**		1	1 unit	42S
814	250	**400**	--	721	250	250	**600**	--	**3RW5547-☐HA☐4**		1	1 unit	42S
987	315	**560**	--	873	300	350	**750**	--	**3RW5548-☐HA☐4**		1	1 unit	42S
1 091	355	**630**	--	972	350	400	**850**	--	**3RW5552-☐HA☐4**		1	1 unit	42S
1 247	400	**710**	--	1 110	400	450	**950**	--	**3RW5553-☐HA☐4**		1	1 unit	42S
1 454	450	**800**	--	1 295	450	550	**1 150**	--	**3RW5554-☐HA☐4**		1	1 unit	42S
1 905	560	**1 000**	--	1 695	600	700	**1 500**	--	**3RW5556-☐HA☐4**		1	1 unit	42S
2 217	710	**1 200**	--	1 973	700	850	**1 700**	--	**3RW5558-☐HA☐4**		1	1 unit	42S

Type of electrical connection for the control circuit
Spring-loaded terminals
Screw terminals

Control supply voltage
24 V AC/DC
110 ... 250 V AC

Note:

For the constraints for the motor outputs specified here,
see page 6/8.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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For normal starting (CLASS 10E)

3RW551.

3RW552.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	at 500 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V	at 575/600 V					
A	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 600 V													
22.5	5.5	**11**	15	19.9	5	5	**10**	15	**3RW5513-□HA□5**		1	1 unit	42S
31.5	7.5	**15**	18.5	28	7.5	7.5	**20**	25	**3RW5514-□HA□5**		1	1 unit	42S
43.3	11	**18.5**	22	39	10	10	**25**	30	**3RW5515-□HA□5**		1	1 unit	42S
55.4	15	**22**	30	49	15	15	**30**	40	**3RW5516-□HA□5**		1	1 unit	42S
65.8	18.5	**30**	37	58	15	20	**40**	50	**3RW5517-□HA□5**		1	1 unit	42S
43.3	11	**18.5**	22	39	10	10	**25**	30	**3RW5521-□HA□6**		1	1 unit	42S
81.4	22	**45**	45	72	20	25	**50**	60	**3RW5524-□HA□6**		1	1 unit	42S
109	30	**55**	55	96	30	30	**75**	75	**3RW5525-□HA□6**		1	1 unit	42S
133	37	**75**	90	118	30	40	**75**	100	**3RW5526-□HA□6**		1	1 unit	42S
161	45	**90**	110	143	40	50	**100**	125	**3RW5527-□HA□6**		1	1 unit	42S

Type of electrical connection for the control circuit
Screw terminals
Spring-loaded terminals

Control supply voltage
24 V AC/DC
110 ... 250 V AC

Note:

For the constraints for the motor outputs specified here, see page 6/8.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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3RW55 soft starters > Inside-delta circuit *IE3/IE4* ready

For normal starting (CLASS 10E)

3RW553.

3RW554.

3RW555.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	at 500 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V	at 575/600 V					
A	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 600 V													
196	55	**110**	132	175	50	60	**125**	150	**3RW5534-□HA□6**		1	1 unit	42S
248	75	**132**	160	222	75	75	**150**	200	**3RW5535-□HA□6**		1	1 unit	42S
296	90	**160**	200	265	75	100	**200**	250	**3RW5536-□HA□6**		1	1 unit	42S
364	110	**200**	250	322	100	125	**250**	300	**3RW5543-□HA□6**		1	1 unit	42S
433	132	**250**	315	381	125	150	**300**	350	**3RW5544-□HA□6**		1	1 unit	42S
546	160	**315**	355	483	150	200	**400**	500	**3RW5545-□HA□6**		1	1 unit	42S
641	200	**355**	450	568	200	200	**450**	600	**3RW5546-□HA□6**		1	1 unit	42S
814	250	**400**	500	721	250	250	**600**	800	**3RW5547-□HA□6**		1	1 unit	42S
987	315	**560**	630	873	300	350	**750**	950	**3RW5548-□HA□6**		1	1 unit	42S
1 091	355	**630**	710	972	350	400	**850**	1 050	**3RW5552-□HA□6**		1	1 unit	42S
1 247	400	**710**	800	1 110	400	450	**950**	1 250	**3RW5553-□HA□6**		1	1 unit	42S
1 454	450	**800**	900	1 295	450	550	**1 150**	1 450	**3RW5554-□HA□6**		1	1 unit	42S
1 905	560	**1 000**	1 200	1 695	600	700	**1 500**	1 900	**3RW5556-□HA□6**		1	1 unit	42S
2 217	710	**1 200**	1 500	1 973	700	850	**1 700**	2 200	**3RW5558-□HA□6**		1	1 unit	42S

Type of electrical connection for the control circuit
Spring-loaded terminals
Screw terminals

2
6

Control supply voltage
24 V AC/DC
110 ... 250 V AC

0
1

Note:

For the constraints for the motor outputs specified here,
see page 6/8.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Selection and ordering data

	Product designation	Manufacturer's article number of the soft starter	Product version	Application	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Fan covers									
3RW5983-0FC00	**Fan cover**	3RW551 (1x), 3RW552 (2x), 3RW553 (2x)	--	--	**3RW5983-0FC00**		1	1 unit	42S
		3RW554 (1x)	--	--	**3RW5984-0FC00**		1	1 unit	42S
		3RW555 (3x)	--	--	**3RW5985-0FC00**		1	1 unit	42S
Terminal covers									
3RW5983-0TC20	**Terminal cover**	3RW552 (2x), 3RW553 (2x)	--	--	**3RW5983-0TC20**		1	1 unit	42S
3RW5984-0TC20		3RW554 (2x)	--	--	**3RW5984-0TC20**		1	1 unit	42S
Enclosure components									
3RW5950-0GL20	**Hinged cover**	3RW55	Without cutout	--	**3RW5950-0GL20**		1	1 unit	42S
Communications modules									
3RW5980-0CS00	**Communications module**[1]	3RW55	PROFINET High-Feature with integral switch	--	**3RW5950-0CH00**		1	1 unit	42S
			PROFINET Standard	--	**3RW5980-0CS00**		1	1 unit	42S
			PROFIBUS	--	**3RW5980-0CP00**		1	1 unit	42S
3RW5980-0CE00			EtherNet/IP	--	**3RW5980-0CE00**		1	1 unit	42S
			Modbus RTU	--	**3RW5980-0CR00**		1	1 unit	42S
3RW5980-0CR00			Modbus TCP	--	**3RW5980-0CT00**		1	1 unit	42S

[1] Use the recommended connection plugs for attaching the bus connecting cable (e.g. angled or suitable for industrial use), see Equipment Manual for the relevant communications module.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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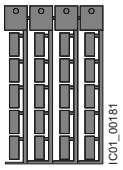
	Product designation	Manufacturer's article number of the soft starter	Product version	Application	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
HMI modules									
3RW5980-0HD00	**IP65 door mounting kit for HMI modules**	3RW55	IP65	For HMI modules	**3RW5980-0HD00**		1	1 unit	42S
Connecting cables									
3UF793.-0BA00-0	**HMI connecting cable**	3RW55	5 m, round	For door mounting	**3RW5980-0HC60**		1	1 unit	42S
			2.5 m, round		**3UF7933-0BA00-0**		1	1 unit	42J
			1.0 m, round		**3UF7937-0BA00-0**		1	1 unit	42J
			0.5 m, round		**3UF7932-0BA00-0**		1	1 unit	42J
Further accessories									
3ZY1311-0AA00	**Push-in lugs for wall mounting**	--	Two lugs are required per device	For HMI modules and communications modules	**3ZY1311-0AA00**		1	10 units	41L
Blank labels									
 3RT2900-1SB20	**Unit labeling plates**[1]	--	20 mm x 7 mm, titanium gray	For SIRIUS devices	**3RT2900-1SB20**		100	340 units	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

More information	
Homepage, see www.siemens.com/sirius-soft-starter	SIRIUS Soft Starter ES (TIA Portal), see page 6/9 or https://support.industry.siemens.com/cs/ww/en/ps/24230/dl
Industry Mall, see www.siemens.com/product?3RW55Failsafe	Decision-making support for motor starting – Starting and running three-phase asynchronous motors efficiently, see www.siemens.com/motorstart-guide
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=3rw55	SIRIUS Sim, see page 6/10 or https://support.industry.siemens.com/cs/ww/en/view/109763750
Industry Online Support (SIOS) topic page, see https://support.industry.siemens.com/cs/ww/en/view/109747404	Conversion tool, see www.siemens.com/conversion-tool
Simulation Tool for Soft Starters (STS), see page 6/9 or https://support.industry.siemens.com/cs/ww/en/view/101494917	

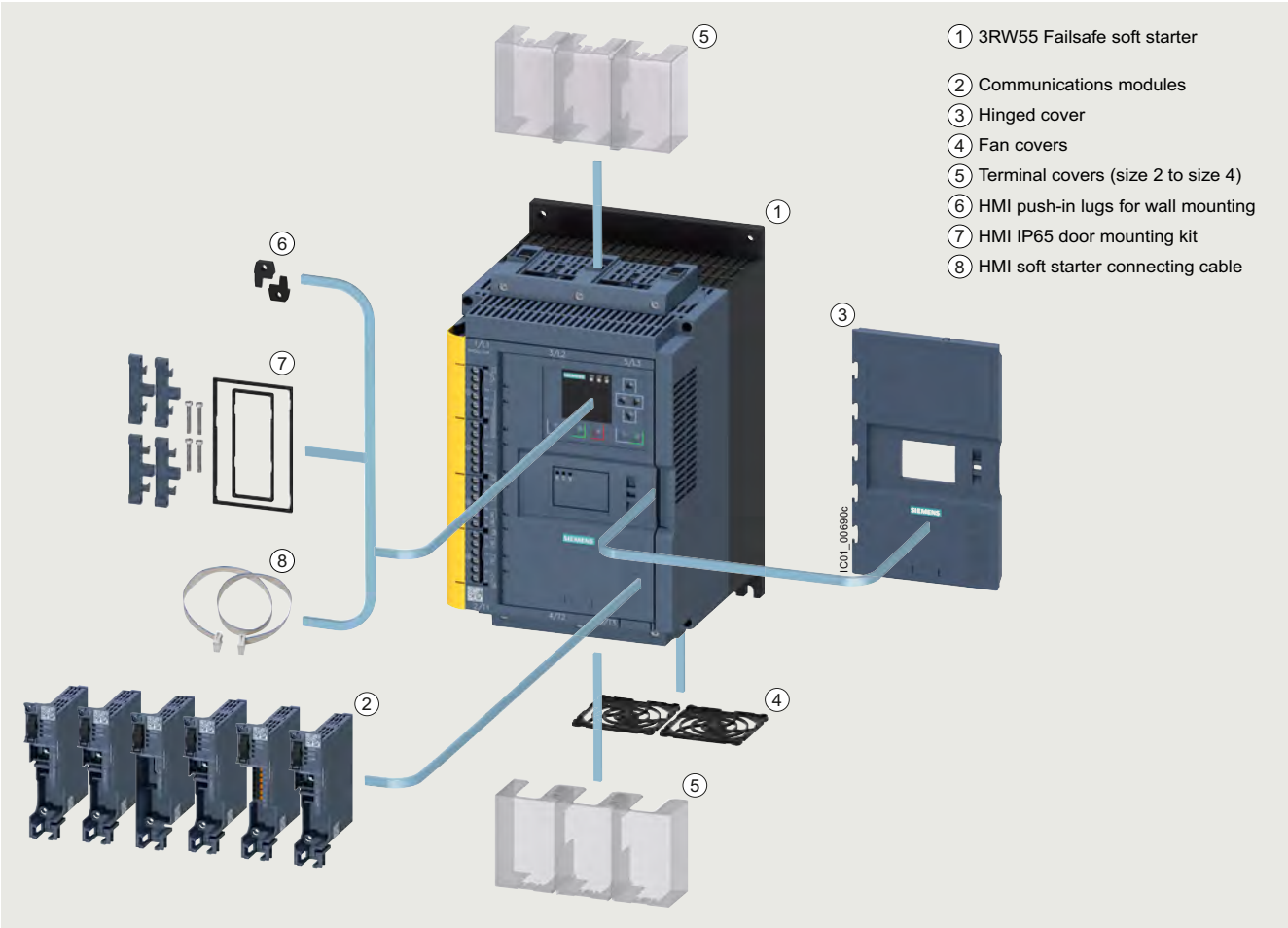
Video: Animation 3RW5 Failsafe soft starter

SIRIUS 3RW55 Failsafe soft starters device family

Equipped with the utmost functionality, the SIRIUS 3RW55 Failsafe High Performance soft starters confidently handle even difficult starting and stopping operations. Thanks to innovative torque control, the device can be used for drives with an output of between 5.5 kW and 560 kW (at 400 V).

The innovative 3RW55 Failsafe soft starter features an integrated fail-safe digital input for directly connecting the EMERGENCY STOP, and thus covers SIL 1 STO applications. The HMI (with color display, local interface and a slot for micro SD memory card) and plug-in communications modules (PROFINET, PROFIBUS, EtherNet/IP and Modbus) ensure maximum flexibility.

With their modern hybrid switching technology, the 3RW55 Failsafe soft starters offer efficient switching for long-term, energy-saving use.



SIRIUS 3RW55 Failsafe High Performance soft starter with accessories (see page 6/53)

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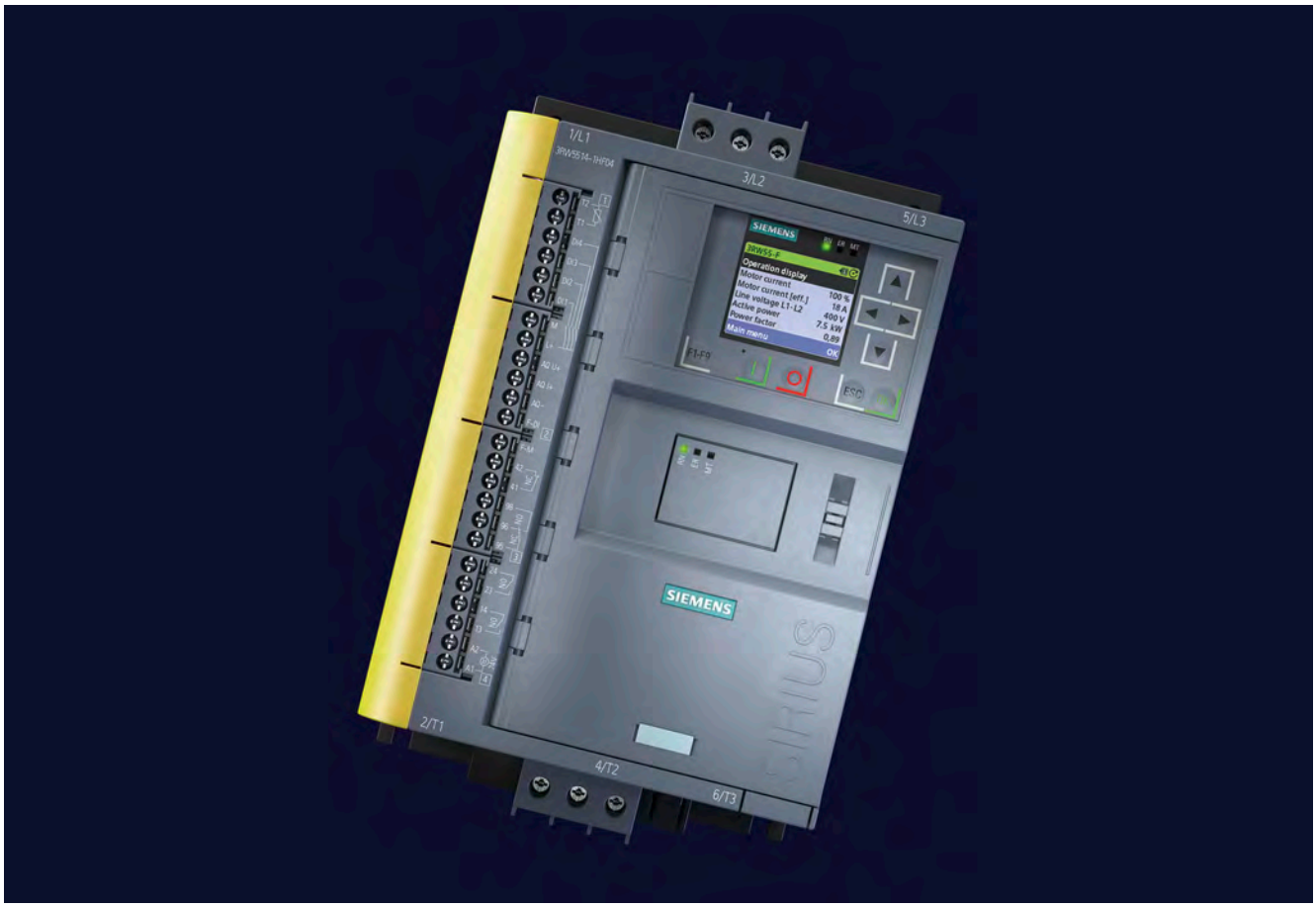
Benefits



Product characteristics/function	Performance features/benefits
Automatic parameterization	Extremely easy commissioning and reliability even under changing load conditions
Hybrid switching technology and 3-phase motor control	Minimum power loss and optimum/symmetrical motor control
TIA integration – communications modules optional	Efficient configuration and maximum flexibility in automation engineering
Removable HMI with color display, local interface, slot for micro SD memory card	Maximum flexibility with regard to user interface and intuitive menu guidance
Pump stop and torque control	Reduced mechanical loading and optimum pump stop control
Certified according to ATEX/IECEx directive	Suitable for the starting of explosion-proof motors
Fail-safe disconnection up to SIL 3/PL e/STO	Reduced costs and space requirements thanks to direct wiring of the EMERGENCY STOP mushroom pushbutton to the soft starter for SIL 1/PL c
System redundancy S2	Simple and straight-forward integration into fault-tolerant automation systems
Direct integration into MindSphere via the OPC UA server	Worldwide data availability for optimal plant operation

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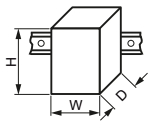
Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/25776/td	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/25776/faq
Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/109753752	Simulation Tool for Soft Starters (STS), see page 6/9 or https://support.industry.siemens.com/cs/ww/en/view/101494917

Type		3RW551.-.HF.4	3RW552.-.HF.4 3RW553.-.HF.4	3RW554.-.HF.4
Installation/fixing/dimensions				
Width x height x depth 	mm	170 x 275 x 152	185 x 306 x 203	210 x 393 x 203
Type of mounting		Screw fixing		
Mounting position		Vertical (can be rotated +/- 90° and tilted +/- 22.5° forward or backward)		
Distance to be maintained with side-by-side mounting				
• Above	mm	100		
• At the side	mm	5		
• Below	mm	75		
Installation altitude at height above sea level, maximum[1]	m	2 000		
Degree of protection IP on the front according to IEC 60529		IP20	IP00 (IP20 with cover)	
Touch protection on the front according to IEC 60529		Finger-safe for vertical touching from the front	Finger-safe for vertical touching from the front with cover	
Ambient conditions				
Ambient temperature				
• During operation[2]	°C	-25 ... +60		
• During storage and transport	°C	-40 ... +80		
Environmental category according to IEC 60721				
• During operation		3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6		
• During storage		1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get into the devices), 1M4		
• During transport		2K2, 2C1, 2S1, 2M2 (max. height of fall 0.3 m)		

[1] Derating from 1 000 m, see characteristic curve on page 6/8.

[2] Note derating above 40 °C.

Type		3RW55..-.HF04	3RW55..-.HF14
Control circuit/control			
Control supply voltage			
• At AC/DC	V	24/24	--/--
• At AC	V	--	110 ... 250
Relative negative tolerance/relative positive tolerance of the control supply voltage			
• At AC	%	-20/20	-15/10
• At DC	%	-20/20	--/--
Frequency of the control supply voltage	Hz	50 ... 60	
• Relative negative tolerance/relative positive tolerance	%	-10/10	
Type of overvoltage protection		Varistors	
Type of short-circuit protection for control circuit[1]		Fuse 4 A gG (I_{cu} =1 kA), fuse 6 A quick-response (I_{cu} =1 kA), MCB C1 (I_{cu} = 600 A), MCB C6 (I_{cu} = 300 A)	

[1] Not included in scope of supply.

Type		3RW55..-.HF.4
Power electronics		
Operational voltage	V	200 ... 480
• Relative negative tolerance/relative positive tolerance	%	-15/10
Operational voltage for inside-delta circuit	V	200 ... 480
• Relative negative tolerance/relative positive tolerance	%	-15/10
Operating frequency	Hz	50 ... 60
• Relative negative tolerance/relative positive tolerance	%	-10/10
Minimum load [% of I_M][1]	%	10
Maximum cable length between soft starter and motor	m	800

[1] Relative to set I_e.

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Type		3RW5513	3RW5514	3RW5515	3RW5516	3RW5517
Rated operational current I_e	A	13	18	25	32	38
Power electronics						
Load rating with rated operational current I_e						
IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	25/22.3/19.6	38/33.5/30.5
Permissible rated motor current and starts/h						
Normal starting (CLASS 10A)						
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	32/28.4/26	38/33.5/30.5
• 300% I_M						
- Start-up time 5 s	1/h	43	43	43	43	43
- Start-up time 10 s	1/h	18	18	18	18	18
• 350% I_M						
- Start-up time 5 s	1/h	28	28	28	28	28
- Start-up time 10 s	1/h	10	10	10	10	10
Normal starting (CLASS 10E)						
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	32/28.4/26	38/33.5/30.5
• 300% I_M						
- Start-up time 10 s	1/h	21	21	21	21	21
- Start-up time 20 s	1/h	8	8	8	8	8
• 350% I_M						
- Start-up time 10 s	1/h	13	13	13	13	13
- Start-up time 20 s	1/h	4	4	4	4	4
Heavy starting (CLASS 20E)						
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	29.6/27.2/23.6	33.5/30.5/27.5
• 300% I_M						
- Start-up time 20 s	1/h	10	10	10	10	10
- Start-up time 40 s	1/h	4	4	4	4	4
• 350% I_M						
- Start-up time 20 s	1/h	7	7	7	7	7
- Start-up time 40 s	1/h	2.5	2.5	2.5	2.5	2.5
Heavy starting (CLASS 30E)						
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	26/23.6/21.2	29/26/23
• 300% I_M						
- Start-up time 30 s	1/h	7	7	7	7	7
- Start-up time 60 s	1/h	3	3	3	3	3
• 350% I_M						
- Start-up time 30 s	1/h	4	4	4	4	4
- Start-up time 60 s	1/h	1.8	1.8	1.8	1.8	1.8
Adjustable rated motor current I_M						
• Minimum/maximum	A	2.5/13	3.5/18	5/25	6.5/32	7.5/38
• Minimum/maximum in inside-delta circuits	A	4.3/22.5	6.1/31.1	8.7/43.3	11.3/55.4	13/65.8

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Type		3RW5524	3RW5525	3RW5526	3RW5527
Rated operational current I_e	A	47	63	77	93
Power electronics					
Load rating with rated operational current I_e					
IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a	A	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
Permissible rated motor current and starts/h					
Normal starting (CLASS 10A)					
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
• 300% I_M					
- Start-up time 5 s	1/h	43	43	43	43
- Start-up time 10 s	1/h	18	18	18	18
• 350% I_M					
- Start-up time 5 s	1/h	28	28	28	28
- Start-up time 10 s	1/h	10	10	10	10
Normal starting (CLASS 10E)					
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
• 300% I_M					
- Start-up time 10 s	1/h	21	21	21	21
- Start-up time 20 s	1/h	8	8	8	8
• 350% I_M					
- Start-up time 10 s	1/h	13	13	13	13
- Start-up time 20 s	1/h	4	4	4	4
Heavy starting (CLASS 20E)					
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
• 300% I_M					
- Start-up time 20 s	1/h	10	10	10	10
- Start-up time 40 s	1/h	4	4	4	4
• 350% I_M					
- Start-up time 20 s	1/h	7	7	7	7
- Start-up time 40 s	1/h	2.5	0	0	0
Heavy starting (CLASS 30E)					
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	43.4/38/34.4	53/48/43	68/62/56	82.5/75.5/65
• 300% I_M					
- Start-up time 30 s	1/h	7	7	7	7
- Start-up time 60 s	1/h	3	3	3	3
• 350% I_M					
- Start-up time 30 s	1/h	4	4	4	4
- Start-up time 60 s	1/h	1.8	1.8	1.8	1.8
Adjustable rated motor current I_M					
• Minimum/maximum	A	10/47	13/63	16/77	19/93
• Minimum/maximum in inside-delta circuits	A	17.3/81.4	22.5/109	27.7/133	32.9/161

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Type		3RW5534	3RW5535	3RW5536
Rated operational current I_e	A	113	143	171
Power electronics				
Load rating with rated operational current I_e				
IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a	A	113/101/89	143/128/118	171/153/141
Permissible rated motor current and starts/h				
Normal starting (CLASS 10A)				
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	113/101/89	143/128/118	171/153/141
• 300% I_M				
- Start-up time 5 s	1/h	43	43	35
- Start-up time 10 s	1/h	18	18	13
• 350% I_M				
- Start-up time 5 s	1/h	28	17	10
- Start-up time 10 s	1/h	10	4	0
Normal starting (CLASS 10E)				
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	113/101/89	143/128/118	171/153/141
• 300% I_M				
- Start-up time 10 s	1/h	21	21	14
- Start-up time 20 s	1/h	8	7	4
• 350% I_M				
- Start-up time 10 s	1/h	13	4	0
- Start-up time 20 s	1/h	4	0	0
Heavy starting (CLASS 20E)				
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	109/97/85	128/113/103	141/129/117
• 300% I_M				
- Start-up time 20 s	1/h	10	10	10
- Start-up time 40 s	1/h	4	4	4
• 350% I_M				
- Start-up time 20 s	1/h	7	6	6
- Start-up time 40 s	1/h	0	0	0
Heavy starting (CLASS 30E)				
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	89/81/74	108/98/88	117/105/93
• 300% I_M				
- Start-up time 30 s	1/h	7	7	7
- Start-up time 60 s	1/h	3	3	3
• 350% I_M				
- Start-up time 30 s	1/h	4	4	4
- Start-up time 60 s	1/h	1.8	1.8	1.8
Adjustable rated motor current I_M				
• Minimum/maximum	A	23/113	29/143	34/171
• Minimum/maximum in inside-delta circuits	A	39.8/195	50.2/247	58.9/296

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Type		3RW5543	3RW5544	3RW5545	3RW5546	3RW5547	3RW5548
Rated operational current I_e	A	210	250	315	370	470	570
Power electronics							
Load rating with rated operational current I_e							
IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a	A	210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	570/504/460
Permissible rated motor current and starts/h							
Normal starting (CLASS 10A)							
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	570/504/460
• 300% I_M							
- Start-up time 5 s	1/h	43	43	38	43	32	13
- Start-up time 10 s	1/h	13	18	14	18	13	3
• 350% I_M							
- Start-up time 5 s	1/h	14	28	19	28	19	4
- Start-up time 10 s	1/h	0	10	5	10	6	0.4
Normal starting (CLASS 10E)							
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	551/490/445
• 300% I_M							
- Start-up time 10 s	1/h	13	21	14	20	13	5
- Start-up time 20 s	1/h	2	8	4	8	3	--
• 350% I_M							
- Start-up time 10 s	1/h	0	13	5	12	6	1
- Start-up time 20 s	1/h	0	4	0	3	0.4	--
Heavy starting (CLASS 20E)							
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	162/146/130	200/180/160	231/207/183	258/230/202	272/254/236	284/262/240
• 300% I_M							
- Start-up time 20 s	1/h	10	10	10	10	10	10
- Start-up time 40 s	1/h	4	4	4	4	4	4
• 350% I_M							
- Start-up time 20 s	1/h	7	7	7	7	7	7
- Start-up time 40 s	1/h	2	2.5	2.5	2.5	2.5	2.5
Heavy starting (CLASS 30E)							
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	138/122/106	160/140/120	183/159/135	202/174/160	210/190/170	220/200/180
• 300% I_M							
- Start-up time 30 s	1/h	7	7	7	7	7	7
- Start-up time 60 s	1/h	3	3	3	3	3	3
• 350% I_M							
- Start-up time 30 s	1/h	4	4	4	4	4	4
- Start-up time 60 s	1/h	1.8	1.8	1.8	1.8	1.8	1.8
Adjustable rated motor current I_M							
• Minimum/maximum	A	42/210	50/250	63/315	74/370	94/470	114/570
• Minimum/maximum in inside-delta circuits	A	72.7/363	86.6/433	109.1/545	128.2/640	162.8/814	197.5/987

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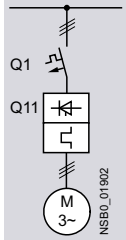
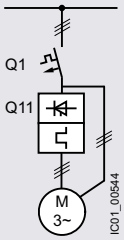
Motor feeders according to IEC with 3RV2 motor starter protectors/3VA circuit breakers (without semiconductor protection)

Type of coordination "1", CLASS 10,
short-circuit breaking capacity I_q in kA, see table

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.





Soft starters	Motor starter protectors/circuit breakers				Motor starter protectors/circuit breakers			
	for 400 V systems		for 480 V systems		for 400 V systems		for 480 V systems	
Q11	Q1	I_q	Q1	I_q	Q1	I_q	Q1	I_q
Type	Type	kA	Type	kA	Type	kA	Type	kA
Type of coordination "1" ToC 1	**Standard (inline) circuit**				**Inside-delta circuit**			
3RW5513	3RV2032-4TA10	65	3RV2032-4TA10	18	3RV2032-4DA10	65	3RV2032-4DA10	18
3RW5514	3RV2032-4DA10	65	3RV2032-4DA10	15	3RV2032-4EA10	65	3RV2032-4EA10	15
3RW5515	3RV2032-4EA10	65	3RV2032-4EA10	15	3RV2032-4VA10	65	3RV2032-4VA10	15
3RW5516	3RV2032-4VA10	65	3RV2032-4VA10	10	3RV2032-4JA10	65	3RV2032-4JA10	10
3RW5517	3RV2032-4WA10	65	3RV2032-4WA10	10	3RV2032-4RA10	65	3RV2032-4RA10	10
3RW5524	3RV2032-4JA10	65	3RV2032-4JA10	10	3RV2032-4RA10	65	3RV2032-4RA10	10
3RW5525	3VA2163-7MN32-0AA0	65	3VA2163-7MN32-0AA0	20	3VA2110-7MN32-0AA0	65	3VA2110-7MN32-0AA0	20
3RW5526	3VA2110-7MN32-0AA0	65	3VA2110-7MN32-0AA0	20	3VA2216-7MN32-0AA0	65	3VA2216-7MN32-0AA0	20
3RW5527	3VA2216-7MN32-0AA0	15	3VA2216-7MN32-0AA0	10	3VA2220-7MN32-0AA0	15	3VA2220-7MN32-0AA0	10
3RW5534	3VA2216-7MN32-0AA0	65	--	--	3VA2220-7MN32-0AA0	65	--	--
3RW5535	3VA2220-7MN32-0AA0	65	--	--	3VA2325-7MN32-0AA0	65	--	--
3RW5536	3VA2325-7MN32-0AA0	30	3VA2325-7MN32-0AA0	10	3VA2440-7MN32-0AA0	30	3VA2440-7MN32-0AA0	10
3RW5543	3VA2325-7MN32-0AA0	65	3VA2325-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65
3RW5544	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65
3RW5545	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65
3RW5546	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65
3RW5547	3VA2450-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65	3VA2510-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65
3RW5548	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65

Note:

The service factor and measurement inaccuracies, for example, have been taken into account for the selection of the specified motor starter protectors/circuit breakers; the specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller motor starter protectors/circuit breakers from the same series can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must match the connected three-phase motor, the short-circuit and overload requirements of the application, and the line protection for the cables used.

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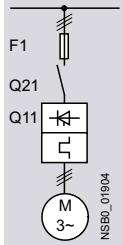
Motor feeders according to IEC with 3NA3 fuses

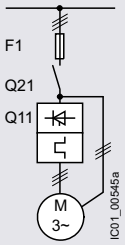
gG class full-range fuses for cable and line protection according to IEC 60269-2, without semiconductor protection

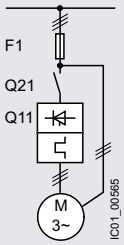
Type of coordination "1",
short-circuit breaking capacity I_q = 65 kA

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.







Soft starters	**gG class fuse** for systems up to 480 V	**Line contactor (optional)** for systems up to 480 V	**gG class fuse** for systems up to 480 V	**Line contactor (optional)** for systems up to 480 V in the supply cable	for systems up to 480 V in the delta
Q11	F1	Q21	F1	Q21	Q21
Type	Type	Type	Type	Type	Type
Type of coordination "1" ToC 1	**Standard (inline) circuit**		**Inside-delta circuit**		
3RW5513	3NA3820-6	3RT2025	3NA3820-6	3RT2027	3RT2025
3RW5514	3NA3820-6	3RT2026	3NA3820-6	3RT2027	3RT2026
3RW5515	3NA3822-6	3RT2027	3NA3822-6	3RT2036	3RT2027
3RW5516	3NA3824-6	3RT2035	3NA3824-6	3RT2037	3RT2035
3RW5517	3NA3824-6	3RT2035	3NA3824-6	3RT2038	3RT2035
3RW5524	3NA3824-6	3RT2036	3NA3824-6	3RT2046	3RT2036
3RW5525	3NA3830-6	3RT2037	3NA3830-6	3RT2047	3RT2037
3RW5526	3NA3132-6	3RT2038	3NA3132-6	3RT1055	3RT2038
3RW5527	3NA3136-6	3RT2046	3NA3136-6	3RT1056	3RT2046
3RW5534	3NA3244-6	3RT1054	3NA3244-6	3RT1064	3RT1054
3RW5535	3NA3244-6	3RT1055	3NA3244-6	3RT1065	3RT1055
3RW5536	3NA3365-6	3RT1056	3NA3365-6	3RT1066	3RT1056
3RW5543	2 x 3NA3354-6	3RT1064	2 x 3NA3354-6	3RT1075	3RT1064
3RW5544	2 x 3NA3354-6	3RT1065	2 x 3NA3354-6	3RT1076	3RT1065
3RW5545	2 x 3NA3365-6	3RT1075	2 x 3NA3365-6	3TF68	3RT1075
3RW5546	2 x 3NA3365-6	3RT1075	2 x 3NA3365-6	3TF69	3RT1075
3RW5547	2 x 3NA3365-6	3RT1076	2 x 3NA3365-6	3TF69	3RT1076
3RW5548	2 x 3NA3365-6	3TF68	2 x 3NA3365-6	--	3TF68

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

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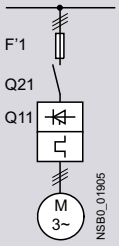
Motor feeders according to IEC with 3NE1 SITOR fuses

gR/gS class full-range fuses for semiconductor protection, cable and line protection (gS)

Type of coordination "2",
short-circuit breaking capacity I_q = 65 kA

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.



Soft starters	**gR/gS class fuse** for systems up to 480 V	**Line contactor (optional)** for systems up to 480 V
Q11	F'1	Q21
Type	Type	Type
Type of coordination "2" ToC 2	**Standard (inline) circuit**	
3RW5513	3NE1815-0	3RT2025
3RW5514	3NE1802-0	3RT2026
3RW5515	3NE1817-0	3RT2027
3RW5516	3NE1818-0	3RT2035
3RW5517	3NE1820-0	3RT2035
3RW5524	3NE1021-2	3RT2036
3RW5525	3NE1022-0	3RT2037
3RW5526	3NE1224-0	3RT2038
3RW5527	3NE1224-0	3RT2046
3RW5534	3NE1225-0	3RT1054
3RW5535	3NE1227-0	3RT1055
3RW5536	3NE1230-0	3RT1056
3RW5543	3NE1230-2	3RT1064
3RW5544	3NE1331-0	3RT1065
3RW5545	3NE1334-2	3RT1075
3RW5546	3NE1334-2	3RT1075
3RW5547	3NE1436-2	3RT1076
3RW5548	3NE1437-2	3TF68

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

In inside-delta circuits, a gR/gS class full-range fuse could not provide the semiconductor protection of the delta-connected soft starter with a short-circuit breaking capacity that is adequate for practical use. In this case, we recommend using aR class partial-range fuses for semiconductor protection for type of coordination "2" (see page 6/49).

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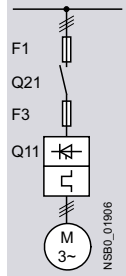
Motor feeders according to IEC with 3NE8/3NE3/3NC3 fuses

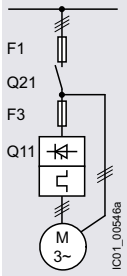
aR class partial-range fuses for semiconductor protection

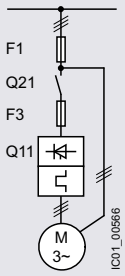
Type of coordination "2",
short-circuit breaking capacity I_q = 65 kA

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.







Soft starters	**gG class fuse** for systems up to 480 V	**aR class fuse** for systems up to 480 V	**Line contactor (optional)** for systems up to 480 V	**gG class fuse** for systems up to 480 V	**aR class fuse** for systems up to 480 V	**Line contactor (optional)** for systems up to 480 V in the supply cable	for systems up to 480 V in the delta
Q11	F1	F3	Q21	F1	F3	Q21	Q21
Type	Type	Type	Type	Type	Type	Type	Type
Type of coordination "2" ToC 2	**Standard (inline) circuit**			**Inside-delta circuit**			
3RW5513	3NA3820-6	3NE8017-1	3RT2025	3NA3820-6	3NE8017-1	3RT2027	3RT2025
3RW5514	3NA3820-6	3NE8020-1	3RT2026	3NA3820-6	3NE8020-1	3RT2027	3RT2026
3RW5515	3NA3822-6	3NE8021-1	3RT2027	3NA3822-6	3NE8021-1	3RT2036	3RT2027
3RW5516	3NA3824-6	3NE8022-1	3RT2035	3NA3824-6	3NE8022-1	3RT2037	3RT2035
3RW5517	3NA3824-6	3NE8024-1	3RT2035	3NA3824-6	3NE8024-1	3RT2038	3RT2035
3RW5524	3NA3824-6	3NE8024-1	3RT2036	3NA3824-6	3NE8024-1	3RT2046	3RT2036
3RW5525	3NA3830-6	3NE3227	3RT2037	3NA3830-6	3NE3227	3RT2047	3RT2037
3RW5526	3NA3132-6	3NE3227	3RT2038	3NA3132-6	3NE3227	3RT1055	3RT2038
3RW5527	3NA3136-6	3NE3227	3RT2046	3NA3136-6	3NE3227	3RT1056	3RT2046
3RW5534	3NA3244-6	3NE3231	3RT1054	3NA3244-6	3NE3231	3RT1064	3RT1054
3RW5535	3NA3244-6	3NE3233	3RT1055	3NA3244-6	3NE3233	3RT1065	3RT1055
3RW5536	3NA3365-6	3NE3334-0B	3RT1056	3NA3365-6	3NE3334-0B	3RT1066	3RT1056
3RW5543	2 x 3NA3354-6	3NE3333	3RT1064	2 x 3NA3354-6	3NE3333	3RT1075	3RT1064
3RW5544	2 x 3NA3354-6	3NE3335	3RT1065	2 x 3NA3354-6	3NE3335	3RT1076	3RT1065
3RW5545	2 x 3NA3365-6	--	3RT1075	2 x 3NA3365-6	--	3TF68	3RT1075
3RW5546	2 x 3NA3365-6	--	3RT1075	2 x 3NA3365-6	--	3TF69	3RT1075
3RW5547	2 x 3NA3365-6	3NE3340-8	3RT1076	2 x 3NA3365-6	3NE3340-8	3TF69	3RT1076
3RW5548	2 x 3NA3365-6	3NC3342-1U	3TF68	2 x 3NA3365-6	3NC3342-1U	--	3TF68

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2 motor starter protectors/3VA circuit breakers can also be used, possibly with reduced short-circuit breaking capacity (see page 6/46). In these cases, optional line contactors can be dispensed with.

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Reversing operation with reversing contactors

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.

(Example circuit, see 3RW55 Equipment Manual, Appendix A.3)

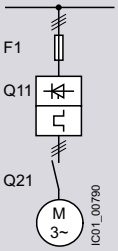
Soft starters	Reversing contactor assembly	Reversing contactor
	for systems up to 480 V	for systems up to 480 V
Q11	Q21/Q22	Q21/Q22
Type	Type	Type
3RW5513	3RA2325	3RT2025
3RW5514	3RA2326	3RT2026
3RW5515	3RA2327	3RT2027
3RW5516	3RA2335	3RT2035
3RW5517	3RA2335	3RT2035
3RW5524	3RA2336	3RT2036
3RW5525	3RA2337	3RT2037
3RW5526	3RA2338	3RT2038
3RW5527	3RA2346	3RT2046
3RW5534	--	3RT1054
3RW5535	--	3RT1055
3RW5536	--	3RT1056
3RW5543	--	3RT1064
3RW5544	--	3RT1065
3RW5545	--	3RT1075
3RW5546	--	3RT1075
3RW5547	--	3RT1076
3RW5548	--	3TF68

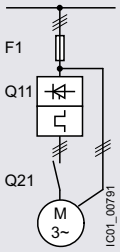
Redundant contactors for applications > SIL 1

A redundant contactor is necessary for applications with a Safety Integrity Level > SIL 1 or a Performance Level > PL c in conjunction with the 3RW55 Failsafe soft starter.

Note:

For more details about safe switching according to IEC 62061 (SIL) or ISO 13849-1 (PL) see FAQ article.





Soft starters	Standard (inline) circuit		Inside-delta circuit	
	for systems up to 480 V		for systems up to 480 V	
	according to IEC 62061	according to ISO 13849-1	according to IEC 62061	according to ISO 13849-1
Q11	Q21		Q21	
Type	Type	Type	Type	Type
3RW5513	3RT2027	3RT2027	3RT2027	3RT2027
3RW5514	3RT2027	3RT2035	3RT2027	3RT2035
3RW5515	3RT2035	3RT2036	3RT2035	3RT2036
3RW5516	3RT2036	3RT2037	3RT2036	3RT2037
3RW5517	3RT2037	3RT2038	3RT2037	3RT2038
3RW5524	3RT2038	3RT2046	3RT2038	3RT2046
3RW5525	3RT2046	3RT1055	3RT2046	3RT1055
3RW5526	3RT1055	3RT1056	3RT1055	3RT1056
3RW5527	3RT1055	3RT1064	3RT1055	3RT1064
3RW5534	3RT1056	3RT1065	3RT1056	3RT1065
3RW5535	3RT1064	3RT1066	3RT1064	3RT1066
3RW5536	3RT1065	3RT1075	3RT1065	3RT1075
3RW5543	3RT1075	3RT1076	3RT1075	3RT1076
3RW5544	3RT1075	3RT1076	3RT1075	3RT1076
3RW5545	3RT1076	3TF68	3RT1076	3TF68
3RW5546	3TF68	3TF69	3TF68	3TF69
3RW5547	3TF69	--	3TF69	--
3RW5548	--	--	--	--

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Selection and ordering data

For normal starting (CLASS 10E)

3RW551.

3RW552.

3RW553.

3RW554.

At 40 °C			At 50 °C				Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V					
A	kW	kW	A	hp	hp	hp					
Operational voltage 200 ... 480 V											
13	3	**5.5**	11.5	2	3	**7.5**	**3RW5513-□HF□4**		1	1 unit	42S
18	4	**7.5**	15.9	3	5	**10**	**3RW5514-□HF□4**		1	1 unit	42S
25	5.5	**11**	22.3	5	7.5	**15**	**3RW5515-□HF□4**		1	1 unit	42S
32	7.5	**15**	28.4	7.5	10	**20**	**3RW5516-□HF□4**		1	1 unit	42S
38	11	**18.5**	33.5	10	10	**20**	**3RW5517-□HF□4**		1	1 unit	42S
47	11	**22**	41.6	10	10	**30**	**3RW5524-□HF□4**		1	1 unit	42S
63	18.5	**30**	55.5	15	20	**40**	**3RW5525-□HF□4**		1	1 unit	42S
77	22	**37**	68	20	25	**50**	**3RW5526-□HF□4**		1	1 unit	42S
93	22	**45**	82.5	25	30	**60**	**3RW5527-□HF□4**		1	1 unit	42S

Type of electrical connection for the control circuit
Screw terminals
Spring-loaded terminals

Control supply voltage
24 V AC/DC
110 ... 250 V AC

1 3
0 1

Note:

For the constraints for the motor outputs specified here,
see page 6/8.

At 40 °C			At 50 °C				Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V					
A	kW	kW	A	hp	hp	hp					
Operational voltage 200 ... 480 V											
113	30	**55**	101	30	30	**75**	**3RW5534-□HF□4**		1	1 unit	42S
143	37	**75**	128	40	40	**100**	**3RW5535-□HF□4**		1	1 unit	42S
171	45	**90**	153	50	50	**100**	**3RW5536-□HF□4**		1	1 unit	42S
210	55	**110**	186	60	60	**150**	**3RW5543-□HF□4**		1	1 unit	42S
250	75	**132**	220	60	75	**150**	**3RW5544-□HF□4**		1	1 unit	42S
315	90	**160**	279	75	100	**200**	**3RW5545-□HF□4**		1	1 unit	42S
370	110	**200**	328	100	125	**250**	**3RW5546-□HF□4**		1	1 unit	42S
470	132	**250**	416	150	150	**350**	**3RW5547-□HF□4**		1	1 unit	42S
570	160	**315**	504	150	200	**400**	**3RW5548-□HF□4**		1	1 unit	42S

Type of electrical connection for the control circuit
Spring-loaded terminals
Screw terminals

Control supply voltage
24 V AC/DC
110 ... 250 V AC

2 6
0 1

Note:

For the constraints for the motor outputs specified here,
see page 6/8.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Selection and ordering data

For normal starting (CLASS 10E)

3RW551.

3RW552.

3RW553.

3RW554.

At 40 °C for inside-delta circuit			At 50 °C for inside-delta circuit				Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V					
A	kW	kW	A	hp	hp	hp					
Operational voltage 200 ... 480 V											
22.5	5.5	**11**	19.9	5	5	**10**	**3RW5513-☐HF☐4**		1	1 unit	42S
31.5	7.5	**15**	28	7.5	7.5	**20**	**3RW5514-☐HF☐4**		1	1 unit	42S
43.3	11	**18.5**	39	10	10	**25**	**3RW5515-☐HF☐4**		1	1 unit	42S
55.4	15	**22**	49	15	15	**30**	**3RW5516-☐HF☐4**		1	1 unit	42S
65.8	18.5	**30**	58	15	20	**40**	**3RW5517-☐HF☐4**		1	1 unit	42S
81.4	22	**45**	72	20	25	**50**	**3RW5524-☐HF☐4**		1	1 unit	42S
109	30	**55**	96	30	30	**75**	**3RW5525-☐HF☐4**		1	1 unit	42S
133	37	**75**	118	30	40	**75**	**3RW5526-☐HF☐4**		1	1 unit	42S
161	45	**90**	143	40	50	**100**	**3RW5527-☐HF☐4**		1	1 unit	42S

Type of electrical connection for the control circuit — 1 3
Screw terminals
Spring-loaded terminals

Control supply voltage — 0 1
24 V AC/DC
110 ... 250 V AC

Note:

For the constraints for the motor outputs specified here,
see page 6/8.

At 40 °C for inside-delta circuit			At 50 °C for inside-delta circuit				Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V					
A	kW	kW	A	hp	hp	hp					
Operational voltage 200 ... 480 V											
196	55	**110**	175	50	60	**125**	**3RW5534-☐HF☐4**		1	1 unit	42S
248	75	**132**	222	75	75	**150**	**3RW5535-☐HF☐4**		1	1 unit	42S
296	90	**160**	265	75	100	**200**	**3RW5536-☐HF☐4**		1	1 unit	42S
364	110	**200**	322	100	125	**250**	**3RW5543-☐HF☐4**		1	1 unit	42S
433	132	**250**	381	125	150	**300**	**3RW5544-☐HF☐4**		1	1 unit	42S
546	160	**315**	483	150	200	**400**	**3RW5545-☐HF☐4**		1	1 unit	42S
641	200	**355**	568	200	200	**450**	**3RW5546-☐HF☐4**		1	1 unit	42S
814	250	**400**	721	250	250	**600**	**3RW5547-☐HF☐4**		1	1 unit	42S
987	315	**560**	873	300	350	**750**	**3RW5548-☐HF☐4**		1	1 unit	42S

Type of electrical connection for the control circuit — 2 6
Spring-loaded terminals
Screw terminals

Control supply voltage — 0 1
24 V AC/DC
110 ... 250 V AC

Note:

For the constraints for the motor outputs specified here,
see page 6/8.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

	Product designation	Manufacturer's article number of the soft starter	Product version	Application	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Fan covers									
3RW5983-0FC00	**Fan cover**	3RW551 (1x), 3RW552 (2x), 3RW553 (2x)	--	--	**3RW5983-0FC00**		1	1 unit	42S
		3RW554 (1x)	--	--	**3RW5984-0FC00**		1	1 unit	42S
Terminal covers									
3RW5983-0TC20	**Terminal cover**	3RW552 (2x), 3RW553 (2x)	--	--	**3RW5983-0TC20**		1	1 unit	42S
3RW5984-0TC20		3RW554 (2x)	--	--	**3RW5984-0TC20**		1	1 unit	42S
Enclosure components									
3RW5950-0GL20	**Hinged cover**	3RW55	Without cutout	--	**3RW5950-0GL20**		1	1 unit	42S
Communications modules									
3RW5980-0CS00	**Communications module**[1]	3RW55	PROFINET High-Feature with integral switch	--	**3RW5950-0CH00**		1	1 unit	42S
			PROFINET Standard	--	**3RW5980-0CS00**		1	1 unit	42S
			PROFIBUS	--	**3RW5980-0CP00**		1	1 unit	42S
3RW5980-0CE00			EtherNet/IP	--	**3RW5980-0CE00**		1	1 unit	42S
3RW5980-0CR00			Modbus RTU	--	**3RW5980-0CR00**		1	1 unit	42S
			Modbus TCP	--	**3RW5980-0CT00**		1	1 unit	42S

[1] Use the recommended connection plugs for attaching the bus connecting cable (e.g. angled or suitable for industrial use), see Equipment Manual for the relevant communications module.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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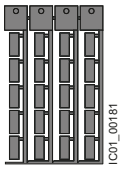
3RW55 Failsafe soft starters > Accessories

	Product designation	Manufacturer's article number of the soft starter	Product version	Application	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
HMI modules									
3RW5980-0HD00	**IP65 door mounting kit for HMI modules**	3RW55	IP65	For HMI modules	**3RW5980-0HD00**		1	1 unit	42S
Connecting cables									
3UF793.-0BA00-0	**HMI connecting cable**	3RW55	5 m, round	For door mounting	**3RW5980-0HC60**		1	1 unit	42S
			2.5 m, round		**3UF7933-0BA00-0**		1	1 unit	42J
			1.0 m, round		**3UF7937-0BA00-0**		1	1 unit	42J
			0.5 m, round		**3UF7932-0BA00-0**		1	1 unit	42J
Further accessories									
3ZY1311-0AA00	**Push-in lugs for wall mounting**	--	Two lugs are required per device	For HMI modules and communications modules	**3ZY1311-0AA00**		1	10 units	41L
Blank labels									
 3RT2900-1SB20	**Unit labeling plates[1)]**	--	20 mm x 7 mm, titanium gray	For SIRIUS devices	**3RT2900-1SB20**		100	340 units	41B

[1)] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

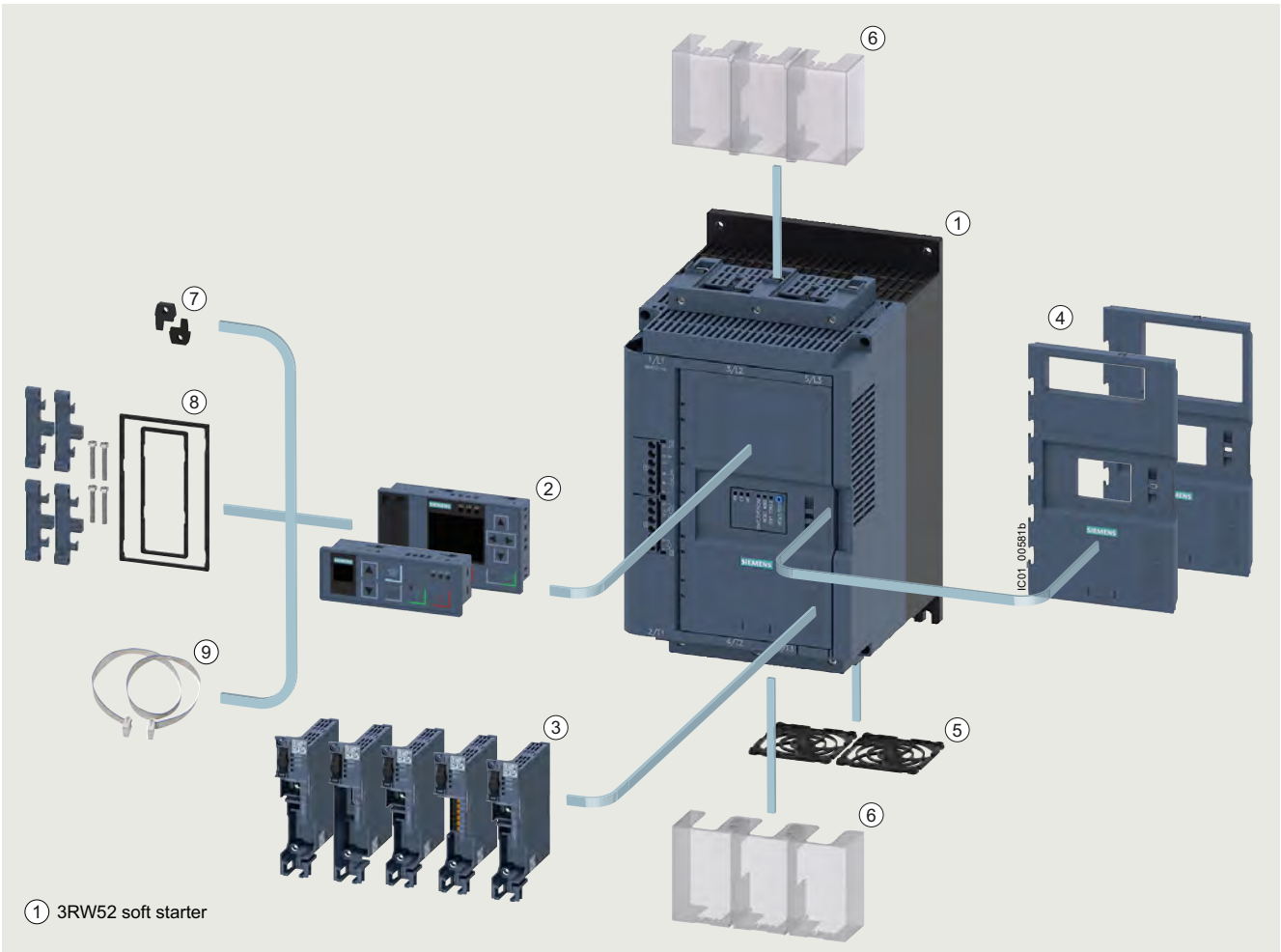
More information	
Homepage, see www.siemens.com/sirius-soft-starter	SIRIUS Soft Starter ES (TIA Portal) for diagnostics, see page 6/9 or https://support.industry.siemens.com/cs/ww/en/ps/24230/dl
Industry Mall, see www.siemens.com/product?3RW52	SIRIUS 3RW soft starter block library for SIMATIC PCS 7, see page 6/10 or https://support.industry.siemens.com/cs/ww/en/view/109770336
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=3rw52	Decision-making support for motor starting – Starting and running three-phase asynchronous motors efficiently, see www.siemens.com/motorstart-guide
Industry Online Support (SIOS) topic page, see https://support.industry.siemens.com/cs/ww/en/view/109747404	Conversion tool, see www.siemens.com/conversion-tool
Simulation Tool for Soft Starters (STS), see page 6/9 or https://support.industry.siemens.com/cs/ww/en/view/101494917	

SIRIUS 3RW52 soft starters device family

SIRIUS 3RW52 General Performance soft starters are the ideal solution for standard applications. With ideal 3-phase motor control, they cover the performance range from 5.5 to 560 kW (at 400 V).

Optional HMI modules, plug-in communications modules (PROFINET, PROFIBUS, EtherNet/IP and Modbus) and either an analog output or thermistor motor protection ensure maximum flexibility.

With their modern hybrid switching technology, the SIRIUS 3RW52 soft starters offer efficient switching for long-term, energy-saving use.



1 3RW52 soft starter
2 HMI modules
3 Communications modules
4 Hinged cover
5 Fan covers
6 Terminal covers (size 2 to size 4)
7 Push-in lugs for wall mounting
8 IP65 door mounting kit
9 HMI soft starter connecting cable

SIRIUS 3RW52 General Performance soft starter with accessories (see page 6/71), for expansion with HMI module or communications module

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Benefits

Product characteristics/function	Performance features/benefits
Hybrid switching technology and 3-phase motor control	Minimum power loss and optimum/symmetrical motor control
TIA integration – communications modules and HMI modules optional	Efficient configuration and maximum flexibility in automation engineering
Soft Torque	Reduced mechanical loading and optimum pump stop
Parameterization using potentiometers	Simple and fast commissioning
Wide range for control supply and main voltage	Low variance, high system availability even with weak supply networks

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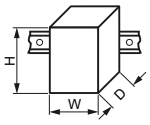
Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/25100/td Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/109753751	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/25100/faq Simulation Tool for Soft Starters (STS), see page 6/9 or https://support.industry.siemens.com/cs/ww/en/view/101494917

Type			**3RW5213 3RW5214 3RW5215**	**3RW5216 3RW5217**	**3RW5224 3RW5225**	**3RW5226 3RW5227 3RW5234 3RW5235 3RW5236**	**3RW5243 3RW5244 3RW5245 3RW5246 3RW5247 3RW5248**
Installation/fixing/dimensions							
Width x height x depth		mm	170 x 275 x 152		185 x 306 x 203		210 x 393 x 203
Type of mounting			Screw fixing				
Mounting position			For vertical mounting surface can be rotated +/- 10° and tilted forward or backward	For vertical mounting surface can be rotated +/- 90°, for vertical mounting surface can be tilted +/- 22.5° forward or backward	For vertical mounting surface can be rotated +/- 10° and tilted forward or backward	For vertical mounting surface can be rotated +/- 90°, for vertical mounting surface can be tilted +/- 22.5° forward or backward	
Distance to be maintained with side-by-side mounting							
• Above		mm	100				
• At the side		mm	5				
• Below		mm	75				
Installation altitude at height above sea level, maximum[1]		m	5 000				
Degree of protection IP on the front according to IEC 60529			IP20		IP00 (IP20 with cover)		
Touch protection on the front according to IEC 60529			Finger-safe for vertical touching from the front		Finger-safe for vertical touching from the front with cover		
Ambient conditions							
Ambient temperature							
• During operation[2]		°C	-25 ... +60				
• During storage and transport		°C	-40 ... +80				
Environmental category according to IEC 60721							
• During operation			3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6				
• During storage			1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get into the devices), 1M4				
• During transport			2K2, 2C1, 2S1, 2M2 (max. height of fall 0.3 m)				

1) Derating from 1 000 m, see characteristic curve on page 6/8.
2) Note derating above 40 °C.

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Type		3RW52..-..C0.	3RW52..-..C1.
Control circuit/control			
Control supply voltage			
• At AC/DC	V	24/24	--/--
• At AC	V	--	110 ... 250
• Relative negative tolerance/relative positive tolerance with AC	%	-20/20	-15/10
• Relative negative tolerance/relative positive tolerance with DC	%	-20/20	--/--
Frequency of the control supply voltage	Hz	50 ... 60	
• Relative negative tolerance/relative positive tolerance	%	-10/10	
Type of overvoltage protection		Varistors	
Type of short-circuit protection for control circuit[1]		Fuse 4 A gG (I_{cu} =1 kA), fuse 6 A quick-response (I_{cu} =1 kA), MCB C1 (I_{cu} = 600 A), MCB C6 (I_{cu} = 300 A)	

1) Not included in scope of supply.

Type		3RW52..-..C.4	3RW52..-..C.5
Power electronics			
Operational voltage	V	200 ... 480	200 ... 600
• Relative negative tolerance/relative positive tolerance	%	-15/10	
Operational voltage for inside-delta circuit	V	200 ... 480	200 ... 600
• Relative negative tolerance/relative positive tolerance	%	-15/10	
Operating frequency	Hz	50 ... 60	
• Relative negative tolerance/relative positive tolerance	%	-10/10	
Minimum load [% of I_M][1]	%	15	
Maximum cable length between soft starter and motor	m	800	

1) Relative to the smallest adjustable I_e.

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Type		3RW5213	3RW5214	3RW5215	3RW5216	3RW5217
Rated operational current I_e	A	13	18	25	32	38
Power electronics						
Load rating with rated operational current I_e						
IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	32/28.4/26	38/33.5/30.5
Permissible rated motor current and starts/h						
Normal starting (CLASS 10A)						
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	32/28.4/26	38/33.5/30.5
• 300% I_M						
- Start-up time 5 s	1/h	43	43	43	43	43
- Start-up time 10 s	1/h	18	18	18	18	18
• 350% I_M						
- Start-up time 5 s	1/h	28	28	28	28	28
- Start-up time 10 s	1/h	10	10	10	10	10
Normal starting (CLASS 10E)						
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	32/28.4/26	38/33.5/30.5
• 300% I_M						
- Start-up time 10 s	1/h	21	21	21	21	21
- Start-up time 20 s	1/h	8	8	8	8	8
• 350% I_M						
- Start-up time 10 s	1/h	13	13	13	13	13
- Start-up time 20 s	1/h	4	4	4	4	4
Heavy starting (CLASS 20E)						
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	29.6/27.2/23.6	33.5/30.5/27.5
• 300% I_M						
- Start-up time 20 s	1/h	10	10	10	10	10
- Start-up time 40 s	1/h	4	4	4	4	4
• 350% I_M						
- Start-up time 20 s	1/h	7	7	7	7	7
- Start-up time 40 s	1/h	2.5	2.5	2.5	2.5	2.5
Adjustable rated motor current I_M						
• Minimum/maximum	A	5.5/13	7.5/18	11.5/25	14/32	15.5/38
• Minimum/maximum in inside-delta circuits	A	9.5/22.5	13/31.2	19.9/43.3	24.2/55.4	26.8/65.8

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Type		3RW5224	3RW5225	3RW5226	3RW5227
Rated operational current I_e	A	47	63	77	93
Power electronics					
Load rating with rated operational current I_e					
IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a	A	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
Permissible rated motor current and starts/h					
Normal starting (CLASS 10A)					
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
• 300% I_M					
- Start-up time 5 s	1/h	43	43	43	43
- Start-up time 10 s	1/h	18	18	18	18
• 350% I_M					
- Start-up time 5 s	1/h	28	28	28	28
- Start-up time 10 s	1/h	10	10	10	10
Normal starting (CLASS 10E)					
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
• 300% I_M					
- Start-up time 10 s	1/h	21	21	21	21
- Start-up time 20 s	1/h	8	8	8	8
• 350% I_M					
- Start-up time 10 s	1/h	13	13	13	13
- Start-up time 20 s	1/h	4	4	4	4
Heavy starting (CLASS 20E)					
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	47/41.6/36.2	63/55.5/50.5	65/59/53	93/82.5/75.5
• 300% I_M					
- Start-up time 20 s	1/h	10	10	10	10
- Start-up time 40 s	1/h	4	3	4	4
• 350% I_M					
- Start-up time 20 s	1/h	7	4	7	7
- Start-up time 40 s	1/h	2	0	2.5	2.5
Adjustable rated motor current I_M					
• Minimum/maximum	A	20/47	25.5/63	32/77	40.5/93
• Minimum/maximum in inside-delta circuits	A	34.6/81.4	44.2/109	55.4/133	70.1/161

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Type		3RW5234	3RW5235	3RW5236
Rated operational current I_e	A	113	143	171
Power electronics				
Load rating with rated operational current I_e				
IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a	A	113/101/89	143/128/118	171/153/141
Permissible rated motor current and starts/h				
Normal starting (CLASS 10A)				
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	113/101/89	143/128/118	171/153/141
• 300% I_M				
- Start-up time 5 s	1/h	43	43	43
- Start-up time 10 s	1/h	18	18	18
• 350% I_M				
- Start-up time 5 s	1/h	28	27	20
- Start-up time 10 s	1/h	10	8	4
Normal starting (CLASS 10E)				
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	113/101/89	139/127/116	158/146/129
• 300% I_M				
- Start-up time 10 s	1/h	21	21	21
- Start-up time 20 s	1/h	8	8	8
• 350% I_M				
- Start-up time 10 s	1/h	13	12	12
- Start-up time 20 s	1/h	4	1	1
Heavy starting (CLASS 20E)				
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	109/97/85	113/103/93	129/117/105
• 300% I_M				
- Start-up time 20 s	1/h	10	10	10
- Start-up time 40 s	1/h	4	4	4
• 350% I_M				
- Start-up time 20 s	1/h	7	7	7
- Start-up time 40 s	1/h	2.5	2.5	2.5
Adjustable rated motor current I_M				
• Minimum/maximum	A	53/113	68/143	81/171
• Minimum/maximum in inside-delta circuits	A	91.8/196	118/248	140/296

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Type		3RW5243	3RW5244	3RW5245	3RW5246	3RW5247	3RW5248
Rated operational current I_e	A	210	250	315	370	470	570
Power electronics							
Load rating with rated operational current I_e							
IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a	A	210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	570/504/460
Permissible rated motor current and starts/h							
Normal starting (CLASS 10A)							
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	570/504/460
• 300% I_M							
- Start-up time 5 s	1/h	43	43	43	43	30	20
- Start-up time 10 s	1/h	18	18	14	18	11	6
• 350% I_M							
- Start-up time 5 s	1/h	28	28	16	28	17	9
- Start-up time 10 s	1/h	5	10	4	10	5	1
Normal starting (CLASS 10E)							
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	197/184/170	250/220/200	279/255/231	370/328/300	398/362/326	460/416/372
• 300% I_M							
- Start-up time 10 s	1/h	21	21	21	21	21	18
- Start-up time 20 s	1/h	8	8	8	8	8	7
• 350% I_M							
- Start-up time 10 s	1/h	12	13	12	13	13	11
- Start-up time 20 s	1/h	1	4	3	4	4	2
Heavy starting (CLASS 20E)							
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	162/146/130	200/180/160	195/171/147	258/230/202	272/236/218	284/262/240
• 300% I_M							
- Start-up time 20 s	1/h	10	10	10	10	10	10
- Start-up time 40 s	1/h	4	4	4	4	4	4
• 350% I_M							
- Start-up time 20 s	1/h	7	7	7	7	7	7
- Start-up time 40 s	1/h	2.5	2.5	2.5	2.5	2.5	2.5
Adjustable rated motor current I_M							
• Minimum/maximum	A	90/210	100/250	135/315	160/370	200/470	240/570
• Minimum/maximum in inside-delta circuits	A	156/364	173/433	234/546	277/641	346/814	416/987

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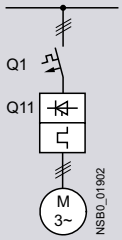
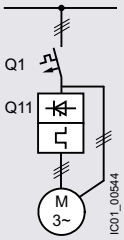
Motor feeders according to IEC with 3RV2 motor starter protectors/3VA circuit breakers (without semiconductor protection)

Type of coordination "1", CLASS 10,
short-circuit breaking capacity I_q in kA, see table

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.





Soft starters	Motor starter protectors/circuit breakers				Motor starter protectors/circuit breakers			
	for 400 V systems		for 500 V systems		for 400 V systems		for 500 V systems	
Q11	Q1	I_q	Q1	I_q	Q1	I_q	Q1	I_q
Type	Type	kA	Type	kA	Type	kA	Type	kA
Type of coordination "1" ToC 1	**Standard (inline) circuit**				**Inside-delta circuit**			
3RW5213	3RV2032-4TA10	65	3RV2032-4TA10	18	3RV2032-4DA10	65	3RV2032-4DA10	18
3RW5214	3RV2032-4DA10	65	3RV2032-4DA10	15	3RV2032-4EA10	65	3RV2032-4EA10	15
3RW5215	3RV2032-4EA10	65	3RV2032-4EA10	15	3RV2032-4VA10	65	3RV2032-4VA10	15
3RW5216	3RV2032-4VA10	65	3RV2032-4VA10	10	3RV2032-4JA10	65	3RV2032-4JA10	10
3RW5217	3RV2032-4WA10	65	3RV2032-4WA10	10	3RV2032-4RA10	65	3RV2032-4RA10	10
3RW5224	3RV2032-4JA10	65	3RV2032-4JA10	10	3RV2032-4RA10	65	3RV2032-4RA10	10
3RW5225	3VA2163-7MN32-0AA0	65	3VA2163-7MN32-0AA0	20	3VA2110-7MN32-0AA0	65	3VA2110-7MN32-0AA0	20
3RW5226	3VA2110-7MN32-0AA0	65	3VA2110-7MN32-0AA0	20	3VA2216-7MN32-0AA0	65	3VA2216-7MN32-0AA0	20
3RW5227	3VA2216-7MN32-0AA0	15	3VA2216-7MN32-0AA0	10	3VA2220-7MN32-0AA0	15	3VA2220-7MN32-0AA0	10
3RW5234	3VA2216-7MN32-0AA0	65	--	--	3VA2220-7MN32-0AA0	65	--	--
3RW5235	3VA2220-7MN32-0AA0	65	--	--	3VA2325-7MN32-0AA0	65	--	--
3RW5236	3VA2325-7MN32-0AA0	30	3VA2325-7MN32-0AA0	10	3VA2440-7MN32-0AA0	30	3VA2440-7MN32-0AA0	10
3RW5243	3VA2325-7MN32-0AA0	65	3VA2325-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65
3RW5244	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65
3RW5245	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65
3RW5246	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65
3RW5247	3VA2450-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65	3VA2510-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65
3RW5248	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65

Note:

The service factor and measurement inaccuracies, for example, have been taken into account for the selection of the specified motor starter protectors/circuit breakers; the specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller motor starter protectors/circuit breakers from the same series can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must match the connected three-phase motor, the short-circuit and overload requirements of the application, and the line protection for the cables used.

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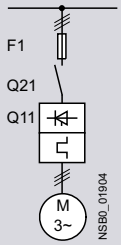
Motor feeders according to IEC with 3NA3 fuses

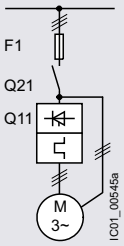
gG class full-range fuses for cable and line protection according to IEC 60269-2, without semiconductor protection

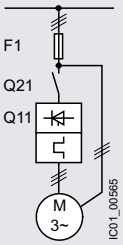
Type of coordination "1",
short-circuit breaking capacity I_q = 65 kA

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.







Soft starters	**gG class fuse**	**Line contactor (optional)**		**gG class fuse**	**Line contactor (optional)**			
	for systems up to 600 V	for systems up to 480 V	for systems up to 600 V	for systems up to 600 V	for systems up to 480 V in the supply cable	for systems up to 600 V in the supply cable	for systems up to 480 V in the delta	for systems up to 600 V in the delta
Q11	F1	Q21	Q21	F1	Q21	Q21	Q21	Q21
Type	Type	Type	Type	Type	Type	Type	Type	Type
Type of coordination "1" ToC 1	**Standard (inline) circuit**			**Inside-delta circuit**				
3RW5213	3NA3820-6	3RT2025	3RT2025	3NA3820-6	3RT2027	3RT2035	3RT2025	3RT2025
3RW5214	3NA3820-6	3RT2026	3RT2027	3NA3820-6	3RT2027	3RT2037	3RT2026	3RT2027
3RW5215	3NA3822-6	3RT2027	3RT2037	3NA3822-6	3RT2036	3RT2037	3RT2027	3RT2037
3RW5216	3NA3824-6	3RT2035	3RT2037	3NA3824-6	3RT2037	3RT2038	3RT2035	3RT2037
3RW5217	3NA3824-6	3RT2035	3RT2037	3NA3824-6	3RT2038	3RT2046	3RT2035	3RT2037
3RW5224	3NA3824-6	3RT2036	3RT2037	3NA3824-6	3RT2046	3RT2047	3RT2036	3RT2037
3RW5225	3NA3830-6	3RT2037	3RT2046	3NA3830-6	3RT2047	3RT1054	3RT2037	3RT2046
3RW5226	3NA3132-6	3RT2038	3RT2046	3NA3132-6	3RT1055	3RT1055	3RT2038	3RT2046
3RW5227	3NA3136-6	3RT2046	3RT2047	3NA3136-6	3RT1056	3RT1056	3RT2046	3RT2047
3RW5234	3NA3244-6	3RT1054	3RT1054	3NA3244-6	3RT1064	3RT1064	3RT1054	3RT1054
3RW5235	3NA3244-6	3RT1055	3RT1055	3NA3244-6	3RT1065	3RT1065	3RT1055	3RT1055
3RW5236	3NA3365-6	3RT1056	3RT1064	3NA3365-6	3RT1066	3RT1075	3RT1056	3RT1064
3RW5243	2 x 3NA3354-6	3RT1064	3RT1064	2 x 3NA3354-6	3RT1075	3RT1075	3RT1064	3RT1064
3RW5244	2 x 3NA3354-6	3RT1065	3RT1065	2 x 3NA3354-6	3RT1076	3RT1076	3RT1065	3RT1065
3RW5245	2 x 3NA3365-6	3RT1075	3RT1075	2 x 3NA3365-6	3TF68	3TF68	3RT1075	3RT1075
3RW5246	2 x 3NA3365-6	3RT1075	3RT1075	2 x 3NA3365-6	3TF69	3TF69	3RT1075	3RT1075
3RW5247	2 x 3NA3365-6	3RT1076	3RT1276	2 x 3NA3365-6	3TF69	3TF69	3RT1076	3RT1276
3RW5248	2 x 3NA3365-6	3TF68	3TF68	2 x 3NA3365-6	--	--	3TF68	3TF68

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

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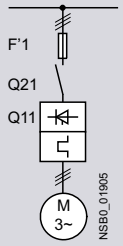
Motor feeders according to IEC with 3NE1 SITOR fuses

gR/gS class full-range fuses for semiconductor protection, cable and line protection (gS)

Type of coordination "2",
short-circuit breaking capacity I_q = 65 kA

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.



Soft starters	gR/gS class fuse	Line contactor (optional)	
	for systems up to 600 V	for systems up to 480 V	for systems up to 600 V
Q11	F'1	Q21	Q21
Type	Type	Type	Type
Type of coordination "2" ToC 2	**Standard (inline) circuit**		
3RW5213	3NE1815-0	3RT2025	3RT2025
3RW5214	3NE1802-0	3RT2026	3RT2027
3RW5215	3NE1817-0	3RT2027	3RT2037
3RW5216	3NE1818-0	3RT2035	3RT2037
3RW5217	3NE1820-0	3RT2035	3RT2037
3RW5224	3NE1021-2	3RT2036	3RT2037
3RW5225	3NE1022-0	3RT2037	3RT2046
3RW5226	3NE1224-0	3RT2038	3RT2046
3RW5227	3NE1224-0	3RT2046	3RT2047
3RW5234	3NE1225-0	3RT1054	3RT1054
3RW5235	3NE1227-0	3RT1055	3RT1055
3RW5236	3NE1230-0	3RT1056	3RT1064
3RW5243	3NE1230-2[1)]	3RT1064	3RT1064
3RW5244	3NE1331-0	3RT1065	3RT1065
3RW5245	3NE1334-2	3RT1075	3RT1075
3RW5246	3NE1334-2	3RT1075	3RT1075
3RW5247	3NE1436-2	3RT1076	3RT1276
3RW5248	3NE1437-2	3TF68	3TF68

[1)] For systems up to 500 V.

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

In inside-delta circuits, a gR/gS class full-range fuse could not provide the semiconductor protection of the delta-connected soft starter with a short-circuit breaking capacity that is adequate for practical use. In this case, we recommend using aR class partial-range fuses for semiconductor protection for type of coordination "2" (see page 6/66).

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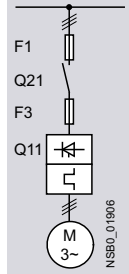
Motor feeders according to IEC with 3NE8/3NE4/3NE3 fuses

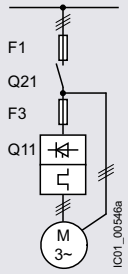
aR class partial-range fuses for semiconductor protection

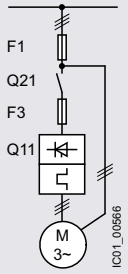
Type of coordination "2",
short-circuit breaking capacity I_q = 65 kA

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.







Soft starters	gG class fuse	aR class fuse	Line contactor (optional)		gG class fuse	aR class fuse	Line contactor (optional)			
	for systems up to 600 V	for systems up to 500 V	for systems up to 480 V	for systems up to 600 V	for systems up to 600 V	for systems up to 600 V	for systems up to 480 V in the supply cable	for systems up to 600 V in the supply cable	for systems up to 480 V in the delta	for systems up to 600 V in the delta
Q11	F1	F3	Q21	Q21	F1	F3	Q21	Q21	Q21	Q21
Type	Type	Type	Type	Type	Type	Type	Type	Type	Type	Type
Type of coordination "2" ToC 2	**Standard (inline) circuit**				**Inside-delta circuit**					
3RW5213	3NA3820-6	3NE8017-1	3RT2025	3RT2025	3NA3820-6	3NE8017-1	3RT2027	3RT2035	3RT2025	3RT2025
3RW5214	3NA3820-6	3NE8020-1	3RT2026	3RT2027	3NA3820-6	3NE8020-1	3RT2027	3RT2037	3RT2026	3RT2027
3RW5215	3NA3822-6	3NE8021-1	3RT2027	3RT2037	3NA3822-6	3NE8021-1	3RT2036	3RT2037	3RT2027	3RT2037
3RW5216	3NA3824-6	3NE8022-1	3RT2035	3RT2037	3NA3824-6	3NE8022-1	3RT2037	3RT2038	3RT2035	3RT2037
3RW5217	3NA3824-6	3NE8024-1	3RT2035	3RT2037	3NA3824-6	3NE8024-1	3RT2038	3RT2046	3RT2035	3RT2037
3RW5224	3NA3824-6	3NE8024-1	3RT2036	3RT2037	3NA3824-6	3NE8024-1	3RT2046	3RT2047	3RT2036	3RT2037
3RW5225	3NA3830-6	3NE8024-1	3RT2037	3RT2046	3NA3830-6	3NE8024-1	3RT2047	3RT1054	3RT2037	3RT2046
3RW5226	3NA3132-6	3NE8024-1	3RT2038	3RT2046	3NA3132-6	3NE8024-1	3RT1055	3RT1055	3RT2038	3RT2046
3RW5227	3NA3136-6	3NE4124	3RT2046	3RT2047	3NA3136-6	3NE4124	3RT1056	3RT1056	3RT2046	3RT2047
3RW5234	3NA3244-6	3NE3332-0B	3RT1054	3RT1054	3NA3244-6	3NE3332-0B	3RT1064	3RT1064	3RT1054	3RT1054
3RW5235	3NA3244-6	3NE3334-0B	3RT1055	3RT1055	3NA3244-6	3NE3334-0B	3RT1065	3RT1065	3RT1055	3RT1055
3RW5236	3NA3365-6	3NE3335	3RT1056	3RT1064	3NA3365-6	3NE3335	3RT1066	3RT1075	3RT1056	3RT1064
3RW5243	2 x 3NA3354-6	3NE3333	3RT1064	3RT1064	2 x 3NA3354-6	3NE3333	3RT1075	3RT1075	3RT1064	3RT1064
3RW5244	2 x 3NA3354-6	3NE3336	3RT1065	3RT1065	2 x 3NA3354-6	3NE3336	3RT1076	3RT1076	3RT1065	3RT1065
3RW5245	2 x 3NA3365-6	3NE3336	3RT1075	3RT1075	2 x 3NA3365-6	3NE3336	3TF68	3TF68	3RT1075	3RT1075
3RW5246	2 x 3NA3365-6	3NE3336	3RT1075	3RT1075	2 x 3NA3365-6	3NE3336	3TF69	3TF69	3RT1075	3RT1075
3RW5247	2 x 3NA3365-6	3NE3340-8	3RT1076	3RT1276	2 x 3NA3365-6	3NE3340-8	3TF69	3TF69	3RT1076	3RT1276
3RW5248	2 x 3NA3365-6	3NE3340-8	3TF68	3TF68	2 x 3NA3365-6	3NE3340-8	--	--	3TF68	3TF68

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2 motor starter protectors/3VA circuit breakers can also be used, possibly with reduced short-circuit breaking capacity (see page 6/63). In these cases, optional line contactors can be dispensed with.

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Selection and ordering data

For normal starting (CLASS 10A)

3RW521.

3RW522.

3RW523.

3RW524.

At 40 °C				At 50 °C					Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	at 500 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V	at 575/600 V					
A	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 480 V													
13	3	**5.5**	--	11.5	2	3	**7.5**	--	**3RW5213-□□C□4**		1	1 unit	42S
18	4	**7.5**	--	15.9	3	5	**10**	--	**3RW5214-□□C□4**		1	1 unit	42S
25	5.5	**11**	--	22.3	5	7.5	**15**	--	**3RW5215-□□C□4**		1	1 unit	42S
32	7.5	**15**	--	28.4	7.5	10	**20**	--	**3RW5216-□□C□4**		1	1 unit	42S
38	11	**18.5**	--	33.5	10	10	**20**	--	**3RW5217-□□C□4**		1	1 unit	42S
47	11	**22**	--	41.6	10	10	**30**	--	**3RW5224-□□C□4**		1	1 unit	42S
63	18.5	**30**	--	55.5	15	20	**40**	--	**3RW5225-□□C□4**		1	1 unit	42S
77	22	**37**	--	68	20	25	**50**	--	**3RW5226-□□C□4**		1	1 unit	42S
93	22	**45**	--	82.5	25	30	**60**	--	**3RW5227-□□C□4**		1	1 unit	42S

Type of electrical connection for the control circuit
Screw terminals — 1 3
Spring-loaded terminals — A T

Product function
Analog output — 0 1
Thermistor motor protection

Control supply voltage
24 V AC/DC
110 ... 250 V AC

Note:

For the constraints for the motor outputs specified here,
see page 6/8.

At 40 °C				At 50 °C					Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	at 500 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V	at 575/600 V					
A	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 480 V													
113	30	**55**	--	101	30	30	**75**	--	**3RW5234-□□C□4**		1	1 unit	42S
143	37	**75**	--	128	40	40	**100**	--	**3RW5235-□□C□4**		1	1 unit	42S
171	45	**90**	--	153	50	50	**100**	--	**3RW5236-□□C□4**		1	1 unit	42S
210	55	**110**	--	186	60	60	**150**	--	**3RW5243-□□C□4**		1	1 unit	42S
250	75	**132**	--	220	60	75	**150**	--	**3RW5244-□□C□4**		1	1 unit	42S
315	90	**160**	--	279	75	100	**200**	--	**3RW5245-□□C□4**		1	1 unit	42S
370	110	**200**	--	328	100	125	**250**	--	**3RW5246-□□C□4**		1	1 unit	42S
470	132	**250**	--	416	150	150	**350**	--	**3RW5247-□□C□4**		1	1 unit	42S
570	160	**315**	--	504	150	200	**400**	--	**3RW5248-□□C□4**		1	1 unit	42S

Type of electrical connection for the control circuit
Spring-loaded terminals — 2 6
Screw terminals — A T

Product function
Analog output — 0 1
Thermistor motor protection

Control supply voltage
24 V AC/DC
110 ... 250 V AC

Note:

For the constraints for the motor outputs specified here,
see page 6/8.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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3RW52 soft starters > Standard (inline) circuit *IE3/IE4 ready*

For normal starting (CLASS 10A)

3RW521.

3RW522.

3RW523.

3RW524.

At 40 °C Operational current	Operating power for three-phase motors at 230 V	at 400 V	at 500 V	At 50 °C Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V	at 575/600 V	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 600 V													
13	3	**5.5**	7.5	11.5	2	3	**7.5**	10	**3RW5213-□□C□5**		1	1 unit	42S
18	4	**7.5**	11	15.9	3	5	**10**	10	**3RW5214-□□C□5**		1	1 unit	42S
25	5.5	**11**	15	22.3	5	7.5	**15**	20	**3RW5215-□□C□5**		1	1 unit	42S
32	7.5	**15**	18.5	28.4	7.5	10	**20**	25	**3RW5216-□□C□5**		1	1 unit	42S
38	11	**18.5**	22	33.5	10	10	**20**	30	**3RW5217-□□C□5**		1	1 unit	42S
47	11	**22**	30	41.6	10	10	**30**	40	**3RW5224-□□C□5**		1	1 unit	42S
63	18.5	**30**	37	55.5	15	20	**40**	50	**3RW5225-□□C□5**		1	1 unit	42S
77	22	**37**	45	68	20	25	**50**	60	**3RW5226-□□C□5**		1	1 unit	42S
93	22	**45**	55	82.5	25	30	**60**	75	**3RW5227-□□C□5**		1	1 unit	42S

Type of electrical connection for the control circuit
Screw terminals
Spring-loaded terminals

Product function
Analog output
Thermistor motor protection

Control supply voltage
24 V AC/DC
110 ... 250 V AC

1 3 A T 0 1

Note:

For the constraints for the motor outputs specified here,
see page 6/8.

At 40 °C Operational current	Operating power for three-phase motors at 230 V	at 400 V	at 500 V	At 50 °C Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V	at 575/600 V	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 600 V													
113	30	**55**	75	101	30	30	**75**	100	**3RW5234-□□C□5**		1	1 unit	42S
143	37	**75**	90	128	40	40	**100**	125	**3RW5235-□□C□5**		1	1 unit	42S
171	45	**90**	110	153	50	50	**100**	150	**3RW5236-□□C□5**		1	1 unit	42S
210	55	**110**	132	186	60	60	**150**	150	**3RW5243-□□C□5**		1	1 unit	42S
250	75	**132**	160	220	60	75	**150**	200	**3RW5244-□□C□5**		1	1 unit	42S
315	90	**160**	200	279	75	100	**200**	250	**3RW5245-□□C□5**		1	1 unit	42S
370	110	**200**	250	328	100	125	**250**	300	**3RW5246-□□C□5**		1	1 unit	42S
470	132	**250**	315	416	150	150	**350**	450	**3RW5247-□□C□5**		1	1 unit	42S
570	160	**315**	355	504	150	200	**400**	500	**3RW5248-□□C□5**		1	1 unit	42S

Type of electrical connection for the control circuit
Spring-loaded terminals
Screw terminals

Product function
Analog output
Thermistor motor protection

Control supply voltage
24 V AC/DC
110 ... 250 V AC

2 6 A T 0 1

Note:

For the constraints for the motor outputs specified here,
see page 6/8.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

For normal starting (CLASS 10A)

3RW521.

3RW522.

3RW523.

3RW524.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	at 500 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V	at 575/600 V					
A	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 480 V													
22.5	5.5	**11**	--	19.9	5	5	**10**	--	**3RW5213-□□C□4**		1	1 unit	42S
31.5	7.5	**15**	--	28	7.5	7.5	**20**	--	**3RW5214-□□C□4**		1	1 unit	42S
43.3	11	**18.5**	--	39	10	10	**25**	--	**3RW5215-□□C□4**		1	1 unit	42S
55.4	15	**22**	--	49	15	15	**30**	--	**3RW5216-□□C□4**		1	1 unit	42S
65.8	18.5	**30**	--	58	15	20	**40**	--	**3RW5217-□□C□4**		1	1 unit	42S
81.4	22	**45**	--	72	20	25	**50**	--	**3RW5224-□□C□4**		1	1 unit	42S
109	30	**55**	--	96	30	30	**75**	--	**3RW5225-□□C□4**		1	1 unit	42S
133	37	**75**	--	118	30	40	**75**	--	**3RW5226-□□C□4**		1	1 unit	42S
161	45	**90**	--	143	40	50	**100**	--	**3RW5227-□□C□4**		1	1 unit	42S

Type of electrical connection for the control circuit
Screw terminals
Spring-loaded terminals

Product function
Analog output
Thermistor motor protection

Control supply voltage
24 V AC/DC
110 ... 250 V AC

1
3
A
T
0
1

Note:

For the constraints for the motor outputs specified here,
see page 6/8.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	at 500 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V	at 575/600 V					
A	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 480 V													
196	55	**110**	--	175	50	60	**125**	--	**3RW5234-□□C□4**		1	1 unit	42S
248	75	**132**	--	222	75	75	**150**	--	**3RW5235-□□C□4**		1	1 unit	42S
296	90	**160**	--	265	75	100	**200**	--	**3RW5236-□□C□4**		1	1 unit	42S
364	110	**200**	--	322	100	125	**250**	--	**3RW5243-□□C□4**		1	1 unit	42S
433	132	**250**	--	381	125	150	**300**	--	**3RW5244-□□C□4**		1	1 unit	42S
546	160	**315**	--	483	150	200	**400**	--	**3RW5245-□□C□4**		1	1 unit	42S
641	200	**355**	--	568	200	200	**450**	--	**3RW5246-□□C□4**		1	1 unit	42S
814	250	**400**	--	721	250	250	**600**	--	**3RW5247-□□C□4**		1	1 unit	42S
987	315	**560**	--	873	300	350	**750**	--	**3RW5248-□□C□4**		1	1 unit	42S

Type of electrical connection for the control circuit
Spring-loaded terminals
Screw terminals

Product function
Analog output
Thermistor motor protection

Control supply voltage
24 V AC/DC
110 ... 250 V AC

2
6
A
T
0
1

Note:

For the constraints for the motor outputs specified here,
see page 6/8.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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3RW52 soft starters > Inside-delta circuit *IE3/IE4 ready*

For normal starting (CLASS 10A)

3RW521.

3RW522.

3RW523.

3RW524.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	at 500 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V	at 575/600 V					
A	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 600 V													
22.5	5.5	**11**	15	19.9	5	5	**10**	15	**3RW5213-□□C□5**		1	1 unit	42S
31.5	7.5	**15**	18.5	28	7.5	7.5	**20**	25	**3RW5214-□□C□5**		1	1 unit	42S
43.3	11	**18.5**	22	39	10	10	**25**	30	**3RW5215-□□C□5**		1	1 unit	42S
55.4	15	**22**	30	49	15	15	**30**	40	**3RW5216-□□C□5**		1	1 unit	42S
65.8	18.5	**30**	37	58	15	20	**40**	50	**3RW5217-□□C□5**		1	1 unit	42S
81.4	22	**45**	45	72	20	25	**50**	60	**3RW5224-□□C□5**		1	1 unit	42S
109	30	**55**	55	96	30	30	**75**	75	**3RW5225-□□C□5**		1	1 unit	42S
133	37	**75**	90	118	30	40	**75**	100	**3RW5226-□□C□5**		1	1 unit	42S
161	45	**90**	110	143	40	50	**100**	125	**3RW5227-□□C□5**		1	1 unit	42S

Type of electrical connection for the control circuit
Screw terminals
Spring-loaded terminals

Product function
Analog output
Thermistor motor protection

Control supply voltage
24 V AC/DC
110 ... 250 V AC

1
3
A
T
0
1

Note:

For the constraints for the motor outputs specified here,
see page 6/8.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	at 500 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V	at 575/600 V					
A	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 600 V													
196	55	**110**	132	175	50	60	**125**	150	**3RW5234-□□C□5**		1	1 unit	42S
248	75	**132**	160	222	75	75	**150**	200	**3RW5235-□□C□5**		1	1 unit	42S
296	90	**160**	200	265	75	100	**200**	250	**3RW5236-□□C□5**		1	1 unit	42S
364	110	**200**	250	322	100	125	**250**	300	**3RW5243-□□C□5**		1	1 unit	42S
433	132	**250**	315	381	125	150	**300**	350	**3RW5244-□□C□5**		1	1 unit	42S
546	160	**315**	355	483	150	200	**400**	500	**3RW5245-□□C□5**		1	1 unit	42S
641	200	**355**	450	568	200	200	**450**	600	**3RW5246-□□C□5**		1	1 unit	42S
814	250	**400**	500	721	250	250	**600**	800	**3RW5247-□□C□5**		1	1 unit	42S
987	315	**560**	630	873	300	350	**750**	950	**3RW5248-□□C□5**		1	1 unit	42S

Type of electrical connection for the control circuit
Spring-loaded terminals
Screw terminals

Product function
Analog output
Thermistor motor protection

Control supply voltage
24 V AC/DC
110 ... 250 V AC

2
6
A
T
0
1

Note:

For the constraints for the motor outputs specified here,
see page 6/8.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

	Product designation	Manufacturer's article number of the soft starter	Product version	Application	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Fan covers									
3RW5983-0FC00	**Fan cover**	3RW5216/17 (1x), 3RW5226/27 (2x), 3RW523 (2x)	--	--	**3RW5983-0FC00**		1	1 unit	42S
		3RW524 (1x)	--	--	**3RW5984-0FC00**		1	1 unit	42S
Terminal covers									
3RW5983-0TC20	**Terminal cover**	3RW522 (2x), 3RW523 (2x)	--	--	**3RW5983-0TC20**		1	1 unit	42S
3RW5984-0TC20		3RW524 (2x)	--	--	**3RW5984-0TC20**		1	1 unit	42S
Enclosure components									
3RW5950-0GL30	**Hinged cover**	3RW52	With cutout for High-Feature HMI module	--	**3RW5950-0GL30**		1	1 unit	42S
3RW5950-0GL40			With cutout for Standard HMI module	--	**3RW5950-0GL40**		1	1 unit	42S
Communications modules									
3RW5980-0CS00	**Communications module**[1]	3RW52	PROFINET Standard	--	**3RW5980-0CS00**		1	1 unit	42S
			PROFIBUS	--	**3RW5980-0CP00**		1	1 unit	42S
			EtherNet/IP	--	**3RW5980-0CE00**		1	1 unit	42S
3RW5980-0CR00			Modbus RTU	--	**3RW5980-0CR00**		1	1 unit	42S
			Modbus TCP	--	**3RW5980-0CT00**		1	1 unit	42S

[1] Use the recommended connection plugs for attaching the bus connecting cable (e.g. angled or suitable for industrial use), see Equipment Manual for the relevant communications module.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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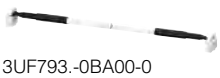
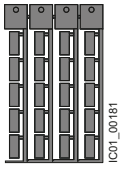
	Product designation	Manufacturer's article number of the soft starter	Product version	Application	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
HMI modules									
3RW5980-0HF00	**HMI module**	3RW52	High-Feature	--	**3RW5980-0HF00**		1	1 unit	42S
3RW5980-0HS00			Standard	--	**3RW5980-0HS00**		1	1 unit	42S
3RW5980-0HD00	**IP65 door mounting kit for HMI modules**	3RW52	IP65	For HMI modules	**3RW5980-0HD00**		1	1 unit	42S
Connecting cables									
 3UF793.-0BA00-0	**HMI connecting cable**	3RW52	5 m, round	For door mounting	**3RW5980-0HC60**		1	1 unit	42S
			2.5 m, round		**3UF7933-0BA00-0**		1	1 unit	42J
			1.0 m, round		**3UF7937-0BA00-0**		1	1 unit	42J
			0.5 m, round		**3UF7932-0BA00-0**		1	1 unit	42J
3UF7931-0AA00-0			0.1 m, flat	For mounting in the device	**3UF7931-0AA00-0**		1	1 unit	42J
Further accessories									
3ZY1311-0AA00	**Push-in lugs for wall mounting**	--	Two lugs are required per device	For HMI modules and communications modules	**3ZY1311-0AA00**		1	10 units	41L
Blank labels									
 3RT2900-1SB20	**Unit labeling plates**[1]	--	20 mm x 7 mm, titanium gray	For SIRIUS devices	**3RT2900-1SB20**		100	340 units	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

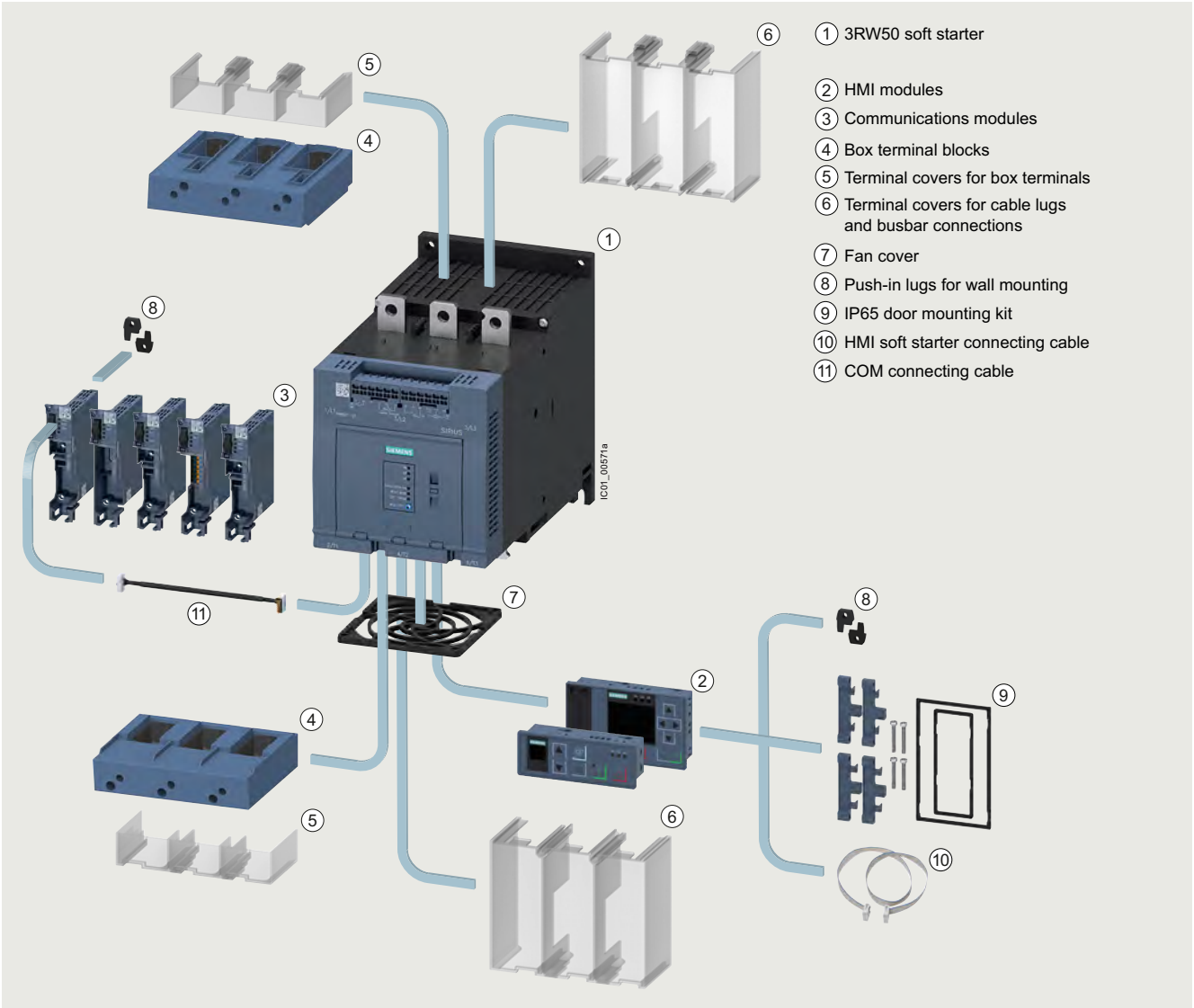
More information	
Homepage, see www.siemens.com/sirius-soft-starter	Simulation Tool for Soft Starters (STS), see page 6/9 or https://support.industry.siemens.com/cs/ww/en/view/101494917
Industry Mall, see www.siemens.com/product?3RW50	SIRIUS Soft Starter ES (TIA Portal) for diagnostics, see page 6/9 or https://support.industry.siemens.com/cs/ww/en/ps/24230/dl
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=3rw50	Decision-making support for motor starting – Starting and running three-phase asynchronous motors efficiently, see www.siemens.com/motorstart-guide
Industry Online Support (SIOS) topic page, see https://support.industry.siemens.com/cs/ww/en/view/109747404	Conversion tool, see www.siemens.com/conversion-tool

SIRIUS 3RW50 soft starters device family

SIRIUS 3RW50 Basic Performance soft starters are the compact solution for standard applications. With 2-phase motor control, they cover the performance range from 75 to 315 kW (at 400 V).

Optional HMI modules for installation in the control cabinet door, laterally mountable communications modules (PROFINET, PROFIBUS, EtherNet/IP and Modbus) and either an analog output or thermistor motor protection ensure maximum flexibility.

With their modern hybrid switching technology, the SIRIUS 3RW50 soft starters offer efficient switching for long-term, energy-saving use.



SIRIUS 3RW50 Basic Performance soft starter with accessories (see page 6/82), for expansion with HMI module or communications module

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Benefits

Product characteristics/function	Performance features/benefits
Hybrid switching technology and 2-phase motor control	Minimum power loss and optimized motor control by avoiding DC components
Small and compact design	Space-saving, clearly arranged control panel layout
TIA integration – communications modules and HMI modules optional	Efficient configuration and maximum flexibility in automation engineering
Motor overload and intrinsic device protection without additional wiring	Adjustable trip classes, integrated diagnostics functions
Soft Torque	Reduced mechanical loading and optimum pump stop
Parameterization using potentiometers	Simple and fast commissioning
Wide range for control supply and main voltage	Low variance, high system availability even with weak supply networks
Certified according to ATEX/IECEx directive	Suitable for the starting of explosion-proof motors with "increased safety" type of protection

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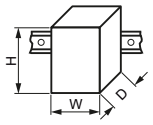
Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/25252/td	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/25252/faq
Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/109753750	Simulation Tool for Soft Starters (STS), see page 6/9 or https://support.industry.siemens.com/cs/ww/en/view/101494917

Type		**3RW5055 3RW5056**	**3RW5072 3RW5073 3RW5074 3RW5075 3RW5076 3RW5077**
Installation/fixing/dimensions			
Width x height x depth 	mm	120 x 198 x 249	160 x 230 x 282
Type of mounting		Screw fixing	
Mounting position		For vertical mounting surface can be rotated +/- 90°, for vertical mounting surface can be tilted +/- 22.5° forward or backward	
Distance to be maintained with side-by-side mounting			
• Above	mm	100	
• At the side	mm	5	
• Below	mm	75	
Installation altitude at height above sea level, maximum[1]	m	5 000	
Degree of protection IP on the front according to IEC 60529		IP00 (IP20 with cover)	
Touch protection on the front according to IEC 60529		Finger-safe for vertical touching from the front with cover	
Ambient conditions			
Ambient temperature			
• During operation[2]	°C	-25 ... +60	
• During storage and transport	°C	-40 ... +80	
Environmental category according to IEC 60721			
• During operation		3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6	
• During storage		1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get into the devices), 1M4	
• During transport		2K2, 2C1, 2S1, 2M2 (max. height of fall 0.3 m)	

[1] Derating from 1 000 m, see characteristic curve on page 6/8.

[2] Note derating above 40 °C.

Type		**3RW50..-..B0.**	**3RW50..-..B1.**
Control circuit/control			
Control supply voltage			
• At AC/DC	V	24/24	--/--
• At AC	V	--	110 ... 250
• Relative negative tolerance/relative positive tolerance with AC	%	-20/20	-15/10
• Relative negative tolerance/relative positive tolerance with DC	%	-20/20	--/--
Frequency of the control supply voltage	Hz	50 ... 60	
• Relative negative tolerance/relative positive tolerance	%	-10/10	
Type of overvoltage protection		Varistors	
Type of short-circuit protection for control circuit[1]		Fuse 4 A gG (I_{cu} =1 kA), fuse 6 A quick-response (I_{cu} =1 kA), MCB C1 (I_{cu} = 600 A), MCB C6 (I_{cu} = 300 A)	

[1] Not included in scope of supply.

Type		**3RW50..-..B.4**	**3RW50..-..B.5**
Power electronics			
Operational voltage	V	200 ... 480	200 ... 600
• Relative negative tolerance/relative positive tolerance	%	-15/10	
Operating frequency	Hz	50 ... 60	
• Relative negative tolerance/relative positive tolerance	%	-10/10	
Minimum load [% of I_M][1]	%	15	
Maximum cable length between soft starter and motor	m	800	

[1] Relative to the smallest adjustable I_e.

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Type		3RW5055	3RW5056
Rated operational current I_e	A	143	171
Power electronics			
Load rating with rated operational current I_e			
IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a	A	143/128/118	171/153/141
Permissible rated motor current and starts/h			
Normal starting (CLASS 10A)			
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	143/128/118	171/153/141
• 300% I_M			
- Start-up time 5 s	1/h	43	43
- Start-up time 10 s	1/h	18	18
• 350% I_M			
- Start-up time 5 s	1/h	28	28
- Start-up time 10 s	1/h	10	9
Normal starting (CLASS 10E)			
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	143/128/118	171/153/141
• 300% I_M			
- Start-up time 10 s	1/h	21	21
- Start-up time 20 s	1/h	8	8
• 350% I_M			
- Start-up time 10 s	1/h	12	9
- Start-up time 20 s	1/h	4	--
Heavy starting (CLASS 20E)			
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	108/98/88	135/123/111
• 300% I_M			
- Start-up time 20 s	1/h	10	10
- Start-up time 40 s	1/h	4	4
• 350% I_M			
- Start-up time 20 s	1/h	7	7
- Start-up time 40 s	1/h	2.5	2.5
Adjustable rated motor current I_M			
• Minimum/maximum	A	68/143	81/117

Type		3RW5072	3RW5073	3RW5074	3RW5075	3RW5076	3RW5077
Rated operational current I_e	A	210	250	315	370	470	570
Power electronics							
Load rating with rated operational current I_e							
IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a	A	210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	570/504/460
Permissible rated motor current and starts/h							
Normal starting (CLASS 10A)							
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	570/504/460
• 300% I_M							
- Start-up time 5 s	1/h	43	43	43	43	43	28
- Start-up time 10 s	1/h	18	18	18	18	18	11
• 350% I_M							
- Start-up time 5 s	1/h	28	28	28	28	28	16
- Start-up time 10 s	1/h	8	10	10	10	10	4
Normal starting (CLASS 10E)							
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	570/504/460
• 300% I_M							
- Start-up time 10 s	1/h	21	21	21	21	20	21
- Start-up time 20 s	1/h	8	8	8	8	7	8
• 350% I_M							
- Start-up time 10 s	1/h	8	13	12	13	12	13
- Start-up time 20 s	1/h	--	4	4	4	2	4
Heavy starting (CLASS 20E)							
Rated motor current I_M, T_u = 40/50/60 °C ON period = 70%; motor protection activated	A	162/146/130	200/180/160	219/195/171	258/230/202	272/254/218	284/262/240
• 300% I_M							
- Start-up time 20 s	1/h	10	10	10	10	10	10
- Start-up time 40 s	1/h	4	4	4	4	4	4
• 350% I_M							
- Start-up time 20 s	1/h	7	7	7	7	7	7
- Start-up time 40 s	1/h	2.5	2.5	2.5	2.5	2.5	2.5
Adjustable rated motor current I_M							
• Minimum/maximum	A	90/210	100/250	135/315	160/370	200/470	240/570

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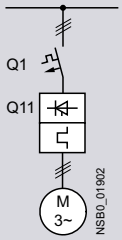
Motor feeders according to IEC with 3VA circuit breakers (without semiconductor protection)

Type of coordination "1", CLASS 10,
short-circuit breaking capacity I_q in kA, see table

Note:

For general recommendations for constructing motor feeders
with soft starters, see page 6/12.



Soft starters	Circuit breakers			
	for 400 V systems		for 500 V systems	
Q11	Q1	I_q	Q1	I_q
Type	Type	kA	Type	kA
Type of coordination "1" ToC 1	**Standard (inline) circuit**			
3RW5055	3VA2220-7MN32-0AA0	20	3VA2220-7MN32-0AA0	20
3RW5056	3VA2220-7MN32-0AA0	20	3VA2220-7MN32-0AA0	20
3RW5072	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65
3RW5073	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65
3RW5074	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65
3RW5075	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65
3RW5076	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65
3RW5077	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65

Note:

The service factor and measurement inaccuracies, for example, have been taken into account for the selection of the specified motor starter protectors/circuit breakers; the specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller motor starter protectors/circuit breakers from the same series can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must match the connected three-phase motor, the short-circuit and overload requirements of the application, and the line protection for the cables used.

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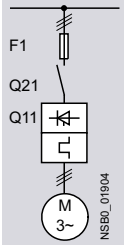
Motor feeders according to IEC with 3NA3 fuses

gG class full-range fuses for cable and line protection according to IEC 60269-2, without semiconductor protection

Type of coordination "1",
short-circuit breaking capacity I_q = 65 kA

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.



Soft starters	gG class fuse	Line contactor (optional)	
	for systems up to 600 V	for systems up to 480 V	for systems up to 600 V
Q11	F1	Q21	Q21
Type	Type	Type	Type
Type of coordination "1" ToC 1	**Standard (inline) circuit**		
3RW5055	3NA3244-6	3RT1055	3RT1055
3RW5056	3NA3244-6	3RT1056	3RT1064
3RW5072	2 x 3NA3354-6	3RT1064	3RT1064
3RW5073	2 x 3NA3354-6	3RT1065	3RT1065
3RW5074	2 x 3NA3365-6	3RT1075	3RT1075
3RW5075	2 x 3NA3365-6	3RT1075	3RT1075
3RW5076	2 x 3NA3365-6	3RT1076	3RT1076
3RW5077	2 x 3NA3365-6	3TF68	3TF68

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

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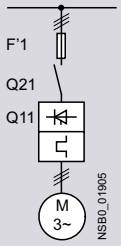
Motor feeders according to IEC with 3NE1 SITOR fuses

gR/gS class full-range fuses for semiconductor protection, cable and line protection (gS)

Type of coordination "2",
short-circuit breaking capacity I_q = 65 kA

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.



Soft starters	**gR/gS class fuse**	**Line contactor (optional)**	
	for systems up to 600 V	for systems up to 480 V	for systems up to 600 V
Q11	F'1	Q21	Q21
Type	Type	Type	Type
Type of coordination "2" ToC 2	**Standard (inline) circuit**		
3RW5055	3NE1227-0	3RT1055	3RT1055
3RW5056	3NE1230-0	3RT1056	3RT1064
3RW5072	3NE1230-2	3RT1064	3RT1064
3RW5073	3NE1331-0	3RT1065	3RT1065
3RW5074	3NE1333-2	3RT1075	3RT1075
3RW5075	3NE1334-2	3RT1075	3RT1075
3RW5076	3NE1436-2	3RT1076	3RT1076
3RW5077	3NE1437-2	3TF68	3TF68

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

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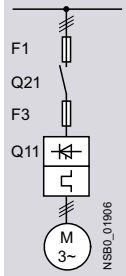
Motor feeders according to IEC with 3NE3 fuses

aR class partial-range fuses for semiconductor protection

Type of coordination "2",
short-circuit breaking capacity I_q = 65 kA

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.



Soft starters	gG class fuse	aR class fuse	Line contactor (optional)	
	for systems up to 600 V	for systems up to 600 V	for systems up to 480 V	for systems up to 600 V
Q11	F1	F3	Q21	Q21
Type	Type	Type	Type	Type
Type of coordination "2" ToC 2	**Standard (inline) circuit**			
3RW5055	3NA3244-6	3NE3334-0B	3RT1055	3RT1055
3RW5056	3NA3244-6	3NE3335	3RT1056	3RT1064
3RW5072	2 x 3NA3354-6	3NE3333	3RT1064	3RT1064
3RW5073	2 x 3NA3354-6	3NE3335	3RT1065	3RT1065
3RW5074	2 x 3NA3365-6	3NE3335	3RT1075	3RT1075
3RW5075	2 x 3NA3365-6	3NE3336	3RT1075	3RT1075
3RW5076	2 x 3NA3365-6	3NE3340-8	3RT1076	3RT1076
3RW5077	2 x 3NA3365-6	3NE3340-8	3TF68	3TF68

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3VA circuit breakers can also be used, possibly with reduced short-circuit breaking capacity (see page 6/77). In these cases, optional line contactors can be dispensed with.

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Selection and ordering data

For normal starting (CLASS 10E)

3RW5055

3RW5075

At 40 °C				At 50 °C					Size	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	at 500 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V	at 575/600 V						
A	kW	kW	kW	A	hp	hp	hp	hp						
Operational voltage 200 ... 480 V														
143	37	**75**	--	128	40	40	**100**	--	S6	**3RW5055-□□B□4**		1	1 unit	42S
171	45	**90**	--	153	50	50	**100**	--	S6	**3RW5056-□□B□4**		1	1 unit	42S
210	55	**110**	--	186	60	60	**150**	--	S12	**3RW5072-□□B□4**		1	1 unit	42S
250	75	**132**	--	220	60	75	**150**	--	S12	**3RW5073-□□B□4**		1	1 unit	42S
315	90	**160**	--	279	75	100	**200**	--	S12	**3RW5074-□□B□4**		1	1 unit	42S
370	110	**200**	--	328	100	125	**250**	--	S12	**3RW5075-□□B□4**		1	1 unit	42S
470	132	**250**	--	416	150	150	**350**	--	S12	**3RW5076-□□B□4**		1	1 unit	42S
570	160	**315**	--	504	150	200	**400**	--	S12	**3RW5077-□□B□4**		1	1 unit	42S

Type of electrical connection for the control circuit
Spring-loaded terminals
Screw terminals

Product function
Analog output
Thermistor motor protection

Control supply voltage
24 V AC/DC
110 ... 250 V AC

3RW5055-□□B□4 / 3RW5056-□□B□4 / 3RW5072-□□B□4 / 3RW5073-□□B□4 / 3RW5074-□□B□4 / 3RW5075-□□B□4 / 3RW5076-□□B□4 / 3RW5077-□□B□4

□□	□
26	AT
01	

Note:

For the constraints for the motor outputs specified here, see page 6/8.

At 40 °C				At 50 °C					Size	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors at 230 V	at 400 V	at 500 V	Operational current	Rating [hp] for three-phase motors at 200/208 V	at 220/230 V	at 460/480 V	at 575/600 V						
A	kW	kW	kW	A	hp	hp	hp	hp						
Operational voltage 200 ... 600 V														
143	37	**75**	90	128	40	40	**100**	125	S6	**3RW5055-□□B□5**		1	1 unit	42S
171	45	**90**	110	153	50	50	**100**	150	S6	**3RW5056-□□B□5**		1	1 unit	42S
210	55	**110**	132	186	60	60	**150**	150	S12	**3RW5072-□□B□5**		1	1 unit	42S
250	75	**132**	160	220	60	75	**150**	200	S12	**3RW5073-□□B□5**		1	1 unit	42S
315	90	**160**	200	279	75	100	**200**	250	S12	**3RW5074-□□B□5**		1	1 unit	42S
370	110	**200**	250	328	100	125	**250**	300	S12	**3RW5075-□□B□5**		1	1 unit	42S
470	132	**250**	315	416	150	150	**350**	450	S12	**3RW5076-□□B□5**		1	1 unit	42S
570	160	**315**	355	504	150	200	**400**	500	S12	**3RW5077-□□B□5**		1	1 unit	42S

Type of electrical connection for the control circuit
Spring-loaded terminals
Screw terminals

Product function
Analog output
Thermistor motor protection

Control supply voltage
24 V AC/DC
110 ... 250 V AC

3RW5055-□□B□5 / 3RW5056-□□B□5 / 3RW5072-□□B□5 / 3RW5073-□□B□5 / 3RW5074-□□B□5 / 3RW5075-□□B□5 / 3RW5076-□□B□5 / 3RW5077-□□B□5

□□	□
26	AT
01	

Note:

For the constraints for the motor outputs specified here, see page 6/8.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

	Product designation	Manufacturer's article number of the soft starter	Product version	Application	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Fan covers									
3RW5985-0FC00	**Fan cover**	3RW50 (1x)	--	--	**3RW5985-0FC00**		1	1 unit	42S
Box terminal block									
3RT1956-4G	**Box terminal block for round and ribbon cables**	3RW505 (2x)	Up to 70 mm^2	--	**3RT1955-4G**		1	1 unit	41B
			Up to 120 mm^2	--	**3RT1956-4G**		1	1 unit	41B
		3RW507 (2x)	Up to 240 mm^2 (with auxiliary conductor connection)	--	**3RT1966-4G**		1	1 unit	41B
Terminal covers									
3RT1956-4EA2	**Covers for box terminals**	3RW505 (2x)	--	--	**3RT1956-4EA2**		1	1 unit	41B
		3RW507 (2x)	--	--	**3RT1966-4EA2**		1	1 unit	41B
3RT1966-4EA1	**Covers for cable lugs and busbar connections**	3RW505 (2x)	--	--	**3RT1956-4EA1**		1	1 unit	41B
		3RW507 (2x)	--	--	**3RT1966-4EA1**		1	1 unit	41B
Communications modules									
3RW5980-0CS00	**Communications module**[1]	3RW50	PROFINET Standard	--	**3RW5980-0CS00**		1	1 unit	42S
			PROFIBUS		**3RW5980-0CP00**		1	1 unit	42S
			EtherNet/IP		**3RW5980-0CE00**		1	1 unit	42S
			Modbus RTU		**3RW5980-0CR00**		1	1 unit	42S
			Modbus TCP		**3RW5980-0CT00**		1	1 unit	42S
3RW5900-0CC00	**COM connecting cable** For mounting laterally on the device	3RW50	0.3 m, round	--	**3RW5900-0CC00**		1	1 unit	42S

[1] Use the recommended connection plugs for attaching the bus connecting cable (e.g. angled or suitable for industrial use), see Equipment Manual for the relevant communications module.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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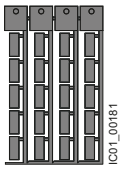
	Product designation	Manufacturer's article number of the soft starter	Product version	Application	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
HMI modules									
3RW5980-0HF00	**HMI module**	3RW50	High-Feature	--	**3RW5980-0HF00**		1	1 unit	42S
3RW5980-0HS00			Standard	--	**3RW5980-0HS00**		1	1 unit	42S
3RW5980-0HD00	**IP65 door mounting kit for HMI modules**	3RW50	IP65	For HMI modules	**3RW5980-0HD00**		1	1 unit	42S
Connecting cables									
3UF793.-0BA00-0	**HMI connecting cable**	3RW50	5 m, round	For door mounting	**3RW5980-0HC60**		1	1 unit	42S
			2.5 m, round		**3UF7933-0BA00-0**		1	1 unit	42J
			1.0 m, round		**3UF7937-0BA00-0**		1	1 unit	42J
			0.5 m, round		**3UF7932-0BA00-0**		1	1 unit	42J
Further accessories									
3ZY1311-0AA00	**Push-in lugs for wall mounting**	--	Two lugs are required per device	For HMI modules and communications modules	**3ZY1311-0AA00**		1	10 units	41L
Blank labels									
 3RT2900-1SB20	**Unit labeling plates**[1]	--	20 mm x 7 mm, titanium gray	For SIRIUS devices	**3RT2900-1SB20**		100	340 units	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

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Overview

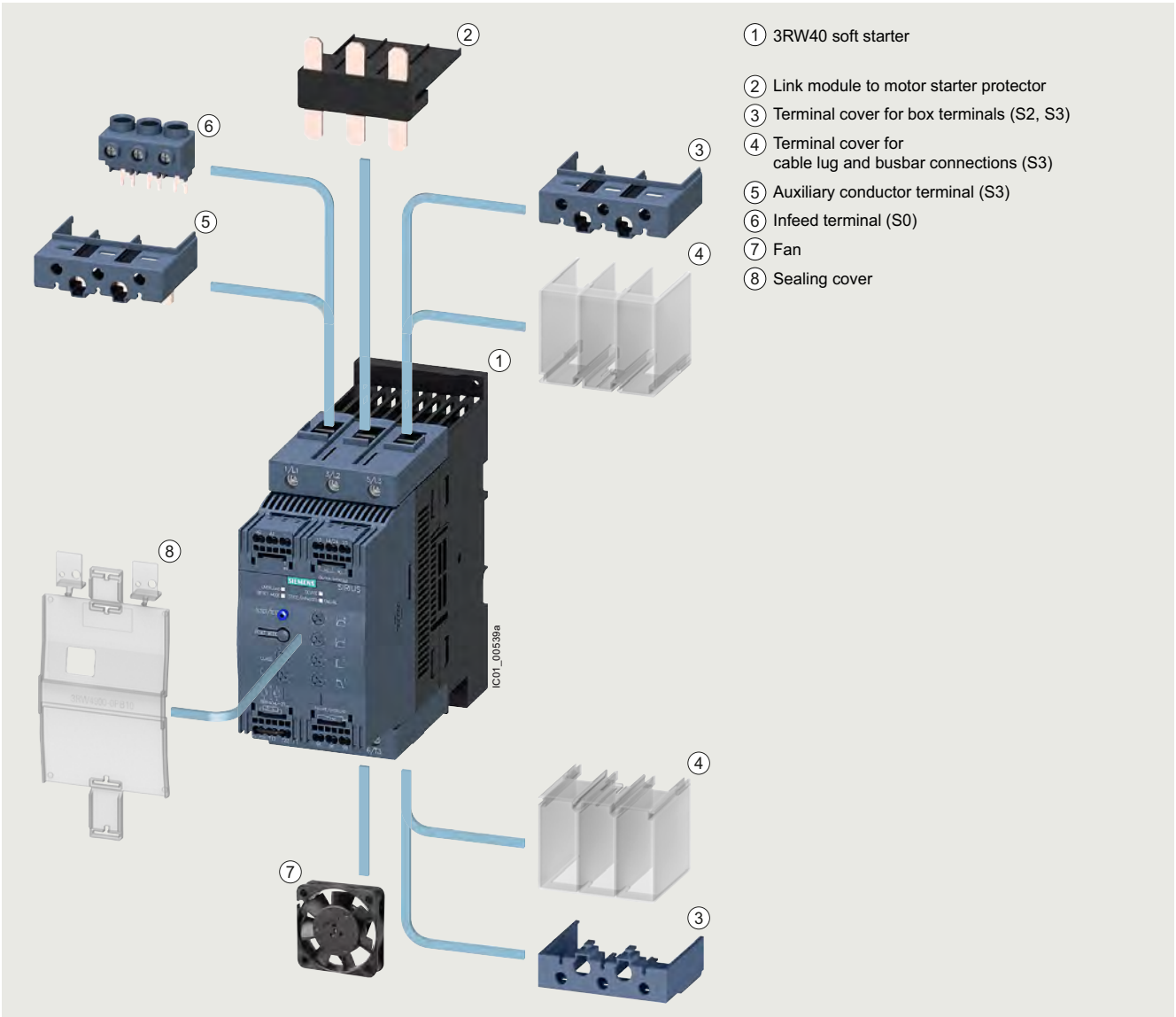
More information	
Homepage, see www.siemens.com/sirius-soft-starter Industry Mall, see www.siemens.com/product?3RW40	TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=3rw40 Simulation Tool for Soft Starters (STS), see page 6/9 or https://support.industry.siemens.com/cs/ww/en/view/101494917 Conversion tool, see www.siemens.com/conversion-tool

SIRIUS 3RW40 soft starter

The SIRIUS 3RW40 Basic Performance soft starters are suitable for soft starting and stopping of three-phase asynchronous motors.

Thanks to 2-phase control, not only is the current kept at minimum values in all three phases throughout the entire starting time, but disturbing direct current components are also eliminated. This not only enables the 2-phase starting of motors up to 55 kW (at 400 V) but also avoids the current and torque peaks which occur e.g. with star-delta (wye-delta) starters.

The SIRIUS 3RW40 soft starters are suitable for starting explosion-proof motors with "increased safety" type of protection EEx e according to ATEX Directive 94/9/EC.



1 3RW40 soft starter
2 Link module to motor starter protector
3 Terminal cover for box terminals (S2, S3)
4 Terminal cover for cable lug and busbar connections (S3)
5 Auxiliary conductor terminal (S3)
6 Infeed terminal (S0)
7 Fan
8 Sealing cover

SIRIUS 3RW40 Basic Performance soft starter with accessories (see page 6/94)

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Benefits

3RW402.

3RW403.

3RW404.

Product characteristics/function	Performance features/benefits
Small and compact design	Space-saving, clearly arranged control panel layout
Motor overload and intrinsic device protection without additional wiring	Adjustable trip classes, integrated diagnostics functions
Integrated in the SIRIUS modular system	Link modules to motor starter protectors
Hybrid switching technology and 2-phase motor control	Minimum power loss and optimized motor control by avoiding DC components
Certified according to ATEX Directive 94/9/EC	Suitable for starting explosion-proof motors with "increased safety" type of protection EEx e.
Optional thermistor motor protection	Full motor protection

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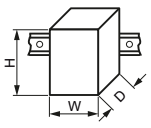
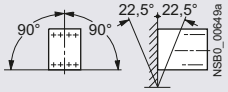
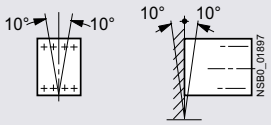
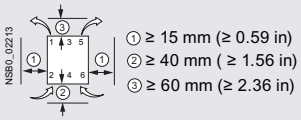
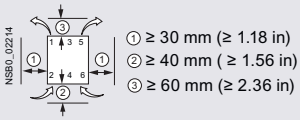
Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/25251/td	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/25251/faq
Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/38752095	Simulation Tool for Soft Starters (STS), see page 6/9 or https://support.industry.siemens.com/cs/ww/en/view/101494917

Type			**3RW402.**	**3RW403.**	**3RW404.**
Mechanics and environment					
Mounting dimensions (W x H x D)					
• Screw terminals		mm	45 x 125 x 154	55 x 144 x 170	70 x 160 x 188
• Spring-loaded terminals		mm	45 x 150 x 154	55 x 144 x 170	70 x 160 x 188
Permissible ambient temperature					
During operation		°C	-25 ... +60 (derating from +40)		
During storage		°C	-40 ... +80		
Weight		kg	0.77	1.35	1.9
Permissible mounting position[1]					
• With auxiliary fan (for 3RW402. to 3RW404.)					
• Without auxiliary fan (for 3RW402. to 3RW404.)					
Installation type[1]	Stand-alone installation		 ① ≥ 15 mm (≥ 0.59 in) ② ≥ 40 mm (≥ 1.56 in) ③ ≥ 60 mm (≥ 2.36 in)	 ① ≥ 30 mm (≥ 1.18 in) ② ≥ 40 mm (≥ 1.56 in) ③ ≥ 60 mm (≥ 2.36 in)	
Permissible installation altitude		m	5 000 (Derating from 1 000, see characteristic curve on page 6/8)		
Degree of protection IP on the front according to IEC 60529			IP20		
Touch protection on the front according to IEC 60529			Finger-safe for vertical touching from the front		

[1] In the case of deviations, please observe derating, see Equipment Manual in the chapter "Configuration".

Type	Terminal		**3RW402., 3RW403., 3RW404.**	
Control electronics				
Rated values				
Rated control supply voltage	A1/A2	V	24 AC/DC	110 ... 230 AC/DC
• Tolerance		%	± 20	-15/+10
Rated frequency		Hz	50/60	
• Tolerance		%	± 10	

Type		**3RW402.-..B.4, 3RW403.-..B.4, 3RW404.-..B.4**	**3RW402.-..B.5, 3RW403.-..B.5, 3RW404.-..B.5**
Power electronics			
Rated operational voltage	V AC	200 ... 480	400 ... 600
Tolerance	%	-15/+10	
Maximum blocking voltage (thyristor)	V AC	1 600	
Rated frequency	Hz	50/60	
Tolerance	%	± 10	
Uninterrupted duty at 40 °C (% of I_e)	%	115	
Minimum load (% of smallest adjustable rated motor current I_M)	%	20 (at least 2 A)	
Maximum cable length between soft starter and motor	m	300	

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Type		3RW4024	3RW4026	3RW4027	3RW4028
Power electronics					
Load rating with rated operational current I_e					
• According to IEC and UL/CSA[1], individual mounting at 40/50/60 °C, AC-53a	A	12.5/11/10	25.3/23/21	32.2/29/26	38/34/31
Smallest adjustable rated motor current I_M					
For the motor overload protection	A	5	10	17	23
Power loss					
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	2	8	13	19
• During starting with current limiting set to 300% I_M (40 °C)	W	68	188	220	256
Permissible rated motor current and starts per hour					
• For normal starting (CLASS 10) at 40/50 °C					
- Rated motor current I_M[2], start-up time 3 s	A	12.5/11	25/23	32/29	38/34
- Starts per hour[3]	1/h	50/50	23/23	23/23	19/19
- Rated motor current I_M[2], start-up time 4 s	A	12.5/11	25/23	32/29	38/34
- Starts per hour[3]	1/h	36/36	15/15	16/16	12/12
• For heavy starting (CLASS 20) at 40/50 °C					
- Rated motor current I_M[2], start-up time 6 s	A	10/9	21/19	27/24	31/28
- Starts per hour[3]	1/h	47/47	21/21	20/20	18/18
- Rated motor current I_M[2], start-up time 8 s	A	10/9	21/19	27/24	31/28
- Starts per hour[3]	1/h	34/34	15/15	14/14	13/13

[1] Measurement at 60 °C according to UL/CSA not required.

[2] Current limiting on soft starter set to 300% I_M, T_u = 40/50 °C. Maximum adjustable rated motor current I_M dependent on CLASS setting.

[3] For intermittent duty S4 with ON period = 30%, T_u = 40/50 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode. Factors for permissible switching frequency in other mounting position, direct mounting, side-by-side mounting, and implementation of optional auxiliary fan, see Equipment Manual in the chapter "Configuration".

Type		3RW4036	3RW4037	3RW4038	3RW4046	3RW4047
Power electronics						
Load rating with rated operational current I_e						
• According to IEC and UL/CSA[1], individual mounting at 40/50/60 °C, AC-53a	A	45/42/39	63/58/53	72/62.1/60	80/73/66	106/98/90
Smallest adjustable rated motor current I_M						
For the motor overload protection	A	23	26	35	43	46
Power loss						
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	6	12	15	12	21
• During starting with current limiting set to 300% I_M (40 °C)	W	316	444	500	576	768
Permissible rated motor current and starts per hour						
• For normal starting (CLASS 10) at 40/50 °C						
- Rated motor current I_M[2], start-up time 3 s	A	45/42	63/58	72/62	80/73	106/98
- Starts per hour[3]	1/h	38/38	23/23	22/22	22/22	15/15
- Rated motor current I_M[2], start-up time 4 s	A	45/42	63/58	72/62	80/73	106/98
- Starts per hour[3]	1/h	26/26	15/15	15/15	15/15	10/10
• For heavy starting (CLASS 20) at 40/50 °C						
- Rated motor current I_M[2], start-up time 6 s	A	38/34	46/42	50/46	64/58	77/70
- Starts per hour[3]	1/h	30/30	31/31	34/34	23/23	23/23
- Rated motor current I_M[2], start-up time 8 s	A	38/34	46/42	50/46	64/58	77/70
- Starts per hour[3]	1/h	21/21	22/22	24/24	16/16	16/16

[1] Measurement at 60 °C according to UL/CSA not required.

[2] Current limiting on soft starter set to 300% I_M, T_u = 40/50 °C. Maximum adjustable rated motor current I_M dependent on CLASS setting.

[3] For intermittent duty S4 with ON period = 30%, T_u = 40/50 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode. Factors for permissible switching frequency in other mounting position, direct mounting, side-by-side mounting, and implementation of optional auxiliary fan, see Equipment Manual in the chapter "Configuration".

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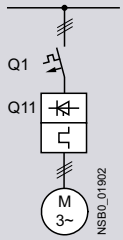
Motor feeders according to IEC with 3RV2 motor starter protectors (without semiconductor protection)

Type of coordination "1", CLASS 10,
short-circuit breaking capacity I_q in kA, see table

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.



Soft starters	Motor starter protectors			
	for 400 V systems		for 500 V systems	
Q11	Q1	I_q	Q1	I_q
Type	Type	kA	Type	kA
Type of coordination "1" ToC 1	**Standard (inline) circuit**			
3RW4024	3RV2021-4AA10	55	3RV2021-4AA10	10
3RW4026	3RV2021-4DA10	55	3RV2021-4DA10	10
3RW4027	3RV2021-4EA10	55	3RV2021-4EA10	10
3RW4028	3RV2021-4FA10	55	3RV2021-4FA10	10
3RW4036	3RV2031-4WA10	10	3RV2031-4WA10	10
3RW4037	3RV2031-4JA10	10	3RV2031-4JA10	5
3RW4038	3RV2031-4KA10	10	3RV2031-4KA10	5
3RW4046	3RV2041-4RA10	11	3RV2041-4YA10	5
3RW4047	3RV2041-4MA10	11	3RV2041-4MA10	5

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller motor starter protectors/circuit breakers from the same series can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must match the connected three-phase motor, the short-circuit and overload requirements of the application, and the line protection for the cables used.

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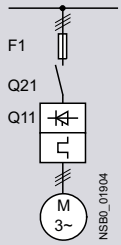
Motor feeders according to IEC with 3NA3 fuses

gG class full-range fuses for cable and line protection according to IEC 60269-2, without semiconductor protection

Type of coordination "1",
short-circuit breaking capacity I_q = 65 kA

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.



Soft starters	**gG class fuse**	**Line contactor (optional)**		
	for systems up to 600 V	for systems up to 400 V	for systems up to 480 V	for systems up to 600 V
Q11	F1	Q21	Q21	Q21
Type	Type	Type	Type	Type
Type of coordination "1" ToC 1	**Standard (inline) circuit**			
3RW4024	3NA3820-6	3RT2025	3RT2025/ 3RT2018 (in size S00)	3RT2025
3RW4026	3NA3822-6	3RT2026	3RT2027	3RT2037
3RW4027	3NA3824-6	3RT2027	3RT2028	3RT2037
3RW4028	3NA3824-6	3RT2028	3RT2035	3RT2037
3RW4036	3NA3130-6	3RT2036	3RT2036	3RT2038
3RW4037	3NA3132-6	3RT2037	3RT2037	3RT2046
3RW4038	3NA3132-6	3RT2038	3RT2038	3RT2046
3RW4046	3NA3136-6	3RT2045	3RT2045	3RT2047
3RW4047	3NA3136-6	3RT2047	3RT2047	3RT1054

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

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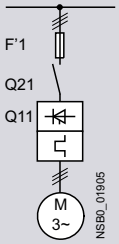
Motor feeders according to IEC with 3NE1 SITOR fuses

gR/gS class full-range fuses for semiconductor protection, cable and line protection (gS)

Type of coordination "2",
short-circuit breaking capacity I_q = 65 kA

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.



Soft starters	**gR/gS class fuse**	**Line contactor (optional)**		
	for systems up to 600 V	for systems up to 400 V	for systems up to 480 V	for systems up to 600 V
Q11	F'1	Q21	Q21	Q21
Type	Type	Type	Type	Type
Type of coordination "2" ToC 2	**Standard (inline) circuit**			
3RW4024	3NE1814-0	3RT2025	3RT2025/ 3RT2018 (in size S00)	3RT2025
3RW4026	3NE1803-0	3RT2026	3RT2027	3RT2037
3RW4027	3NE1020-2	3RT2027	3RT2028	3RT2037
3RW4028	3NE1020-2	3RT2028	3RT2035	3RT2037
3RW4036	3NE1020-2	3RT2036	3RT2036	3RT2038
3RW4037	3NE1820-0	3RT2037	3RT2037	3RT2046
3RW4038	3NE1820-0	3RT2038	3RT2038	3RT2046
3RW4046	3NE1021-0	3RT2045	3RT2045	3RT2047
3RW4047	3NE1022-0	3RT2047	3RT2047	3RT1054

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

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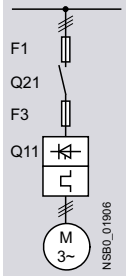
Motor feeders according to IEC with 3NE8/3NE4/3NE3/3NC fuses

aR class partial-range fuses for semiconductor protection

Type of coordination "2",
short-circuit breaking capacity I_q = 65 kA

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.



Soft starters	**gG class fuse**	**aR class fuse**			**Cylindrical fuse**	**Line contactor (optional)**		
	for systems up to 600 V	for systems up to 600 V	for systems up to 600 V	for systems up to 600 V	for systems up to 480 V	for systems up to 400 V	for systems up to 480 V	for systems up to 600 V
Q11	F1	F3	F3	F3	F3	Q21	Q21	Q21
Type	Type	Type	Type	Type	Type	Type	Type	Type
Type of coordination "2" ToC 2	**Standard (inline) circuit**							
3RW4024	3NA3820-6	--	3NE4101	3NE8015-1	3NC2240	3RT2025	3RT2025/ 3RT2018 (in size S00)	3RT2025
3RW4026	3NA3822-6	--	3NE4102	3NE8017-1	3NC2263	3RT2026	3RT2027	3RT2037
3RW4027	3NA3824-6	--	3NE4118	3NE8018-1	3NC2280	3RT2027	3RT2028	3RT2037
3RW4028	3NA3824-6	--	3NE4118	3NE8020-1	3NC2280	3RT2028	3RT2035	3RT2037
3RW4036	3NA3130-6	--	3NE4120	3NE8020-1	3NC2280	3RT2036	3RT2036	3RT2038
3RW4037	3NA3132-6	--	3NE4121	3NE8021-1	--	3RT2037	3RT2037	3RT2046
3RW4038	3NA3132-6	3NE3221	--	3NE8022-1	--	3RT2038	3RT2038	3RT2046
3RW4046	3NA3136-6	3NE3222	--	3NE8022-1	--	3RT2045	3RT2045	3RT2047
3RW4047	3NA3136-6	3NE3224	--	3NE8024-1	--	3RT2047	3RT2047	3RT1054

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2 motor starter protectors can also be used, possibly with reduced short-circuit breaking capacity (see page 6/88). In these cases, optional line contactors can be dispensed with.

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Selection and ordering data

For normal starting (CLASS 10)

3RW402.

3RW403.

3RW404.

3RW ambient temperature 40 °C Rated values of three-phase motors				3RW ambient temperature 50 °C Rated values of three-phase motors					Size	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current I_e	Rating at operational voltage U_e 230 V	400 V	500 V	Operational current I_e	Rating at operational voltage U_e 200 V	230 V	460 V	575 V						
A	kW	kW	kW	A	hp	hp	hp	hp						
Rated operational voltage U_e 200 ... 480 V														
12.5	3	**5.5**	--	11	3	3	**7.5**	--	**S0**	**3RW4024-□BB□4**		1	1 unit	42G
25	5.5	**11**	--	23	5	5	**15**	--	**S0**	**3RW4026-□BB□4**		1	1 unit	42G
32	7.5	**15**	--	29	7.5	7.5	**20**	--	**S0**	**3RW4027-□BB□4**		1	1 unit	42G
38	11	**18.5**	--	34	10	10	**25**	--	**S0**	**3RW4028-□BB□4**		1	1 unit	42G
45	11	**22**	--	42	10	15	**30**	--	**S2**	**3RW4036-□BB□4**		1	1 unit	42G
63	18.5	**30**	--	58	15	20	**40**	--	**S2**	**3RW4037-□BB□4**		1	1 unit	42G
72	22	**37**	--	62	20	20	**40**	--	**S2**	**3RW4038-□BB□4**		1	1 unit	42G
80	22	**45**	--	73	20	25	**50**	--	**S3**	**3RW4046-□BB□4**		1	1 unit	42G
106	30	**55**	--	98	30	30	**75**	--	**S3**	**3RW4047-□BB□4**		1	1 unit	42G
Rated operational voltage U_e 400 ... 600 V														
12.5	--	5.5	**7.5**	11	--	--	7.5	**10**	**S0**	**3RW4024-□BB□5**		1	1 unit	42G
25	--	11	**15**	23	--	--	15	**20**	**S0**	**3RW4026-□BB□5**		1	1 unit	42G
32	--	15	**18.5**	29	--	--	20	**25**	**S0**	**3RW4027-□BB□5**		1	1 unit	42G
38	--	18.5	**22**	34	--	--	25	**30**	**S0**	**3RW4028-□BB□5**		1	1 unit	42G
45	--	22	**30**	42	--	--	30	**40**	**S2**	**3RW4036-□BB□5**		1	1 unit	42G
63	--	30	**37**	58	--	--	40	**50**	**S2**	**3RW4037-□BB□5**		1	1 unit	42G
72	--	37	**45**	62	--	--	40	**60**	**S2**	**3RW4038-□BB□5**		1	1 unit	42G
80	--	45	**55**	73	--	--	50	**60**	**S3**	**3RW4046-□BB□5**		1	1 unit	42G
106	--	55	**75**	98	--	--	75	**75**	**S3**	**3RW4047-□BB□5**		1	1 unit	42G

Article number supplement for connection types

- Screw terminals
- Spring-loaded terminals[1)]

Control supply voltage

- 24 V AC/DC
- 110 … 230 V AC/DC

1 2

0 1

1) Main connection from size S2: screw terminals.

Note:

For the constraints for the motor outputs specified here, see page 6/8.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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For normal starting (CLASS 10)

3RW402.

3RW403.

3RW404.

3RW ambient temperature 40 °C Rated values of three-phase motors Operational current I_e	Rating at operational voltage U_e 230 V	400 V	500 V	3RW ambient temperature 50 °C Rated values of three-phase motors Operational current I_e	Rating at operational voltage U_e 200 V	230 V	460 V	575 V	Size	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	kW	kW	kW	A	hp	hp	hp	hp						
Rated operational voltage U_e 200 ... 480 V, with thermistor motor protection, rated control supply voltage U_s 24 V AC/DC														
12.5	3	**5.5**	--	11	3	3	**7.5**	--	**S0**	**3RW4024-□TB04**		1	1 unit	42G
25	5.5	**11**	--	23	5	5	**15**	--	**S0**	**3RW4026-□TB04**		1	1 unit	42G
32	7.5	**15**	--	29	7.5	7.5	**20**	--	**S0**	**3RW4027-□TB04**		1	1 unit	42G
38	11	**18.5**	--	34	10	10	**25**	--	**S0**	**3RW4028-□TB04**		1	1 unit	42G
45	11	**22**	--	42	10	15	**30**	--	**S2**	**3RW4036-□TB04**		1	1 unit	42G
63	18.5	**30**	--	58	15	20	**40**	--	**S2**	**3RW4037-□TB04**		1	1 unit	42G
72	22	**37**	--	62	20	20	**40**	--	**S2**	**3RW4038-□TB04**		1	1 unit	42G
80	22	**45**	--	73	20	25	**50**	--	**S3**	**3RW4046-□TB04**		1	1 unit	42G
106	30	**55**	--	98	30	30	**75**	--	**S3**	**3RW4047-□TB04**		1	1 unit	42G
Rated operational voltage U_e 400 ... 600 V, with thermistor motor protection, rated control supply voltage U_s 24 V AC/DC														
12.5	--	5.5	**7.5**	11	--	--	7.5	**10**	**S0**	**3RW4024-□TB05**		1	1 unit	42G
25	--	11	**15**	23	--	--	15	**20**	**S0**	**3RW4026-□TB05**		1	1 unit	42G
32	--	15	**18.5**	29	--	--	20	**25**	**S0**	**3RW4027-□TB05**		1	1 unit	42G
38	--	18.5	**22**	34	--	--	25	**30**	**S0**	**3RW4028-□TB05**		1	1 unit	42G
45	--	22	**30**	42	--	--	30	**40**	**S2**	**3RW4036-□TB05**		1	1 unit	42G
63	--	30	**37**	58	--	--	40	**50**	**S2**	**3RW4037-□TB05**		1	1 unit	42G
72	--	37	**45**	62	--	--	40	**60**	**S2**	**3RW4038-□TB05**		1	1 unit	42G
80	--	45	**55**	73	--	--	50	**60**	**S3**	**3RW4046-□TB05**		1	1 unit	42G
106	--	55	**75**	98	--	--	75	**75**	**S3**	**3RW4047-□TB05**		1	1 unit	42G

Article number supplement for connection types

- Screw terminals
- Spring-loaded terminals[1)]

1 2

[1)] Main connection from size S2: screw terminals.

Note:

For the constraints for the motor outputs specified here, see page 6/8.

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Selection and ordering data

For soft starters		Conductor cross-section			Tightening torque	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		Solid or stranded	Finely stranded with end sleeve	AWG cables, solid or stranded						
Type	Size	mm²	mm²	AWG	Nm					
3-phase infeed terminals										
3RW402.	**S0**	2.5 ... 25	2.5 ... 16	10 ... 4	3 ... 4	**3RV2925-5AB**		1	1 unit	41E

3RV2925-5AB

For soft starters		Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type	Size						
Auxiliary conductor terminals							
Auxiliary conductor terminals, 3-pole							
3RW404.	**S3**	For connection of auxiliary and control cables (0.5 ... 2.5 mm²) to the main conductor terminals	**3RT2946-4F**		1	1 unit	41B
Covers for soft starters							
Terminal covers for box terminals							
3RW403.	**S2**	Additional touch protection to be fitted at the box terminals (two units required per device)	**3RT2936-4EA2**		1	1 unit	41B
3RW404.	**S3**		**3RT2946-4EA2**		1	1 unit	41B
Terminal covers for cable lugs and busbar connections							
3RW404.	**S3**	For complying with the voltage clearances and as touch protection if box terminal is removed (two units required per device)	**3RT1946-4EA1**		1	1 unit	41B
Sealing covers							
3RW402. to 3RW404.	**S0, S2, S3**	--	**3RW4900-0PB10**		1	1 unit	42G

3RT2946-4F

3RT2936-4EA2

3RT1946-4EA1

3RW4900-0PB10

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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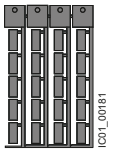
	For motor starter protectors Size	For soft starters Size	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
DIN-rail adapters								
3RA2932-1CA00	**S2**	**S2**	For mechanical fixing of motor starter protector and soft starter; for snapping onto DIN rail or for screw fixing **Single-unit packaging**	**3RA2932-1CA00**		1	1 unit	41B

	For soft starters Type	Size	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Fans (to increase switching frequency and for device mounting in positions different to the standard position)							
3RW49..-8VB00	3RW402.	**S0**	**3RW4928-8VB00**		1	1 unit	42G
	3RW403., 3RW404.	**S2, S3**	**3RW4947-8VB00**		1	1 unit	42G

	For soft starters Type	Size	Motor starter protectors Size	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Link modules to motor starter protectors[1]								
3RA2921-1BA00	• Screw terminals			**Screw terminals**				
	3RW402.	**S0**	**S00/S0**	**3RA2921-1BA00**		1	1 unit	41B
	3RW4036	**S2**	**S2**	**3RA2931-1AA00**		1	1 unit	41B
	3RW404.	**S3**	**S3**	**3RA1941-1AA00**		1	1 unit	41B
	• Spring-loaded terminals			**Spring-loaded terminals**				
3RA2921-2GA00	3RW402.	**S0**	**S0**	**3RA2921-2GA00**		1	1 unit	41B

[1] Can be used in size S0 up to maximum 32 A.
Can be used in size S2 up to maximum 65 A in combination with 3RA2932-1CA00 DIN-rail adapter (specially for soft starters).
Can be used in size S3 up to maximum 64 A and only with mounting plate.

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Tools for opening spring-loaded terminals in sizes S00 and S0						
3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-loaded terminals Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**Spring-loaded terminals** **3RA2908-1A**		1	1 unit	41B
Blank labels						
 3RT2900-1SB20	**Unit labeling plates**[1] For SIRIUS devices 20 mm x 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH
(see page 16/18).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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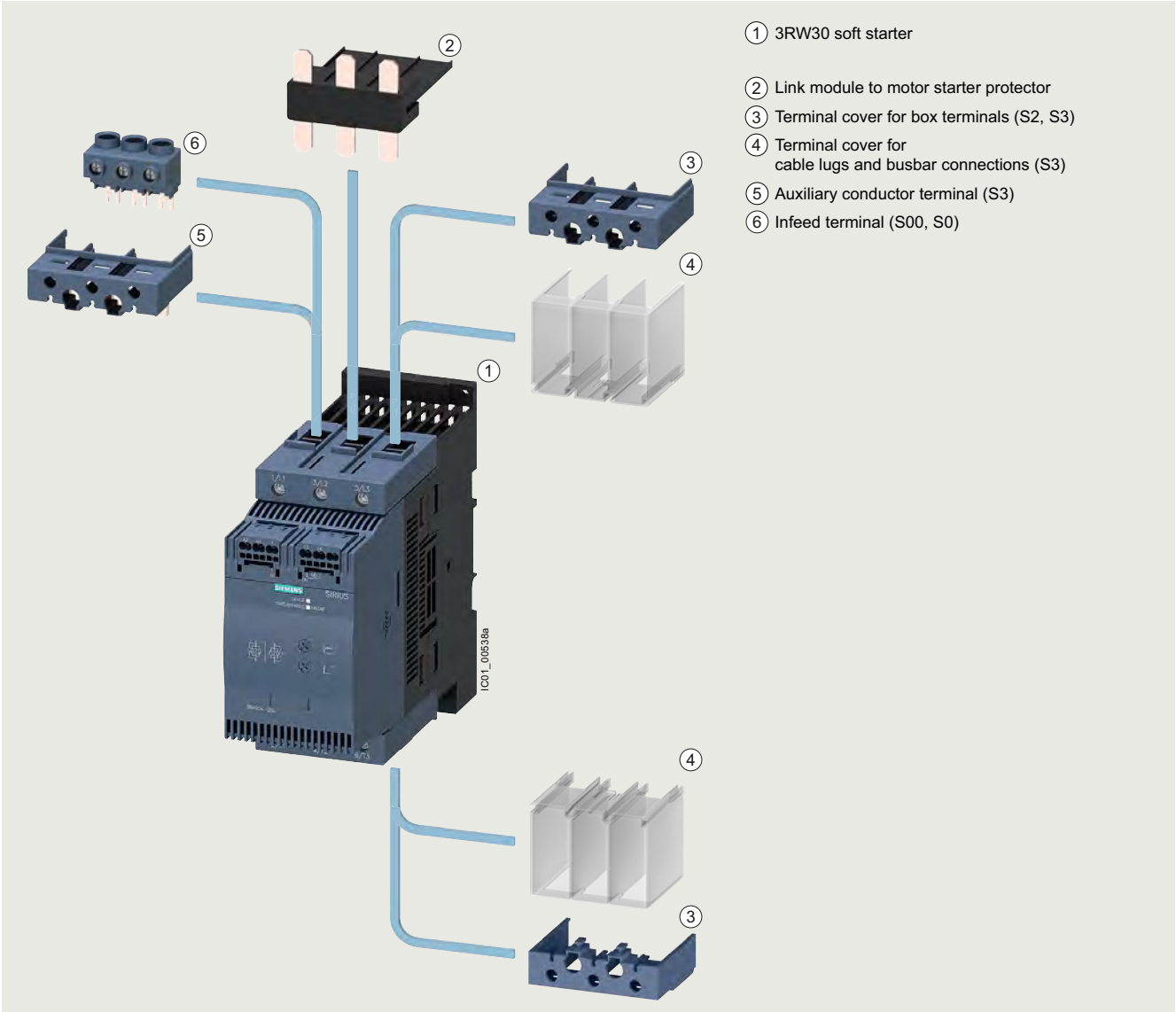
Overview

More information	
Homepage, see www.siemens.com/sirius-soft-starter Industry Mall, see www.siemens.com/product?3RW30	TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=3rw30 Simulation Tool for Soft Starters (STS), see page 6/9 or https://support.industry.siemens.com/cs/ww/en/view/101494917 Conversion tool, see www.siemens.com/conversion-tool

SIRIUS 3RW30 soft starter

The SIRIUS 3RW30 Basic Performance soft starters are suitable for soft starting of three-phase asynchronous motors.

Thanks to 2-phase control, not only is the current kept at minimum values in all three phases throughout the entire starting time, but disturbing direct current components are also eliminated. This not only enables the 2-phase starting of motors up to 55 kW (at 400 V) but also avoids the current and torque peaks which occur e.g. with star-delta (wye-delta) starters.



1. 3RW30 soft starter
2. Link module to motor starter protector
3. Terminal cover for box terminals (S2, S3)
4. Terminal cover for cable lugs and busbar connections (S3)
5. Auxiliary conductor terminal (S3)
6. Infeed terminal (S00, S0)

SIRIUS 3RW30 Basic Performance soft starter with accessories (see page 6/104)

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Benefits

3RW301.

3RW302.

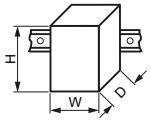
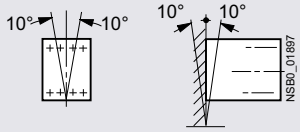
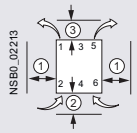
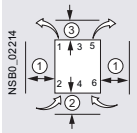
3RW303.

3RW304.

Product characteristics/function	Performance features/benefits
Small and compact design	Space-saving, clearly arranged control panel layout
Parameterization using potentiometers	Simple and fast commissioning
Integrated in the SIRIUS modular system	Link modules to motor starter protectors
Hybrid switching technology and 2-phase motor control	Minimum power loss and optimized motor control by avoiding DC components

Technical specifications

More information	
Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/38752095 FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16213/faq	Catalog LV 10, see www.siemens.com/lowvoltage/lv10

Type			3RW301.	3RW302.	3RW303.	3RW304.
Mechanics and environment						
Mounting dimensions (W x H x D) • Screw terminals • Spring-loaded terminals		mm mm	45 x 95 x 151 45 x 117 x 151	45 x 125 x 151 45 x 150 x 151	55 x 144 x 168 55 x 144 x 168	70 x 160 x 186 70 x 160 x 186
Permissible ambient temperature During operation During storage		°C °C	-25 ... +60 (derating from +40) -40 ... +80			
Weight		kg	0.58	0.69	1.20	1.71
Permissible mounting position[1] (auxiliary fan not possible)						
Installation type[1]	Stand-alone installation					
Permissible installation altitude		m	5 000 (Derating from 1 000, see characteristic curve on page 6/9)			
Degree of protection IP on the front according to IEC 60529			IP20			
Touch protection on the front according to IEC 60529			Finger-safe for vertical touching from the front			

[1] In the case of deviations, please observe derating, see Equipment Manual in the chapter "Configuration".

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Type	Terminal		3RW301., 3RW302.		3RW303., 3RW304.	
Control electronics						
Rated values						
Rated control supply voltage	A1/A2	V	24	110 ... 230	24	110 ... 230
• Tolerance		%	± 20	-15/+10	± 20	-15/+10
Rated frequency		Hz	50/60			
• Tolerance		%	± 10			

Type		3RW301.	3RW302.	3RW303.	3RW304.
Power electronics					
Rated operational voltage	V AC	200 ... 480			
Tolerance	%	-15/+10			
Rated frequency	Hz	50/60			
Tolerance	%	± 10			
Uninterrupted duty at 40 °C (% of I_e)	%	115			
Minimum load (% of I_e)	%	10 (at least 1 A)			
Maximum cable length between soft starter and motor	m	300			

Type		3RW3013	3RW3014	3RW3016	3RW3017	3RW3018
Power electronics						
Load rating with rated operational current I_e						
• According to IEC and UL/CSA[1], individual mounting at 40/50/60 °C, AC-53a	A	3.6/3.3/3	6.5/6/5.5	9/8/7	12.5/12/11	17.6/17/14
Power loss						
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	0.25	0.5	1	2	4
• During starting with 300% I_M (40 °C)	W	24	52	80	80	116
Permissible rated motor current and starts per hour						
• For normal starting (CLASS 10) at 40/50 °C						
- Rated motor current I_M[2], start-up time 3 s	A	3.6/3.3	6.5/6.0	9/8	12.5/12.0	17.6/17.0
- Starts per hour[3]	1/h	200/150	87/60	50/50	85/70	62/46
- Rated motor current I_M[2], start-up time 4 s	A	3.6/3.3	6.5/6.0	9/8	12.5/12.0	17.6/17.0
- Starts per hour[3]	1/h	150/100	64/46	35/35	62/47	45/32

1) Measurement at 60 °C according to UL/CSA not required.
2) At 300% I_M, T_u = 40/50 °C.
3) For intermittent duty S4 with ON period = 30%, T_u = 40/50 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

Type		3RW3026	3RW3027	3RW3028
Power electronics				
Load rating with rated operational current I_e				
• According to IEC and UL/CSA[1], individual mounting at 40/50/60 °C, AC-53a	A	25.3/23/21	32.2/29/26	38/34/31
Power loss				
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	8	13	19
• During starting with 300% I_M (40 °C)	W	188	220	256
Permissible rated motor current and starts per hour				
• For normal starting (CLASS 10) at 40/50 °C				
- Rated motor current I_M[2], start-up time 3 s	A	25/23	32/29	38/34
- Starts per hour[3]	1/h	23/23	23/23	19/19
- Rated motor current I_M[2], start-up time 4 s	A	25/23	32/29	38/34
- Starts per hour[3]	1/h	15/15	16/16	12/12

1) Measurement at 60 °C according to UL/CSA not required.
2) At 300% I_M, T_u = 40/50 °C.
3) For intermittent duty S4 with ON period = 30%, T_u = 40/50 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode. Factors for permissible switching frequency with deviating mounting position, direct mounting, side-by-side mounting, see Equipment Manual in the chapter "Configuration".

Type		3RW3036	3RW3037	3RW3038	3RW3046	3RW3047
Power electronics						
Load rating with rated operational current I_e						
• According to IEC and UL/CSA[1], individual mounting at 40/50/60 °C, AC-53a	A	45/42/39	65/58/53	72/62.1/60	80/73/66	106/98/90
Power loss						
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	6	12	15	12	21
• During starting with 300% I_M (40 °C)	W	316	444	500	576	768
Permissible rated motor current and starts per hour						
• For normal starting (CLASS 10) at 40/50 °C						
- Rated motor current I_M[2], start-up time 3 s	A	45/42	63/58	72/62	80/73	106/108
- Starts per hour[3]	1/h	38/38	23/23	22/22	22/22	15/15
- Rated motor current I_M[2], start-up time 4 s	A	45/42	63/58	72/62	80/73	106/98
- Starts per hour[3]	1/h	26/26	15/15	15/15	15/15	10/10

1) Measurement at 60 °C according to UL/CSA not required.
2) At 300% I_M, T_u = 40/50 °C.
3) For intermittent duty S4 with ON period = 30%, T_u = 40/50 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

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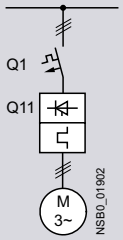
Motor feeders according to IEC with 3RV2 motor starter protectors (without semiconductor protection)

Type of coordination "1", CLASS 10,
short-circuit breaking capacity I_q in kA, see table

Note:

For general recommendations for constructing motor feeders
with soft starters, see page 6/12.



Soft starters	**Motor starter protectors** for 400 V systems	
Q11	Q1	I_q
Type	Type	kA
Type of coordination "1" ToC 1	**Standard (inline) circuit**	
3RW3013	3RV2011-1FA10	5
3RW3014	3RV2011-1HA10	5
3RW3016	3RV2011-1JA10	5
3RW3017	3RV2011-1KA10	5
3RW3018	3RV2021-4BA10	5
3RW3026	3RV2021-4DA10	55
3RW3027	3RV2021-4EA10	55
3RW3028	3RV2021-4FA10	55
3RW3036	3RV2031-4WA10	10
3RW3037	3RV2031-4JA10	10
3RW3038	3RV2031-4KA10	10
3RW3046	3RV2041-4RA10	11
3RW3047	3RV2041-4MA10	11

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller motor starter protectors/circuit breakers from the same series can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must match the connected three-phase motor, the short-circuit and overload requirements of the application, and the line protection for the cables used.

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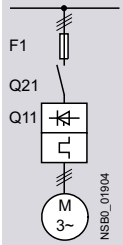
Motor feeders according to IEC with 3NA3 fuses

gG class full-range fuses for cable and line protection according to IEC 60269-2, without semiconductor protection

Type of coordination "1",
short-circuit breaking capacity I_q = 65 kA

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.



Soft starters Q11 Type	gG class fuse for systems up to 480 V F1 Type	Line contactor (optional) for systems up to 400 V Q21 Type	 for systems up to 480 V Q21 Type
Type of coordination "1" ToC 1	**Standard (inline) circuit**		
3RW3013	3NA3803-6	3RT2015	3RT2015
3RW3014	3NA3805-6	3RT2015	3RT2016
3RW3016	3NA3807-6	3RT2016	3RT2017
3RW3017	3NA3810-6	3RT2018	3RT2025
3RW3018	3NA3814-6	3RT2026	3RT2026
3RW3026	3NA3822-6	3RT2026	3RT2027
3RW3027	3NA3824-6	3RT2027	3RT2028
3RW3028	3NA3824-6	3RT2028	3RT2035
3RW3036	3NA3130-6	3RT2036	3RT2036
3RW3037	3NA3132-6	3RT2037	3RT2037
3RW3038	3NA3132-6	3RT2038	3RT2038
3RW3046	3NA3136-6	3RT2045	3RT2045
3RW3047	3NA3136-6	3RT2047	3RT2047

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

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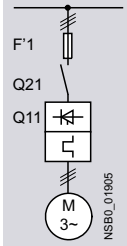
Motor feeders according to IEC with 3NE1 SITOR fuses

gR/gS class full-range fuses for semiconductor protection, cable and line protection (gS)

Type of coordination "2",
short-circuit breaking capacity I_q = 65 kA

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.



Soft starters	**gR/gS class fuse**	**Line contactor (optional)**	
	for systems up to 480 V	for systems up to 400 V	for systems up to 480 V
Q11	F'1	Q21	Q21
Type	Type	Type	Type
Type of coordination "2" ToC 2	**Standard (inline) circuit**		
3RW3013	3NE1813-0	3RT2015	3RT2015
3RW3014	3NE1813-0	3RT2015	3RT2016
3RW3016	3NE1813-0	3RT2016	3RT2017
3RW3017	3NE1813-0	3RT2018	3RT2025
3RW3018	3NE1814-0	3RT2026	3RT2026
3RW3026	3NE1803-0	3RT2026	3RT2027
3RW3027	3NE1020-2	3RT2027	3RT2028
3RW3028	3NE1020-2	3RT2028	3RT2035
3RW3036	3NE1020-2	3RT2036	3RT2036
3RW3037	3NE1820-0	3RT2037	3RT2037
3RW3038	3NE1820-0	3RT2038	3RT2038
3RW3046	3NE1021-0	3RT2045	3RT2045
3RW3047	3NE1022-0	3RT2047	3RT2047

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

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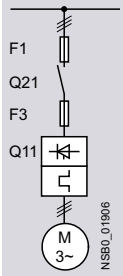
Motor feeders according to IEC with 3NE8/3NE4/3NE3/3NC fuses

aR class partial-range fuses for semiconductor protection

Type of coordination "2",
short-circuit breaking capacity I_q = 65 kA

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/12.



Soft starters	**gG class fuse**	**aR class fuse**			**Cylindrical fuse**	**Line contactor (optional)**	
	for systems up to 480 V	for systems up to 480 V	for systems up to 480 V	for systems up to 480 V	for systems up to 480 V	for systems up to 400 V	for systems up to 480 V
Q11	F1	F3	F3	F3	F3	Q21	Q21
Type	Type	Type	Type	Type	Type	Type	Type
Type of coordination "2" ToC 2	**Standard (inline) circuit**						
3RW3013	3NA3803-6	--	3NE4101	3NE8015-1	3NC2220	3RT2015	3RT2015
3RW3014	3NA3805-6	--	3NE4101	3NE8015-1	3NC2220	3RT2015	3RT2016
3RW3016	3NA3807-6	--	3NE4101	3NE8015-1	3NC2220	3RT2016	3RT2017
3RW3017	3NA3810-6	--	3NE4101	3NE8015-1	3NC2250	3RT2018	3RT2025
3RW3018	3NA3814-6	--	3NE4101	3NE8003-1	3NC2263	3RT2026	3RT2026
3RW3026	3NA3822-6	--	3NE4102	3NE8017-1	3NC2263	3RT2026	3RT2027
3RW3027	3NA3824-6	--	3NE4118	3NE8018-1	3NC2280	3RT2027	3RT2028
3RW3028	3NA3824-6	--	3NE4118	3NE8020-1	3NC2280	3RT2028	3RT2035
3RW3036	3NA3130-6	--	3NE4120	3NE8020-1	3NC2280	3RT2036	3RT2036
3RW3037	3NA3132-6	--	3NE4121	3NE8021-1	--	3RT2037	3RT2037
3RW3038	3NA3132-6	3NE3221	--	3NE8022-1	--	3RT2038	3RT2038
3RW3046	3NA3136-6	3NE3222	--	3NE8022-1	--	3RT2045	3RT2045
3RW3047	3NA3136-6	3NE3224	--	3NE8024-1	--	3RT2047	3RT2047

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2 motor starter protectors can also be used, possibly with reduced short-circuit breaking capacity (see page 6/99). In these cases, optional line contactors can be dispensed with.

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Selection and ordering data

For simple starting conditions

3RW301.

3RW302.

3RW303.

3RW304.

3RW ambient temperature 40 °C Rated values of three-phase motors				3RW ambient temperature 50 °C Rated values of three-phase motors					Size	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current I_e	Rating at operational voltage U_e 230 V	400 V	500 V	Operational current I_e	200 V	230 V	460 V	575 V						
A	kW	kW	kW	A	hp	hp	hp	hp						
Rated operational voltage U_e 200 ... 480 V														
3.6	0.75	**1.5**	--	3	0.5	0.5	**1.5**	--	**S00**	**3RW3013-□BB□4**		1	1 unit	42G
6.5	1.5	**3**	--	6	1	1	**3**	--	**S00**	**3RW3014-□BB□4**		1	1 unit	42G
9	2.2	**4**	--	8	2	2	**5**	--	**S00**	**3RW3016-□BB□4**		1	1 unit	42G
12.5	3	**5.5**	--	12	3	3	**7.5**	--	**S00**	**3RW3017-□BB□4**		1	1 unit	42G
17.6	4	**7.5**	--	17	3	3	**10**	--	**S00**	**3RW3018-□BB□4**		1	1 unit	42G
25	5.5	**11**	--	23	5	5	**15**	--	**S0**	**3RW3026-□BB□4**		1	1 unit	42G
32	7.5	**15**	--	29	7.5	7.5	**20**	--	**S0**	**3RW3027-□BB□4**		1	1 unit	42G
38	11	**18.5**	--	34	10	10	**25**	--	**S0**	**3RW3028-□BB□4**		1	1 unit	42G
45	11	**22**	--	42	10	15	**30**	--	**S2**	**3RW3036-□BB□4**		1	1 unit	42G
63	18.5	**30**	--	58	15	20	**40**	--	**S2**	**3RW3037-□BB□4**		1	1 unit	42G
72	22	**37**	--	62	20	20	**40**	--	**S2**	**3RW3038-□BB□4**		1	1 unit	42G
80	22	**45**	--	73	20	25	**50**	--	**S3**	**3RW3046-□BB□4**		1	1 unit	42G
106	30	**55**	--	98	30	30	**75**	--	**S3**	**3RW3047-□BB□4**		1	1 unit	42G

Article number supplement for connection types

- Screw terminals **1 2**
- Spring-loaded terminals[1] **0 1**

Control supply voltage U_s

- 24 V AC/DC
- 110 … 230 V AC/DC

[1] Main connection from size S2: screw terminals.

Note:

For the constraints for the motor outputs specified here, see page 6/8.

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Selection and ordering data

More information

Equipment Manual, see
https://support.industry.siemens.com/cs/ww/en/view/38752095

	Conductor cross-section			Tightening torque	For soft starters	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Solid or stranded	Finely stranded with end sleeve	AWG cables, solid or stranded							
	mm²	mm²	AWG	Nm	Size					
3-phase infeed terminals										
3RV2925-5AB	2.5 ... 25	2.5 ... 16	10 ... 4	3 ... 4	S00 (3RW301.), S0 (3RW302.)	**3RV2925-5AB**		1	1 unit	41E

	For soft starters		Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Type	Size					
Auxiliary conductor terminals							
3RT2946-4F	**Auxiliary conductor terminals, 3-pole**						
	3RW304.	**S3**	**3RT2946-4F**		1	1 unit	41B
Covers for soft starters							
3RT2936-4EA2	**Terminal covers for box terminals** Additional touch protection to be fitted at the box terminals (two units required per device)						
	3RW303.	**S2**	**3RT2936-4EA2**		1	1 unit	41B
	3RW304.	**S3**	**3RT2946-4EA2**		1	1 unit	41B
3RT1946-4EA1	**Terminal covers for cable lugs and busbar connections** For complying with the voltage clearances and as touch protection if box terminal is removed (two units required per device)						
	3RW304.	**S3**	**3RT1946-4EA1**		1	1 unit	41B

	For motor starter protectors	For soft starters	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Size	Size						
Mounting rails for mounting contactors for the customer assembly of 3RA21 load feeders with busbar adapters for 60 mm systems								
8US1998-7CB45			For the discrete configuration of direct-on-line starters, an additional mounting rail is needed for the contactor in addition to the existing mounting rail on the busbar adapter for the motor starter protector.					
	--	**S0**	For pushing onto the device adapter, including fixing screws	**8US1998-7CB45**		1	10 units	14O
DIN-rail adapters								
3RA2932-1CA00			For mechanical fixing of motor starter protector and soft starter; for snapping onto DIN rail or for screw fixing					
	S2	**S2**	**Single-unit packaging**	**3RA2932-1CA00**		1	1 unit	41B

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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For soft starters		Motor starter protectors	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type	Size	Size					
Link modules to motor starter protectors[1]							
• Screw terminals			**Screw terminals**				
3RW301.	**S00**	**S00**	**3RA2921-1BA00**		1	1 unit	41B
3RW302.	**S0**	**S00/S0**	**3RA2921-1BA00**		1	1 unit	41B
3RW3036	**S2**	**S2**	**3RA2931-1AA00**		1	1 unit	41B
3RW304.	**S3**	**S3**	**3RA1941-1AA00**		1	1 unit	41B
• Spring-loaded terminals			**Spring-loaded terminals**				
3RW301.	**S00**	**S00**	**3RA2911-2GA00**		1	1 unit	41B
3RW302.	**S0**	**S0**	**3RA2921-2GA00**		1	1 unit	41B

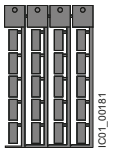
3RA2921-1BA00

3RA2921-2GA00

[1] Can be used in size S0 up to maximum 32 A.
Can be used in size S2 up to maximum 65 A in combination with 3RA2932-1CA00 DIN-rail adapter (specially for soft starters).
Can be used in size S3 up to maximum 64 A and only on a mounting plate.

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Tools for opening spring-loaded terminals in sizes S00 and S0					
Screwdrivers For all SIRIUS devices with spring-loaded terminals	**Spring-loaded terminals**				
Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**3RA2908-1A**		1	1 unit	41B
Blank labels					
Unit labeling plates[1] For SIRIUS devices					
20 mm x 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B

3RA2908-1A



3RT2900-1SB20

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH
(see page 16/18).

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For 3RW55

Overview

More information

Homepage, see www.siemens.com/sirius-soft-starter
Industry Mall, see www.siemens.com/product?3RW
Industry Online Support (SIOS) topic page, see https://support.industry.siemens.com/cs/ww/en/view/109747404

Selection and ordering data

Product designation	Manufacturer's article number of the soft starter	Product version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Power semiconductor modules							
Power semiconductor module	3RW5524-.HA.4 (3x)	480 V, 47 A	**3RW5952-0SF04**		1	1 unit	42S
	3RW5525-.HA.4 (3x), 3RW5526-.HA.4 (3x)	480 V, 77 A	**3RW5952-0SH04**		1	1 unit	42S
	3RW5527-.HA.4 (3x)	480 V, 93 A	**3RW5952-0SJ04**		1	1 unit	42S
	3RW5534-.HA.4 (3x), 3RW5535-.HA.4 (3x)	480 V, 143 A	**3RW5953-0SL04**		1	1 unit	42S
	3RW5536-.HA.4 (3x)	480 V, 171 A	**3RW5953-0SM04**		1	1 unit	42S
	3RW5543-.HA.4 (3x)	480 V, 210 A	**3RW5954-0SN04**		1	1 unit	42S
	3RW5544-.HA.4 (3x)	480 V, 250 A	**3RW5954-0SP04**		1	1 unit	42S
	3RW5545-.HA.4 (3x), 3RW5546-.HA.4 (3x)	480 V, 370 A	**3RW5954-0SR04**		1	1 unit	42S
	3RW5547-.HA.4 (3x), 3RW5548-.HA.4 (3x)	480 V, 570 A	**3RW5954-0ST04**		1	1 unit	42S
	3RW5552-.HA.4 (3x)	480 V, 630 A	**3RW5955-0SU04**		1	1 unit	42S
	3RW5553-.HA.4 (3x)	480 V, 720 A	**3RW5955-0SV04**		1	1 unit	42S
	3RW5554-.HA.4 (3x)	480 V, 840 A	**3RW5955-0SW04**		1	1 unit	42S
	3RW5556-.HA.4 (3x)	480 V, 1 100 A	**3RW5955-0SX04**		1	1 unit	42S
	3RW5558-.HA.4 (3x)	480 V, 1 280 A	**3RW5955-0SY04**		1	1 unit	42S
	3RW5521-.HA.6 (3x), 3RW5524-.HA.6 (3x)	690 V, 47 A	**3RW5952-0SF06**		1	1 unit	42S
	3RW5525-.HA.6 (3x), 3RW5526-.HA.6 (3x)	690 V, 77 A	**3RW5952-0SH06**		1	1 unit	42S
	3RW5527-.HA.6 (3x)	690 V, 93 A	**3RW5952-0SJ06**		1	1 unit	42S
	3RW5534-.HA.6 (3x), 3RW5535-.HA.6 (3x)	690 V, 143 A	**3RW5953-0SL06**		1	1 unit	42S
	3RW5536-.HA.6 (3x)	690 V, 171 A	**3RW5953-0SM06**		1	1 unit	42S
	3RW5543-.HA.6 (3x)	690 V, 210 A	**3RW5954-0SN06**		1	1 unit	42S
	3RW5544-.HA.6 (3x)	690 V, 250 A	**3RW5954-0SP06**		1	1 unit	42S
	3RW5545-.HA.6 (3x), 3RW5546-.HA.6 (3x)	690 V, 370 A	**3RW5954-0SR06**		1	1 unit	42S
	3RW5547-.HA.6 (3x), 3RW5548-.HA.6 (3x)	690 V, 570 A	**3RW5954-0ST06**		1	1 unit	42S
	3RW5552-.HA.6 (3x)	690 V, 630 A	**3RW5955-0SU06**		1	1 unit	42S
	3RW5553-.HA.6 (3x)	690 V, 720 A	**3RW5955-0SV06**		1	1 unit	42S
	3RW5554-.HA.6 (3x)	690 V, 840 A	**3RW5955-0SW06**		1	1 unit	42S
	3RW5556-.HA.6 (3x)	690 V, 1 100 A	**3RW5955-0SX06**		1	1 unit	42S
	3RW5558-.HA.6 (3x)	690 V, 1 280 A	**3RW5955-0SY06**		1	1 unit	42S
Bypass units							
Bypass unit	3RW552.-.HA.., 3RW553.-.HA..	--	**3RW5953-0BY00**		1	1 unit	42S
	3RW5543.-.HA.., 3RW5544.-.HA.., 3RW5545.-.HA..	210 ... 315 A	**3RW5954-0BP00**		1	1 unit	42S
	3RW5546.-.HA.., 3RW5547.-.HA.., 3RW5548.-.HA..	370 ... 570 A	**3RW5954-0BT00**		1	1 unit	42S
	3RW5552, 3RW5553, 3RW5554	630 ... 840 A	**3RW5955-0BW00**		1	1 unit	42S
	3RW5556, 3RW5558	1 100 A, 1 280 A	**3RW5955-0BY00**		1	1 unit	42S

3RW5952-0SF04

3RW5953-0SM06

3RW5954-0ST06

3RW5953-0BY00

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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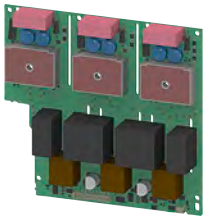
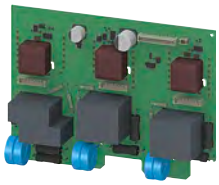
	Product designation	Manufacturer's article number of the soft starter	Product version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Control units								
3RW5950-1UY00	**Control unit**	3RW551..-.HA0., 3RW552..-.HA0., 3RW553..-.HA0., 3RW554..-.HA0.	24 V	**3RW5950-1UY00**		1	1 unit	42S
		3RW555..-.HA0.		**3RW5955-1UY00**		1	1 unit	42S
		3RW551..-.HA1., 3RW552..-.HA1., 3RW553..-.HA1., 3RW554..-.HA1.	110 ... 250 V	**3RW5950-1UY10**		1	1 unit	42S
		3RW555..-.HA1.		**3RW5955-1UY10**		1	1 unit	42S
Printed circuit boards								
 3RW5951-0PA04	**Printed circuit boards**	3RW5513-.HA.4	480 V, 13 A	**3RW5951-0PA04**		1	1 unit	42S
		3RW5514-.HA.4	480 V, 18 A	**3RW5951-0PB04**		1	1 unit	42S
		3RW5515-.HA.4	480 V, 25 A	**3RW5951-0PC04**		1	1 unit	42S
		3RW5516-.HA.4	480 V, 32 A	**3RW5951-0PD04**		1	1 unit	42S
		3RW5517-.HA.4	480 V, 38 A	**3RW5951-0PE04**		1	1 unit	42S
		3RW552.-.HA.4, 3RW553.-.HA.4	480 V	**3RW5953-0PY04**		1	1 unit	42S
		3RW554.-.HA.4	480 V	**3RW5954-0PY04**		1	1 unit	42S
		3RW5513-.HA.5	600 V, 13 A	**3RW5951-0PA05**		1	1 unit	42S
		3RW5514-.HA.5	600 V, 18 A	**3RW5951-0PB05**		1	1 unit	42S
		3RW5515-.HA.5	600 V, 25 A	**3RW5951-0PC05**		1	1 unit	42S
		3RW5516-.HA.5	600 V, 32 A	**3RW5951-0PD05**		1	1 unit	42S
		3RW5517-.HA.5	600 V, 38 A	**3RW5951-0PE05**		1	1 unit	42S
 3RW5954-0PY06		3RW552.-.HA.6, 3RW553.-.HA.6	690 V	**3RW5953-0PY06**		1	1 unit	42S
		3RW554.-.HA.6	690 V	**3RW5954-0PY06**		1	1 unit	42S
	Firing printed circuit boards	3RW555.-.HA.4	480 V	**3RW5955-0PY14**		1	1 unit	42S
		3RW555.-.HA.6	690 V	**3RW5955-0PY16**		1	1 unit	42S
	TSE printed circuit boards	3RW555.-.HA.4	480 V	**3RW5955-0PY24**		1	1 unit	42S
		3RW555.-.HA.6	690 V	**3RW5955-0PY26**		1	1 unit	42S
Fans								
3RW5983-0FF00	**Fan**	3RW551 (1x), 3RW552 (2x), 3RW553 (2x)	--	**3RW5983-0FF00**		1	1 unit	42S
		3RW554 (1x)	--	**3RW5984-0FF00**		1	1 unit	42S
		3RW555 (3x)	--	**3RW5985-0FF00**		1	1 unit	42S
Terminals and terminal covers								
3RW5982-0TB00	**Box terminal block**	3RW552 (2x)	--	**3RW5982-0TB00**		1	1 unit	42S
3RW5980-1TR00	**Removable control terminals**	• Screw terminals		**Screw terminals**				
		3RW551.-1H... (2x), 3RW552.-1H... (2x), 3RW553.-6H... (2x), 3RW554.-6H... (2x), 3RW555.-6H... (2x)	Contains 2 blocks each with 6 terminals	**3RW5980-1TR00**		1	1 unit	42S
		• Spring-loaded terminals		**Spring-loaded terminals**				
		3RW551.-3H... (2x), 3RW552.-3H... (2x), 3RW553.-2H... (2x), 3RW554.-2H... (2x), 3RW555.-2H... (2x)	Contains 2 blocks each with 6 terminals	**3RW5980-2TR00**		1	1 unit	42S
3RW5955-0TC20	**Terminal cover**	3RW555	--	**3RW5955-0TC20**		1	1 unit	42S

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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For 3RW55

	Product designation	Manufacturer's article number of the soft starter	Product version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosure components								
3RW5953-0GB00	**Lower part of enclosure**	3RW552.-.HA.., 3RW553.-.HA..	--	**3RW5953-0GB00**		1	1 unit	42S
		3RW554.-.HA..	--	**3RW5954-0GB00**		1	1 unit	42S
3RW5955-0GC00	**Ventilation cover**	3RW555 (3x)	--	**3RW5955-0GC00**		1	1 unit	42S
3RW5950-0GD20	**Cover for control cable duct**	3RW55..-.HA..	Titanium gray	**3RW5950-0GD20**		1	1 unit	42S
3RW5954-0GF00	**Front cover**	3RW554.-.HA..	--	**3RW5954-0GF00**		1	1 unit	42S
		3RW555	--	**3RW5955-0GF00**		1	1 unit	42S
3RW5950-0GL30	**Hinged cover**	3RW55	With cutout for High-Feature HMI module	**3RW5950-0GL30**		1	1 unit	42S

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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For 3RW55

	Product designation	Manufacturer's article number of the soft starter	Product version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
HMI modules								
3RW5980-0HF00	**HMI module**	3RW55	High-Feature	**3RW5980-0HF00**		1	1 unit	42S
3RW5980-0HL00	**Interface cover**	3RW55	--	**3RW5980-0HL00**		1	1 unit	42S
Connecting cable for installing the HMI module in the soft starter								
3UF7931-0AA00-0	**Connecting cable**	--	Length 0.1 m, flat	**3UF7931-0AA00-0**		1	1 unit	42J
Transport packaging								
3RW5953-0VY00	**Transport packaging**	3RW551	--	**3RW5951-0VY00**		1	1 unit	42S
		3RW552, 3RW553	--	**3RW5953-0VY00**		1	1 unit	42S
		3RW554	--	**3RW5954-0VY00**		1	1 unit	42S
		3RW555	--	**3RW5955-0VY00**		1	1 unit	42S

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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For 3RW55 Failsafe

Overview

More information

Homepage, see www.siemens.com/sirius-soft-starter
Industry Mall, see www.siemens.com/product?3RW
Industry Online Support (SIOS) topic page, see https://support.industry.siemens.com/cs/ww/en/view/109747404

Selection and ordering data

	Product designation	Manufacturer's article number of the soft starter	Product version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Fans								
3RW5983-0FF00	**Fan**	3RW551 (1x), 3RW552 (2x), 3RW553 (2x)	--	**3RW5983-0FF00**		1	1 unit	42S
		3RW554 (1x)	--	**3RW5984-0FF00**		1	1 unit	42S
Terminals and terminal covers								
3RW5982-0TB00	**Box terminal block**	3RW552 (2x)	--	**3RW5982-0TB00**		1	1 unit	42S
3RW5980-1TR00	**Removable control terminals**	• Screw terminals		**Screw terminals**				
		3RW551.-1H... (2x), 3RW552.-1H... (2x), 3RW553.-6H... (2x), 3RW554.-6H... (2x)	Contains 2 blocks each with 6 terminals	**3RW5980-1TR00**		1	1 unit	42S
		• Spring-loaded terminals		**Spring-loaded terminals**				
		3RW551.-3H... (2x), 3RW552.-3H... (2x), 3RW553.-2H... (2x), 3RW554.-2H... (2x)	Contains 2 blocks each with 6 terminals	**3RW5980-2TR00**		1	1 unit	42S
Enclosure components								
3RW5950-0GD30	**Cover for control cable duct**	3RW55..-.HF..	Yellow	**3RW5950-0GD30**		1	1 unit	42S
3RW5950-0GL30	**Hinged cover**	3RW55	With cutout for High-Feature HMI module	**3RW5950-0GL30**		1	1 unit	42S

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For 3RW55 Failsafe

	Product designation	Manufacturer's article number of the soft starter	Product version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
HMI modules								
3RW5980-0HF00	**HMI module**	3RW55	High-Feature	**3RW5980-0HF00**		1	1 unit	42S
3RW5980-0HL00	**Interface cover**	3RW55	--	**3RW5980-0HL00**		1	1 unit	42S
Connecting cable for installing the HMI module in the soft starter								
3UF7931-0AA00-0	**Connecting cable**	--	Length 0.1 m, flat	**3UF7931-0AA00-0**		1	1 unit	42J
Transport packaging								
3RW5953-0VY00	**Transport packaging**	3RW551	--	**3RW5951-0VY00**		1	1 unit	42S
		3RW552, 3RW553	--	**3RW5953-0VY00**		1	1 unit	42S
		3RW554	--	**3RW5954-0VY00**		1	1 unit	42S

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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For 3RW52

Overview

More information	
Homepage, see www.siemens.com/sirius-soft-starter Industry Mall, see www.siemens.com/product?3RW	Industry Online Support (SIOS) topic page, see https://support.industry.siemens.com/cs/ww/en/view/109747404

Selection and ordering data

	Product designation	Manufacturer's article number of the soft starter	Product version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Power semiconductor modules								
3RW5952-0SF04	**Power semiconductor module**	3RW5224-..C.4 (3x)	480 V, 47 A	**3RW5952-0SF04**		1	1 unit	42S
		3RW5225-..C.4 (3x), 3RW5226-..C.4 (3x)	480 V, 77 A	**3RW5952-0SH04**		1	1 unit	42S
		3RW5227-..C.4 (3x)	480 V, 93 A	**3RW5952-0SJ04**		1	1 unit	42S
		3RW5234-..C.4 (3x), 3RW5235-..C.4 (3x)	480 V, 143 A	**3RW5953-0SL04**		1	1 unit	42S
		3RW5236-..C.4 (3x)	480 V, 171 A	**3RW5953-0SM04**		1	1 unit	42S
		3RW5224-..C.5 (3x)	600 V, 47 A	**3RW5952-0SF05**		1	1 unit	42S
		3RW5225-..C.5 (3x), 3RW5226-..C.5 (3x)	600 V, 77 A	**3RW5952-0SH05**		1	1 unit	42S
		3RW5227-..C.5 (3x)	600 V, 93 A	**3RW5952-0SJ05**		1	1 unit	42S
3RW5953-0SM05		3RW5234-..C.5 (3x), 3RW5235-..C.5 (3x)	600 V, 143 A	**3RW5953-0SL05**		1	1 unit	42S
		3RW5236-..C.5 (3x)	600 V, 171 A	**3RW5953-0SM05**		1	1 unit	42S
		3RW5243 (3x)	600 V, 210 A	**3RW5924-0SN05**		1	1 unit	42S
		3RW5244 (3x), 3RW5245 (3x)	600 V, 315 A	**3RW5924-0SQ05**		1	1 unit	42S
		3RW5246 (3x), 3RW5247 (3x)	600 V, 470 A	**3RW5924-0SS05**		1	1 unit	42S
3RW5924-0ST05		3RW5248 (3x)	600 V, 570 A	**3RW5924-0ST05**		1	1 unit	42S
Bypass units								
3RW5953-0BY00	**Bypass unit**	3RW522, 3RW523	--	**3RW5953-0BY00**		1	1 unit	42S
		3RW5243, 3RW5244, 3RW5245	210 ... 315 A	**3RW5954-0BP00**		1	1 unit	42S
		3RW5246, 3RW5247, 3RW5248	370 ... 570 A	**3RW5954-0BT00**		1	1 unit	42S
Control units								
3RW5920-1UA00	**Control unit**	3RW52..-.AC0.	24 V analog output	**3RW5920-1UA00**		1	1 unit	42S
		3RW52..-.AC1.	110 ... 250 V analog output	**3RW5920-1UA10**		1	1 unit	42S
		3RW52..-.TC0.	24 V thermistor input	**3RW5920-1UT00**		1	1 unit	42S
		3RW52..-.TC1.	110 ... 250 V thermistor input	**3RW5920-1UT10**		1	1 unit	42S

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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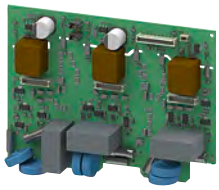
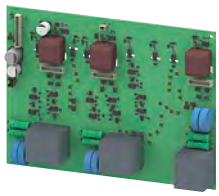
	Product designation	Manufacturer's article number of the soft starter	Product version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Printed circuit boards								
 3RW5923-0PY04	**Printed circuit board**	3RW5213-..C.4	480 V, 13 A	**3RW5921-0PA04**		1	1 unit	42S
		3RW5214-..C.4	480 V, 18 A	**3RW5921-0PB04**		1	1 unit	42S
		3RW5215-..C.4	480 V, 25 A	**3RW5921-0PC04**		1	1 unit	42S
		3RW5216-..C.4	480 V, 32 A	**3RW5921-0PD04**		1	1 unit	42S
		3RW5217-..C.4	480 V, 38 A	**3RW5921-0PE04**		1	1 unit	42S
		3RW522.-..C.4, 3RW523.-..C.4	480 V	**3RW5923-0PY04**		1	1 unit	42S
		3RW524.-..C.4	480 V	**3RW5924-0PY04**		1	1 unit	42S
 3RW5924-0PY05		3RW5213-..C.5	600 V, 13 A	**3RW5921-0PA05**		1	1 unit	42S
		3RW5214-..C.5	600 V, 18 A	**3RW5921-0PB05**		1	1 unit	42S
		3RW5215-..C.5	600 V, 25 A	**3RW5921-0PC05**		1	1 unit	42S
		3RW5216-..C.5	600 V, 32 A	**3RW5921-0PD05**		1	1 unit	42S
		3RW5217-..C.5	600 V, 38 A	**3RW5921-0PE05**		1	1 unit	42S
		3RW522.-..C.5, 3RW523.-..C.5	600 V	**3RW5923-0PY05**		1	1 unit	42S
		3RW524.-..C.5	600 V	**3RW5924-0PY05**		1	1 unit	42S
Fans								
3RW5983-0FF00	**Fan**	3RW5216/17 (1x), 3RW5226/27 (2x), 3RW523 (2x)	--	**3RW5983-0FF00**		1	1 unit	42S
		3RW524 (1x)	--	**3RW5984-0FF00**		1	1 unit	42S
Terminals								
3RW5982-0TB00	**Box terminal block**	3RW522 (2x)	--	**3RW5982-0TB00**		1	1 unit	42S
	Removable control terminals	• Screw terminals		**Screw terminals**				
3RW5980-1TR00		3RW521.-1.C.., 3RW522.-1.C.., 3RW523.-6.C.., 3RW524.-6.C..	Contains 2 blocks each with 6 terminals	**3RW5980-1TR00**		1	1 unit	42S
		• Spring-loaded terminals		**Spring-loaded terminals**				
		3RW521.-3.C.., 3RW522.-3.C.., 3RW523.-2.C.., 3RW524.-2.C..	Contains 2 blocks each with 6 terminals	**3RW5980-2TR00**		1	1 unit	42S
Enclosure components								
3RW5953-0GB00	**Lower part of enclosure**	3RW522, 3RW523	--	**3RW5953-0GB00**		1	1 unit	42S
		3RW524	--	**3RW5954-0GB00**		1	1 unit	42S
3RW5950-0GD20	**Cover for control cable duct**	3RW52	Titanium gray	**3RW5950-0GD20**		1	1 unit	42S

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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For 3RW52

	Product designation	Manufacturer's article number of the soft starter	Product version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosure components								
3RW5954-0GF00	**Front cover**	3RW524	--	**3RW5954-0GF00**		1	1 unit	42S
3RW5950-0GL20	**Hinged cover**	3RW52	Without cutout	**3RW5950-0GL20**		1	1 unit	42S
Transport packaging								
3RW5953-0VY00	**Transport packaging**	3RW521	--	**3RW5951-0VY00**		1	1 unit	42S
		3RW522, 3RW523	--	**3RW5953-0VY00**		1	1 unit	42S
		3RW524	--	**3RW5954-0VY00**		1	1 unit	42S

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Illustrations are approximate

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Overview

More information	
Homepage, see www.siemens.com/sirius-soft-starter Industry Mall, see www.siemens.com/product?3RW	Industry Online Support (SIOS) topic page, see https://support.industry.siemens.com/cs/ww/en/view/109747404

Selection and ordering data

	Product designation	Manufacturer's article number of the soft starter	Product version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Power semiconductor modules								
3RW5953-0SL0.	**Power semiconductor module**	3RW505.-..B.4 (2x)	480 V, 171 A	**3RW5953-0SL04**		1	1 unit	42S
		3RW505.-..B.5 (2x)	600 V, 171 A	**3RW5953-0SL05**		1	1 unit	42S
3RW5924-0S.05		3RW5072 (2x)	600 V, 210 A	**3RW5924-0SN05**		1	1 unit	42S
		3RW5073 (2x), 3RW5074 (2x)	600 V, 315 A	**3RW5924-0SQ05**		1	1 unit	42S
		3RW5075 (2x), 3RW5076 (2x)	600 V, 470 A	**3RW5924-0SS05**		1	1 unit	42S
		3RW5077 (2x)	600 V, 570 A	**3RW5924-0ST05**		1	1 unit	42S
Bypass units								
3RW5905-0BY00	**Bypass unit**	3RW505	--	**3RW5905-0BY00**		1	1 unit	42S
		3RW5072, 3RW5073, 3RW5074	210 ... 315 A	**3RW5907-0BQ00**		1	1 unit	42S
		3RW5075, 3RW5076, 3RW5077	370 ... 570 A	**3RW5907-0BY00**		1	1 unit	42S
Control units								
3RW5905-1UA00	**Control unit**							
	Analog output	3RW505.-.AB0.	24 V	**3RW5905-1UA00**		1	1 unit	42S
		3RW505.-.AB1.	110 ... 250 V	**3RW5905-1UA10**		1	1 unit	42S
		3RW507.-.AB0.	24 V	**3RW5907-1UA00**		1	1 unit	42S
		3RW507.-.AB1.	110 ... 250 V	**3RW5907-1UA10**		1	1 unit	42S
	Thermistor input	3RW505.-.TB0.	24 V	**3RW5905-1UT00**		1	1 unit	42S
		3RW505.-.TB1.	110 ... 250 V	**3RW5905-1UT10**		1	1 unit	42S
		3RW507.-.TB0.	24 V	**3RW5907-1UT00**		1	1 unit	42S
		3RW507.-.TB1.	110 ... 250 V	**3RW5907-1UT10**		1	1 unit	42S

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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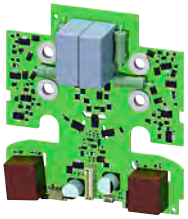
For 3RW50

	Product designation	Manufacturer's article number of the soft starter	Product version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Printed circuit boards								
 3RW5905-0PY04	**Printed circuit board**	3RW505.-..B.4	480 V	**3RW5905-0PY04**		1	1 unit	42S
		3RW507.-..B.4	480 V	**3RW5907-0PY04**		1	1 unit	42S
		3RW505.-..B.5	600 V	**3RW5905-0PY05**		1	1 unit	42S
		3RW507.-..B.5	600 V	**3RW5907-0PY05**		1	1 unit	42S
Fans								
3RW5905-0FF00	**Fan**	3RW505 (1x)	--	**3RW5905-0FF00**		1	1 unit	42S
		3RW507 (1x)	--	**3RW5907-0FF00**		1	1 unit	42S
Terminals								
3RW5980-1TR00	**Removable control terminals**	• Screw terminals		**Screw terminals**				
		3RW50..-6.B..	Contains 2 blocks each with 6 terminals	**3RW5980-1TR00**		1	1 unit	42S
		• Spring-loaded terminals		**Spring-loaded terminals**				
		3RW50..-2.B..	Contains 2 blocks each with 6 terminals	**3RW5980-2TR00**		1	1 unit	42S
Enclosure components								
3RW5905-0GB00	**Lower part of enclosure**	3RW505	--	**3RW5905-0GB00**		1	1 unit	42S
		3RW507	--	**3RW5907-0GB00**		1	1 unit	42S
3RW5900-0GL00	**Hinged cover**	3RW50	--	**3RW5900-0GL00**		1	1 unit	42S
Transport packaging								
3RW5905-0VY00	**Transport packaging**	3RW505	--	**3RW5905-0VY00**		1	1 unit	42S
		3RW507	--	**3RW5907-0VY00**		1	1 unit	42S

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Overview

More information	
Industry Mall, see www.siemens.com/product?3RF	Online configurator, see www.siemens.com/sirius/configurators Conversion tool, see www.siemens.com/conversion-tool

SIRIUS 3RF solid-state switching devices

1-phase solid-state relay and 3-phase solid-state contactor

The SIRIUS 3RF2 solid-state switching devices reliably switch a wide range of different loads with alternating voltages in 50 and 60 Hz systems.

SIRIUS 3RF2 solid-state switching devices for resistive/inductive loads:

- Solid-state relays
- Solid-state contactors
- Function modules

SIRIUS 3RF2 – for almost unending activity

Conventional electromechanical switchgear is often overtaxed by the rise in the number of switching operations. A high switching frequency results in frequent failure and short replacement cycles. However, this does not have to be the case, because with the latest generation of our SIRIUS 3RF2 solid-state switching devices we provide you with solid-state relays and contactors with a particularly long endurance – for almost unending activity even under the toughest conditions and under high mechanical loading, but also in noise-sensitive areas.

Proven time and again in service

SIRIUS 3RF2 solid-state switching devices have firmly established themselves in industrial applications. They are used above all in applications where loads are switched frequently – mainly with resistive load controllers, with the control of electrical heat or the control of valves and motors in conveyor systems. In addition to its use in areas with high switching frequencies, their silent switching means that SIRIUS is also ideally suited for use in noise-sensitive areas, such as offices or hospitals.

The most reliable solution for any application

Compared to mechanical switchgear, our SIRIUS 3RF2 solid-state switching devices stand out due to their considerably longer service life. Thanks to the high product quality, their switching is extremely precise, reliable and, above all, insusceptible to faults. With its variable connection methods and a wide spread of control voltages, the SIRIUS 3RF2 family is universally applicable. Depending on the individual requirements of the application, our modular switchgear can also be quite easily expanded by the addition of standardized function modules.

Always on the sunny side with SIRIUS

Because SIRIUS 3RF2 offers even more:

- The space-saving and compact side-by-side mounting ensures reliable operation up to an ambient temperature of +60 °C.
- Thanks to fast configuration and the ease of mounting and startup, not only time but also expenses are saved.

Also for switching motors (see page 6/159)

In order to achieve higher productivity, the switching frequency is continuously increased in drive technology. It is no problem for our SIRIUS solid-state contactors for switching motors. With three-phase motors up to 7.5 kW, they can reliably withstand even the highest switching frequencies. Even a continuous change in the direction of rotation is possible with the solid-state reversing contactors. Both versions can be perfectly combined with components from the SIRIUS modular system. Connecting with SIRIUS motor starter protectors or SIRIUS overload relays can be implemented without any further steps.

SIRIUS 3RF3 solid-state switching devices for switching motors:

- Solid-state contactors
- Solid-state reversing contactors

Connection methods

The solid-state switching devices are available with screw terminals (box terminals), spring-loaded terminals or ring cable lug connections.

	Screw terminals
	Spring-loaded terminals
	Ring cable lug connection
	The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

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General data

Article number scheme

Product versions		Article number									
Device type	**Solid-state relays**	**3RF20**	□	□	–	□	□	□	□	□	1-phase, 45-mm width
		3RF21	□	□	–	□	□	□	□	□	1-phase, 22.5-mm width
		3RF22	□	□	–	□	□	□	□	□	3-phase, 45-mm width
	Solid-state contactors	**3RF23**	□	□	–	□	□	□	□	□	1-phase
		3RF24	□	□	–	□	□	□	□	□	3-phase
Type current	e.g. 20 = 20 A		□	□							
Connection type	Screw terminals					**1**					
	Spring-loaded terminals					**2**					
	Ring cable lug connection					**3**					
Switching function	Zero-point switching						**A**				
	Instantaneous switching						**B**				
	Zero-point switching						**C**				Low noise
	Zero-point switching						**D**				Short-circuit-proof with B MCB
1-phase or number of controlled phases	1-phase							**A**			
	2-phase							**B**			
	3-phase							**C**			
Rated control supply voltage U_s	24 V DC								**0**		
	24 V AC/DC								**1**		
	110 ... 230 V AC								**2**		
	110 V AC								**3**		
	4 ... 30 V DC								**4**		
	230 V AC								**5**		
Rated operational voltage U_e	24 ... 230 V AC									**2**	
	48 ... 460 V AC									**4**	
	48 ... 600 V AC									**5**	Blocking voltage 1 200 V
	48 ... 600 V AC									**6**	Blocking voltage 1 600 V
Example		**3RF21**	**2**	**0**	**–**	**1**	**A**	**A**	**0**	**6**	

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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Overview of the SIRIUS 3RF2 solid-state switching devices

Type	Solid-state relays			Solid-state contactors		Function modules					
	1-phase		3-phase	1-phase	3-phase	Converters	Load monitoring		Heating current monitoring	Power controllers	Power regulators
	22.5 mm	45 mm	45 mm				Basic	Extended			
Usage											
Simple replacement of existing solid-state relays	❑	✓	❑	❑	❑	--	--	--	--	--	--
Complete unit "Ready to use"	❑	❑	❑	✓	✓	--	--	--	--	--	--
Space-saving	✓	--	✓	✓	✓	✓	✓	--	--	--	--
Can be extended with modular function modules	✓	--	[1]	✓	[1]	--	--	--	--	--	--
Frequent switching and monitoring of the load and the solid-state relay or contactor	--	--	--	--	--	--	✓	✓	✓	✓	✓
Monitoring of up to 6 partial loads	--	--	--	--	--	--	✓	--	✓	✓	--
Monitoring of more than 6 partial loads	--	--	--	--	--	--	--	✓	--	--	--
Control of the heating power through an analog input	--	--	--	--	--	✓	--	--	--	✓	✓
Power control	--	--	--	--	--	--	--	--	--	--	✓
Startup											
Easy setting of setpoint values with "Teach" button	--	--	--	--	--	--	✓	✓	--	✓	✓
"Remote Teach" input for setting setpoints	--	--	--	--	--	--	--	--	✓	--	--
Mounting											
Mounting on mounting rails or mounting plates	--	--	--	✓	✓	--	--	--	--	--	--
Can be snapped directly onto a solid-state relay or contactor	--	--	--	--	--	✓	✓	✓	✓	✓	✓
For use with "Coolplate" heat sink	✓	✓	✓	--	--	--	--	--	--	--	--
Cable routing											
Connection of load circuit as for switchgear	✓	--	✓	✓	✓	--	✓	✓	✓	✓	✓
Connection of load circuit from above	--	✓	--	--	--	--	--	--	--	--	--

✓ Function available

❑ Function possible

-- Function not possible

[1] The converter can also be used with 3-phase devices.

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General data

Benefits

Main features

- LED display
- Variety of connection methods, also with high degree of protection
- Plug-in control connection
- Zero-point switching, 2-phase or 3-phase controlled

Features

- Considerable space savings thanks to a width of only 22.5 mm
- Variety of connection methods: Screw terminal, spring-loaded terminal or ring cable lug, there is no problem – they are all finger-safe
- Flexible for all applications with function modules for retrofitting
- Possibility of fuseless short-circuit-proof design

Benefits

- Saves time and costs with fast mounting and commissioning, short startup times and easy wiring
- Extremely long life, low maintenance, rugged and reliable
- Space-saving and safe thanks to side-by-side mounting up to an ambient temperature of +60 °C
- Modular design: Standardized function modules and heat sinks can be used in conjunction with solid-state relays to satisfy individual requirements.
- Safety due to lifelong, vibration-resistant and shock-resistant spring-loaded terminals even under tough conditions
- Optimum heat transfer allows small, space-saving heat sinks to be used

Application

Applications

Example: Plastics processing industry

Thanks to their high switching endurance SIRIUS 3RF2 solid-state switching devices are ideal for controlling electrical heat. This is because the more precise the temperature regulation process has to be, the higher the switching frequency.
The accurate regulation of electrical heat is used for example in many processes in the plastics processing industry:

- Band heaters heat the extrudate to the correct temperature in plastic extruders
- Heat emitters heat plastic blanks to the correct temperature
- Heat drums dry plastic granules
- Heating channels keep molds at the correct temperature in order to manufacture different plastic parts without defects

The powerful SIRIUS 3RF2 solid-state relays and contactors can be used for the simultaneous control of several heating loads. By using a load monitoring module the individual partial loads can easily be monitored, and in the event of a failure a signal is generated to be sent to the controller.

Use in fuseless load feeders

Compared with the fused configuration of load feeders, short-circuit and line protection using miniature circuit breakers is easy to achieve with SIRIUS 3RF2 solid-state relays and contactors.

A special version of the solid-state contactors can be protected against damage in the case of a short circuit with a miniature circuit breaker with type B tripping characteristic. This allows the low-cost and simple design of fuseless load feeders with full protection of the switchgear.

More information

Notes on integration in the load feeders

The SIRIUS solid-state switching devices are very easy to integrate into the load feeders thanks to their industrial connection method and design.

Particular attention must however be paid to the circumstances of the installation and ambient conditions, as the performance of the solid-state switching devices is largely dependent on these. Depending on the version, certain restrictions must be observed. For detailed information, for example in relation to solid-state contactors about the minimum spacing and to solid-state relays about the choice of heat sink, see technical specifications and product data sheets, https://support.industry.siemens.com/cs/ww/en/ps/16222.

Short-circuit and overload protection

Despite the rugged power semiconductors that are used, solid-state switching devices respond more sensitively to short circuits in the load feeder. Consequently, special precautions have to be taken against destruction, depending on the type of design.

Siemens generally recommends using SITOR semiconductor protection fuses. These fuses also provide protection against destruction in the event of a short circuit even when the solid-state contactors and solid-state relays are fully utilized.

Alternatively, if there is lower loading, protection can also be provided by standard fuses or miniature circuit breakers. This protection is achieved by overdimensioning the solid-state switching devices accordingly. The technical specifications and the product data sheets contain details both about the solid-state fuse protection itself and about use of the devices with conventional protection equipment.

Electromagnetic compatibility (EMC)

The solid-state switching devices are suitable for interference-free operation in industrial networks without further measures. If they are used in public networks, it may be necessary for conducted interference to be reduced by means of filters.

This does not include the solid-state contactors for resistive loads of the special type 3RF23..-.CA.. "low noise". These comply with the class B limit values up to a rated current of 16 A. If other versions are used, and at currents of over 16 A, standard filters can be used in order to comply with the limit values. The decisive factors when it comes to selecting the filters are essentially the current loading and the other parameters (operational voltage, design type, etc.) in the load feeder.

Suitable filters can be ordered from EPCOS AG, see page 16/18.

Product information and technical specifications

For product data sheets with detailed technical specifications, dimensional drawings and characteristic curves, see https://support.industry.siemens.com/cs/ww/en/ps/16222.

For more information, please enter the article number of the required device under the tab "Product List".

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Overview

Solid-state relays (without heat sink)

SIRIUS solid-state relays are suitable for surface mounting on existing cooling surfaces. Mounting is quick and easy, involving just two screws. The special technology of the power semiconductor ensures that there is excellent thermal contact with the heat sink. Depending on the nature of the heat sink, the capacity reaches up to 88 A on resistive loads.

The solid-state relays are available in three different versions:

- 3RF21 1-phase solid-state relay with a width of 22.5 mm
- 3RF20 1-phase solid-state relay with a width of 45 mm
- 3RF22 3-phase solid-state relay with a width of 45 mm

Version for resistive loads "zero-point switching"

This standard version is often used for 3RF20 to 3RF22 solid-state relays for switching heaters on and off.

Version for inductive loads "instantaneous switching"

In this version, the 3RF20 and 3RF21 solid-state relays are specifically matched to inductive loads. Whether it is a matter of frequent actuation of the valves in a filling plant or starting and stopping small operating mechanisms in packet distribution systems, operation is carried out safely and noiselessly.

Special "low noise" version

Thanks to a special control circuit of the 3RF21 solid-state contactors, this special version can be used in public networks up to 16 A without any additional measures such as interference suppressor filters. As a result, in terms of emitted interference, it conforms to limit value curve class B according to IEC 60947-4-3.

Function modules

The 3RF21 and 3RF22 solid-state relays can be expanded with various function modules for individual adaptation to applications, see page 6/150 onwards.

3RF21 1-phase solid-state relays (without heat sink) with a width of 22.5 mm

With its compact design and a width of just 22.5 mm, which is not exceeded even for currents of up to 88 A, the 3RF21 solid-state relay offers an ultra-small footprint. The logical connection method, with the power infeed from above and load connection from below, ensures tidy installation in the control cabinet.

3RF20 1-phase solid-state relays (without heat sink) with a width of 45 mm

The solid-state relays with a width of 45 mm provide for connection of the power supply lead and the load from above. This makes it easy to replace existing solid-state relays in existing arrangements. The connection of the control cable is as space-saving as the 22.5 mm design, as it is simply plugged on.

3RF22 3-phase solid-state relays (without heat sink) with a width of 45 mm

With its compact design, which stays the same even at currents of up to 55 A, the 3RF22 solid-state relay with a width of just 45 mm offers an ultra small footprint. The logical connection method, with the power infeed from above and load connection from below, ensures tidy installation in the control cabinet.

The 3-phase solid-state relays are available with

- 2-phase control (suitable in particular for circuits without connection to the neutral conductor) and
- 3-phase control (suitable for star circuits with connection to the neutral conductor or for applications in which the system requires all phases to be switched)

Selection notes

When selecting solid-state relays, in addition to information about the network, the load and the ambient conditions, it is also necessary to know details of the planned design. The solid-state relays can only conform to their specific technical specifications if they are mounted with appropriate care on an adequately dimensioned heat sink.

Mounting solid-state relays directly on a mounting plate made of sheet steel is inadequate in terms of heat dissipation.

The following procedure is recommended:

- Determine the rated current of the load and the mains voltage
- Select the relay design and choose a solid-state relay with higher rated current than the load
- Determine the thermal resistance of the proposed heat sink
- Check the correct relay size with the aid of the diagrams
- In systems that have high voltage peaks or at voltages of 575 V and higher, use of versions with a blocking voltage of 1 600 V is recommended.

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Technical specifications

More information	
System Manual for modular system, see https://support.industry.siemens.com/cs/ww/en/view/60311318	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16223/faq

Type		**3RF21..-1....**	**3RF21..-2....**	**3RF21..-3....**
Dimensions (W x H x D)	mm	22.5 x 85 x 48 mm	22.5 x 85 x 48 mm	22.5 x 85 x 48 mm
General data				
Ambient temperature				
• During operation, derating from 40 °C	°C	-25 ... +60		
• During storage	°C	-55 ... +80		
Installation altitude	m	0 ... 1 000; derating from 1 000		
Shock resistance according to IEC 60068-2-27	*g*/ms	15/11		
Vibration resistance according to IEC 60068-2-6	*g*	2		
Degree of protection IP on the front according to IEC 60529		IP20		IP00 (IP20 when using the 3RF2900-3PA88 terminal cover)
Touch protection on the front according to IEC 60529		Finger-safe for vertical touching from the front		--
Electromagnetic compatibility (EMC)				
• Emitted interference				
- Conducted interference voltage according to IEC 60947-4-3		Class A for industrial applications		
- Emitted, high-frequency interference voltage according to IEC 60947-4-3		Class B for residential, business and commercial applications		
• Interference immunity				
- Electrostatic discharge according to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	Contact discharge 4; air discharge 8; behavior criterion 2		
- Induced RF fields according to IEC 61000-4-6	MHz	0.15 ... 80; 140 dBµV; behavior criterion 1		
- Burst according to IEC 61000-4-4	kV	2/5.0 kHz; behavior criterion 2		
- Surge according to IEC 61000-4-5	kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2		
Mounting				
• Screws (not included in the scope of supply)		2 x M4		
• Tightening torque	Nm	1.5		
Connection type		**Screw terminals**	**Spring-loaded terminals**	**Ring cable lug connection**
Connection, main contacts				
• Conductor cross-sections				
- Solid	mm^2	2 x (1.5 ... 2.5)[1], 2 x (2.5 ... 6)[1]	2 x (0.5 ... 2.5)	--
- Finely stranded with end sleeve	mm^2	2 x (1 ... 2.5)[1], 2 x (2.5 ... 6)[1], 1 x 10	2 x (0.5 ... 1.5)	--
- Finely stranded without end sleeve	mm^2	--	2 x (0.5 ... 2.5)	--
- Solid or stranded, AWG cables	AWG	2 x (14 ... 10)	2 x (18 ... 14)	--
• Terminal screws		M4	--	M5
• Tightening torque	Nm	2 ... 2.5	--	2 ... 2.5
	lb.in	7 ... 10.3	--	7 ... 10.3
• Cable lugs				
- According to DIN 46234		--	--	5-2.5, 5-6, 5-10, 5-16, 5-25
- According to JIS C 2805		--	--	R 2-5, R 5.5-5, R 8-5, R 14-5
- Width, maximum	mm	--	--	12
Connection, auxiliary/control contacts				
• Conductor cross-sections	mm	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0)	0.5 ... 2.5	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0)
	AWG	20 ... 12	20 ... 12	20 ... 12
• Stripped length	mm	7	10	7
• Terminal screw		M3	--	M3
• Tightening torque	Nm	0.5 ... 0.6	--	0.5 ... 0.6
	lb.in	4.5 ... 5.3	--	4.5 ... 5.3

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

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Type	I_{max} [1] at R_{thha}/T_u = 40 °C		I_e according to IEC 60947-4-3 at R_{thha}/T_u = 40 °C		I_e according to UL/CSA at R_{thha}/T_u = 50 °C		Power loss at I_{max}	Minimum load current	Off-state current
	A	K/W	A	K/W	A	K/W	W	A	mA
Main circuit									
3RF2120-.....	20	2.00	20	1.70	20	1.30	28.6	0.1	10
3RF2130-1....	30	1.45	30	1.45	30	1.25	44.2	0.5	10
3RF2150-1....	50	0.85	50	0.85	50	0.70	66	0.5	10
3RF2150-2....	50	0.85	20	2.90	20	2.60	66	0.5	10
3RF2150-3....	50	0.85	50	0.85	50	0.70	66	0.5	10
3RF2170-1....	70	0.50	50	1.15	50	1.00	94	0.5	10
3RF2190-1....	88	0.55	50	1.40	50	0.85	118	0.5	10
3RF2190-2....	88	0.55	20	3.50	20	2.80	118	0.5	10
3RF2190-3....	88	0.55	80	0.55	80	0.45	118	0.5	10

1) The current I_{max} provides information about the performance of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

Note:

The required heat sinks for the corresponding load currents can be determined from the characteristic curves (see page 6/120, "More Information"). The minimum thickness values for the mounting surface must be observed.

Type	Rated peak withstand current I_{tsm}	I^2t value
	A	A^2s
Main circuit		
3RF2120-.....	200	200
3RF2130-..A.2	300	450
3RF2130-..A.4	300	450
3RF2130-..A.5	300	450
3RF2130-..A.6	400	800
3RF2150-.....	600	1 800
3RF2170-..A.2	1 200	7 200
3RF2170-..A.4	1 200	7 200
3RF2170-..A.5	1 200	7 200
3RF2170-..A.6	1 150	6 600
3RF2190-.....	1 150	6 600

Type		**3RF21..-....2**	**3RF21..-....4**	**3RF21..-....5**	**3RF21..-....6**
Main circuit					
Rated operational voltage U_e	V AC	24 ... 230	48 ... 460	48 ... 600	
• Operating range	V AC	20 ... 253	40 ... 506	40 ... 660	
• Rated frequency	Hz	50/60 ± 10%			
Rated insulation voltage U_i	V	600			
Blocking voltage	V	800	1 200		1 600
Rate of voltage rise	V/µs	1 000			

Type		**3RF21..-...0.**	**3RF21..-...1.**		**3RF21..-...2.**	**3RF21..-...4.**
Control circuit						
Method of operation		DC operation	AC/DC operation		AC operation	DC operation
Rated control supply voltage U_s	V	24	24 AC	24 DC	1 105 ... 230	4 ... 30
Rated frequency of the control supply voltage	Hz	--	50/60 ± 10%	--	50/60 ± 10%	--
Control supply voltage, max.	V	30	26.5 AC	30 DC	253	30
Typical actuating current	mA	15/low power: 9[1]	20		15	15
Response voltage	V	15	14 AC	15 DC	90	4
Drop-out voltage	V	5	5 AC	5 DC	40	1
Operating times						
• ON-delay	ms	1 + max. one half-wave[2]	10 + max. one half-wave[2]		40 + max. one half-wave[2]	1 + max. one half-wave[2]
• OFF-delay	ms	1 + max. one half-wave	15 + max. one half-wave		40 + max. one half-wave	1 + max. one half-wave

1) Applies to the "low power" version 3RF21..-.AA..-**0KN0**.
2) Only for zero-point switching devices.

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Selection and ordering data

1-phase solid-state relays (without heat sink) with a width of 22.5 mm

3RF2120-1AA02

Type current/ performance capacity[1]	Rated control supply voltage U_s	Screw terminals		PU (UNIT, SET, M)	PS*	PG
		Article No.	Price per PU			
A	V					
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC						
20	24 DC	**3RF2120-1AA02**		1	1 unit	41C
30		**3RF2130-1AA02**		1	1 unit	41C
50		**3RF2150-1AA02**		1	1 unit	41C
70[2]		**3RF2170-1AA02**		1	1 unit	41C
90[2]		**3RF2190-1AA02**		1	1 unit	41C
20	110 ... 230 AC	**3RF2120-1AA22**		1	1 unit	41C
30		**3RF2130-1AA22**		1	1 unit	41C
50		**3RF2150-1AA22**		1	1 unit	41C
70[2]		**3RF2170-1AA22**		1	1 unit	41C
90[2]		**3RF2190-1AA22**		1	1 unit	41C
20	4 ... 30 DC	**3RF2120-1AA42**		1	1 unit	41C
30		**3RF2130-1AA42**		1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 460 V AC						
20	24 DC	**3RF2120-1AA04**		1	1 unit	41C
30		**3RF2130-1AA04**		1	1 unit	41C
50		**3RF2150-1AA04**		1	1 unit	41C
70[2]		**3RF2170-1AA04**		1	1 unit	41C
90[2]		**3RF2190-1AA04**		1	1 unit	41C
20	24 AC/DC	**3RF2150-1AA14**		1	1 unit	41C
20	110 ... 230 AC	**3RF2120-1AA24**		1	1 unit	41C
30		**3RF2130-1AA24**		1	1 unit	41C
50		**3RF2150-1AA24**		1	1 unit	41C
70[2]		**3RF2170-1AA24**		1	1 unit	41C
90[2]		**3RF2190-1AA24**		1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 600 V AC						
70	24 DC low power	**3RF2170-1AA05-0KN0**		1	1 unit	41C
20	4 ... 30 DC	**3RF2120-1AA45**		1	1 unit	41C
30		**3RF2130-1AA45**		1	1 unit	41C
50		**3RF2150-1AA45**		1	1 unit	41C
70[2]		**3RF2170-1AA45**		1	1 unit	41C
90[2]		**3RF2190-1AA45**		1	1 unit	41C
Zero-point switching · Blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC						
30	24 DC	**3RF2130-1AA06**		1	1 unit	41C
50		**3RF2150-1AA06**		1	1 unit	41C
70[2]		**3RF2170-1AA06**		1	1 unit	41C
90[2]		**3RF2190-1AA06**		1	1 unit	41C
30	110 ... 230 AC	**3RF2130-1AA26**		1	1 unit	41C
50		**3RF2150-1AA26**		1	1 unit	41C
70[2]		**3RF2170-1AA26**		1	1 unit	41C
90[2]		**3RF2190-1AA26**		1	1 unit	41C

1) The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

2) Please note that this version with an M4 screw connection can only be used for a rated current of up to approx. 50 A and a conductor cross-section of 10 mm^2.
Please use the 3RF21 solid-state relays with ring cable lug connections for these currents, see page 6/126.

Other rated control supply voltages on request.

Accessories, see page 6/127.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Type current/ performance capacity[1]	Rated control supply voltage U_s	Screw terminals		PU (UNIT, SET, M)	PS*	PG
		Article No.	Price per PU			
A	V					
Instantaneous switching, rated operational voltage U_e 24 ... 230 V AC						
50	110 ... 230 AC	**3RF2150-1BA22**		1	1 unit	41C
Instantaneous switching, rated operational voltage U_e 48 ... 460 V AC						
20	24 DC	**3RF2120-1BA04**		1	1 unit	41C
30		**3RF2130-1BA04**		1	1 unit	41C
50		**3RF2150-1BA04**		1	1 unit	41C
70[2]		**3RF2170-1BA04**		1	1 unit	41C
90[2]		**3RF2190-1BA04**		1	1 unit	41C
Instantaneous switching · Blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC						
50	24 DC	**3RF2150-1BA06**		1	1 unit	41C
Low noise[3] · Zero-point switching, rated operational voltage U_e 48 ... 460 V AC						
70[2]	24 DC	**3RF2170-1CA04**		1	1 unit	41C

1) The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

2) Please note that this version with an M4 screw connection can only be used for a rated current of up to approx. 50 A and a conductor cross-section of 10 mm^2.
Please use the 3RF21 solid-state relays with ring cable lug connections for these currents, see page 6/126.

3) See page 6/121.

Other rated control supply voltages on request.

Accessories, see page 6/127.

Type current/ performance capacity[1]	Rated control supply voltage U_s	Spring-loaded terminals		PU (UNIT, SET, M)	PS*	PG
		Article No.	Price per PU			
A	V					
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC						
20	24 DC	**3RF2120-2AA02**		1	1 unit	41C
50[2]		**3RF2150-2AA02**		1	1 unit	41C
90[2]		**3RF2190-2AA02**		1	1 unit	41C
20	110 ... 230 AC	**3RF2120-2AA22**		1	1 unit	41C
50[2]		**3RF2150-2AA22**		1	1 unit	41C
90[2]		**3RF2190-2AA22**		1	1 unit	41C
20	4 ... 30 DC	**3RF2120-2AA42**		1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 460 V AC						
20	24 DC	**3RF2120-2AA04**		1	1 unit	41C
50[2]		**3RF2150-2AA04**		1	1 unit	41C
90[2]		**3RF2190-2AA04**		1	1 unit	41C
50[2]	24 AC/DC	**3RF2150-2AA14**		1	1 unit	41C
20	110 ... 230 AC	**3RF2120-2AA24**		1	1 unit	41C
50[2]		**3RF2150-2AA24**		1	1 unit	41C
90[2]		**3RF2190-2AA24**		1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 600 V AC						
20	4 ... 30 DC	**3RF2120-2AA45**		1	1 unit	41C
Zero-point switching · Blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC						
50[2]	24 DC	**3RF2150-2AA06**		1	1 unit	41C
90[2]		**3RF2190-2AA06**		1	1 unit	41C
50[2]	110 ... 230 AC	**3RF2150-2AA26**		1	1 unit	41C
90[2]		**3RF2190-2AA26**		1	1 unit	41C

3RF2120-2AA02

1) The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

2) Please note that the version with spring-loaded terminals can only be used for a rated current of up to approx. 20 A and a conductor cross-section of 2.5 mm^2. Higher currents can be achieved by connecting two conductors per terminal.

Other rated control supply voltages on request.

Accessories, see page 6/127.

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Solid-state relays > SIRIUS 3RF21 solid-state relays, 1-phase, 22.5 mm

Type current/ performance capacity[1]	Rated control supply voltage U_s	**Ring cable lug connection**		PU (UNIT, SET, M)	PS*	PG
		Article No.	Price per PU			
A	V					
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC						
20	24 DC	**3RF2120-3AA02**		1	1 unit	41C
50		**3RF2150-3AA02**		1	1 unit	41C
90		**3RF2190-3AA02**		1	1 unit	41C
20	110 ... 230 AC	**3RF2120-3AA22**		1	1 unit	41C
50		**3RF2150-3AA22**		1	1 unit	41C
90		**3RF2190-3AA22**		1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 460 V AC						
20	24 DC	**3RF2120-3AA04**		1	1 unit	41C
50		**3RF2150-3AA04**		1	1 unit	41C
90		**3RF2190-3AA04**		1	1 unit	41C
20	110 ... 230 AC	**3RF2120-3AA24**		1	1 unit	41C
50		**3RF2150-3AA24**		1	1 unit	41C
90		**3RF2190-3AA24**		1	1 unit	41C
90	4 ... 30 DC	**3RF2190-3AA44**		1	1 unit	41C
Zero-point switching · Blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC						
50	24 DC	**3RF2150-3AA06**		1	1 unit	41C
90		**3RF2190-3AA06**		1	1 unit	41C
50	110 ... 230 AC	**3RF2150-3AA26**		1	1 unit	41C
90		**3RF2190-3AA26**		1	1 unit	41C

3RF2120-3AA02

[1] The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

Other rated control supply voltages on request.

Accessories, see page 6/127.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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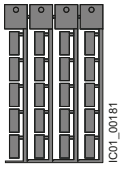
Accessories

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal covers						
		Ring cable lug connection				
3RF2900-3PA88	**Terminal covers** For 3RF21 solid-state relays with ring cable lug connection With this terminal cover, degree of protection IP20 can be achieved on the front with a ring cable lug connection. It can also be used for screw terminals after simple adaptation.	**3RF2900-3PA88**		1	10 units	41C
Control connectors						
		Screw terminals				
3RF2900-1TA88	**Replacement control connectors** For 3RF20 to 3RF22 solid-state relays With screw terminals	**3RF2900-1TA88**		1	50 units	41C
		Spring-loaded terminals				
3RF2900-2TA88	**Replacement control connectors** For 3RF20 to 3RF22 solid-state relays With spring-loaded terminals	**3RF2900-2TA88**		1	50 units	41C
3RF2900-2TB88	**Control connectors** For 3RF20 to 3RF22 solid-state relays With spring-loaded terminals With two clamping points per contact	**3RF2900-2TB88**		1	10 units	41C
Tools for opening spring-loaded terminals						
3RA2908-1A	**Screwdrivers** For all SIRIUS devices With spring-loaded terminals Length approx. 200 mm, size 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**3RA2908-1A**		1	1 unit	41B
Blank labels						
 3RT2900-1SB20	**Unit labeling plates** For SIRIUS devices[1]					
	10 mm × 7 mm, titanium gray	**3RT2900-1SB10**		100	816 units	41B
	20 mm × 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B
	Adhesive labels For SIRIUS devices					
	19 mm × 6 mm, titanium gray	**3RT2900-1SB60**		100	3060 units	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

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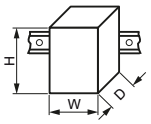
Technical specifications

More information	
System Manual for modular system, see https://support.industry.siemens.com/cs/ww/en/view/60311318	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16223/faq

Type			**3RF20..-1....**	**3RF20..-4....**
Dimensions (W x H x D)		mm	45 x 58 x 48	45 x 58 x 48
General data				
Ambient temperature				
• During operation, derating from 40 °C		°C	-25 ... +60	
• During storage		°C	-55 ... +80	
Installation altitude		m	0 ... 1 000; derating from 1 000	
Shock resistance according to IEC 60068-2-27		*g*/ms	15/11	
Vibration resistance according to IEC 60068-2-6		*g*	2	
Degree of protection IP on the front according to IEC 60529			IP20	
Touch protection on the front according to IEC 60529			Finger-safe for vertical touching from the front	
Electromagnetic compatibility (EMC)				
• Emitted interference				
- Conducted interference voltage according to IEC 60947-4-3			Class A for industrial applications	
- Emitted, high-frequency interference voltage according to IEC 60947-4-3			Class B for residential, business and commercial applications	
• Interference immunity				
- Electrostatic discharge according to IEC 61000-4-2 (corresponds to degree of severity 3)		kV	Contact discharge 4; air discharge 8; behavior criterion 2	
- Induced RF fields according to IEC 61000-4-6		MHz	0.15 ... 80; 140 dBµV; behavior criterion 1	
- Burst according to IEC 61000-4-4		kV	2/5.0 kHz; behavior criterion 2	
- Surge according to IEC 61000-4-5		kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2	
Mounting				
• Screws (not included in the scope of supply)			2 x M4	
• Tightening torque		Nm	1.5	
Connection type			**Screw terminals**	**Spring-loaded terminals**
Connection, main contacts				
• Conductor cross-sections				
- Solid		mm^2	2 x (1.5 ... 2.5)[1], 2 x (2.5 ... 6)[1]	--
- Finely stranded with end sleeve		mm^2	2 x (1 ... 2.5)[1], 2 x (2.5 ... 6)[1], 1 x 10	--
- Solid or stranded, AWG cables		AWG	2 x (14 ... 10)	--
• Terminal screw			M4	--
• Tightening torque		Nm lb.in	2 ... 2.5 7 ... 10.3	-- --
Connection, auxiliary/control contacts				
• Conductor cross-sections		mm^2 AWG	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0) 20 ... 12	0.5 ... 2.5 20 ... 12
• Stripped length		mm	7	10
• Terminal screw			M3	--
• Tightening torque		Nm lb.in	0.5 ... 0.6 4.5 ... 5.3	-- --

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

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Type	I_{max} [1] at R_{thha}/T_u = 40 °C		I_e according to IEC 60947-4-3 at R_{thha}/T_u = 40 °C		I_e according to UL/CSA at R_{thha}/T_u = 50 °C		Power loss at I_{max}	Minimum load current	Off-state current
	A	K/W	A	K/W	A	K/W	W	A	mA
Main circuit									
3RF2020-1.A..	20	2.00	20	1.70	20	1.30	28.6	0.1	10
3RF2030-1.A..	30	1.45	30	1.45	30	1.25	44.2	0.5	10
3RF2050-1.A..	50	0.85	50	0.85	50	0.70	66	0.5	10
3RF2070-1.A..	70	0.50	50	1.15	50	1.00	94	0.5	10
3RF2090-1.A..	88	0.55	50	1.40	50	1.00	118	0.5	10

1) The current I_{max} provides information about the performance of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

Note:

The required heat sinks for the corresponding load currents can be determined from the characteristic curves (see page 6/120, "More Information"). The minimum thickness values for the mounting surface must be observed.

Type	Rated peak withstand current I_{tsm}	I^2t value
	A	A^2s
Main circuit		
3RF2020-1.A..	200	200
3RF2030-1.A.2	300	450
3RF2030-1.A.4	300	450
3RF2030-1.A.6	400	800
3RF2050-1.A..	600	1 800
3RF2070-1.A.2	1 200	7 200
3RF2070-1.A.4	1 200	7 200
3RF2070-1.A.5	1 200	7 200
3RF2070-1.A.6	1 150	6 600
3RF2090-1.A..	1 150	6 600

Type		3RF20.0-1.A.2	3RF20.0-1.A.4	3RF20.0-1.A.5	3RF20.0-1.A.6
Main circuit					
Rated operational voltage U_e	V AC	24 ... 230	48 ... 460	48 ... 600	
• Operating range	V AC	20 ... 253	40 ... 506	40 ... 660	
• Rated frequency	Hz	50/60 ± 10%			
Rated insulation voltage U_i	V	600			
Blocking voltage	V	800	1 200		1 600
Rate of voltage rise	V/µs	1 000			

Type		3RF20.0-1.A0.	3RF20.0-1.A2.	3RF20.0-1.A4.
Control circuit				
Method of operation		DC operation	AC operation	DC operation
Rated control supply voltage U_s	V	24	110 ... 230	4 … 30
Rated frequency of the control supply voltage	Hz	--	50/60 ± 10%	--
Control supply voltage, max.	V	30	253	30
Typical actuating current	mA	15	15	15
Response voltage	V	15	90	4
Drop-out voltage	V	5	40	1
Operating times				
• ON-delay	ms	1 + max. one half-wave[1]	40 + max. one half-wave[1]	1 + max. one half-wave[1]
• OFF-delay	ms	1 + max. one half-wave	40 + max. one half-wave	1 + max. one half-wave

1) Only for zero-point switching devices.

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Selection and ordering data

1-phase solid-state relays (without heat sink) with a width of 45 mm

3RF2020-1AA02

Type current/ performance capacity[1]	Rated control supply voltage U_s	Screw terminals	PU (UNIT, SET, M)	PS*	PG
A	V	Article No.			
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC					
20	24 DC	**3RF2020-1AA02**	1	1 unit	41C
30		**3RF2030-1AA02**	1	1 unit	41C
50		**3RF2050-1AA02**	1	1 unit	41C
70[2]		**3RF2070-1AA02**	1	1 unit	41C
90[2]		**3RF2090-1AA02**	1	1 unit	41C
20	110 ... 230 AC	**3RF2020-1AA22**	1	1 unit	41C
30		**3RF2030-1AA22**	1	1 unit	41C
50		**3RF2050-1AA22**	1	1 unit	41C
70[2]		**3RF2070-1AA22**	1	1 unit	41C
90[2]		**3RF2090-1AA22**	1	1 unit	41C
20	4 ... 30 DC	**3RF2020-1AA42**	1	1 unit	41C
30		**3RF2030-1AA42**	1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 460 V AC					
20	24 DC	**3RF2020-1AA04**	1	1 unit	41C
30		**3RF2030-1AA04**	1	1 unit	41C
50		**3RF2050-1AA04**	1	1 unit	41C
70[2]		**3RF2070-1AA04**	1	1 unit	41C
90[2]		**3RF2090-1AA04**	1	1 unit	41C
20	110 ... 230 AC	**3RF2020-1AA24**	1	1 unit	41C
30		**3RF2030-1AA24**	1	1 unit	41C
50		**3RF2050-1AA24**	1	1 unit	41C
70[2]		**3RF2070-1AA24**	1	1 unit	41C
90[2]		**3RF2090-1AA24**	1	1 unit	41C
50	4 ... 30 DC	**3RF2050-1AA44**	1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 600 V AC					
20	4 ... 30 DC	**3RF2020-1AA45**	1	1 unit	41C
50		**3RF2050-1AA45**	1	1 unit	41C
70[2]		**3RF2070-1AA45**	1	1 unit	41C
90[2]		**3RF2090-1AA45**	1	1 unit	41C
Zero-point switching · Blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC					
30	24 DC	**3RF2030-1AA06**	1	1 unit	41C
50		**3RF2050-1AA06**	1	1 unit	41C
70[2]		**3RF2070-1AA06**	1	1 unit	41C
90[2]		**3RF2090-1AA06**	1	1 unit	41C
30	110 ... 230 AC	**3RF2030-1AA26**	1	1 unit	41C
50		**3RF2050-1AA26**	1	1 unit	41C
70[2]		**3RF2070-1AA26**	1	1 unit	41C
90[2]		**3RF2090-1AA26**	1	1 unit	41C
Instantaneous switching, rated operational voltage U_e 48 ... 460 V AC					
30	24 DC	**3RF2030-1BA04**	1	1 unit	41C

[1] The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

[2] Please note that this version with an M4 screw connection can only be used for a rated current of up to approx. 50 A and a conductor cross-section of 10 mm^2.

Accessories, see page 6/127.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Type current/ performance capacity[1]	Rated control supply voltage U_s	**Screw terminals + spring-loaded terminals** (control current side)		PU (UNIT, SET, M)	PS*	PG
	A	V	Article No.	Price per PU			
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC							
3RF2050-4AA02	50	24 DC	**3RF2050-4AA02**		1	1 unit	41C

1) The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

Accessories, see page 6/127.

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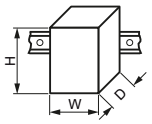
Technical specifications

More information	
System Manual for modular system, see https://support.industry.siemens.com/cs/ww/en/view/60311318	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16223/faq

Type			3RF22..-1....	3RF22..-2....	3RF22..-3....
Dimensions (W x H x D)		mm	45 x 95 x 47	45 x 95 x 47	45 x 95 x 47

General data				
Ambient temperature				
• During operation, derating from 40 °C	°C	-25 ... +60		
• During storage	°C	-55 ... +80		
Installation altitude	m	0 ... 1 000; > 1 000 ask Technical Support		
Shock resistance according to IEC 60068-2-27	*g*/ms	15/11		
Vibration resistance according to IEC 60068-2-6	*g*	2		
Degree of protection IP on the front according to IEC 60529		IP20		IP00
Touch protection on the front according to IEC 60529		Finger-safe for vertical touching from the front		--
Insulation strength at 50/60 Hz (main/control circuit to floor)	V rms	4 000		
Electromagnetic compatibility (EMC)				
• Emitted interference				
- Conducted interference voltage according to IEC 60947-4-3		Class A for industrial applications[1]		
• Interference immunity				
- Electrostatic discharge according to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	Contact discharge 4; air discharge 8; behavior criterion 2		
- Induced RF fields according to IEC 61000-4-6	MHz	0.15 ... 80; 140 dBµV; behavior criterion 1		
- Burst according to IEC 61000-4-4	kV	2/5.0 kHz; behavior criterion 2		
- Surge according to IEC 61000-4-5	kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2		
Mounting				
• Screws (not included in the scope of supply)		2 x M4		
• Tightening torque	Nm	1.5		
Connection type		Screw terminals	Spring-loaded terminals	Ring cable lug connection
Connection, main contacts				
• Conductor cross-sections				
- Solid	mm^2	2 x (1.5 ... 2.5)[2], 2 x (2.5 ... 6)[2]	2 x (0.5 ... 2.5)	--
- Finely stranded with end sleeve	mm^2	2 x (1 ... 2.5)[2], 2 x (2.5 ... 6)[2], 1 x 10	2 x (0.5 ... 1.5)	--
- Finely stranded without end sleeve	mm^2	--	2 x (0.5 ... 2.5)	--
- Solid or stranded, AWG cables	AWG	2 x (14 ... 10)	2 x (18 ... 14)	--
• Stripped length	mm	10	10	--
• Terminal screws		M4	--	M5
- Tightening torque, ∅ 5 ... 6 mm, PZ 2	Nm lb.in	2 ... 2.5 18 ... 22		2 ... 2.5 18 ... 22
• Cable lugs				
- According to DIN 46234		--	--	5-2.5 ... 5-25
- According to JIS C 2805		--	--	R 2-5 ... R 14-5
- Width, maximum	mm	--	--	12
Connection, auxiliary/control contacts				
• Conductor cross-sections, with or without end sleeve	mm AWG	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0) 20 ... 12	0.5 ... 2.5 20 ... 12	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0) 20 ... 12
• Stripped length	mm	7	10	7
• Terminal screw		M3	--	M3
- Tightening torque, ∅ 3.5 mm, PZ 1	Nm lb.in	0.5 ... 0.6 4.5 ... 5.3		0.5 ... 0.6 4.5 ... 5.3

1) These products were built as Class A devices. The use of these devices in residential areas could result in radio interference. In this case it may be required to introduce additional interference suppression measures.

2) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

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Type	I_{max} [1] at R_{thha}/T_u = 40 °C		I_e according to IEC 60947-4-3 at R_{thha}/T_u = 40 °C		I_e according to UL/CSA at R_{thha}/T_u = 50 °C		Power loss at I_{max}	Minimum load current	Max. off-state current
	A	K/W	A	K/W	A	K/W	W	A	mA
Main circuit									
3RF2230-1AB..	30	0.80	30	0.80	30	0.65	81	0.5	10
3RF2230-2AB..			20	1.36	20	1.15			
3RF2230-3AB..			30	0.80	30	0.65			
3RF2255-1AB..	55	0.25	50	0.35	50	0.15	151	0.5	10
3RF2255-2AB..			20	1.83	20	1.58			
3RF2255-3AB..			55	0.25	55	0.15			
3RF2230-1AC..	30	0.45	30	0.45	30	0.35	122	0.5	10
3RF2230-2AC..			20	0.86	20	0.72			
3RF2230-3AC..			30	0.45	30	0.35			
3RF2255-1AC..	55	0.14	50	0.20	50	0.12	226	0.5	10
3RF2255-2AC..			20	1.19	20	1.02			
3RF2255-3AC..			55	0.14	55	0.12			

[1] The current I_{max} provides information about the performance of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

Note:

The required heat sinks for the corresponding load currents can be determined from the characteristic curves (see page 6/120, "More Information"). The minimum thickness values for the mounting surface must be observed.

Type	Rated peak withstand current I_{tsm}	I^2t value
	A	A^2s
Main circuit		
3RF2230-....5	300	450
3RF2255-....5	600	1 800

Type		3RF22..-.AB.5	3RF22..-.AC.5
Main circuit			
Controlled phases		2-phase	3-phase
Rated operational voltage U_e	V AC	48 ... 600	
• Operating range	V AC	40 ... 660	
• Rated frequency	Hz	50/60 ± 10%	
Rated insulation voltage U_i	V	600	
Rated impulse withstand voltage U_{imp}	kV	6	
Blocking voltage	V	1 200	
Rate of voltage rise	V/µs	1 000	

Type		3RF22..-.A.3.	3RF22..-.A.4.
Control circuit			
Method of operation		AC operation	DC operation
Rated control supply voltage U_s	V	110	4 ... 30
Rated frequency of the control supply voltage	Hz	50/60 ± 10%	--
Control supply voltage, max.	V	121	30
Typical actuating current	mA	15	30
Response voltage	V	90	4
Drop-out voltage	V	< 40	1
Operating times			
• ON-delay	ms	40 + max. one half-wave	1 + max. one half-wave
• OFF-delay	ms	40 + max. one half-wave	1 + max. one half-wave

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Selection and ordering data

Type current/ performance capacity[1]	Rated control supply voltage U_s	Screw terminals		PU (UNIT, SET, M)	PS*	PG
A	V	Article No.	Price per PU			
Zero-point switching, rated operational voltage U_e 48 ... 600 V AC						
2-phase controlled						
30	110 AC	**3RF2230-1AB35**		1	1 unit	41C
55[2]		**3RF2255-1AB35**		1	1 unit	41C
30	4 ... 30 DC	**3RF2230-1AB45**		1	1 unit	41C
55[2]		**3RF2255-1AB45**		1	1 unit	41C
3-phase controlled						
30	110 AC	**3RF2230-1AC35**		1	1 unit	41C
55[2]		**3RF2255-1AC35**		1	1 unit	41C
30	4 ... 30 DC	**3RF2230-1AC45**		1	1 unit	41C
55[2]		**3RF2255-1AC45**		1	1 unit	41C

3RF2230-1AB35

1) The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

2) Please note that the version with an M4 screw connection can only be used for a rated current of up to approx. 50 A and a conductor cross-section of 10 mm^2.
Please use the 3RF22 solid-state relays with ring cable lug connections for these currents.

Accessories, see page 6/127.

Type current/ performance capacity[1]	Rated control supply voltage U_s	Spring-loaded terminals		PU (UNIT, SET, M)	PS*	PG
A	V	Article No.	Price per PU			
Zero-point switching, rated operational voltage U_e 48 ... 600 V AC						
2-phase controlled						
30[2]	4 ... 30 DC	**3RF2230-2AB45**		1	1 unit	41C
55[2]		**3RF2255-2AB45**		1	1 unit	41C
3-phase controlled						
30[2]	4 ... 30 DC	**3RF2230-2AC45**		1	1 unit	41C
55[2]		**3RF2255-2AC45**		1	1 unit	41C

3RF2230-2AB45

1) The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

2) Please note that the version with spring-loaded terminals can only be used for a rated current of up to approx. 20 A and a conductor cross-section of 2.5 mm^2. Higher currents can be achieved by connecting two conductors per terminal.

Accessories, see page 6/127.

Type current/ performance capacity[1]	Rated control supply voltage U_s	Ring cable lug connection		PU (UNIT, SET, M)	PS*	PG
A	V	Article No.	Price per PU			
Zero-point switching, rated operational voltage U_e 48 ... 600 V AC						
2-phase controlled						
30	4 ... 30 DC	**3RF2230-3AB45**		1	1 unit	41C
55		**3RF2255-3AB45**		1	1 unit	41C
3-phase controlled						
30	4 ... 30 DC	**3RF2230-3AC45**		1	1 unit	41C
55		**3RF2255-3AC45**		1	1 unit	41C

3RF2230-3AB45

1) The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

Accessories, see page 6/127.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

Solid-state contactors (with integrated heat sink)

The solid-state contactors are available in two different versions:

- 3RF23 1-phase solid-state contactors: Their compact design with optimized heat sink enables small complete units with currents up to 70 A.
- 3RF24 3-phase solid-state contactors: Their compact design with optimized heat sink enables the provision of small complete units with currents up to 50 A.

The complete units consist of a solid-state relay plus optimized heat sink, and are therefore ready to use. They offer defined rated currents to make selection as easy as possible. Like all of our solid-state switching devices, one of their particular advantages is their compact and space-saving design.

Thanks to optimized power electronics, versions of 3RF2310 to 3RF2330 solid-state contactors can be mounted side-by-side without derating, see product information or product data sheets for the individual products.

Note:

Due to a special mounting foot for versions 3RF2310 to 3RF2330 and 3RF2410, snapping onto grounded DIN rails or mounting on a grounded mounting plate simultaneously provides safe grounding of the heat sink. Additional grounding is no longer necessary in this case.
With other types of mounting, an additional ground connection to the heat sink can be established by means of a screw terminal connection.

3RF23 1-phase solid-state contactors with heat sink

Version for resistive loads "zero-point switching"

This standard version is often used for switching heaters on and off.

Version for inductive loads "instantaneous switching"

In this version, the solid-state contactor is specifically matched to inductive loads. Whether it is a matter of frequent actuation of the valves in a filling plant or starting and stopping small operating mechanisms in packet distribution systems, operation is carried out safely and noiselessly.

Special "low noise" version

Thanks to a special control circuit, this special version can be used in public networks up to 16 A without any additional measures such as interference suppressor filters. As a result, in terms of emitted interference, it conforms to limit value curve class B according to IEC 60947-4-3.

Special "short-circuit-proof" version

Skillful matching of the power semiconductor with the performance capacity of the solid-state contactor means that "short-circuit strength" can be achieved with a standard miniature circuit breaker. In combination with a B MCB or a conventional line protection fuse, the result is a short-circuit-proof feeder.

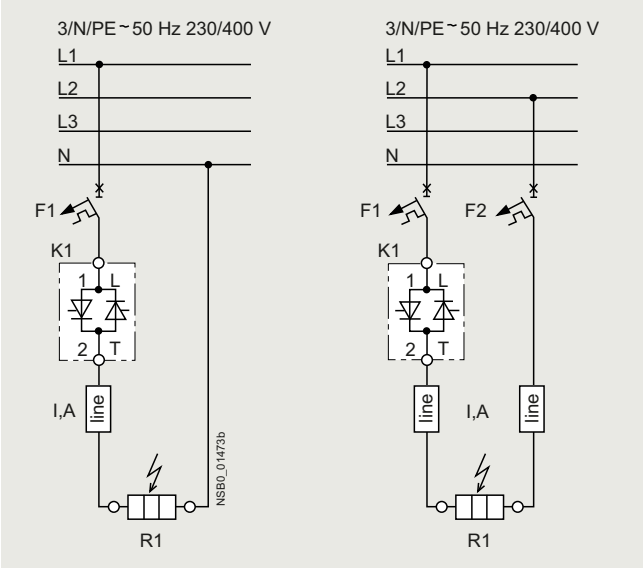
In order to achieve problem-free short-circuit protection by means of miniature circuit breakers, however, certain constraints must be observed. As the magnitude and duration of the short-circuit current are determined not only by the short-circuit breaking response of the miniature circuit breaker but also the properties of the wiring system, such as the internal resistance of the input to the network and damping by switching devices and cables, particular attention must also be paid to these parameters. The necessary cable lengths are therefore shown for the main factor, the line resistance, in the following table.

In systems that have high voltage peaks or at voltages of 575 V and higher, use of versions with a blocking voltage of 1 600 V is recommended.

The following miniature circuit breakers with a B characteristic and 10 kA or 6 kA breaking capacity protect the 3RF23..-.DA.. solid-state contactors in the event of short circuits on the load and the specified conductor cross-sections and lengths:

Rated current of the miniature circuit breaker	Example of type[1)]	Max. conductor cross-section	Minimum cable length from contactor to load
6 A	5SY4106-6	1 mm^2	5 m
10 A	5SY4110-6	1.5 mm^2	8 m
16 A	5SY4116-6	1.5 mm^2	12 m
		2.5 mm^2	20 m
20 A	5SY4120-6	2.5 mm^2	20 m
25 A	5SY4125-6	2.5 mm^2	26 m

1) The miniature circuit breakers can be used up to a maximum rated voltage of 480 V!



Solid-state contactor protection

The setup and installation above can also be used for the solid-state relays with an I^2t value of at least 6 600 A^2s.

Function modules

The 3RF23 solid-state contactors can be expanded with various function modules for individual adaptation to applications, see page 6/150 onwards.

3RF24 3-phase solid-state contactors with heat sink

The 3-phase solid-state contactors for resistive loads up to 50 A are available with

- 2-phase control (suitable in particular for circuits without connection to the neutral conductor) and
- 3-phase control (suitable for star circuits with connection to the neutral conductor or for applications in which the system requires all phases to be switched)

The converter function module can be snapped onto both versions for the simple power control of loads in a three-phase network by means of analog signals.

Note:

Checking the correct solid-state contactor size with the aid of the rated current diagram, taking account of the installation conditions, is recommended.

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Technical specifications

More information	
System Manual for modular system, see https://support.industry.siemens.com/cs/ww/en/view/60311318	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16223/faq

Type		3RF23..-.A...	3RF23..-.B...	3RF23..-.C...	3RF23..-.D...
Dimensions (W x H x D)		See page 6/137			
General data					
Ambient temperature					
• During operation, derating from 40 °C	°C	-25 ... +60			
• During storage	°C	-55 ... +80			
Installation altitude	m	0 ... 1 000; derating from 1 000			
Shock resistance according to IEC 60068-2-27	*g*/ms	15/11			
Vibration resistance according to IEC 60068-2-6	*g*	2			
Degree of protection IP on the front according to IEC 60529					
• Screw terminals and spring-loaded terminals		IP20			
• Ring cable lug connection		IP00 (IP20 when using the 3RF2900-3PA88 terminal cover)			
Touch protection on the front according to IEC 60529					
• Screw terminals and spring-loaded terminals		Finger-safe for vertical touching from the front			
• Ring cable lug connection		Finger-safe for vertical touching from the front when using the 3RF2900-3PA88 terminal cover			
Electromagnetic compatibility (EMC)					
• Emitted interference according to IEC 60947-4-3					
- Conducted interference voltage		Class A for industrial applications		Class A for industrial applications; Class B for residential, business and commercial applications up to 16 A, AC-51 low noise	Class A for industrial applications
- Emitted, high-frequency interference voltage		Class B for residential, business and commercial applications			
• Interference immunity					
- Electrostatic discharge according to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	Contact discharge 4; air discharge 8; behavior criterion 2			
- Induced RF fields according to IEC 61000-4-6	MHz	0.15 ... 80; 140 dBµV; behavior criterion 1			
- Burst according to IEC 61000-4-4	kV	2/5.0 kHz; behavior criterion 2			
- Surge according to IEC 61000-4-5	kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2			

Type		3RF23..-1....	3RF23..-2....	3RF23..-3....
General data				
Connection type		**Screw terminals**	**Spring-loaded terminals**	**Ring cable lug connection**
Connection, main contacts				
• Conductor cross-section				
- Solid	mm^2	2 x (1.5 ... 2.5)[1], 2 x (2.5 ... 6)[1]	2 x (0.5 ... 2.5)	--
- Finely stranded with end sleeve	mm^2	2 x (1 ... 2.5)[1], 2 x (2.5 ... 6)[1], 1 x 10	2 x (0.5 ... 1.5)	--
- Finely stranded without end sleeve	mm^2	--	2 x (0.5 ... 2.5)	--
- Solid or stranded, AWG cables	AWG	2 x (14 ... 10)	2 x (18 ... 14)	--
• Terminal screws		M4	--	M5
• Tightening torque	Nm	2 ... 2.5	--	2 ... 2.5
	lb.in	7 ... 10.3	--	7 ... 10.3
• Cable lugs				
- According to DIN 46234		--	--	5-2.5, 5-6, 5-10, 5-16, 5-25
- According to JIS C 2805		--	--	R 2-5, R 5.5-5, R 8-5, R 14-5
- Width, maximum	mm	--	--	12
Connection, auxiliary/control contacts				
• Conductor cross-section	mm	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0)	0.5 ... 2.5	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0)
	AWG	20 ... 12	20 ... 12	20 ... 12
• Stripped length	mm	7	10	7
• Terminal screw		M3	--	M3
• Tightening torque	Nm	0.5 ... 0.6	--	0.5 ... 0.6
	lb.in	4.5 ... 5.3	--	4.5 ... 5.3

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

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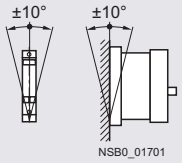
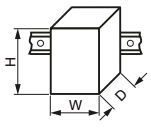
Type		3RF23..-1....	3RF23..-2....	3RF23..-3....
General data				
Connection type		Screw terminals	Spring-loaded terminals	Ring cable lug connection
Grounding studs		Optional, see also note on page 6/135 about the special mounting foot for safe grounding on DIN rails for versions 3RF2310 to 3RF2330		
• Size (standard screw)		M5		
Permissible mounting position				

Type		3RF23..-....2	3RF23..-....4	3RF23..-....5	3RF23..-....6
Main circuit					
Rated operational voltage U_e	V AC	24 ... 230	48 ... 460	48 ... 600	
• Operating range	V AC	20 ... 253	40 ... 506	40 ... 660	
• Rated frequency	Hz	50/60 ± 10%			
Rated insulation voltage U_i	V	600			
Blocking voltage	V	800	1 200		1 600
Rate of voltage rise	V/µs	1 000			

Type		3RF23..-...0.	3RF23..-...1.		3RF23..-...2.	3RF23..-...4.
Control circuit						
Method of operation		DC operation	AC/DC operation		AC operation	DC operation
Rated control supply voltage U_s	V	24 DC	24 AC	24 DC	110 ... 230 AC	4 ... 30 DC
Rated frequency of the control supply voltage	Hz	--	50/60 ± 10%	--	50/60 ± 10%	--
Actuating voltage, max.	V	30	26.5 AC	30 DC	253	30
Typical actuating current	mA	15/low power: 9[1]	20	20	15	20
Response voltage	V	15	14 AC	15 DC	90	4
Drop-out voltage	V	5	5 AC	5 DC	40	1
Operating times						
• ON-delay	ms	1 + max. one half-wave[2]	10 + max. one half-wave[2]		40 + max. one half-wave[2]	1 + max. one half-wave[2]
• OFF-delay	ms	1 + max. one half-wave	15 + max. one half-wave		40 + max. one half-wave	1 + max. one half-wave

[1] Applies to the "low power" version 3RF23..-.AA..-**0KN0**.
[2] Only for zero-point switching devices.

Type	**Type current/performance capacity**[1] I_{AC-51}	**Dimensions (W x H x D)** incl. heat sink
		
	A	mm
Main circuit		
3RF2310-.AA..	10.5	22.5 x 95 x 84
3RF2320-.AA.. **3RF2320-.CA..** **3RF2320-.DA..**	20	22.5 x 95 x 116
3RF2330-.AA.. **3RF2330-.CA..**	30	45 x 95 x 131.5
3RF2330-.DA..		22.5 x 95 x 116
3RF2340-.AA.. **3RF2340-.DA..**	40	67 x 100 x 136
3RF2350-.AA..	50	67 x 100 x 136
3RF2370-.AA..	70	80 x 100 x 157

[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the installation conditions.

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Type	Type current AC-51/performance capacity[1]			Power loss at I_{max}	Minimum load current	Off-state current	Rated peak withstand current I_{tsm}	I^2t value
	at I_{max} at 40 °C	according to IEC 60947-4-3 at 40 °C	according to UL/CSA at 50 °C					
	A	A	A	W	A	mA	A	A^2s
Main circuit								
3RF2310-.AA.2 **3RF2310-.AA.4** **3RF2310-.AA.5**	10.5	7.5	9.6	11	0.1	10	200	200
3RF2310-.AA.6							400	800
3RF2320-.AA.2 **3RF2320-.AA.4** **3RF2320-.AA.5** **3RF2320-.AA.6**	20	13.2	17.6	20	0.5	10	600	1 800
3RF2320-.CA.2 **3RF2320-.CA.4**						25	600	1 800
3RF2320-.DA.2 **3RF2320-.DA.4**						10	1 150	6 600
3RF2330-.AA.2 **3RF2330-.AA.4** **3RF2330-.AA.5** **3RF2330-.AA.6**	30	22	27	33	0.5	10	600	1 800
3RF2330-.CA.2						25	600	1 800
3RF2330-.DA.4		18.5	26	33	0.5	10	1 150	6 600
3RF2340-.AA.2 **3RF2340-.AA.4** **3RF2340-.AA.5**	40	33	36	44	0.5	10	1 200	7 200
3RF2340-.AA.6							1 150	6 600
3RF2340-.DA.4		33	30	44	0.5	10	1 150	6 600
3RF2350-.AA.2 **3RF2350-.AA.4** **3RF2350-.AA.5** **3RF2350-.AA.6**	50	36	45	54	0.5	10	1 150	6 600
3RF2370-.AA.2 **3RF2370-.AA.4** **3RF2370-.AA.5** **3RF2370-.AA.6**	70	70	62	83	0.5	10	1 150	6 600

[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the installation conditions.

Type	Type current AC-51/performance capacity[1]			Type current AC-15/ performance capacity[1]		Power loss at I_{max}	Minimum load current	Off-state current	Rated peak withstand current I_{tsm}	I^2t value
	at I_{max} at 40 °C	according to IEC 60947-4-3 at 40 °C	according to UL/CSA at 50 °C	10 x I_e for 60 ms	Parameters					
	A	A	A	A		W	A	mA	A	A^2s
Main circuit										
3RF2310-.BA.2 **3RF2310-.BA.4**	10.5	7.5	9.6	6	1 200 1/h 50% ON period	11	0.1	10	200	200
3RF2310-.BA.6									400	800
3RF2320-.BA.2 **3RF2320-.BA.4** **3RF2320-.BA.6**	20	13.2	17.6	12	1 200 1/h 50% ON period	20	0.5	10	600	1 800
3RF2330-.BA.2 **3RF2330-.BA.4** **3RF2330-.BA.6**	30	22	27	15	1 200 1/h 50% ON period	33	0.5	10	600	1 800
3RF2340-.BA.2 **3RF2340-.BA.4**	40	33	36	20	1 200 1/h 50% ON period	44	0.5	10	1 200	7 200
3RF2340-.BA.6									1 150	6 600
3RF2350-.BA.2 **3RF2350-.BA.4** **3RF2350-.BA.6**	50	36	45	25	1 200 1/h 50% ON period	54	0.5	10	1 150	6 600
3RF2370-.BA.2 **3RF2370-.BA.4** **3RF2370-.BA.6**	70	70	62	27.5	1 200 1/h 50% ON period	83	0.5	10	1 150	6 600

[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the installation conditions.

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Selection and ordering data

Selection notes

The solid-state contactors are selected on the basis of details of the network, the load and the ambient conditions. As the solid-state contactors are already equipped with an optimally matched heat sink, the selection process is considerably simpler than that for solid-state relays.

The following procedure is recommended:

- Determine the rated current of the load and the mains voltage
- Select a solid-state contactor with the same or higher rated current than the load

Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	Grounding	Screw terminals ⏚ Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V						
Zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC							
3RF2310-1							
10.5	24 DC	✓	**3RF2310-1AA02**		1	1 unit	41C
20		✓	**3RF2320-1AA02**		1	1 unit	41C
30		✓	**3RF2330-1AA02**		1	1 unit	41C
40		--	**3RF2340-1AA02**		1	1 unit	41C
50		--	**3RF2350-1AA02**		1	1 unit	41C
20	24 DC low power	✓	**3RF2320-1AA02-0KN0**		1	1 unit	41C
10.5	24 AC/DC	✓	**3RF2310-1AA12**		1	1 unit	41C
10.5	110 ... 230 AC	✓	**3RF2310-1AA22**		1	1 unit	41C
20		✓	**3RF2320-1AA22**		1	1 unit	41C
30		✓	**3RF2330-1AA22**		1	1 unit	41C
40		--	**3RF2340-1AA22**		1	1 unit	41C
50		--	**3RF2350-1AA22**		1	1 unit	41C
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC							
3RF2320-1							
10.5	24 DC	✓	**3RF2310-1AA04**		1	1 unit	41C
20		✓	**3RF2320-1AA04**		1	1 unit	41C
30		✓	**3RF2330-1AA04**		1	1 unit	41C
40		--	**3RF2340-1AA04**		1	1 unit	41C
50		--	**3RF2350-1AA04**		1	1 unit	41C
10.5	24 DC low power	✓	**3RF2310-1AA04-0KN0**		1	1 unit	41C
10.5	24 AC/DC	✓	**3RF2310-1AA14**		1	1 unit	41C
20		✓	**3RF2320-1AA14**		1	1 unit	41C
30		✓	**3RF2330-1AA14**		1	1 unit	41C
40		--	**3RF2340-1AA14**		1	1 unit	41C
50		--	**3RF2350-1AA14**		1	1 unit	41C
10.5	110 ... 230 AC	✓	**3RF2310-1AA24**		1	1 unit	41C
20		✓	**3RF2320-1AA24**		1	1 unit	41C
30		✓	**3RF2330-1AA24**		1	1 unit	41C
40		--	**3RF2340-1AA24**		1	1 unit	41C
50		--	**3RF2350-1AA24**		1	1 unit	41C
10.5	4 ... 30 DC	✓	**3RF2310-1AA44**		1	1 unit	41C
20		✓	**3RF2320-1AA44**		1	1 unit	41C
30		✓	**3RF2330-1AA44**		1	1 unit	41C

✓ These versions are equipped with a special mounting foot. Snapping them onto grounded DIN rails or mounting them on a grounded mounting plate simultaneously provides safe grounding of the heat sink. Additional grounding is no longer necessary in this case.

-- With these versions, the ground connection to the heat sink can be established by means of a screw terminal connection.

[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the installation conditions.
For derating characteristic curves, see page 6/120, "More information".

Other rated control supply voltages on request.

Accessories, see page 6/145.

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	Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	Grounding	Screw terminals	PU (UNIT, SET, M)	PS*	PG
				Article No. Price per PU			
	A	V					
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 600 V AC							
	20	110 DC	✓	**3RF2320-1AA65**	1	1 unit	41C
	30	110 ... 230 AC	✓	**3RF2330-1AA25**	1	1 unit	41C
	10.5	4 ... 30 DC	✓	**3RF2310-1AA45**	1	1 unit	41C
	20		✓	**3RF2320-1AA45**	1	1 unit	41C
	30		✓	**3RF2330-1AA45**	1	1 unit	41C
	40		--	**3RF2340-1AA45**	1	1 unit	41C
	50		--	**3RF2350-1AA45**	1	1 unit	41C
Zero-point switching · Integrated heat sink, blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC							
3RF2330-1	10.5	24 DC	✓	**3RF2310-1AA06**	1	1 unit	41C
	20		✓	**3RF2320-1AA06**	1	1 unit	41C
	30		✓	**3RF2330-1AA06**	1	1 unit	41C
	40		--	**3RF2340-1AA06**	1	1 unit	41C
	50		--	**3RF2350-1AA06**	1	1 unit	41C
	10.5	110 ... 230 AC	✓	**3RF2310-1AA26**	1	1 unit	41C
	20		✓	**3RF2320-1AA26**	1	1 unit	41C
	30		✓	**3RF2330-1AA26**	1	1 unit	41C
	40		--	**3RF2340-1AA26**	1	1 unit	41C
	50		--	**3RF2350-1AA26**	1	1 unit	41C
Low noise[2], zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC							
3RF2320-1	20	24 DC	✓	**3RF2320-1CA02**	1	1 unit	41C
	30		✓	**3RF2330-1CA02**	1	1 unit	41C
	20	110 ... 230 AC	✓	**3RF2320-1CA22**	1	1 unit	41C
Low noise[2], zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC							
	20	24 DC	✓	**3RF2320-1CA04**	1	1 unit	41C
	20	110 ... 230 AC	✓	**3RF2320-1CA24**	1	1 unit	41C
	20	4 ... 30 DC	✓	**3RF2320-1CA44**	1	1 unit	41C
Short-circuit-proof with B MCB · Zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC							
	20	24 DC	✓	**3RF2320-1DA02**	1	1 unit	41C
	20	110 ... 230 AC	✓	**3RF2320-1DA22**	1	1 unit	41C
Short-circuit-proof with B MCB · Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC							
3RF2330-1	20	24 DC	✓	**3RF2320-1DA04**	1	1 unit	41C
	40	24 DC low power	--	**3RF2340-1DA04-0KN0**	1	1 unit	41C
	20	110 ... 230 AC	✓	**3RF2320-1DA24**	1	1 unit	41C
	20	4 ... 30 DC	✓	**3RF2320-1DA44**	1	1 unit	41C
	30		✓	**3RF2330-1DA44**	1	1 unit	41C
	30[3]	24 DC	✓	**3RF2330-1DA06**	1	1 unit	41C

✓ These versions are equipped with a special mounting foot. Snapping them onto grounded DIN rails or mounting them on a grounded mounting plate simultaneously provides safe grounding of the heat sink. Additional grounding is no longer necessary in this case.

-- With these versions, the ground connection to the heat sink can be established by means of a screw terminal connection.

1) The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the installation conditions.
For derating characteristic curves, see page 6/120, "More information".

2) See page 6/135.

3) Blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC

Other rated control supply voltages on request.

Accessories, see page 6/145.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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	Type current/ performance capacity[1] I_{max}	Operational current I_e/AC-15[2]	Rated control supply voltage U_s	Ground-ing	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	A	V						
Instantaneous switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC									
3RF2310-1	10.5	6	24 DC	✓	**3RF2310-1BA02**		1	1 unit	41C
	20	12		✓	**3RF2320-1BA02**		1	1 unit	41C
	30	15		✓	**3RF2330-1BA02**		1	1 unit	41C
	40	20		--	**3RF2340-1BA02**		1	1 unit	41C
	50	25		--	**3RF2350-1BA02**		1	1 unit	41C
	50	27.5		--	**3RF2370-1BA02**		1	1 unit	41C
	10.5	6	110 ... 230 AC	✓	**3RF2310-1BA22**		1	1 unit	41C
	20	12		✓	**3RF2320-1BA22**		1	1 unit	41C
	30	15		✓	**3RF2330-1BA22**		1	1 unit	41C
	40	20		--	**3RF2340-1BA22**		1	1 unit	41C
	50	25		--	**3RF2350-1BA22**		1	1 unit	41C
	50	27.5		--	**3RF2370-1BA22**		1	1 unit	41C
Instantaneous switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC									
3RF2320-1	10.5	6	24 DC	✓	**3RF2310-1BA04**		1	1 unit	41C
	20	12		✓	**3RF2320-1BA04**		1	1 unit	41C
	30	15		✓	**3RF2330-1BA04**		1	1 unit	41C
	40	20		--	**3RF2340-1BA04**		1	1 unit	41C
	50	25		--	**3RF2350-1BA04**		1	1 unit	41C
	50	27.5		--	**3RF2370-1BA04**		1	1 unit	41C
	10.5	6	110 ... 230 AC	✓	**3RF2310-1BA24**		1	1 unit	41C
	20	12		✓	**3RF2320-1BA24**		1	1 unit	41C
	30	15		✓	**3RF2330-1BA24**		1	1 unit	41C
	40	20		--	**3RF2340-1BA24**		1	1 unit	41C
	50	25		--	**3RF2350-1BA24**		1	1 unit	41C
	50	27.5		--	**3RF2370-1BA24**		1	1 unit	41C
	20	12	4 ... 30 DC	✓	**3RF2320-1BA44**		1	1 unit	41C
	30	15		✓	**3RF2330-1BA44**		1	1 unit	41C
	50	25		--	**3RF2350-1BA44**		1	1 unit	41C
Instantaneous switching · Integrated heat sink, blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC									
3RF2330-1	10.5	6	24 DC	✓	**3RF2310-1BA06**		1	1 unit	41C
	20	12		✓	**3RF2320-1BA06**		1	1 unit	41C
	30	15		✓	**3RF2330-1BA06**		1	1 unit	41C
	40	20		--	**3RF2340-1BA06**		1	1 unit	41C
	50	25		--	**3RF2350-1BA06**		1	1 unit	41C
	50	27.5		--	**3RF2370-1BA06**		1	1 unit	41C
	10.5	6	110 ... 230 AC	✓	**3RF2310-1BA26**		1	1 unit	41C
	20	12		✓	**3RF2320-1BA26**		1	1 unit	41C
	30	15		✓	**3RF2330-1BA26**		1	1 unit	41C
	40	20		--	**3RF2340-1BA26**		1	1 unit	41C
	50	25		--	**3RF2350-1BA26**		1	1 unit	41C
	50	27.5		--	**3RF2370-1BA26**		1	1 unit	41C

✓ These versions are equipped with a special mounting foot. Snapping them onto grounded DIN rails or mounting them on a grounded mounting plate simultaneously provides safe grounding of the heat sink. Additional grounding is no longer necessary in this case.

-- With these versions, the ground connection to the heat sink can be established by means of a screw terminal connection.

[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the installation conditions.
For derating characteristic curves, see page 6/120, "More information".

[2] Utilization category AC-15:
Electromagnetic loads, e.g. valves according to IEC 60947-5-1.
Parameters: max. 1 200 1/h, 50% ON period, 10-times inrush current for 60 ms.

Other rated control supply voltages on request.

Accessories, see page 6/145.

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Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	Grounding	Spring-loaded terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V						
Zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC							
10.5	24 DC	✓	**3RF2310-2AA02**		1	1 unit	41C
20		✓	**3RF2320-2AA02**		1	1 unit	41C
10.5	110 ... 230 AC	✓	**3RF2310-2AA22**		1	1 unit	41C
20		✓	**3RF2320-2AA22**		1	1 unit	41C
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC							
10.5	24 DC	✓	**3RF2310-2AA04**		1	1 unit	41C
20		✓	**3RF2320-2AA04**		1	1 unit	41C
10.5	110 ... 230 AC	✓	**3RF2310-2AA24**		1	1 unit	41C
20		✓	**3RF2320-2AA24**		1	1 unit	41C
Zero-point switching · Integrated heat sink, blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC							
10.5	24 DC	✓	**3RF2310-2AA06**		1	1 unit	41C
20		✓	**3RF2320-2AA06**		1	1 unit	41C
10.5	110 ... 230 AC	✓	**3RF2310-2AA26**		1	1 unit	41C
20		✓	**3RF2320-2AA26**		1	1 unit	41C
Low noise[2], zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC							
20	24 DC	✓	**3RF2320-2CA02**		1	1 unit	41C
20	110 ... 230 AC	✓	**3RF2320-2CA22**		1	1 unit	41C
Low noise[2], zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC							
20	24 DC	✓	**3RF2320-2CA04**		1	1 unit	41C
20	110 ... 230 AC	✓	**3RF2320-2CA24**		1	1 unit	41C
Short-circuit-proof with B MCB, zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC							
20	110 ... 230 AC	✓	**3RF2320-2DA22**		1	1 unit	41C
Short-circuit-proof with B MCB, zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC							
20	24 DC	✓	**3RF2320-2DA04**		1	1 unit	41C
30		✓	**3RF2330-2DA64**		1	1 unit	41C
20	110 ... 230 AC	✓	**3RF2320-2DA24**		1	1 unit	41C

3RF2320-2

✓ These versions are equipped with a special mounting foot. Snapping them onto grounded DIN rails or mounting them on a grounded mounting plate simultaneously provides safe grounding of the heat sink. Additional grounding is no longer necessary in this case.

1) The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the installation conditions.
For derating characteristic curves, see page 6/120, "More information".

2) See page 6/135.

Other rated control supply voltages on request.

Accessories, see page 6/145.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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	Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	Grounding	Ring cable lug connection		PU (UNIT, SET, M)	PS*	PG
				Article No.	Price per PU			
	A	V						
Zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC								
3RF2310-3	10.5	24 DC	✓	**3RF2310-3AA02**		1	1 unit	41C
	20		✓	**3RF2320-3AA02**		1	1 unit	41C
	30		✓	**3RF2330-3AA02**		1	1 unit	41C
	40		--	**3RF2340-3AA02**		1	1 unit	41C
	50		--	**3RF2350-3AA02**		1	1 unit	41C
	70		--	**3RF2370-3AA02**		1	1 unit	41C
	10.5	110 ... 230 AC	✓	**3RF2310-3AA22**		1	1 unit	41C
	20		✓	**3RF2320-3AA22**		1	1 unit	41C
	30		✓	**3RF2330-3AA22**		1	1 unit	41C
	40		--	**3RF2340-3AA22**		1	1 unit	41C
	50		--	**3RF2350-3AA22**		1	1 unit	41C
	70		--	**3RF2370-3AA22**		1	1 unit	41C
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC								
3RF2330-3	10.5	24 DC	✓	**3RF2310-3AA04**		1	1 unit	41C
	20		✓	**3RF2320-3AA04**		1	1 unit	41C
	30		✓	**3RF2330-3AA04**		1	1 unit	41C
	40		--	**3RF2340-3AA04**		1	1 unit	41C
	50		--	**3RF2350-3AA04**		1	1 unit	41C
	70		--	**3RF2370-3AA04**		1	1 unit	41C
	10.5	110 ... 230 AC	✓	**3RF2310-3AA24**		1	1 unit	41C
	20		✓	**3RF2320-3AA24**		1	1 unit	41C
	30		✓	**3RF2330-3AA24**		1	1 unit	41C
	40		--	**3RF2340-3AA24**		1	1 unit	41C
	50		--	**3RF2350-3AA24**		1	1 unit	41C
	70		--	**3RF2370-3AA24**		1	1 unit	41C
	20	4 ... 30 DC	✓	**3RF2320-3AA44**		1	1 unit	41C
	30		✓	**3RF2330-3AA44**		1	1 unit	41C
	50		--	**3RF2350-3AA44**		1	1 unit	41C
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 600 V AC								
	40	4 ... 30 DC	--	**3RF2340-3AA45**		1	1 unit	41C
	70		--	**3RF2370-3AA45**		1	1 unit	41C
Zero-point switching · Integrated heat sink, blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC								
	10.5	24 DC	✓	**3RF2310-3AA06**		1	1 unit	41C
	20		✓	**3RF2320-3AA06**		1	1 unit	41C
	30		✓	**3RF2330-3AA06**		1	1 unit	41C
	40		--	**3RF2340-3AA06**		1	1 unit	41C
	50		--	**3RF2350-3AA06**		1	1 unit	41C
	70		--	**3RF2370-3AA06**		1	1 unit	41C
	10.5	110 ... 230 AC	✓	**3RF2310-3AA26**		1	1 unit	41C
	20		✓	**3RF2320-3AA26**		1	1 unit	41C
	30		✓	**3RF2330-3AA26**		1	1 unit	41C
	40		--	**3RF2340-3AA26**		1	1 unit	41C
	50		--	**3RF2350-3AA26**		1	1 unit	41C
	70		--	**3RF2370-3AA26**		1	1 unit	41C

✓ These versions are equipped with a special mounting foot. Snapping them onto grounded DIN rails or mounting them on a grounded mounting plate simultaneously provides safe grounding of the heat sink. Additional grounding is no longer necessary in this case.

-- With these versions, the ground connection to the heat sink can be established by means of a screw terminal connection.

[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the installation conditions.
For derating characteristic curves, see page 6/120, "More information".

Other rated control supply voltages on request.

Accessories, see page 6/145.

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Solid-state contactors > SIRIUS 3RF23 solid-state contactors, 1-phase

	Type current/ performance capacity[1] I_{max}	Operational current I_e/AC-15[2]	Rated control supply voltage U_s	Ground-ing	Ring cable lug connection Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	A	V						
Instantaneous switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC									
	70	27.5	24 DC	--	**3RF2370-3BA02**		1	1 unit	41C
	70	27.5	110 ... 230 AC	--	**3RF2370-3BA22**		1	1 unit	41C
Instantaneous switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC									
	70	27.5	24 DC	--	**3RF2370-3BA04**		1	1 unit	41C
	70	27.5	110 ... 230 AC	--	**3RF2370-3BA24**		1	1 unit	41C
Instantaneous switching · Integrated heat sink, blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC									
	70	27.5	24 DC	--	**3RF2370-3BA06**		1	1 unit	41C
	70	27.5	110 ... 230 AC	--	**3RF2370-3BA26**		1	1 unit	41C
Short-circuit-proof with B MCB, zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC									
3RF2320-3DA02	20	--	24 DC	✓	**3RF2320-3DA02**		1	1 unit	41C
	20	--	110 ... 230 AC	✓	**3RF2320-3DA22**		1	1 unit	41C
Short-circuit-proof with B MCB, zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC									
	20	--	24 DC	✓	**3RF2320-3DA04**		1	1 unit	41C
	20	--	110 ... 230 AC	✓	**3RF2320-3DA24**		1	1 unit	41C

✓ These versions are equipped with a special mounting foot. Snapping them onto grounded DIN rails or mounting them on a grounded mounting plate simultaneously provides safe grounding of the heat sink. Additional grounding is no longer necessary in this case.

-- With these versions, the ground connection to the heat sink can be established by means of a screw terminal connection.

1) The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the installation conditions.
For derating characteristic curves, see page 6/120, "More information".

2) Utilization category AC-15:
Electromagnetic loads, e.g. valves according to IEC 60947-5-1.
Parameters: max. 1 200 1/h, 50% ON period, 10-times inrush current for 60 ms.

Other rated control supply voltages on request.

Accessories, see page 6/145.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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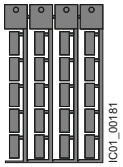
Accessories

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal covers						
		Ring cable lug connection				
3RF2900-3PA88	**Terminal covers** For 3RF23 solid-state contactors with ring cable lug connection With this terminal cover, degree of protection IP20 can be achieved on the front with a ring cable lug connection. It can also be used for screw terminals after simple adaptation.	**3RF2900-3PA88**		1	10 units	41C
Control connectors						
		Screw terminals				
3RF2900-1TA88	**Replacement control connectors** For 3RF23 and 3RF24 solid-state contactors With screw terminals	**3RF2900-1TA88**		1	50 units	41C
		Spring-loaded terminals				
3RF2900-2TA88	**Replacement control connectors** For 3RF23 and 3RF24 solid-state contactors With spring-loaded terminals	**3RF2900-2TA88**		1	50 units	41C
3RF2900-2TB88	**Control connectors** For 3RF23 and 3RF24 solid-state contactors With spring-loaded terminals With two clamping points per contact	**3RF2900-2TB88**		1	10 units	41C
Tools for opening spring-loaded terminals						
3RA2908-1A	**Screwdrivers** For all SIRIUS devices With spring-loaded terminals Length approx. 200 mm, size 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**3RA2908-1A**		1	1 unit	41B
Blank labels						
 3RT2900-1SB20	**Unit labeling plates** For SIRIUS devices[1]					
	10 mm × 7 mm, titanium gray	**3RT2900-1SB10**		100	816 units	41B
	20 mm × 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B
	Adhesive labels For SIRIUS devices					
	19 mm × 6 mm, titanium gray	**3RT2900-1SB60**		100	3060 units	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

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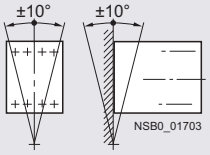
Technical specifications

More information	
System Manual for modular system, see https://support.industry.siemens.com/cs/ww/en/view/60311318	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16223/faq

Type		**3RF24..-1....**	**3RF24..-2....**	**3RF24..-3....**
Dimensions (W x H x D)		See page 6/147		
General data				
Ambient temperature				
• During operation, derating from 40 °C	°C	-25 ... +60		
• During storage	°C	-55 ... +80		
Installation altitude	m	0 ... 1 000; derating from 1 000		
Shock resistance according to IEC 60068-2-27	*g*/ms	15/11		
Vibration resistance according to IEC 60068-2-6	*g*	2		
Degree of protection IP on the front according to IEC 60529		IP20		IP00
Touch protection on the front according to IEC 60529		Finger-safe for vertical touching from the front		--
Insulation strength at 50/60 Hz (main/control circuit to floor)	V rms	4 000		
Electromagnetic compatibility (EMC)				
• Emitted interference according to IEC 60947-4-3				
- Conducted interference voltage		Class A for industrial applications[1]		
• Interference immunity				
- Electrostatic discharge according to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	Contact discharge 4; air discharge 8; behavior criterion 2		
- Induced RF fields according to IEC 61000-4-6	MHz	0.15 ... 80; 140 dBµV; behavior criterion 1		
- Burst according to IEC 61000-4-4	kV	2/5.0 kHz; behavior criterion 2		
- Surge according to IEC 61000-4-5	kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2		
Connection type		**Screw terminals**	**Spring-loaded terminals**	**Ring cable lug connection**
Connection, main contacts				
• Conductor cross-section				
- Solid	mm^2	2 x (1.5 ... 2.5)[2], 2 x (2.5 ... 6)[2]	2 x (0.5 ... 2.5)	--
- Finely stranded with end sleeve	mm^2	2 x (1 ... 2.5)[2], 2 x (2.5 ... 6)[2], 1 x 10	2 x (0.5 ... 1.5)	--
- Finely stranded without end sleeve	mm^2	--	2 x (0.5 ... 2.5)	--
- Solid or stranded, AWG cables	AWG	2 x (14 ... 10)	2 x (18 ... 14)	--
• Stripped length	mm	10	10	--
• Terminal screws		M4	--	M5
- Tightening torque	Nm	2 ... 2.5		2 ... 2.5
	lb.in	18 ... 22		18 ... 22
• Cable lugs				
- According to DIN 46234		--	--	5-2.5 ... 5-25
- According to JIS C 2805		--	--	R 2-5 ... R 14-5
- Width, maximum	mm	--	--	12
Connection, auxiliary/control contacts				
• Conductor cross-section	mm	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0)	0.5 ... 2.5	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0)
	AWG	20 ... 12	20 ... 12	20 ... 12
• Stripped length	mm	7	10	7
• Terminal screw		M3	--	M3
- Tightening torque, ∅ 3.5 mm, PZ 1	Nm	0.5 ... 0.6	--	0.5 ... 0.6
	lb.in	4.5 ... 5.3	--	4.5 ... 5.3
Grounding studs		Optional, see also note on page 6/135 about the special mounting foot for safe grounding on DIN rails for version 3RF2410		
• Size (standard screw)		M5		
Permissible mounting position				

[1] These products were built as Class A devices. The use of these devices in residential areas could result in radio interference. In this case it may be required to introduce additional interference suppression measures. The versions 3RF24..-1AC55 comply with Class B for residential, business and commercial applications.

[2] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

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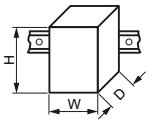
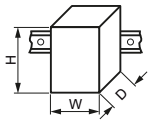
Type	Type current/ performance capacity[1]	Rated operational current I_e		Power loss at I_{AC-51}	Minimum load current	Max. off-state current	Rated peak withstand current I_{tsm}	I^2t value
	I_{AC-51} at 40 °C	according to IEC 60947-4-3 at 40 °C	according to UL/CSA at 50 °C					
	A	A	A	W	A	mA	A	A^2s
Main circuit								
3RF2410-.AB.5	10.5	7	7	23	0.1	10	200	200
3RF2420-.AB.5	22	15	15	44	0.5	10	600	1 800
3RF2430-.AB.5	30	22	22	61	0.5	10	1 200	7 200
3RF2440-.AB.5	40	30	30	80	0.5	10	1 150	6 600
3RF2450-.AB.5	50	38	38	107	0.5	10	1 150	6 600
3RF2410-.AC.5	10.5	7	7	31	0.5	10	300	450
3RF2420-.AC.5	22	15	15	66	0.5	10	600	1 800
3RF2430-.AC.5	30	22	22	91	0.5	10	1 200	7 200
3RF2440-.AC.5	40	30	30	121	0.5	10	1 150	6 600
3RF2450-.AC.5	50	38	38	160	0.5	10	1 150	6 600

[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions.

Type	Type current I_{AC-51}	Dimensions (W x H x D) (including heat sink)
	A	mm
Main circuit		
3RF2410-.AB..	10.5	45 x 95 x 92.5
3RF2410-.AC..		
3RF2420-.AB..	22	45 x 100 x 112
3RF2420-.AC..	22	74.5 x 100 x 114.5
3RF2430-.AB..	30	



Type	Type current I_{AC-51}	Dimensions (W x H x D) (including heat sink)
	A	mm
Main circuit		
3RF2430-.AC..	30	89.5 x 100 x 123
3RF2440-.AB..	40	
3RF2440-.AC..	40	120 x 95 x 130
3RF2450-.AB..	50	
3RF2450-.AC..	50	120 x 150 x 130



Type		3RF24..-.AB.5	3RF24..-.AC.5
Main circuit			
Controlled phases		2-phase	3-phase
Rated operational voltage U_e	V AC	48 ... 600	
• Operating range	V AC	40 ... 660	
• Rated frequency	Hz	50/60 ± 10%	
Rated insulation voltage U_i	V	600	
Rated impulse withstand voltage U_{imp}	kV	6	
Blocking voltage	V	1 200	
Rate of voltage rise	V/µs	1 000	

Type		3RF24..-...3.	3RF24..-...4.	3RF24..-...5.
Control circuit				
Method of operation		AC operation	DC operation	AC operation
Rated control supply voltage U_s	V	110	4 ... 30	190 ... 230
Rated frequency of the control supply voltage	Hz	50/60 ± 10%	--	50/60 ± 10%
Actuating voltage, max.	V	121	30	253
Typical actuating current	mA	15	30	15
Response voltage	V	90	4	180
Drop-out voltage	V	< 40	< 1	< 40
Operating times				
• ON-delay	ms	40 + max. one half-wave	1 + max. one half-wave	40 + max. one half-wave
• OFF-delay	ms	40 + max. one half-wave	1 + max. one half-wave	40 + max. one half-wave

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Selection and ordering data

Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	Grounding	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V						
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 600 V AC							
2-phase controlled							
10.5	4 ... 30 DC	✓	**3RF2410-1AB45**		1	1 unit	41C
20		--	**3RF2420-1AB45**		1	1 unit	41C
30		--	**3RF2430-1AB45**		1	1 unit	41C
40		--	**3RF2440-1AB45**		1	1 unit	41C
50		--	**3RF2450-1AB45**		1	1 unit	41C
10.5	110 AC	✓	**3RF2410-1AB35**		1	1 unit	41C
20		--	**3RF2420-1AB35**		1	1 unit	41C
30		--	**3RF2430-1AB35**		1	1 unit	41C
40		--	**3RF2440-1AB35**		1	1 unit	41C
50		--	**3RF2450-1AB35**		1	1 unit	41C
10.5	230 AC	✓	**3RF2410-1AB55**		1	1 unit	41C
20		--	**3RF2420-1AB55**		1	1 unit	41C
30		--	**3RF2430-1AB55**		1	1 unit	41C
40		--	**3RF2440-1AB55**		1	1 unit	41C
50		--	**3RF2450-1AB55**		1	1 unit	41C
3-phase controlled							
10.5	4 ... 30 DC	✓	**3RF2410-1AC45**		1	1 unit	41C
20		--	**3RF2420-1AC45**		1	1 unit	41C
30		--	**3RF2430-1AC45**		1	1 unit	41C
40		--	**3RF2440-1AC45**		1	1 unit	41C
50		--	**3RF2450-1AC45**		1	1 unit	41C
10.5	110 AC	✓	**3RF2410-1AC35**		1	1 unit	41C
20		--	**3RF2420-1AC35**		1	1 unit	41C
30		--	**3RF2430-1AC35**		1	1 unit	41C
40		--	**3RF2440-1AC35**		1	1 unit	41C
50		--	**3RF2450-1AC35**		1	1 unit	41C
10.5	230 AC	✓	**3RF2410-1AC55**		1	1 unit	41C
20		--	**3RF2420-1AC55**		1	1 unit	41C
30		--	**3RF2430-1AC55**		1	1 unit	41C
40		--	**3RF2440-1AC55**		1	1 unit	41C
50		--	**3RF2450-1AC55**		1	1 unit	41C

3RF2410-1AB45

3RF2410-1AC45

✓ These versions are equipped with a special mounting foot. Snapping them onto grounded DIN rails or mounting them on a grounded mounting plate simultaneously provides safe grounding of the heat sink. Additional grounding is no longer necessary in this case.

-- With these versions, the ground connection to the heat sink can be established by means of a screw terminal connection.

[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions.
For derating characteristic curves, see page 6/120, "More information".

Accessories, see page 6/145.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	Grounding	**Spring-loaded terminals** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V						
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 600 V AC							
2-phase controlled							
10	4 ... 30 DC	✓	**3RF2410-2AB45**		1	1 unit	41C
20		--	**3RF2420-2AB45**		1	1 unit	41C
10	230 AC	✓	**3RF2410-2AB55**		1	1 unit	41C
20		--	**3RF2420-2AB55**		1	1 unit	41C
3-phase controlled							
10	4 ... 30 DC	✓	**3RF2410-2AC45**		1	1 unit	41C
20		--	**3RF2420-2AC45**		1	1 unit	41C
10	230 AC	✓	**3RF2410-2AC55**		1	1 unit	41C
20		--	**3RF2420-2AC55**		1	1 unit	41C

3RF2410-2AB45

✓ These versions are equipped with a special mounting foot. Snapping them onto grounded DIN rails or mounting them on a grounded mounting plate simultaneously provides safe grounding of the heat sink. Additional grounding is no longer necessary in this case.

-- With these versions, the ground connection to the heat sink can be established by means of a screw terminal connection.

[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions.
For derating characteristic curves, see page 6/120, "More information".

Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	Grounding	**Ring cable lug connection** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V						
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 600 V AC							
2-phase controlled							
50	4 ... 30 DC	--	**3RF2450-3AB45**		1	1 unit	41C
50	230 AC	--	**3RF2450-3AB55**		1	1 unit	41C
3-phase controlled							
50	4 ... 30 DC	--	**3RF2450-3AC45**		1	1 unit	41C
50	230 AC	--	**3RF2450-3AC55**		1	1 unit	41C

-- With these versions, the ground connection to the heat sink can be established by means of a screw terminal connection.

[1] The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions.
For derating characteristic curves, see page 6/120, "More information".

Accessories, see page 6/145.

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General data

Overview

Function modules for SIRIUS 3RF2 solid-state switching devices

A great variety of applications demand an expanded range of functionality. With our function modules, these requirements can be met really easily. The modules are mounted simply by clicking them into place; straight away the necessary connections are made with the solid-state relay or contactor.

The plug-in connection to control the solid-state switching devices can simply remain in use. The external connections have screw terminals.

For function modules with current measurement, the load cable must be inserted through the straight-through transformer and reconnected to the solid-state switching device.

The following function modules are available:

- Converters (without current measurement)
- Load monitoring
- Heating current monitoring
- Power controllers
- Power regulators

Note:

With the exception of the converter, the function modules can be used only with 1-phase solid-state switching devices.

For recommended assignment of the function modules to 3RF2 solid-state switching devices, see Industry Mall.

Technical specifications

More information	
Online configurator, see www.siemens.com/sirius/configurators	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16231/faq
System Manual for modular system, see https://support.industry.siemens.com/cs/ww/en/view/60311318	Conversion tool, see www.siemens.com/conversion-tool

Type		3RF29..-0EA..	3RF29..-0FA..	3RF29..-0GA..	3RF29..-0HA..	3RF29..-0JA..	3RF29..-0KA..
Dimensions (W x H x D)	mm	22.5 x 84 x 38	22.5 x 102 x 39	45 x 112 x 44	45 x 112 x 44	45 x 112 x 44	45 x 112 x 44
General data							
Ambient temperature							
• During operation, derating from 40 °C	°C	-25 ... +60					
• During storage	°C	-55 ... +80					
Installation altitude	m	0 ... 1 000; derating from 1 000					
Shock resistance according to IEC 60068-2-27	*g*/ms	15/11					
Vibration resistance according to IEC 60068-2-6	*g*	2					
Degree of protection IP on the front according to IEC 60529		IP20					
Touch protection on the front according to IEC 60529		Finger-safe for vertical touching from the front					
Electromagnetic compatibility (EMC)							
• Emitted interference							
- Conducted interference voltage according to IEC 60947-4-3		Class A for industrial applications[1]					
- Emitted, high-frequency interference voltage according to IEC 60947-4-3		Class B for residential, business and commercial applications					
• Interference immunity							
- Electrostatic discharge according to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	Contact discharge 4; air discharge 8; behavior criterion 2					
- Induced RF fields according to IEC 61000-4-6	MHz	0.15 ... 80; 140 dBµV; behavior criterion 1					
- Burst according to IEC 61000-4-4		2 kV/5.0 kHz; behavior criterion 2					
- Surge according to IEC 61000-4-5	kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2					
Connection type Auxiliary/control contacts		**Screw terminals**					
• Conductor cross-section	mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0), 1 x (AWG 20 ... 12)					
• Stripped length	mm	7					
• Terminal screw		M3					
• Tightening torque	Nm lb.in	0.5 ... 0.6 4.5 ... 5.3					
Connection type Converters		**Straight-through transformers**					
• Diameter	mm	--	7	17			

[1] Note limitations for power controller and power regulator function modules. These modules were built as Class A devices. The use of these devices in residential areas could result in radio interference. In this case it may be required to introduce additional interference suppression measures.

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Type		3RF29..-0EA18[1)]	3RF29..-0FA08[1)]	3RF29..-0GA.3	3RF29..-0GA.6
Main circuit					
Rated operational voltage U_e	V AC	--		110 ... 230	400 ... 600
• Operating range	V AC	--		93.5 ... 253	340 ... 660
• Rated frequency	Hz	--		50/60	
Rated insulation voltage U_i	V	--		600	
Voltage measuring					
• Measuring range	V	--		93.5 ... 253	340 ... 660
Mains voltage, fluctuation compensation	%	--		20	

[1)] Versions are independent of the main circuit.

Type		3RF29..-0HA.3 3RF29..-0KA.3	3RF29..-0HA.6 3RF29..-0KA.6	3RF29..-0JA.3	3RF29..-0JA.6
Main circuit					
Rated operational voltage U_e	V AC	110 ... 230	400 ... 600	110 ... 230	400 ... 600
• Operating range	V AC	93.5 ... 253	340 ... 660	93.5 ... 253	340 ... 660
• Rated frequency	Hz	50/60			
Rated insulation voltage U_i	V	600			
Voltage measuring					
• Measuring range	V	93.5 ... 253	340 ... 660	93.5 ... 253	340 ... 660
Mains voltage, fluctuation compensation	%	20			

Type		3RF29..-...0.	3RF29..-...1.
Control circuit			
Method of operation		DC operation	AC/DC operation
Rated control supply voltage U_s	V	24	
Rated actuating current	mA	25	40
Rated frequency	Hz	--	50/60
of the control supply voltage			
Actuating voltage, max.	V	30	
Rated actuating current	mA	30	50
At maximum voltage			
Response voltage	V	15	
• For operating current	mA	2	
Drop-out voltage	V	5	

Type		3RF2906-0FA08	3RF2920-0FA08	3RF2920-0GA..	3RF2950-0GA..	3RF2990-0GA..
Current measurement						
Rated operational current I_e	A	6	20		50	90
Current measurement						
• Teach range	A	0.25 … 6	0.65 … 20	0.56 … 20	1.62 … 50	2.93 … 90
• Measuring range	A	0 … 6.6	0 … 22		0 … 55	0 … 99
• Minimum partial load current	A	0.25	0.65		1.6	2.9
Number of partial loads		1 … 6		1 … 12		

Type		3RF2920-0HA..	3RF2950-0HA..	3RF2990-0HA..	3RF2916-0JA..	3RF2932-0JA..
Current measurement						
Rated operational current I_e	A	20	50	90	16	32
Current measurement						
• Teach range	A	4 ... 20	10 ... 50	18 ... 90	0.42 ... 16	0.8 ... 32
• Measuring range	A	0 ... 22	0 ... 55	4 ... 99	0 ... 16	0 ... 32
• Minimum partial load current	A	--			0.42	0.8
Number of partial loads		--			1 ... 6	

Type		3RF2904-0KA..	3RF2920-0KA..	3RF2950-0KA..	3RF2990-0KA..
Current measurement					
Rated operational current I_e	A	4	20	50	90
Current measurement					
• Teach range	A	0.15 ... 4	0.65 ... 20	1.6 ... 50	2.9 ... 90
• Measuring range	A	0 ... 4	0 ... 22	0 ... 55	0 ... 99
• Minimum partial load current	A	--	0.65	1.6	2.9
Number of partial loads		--	1 ... 6		

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SIRIUS converters for 3RF2

Overview

Converters for 3RF2 solid-state switching devices

These modules are used to convert analog control signals, such as those output from many temperature controllers for example, into a pulse-width-modulated digital signal. The connected solid-state contactors and relays can therefore regulate the output of a load as a percentage.

Application

The function module is used for converting an analog input signal to an input/output ratio with the time base 1 s. The module can only be used in conjunction with 3RF21 and 3RF23 1-phase solid-state switching devices or 3RF22 and 3RF24 3-phase devices. It can be used on versions with 24 V DC and 24 V AC/DC control supply voltage.

Note:

The use of 1-pole solid-state switching devices with converters, power controllers or power regulators of loads in a three-phase network in full-wave control mode is not recommended. As mutual synchronization of the function modules is not possible, fluctuations in the heating power are possible; there is no optimum settling in particular with setpoint values < 50%.

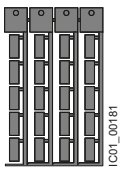
Selection and ordering data

Rated operational current I_e	Rated operational voltage U_e	Screw terminals		PU (UNIT, SET, M)	PS*	PG
A	V	Article No.	Price per PU			
Converters						
Rated control supply voltage 24 V AC/DC						
--	--	**3RF2900-0EA18**		1	1 unit	41C

3RF2900-0EA18

Accessories

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Blank labels					
Unit labeling plates For SIRIUS devices[1]					
10 mm × 7 mm, titanium gray	**3RT2900-1SB10**		100	816 units	41B
20 mm × 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B
Adhesive labels For SIRIUS devices					
19 mm × 6 mm, titanium gray	**3RT2900-1SB60**		100	3060 units	41B



3RT2900-1SB20

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

Load monitoring for 3RF2 1-phase solid-state switching devices

Many faults can be quickly detected by monitoring a load circuit connected to the solid-state switching device, as made possible with this module. Examples include the failure of load elements (up to 6 in the basic version or up to 12 in the extended version), alloyed power semiconductors, a lack of voltage or a break in a load circuit. A fault is indicated by one or more LEDs and reported to the controller by way of a PLC-compatible output.

The principle of operation is based on permanent monitoring of the current intensity. This figure is continuously compared with the reference value stored once during startup by the simple press of a button.

In order to detect the failure of one of several loads, the current difference must be 1/6 (in the basic version) or 1/12 (in the extended version) of the reference value. In the event of a fault, an output is actuated and one or more LEDs indicate the fault.

Application

The device is used for monitoring one or more loads (partial loads).

Notes:

The function module can only be used in conjunction with a 3RF21 solid-state relay or a 3RF23 solid-state contactor.

The solid-state switching devices with spring-loaded terminals in the load circuit are not suitable for load monitoring!

Selection and ordering data

Rated operational current I_e	Rated operational voltage U_e	Screw terminals ⊕ Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V					
Basic load monitoring						
Rated control supply voltage 24 V DC						
6	--	**3RF2906-0FA08**		1	1 unit	41C
20	--	**3RF2920-0FA08**		1	1 unit	41C
• With mounted 3RF2900-0RA88 cover						
6	--	**3RF2906-0FA08-0KH0**		1	1 unit	41C
20	--	**3RF2920-0FA08-0KH0**		1	1 unit	41C

3RF2920-0FA08

Extended load monitoring						
Rated control supply voltage 24 V AC/DC						
20	110 ... 230	**3RF2920-0GA13**		1	1 unit	41C
20	400 … 600	**3RF2920-0GA16**		1	1 unit	41C
50	110 ... 230	**3RF2950-0GA13**		1	1 unit	41C
50	400 … 600	**3RF2950-0GA16**		1	1 unit	41C
90	110 ... 230	**3RF2990-0GA13**		1	1 unit	41C
90	400 … 600	**3RF2990-0GA16**		1	1 unit	41C

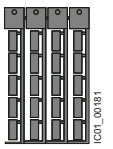
3RF2920-0GA13

Accessories

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Covers					
Sealable covers for function modules (not for converters) For securing against unauthorized adjustment of setting knobs	**3RF2900-0RA88**		1	10 units	41C

3RF2900-0RA88

Blank labels					
Unit labeling plates For SIRIUS devices[1]					
10 mm × 7 mm, titanium gray	**3RT2900-1SB10**		100	816 units	41B
20 mm × 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B
Adhesive labels For SIRIUS devices					
19 mm × 6 mm, titanium gray	**3RT2900-1SB60**		100	3060 units	41B



3RT2900-1SB20

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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SIRIUS heating current monitoring for 3RF2

Overview

Heating current monitoring for 3RF2 1-phase solid-state switching devices

Many faults can be quickly detected by monitoring a load circuit connected to the solid-state switching device, as made possible with this module. Examples include the failure of up to six load elements, alloyed power semiconductors, a lack of voltage, or a break in the load circuit. A fault is indicated by LEDs and reported to the controller via relay output (NC).

The principle of operation is based on permanent monitoring of the current intensity. This figure is continuously compared with the reference value stored once during startup. In order to detect the failure of one of several loads, the current difference must be 1/6 of the reference value. In the event of a fault, an output is actuated and the LEDs indicate the fault.

The heating current monitoring has a teach input and therefore differs from the load monitoring. This remote teaching function enables simple adjustment to changing loads without manual intervention.

Special version with "Standby" mode: Deviations from the standard version

3RF29..-0JA1.-1KK0

If the current is below 50% of the lower teach current during the teach routine, the device will go into "Standby" mode; the LOAD LED will flicker. The device thus detects a non-connected load, e.g. channels not required for tool heaters, and does not signal a fault. This mode can be reset by re-teaching.

Application

The device is used for monitoring one or more loads (partial loads).

Notes:

The function module can only be used in conjunction with a 3RF21 solid-state relay or a 3RF23 solid-state contactor.

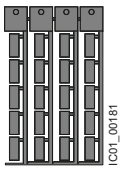
The solid-state switching devices with spring-loaded terminals in the load circuit are not suitable!

Selection and ordering data

Rated operational current I_e	Rated operational voltage U_e	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
A	V	Article No. Price per PU			
Heating current monitoring[1]					
3RF2916-0JA13					
Rated control supply voltage 24 V AC/DC					
16	110 ... 230	**3RF2916-0JA13**	1	1 unit	41C
16 (with "Standby" mode)	110 ... 230	**3RF2916-0JA13-1KK0**	1	1 unit	41C
16 (with "Standby" mode)	400 … 600	**3RF2916-0JA16-1KK0**	1	1 unit	41C
32 (with "Standby" mode)	110 ... 230	**3RF2932-0JA13-1KK0**	1	1 unit	41C
32	400 … 600	**3RF2932-0JA16**	1	1 unit	41C
32 (with "Standby" mode)	400 … 600	**3RF2932-0JA16-1KK0**	1	1 unit	41C

[1] Supplied without control connector. The control connector can be purchased from Wieland by quoting article number 8213 B/6VR (PCB connector), see page 16/18.

Accessories

Version	Article No. Price per PU	PU (UNIT, SET, M)	PS*	PG
Covers				
3RF2900-0RA88				
Sealable covers for function modules (not for converters) For securing against unauthorized adjustment of setting knobs	**3RF2900-0RA88**	1	10 units	41C
Blank labels				
 3RT2900-1SB20				
Unit labeling plates For SIRIUS devices[1]				
10 mm × 7 mm, titanium gray	**3RT2900-1SB10**	100	816 units	41B
20 mm × 7 mm, titanium gray	**3RT2900-1SB20**	100	340 units	41B
Adhesive labels For SIRIUS devices				
19 mm × 6 mm, titanium gray	**3RT2900-1SB60**	100	3060 units	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

Power controllers for 3RF2 1-phase solid-state switching devices

The power controller is a function module for the autonomous power control of complex heating systems and inductive loads.

The following functions have been integrated:

- Power controller
  For adjusting the power of the connected load. The setpoint value is selected via a rotary knob on the module as a percentage of the 100% power value stored.
- Inrush current limiting
  With the aid of an adjustable voltage ramp, the inrush current is limited by means of phase control. This is useful above all with loads such as lamps or infrared lamps which have an inrush transient current.
- Load circuit monitoring
  For detecting load failure, partial load faults, alloyed power semiconductors, lack of voltage or a break in the load circuit.

Note:

With the phase control operating mode, a partial load fault is detected by cyclic "scanning" of the load; the exact mode of operation is described in the data sheets!

Special versions:
Deviations from the standard version

3RF2904-0KA13-0KC0 (no teach current)

During the teach routine, the connected solid-state relay or contactor is not activated; i.e. no current will flow. No current reference value is stored. No partial load monitoring!

3RF29..-0KA1.-0KT0 (without partial load faults)

No partial load monitoring!

Application

The power controller can be used for:

- Complex heating systems
- Inductive loads
- Loads with temperature-dependent resistor
- Loads with ageing after long-time service
- Simple indirect control of temperature

Notes:

This function module can only be used in conjunction with a 3RF21 solid-state relay or a 3RF23 solid-state contactor.

The solid-state switching devices with spring-loaded terminals in the load circuit are not suitable!

Power control

The power controller adjusts the power in the connected load by means of a solid-state switching device depending on the setpoint selection. It does not compensate for changes in the mains voltage or load resistance. The setpoint value can be predefined externally as a 0 to 10 V signal or internally by means of a potentiometer. Depending on the setting of the potentiometer (t_R), the control is carried out according to the principle of full-wave control or generalized phase control.

Note:

In the case of ohmic loads, the power is set linear to the setpoint value. During operation of inductive loads, the power control is no longer proportional and linear due to the phase shift between current and voltage.

Full-wave control

In this operating mode the output is adjusted to the required setpoint value by changing the on-to-off period. The period duration is predefined at 1 s.

Notes:

The use of 1-pole solid-state switching devices with converters, power controllers or power regulators of loads in a three-phase network in full-wave control mode is not recommended.
As mutual synchronization of the function modules is not possible, fluctuations in the heating power are possible; there is no optimum settling in particular with setpoint values < 50%.

Generalized phase control

In this operating mode the output is adjusted to the required setpoint value by changing the current flow angle. In order to observe the limit values of the conducted interference voltage for industrial networks, at loads up to 20 kVA, the load circuit must include an additional filter, and for loads above 20 kVA, a reactor with a rating of at least 200 µH must be used. You will find details about the filters in the FAQ "Filters for 3RF29 power regulators and power controllers to comply with the limits for electromagnetic emitted interference", see https://support.industry.siemens.com/cs/ww/en/view/109751887.

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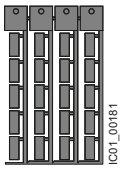
SIRIUS power controllers for 3RF2

Selection and ordering data

Rated operational current I_e	Rated operational voltage U_e	Screw terminals	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V						
Power controllers							
3RF2904-0KA13							
Rated control supply voltage 24 V AC/DC							
4 (no teach current)	110 ... 230		**3RF2904-0KA13-0KC0**		1	1 unit	41C
4 (without partial load faults)			**3RF2904-0KA13-0KT0**		1	1 unit	41C
20			**3RF2920-0KA13**		1	1 unit	41C
50			**3RF2950-0KA13**		1	1 unit	41C
90			**3RF2990-0KA13**		1	1 unit	41C
20	400 ... 600		**3RF2920-0KA16**		1	1 unit	41C
50			**3RF2950-0KA16**		1	1 unit	41C
50 (without partial load faults)			**3RF2950-0KA16-0KT0**		1	1 unit	41C
90			**3RF2990-0KA16**		1	1 unit	41C

Accessories

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Covers					
3RF2900-0RA88					
Sealable covers for function modules (not for converters) For securing against unauthorized adjustment of setting knobs	**3RF2900-0RA88**		1	10 units	41C
Blank labels					
 3RT2900-1SB20					
Unit labeling plates For SIRIUS devices[1]					
10 mm × 7 mm, titanium gray	**3RT2900-1SB10**		100	816 units	41B
20 mm × 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B
Adhesive labels For SIRIUS devices					
19 mm × 6 mm, titanium gray	**3RT2900-1SB60**		100	3060 units	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

Power regulators for 3RF2 1-phase solid-state switching devices

The power regulator is a function module for the autonomous power control of complex heating systems.

The following functions have been integrated:

- Power controller with proportional-action control
  For adjusting the power of the connected load. The setpoint value is selected via a rotary knob on the module as a percentage of the 100% power value stored. Changes in the mains voltage or in the load resistance are compensated in this case.
- Inrush current limiting
  With the aid of an adjustable voltage ramp, the inrush current is limited by means of phase control. This is useful above all with loads such as lamps which have an inrush transient current.
- Load circuit monitoring
  For detecting load failure, alloyed power semiconductors, lack of voltage or a break in the load circuit. Partial load monitoring is not possible. Load fluctuations are compensated.

Application

The power regulator can be used for:

- Complex heating systems
- Heating elements with temperature-dependent resistor
- Heating elements with ageing after long-time service
- Simple indirect control of temperature

Notes:

This function module can only be used in conjunction with a 3RF21 solid-state relay or a 3RF23 solid-state contactor.

The solid-state switching devices with spring-loaded terminals in the load circuit are not suitable!

Power control

The power regulator adjusts the power in the connected load by means of a solid-state switching device depending on the taught power and the selected setpoint. Changes in the mains voltage or in the load resistance are thus compensated by the power regulator. The setpoint value can be predefined externally as a 0 to 10 V signal or internally by means of a potentiometer. Depending on the setting of the potentiometer (t_R), the adjustment is carried out according to the principle of full-wave control or generalized phase control.

Note:

In the case of ohmic loads, the power is set linear to the setpoint value. During operation of inductive loads, the power control is no longer proportional and linear due to the phase shift between current and voltage.

Full-wave control

In this operating mode the output is adjusted to the required setpoint value by changing the on-to-off period. The period duration is predefined at 1 s.

Notes:

The use of 1-pole solid-state switching devices with converters, power controllers or power regulators of loads in a three-phase network in full-wave control mode is not recommended.
As mutual synchronization of the function modules is not possible, fluctuations in the heating power are possible; there is no optimum settling in particular with setpoint values < 50%.

Generalized phase control

In this operating mode the output is adjusted to the required setpoint value by changing the current flow angle. In order to observe the limit values of the conducted interference voltage for industrial networks, at loads up to 20 kVA, the load circuit must include an additional filter, and for loads above 20 kVA, a reactor with a rating of at least 200 µH must be used. You will find details about the filters in the FAQ "Filters for 3RF29 power regulators and power controllers to comply with the limits for electromagnetic emitted interference", see https://support.industry.siemens.com/cs/ww/en/view/109751887.

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SIRIUS power regulators for 3RF2

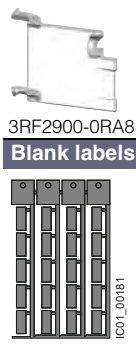
Selection and ordering data

Rated operational current I_e	Rated operational voltage U_e	Screw terminals		PU (UNIT, SET, M)	PS*	PG
		Article No.	Price per PU			
A	V					
Power regulators						
Rated control supply voltage 24 V AC/DC						
20	110 ... 230	**3RF2920-0HA13**		1	1 unit	41C
20	400 … 600	**3RF2920-0HA16**		1	1 unit	41C
50	110 ... 230	**3RF2950-0HA13**		1	1 unit	41C
50	400 … 600	**3RF2950-0HA16**		1	1 unit	41C
90	110 ... 230	**3RF2990-0HA13**		1	1 unit	41C
90	400 … 600	**3RF2990-0HA16**		1	1 unit	41C

3RF2920-0HA13

Accessories

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Covers					
Sealable covers for function modules (not for converters) For securing against unauthorized adjustment of setting knobs	**3RF2900-0RA88**		1	10 units	41C
Blank labels					
Unit labeling plates For SIRIUS devices[1]					
10 mm × 7 mm, titanium gray	**3RT2900-1SB10**		100	816 units	41B
20 mm × 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B
Adhesive labels For SIRIUS devices					
19 mm × 6 mm, titanium gray	**3RT2900-1SB60**		100	3060 units	41B



3RT2900-1SB20

3RF2900-0RA88

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH
(see page 16/18).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

More information	
Industry Mall, see www.siemens.com/product?3RF	Online configurator, see www.siemens.com/sirius/configurators Conversion tool, see www.siemens.com/conversion-tool

Solid-state contactors for switching motors

Solid-state contactor for direct-on-line starting

The solid-state contactors for switching motors are intended for frequently switching on and off three-phase current operating mechanisms up to 7.5 kW and reversing up to 3.0 kW.
The devices are constructed with complete insulation and can be mounted directly on SIRIUS motor starter protectors, overload relays and current monitoring relays, resulting in a very simple integration into motor feeders.

These 3-phase solid-state contactors are equipped with a 2-phase control which is particularly suitable for typical motor current circuits without connecting to the neutral conductor.

Solid-state contactors for switching motors are available in two versions:

- SIRIUS 3RF34 solid-state contactors, 3-phase:
  These 2-phase controlled, instantaneous switching solid-state contactors in the insulating enclosure are offered with a width of 45 mm up to 5.2 A – and with a width of 90 mm up to 16 A. They allow the operation of motors up to 7.5 kW.
- SIRIUS 3RF34 solid-state reversing contactors, 3-phase:
  The integration of four conducting paths to a reverse switch, combined in one enclosure, makes this device a particularly compact solution. Compared to conventional systems, for which two contactors are required, it is possible to save up to 50% width with the 3-phase reversing contactors. Devices with a width of 45 mm cover motors up to 2.2 kW – and those with a width of 90 mm cover motors up to 3 kW.

Note:

In accordance with the product standard IEC 60947-4-2, the motor contactors are designed for motors with maximum starting current conditions of $I/I_e \leq 8$. For configuring motors with higher starting current conditions (typically $I/I_e > 8$), the data in the Equipment Manual for 3RF34 solid-state switching devices must be taken into account, see https://support.industry.siemens.com/cs/ww/en/view/60298187.

Switching functions

The solid-state contactors for switching motors are "Instantaneous switching", because this method is particularly suited for inductive loads. By distributing the ON point over the entire sine curve of the mains voltage, disturbances are reduced to a minimum.

Connection methods

You can choose between the following connection methods for the solid-state contactors for switching motors:

Screw terminals

The screw connection system is the standard for industrial controls. Open terminals and a plus-minus screw are just two features of this technology. Two conductors of up to 6 mm² can be connected in just one terminal.

Spring-loaded terminals

This innovative technology manages without any screw connection. This means that very high vibration resistance is achieved. Two conductors of up to 2.5 mm² can be connected to each terminal.

Motor feeders

The devices can use a link module to directly connect to a motor starter protector. Also possible is the mounting of a 3RB30/3RB31 electronic overload relay (see page 7/95) or a 3RR2 current monitoring relay (see pages 10/47 and 10/55) using a link adapter. The simultaneous mounting of a motor starter protector and an overload or current monitoring relay is not recommended for space and heat development reasons.

Rapid-switching fuseless and fused motor feeders can thereby be implemented in a time-saving manner.

Selecting solid-state contactors

The solid-state contactors are selected on the basis of details of the network, the load and the ambient conditions.

The following procedure is recommended:

- Determine the rated current of the load and the mains voltage
- Select a solid-state contactor with the same or higher rated current than the load
- Testing of the maximum permissible switching frequency based on the characteristic curves (see "More information" → "Product information", page 6/161). To do this, the starting current, the starting time and the motor load in the operating phase must be known.
- If the permissible switching frequency is under the desired frequency, it is possible to achieve an increase only by overdimensioning the motor and the solid-state contactor!

The correct device size can be determined by entering the network and motor data along with the application and ambient conditions.

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General data

Short-circuit protection

Despite the rugged power semiconductors that are used, solid-state switching devices respond more sensitively to short circuits in the load feeder. Consequently, special precautions have to be taken against destruction, depending on the type of design.

Siemens generally recommends using SITOR semiconductor fuses. These fuses also provide protection against destruction in the event of a short circuit even when the solid-state contactors and solid-state relays are fully utilized.

Alternatively, if there is lower loading, protection can also be provided by standard fuses or miniature circuit breakers. This protection is achieved by overdimensioning the solid-state switching devices accordingly.

Article number scheme

Product versions		Article number										
Solid-state contactors		**3RF34**	□	□	–	□	□	□	□	□		3-phase
Rated operational current	3.8 A		**0**	**3**								Only for reversing contactor
	5.2 A (5.4 A for reversing contactor)		**0**	**5**								
	9.2 A (7.4 A for reversing contactor)		**1**	**0**								
	12.5 A		**1**	**2**								Only for solid-state contactor
	16 A		**1**	**6**								Only for solid-state contactor
Connection type	Screw terminals					**1**						
	Spring-loaded terminals					**2**						
Switching function	Instantaneous switching						**B**					
Number of controlled phases	2-phase							**B**				
	Reversing contactor							**D**				
Rated control supply voltage U_s	24 V DC								**0**			
	110 ... 230 V AC								**2**			
Rated operational voltage U_e	48 ... 460 V AC									**4**		
	48 ... 600 V AC									**6**		Blocking voltage 1 600 V, only for solid-state contactor
Example		**3RF34**	**1**	**0**	**–**	**1**	**B**	**B**	**0**	**4**		

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Insulated enclosure with integrated heat sink, "ready to use"
- Compact and space-saving design
- Reversing contactors with integrated interlocking
- High degree of protection
- Integrated mounting foot for snapping onto a DIN rail or for mounting on a support plate
- Variety of connection methods
- Plug-in control connection
- Display via LEDs
- Wide voltage range for AC control supply voltage

Application

Use in load feeders

There is no typical design of a load feeder with solid-state relays or solid-state contactors; instead, the great variety of connection methods and control voltages offers universal application opportunities.

SIRIUS solid-state relays and solid-state contactors can be installed in fuseless or fused feeders, as required.

See Configuration Manual for load feeders, https://support.industry.siemens.com/cs/ww/en/view/39714188.

Standards and approvals

- IEC 60947-4-2
- UL 508, CSA for North America[1)]
- CE marking for Europe
- C-Tick approval for Australia
- CCC approval for China

[1)] Please note: Use overvoltage protection device; max. cut-off-voltage 6 000 V; min. energy handling capability 100 J.

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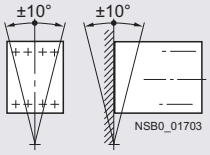
Technical specifications

Type		3RF3405-1BB.. 3RF3403-1BD.., 3RF3405-1BD..	3RF3410-1BB.., 3RF3412-1BB.., 3RF3416-1BB.. 3RF3410-1BD..	3RF3405-2BB..	3RF3410-2BB.., 3RF3412-2BB.., 3RF3416-2BB..
Dimensions (W x H x D)					
• 3RF34..-1BB..	mm	45 x 95 x 96.5	90 x 95 x 96.5	45 x 95 x 96.5	90 x 95 x 96.5
• 3RF34..-1BD..	mm	45 x 95 x 108.5	90 x 95 x 108.5	--	--
General technical specifications					
Ambient temperature					
• During operation, derating from 40 °C	°C	-25 ... +60			
• During storage	°C	-55 ... +80			
Installation altitude	m	0 ... 1 000; derating over 1 000 m on request			
Shock resistance according to IEC 60068-2-27	*g*/ms	15/11			
Vibration resistance according to IEC 60068-2-6	*g*	2			
Degree of protection IP on the front according to IEC 60529		IP20			
Touch protection on the front according to IEC 60529		Finger-safe for vertical touching from the front			
Insulation strength at 50/60 Hz (main/control circuit to floor)	V rms	4 000			
Electromagnetic compatibility (EMC)					
• Emitted interference according to IEC 60947-4-2					
- Conducted interference voltage		Class A for industrial applications[1]			
- Emitted, high-frequency interference voltage		Class A for industrial applications			
• Interference immunity					
- Electrostatic discharge according to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	Contact discharge: 4; air discharge: 8; Behavior criterion 2			
- Induced RF fields according to IEC 61000-4-6	MHz	0.15 ... 80; 140 dBµV; behavior criterion 1			
- Burst according to IEC 61000-4-4	kV	2; at 5 kHz; behavior criterion 2			
- Surge according to IEC 61000-4-5[2]	kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2			
Connection type		**Screw terminals**		**Spring-loaded terminals**	
Operating devices		Standard screwdriver size 2 and Pozidriv 2		3.0 x 0.5 and 3.5 x 0.5	
Conductor cross-sections, main contacts					
• Solid	mm^2	2 x (1.5 ... 2.5)[3], 2 x (2.5 ... 6)[3]		2 x (0.5 ... 2.5)	
• Finely stranded with end sleeve	mm^2	2 x (1 ... 2.5)[3], 2 x (2.5 ... 6)[3], 1 x 10		2 x (0.5 ... 1.5)	
• Finely stranded without end sleeve	mm^2	--		2 x (0.5 ... 2.5)	
• AWG cables, solid or stranded	AWG	2 x (14 ... 10)		2 x (18 ... 14)	
Conductor cross-sections, auxiliary/control contacts					
• With/without end sleeve	mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0)		0.5 ... 2.5	
• AWG cables, solid or stranded	AWG	20 ... 12		20 ... 12	
Permissible mounting position					

[1] These products were built as Class A devices. The use of these devices in residential areas could result in radio interference. In this case it may be required to introduce additional interference suppression measures.

[2] The following applies for reversing contactors: To maintain the values, a 3TX7462-3L surge suppressor should be used between phases L1 and L3 as close as possible to the reversing contactor.

[3] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

More information

For more information, see

- System Manual for modular system, https://support.industry.siemens.com/cs/ww/en/view/60311318
- Equipment Manual for 3RF34 solid-state switching devices, https://support.industry.siemens.com/cs/ww/en/view/60298187

Product information and technical specifications

For product data sheets with detailed technical specifications and dimensional drawings, see https://support.industry.siemens.com/cs/ww/en/ps/16237/td.

For more information, please enter the article number of the required device under the tab "Product List".

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SIRIUS 3RF34 solid-state contactors, 3-phase

Technical specifications

More information	
System Manual for modular system, see https://support.industry.siemens.com/cs/ww/en/view/60311318	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16237/faq
Equipment Manual for 3RF34 solid-state switching devices, see https://support.industry.siemens.com/cs/ww/en/view/60298187	

Type		3RF3405-.BB..	3RF3410-.BB..	3RF3412-.BB..	3RF3416-.BB..
Fuseless design with 3RV2 motor starter protector, CLASS 10					
Rated operational current I_{AC-53a} [1] According to IEC 60947-4-2					
• At 40 °C	A	5.2 (4.5)	9.2	12.5	16
• UL/CSA, at 50 °C	A	4.6 (4.0)	8.4	11.5	14
• At 60 °C	A	4.2 (3.5)	7.6	10.5	12.5
Power loss at I_{AC-53a}					
• At 40 °C	W	10 (8)	16	22	28
Short-circuit protection with type of coordination "1" At operational voltage U_e up to 440 V					
• Motor starter protectors	Type	3RV2011-1GA10	3RV2011-1JA10	3RV2011-1KA10	3RV2011-4AA10
• Current I_q	kA	50	5		3

[1] The reduced values in brackets apply to a directly mounted motor starter protector and simultaneous side-by-side mounting.

Type		3RF3405-.BB.4	3RF3405-.BB.6	3RF3410-.BB..	3RF3412-.BB.4	3RF3412-.BB.6	3RF3416-.BB..
Fused design with directly connected 3RB3 overload relay							
Rated operational current I_{AC-53a} According to IEC 60947-4-2							
• At 40 °C	A	4		7.8	9.5		11
• UL/CSA, at 50 °C	A	3.6		7	8.5		10
• At 60 °C	A	3.2		6.2	7.6		9
Power loss at I_{AC-53a}							
• At 40 °C	W	7		13	16		18
Minimum load current	A	0.1	0.5				
Max. off-state current	mA	10					
Rated peak withstand current I_{tsm}	A	200	600		1 200	1 150	
I^2t value	A^2s	200	1 800		7 200	6 600	

Type		3RF34..-.BB.4	3RF34..-.BB.6
Main circuit			
Controlled phases		2-phase	
Rated operational voltage U_e	V AC	48 ... 480	48 ... 600
• Operating range	V AC	40 ... 506	40 ... 660
• Rated frequency	Hz	50/60 ± 10%	
Rated insulation voltage U_i	V	600	
Rated impulse withstand voltage U_{imp}	kV	6	
Blocking voltage	V	1 200	1 600
Rate of voltage rise	V/µs	1 000	

Type		3RF34..-.BB0.	3RF34..-.BB2.
Control circuit			
Method of operation		DC operation	AC operation
Rated control supply voltage U_s	V	24	110 ... 230
Rated frequency of the control supply voltage	Hz	--	50/60 ± 10%
Control supply voltage, max.	V	30	253
Typical actuating current	mA	20	15
Response voltage	V	15	90
Drop-out voltage	V	5	< 40
Operating times			
• ON-delay	ms	1	5
• OFF-delay	ms	1 + max. one half-wave	30 + max. one half-wave

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Selection and ordering data

Motor contactors · Instantaneous switching · 2-phase controlled

Rated operational current I_e	Rated power at I_e and U_e	Rated control supply voltage U_s	Screw terminals	PU (UNIT, SET, M)	PS*	PG
A	400 V kW	V	Article No. — Price per PU			
Rated operational voltage U_e 48 ... 480 V AC						
5.2	**2.2**	24 DC	**3RF3405-1BB04**	1	1 unit	41C
9.2	**4.0**		**3RF3410-1BB04**	1	1 unit	41C
12.5	**5.5**		**3RF3412-1BB04**	1	1 unit	41C
16	**7.5**		**3RF3416-1BB04**	1	1 unit	41C
5.2	**2.2**	110 ... 230 AC	**3RF3405-1BB24**	1	1 unit	41C
9.2	**4.0**		**3RF3410-1BB24**	1	1 unit	41C
12.5	**5.5**		**3RF3412-1BB24**	1	1 unit	41C
16	**7.5**		**3RF3416-1BB24**	1	1 unit	41C

3RF3405-1BB

Rated operational voltage U_e 48 ... 600 V AC, blocking voltage 1 600 V						
5.2	**2.2**	24 DC	**3RF3405-1BB06**	1	1 unit	41C
9.2	**4.0**		**3RF3410-1BB06**	1	1 unit	41C
12.5	**5.5**		**3RF3412-1BB06**	1	1 unit	41C
16	**7.5**		**3RF3416-1BB06**	1	1 unit	41C
5.2	**2.2**	110 ... 230 AC	**3RF3405-1BB26**	1	1 unit	41C
9.2	**4.0**		**3RF3410-1BB26**	1	1 unit	41C
12.5	**5.5**		**3RF3412-1BB26**	1	1 unit	41C
16	**7.5**		**3RF3416-1BB26**	1	1 unit	41C

3RF3410-1BB

Rated operational current I_e	Rated power at I_e and U_e	Rated control supply voltage U_s	Spring-loaded terminals	PU (UNIT, SET, M)	PS*	PG
A	400 V kW	V	Article No. — Price per PU			
Rated operational voltage U_e 48 ... 480 V AC						
5.2	**2.2**	24 DC	**3RF3405-2BB04**	1	1 unit	41C
9.2	**4.0**		**3RF3410-2BB04**	1	1 unit	41C
12.5	**5.5**		**3RF3412-2BB04**	1	1 unit	41C
16	**7.5**		**3RF3416-2BB04**	1	1 unit	41C
5.2	**2.2**	110 ... 230 AC	**3RF3405-2BB24**	1	1 unit	41C
9.2	**4.0**		**3RF3410-2BB24**	1	1 unit	41C
12.5	**5.5**		**3RF3412-2BB24**	1	1 unit	41C
16	**7.5**		**3RF3416-2BB24**	1	1 unit	41C

3RF3405-2BB

Rated operational voltage U_e 48 ... 600 V AC, blocking voltage 1 600 V						
5.2	**2.2**	24 DC	**3RF3405-2BB06**	1	1 unit	41C
9.2	**4.0**		**3RF3410-2BB06**	1	1 unit	41C
12.5	**5.5**		**3RF3412-2BB06**	1	1 unit	41C
16	**7.5**		**3RF3416-2BB06**	1	1 unit	41C
5.2	**2.2**	110 ... 230 AC	**3RF3405-2BB26**	1	1 unit	41C
9.2	**4.0**		**3RF3410-2BB26**	1	1 unit	41C
12.5	**5.5**		**3RF3412-2BB26**	1	1 unit	41C
16	**7.5**		**3RF3416-2BB26**	1	1 unit	41C

3RF3410-2BB

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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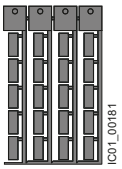
SIRIUS 3RF34 solid-state contactors, 3-phase

Accessories

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Link modules between solid-state contactor and motor starter protector						
3RA2921-1BA00	**Link modules** Between solid-state contactor and motor starter protector with screw terminals	**Screw terminals**				
	For 3RV2 motor starter protectors size S00/S0	**3RA2921-1BA00**		1	1 unit	41B
Link adapters between solid-state contactor and overload relay						
3RF3900-0QA88	**Link adapters** For direct mounting of 3RB3 overload relays or 3RR2 current monitoring relays to the solid-state contactor with screw terminals					
	The adapter is snapped onto the enclosure of the 3RF34 contactor and accommodates the fixing hooks of the 3RB3 overload relays or the 3RR2 current monitoring relays for direct mounting.	**3RF3900-0QA88**		1	1 unit	41C
Insulation stop for securely holding back the conductor insulation, on conductors up to 1 mm²						
3RT2916-4JA02	**Insulation stop strip** For all SIRIUS devices with spring-loaded terminals	**Spring-loaded terminals**				
	Can be inserted in the cable entry of the spring-loaded terminal (no more than two strips per contactor required; removable in pairs) For terminals with a conductor cross-section up to 2.5 mm²	**3RT2916-4JA02**		1	20 units	41B
Tools for opening spring-loaded terminals						
3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-loaded terminals					
	Length approx. 200 mm, size 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**3RA2908-1A**		1	1 unit	41B
Control connectors						
3RF2900-2TB88	**Control connectors** For solid-state contactors with spring-loaded terminals					
	With two clamping points per contact	**3RF2900-2TB88**		1	10 units	41C
Blank labels						
 3RT2900-1SB20	**Unit labeling plates** For SIRIUS devices[1]					
	10 mm x 7 mm, titanium gray	**3RT2900-1SB10**		100	816 units	41B
	20 mm x 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B
	Adhesive labels For SIRIUS devices					
	19 mm x 6 mm, titanium gray	**3RT2900-1SB60**		100	3060 units	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Technical specifications

More information	
System Manual for modular system, see https://support.industry.siemens.com/cs/ww/en/view/60311318	Equipment Manual for 3RF34 solid-state switching devices, see https://support.industry.siemens.com/cs/ww/en/view/60298187 FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16237/faq

Type		3RF3403-.BD.4	3RF3405-.BD.4	3RF3410-.BD.4
Fuseless design with 3RV2 motor starter protector, CLASS 10				
Rated operational current I_{AC-53a}[1] According to IEC 60947-4-2				
• At 40 °C	A	3.8 (3.4)	5.4 (4.8)	7.4
• UL/CSA, at 50 °C	A	3.5 (3.1)	5 (4.3)	6.8
• At 60 °C	A	3.2 (2.8)	4.6 (3.8)	6.2
Power loss at I_{AC-53a}				
• At 40 °C	W	7 (6)	9 (8)	13
Short-circuit protection with type of coordination "1" At operational voltage U_e up to 440 V				
• Motor starter protectors	Type	3RV2011-1FA10	3RV2011-1GA10	3RV2011-1JA10
• Current I_q	kA	50		10

[1] The reduced values in brackets apply to a directly mounted motor starter protector and simultaneous side-by-side mounting.

Type		3RF3403-.BD.4	3RF3405-.BD.4	3RF3410-.BD.4
Fused design with directly connected 3RB3 overload relay				
Rated operational current I_{AC-53a} According to IEC 60947-4-2				
• At 40 °C	A	3.8	5.4	7.4
• UL/CSA, at 50 °C	A	3.5	5	6.8
• At 60 °C	A	3.2	4.6	6.2
Power loss at I_{AC-53a}				
• At 40 °C	W	6	8	16
Minimum load current	A	0.5		
Max. off-state current	mA	10		
Rated peak withstand current I_{tsm}	A	200	600	
I^2t value	A^2s	200	1 800	

Type		3RF34..-.BD.4
Main circuit		
Controlled phases		2-phase
Rated operational voltage U_e[1]	V AC	48 ... 480
• Operating range	V AC	40 ... 506
• Rated frequency	Hz	50/60 ± 10%
Rated insulation voltage U_i	V	600
Rated impulse withstand voltage U_{imp}	kV	6
Blocking voltage	V	1 200
Rate of voltage rise	V/µs	1 000

[1] To reduce the risk of a phase short circuit due to overvoltage, we recommend using a varistor type 3TX7462-3L between the phases L1 and L3 as close as possible to the switchgear.

We recommend a design with semiconductor protection as short-circuit protection.

Type		3RF34..-.BD0.	3RF34..-.BD2.
Control circuit			
Method of operation		DC operation	AC operation
Rated control supply voltage U_s	V	24	110 ... 230
Rated frequency of the control supply voltage	Hz	--	50/60 ± 10%
Control supply voltage, maximum	V	30	253
Typical actuating current	mA	15	10
Response voltage	V	15	90
Drop-out voltage	V	5	< 40
Operating times[1]			
• ON-delay	ms	5	20
• OFF-delay	ms	5 + max. one half-wave	10 + max. one half-wave
• Interlocking time	ms	60 ... 100	50 ... 100

[1] Notice! Risk of phase short circuit in automatic mode. The control inputs must not be actuated until a delay of 40 ms has expired after the main voltage is applied.

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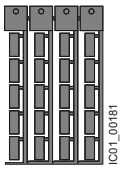
SIRIUS 3RF34 solid-state reversing contactors, 3-phase *IE3/IE4* ready

Selection and ordering data

Reversing contactors · Instantaneous switching · 2-phase controlled

	Rated operational current I_e	Rated power at I_e and U_e	Rated control supply voltage U_s	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	A	400 V kW	V	Article No. Price per PU			
Rated operational voltage U_e 48 ... 480 V AC							
3RF3403-1BD	3.8	**1.5**	24 DC	**3RF3403-1BD04**	1	1 unit	41C
	5.4	**2.2**		**3RF3405-1BD04**	1	1 unit	41C
	7.4	**3.0**		**3RF3410-1BD04**	1	1 unit	41C
3RF3410-1BD	3.8	**1.5**	110 ... 230 AC	**3RF3403-1BD24**	1	1 unit	41C
	5.4	**2.2**		**3RF3405-1BD24**	1	1 unit	41C
	7.4	**3.0**		**3RF3410-1BD24**	1	1 unit	41C

Accessories

	Version	Article No. Price per PU	PU (UNIT, SET, M)	PS*	PG
Link modules between solid-state contactor and motor starter protector					
3RA2921-1BA00	**Link modules** Between solid-state reversing contactor and motor starter protector with screw terminals	**Screw terminals**			
	For 3RV2 motor starter protectors, size S00/S0	**3RA2921-1BA00**	1	1 unit	41B
Link adapters between solid-state contactor and overload relay					
3RF3900-0QA88	**Link adapters** For direct mounting of 3RB3 overload relays or 3RR2 current monitoring relays to the solid-state contactor with screw terminals				
	The adapter is snapped onto the enclosure of the 3RF34 contactor and accommodates the fixing hooks of the 3RB3 overload relays or the 3RR2 current monitoring relays for direct mounting.	**3RF3900-0QA88**	1	1 unit	41C
Blank labels					
 3RT2900-1SB20	**Unit labeling plates** For SIRIUS devices[1]				
	10 mm x 7 mm, titanium gray	**3RT2900-1SB10**	100	816 units	41B
	20 mm x 7 mm, titanium gray	**3RT2900-1SB20**	100	340 units	41B
	Adhesive labels For SIRIUS devices				
	19 mm x 6 mm, titanium gray	**3RT2900-1SB60**	100	3060 units	41B

1) PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Price groups
	PG 12P, 14O, 41B, 41E, 41F, 41G, 41H, 41J, 42F, 42J
7/2	**Introduction**
	Motor starter protectors/ circuit breakers
	SIRIUS 3RV2 motor starter protectors/circuit breakers
7/6	General data
7/27	For motor protection
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7/45	For system protection according to UL 489/CSA C22.2 No. 5
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	Accessories
7/47	- Mountable accessories
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Introduction

Overview

Type	3RV20	3RV21	3RV23	3RV24	3RV27	3RV28
SIRIUS 3RV2 motor starter protectors/circuit breakers						
Applications						
• System protection	✓[1]/ 3RV20..-.....-0DA0[2]	✓[1]	--	--	✓	✓
• Motor protection	✓	--	--	--	--	--
• Motor protection with overload relay function	--	✓	--	--	--	--
• Starter combinations	--	--	✓	--	--	--
• Transformer protection	--	--	--	✓/ 3RV24..-.....-0DA0[2]	--	✓
Size	S00, S0, S2, S3	S00, S0, S2, S3	S00, S0, S2, S3	S00, S0, S2	S00, S0, S3	S00, S0
Rated current I_n						
• Size S00 A	Up to 16	Up to 16	Up to 16	Up to 16	Up to 15	Up to 15
• Size S0 A	Up to 40	Up to 32	Up to 40	Up to 25	Up to 22	Up to 22
• Size S2 A	Up to 80	Up to 80	Up to 80	Up to 65	--	--
• Size S3 A	Up to 100	Up to 100	Up to 100	--	Up to 70	--
Rated operational voltage U_e according to IEC V	690 AC[3]	690 AC[3]	690 AC[3]	690 AC[3]	690 AC	690 AC
Rated frequency Hz	50/60	50/60	50/60	50/60	50/60	50/60
Trip class	CLASS 10 (S00 ... S3), CLASS 20 (S2, S3)	CLASS 10	--	CLASS 10	--	--
Thermal overload release A A	0.11 ... 0.16 to 80 ... 100	0.11 ... 0.16 to 80 ... 100	None[4]	0.11 ... 0.16 to 54 ... 65	0.16 ... 70 Non-adjustable	0.16 ... 22 Non-adjustable
Electronic release A multiple of the rated current	13 times	13 times	13 times	20 times	13 times	20 times
Short-circuit breaking capacity I_{cu} at 400 V AC kA	20/55/65/100	55/65/100	20/55/65/100	55/65/100	[5]	[5]
Pages	7/27 ... 7/34	7/35, 7/36	7/37 ... 7/39	7/40, 7/41	7/45	7/46

Accessories																				
For sizes	S00	S0	S2	S3	S00	S0	S2	S3	S00	S0	S2	S3	S00	S0	S2	S00	S0	S3	S00	S0
Auxiliary switches	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓[6]	✓	✓
Signaling switches	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--
Undervoltage releases	✓	✓	✓	✓	--	--	--	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shunt releases	✓	✓	✓	✓	--	--	--	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Isolator modules	✓	✓	✓	--	✓	✓	✓	--	✓	✓	✓	--	✓	✓	✓	--	--	--	--	--
Insulated 3-phase busbar system	✓	✓	✓	--	--	--	✓	--	✓	✓	✓	--	✓	✓	✓	✓	✓	--	✓	✓
Busbar adapters	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	--	--
Door-coupling rotary operating mechanisms	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Link modules	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--
Enclosures for surface mounting	✓	✓	✓	--	✓	✓	✓	--	✓	✓	✓	--	✓	✓	✓	--	--	--	--	--
Enclosures for flush mounting	✓	✓	--	--	✓	✓	--	--	✓	✓	--	--	✓	✓	--	--	--	--	--	--
Front plates	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--
Infeed system	✓	✓	--	--	--	--	--	--	✓	✓	--	--	✓	✓	--	✓	✓	--	✓	✓
Sealable scale covers for setting knobs	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	✓	✓	✓	--	--	--	--	--
Pages	7/47 ... 7/66																			

✓ Has this function or can use this accessory

-- Does not have this function or cannot use this accessory

1) For symmetrical loading of the three phases.

2) For 1-phase, 2-phase and 3-phase asymmetrical loading of the three phases.

3) With molded-plastic enclosure 500 V AC.

4) For overload protection of the motors, appropriate overload relays must be used.

5) According to UL 489 at 480 Y/277 V AC: 65 kA or 50 kA.

6) Only lateral auxiliary switches can be used

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Type		**3RV1611-0BD10**	**3RV1611-1.G14**	**3RV1011**
SIRIUS 3RV1 motor starter protectors/circuit breakers				
Applications				
• Motor protection		--	--	✓
• Fuse monitoring		✓	--	--
• Voltage transformer circuit breakers for distance protection		--	✓	--
Size		S00	S00	S00
Rated current I_n	A	0.2	Up to 3	Up to 12
Rated operational voltage U_e according to IEC	V	690 AC[1)]	400 AC	690 AC
Rated frequency	Hz	50/60	$16^2/_3$ ... 60	50/60
Trip class		--	--	CLASS 10
Thermal overload release	A	0.2	1.4 ... 3	0.11 ... 0.16 to 9 ... 12
Electronic release				
A multiple of the rated current		6 times	4 ... 7 times	13 times
Short-circuit breaking capacity I_{cu} at 400 V AC	kA	100	50	100/50
Pages		7/73	7/74	7/75
Accessories				
For sizes		S00	S00	S00
Auxiliary switches		✓	✓	✓
Further accessories		--	--	✓
Pages		7/73	7/74	7/47 ... 7/72

✓ Has this function or can use this accessory

-- Does not have this function or cannot use this accessory

1) With molded-plastic enclosure 500 V AC.

7

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Introduction

Type		Thermal overload relays for standard applications 3RU21	Electronic overload relays for standard applications 3RB30	3RB31
SIRIUS overload relays				
Applications				
• System protection		✓[1]	✓[1]	✓[1]
• Motor protection		✓	✓	✓
• Alternating current, 3-phase		✓	✓	✓
• Alternating current, 1-phase		✓	--	--
• Direct current		✓	--	--
Size contactor		S00, S0, S2, S3	S00, S0, S2, S3	S00, S0, S2, S3
Rated operational current I_e				
• Size S00	A	Up to 16	Up to 16	Up to 16
• Size S0	A	Up to 40	Up to 40	Up to 40
• Size S2	A	Up to 80	Up to 80	Up to 80
• Size S3	A	Up to 100	Up to 115	Up to 115
Rated operational voltage U_e	V	690 AC	690 AC	690 AC
Rated frequency	Hz	50/60	50/60	50/60
Trip class		CLASS 10, 10A	CLASS 10E, 20E	CLASS 5E, 10E, 20E, 30E (adjustable)
Thermal overload release	A A	0.11 ... 0.16 to 80 ... 100	--	--
Electronic overload releases	A A	--	0.1 ... 0.4 to 32 ... 115	0.1 ... 0.4 to 32 ... 115
Pages		7/89 ... 7/92	7/102, 7/103	7/104

Accessories												
For sizes	S00	S0	S2	S3	S00	S0	S2	S3	S00	S0	S2	S3
Terminal supports for stand-alone installation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mechanical RESET	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cable releases for RESET	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Electrical Remote RESET	✓	✓	✓	✓	--	--	--	--	Integrated in the unit			
Terminal covers for box terminal	--	--	✓	✓	--	--	✓	✓	--	--	✓	✓
Sealable covers for setting knobs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pages	7/93, 7/94				7/105, 7/106				7/105, 7/106			

✓ Has this function or can use this accessory

-- Does not have this function or cannot use this accessory

[1] The units are responsible in the main circuit for overload protection of the assigned electrical loads (e.g. motors), feeder cable, and other switching and protection devices in the respective load feeder.

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Type		Electronic overload relays for standard applications **3RB20**	 **3RB21**	for high-feature applications **3RB22, 3RB23**	Electronic overload relays for IO-Link for high-feature applications **3RB24**
SIRIUS overload relays					
Applications					
• System protection		✓[1]	✓[1]	✓[1]	
• Motor protection		✓	✓	✓	
• Alternating current, 3-phase		✓	✓	✓	
• Alternating current, 1-phase		--	--	✓	
• Direct current		--	--	--	
Size contactor		S6 ... S12	S6 ... S12	S00 ... S12	
Rated operational current I_e					
• Sizes S00 and S0	A	--	--	Up to 25 and 45 mm width with current measuring modules 3RB2906-2BG1/3RB2906-2DG1	
• Size S2	A	--	--	Up to 100 and 55 mm width with current measuring module 3RB2906-2JG1	
• Size S3	A	--	--		
• Size S6	A	Up to 200	Up to 200	Up to 200 and 120 mm width with current measuring modules 3RB2956-2TH2/3RB2956-2TG2	
• Size S10/S12	A	Up to 630	Up to 630	Up to 630 and 145 mm width with current measuring module 3RB2966-2WH2	
• Size 14 (3TF68/3TF69)	A	Up to 630	Up to 630	Up to 820 with current measuring module 3RB2906-2BG1 and transformer 3UF1868-3GA00	
Rated operational voltage U_e	V	690/1 000 AC	690/1 000 AC	690/1 000 AC[2]	
Rated frequency	Hz	50/60	50/60	50/60	
Trip class		CLASS 10, 20	CLASS 5, 10, 20, 30 adjustable	CLASS 5, 10, 20, 30 adjustable	
Thermal overload release	A	--	--	--	
Electronic overload releases	A A	50 ... 200 to 160 ... 630	50 ... 200 to 160 ... 630	0.3 ... 3 to 63 ... 630	
Pages		7/114, 7/115	7/116	7/125, 7/126, 7/137	7/133, 7/137

Accessories											
For sizes	S6	S10/S12	S6	S10/S12	S00	S0	S2	S3	S6	S10/S12
Terminal supports for stand-alone installation	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]
Mechanical RESET	✓	✓	✓	✓	--	--	--	--	--	--
Cable releases for RESET	✓	✓	✓	✓	--	--	--	--	--	--
Electrical Remote RESET	--	--	Integrated in the unit		Integrated in the unit					
Terminal covers	✓	✓	✓	✓	--	--	--	✓	✓	✓
Sealable covers for setting knobs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Operator panel for 3RB24 evaluation module	--	--	--	--	✓	✓	✓	✓	✓	✓
Pages	7/117, 7/118		7/117, 7/118		7/137 ... 7/139					

✓ Has this function or can use this accessory

-- Does not have this function or cannot use this accessory

[1] The units are responsible in the main circuit for overload protection of the assigned electrical loads (e.g. motors), feeder cable, and other switching and protection devices in the respective load feeder.

[2] With reference to the 3RB29.6 current measuring modules.

[3] Stand-alone installation without accessories is possible.

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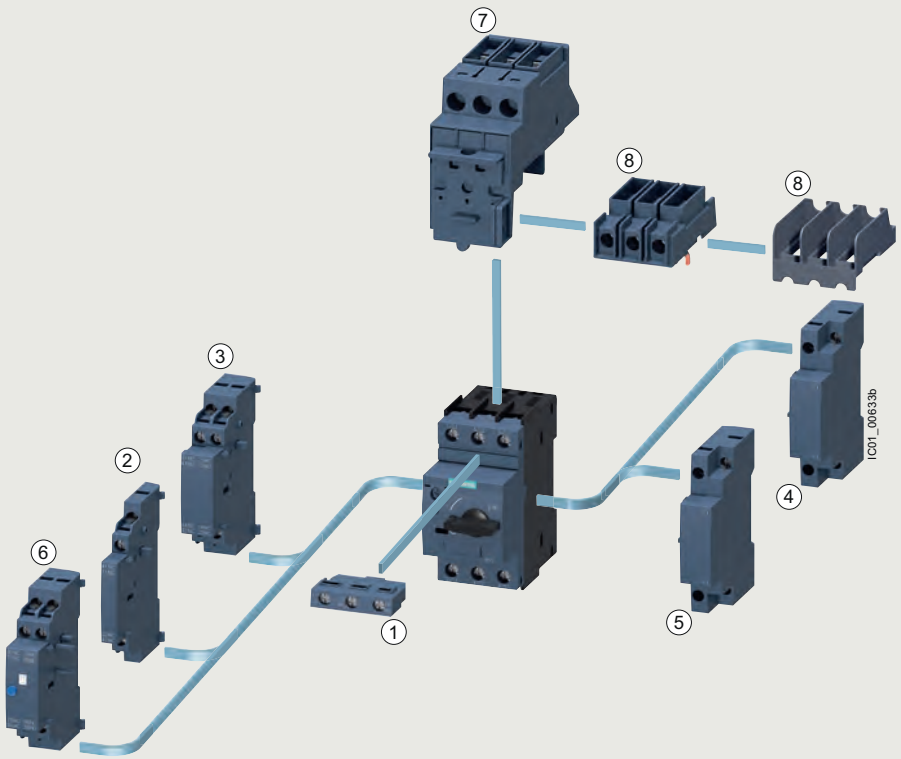
General data

Overview

More information	
Homepage, see www.siemens.com/sirius-circuit-breakers	Application Manual for switching devices with IE3 and IE4 motors, see https://support.industry.siemens.com/cs/ww/en/view/94770820
Industry Mall, see www.siemens.com/product?3RV2	System Manual for modular system, see https://support.industry.siemens.com/cs/ww/en/view/60311318
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=MotorStarterProtector	Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/60279172
Conversion tool, see www.siemens.com/conversion-tool	Certificates, see https://support.industry.siemens.com/cs/ww/en/ps/16245/cert

The following illustration shows 3RV2 motor starter protectors/ circuit breakers with the accessories which can be mounted for the sizes S00 to S3, see also "Introduction" → "Overview", page 7/2.

Accessories, see page 7/47 onwards.

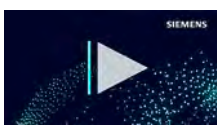


Mountable accessories

1. Transverse auxiliary switch
2. Lateral auxiliary switch with 2 contacts
3. Lateral auxiliary switch with 4 contacts
4. Shunt release (can not be used with 3RV21 motor starter protectors)
5. Undervoltage release without/with leading contacts (can not be used with 3RV21 motor starter protectors)
6. Signaling switch (can not be used with 3RV27 and 3RV28 circuit breakers)
7. Isolator module (can not be used with 3RV2.4, 3RV27 and 3RV28 motor starter protectors/circuit breakers)
8. Terminal block Type E (cannot be used with 3RV2.4 motor starter protectors in conjunction with transverse auxiliary switch) or phase barriers

Mountable accessories for SIRIUS 3RV2 motor starter protectors/circuit breakers

Motor starter protector with spring-loaded terminals, size S0 (left) and motor starter protector with screw terminals, size S00 (right)



Video: SIRIUS 3RV2 circuit breakers - Motor protection for machinery and plants (0.11 to 100 A)

The SIRIUS 3RV2 motor starter protectors/circuit breakers are compact, current limiting motor starter protectors/ circuit breakers which are optimized for load feeders. The motor starter protectors/circuit breakers are used for switching and protecting three-phase motors of up to 55/45 kW at 400 V AC and for other loads with rated currents of up to 100 A.

3RV2 motor starter protectors are usually approved according to IEC and UL/CSA. According to UL 508/UL 60947-4-1, the 3RV2 motor starter protectors/circuit breakers in sizes S00 to S3 are approved as:

- "Manual Motor Controllers"
- "Manual Motor Controllers" for "Group Installations"
- "Manual Motor Controllers Suitable for Tab Conductor Protection in Group Installations"
- "Self-Protected Combination Motor Controllers (Type E)" Please note that for this approval the 3RV20 motor starter protectors must be equipped with additional infeed terminals or phase barriers. For more information, see page 7/57.

Corresponding short-circuit values, see pages 7/9 to 7/17.

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The 3RV2...-.....-0BA0 motor starter protectors/circuit breakers can be used at low ambient temperatures down to -50 °C.

3RV20..-.....-0DA0 motor starter protectors for system protection according to IEC, 3RV24..-.....-0DA0 for transformer protection according to IEC and 3RV27 and 3RV28 circuit breakers according to UL 489 can be used for 1-phase, 2-phase and 3-phase loads, as these motor starter protectors/circuit breakers do not have asymmetry detection.

The 3RV27 and 3RV28 are approved as circuit breakers according to UL 489; they are a special version of the 3RV2 motor starter protectors.

Thanks to their dimensions, the 3RV1011 motor starter protectors are suitable for installation in enclosures or under cramped installation conditions.

Type of construction

The 3RV2 motor starter protectors are available in four sizes:

- Size S00 – width 45 mm,
  max. rated current 16 A,
  at 400 V AC suitable for three-phase motors up to 7.5 kW
- Size S0 – width 45 mm,
  max. rated current 40 A,
  at 400 V AC suitable for three-phase motors up to 18.5 kW
- Size S2 – width 55 mm,
  max. rated current 80 A,
  at 400 V AC suitable for three-phase motors up to 37 kW
- Size S3 – width 70 mm,
  max. rated current 100 A,
  at 400 V AC suitable for three-phase motors up to 45/55 kW

Circuit breakers according to UL 489

The 3RV27 and 3RV28 circuit breakers are available in two or three sizes:

- Size S00 – width 45 mm,
  max. rated current 15 A, for 480 Y/277 V AC
- Size S0 – width 45 mm,
  max. rated current 22 A, for 480 Y/277 V AC
- Size S3 – width 70 mm,
  max. rated current 70 A, for 480 Y/277 V AC

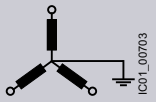
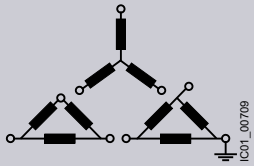
Connection methods

The 3RV2 motor starter protectors/circuit breakers can be supplied with screw terminals and spring-loaded terminals.

	Screw terminals
	Spring-loaded terminals
	The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Voltage data

The data for 3-phase power systems according to IEC 60947-4-1 are valid for the following line system configurations:

Voltage U_e	Line system configurations	
	Three-phase four-wire networks 	Three-phase three-wire networks 
V	V	V
230	--	230
400	230/400	400
440	260/440	440
500	--	500
690	400/690	690 (only as from size S3)
1 000	--	1 000

-- Not specified

Use in hazardous areas

The 3RV20 motor starter protectors for motor protection (without 3RV20..-.....-0BA0 and -0DA0) have certification in accordance with both the European Explosion Protection Directive (ATEX) and the International Explosion Protection Standard (IECEx).

In accordance with the European Directive (ATEX), the 3RV20 (without 3RV20..-.....-0BA0 and -0DA0) are able to switch and protect explosion-proof motors of type of protection "Increased Safety EEx e".

In accordance with the international guideline (IECEx), the 3RV20 (without 3RV20..-.....-0BA0 and -0DA0) are able to switch and protect motors of the types "Increased Safety Ex e" or "Flameproof enclosure Ex d".

Article number scheme

Product versions		Article number
Motor starter protectors/circuit breakers		**3RV2** □ □ □ – □ □ □ □ □ – □ □ □ □
Type of motor starter protector/circuit breaker	e.g. 0 = for motor protection/system protection	□
Size	e.g. 1 = 16 A (7.5 kW) for size S00	□
Breaking capacity	e.g. 1 = standard switching capacity	□
Setting range for overload release	e.g. 1A = 1.1 ... 1.6 A	□ □
Trip class (CLASS)	e.g. A = a (adjustable CLASS 10)/n (13 or 20 x In)	□
Connection methods	e.g. 1 = screw terminals	□
With or without auxiliary switch	e.g. 0 = without	□
Special versions		□ □ □ □
Example		**3RV2 0 1 1 – 1 A A 1 0**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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Application

Operating conditions

3RV2 motor starter protectors/circuit breakers are suitable for use in any climate. They are intended for use in enclosed rooms in which no severe operating conditions (such as dust, caustic vapors, hazardous gases) prevail. When installed in dusty and damp areas, suitable enclosures must be provided.

3RV2 motor starter protectors/circuit breakers can optionally be fed from the top or from below.

The permissible ambient temperatures, the maximum switching capacities, the tripping currents and other boundary conditions can be found in the technical specifications and tripping characteristics.

3RV2 motor starter protectors/circuit breakers are suitable for operation in IT systems (IT networks). In this case, the different short-circuit breaking capacity in the IT system must be taken into account, see page 7/11.

Since operational currents, starting currents and current peaks are different even for motors with identical power ratings due to the inrush current, the motor ratings in the selection tables are only guide values. The specific rated and startup data of the motor to be protected are always paramount to the choice of the most suitable motor starter protector/circuit breaker. This also applies to motor starter protectors for transformer protection.

Possible uses

The 3RV motor starter protectors/circuit breakers can be used:

- For short-circuit protection
- For motor protection (also with overload relay function)
- For system protection
- For short-circuit protection for starter combinations
- For transformer protection
- As main and EMERGENCY OFF switches
- For operation in IT systems (IT networks)
- In hazardous areas (ATEX, IECEx)
- As circuit breakers according to UL 489 (3RV27 and 3RV28)
- For fuse monitoring
- For distance protection

Use of SIRIUS protection devices in conjunction with IE3 and IE4 motors

Note:

For the use of 3RV2 motor starter protectors/circuit breakers in conjunction with highly efficient IE3 and IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

For more information, see page 1/8.

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Technical specifications

More information	
System Manual for modular system, see https://support.industry.siemens.com/cs/ww/en/view/60311318	Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/60279172
Configuration Manual for load feeders, see https://support.industry.siemens.com/cs/ww/en/view/39714188	Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16245/td
	For UL reports for the individual devices, see https://support.industry.siemens.com/cs/ww/en/ps/16245/cert

Short-circuit breaking capacity I_{cu}, I_{cs} according to IEC 60947-2

The table shows the rated ultimate short-circuit breaking capacity I_{cu} and the rated service short-circuit breaking capacity I_{cs} of the 3RV motor starter protectors/circuit breakers with different operational voltages dependent on the rated current I_n of the motor starter protectors/circuit breakers.

Power can be supplied to the motor starter protectors/ circuit breakers via the terminals at the top or at the bottom without restricting the rated data. If the short-circuit current at the installation location exceeds the motor starter protector/ circuit breaker's specified rated short-circuit breaking capacity, you will need to use a back-up fuse. It is also possible to install an upstream motor starter protector/circuit breaker with a limiter function.

The maximum rated current of this back-up fuse is indicated in the tables. The rated ultimate short-circuit breaking capacity then applies as specified on the fuse.

Fuseless design

Motor starter protector/contactor assemblies for short-circuit currents up to 150 kA can be ordered as 3RA2 fuseless load feeders, see page 8/5 onwards.

Motor starter protectors/ circuit breakers	Rated current I_n	Up to 240 V AC[1]			Up to 400 V AC[1]/415 V AC[2]			Up to 440 V AC[1]/460 V AC[2]			Up to 500 V AC[1]/525 V AC[2]			Up to 690 V AC[1]		
		I_{cu}	I_{cs}	Max. fuse (gG)	I_{cu}	I_{cs}	Max. fuse (gG)[3]	I_{cu}	I_{cs}	Max. fuse (gG)[3]	I_{cu}	I_{cs}	Max. fuse (gG)[3]	I_{cu}	I_{cs}	Max. fuse (gG)[3][4]
Type	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A
Size S00																
3RV1011	0.16 ... 1	100	100	--	100	100	--	100	100	--	100	100	--	100	100	--
	1.25, 1.6	100	100	--	100	100	--	100	100	--	100	100	--	2	2	20
	2; 2.5	100	100	--	100	100	--	100	100	--	10	10	35	2	2	35
	3.2; 4	100	100	--	100	100	--	50	12.5	40	3	3	40	2	2	40
	5; 6.3	100	100	--	100	100	--	50	12.5	50	3	3	50	2	2	40
	8	100	100	--	50	12.5	80	50	12.5	63	3	3	63	2	2	50
	10	100	100	--	50	12.5	80	10	10	63	3	3	63	2	2	50
	12	100	100	--	50	12.5	80	10	10	80	3	3	80	2	2	50
3RV2.11	0.16 ... 1.6	100	100	--	100	100	--	100	100	--	100	100	--	100	100	--
	2; 2.5	100	100	--	100	100	--	100	100	--	100	100	--	10	10	25
	3.2	100	100	--	100	100	--	100	100	--	100	100	--	10	10	32
	4; 5	100	100	--	100	100	--	100	100	--	100	100	--	6	4	32
	6.3	100	100	--	100	100	--	100	100	--	100	100	--	6	4	50
	8	100	100	--	100	100	--	50	50	63	42	42	63	6	4	50
	10	100	100	--	100	100	--	50	50	80	42	42	63	6	4	50
	12.5	100	100	--	100	100	--	50	50	80	42	42	80	6	4	63
	16	100	100	--	55	30	100	50	12.5	80	10	5	80	4	4	63
3RV1611-0BD10	0.2	100	100	--	100	100	--	100	100	--	100	100	--	100	100	--
Size S0																
3RV2.21	0.16 ... 1.6	100	100	--	100	100	--	100	100	--	100	100	--	100	100	--
	2; 2.5	100	100	--	100	100	--	100	100	--	100	100	--	10	10	25
	3.2	100	100	--	100	100	--	100	100	--	100	100	--	10	10	32
	4; 5	100	100	--	100	100	--	100	100	--	100	100	--	6	4	32
	6.3	100	100	--	100	100	--	100	100	--	100	100	--	6	4	50
	8	100	100	--	100	100	--	50	50	63	42	42	63	6	4	50
	10	100	100	--	100	100	--	50	50	80	42	42	63	6	4	50
	12.5	100	100	--	100	100	--	50	50	80	42	42	80	6	4	63
	16	100	100	--	55	25	100	50	12.5	80	10	5	80	4	2	63
	20	100	100	--	55	25	125	50	10	80	10	5	80	4	2	63
	22; 25	100	100	--	55	25	125	50	10	100	10	5	80	4	2	63
	28; 32	100	100	--	55	25	125	30	10	125	10	5	100	4	2	100
	36; 40	100	100	--	20	10	125	12	8	125	6	3	100	3	2	100

-- No back-up fuse required, since short-circuit-proof up to 100 kA

1) 10% overvoltage.

2) 5% overvoltage.

3) Back-up fuse only required if short-circuit current at the installation location is > I_{cu}.

4) Alternatively, fuseless limiter combinations for 690 V AC can also be used.

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General data

Motor starter protectors/ circuit breakers	Rated current I_n	Up to 240 V AC[1]			Up to 400 V AC[1]/415 V AC[2]			Up to 440 V AC[1]/460 V AC[2]			Up to 500 V AC[1]/525 V AC[2]			Up to 690 V AC[1]		
		I_{cu}	I_{cs}	Max. fuse (gG)	I_{cu}	I_{cs}	Max. fuse (gG)[3]	I_{cu}	I_{cs}	Max. fuse (gG)[3]	I_{cu}	I_{cs}	Max. fuse (gG)[3]	I_{cu}	I_{cs}	Max. fuse (gG)[3][4]
Type	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A
Size S2																
3RV2.31	14; 17	100	100	--	65	30	100	50	25	100	12	6	63	5	3	63
	20	100	100	--	65	30	100	50	25	100	12	6	80	5	3	80
	25	100	100	--	65	30	100	50	15	100	12	6	80	5	3	80
	32; 36	100	100	--	65	30	125	50	15	125	10	5	100	4	2	100
	40; 45	100	100	--	65	30	160	50	15	125	10	5	100	4	2	100
	52	100	100	--	65	30	160	50	15	125	10	5	125	4	2	125
	59; 65	100	100	--	65	30	160	50	15	160	8	4	125	4	2	125
	73; 80	100	100	--	65	30	200	50	15	200	8	4	160	4	2	125
Size S2, with increased switching capacity																
3RV2.32	14; 17	100	100	--	100	50	--	65	30	100	18	10	63	8	5	63
	20; 25	100	100	--	100	50	--	65	30	100	18	10	80	8	5	80
	32 ... 45	100	100	--	100	50	--	65	30	125	15	8	100	6	4	100
	52	100	100	--	100	50	--	65	30	125	15	8	125	6	4	125
	59; 65	100	100	--	100	50	--	50	15	160	10	5	125	6	4	125
	73; 80	100	100	--	100	50	--	50	15	200	10	5	160	6	4	125
Size S3																
3RV2.41	40	100	100	--	65	30	125	65	30	125	12	6	100	6	3	63
	50	100	100	--	65	30	125	65	30	125	12	6	100	6	3	80
	63	100	100	--	65	30	160	65	30	160	12	6	100	6	3	80
	75	100	100	--	65	30	160	65	30	160	8	4	125	5	3	100
	84 ... 100	100	100	--	65	30	160	65	30	160	8	4	125	5	3	125
Size S3, with increased switching capacity																
3RV2.42	40	100	100	--	100	50	--	100	50	--	18	9	160	12	6	80
	50	100	100	--	100	50	--	100	50	--	15	7.5	160	10	5	100
	63	100	100	--	100	50	--	70	50	200	15	7.5	160	7.5	4	100
	75	100	100	--	100	50	--	70	50	200	10	5	160	6	3	125
	84 ... 100	100	100	--	100	50	--	70	50	200	10	5	160	6	3	160
3RV2742	10 ... 70	100	100	--	100	50	--	--	--	--	--	--	--	--	--	--

-- No back-up fuse required, since short-circuit-proof up to 100 kA

1) 10% overvoltage.

2) 5% overvoltage.

3) Back-up fuse only required if short-circuit current at the installation location is > I_{cu}.

4) Alternatively, fuseless limiter combinations for 690 V AC can also be used.

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Short-circuit breaking capacity I_{cuIT} in the IT system (IT network) according to IEC 60947-2

3RV motor starter protectors/circuit breakers are suitable for use in IT systems. The values of I_{cu} and I_{cs} apply for the 3-pole short circuit. In the case of a double ground fault in different phases at the input and output side of a motor starter protector/ circuit breaker, the special short-circuit breaking capacity I_{cuIT} applies. The specifications in the table below apply to 3RV motor starter protectors/circuit breakers.

If the short-circuit current at the installation location exceeds the motor starter protector/circuit breaker's specified rated short-circuit breaking capacity, you will need to use a back-up fuse. The maximum rated current of this back-up fuse is indicated in the tables. The rated short-circuit breaking capacity then applies as specified on the fuse.

Motor starter protectors/ circuit breakers	Rated current I_n	Up to 240 V AC[1]		Up to 400 V AC[1]/415 V AC[2]		Up to 440 V AC[1]/460 V AC[2]		Up to 500 V AC[1]/525 V AC[2]		Up to 690 V AC[1][3]	
		I_{cuIT}	Max. fuse (gG)[4]	I_{cuIT}	Max. fuse (gG)[4][5]	I_{cuIT}	Max. fuse (gG)[4]	I_{cuIT}	Max. fuse (gG)[4]	I_{cuIT}	Max. fuse (gG)[4]
Type	A	kA	A	kA	A	kA	A	kA	A	kA	A
Size S00											
3RV1011	0.16 ... 0.4	100	--	100	--	100	--	100	--	100	--
	0.5	100	--	100	--	100	--	100	--	0.5	4
	0.63	100	--	100	--	6	6	6	6	0.5	6
	0.8	100	--	100	--	5	6	5	6	0.5	6
	1	100	--	4	10	2	10	2	10	0.5	10
	1.25	100	--	2	20	2	16	2	16	0.5	16
	1.6	100	--	2	20	2	20	2	20	1	16
	2	100	--	2	35	2	25	2	25	1	20
	2.5	100	--	2	35	2	25	2	25	1	25
	3.2	100	--	2	40	2	35	2	35	1	25
	4	100	--	2	40	2	35	2	35	1	35
	5	100	--	2	50	2	35	2	35	1	35
	6.3	100	--	2	50	2	40	2	40	1	40
	8	50	80	2	63	2	40	2	40	1	40
	10	50	80	2	63	2	50	2	50	1	50
	12	50	80	2	80	2	50	2	50	1	50
3RV2.11	0.16 ... 0.4	100	--	100	--	100	--	100	--	100	--
	0.5	100	--	100	--	100	--	100	--	0.5	4
	0.63; 0.8	100	--	100	--	100	--	100	--	0.5	6
	1	100	--	100	--	2	10	2	10	1.5	10
	1.25	100	--	100	--	2	16	2	16	1.5	16
	1.6	100	--	100	--	2	20	2	20	1.5	16
	2; 2.5	100	--	8	25	2	25	2	25	1.5	20
	3.2	100	--	8	32	2	32	2	32	1.5	25
	4; 5	100	--	4	32	1.5	32	1.5	32	1.5	25
	6.3; 8	100	--	4	50	1	40	1	40	1	35
	10	100	--	4	50	1	40	1	40	1	40
	12.5	100	--	4	63	1	50	1	50	1	40
	16	55	80	4	63	1	50	1	50	1	40
Size S0											
3RV2.21	0.16 ... 0.4	100	--	100	--	100	--	100	--	100	--
	0.5	100	--	100	--	100	--	100	--	0.5	4
	0.63; 0.8	100	--	100	--	100	--	100	--	0.5	6
	1	100	--	100	--	2	10	2	10	1.5	10
	1.25	100	--	100	--	2	16	2	16	1.5	16
	1.6	100	--	100	--	2	20	2	20	1.5	16
	2; 2.5	100	--	8	25	2	25	2	25	1.5	20
	3.2	100	--	8	32	2	32	2	32	1.5	25
	4; 5	100	--	4	32	1.5	32	1.5	32	1.5	25
	6.3; 8	100	--	4	50	1	40	1	40	1	35
	10	100	--	4	50	1	40	1	40	1	40
	12.5	100	--	4	63	1	50	1	50	1	40
	16	55	80	4	63	1	50	1	50	1	40
	20 ... 25	55	80	4	63	1	50	1	50	1	50
	28; 32	55	80	2	63	1	63	1	63	1	63
	36; 40	20	80	2	63	1	63	1	63	1	63

-- No back-up fuse required, since short-circuit-proof up to 100 kA

1) 5% overvoltage.

2) Without overvoltage.

3) Overvoltage category II applies for applications in IT systems > 600 V.

4) Back-up fuse only required if short-circuit current at installation location is > I_{cuIT}.

5) Alternatively, fuseless limiter combinations for 690 V AC can also be used.

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General data

Motor starter protectors/ circuit breakers	Rated current I_n	Up to 240 V AC[1]		Up to 400 V AC[1]/415 V AC[2]		Up to 440 V AC[1]/460 V AC[2]		Up to 500 V AC[1]/525 V AC[2]		Up to 690 V AC[1][3]	
		I_{cuIT}	Max. fuse (gG)[4]	I_{cuIT}	Max. fuse (gG)[4][5]	I_{cuIT}	Max. fuse (gG)[4]	I_{cuIT}	Max. fuse (gG)[4]	I_{cuIT}	Max. fuse (gG)[4]
Type	A	kA	A	kA	A	kA	A	kA	A	kA	A
Size S2											
3RV2031, 3RV2131, 3RV2331	14 ... 25	100	--	8	100	6	80	6	80	4	63
	32 ... 45	100	--	6	125	4	100	4	100	3	80
	52 ... 80	100	--	4	160	3	125	3	125	2	100
Size S2, with increased switching capacity											
3RV2032, 3RV2332	14 ... 25	100	--	8	100	6	80	6	80	4	63
	32 ... 45	100	--	6	125	6	100	6	100	4	80
	52	100	--	6	160	6	125	6	125	4	100
	59 ... 80	100	--	6	160	4	125	4	125	4	100
Size S3											
3RV2.41	40	65	125	10	63	5	50	5	50	5	50
	50	65	125	8	80	3	63	3	63	3	63
	63	65	160	6	80	3	63	3	63	3	63
	75	65	160	5	100	2	80	2	80	2	80
	84; 100	65	160	5	125	2	100	2	100	2	100
Size S3, with increased switching capacity											
3RV2.42	40	100	--	12	80	6	63	6	63	6	63
	50	100	--	10	100	4	80	4	80	4	80
	63	100	--	7.5	100	4	80	4	80	4	80
	75	100	--	6	125	3	100	3	100	3	100
	84; 100	100	--	6	160	3	125	3	125	3	125

-- No back-up fuse required, since short-circuit-proof up to 100 kA

1) 10% overvoltage.

2) 5% overvoltage.

3) Overvoltage category II applies for applications in IT systems > 600 V.

4) Back-up fuse only required if short-circuit current at installation location is > I_{cuIT}.

5) Alternatively, fuseless limiter combinations for 690 V AC can also be used.

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Limiter function with standard devices for 500 V AC and 690 V AC according to IEC 60947-2

The table shows the rated ultimate short-circuit breaking capacity I_{cu} and the rated service short-circuit breaking capacity I_{cs} with an upstream standard motor starter protector/circuit breaker that fulfills the limiter function at voltages 500 V AC and 690 V AC.

The short-circuit breaking capacity can be increased significantly with an upstream standard motor starter protector/circuit breaker with limiter function. The motor starter protector/circuit breaker which is connected downstream must be set to the rated current of the load.

With motor starter protector/circuit breaker assemblies, note the clearance to grounded parts and between the motor starter protectors/circuit breakers. Short-circuit-proof wiring between the motor starter protectors/circuit breakers must be ensured. The motor starter protectors/circuit breakers can be mounted side by side in a modular arrangement.

Standard motor starter protectors/circuit breakers		**Rated current I_n**	**Up to 500 V AC[1]/525 V AC[2]**		**Up to 690 V AC[1][3]**	
With limiter Rated current I_n			I_{cu}	I_{cs}	I_{cu}	I_{cs}
Type	Type	A	kA	kA	kA	kA
Size S00						
Size S0: **3RV2321-4EC10** I_n = 32 A	**3RV2011**	2 ... 6.3 8 10 ... 16	-- 100 100	-- 50 50	50 50 20[4]	25 25 10[4]
Size S2: **3RV2331-4WC10** I_n = 52 A	**3RV2011**	10 ... 16	--	--	50	25
Size S0						
Size S0: **3RV2321-4EC10** I_n = 32 A	**3RV2021**	12 ... 32	100	50	20[4]	10[4]
Size S2: **3RV2331-4WC10** I_n = 52 A	**3RV2021**	16 ... 32	--	--	50	20
Size S2, with increased switching capacity						
Size S2: **3RV2332-4RC10** I_n = 80 A	**3RV2032**	14 ... 80	100	50	70	35
Size S3, with increased switching capacity						
Size S3[5]: **3RV2342-4MC10** I_n = 100 A	**3RV2042**	40 ... 100	100	50	50	25

-- No limiter required

1) 10% overvoltage.

2) 5% overvoltage.

3) Use 3RV29.8-1K phase barriers on the infeed side

4) Infeed to the limiter is always on the side 1L1/3L2/5L3.

5) Infeed to the limiter only on the side 2T1/4T2/6T3. Use 3RV2948-1K phase barriers on the infeed side.

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General data

Permissible rated data of devices approved for North America (UL/CSA)

Motor starter protectors of the 3RV2 series are approved for UL/CSA, and according to UL 508/UL 60947-4-1 and CSA C22.2 No. 14/CSA C22.2 No. 60947-4-1 they can be used on their own or as load feeders in combination with a contactor.

These motor starter protectors/circuit breakers can be used as "Manual Motor Controllers" for "Group Installations", as "Manual Motor Controllers Suitable for Tap Conductor Protection in Group Installations" and as "Self-Protected Combination Motor Controllers (Type E)".

3RV motor starter protectors as "Manual Motor Controllers"

If used as a "Manual Motor Controller", the motor starter protector is always operated in combination with an upstream short-circuit protection. Approved fuses or circuit breakers according to UL 489/CSA C22.2 No. 5 may be used for this purpose. These devices must be dimensioned according to the National Electrical Code (UL) or Canadian Electrical Code (CSA).

The file numbers for the approval of the 3RV as a manual motor controller are as follows:

- UL File No. 47705, CCN: NLRV
- CSA Master Contract 165071, Product Class: 3211

Motor starter protectors/ circuit breakers		**hp rating[1] for FLA[2] max.**		**Rated current I_n**	**240 V AC**		**480 V AC**		**600 V AC**	
					UL	CSA	UL	CSA	UL	CSA
					I_{bc}[3]	I_{bc}[3]	I_{bc}[3]	I_{bc}[3]	I_{bc}[3]	I_{bc}[3]
Type	V	1-phase	3-phase	A	kA	kA	kA	kA	kA	kA
Size S00										
3RV1011				0.16 ... 2	65	65	65	65	10	10
				2.5	65	65	65	65	10	10
FLA[2] max. 12 A, 600 V	115	1/2	--	3.2	65	65	65	65	10	10
	200	1 1/2	3	4	65	65	65	65	10	10
	230	2	3	5	65	65	65	65	10	10
	460	--	7 1/2	6.3	65	65	65	65	10	10
	575/600	--	10	8	65	65	65	65	10	10
				10	65	65	65	65	10	10
				12	65	65	65	65	10	10
3RV2011, 3RV2111, 3RV2311, 3RV2411				0.16 ... 12.5	65	65	65	65	30	30
				16	65	65	65	65	--	--
FLA[2] max.	115/120	1	2							
16 A, 480 V	200/208	2	3							
12.5 A, 600 V	230/240	2	5							
	460/480	--	10							
	575/600	--	10							
3RV1611-0BD10				0.2	65	65	65	65	10	10
Size S0										
3RV2021, 3RV2121, 3RV2321, 3RV2421				0.16 ... 12.5	65	65	65	65	30	30
				16 ... 25	65	65	65	65	--/(30)[4]	--/(30)[4]
FLA[2] max.	115/120	3	5	28, 32	65	65	50	50	--	--
40 A, 480 V	200/208	5	10	36, 40	65	65	12	12	--	--
12.5 A, 600 V	230/240	7 1/2	10							
	460/480	--	30							
	575/600	--	--							
Size S2										
3RV2031, 3RV2131, 3RV2331, 3RV2431				14 ... 36	65	65	65	65	25	25
				40 ... 52	65	65	65	65	22	22
FLA[2] max.	115/120	7 1/2	10	59 ... 65	65	65	65[5]	65[5]	20[5]	20[5]
80 A, 600 V	200/208	15	25	73 ... 80	65	65	65[5]	65[5]	20[5]	20[5]
	230/240	15	30							
	460/480	--	60							
	575/600	--	75							
Size S2, with increased switching capacity										
3RV2032, 3RV2332				14 ... 36	100	100	100	100	25	25
				40 ... 52	100	100	100	100	22	22
FLA[2] max.	115/120	7 1/2	10	59 ... 65	100	100	100[5]	100[5]	25[5]	25[5]
80 A, 600 V	200/208	15	25	73 ... 80	100	100	100[5]	100[5]	25[5]	25[5]
	230/240	15	30							
	460/480	--	60							
	575/600	--	75							
Size S3										
3RV2041, 3RV2142, 3RV2341, 3RV2042, 3RV2342				40 ... 75	65	65	65	65	30	30
				84 ... 100	65	65	65	65	10/30[6]	10/30[6]
FLA[2] max.	115/120	7 1/2	15							
100 A, 600 V	200/208	15	30							
	230/240	20	40							
	460/480	--	75							
	575/600	--	100							

-- No approval

1) hp rating = Power rating in horse power (maximum motor rating).

2) FLA = Full Load Amps (motor full load current).

3) Corresponds to "short-circuit breaking capacity" according to UL/CSA.

4) Values in brackets only apply to 3RV2.23 motor starter protectors.

5) With Class J fuse.

6) With Class J fuse 300 A.

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3RV20 motor starter protectors (up to 100 A) as "Manual Motor Controllers Suitable for Tap Conductor Protection in Group Installations"

The application as "Manual Motor Controllers Suitable for Tap Conductor Protection in Group Installations" is only available for UL. CSA does not recognize this approval! When the motor starter protector is used as a "Manual Motor Controller Suitable for Tap Conductor Protection in Group Installations", it must always be combined with upstream short-circuit protection. Approved fuses or circuit breakers according to UL 489 may be used for this purpose.
These devices must be dimensioned according to the National Electrical Code.

The 3RV20 motor starter protectors are approved as "Manual Motor Controllers Suitable for Tap Conductor Protection in Group Installations" under the following file number:

- UL File No. 47705, CCN: NLRV

Motor starter protectors/ circuit breakers		**hp rating[1] for FLA[2] max.**		**Rated current I_n**	**240 V AC** UL I_{bc}[3]	**480 Y/277 V AC** UL I_{bc}[3]	**600 Y/347 V AC** UL I_{bc}[3]
Type	V	1-phase	3-phase	A	kA	kA	kA
Size S00							
3RV1011				0.16 ... 0.8	65	65	10
				1	65	65	10
FLA[2] max. 8 A,	115	1/3	--	1.25	65	65	10
480 V	200	3/4	2	2	65	65	10
	230	1	2	2.5	65	65	10
	460	--	5	3.2	65	65	10
	575/600	--	--	4	65	65	10
				5	65	65	10
				6.3	65	65	10
				8	65	65	10
3RV2011				0.16 ... 12.5	65	65	30
				16	65	65	--
FLA[2] max.	115/120	1	2				
16 A, 480 V	200/208	2	3				
12.5 A, 600 V	230/240	2	5				
	460/480	--	10				
	575/600	--	10				
Size S0							
3RV2021				0.16 ... 12.5	65	65	30
				16 ... 25	65	65	--
FLA[2] max.	115/120	2	5	28; 32	50	50	--
32 A, 480 V	200/208	3	10				
12.5 A, 600 V	230/240	5	10				
	460/480	--	20				
	575/600	--	--				
Size S2							
3RV2031				14 ... 36	65	65	25
				40 ... 52	65	65	22
FLA[2] max.	115/120	7 1/2	10	59 ... 65	65	30	--
80 A, 480 V	200/208	15	25	73	65	20	--
52 A, 600 V	230/240	15	30	80	65	10	--
	460/480	--	60				
	575/600	--	75				
Size S2, with increased switching capacity							
3RV2032				14 ... 36	100	100	25
				40 ... 52	100	100	22
FLA[2] max.	115/120	7 1/2	10	59 ... 65	100	42	--
80 A, 480 V	200/208	15	25	73	100	30	--
52 A, 600 V	230/240	15	30	80	100	10	--
	460/480	--	60				
	575/600	--	75				
Size S3							
3RV2041, 3RV2042				40 ... 75	65	65	30
				84 ... 100	65	65	--
FLA[2] max.	115/120	7 1/2	15				
100 A, 480 V	200/208	15	30				
75 A, 600 V	230/240	20	40				
	460/480	--	75				
	575/600	--	75				

-- No approval

1) hp rating = Power rating in horse power (maximum motor rating).

2) FLA = Full Load Amps (motor full load current).

3) Corresponds to "short-circuit breaking capacity" according to UL.

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General data

3RV20 motor starter protectors (up to 100 A) as "Self-Protected Combination Motor Controllers (Type E)"

UL 508/UL 60947-4-1 approval demands 1-inch clearance and 2-inch creepage distance at line side for "Self-Protected Combination Motor Controllers".

Therefore, 3RV20 motor starter protectors of sizes S00 to S3 are approved according to UL 508/UL 60947-4-1 in combination with the terminal blocks listed below.

CSA does not require these extended clearance and creepage distances. According to CSA, these terminal blocks can be omitted when the device is used as a "Self-Protected Combination Motor Controller".

The 3RV20 motor starter protectors are approved as "Self-Protected Combination Motor Controllers" under the following file numbers:

- UL File No. E156943, CCN: NKJH
- CSA Master Contract 165071, Product Class: 3211 08

Motor starter protectors/ circuit breakers		**hp rating[1] for FLA[2] max.**		**Rated current I_n**	**Up to 240 V AC**		**Up to 480 Y/277 V AC**		**Up to 600 Y/347 V AC**	
					UL	CSA	UL	CSA	UL	CSA
					I_{bc}[3]	I_{bc}[3]	I_{bc}[3]	I_{bc}[3]	I_{bc}[3]	I_{bc}[3]
Type	V	1-phase	3-phase	A	kA	kA	kA	kA	kA	kA
Size S00										
3RV2011 + 3RV2928-1H[4][5]				0.16 ... 12.5	65	65	65	65	30	30
				16	65	65	65	65	--	--
FLA[2] max.	115/120	1	2							
16 A, 480 V;	200/208	2	3							
12.5 A, 600 V	230/240	2	5							
	460/480	--	10							
	575/600	--	10							
Size S0										
3RV2021 + 3RV2928-1H[4][5]				0.16 ... 12.5	65	65	65	65	30	30
				16 ... 25	65	65	65	65	--	--
FLA[2] max.	115/120	2	5	28; 32	50	50	50	50	--	--
32 A, 480 V	200/208	3	10							
12.5 A, 600 V	230/240	5	10							
	460/480	--	20							
	575/600	--	--							
Size S2										
3RV2031+ 3RV2938-1K[4]				14 ... 36	65	65	65	65	25	25
				40 ... 52	65	65	65	65	22	22
FLA[2] max.	115/120	7 1/2	10	59 ... 73	65	65	20	20	--	--
73 A, 480 V	200/208	15	25							
52 A, 600 V	230/240	15	30							
	460/480	--	60							
	575/600	--	75							
Size S2, with increased switching capacity										
3RV2032 + 3RV2938-1K[4]				14 ... 36	100	100	100	100	25	25
				40 ... 52	100	100	100	100	22	22
FLA[2] max.	115/120	7 1/2	10	59 ... 73	100	100	30	30	--	--
73 A, 480 V	200/208	15	25							
52 A, 600 V	230/240	15	30							
	460/480	--	60							
	575/600	--	75							
Size S3										
3RV2041/3RV2042 + 3RT2946-4GA07[4]				40 ... 75	65	65	65	65	30	30
				84 ... 100	65	65	65	65	--	--
FLA[2] max.	115/120	7 1/2	15							
100 A, 480 V	200/208	15	30							
75 A, 600 V	230/240	20	40							
	460/480	--	75							
	575/600	--	75							

-- No approval

1) hp rating = Power rating in horse power (maximum motor rating).

2) FLA = Full Load Amps (motor full load current).

3) Corresponds to "short-circuit breaking capacity" according to UL/CSA.

4) Not required for CSA.

5) Alternatively 3RV2928-1K phase barrier can be used.

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3RV27 and 3RV28 motor starter protectors as "circuit breakers"

These motor starter protectors are approved as circuit breakers according to UL 489 and CSA 22.2 No. 5. They can be used therefore as upstream short-circuit protective devices for "Manual Motor Controllers" and "Manual Motor Controllers Suitable for Tap Conductor Protection in Group Installations".

3RV27 and 3RV28 motor starter protectors are approved as "circuit breakers" under the following file numbers:

- UL File No. E235044, CCN: DIVQ
- CSA Master Contract 165071, Product Class: 1432 01

Motor starter protectors/ circuit breakers	**Rated current I_n**	**240 V AC**		**480 Y/277 V AC**		**480 V AC**		**600 Y/347 V AC**		**600 V AC**	
		UL	CSA	UL	CSA	UL	CSA	UL	CSA	UL	CSA
		I_{bc} [1]	I_{bc} [1]	I_{bc} [1]	I_{bc} [1]	I_{bc} [1]	I_{bc} [1]	I_{bc} [1]	I_{bc} [1]	I_{bc} [1]	I_{bc} [1]
Type	A	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA
Size S00											
3RV2711	0.16 ... 12.5	65	65	65	65	--	--	10	10	--	--
	15	65	65	65	65	--	--	--	--	--	--
3RV2811	0.16 ... 12.5	65	65	65	65	--	--	10	10	--	--
	15	65	65	65	65	--	--	--	--	--	--
Size S0											
3RV2721	20; 22	50	50	50	50	--	--	--	--	--	--
3RV2821	20; 22	50	50	50	50	--	--	--	--	--	--
Size S3											
3RV2742	10; 15	65	65	65	65	65	65	20	20	20	20
	20 ... 30	65	65	65	65	65	65	20	20	--	--
	35 ... 60	65	65	65	65	--	--	20	20	--	--
	70	65	65	65	65	--	--	10	10	--	--

-- No approval

[1] Corresponds to "short-circuit breaking capacity" according to UL.

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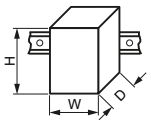
General data

General data

Type			**3RV2.1.**	**3RV2.2.**	**3RV2.3.**	**3RV2.4.**	**3RV27, 3RV28**
Size			S00	S0	S2	S3	S00, S0
Dimensions (W x H x D)							
• Screw terminals		mm	45 x 97 x 92	45 x 97 x 92	55 x 140 x 149	70 x 165 x 169	45 x 144 x 92
• Spring-loaded terminals		mm	45 x 106 x 92	45 x 119 x 92	--	--	--
Standards							
• IEC 60947-1 (VDE 0660 Part 100)			Yes				
• IEC 60947-2 (VDE 0660 Part 101)			Yes				
• IEC 60947-4-1 (VDE 0660 Part 102)			Yes				
• UL 508/UL 60947-4-1, CSA C22.2 No. 14/CSA C22.2 No. 60947-4-1			Yes (not for 3RV2...-.....-0BA0 and -0DA0 motor starter protectors)				--
• UL 489, CSA C22.2 No. 5			--				Yes
Number of poles			3				
Max. rated current $I_{n\ max}$ (= max. rated operational current I_e)		A	16	40	80	100	22
Permissible ambient temperature							
• Storage/transport		°C	-50 ... +80				
• Operation	I_n: 0.16 ... 32 A	°C	-20 (-50)[1] ... +70 (current reduction above +60 °C)		--		
	I_n: 36 ... 40 A	°C	--	-20 ... +40 (the devices must not be mounted side-by-side and they must not be assembled with link modules with contactors. A lateral clearance of 9 mm is required.)	--		
	I_n: 14 ... 80 A	°C	--		-20 (-50)[1] ... +70 (current reduction above +60 °C)	--	
	I_n: 40 ... 100 A	°C	--			-20 ... +70 (current reduction above +60 °C)	--
Permissible rated current at inside temperature of control cabinet							
• +60 °C		%	100				
• +70 °C		%	87				
Permissible rated current at ambient temperature of enclosure (applies to motor starter protector/circuit breaker inside enclosure: S00/S0 ≤ 32 A, S2 ≤ 52 A)							
• +35 °C		%	100			--	
• +60 °C		%	--				
Rated operational voltage U_e							
• According to IEC		V AC	690 (when a molded-plastic enclosure is used only 500 V)				
• According to UL/CSA		V AC	600				
Rated frequency		Hz	50/60				
Rated insulation voltage U_i		V	690			1 000	690
Rated impulse withstand voltage U_{imp}		kV	6			8	6
Utilization category							
• IEC 60947-2 (motor starter protector/circuit breaker)			A				
• IEC 60947-4-1 (motor starter)			AC-3 and AC-3e				
Trip class CLASS	According to IEC 60947-4-1		10		10/20		--
Power loss P_v per motor starter protector dependent upon rated current I_n (upper setting range) $R_{\text{per conducting path}} = \frac{P}{I^2 \times 3}$	I_n: 0.16 ... 0.63 A	W	5.5		--		5.5
	I_n: 0.8 ... 6.3 A	W	7.3		--		7.3
	I_n: 8 ... 16 A	W	9.3		--		9.3
	I_n: 14 ... 16 A	W	--	9.3	12.5	--	9.3
	I_n: 17 ... 25 A	W	--	10.5	14.5	--	10.5
	I_n: 28 ... 32 A	W	--	13.3	18	--	
	I_n: 36 ... 40 A	W	--	16.3	20	--	
	I_n: 45 ... 52 A	W	--		24.5	--	
	I_n: 59 ... 65 A	W	--		26	--	
	I_n: 73 ... 80 A	W	--		29.5	--	
	I_n: 40 ... 50 A	W	--			27	--
	I_n: 63 ... 75 A	W	--			38	--
	I_n: 84 ... 93 A	W	--			39	--
	I_n: 100 A	W	--			44	--
Shock resistance	According to IEC 60068-2-27	*g*/ms	25/11 (square and sine pulse)				

[1] Value in brackets applies to the 3RV2...-.....-0BA0 motor starter protectors.

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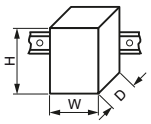
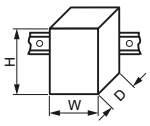
General data (continued)

Type			**3RV2.1.**	**3RV2.2.**	**3RV2.3.**	**3RV2.4.**	**3RV27, 3RV28**
Size			S00	S0	S2	S3	S00, S0
Dimensions (W x H x D)							
• Screw terminals		mm	45 x 97 x 92	45 x 97 x 92	55 x 140 x 149	70 x 165 x 169	45 x 144 x 92
• Spring-loaded terminals		mm	45 x 106 x 92	45 x 119 x 92	--	--	--
Degree of protection IP on the front	according to IEC 60529		IP20 (screw terminals and spring-loaded terminals)				
Touch protection on the front	according to IEC 60529		Finger-safe for vertical touching from the front (screw and spring-loaded terminals)				
Temperature compensation	According to IEC 60947-4-1	°C	-20 ... +60				
Phase failure sensitivity	According to IEC 60947-4-1		Yes (not for 3RV23, 3RV2...-.....-0DA0 motor starter protectors)				No
Protection of motors in hazardous environments			Yes (only for 3RV20 motor starter protectors, not for 3RV20..-.....-0BA0 and -0DA0)				No
• EC type-examination certificate number according to European Directive 2014/34/EU (ATEX)			DMT 02 ATEX F 001 Ex II (2) GD				No
• According to international standard IECEx			IECEx BVS14.0102 [Ex]				No
Isolating function	According to IEC 60947-2		Yes				
Main and EMERGENCY STOP switch characteristics (with corresponding accessories)	According to IEC 60204-1 (VDE 0113)		Yes				
Protective separation between main and auxiliary circuits required for PELV applications	According to IEC 60947-1						
• Up to 400 V + 10%			Yes				
• Up to 415 V + 5% (higher voltages on request)			Yes				
• Up to 690 V (depends on mounted accessories)			Yes, see certificate				
Permissible mounting position			Any, according to IEC 60447 start command "I" right-hand side or top				
Mechanical endurance (operating cycles)							
• 3RV2			100 000		Up to 52 A: 50 000, up to 80 A: 20 000	25 000	100 000
• 3RV2...-.....-0BA0			500		250	--	
Electrical endurance (operating cycles)							
• 3RV2			100 000		Up to 52 A: 50 000, up to 80 A: 20 000	25 000	100 000
• 3RV2...-.....-0BA0			500		250	--	
Max. switching frequency per hour (motor starts)		1/h	15				

General data

Type			**3RV2742**	**3RV1611-0BD10**[1]	**3RV1011**
Size			S3	S00	S00
Dimensions (W x H x D)		mm	70 x 168 x 169	45 x 90 x 70	45 x 90 x 70
Standards					
• IEC 60947-1 (VDE 0660 Part 100)			Yes		
• IEC 60947-2 (VDE 0660 Part 101)			Yes		
• UL 508/UL 60947-4-1, CSA C22.2 No.14/CSA 60947-4-1			No	Yes	
• UL 489, CSA C22.2 No. 5			Yes	No	
Number of poles			3		
Max. rated current $I_{n\ max}$ (= max. rated operational current I_e)		A	70	0.2	12
Permissible ambient temperature					
• Storage/transport		°C	-50 ... +80		
• Operation		°C	-20 ... +70 (current reduction above +60 °C)		
Permissible rated current at inside temperature of control cabinet					
• +60 °C		%	100		
• +70 °C		%	87		
Permissible rated current at ambient temperature of enclosure (applies to motor starter protector/ circuit breaker inside enclosure)					
• +35 °C		%	--		100
• +60 °C		%	--		
Rated operational voltage U_e					
• According to IEC		V AC	690 (with molded-plastic enclosure 500 V)		
• According to UL/CSA		V AC	600		
Rated frequency		Hz	50/60		
Rated insulation voltage U_i		V	1 000	690	
Rated impulse withstand voltage U_{imp}		kV	8	6	
Utilization category					
• IEC 60947-2 (motor starter protector/circuit breaker)			A		
• IEC 60947-4-1 (motor starter)			AC-3	AC-3 and AC-3e	

[1] "Technical specifications" for 3RV1611 voltage transformer circuit breakers, see page 7/24.

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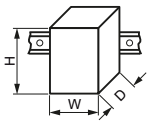
General data

General data (continued)

Type			**3RV2742**	**3RV1611-0BD10**[1]	**3RV1011**
Size			S3	S00	S00
Dimensions (W x H x D)		mm	70 x 168 x 169	45 x 90 x 70	45 x 90 x 70
Power loss P_v per motor starter protector dependent upon rated current I_n (upper setting range)	I_n: 0.2 A	W	--	5	--
	I_n: 10 A	W	10	--	
	I_n: 15 ... 35 A	W	14	--	
	I_n: 40 ... 70 A	W	23.5	--	
$R_{\text{per conducting path}} = \frac{P}{I^2 \times 3}$	I_n: ... 1.25 A	W	--		5.5
	I_n: 1.65 ... 6.3 A	W	--		7.3
	I_n: 8 ... 12 A	W	--		9.3
Shock resistance	According to IEC 60068-2-27	*g*/ms	25/11 (square and sine pulse)		
Degree of protection IP on the front	according to IEC 60529		IP20		
Touch protection on the front	according to IEC 60529		Finger-safe for vertical touching from the front		
Temperature compensation	According to IEC 60947-4-1	°C	-20 ... +60		
Phase failure sensitivity	According to IEC 60947-4-1		No	Yes	
Explosion protection – Safe operation of motors with "increased safety" type of protection EC type-examination certificate number according to Directive 2014/34/EU (ATEX)			No		Yes
Isolating function	According to IEC 60947-2		Yes		
Main and EMERGENCY STOP switch characteristics (with corresponding accessories)	According to IEC 60204-1 (VDE 0113)		Yes		
Protective separation between main and auxiliary circuits, required for PELV applications	According to IEC 60947-1				
• Up to 400 V + 10%			Yes		
• Up to 415 V + 5% (higher voltages on request)			Yes		
Permissible mounting position			Any, according to IEC 60447 start command "I" right-hand side or top		
Mechanical endurance		Operating cycles	25 000	100 000	
Electrical endurance		Operating cycles	25 000	100 000	
Max. switching frequency per hour (motor starts)		1/h	15		

1) "Technical specifications" for 3RV1611 voltage transformer circuit breakers, see page 7/24.

Rated data of the auxiliary switches and signaling switches

		Lateral auxiliary switch with 1 NO + 1 NC, 2 NO, 2 NC, 2 NO + 2 NC	**Signaling switch**	**Transverse auxiliary switch with**	
				1 CO	**1 NO + 1 NC, 2 NO**
Max. rated voltage					
• According to NEMA (UL)	V AC	600		250	
• According to NEMA (CSA)	V AC	600		250	
Uninterrupted current	A	10		5	2.5
Switching capacity		1 NO + 1 NC, 2 NO, 2 NC: A600, Q300; 2 NO + 2 NC: A300, Q300	A600, Q300	B600, R300	C300, R300

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Front transverse auxiliary switches

			Switching capacity for different voltages	
			1 CO	**1 NO + 1 NC, 2 NO**
Rated operational current I_e				
• At AC-15, alternating voltage				
- 24 V		A	4	2
- 230 V		A	3	0.5
• At AC-12 = I_{th}, alternating voltage				
- 24 V		A	10	2.5
- 230 V		A	10	2.5
• At DC-13, direct voltage *L/R* 200 ms				
- 24 V		A	1	1
- 48 V		A	--	0.3
- 60 V		A	--	0.15
- 110 V		A	0.22	--
- 220 V		A	0.1	--
Minimum load capacity		V	17	
		mA	1	

Front transverse solid-state compatible auxiliary switches

			Switching capacity for different voltages
			1 CO
Rated operational voltage U_e	Alternating voltage	V	125
Rated operational current I_e/AC-14	at U_e = 125 V	A	0.1
Rated operational voltage U_e	Direct voltage *L/R* 200 ms	V	60
Rated operational current I_e/DC-13	at U_e = 60 V	A	0.3
Minimum load capacity		V	5
		mA	1

Lateral auxiliary switches with signaling switch

			Switching capacity for different voltages: Lateral auxiliary switch with 1 NO + 1 NC, 2 NO, 2 NC, 2 NO + 2 NC, Signaling switch
Rated operational current I_e			
• At AC-15, alternating voltage			
- 24 V		A	6
- 230 V		A	4
- 400 V		A	3
- 690 V		A	1
• At AC-12 = I_{th}, alternating voltage			
- 24 V		A	10
- 230 V		A	10
- 400 V		A	10
- 690 V		A	10
• At DC-13, direct voltage *L/R* 200 ms			
- 24 V		A	2
- 110 V		A	0.5
- 220 V		A	0.25
- 440 V		A	0.1
Minimum load capacity		V	17
		mA	1

Auxiliary releases

		Undervoltage releases	Shunt releases
Power consumption			
• During pick-up			
- AC voltages	VA/W	20.2/13	
- DC voltages	W	20	13 ... 80
• During uninterrupted duty			
- AC voltages	VA/W	7.2/2.4	--
- DC voltages	W	2.1	--
Response voltage			
• Tripping	V	0.35 ... 0.7 x U_s	0.7 ... 1.1 x U_s
• Pick-up	V	0.85 ... 1.1 x U_s	--
Opening time maximum	ms	20	

Short-circuit protection for auxiliary and control circuits

Melting fuses operational class gG	A	10
Miniature circuit breakers C characteristic	A	6 (prospective short-circuit current < 0.4 kA)

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General data

Conductor cross-sections of main circuit

Type		**3RV2.11**	**3RV2.21**	**3RV2.31-4B.1., 3RV2.31-4D.1., 3RV2.31-4E.1., 3RV2.31-4P.1., 3RV2.31-4S.1., 3RV2.31-4T.1., 3RV2.31-4U.1., 3RV2.31-4V.1.**	**3RV2.31-4J.1., 3RV2.31-4K.1., 3RV2.31-4R.1., 3RV2.31-4W.1., 3RV2.31-4X.1., 3RV2431-4VA1., 3RV2.32**	**3RV27.1, 3RV28.1**
Size		S00	S0	S2		S00, S0
Connection type		**Screw terminals**				
Terminal screw		M3, Pozidriv size 2	M4, Pozidriv size 2	M6, Pozidriv size 2		M4, Pozidriv size 2
Operating devices	mm	⌀ 5 ... 6	⌀ 5 ... 6	⌀ 5 ... 6		⌀ 5 ... 6
Prescribed tightening torque	Nm	0.8 ... 1.2	2 ... 2.5	3.0 ... 4.5		2.5 ... 3
Conductor cross-sections (min./max.), one or two conductors can be connected						
• Solid or stranded	mm^2	2 x (0.75 ... 2.5)[1], 2 x 4	2 x (1 ... 2.5)[1], 2 x (2.5 ... 10)[1]	2 x (1 ... 25)[1], 1 x (1 ... 35)[1]	2 x (1 ... 35)[1], 1 x (1 ... 50)[1]	2 x (1 ... 10)[1], max. 1 x 25
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1]	2 x (1 ... 2.5)[1], 2 x (2.5 ... 6)[1], 1 x 10	2 x (1 ... 16)[1], 1 x (1 ... 25)[1]	2 x (1 ... 25)[1], 1 x (1 ... 35)[1]	1 x (1 ... 16), max. 6 + 16
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1], 2 x (18 ... 12)[1]	2 x (16 ... 12)[1], 2 x (14 ... 8)[1]	2 x (18 ... 3)[1], 1 x (18 ... 2)[1]	2 x (18 ... 2)[1], 1 x (18 ... 1)[1]	2 x (14 ... 10)
Connection type		**Spring-loaded terminals**				
Operating devices	mm	3.0 x 0.5				
Conductor cross-sections (min./max.), one or two conductors can be connected						
• Solid or stranded	mm^2	2 x (0.5 ... 4)	2 x (1 ... 10)	--		
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)	2 x (1 ... 6)	--		
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 2.5)	2 x (1 ... 6)	--		
• AWG cables, solid or stranded	AWG	2 x (20 ... 12)	2 x (18 ... 8)	--		
Max. external diameter of the conductor insulation	mm	3.6	6.4	--		

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

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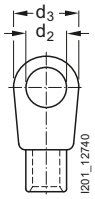
Conductor cross-sections of main circuit (continued)

Type		3RV2.4./ 3RV2742	3RV1611-0BD10[1]/ 3RV1011
Size		S3	S00
Connection type		**Screw terminals with box terminal**	**Screw terminals**
Terminal screw		M6	Pozidriv size 2
Prescribed tightening torque	Nm	4.5 ... 6	0.8 .... 1.2
Conductor cross-sections (min./max.), one or two conductors can be connected			
• Solid or stranded	mm^2	2 x (2.5 ... 16)[2], 2 x (10 ... 50)[2], 1 x (10 ... 70)[2]	2 x (0.5 ... 1.5)[2], 2 x (0.75 ... 2.5)[2]
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (2.5 ... 35)[2], 1 x (2.5 ... 50)[2]	2 x (0.5 ... 1.5)[2], 2 x (0.75 ... 2.5)[2]
• AWG cables, solid or stranded	AWG	2 x (10 ... 1/0)[2], 1 x (10 ... 2/0)[2]	2 x (18 ... 14)
Ribbon cable conductors (number x width x thickness)	mm	2 x (6 x 9 x 0.8)	--
Removable box terminals[3]			
• With copper bars[4]	mm	2 x 12 x 4	--
• With cable lugs[5]			
- Terminal screw		M6	
- Prescribed tightening torque	Nm	4.5 ... 6	
- Usable ring cable lugs	mm mm	d_2 = min. 6.3 d_3 = max. 19	



1) "Technical specifications" for 3RV16 voltage transformer circuit breakers, see page 7/24.
2) If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.
3) Cable lug and busbar connection possible after removing the box terminals. This does not apply for 3RV2742.
4) If bars larger than 12 mm x 10 mm are connected, a 3RT2946-4EA2 cover is needed to maintain the required phase clearance, see page 7/59.
5) If conductors larger than 25 mm^2 are connected, the 3RT2946-4EA2 cover is needed to maintain the required phase clearance, see page 7/59.

Conductor cross-sections for auxiliary and control circuits[1]

Type		3RV2.11	3RV1011/ 3RV1611-0BD10[2]	3RV2.21	3RV2.3	3RV2.4	3RV27, 3RV28
Size		S00		S0	S2	S3	S00, S0, S3
Connection type		**Screw terminals**					
Terminal screw		M3, Pozidriv size 2					
Operating devices	mm	⌀ 5 ... 6					
Prescribed tightening torque	Nm	0.8 ... 1.2					
Conductor cross-sections (min./max.), one or two conductors can be connected							
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[3], 2 x (0.75 ... 2.5)[3]					
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)[3], 2 x (0.75 ... 2.5)[3]					
• AWG cables, solid or stranded	AWG	2 x (18 ... 14)[3], 2 x (20 ... 16)[3]					
Connection type		**Spring-loaded terminals**					
Operating devices	mm	3.0 x 0.5					
Conductor cross-sections (min./max.), one or two conductors can be connected							
• Solid or stranded	mm^2	2 x (0.5 ... 2.5)					
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)					
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)					
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)					
Max. external diameter of the conductor insulation	mm	3.6					

1) The conductor cross-sections also apply to the 3RV2901-1. auxiliary switch, 3RV2921-1M signaling switch and 3RV29.2-1.... auxiliary release.
2) "Technical specifications" for 3RV16 voltage transformer circuit breakers, see page 7/24.
3) If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

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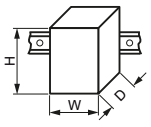
General data

Voltage transformer circuit breakers

General data					
Type			**3RV1611-1AG14**	**3RV1611-1CG14**	**3RV1611-1DG14**
Size			S00	S00	S00
Dimensions (W x H x D)		mm	45 x 90 x 70	45 x 90 x 70	45 x 90 x 70
Rated current I_n		A	1.4	2.5	3
Ambient temperature					
• During storage/transport		°C	-50 ... +80		
• During operation		°C	-20 ... +60 (up to +70 °C possible with current reduction)		
Rated operational voltage U_e		V	400		
Rated frequency		Hz	16.66 ... 60		
Rated insulation voltage U_i		V	690		
Short-circuit breaking capacity I_{cu} at 400 V AC		kA	50		
Set value of the thermal overload release		A	1.4	2.5	3
Response value of the instantaneous electronic release		A	6 ±20%	10.5 ±20%	20 ±20%
Tripping time of the instantaneous electronic release		ms	Approx. 6 at 12 A	Approx. 6 at 20 A	Approx. 6 at 40 A
Internal resistance					
• In cold state		Ω	> 0.25 ±6.5%		
• In heated state		Ω	> 0.30 ±6.5%		
Shock resistance according to IEC 60068-2-27		*g*/ms	15		
Degree of protection IP on the front according to IEC 60529			IP20		
Touch protection on the front according to IEC 60529			Finger-safe for vertical touching from the front		
Endurance					
• Mechanical		Operating cycles	10 000		
• Electrical		Operating cycles	10 000		
Permissible mounting position			Any		

Type			**3RV1611-1AG14**	**3RV1611-1CG14**	**3RV1611-1DG14**
Conductor cross-sections, main circuit, 1 or 2 conductors					
Connection type			**Screw terminals**		
Terminal screw			Pozidriv size 2		
Conductor cross-sections (min./max.), one or two conductors can be connected					
• Solid or stranded		mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1], 2 x (1 ... 4)		
• Finely stranded with end sleeve (DIN 46228)		mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1]		
Auxiliary switches for blocking the distance protection					
With defined lateral assignment for blocking distance protection			1 CO (for use as 1 NO or 1 NC)		
Rated operational voltage U_e	Alternating voltage	V	125		
Rated operational current I_e/AC-14	at U_e = 125 V	A	0.1		
Rated operational voltage U_e	Direct voltage *L/R* 200 ms	V	60		
Rated operational current I_e/DC-13	at U_e = 60 V	A	0.3		
Minimum load capacity		V mA	5 1		
Short-circuit protection for auxiliary circuit					
Melting fuse		A	250 V type FF 2A (prospective short-circuit current < 1.1 kA)		

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

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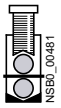
Terminals for "Self-Protected Combination Motor Controllers (Type E) according to UL 508/UL 60947-4-1"		
Type		**3RV2928-1H**
Prescribed tightening torque	Nm	2.5 ... 3
Conductor cross-sections		
• Front clamping point connected		
NSB0_00479		
- Solid	mm^2	1 ... 10
- Finely stranded with end sleeve	mm^2	1 ... 16
- Stranded	mm^2	2.5 … 25
- AWG cables, solid or stranded	AWG	14 ... 3
- Terminal screw		M4
• Rear clamping point connected		
NSB0_00480		
- Solid	mm^2	1 ... 10
- Finely stranded with end sleeve	mm^2	1 ... 16
- Stranded	mm^2	1.5 ... 25
- AWG cables, solid or stranded	AWG	14 ... 6
- Terminal screw		M4
• Both clamping points connected		
 NSB0_00481		
- Front clamping point:		
Solid	mm^2	1 ... 10
Finely stranded with end sleeve	mm^2	1 ... 10[1], 1 ... 6[1]
Stranded	mm^2	2.5 ... 10
AWG cables, solid or stranded	AWG	14 ... 6
Terminal screw		M4
- Rear clamping point:		
Solid	mm^2	1 ... 10
Finely stranded with end sleeve	mm^2	1 ... 10[1], 1 ... 16[1]
Stranded	mm^2	2.5 ... 10
AWG cables, solid or stranded	AWG	16 ... 3
Terminal screw		M4

1) The following connections are possible when both clamping points are connected:
- front 1 to 10 mm^2 and rear 1 to 10 mm^2,
- front 1 to 6 mm^2 and rear 1 to 16 mm^2.

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General data

Connection module (plug and adapter) for motor starter protectors/circuit breakers with screw terminals			
Type		**3RT1900-4RE01** **Motor feeder connector S0**	**3RT1926-4RD01** **Adapter S0**
General data			
Rated insulation voltage U_i (pollution degree 3)	V	690	
Rated impulse withstand voltage U_{imp} (pollution degree 3)	kV	6	
Rated operational voltage U_e	V	440	
Rated frequency *f* For AC operation	Hz	50/60	
Rated operational current I_e AC-3 and AC-3e at 400 V	A	25	
Mechanical endurance	Operating cycles	10 million	
Electrical endurance at I_e	Operating cycles	1 million	
Protective separation according to IEC 60947-1 (pollution degree 3)	V	400	
Permissible ambient temperature			
• During operation	°C	-25 ... +60	
• During storage	°C	-50 ... +80	
Conductor cross-sections			
Connection type		**Screw terminals**	
• Solid	mm^2	1 x (0.5 ... 6)	
• Finely stranded without/with end sleeve	mm^2	1 x (0.5 ... 6)	
• Stranded	mm^2	1 x (0.5 ... 6)	
• AWG cables, solid or stranded	AWG	1 x (20 ... 10)	
• Tightening torque	Nm	0.6 ... 0.8	
• Corresponding opening tool		Cross-tip screwdriver PZ2	
CSA and UL rated data			
Rated operational voltage U_e	V	480	
Rated insulation voltage U_i	V	600	
Uninterrupted current, at 40 °C	A	25	
Short-circuit protection[1]			
• At 600 V	kA	5	
• CLASS RK5 fuse	A	100	
• Circuit breakers with overload protection according to UL 489	A	100	
Combination motor controllers type E according to UL 508			
at 480 V	Type	3RV202	
	A	22	
	kA	65	
at 600 V	Type	3RV202	
	A	22	
	kA	10	

[1] For more information about short-circuit values, e.g. for protection against high short-circuit currents, see the UL reports.

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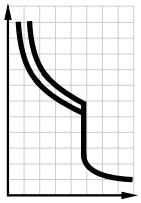
Selection and ordering data

CLASS 10, without auxiliary switches

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E



3RV2011-..A10,
3RV2011-..A10-0BA0

3RV2011-..A20,
3RV2011-.AA20-0BA0

Rated current	Suitable for three-phase motors[1] with *P*	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	**Screw terminals**		**Spring-loaded terminals**	
I_n			$I >$	I_{cu}	Article No.	Price per PU	Article No.	Price per PU
A	kW	A	A	kA				
Size S00								
0.16	0.04	0.11 ... 0.16	2.1	100	**3RV2011-0AA10**		**3RV2011-0AA20**	
0.2	0.06	0.14 ... 0.2	2.6	100	**3RV2011-0BA10**		**3RV2011-0BA20**	
0.25	0.06	0.18 ... 0.25	3.3	100	**3RV2011-0CA10**		**3RV2011-0CA20**	
0.32	0.09	0.22 ... 0.32	4.2	100	**3RV2011-0DA10**		**3RV2011-0DA20**	
0.4	0.09	0.28 ... 0.4	5.2	100	**3RV2011-0EA10**		**3RV2011-0EA20**	
0.5	0.12	0.35 ... 0.5	6.5	100	**3RV2011-0FA10**		**3RV2011-0FA20**	
0.63	0.18	0.45 ... 0.63	8.2	100	**3RV2011-0GA10**		**3RV2011-0GA20**	
0.8	0.18	0.55 ... 0.8	10	100	**3RV2011-0HA10**		**3RV2011-0HA20**	
1	0.25	0.7 ... 1	13	100	**3RV2011-0JA10**		**3RV2011-0JA20**	
1.25	0.37	0.9 ... 1.25	16	100	**3RV2011-0KA10**		**3RV2011-0KA20**	
1.6	0.55	1.1 ... 1.6	21	100	**3RV2011-1AA10**		**3RV2011-1AA20**	
2	0.75	1.4 ... 2	26	100	**3RV2011-1BA10**		**3RV2011-1BA20**	
2.5	0.75	1.8 ... 2.5	33	100	**3RV2011-1CA10**		**3RV2011-1CA20**	
3.2	1.1	2.2 ... 3.2	42	100	**3RV2011-1DA10**		**3RV2011-1DA20**	
4	1.5	2.8 ... 4	52	100	**3RV2011-1EA10**		**3RV2011-1EA20**	
5	1.5	3.5 ... 5	65	100	**3RV2011-1FA10**		**3RV2011-1FA20**	
6.3	2.2	4.5 ... 6.3	82	100	**3RV2011-1GA10**		**3RV2011-1GA20**	
8	3	5.5 ... 8	104	100	**3RV2011-1HA10**		**3RV2011-1HA20**	
10	4	7 ... 10	130	100	**3RV2011-1JA10**		**3RV2011-1JA20**	
12.5	5.5	9 ... 12.5	163	100	**3RV2011-1KA10**		**3RV2011-1KA20**	
16	7.5	10 ... 16	208	55	**3RV2011-4AA10**		**3RV2011-4AA20**	
For special operating conditions down to -50 °C[2)3)]								
1.25	0.37	0.9 ... 1.25	16	100	**3RV2011-0KA10-0BA0**		**--**	
1.6	0.55	1.1 ... 1.6	21	100	**3RV2011-1AA10-0BA0**		**3RV2011-1AA20-0BA0**	
2.5	0.75	1.8 ... 2.5	33	100	**3RV2011-1CA10-0BA0**		**--**	
3.2	1.1	2.2 ... 3.2	42	100	**3RV2011-1DA10-0BA0**		**--**	
4	1.5	2.8 ... 4	52	100	**3RV2011-1EA10-0BA0**		**--**	
5	1.5	3.5 ... 5	65	100	**3RV2011-1FA10-0BA0**		**--**	
6.3	2.2	4.5 ... 6.3	82	100	**3RV2011-1GA10-0BA0**		**--**	
8	3	5.5 ... 8	104	100	**3RV2011-1HA10-0BA0**		**--**	
10	4	7 ... 10	130	100	**3RV2011-1JA10-0BA0**		**--**	
12.5	5.5	9 ... 12.5	163	100	**3RV2011-1KA10-0BA0**		**--**	
16	7.5	10 ... 16	208	55	**3RV2011-4AA10-0BA0**		**3RV2011-4AA20-0BA0**	

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) The 3RV2011-.....-0BA0 motor starter protectors have a mechanical endurance of 500 operating cycles.

3) The motor starter protectors do not have UL/CSA approval and are not certified either according to the European Explosion Protection Directive (ATEX) or according to the International Explosion Protection Standard (IECEx).

Auxiliary switches and other accessories can be ordered separately (see page 7/48 onwards).

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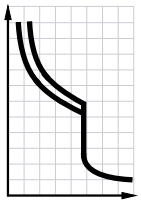
For motor protection ***IE3/IE4 ready*** **AC-3e**

CLASS 10, without auxiliary switches

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E



3RV2021-..A10, 3RV2021-4.A10-0BA0

3RV2021-..A20, 3RV2021-..A20-0BA0

Rated current	Suitable for three-phase motors[1] with ▶	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	**Screw terminals**		**Spring-loaded terminals**	
I_n			$I >$	I_{cu}	Article No.	Price per PU	Article No.	Price per PU
A	kW	A	A	kA				
Size S0								
0.16	0.04	0.11 ... 0.16	2.1	100	**3RV2021-0AA10**		--	
0.2	0.06	0.14 ... 0.2	2.6	100	**3RV2021-0BA10**		--	
0.25	0.06	0.18 ... 0.25	3.3	100	**3RV2021-0CA10**		--	
0.32	0.09	0.22 ... 0.32	4.2	100	**3RV2021-0DA10**		--	
0.4	0.09	0.28 ... 0.4	5.2	100	**3RV2021-0EA10**		--	
0.5	0.12	0.35 ... 0.5	6.5	100	**3RV2021-0FA10**		--	
0.63	0.18	0.45 ... 0.63	8.2	100	**3RV2021-0GA10**		**3RV2021-0GA20**	
0.8	0.18	0.55 ... 0.8	10	100	**3RV2021-0HA10**		**3RV2021-0HA20**	
1	0.25	0.7 ... 1	13	100	**3RV2021-0JA10**		**3RV2021-0JA20**	
1.25	0.37	0.9 ... 1.25	16	100	**3RV2021-0KA10**		**3RV2021-0KA20**	
1.6	0.55	1.1 ... 1.6	21	100	**3RV2021-1AA10**		**3RV2021-1AA20**	
2	0.75	1.4 ... 2	26	100	**3RV2021-1BA10**		**3RV2021-1BA20**	
2.5	0.75	1.8 ... 2.5	33	100	**3RV2021-1CA10**		**3RV2021-1CA20**	
3.2	1.1	2.2 ... 3.2	42	100	**3RV2021-1DA10**		**3RV2021-1DA20**	
4	1.5	2.8 ... 4	52	100	**3RV2021-1EA10**		**3RV2021-1EA20**	
5	1.5	3.5 ... 5	65	100	**3RV2021-1FA10**		**3RV2021-1FA20**	
6.3	2.2	4.5 ... 6.3	82	100	**3RV2021-1GA10**		**3RV2021-1GA20**	
8	3	5.5 ... 8	104	100	**3RV2021-1HA10**		**3RV2021-1HA20**	
10	4	7 ... 10	130	100	**3RV2021-1JA10**		**3RV2021-1JA20**	
12.5	5.5	9 ... 12.5	163	100	**3RV2021-1KA10**		**3RV2021-1KA20**	
16	7.5	10 ... 16	208	55	**3RV2021-4AA10**		**3RV2021-4AA20**	
20	7.5	13 ... 20	260	55	**3RV2021-4BA10**		**3RV2021-4BA20**	
22	11	16 ... 22	286	55	**3RV2021-4CA10**		**3RV2021-4CA20**	
25	11	18 ... 25	325	55	**3RV2021-4DA10**		**3RV2021-4DA20**	
28	15	23 ... 28	364	55	**3RV2021-4NA10**		**3RV2021-4NA20**	
32[2]	15	27 ... 32	400	55	**3RV2021-4EA10**		**3RV2021-4EA20**	
36[3]	18.5	30 ... 36	432	20	**3RV2021-4PA10**		--	
40[3]	18.5	34 ... 40	480	20	**3RV2021-4FA10**		--	
For special operating conditions down to -50 °C[4][5]								
1	0.25	0.7 ... 1	13	100	--		**3RV2021-0JA20-0BA0**	
1.6	0.55	1.1 ... 1.6	21	100	--		**3RV2021-1AA20-0BA0**	
2	0.75	1.4 ... 2	26	100	--		**3RV2021-1BA20-0BA0**	
2.5	0.75	1.8 ... 2.5	33	100	--		**3RV2021-1CA20-0BA0**	
4	1.5	2.8 ... 4	52	100	--		**3RV2021-1EA20-0BA0**	
6.3	2.2	4.5 ... 6.3	82	100	--		**3RV2021-1GA20-0BA0**	
8	3	5.5 ... 8	104	100	--		**3RV2021-1HA20-0BA0**	
10	4	7 ... 10	130	100	--		**3RV2021-1JA20-0BA0**	
12.5	5.5	9 ... 12.5	163	100	--		**3RV2021-1KA20-0BA0**	
16	7.5	10 ... 16	208	55	--		**3RV2021-4AA20-0BA0**	
20	7.5	13 ... 20	260	55	**3RV2021-4BA10-0BA0**		--	
22	11	16 ... 22	286	55	**3RV2021-4CA10-0BA0**		--	
25	11	18 ... 25	325	55	**3RV2021-4DA10-0BA0**		**3RV2021-4DA20-0BA0**	
28	15	23 ... 28	364	55	--		**3RV2021-4NA20-0BA0**	
32[2]	15	27 ... 32	400	55	**3RV2021-4EA10-0BA0**		**3RV2021-4EA20-0BA0**	
40[3]	18.5	34 ... 40	480	20	**3RV2021-4FA10-0BA0**		--	

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S2.

3) The devices must not be mounted side-by-side and they must not be assembled with link modules with contactors. A lateral clearance of 9 mm is required. For use with IE3 and IE4 motors we recommend using 3RV2 motor starter protectors size S2.

4) The 3RV2021-.....-0BA0 motor starter protectors have a mechanical endurance of 500 operating cycles.

5) The motor starter protectors do not have UL/CSA approval and are not certified either according to the European Explosion Protection Directive (ATEX) or according to the International Explosion Protection Standard (IECEx).

Auxiliary switches and other accessories can be ordered separately (see page 7/48 onwards).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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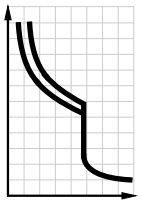
CLASS 10, without auxiliary switches



3RV2031-4.A10,
3RV2031-4.A10-0BA0

3RV2032-4.A10

Rated current	Suitable for three-phase motors[1] with *P*	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	**Screw terminals**		PU (UNIT, SET, M)	PS*	PG
I_n			$I >$	I_{cu}	Article No.	Price per PU			
A	kW	A	A	kA					
Size S2									
14	5.5	9.5 ... 14	208	65	**3RV2031-4SA10**		1	1 unit	41E
17	7.5	12 ... 17	260	65	**3RV2031-4TA10**		1	1 unit	41E
20	7.5	14 ... 20	260	65	**3RV2031-4BA10**		1	1 unit	41E
25	11	18 ... 25	325	65	**3RV2031-4DA10**		1	1 unit	41E
32	15	22 ... 32	416	65	**3RV2031-4EA10**		1	1 unit	41E
36	18.5	28 ... 36	520	65	**3RV2031-4PA10**		1	1 unit	41E
40	18.5	32 ... 40	585	65	**3RV2031-4UA10**		1	1 unit	41E
45	22	35 ... 45	650	65	**3RV2031-4VA10**		1	1 unit	41E
52	22	42 ... 52	741	65	**3RV2031-4WA10**		1	1 unit	41E
59	30	49 ... 59	845	65	**3RV2031-4XA10**		1	1 unit	41E
65	30	54 ... 65	845	65	**3RV2031-4JA10**		1	1 unit	41E
73	37	62 ... 73	949	65	**3RV2031-4KA10**		1	1 unit	41E
80[2]	37	70 ... 80	1 040	65	**3RV2031-4RA10**		1	1 unit	41E
For special operating conditions down to -50 °C[3][4]									
25	11	18 ... 25	325	65	**3RV2031-4DA10-0BA0**		1	1 unit	41E
32	15	22 ... 32	416	65	**3RV2031-4EA10-0BA0**		1	1 unit	41E
65	30	54 ... 65	845	65	**3RV2031-4JA10-0BA0**		1	1 unit	41E
Size S2, with increased switching capacity									
14	5.5	9.5 ... 14	208	100	**3RV2032-4SA10**		1	1 unit	41E
17	7.5	12 ... 17	260	100	**3RV2032-4TA10**		1	1 unit	41E
20	7.5	14 ... 20	260	100	**3RV2032-4BA10**		1	1 unit	41E
25	11	18 ... 25	325	100	**3RV2032-4DA10**		1	1 unit	41E
32	15	22 ... 32	416	100	**3RV2032-4EA10**		1	1 unit	41E
36	18.5	28 ... 36	520	100	**3RV2032-4PA10**		1	1 unit	41E
40	18.5	32 ... 40	585	100	**3RV2032-4UA10**		1	1 unit	41E
45	22	35 ... 45	650	100	**3RV2032-4VA10**		1	1 unit	41E
52	22	42 ... 52	741	100	**3RV2032-4WA10**		1	1 unit	41E
59	30	49 ... 59	845	100	**3RV2032-4XA10**		1	1 unit	41E
65	30	54 ... 65	845	100	**3RV2032-4JA10**		1	1 unit	41E
73	37	62 ... 73	949	100	**3RV2032-4KA10**		1	1 unit	41E
80[2]	37	70 ... 80	1 040	100	**3RV2032-4RA10**		1	1 unit	41E

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) Suitable for use with IE3 and IE4 motors up to a starting current of 720 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S3.

3) The 3RV2031-.....-0BA0 motor starter protectors have a mechanical endurance of 250 operating cycles.

4) The motor starter protectors do not have UL/CSA approval and are not certified either according to the European Explosion Protection Directive (ATEX) or according to the International Explosion Protection Standard (IECEx).

Auxiliary switches and other accessories can be ordered separately (see page 7/48 onwards).

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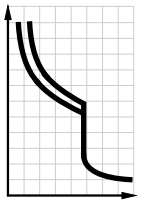
For motor protection ***IE3/IE4 ready*** **AC-3e**

CLASS 10, without auxiliary switches



3RV204.-4.A10

Rated current	Suitable for three-phase motors[1] with *P*	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	Screw terminals	PU (UNIT, SET, M)	PS*	PG
I_n		⊏	$I >$	I_{cu}	Article No. Price per PU			
A	kW	A	A	kA				
Size S3								
40	18.5	28 ... 40	520	65	**3RV2041-4FA10**	1	1 unit	41E
50	22	36 ... 50	650	65	**3RV2041-4HA10**	1	1 unit	41E
63	30	45 ... 63	819	65	**3RV2041-4JA10**	1	1 unit	41E
75	37	57 ... 75	975	65	**3RV2041-4KA10**	1	1 unit	41E
84	45	65 ... 84	1 170	65	**3RV2041-4RA10**	1	1 unit	41E
93	45	75 ... 93	1 300	65	**3RV2041-4YA10**	1	1 unit	41E
100[2]	45, 55	80 ... 100	1 300	65	**3RV2041-4MA10**	1	1 unit	41E
Size S3, with increased switching capacity								
40	18.5	28 ... 40	520	100	**3RV2042-4FA10**	1	1 unit	41E
50	22	36 ... 50	650	100	**3RV2042-4HA10**	1	1 unit	41E
63	30	45 ... 63	819	100	**3RV2042-4JA10**	1	1 unit	41E
75	37	57 ... 75	975	100	**3RV2042-4KA10**	1	1 unit	41E
84	45	65 ... 84	1 170	100	**3RV2042-4RA10**	1	1 unit	41E
93	45	75 ... 93	1 300	100	**3RV2042-4YA10**	1	1 unit	41E
100[2]	45, 55	80 ... 100	1 300	100	**3RV2042-4MA10**	1	1 unit	41E

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[2] Suitable for use with IE3 and IE4 motors up to a starting current of 780 A. For higher starting currents we recommend using 3VA circuit breakers (see Catalog LV 10).

Auxiliary switches and other accessories can be ordered separately (see page 7/48 onwards).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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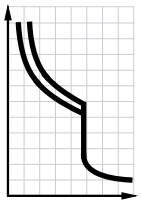
CLASS 10, with transverse auxiliary switch (1 NO + 1 NC)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E



3RV2011-..A15

3RV2011-..A25, 3RV2011-1EA25-0BA0

3RV2.21-4.A15, 3RV2021-4.A15-0BA0

3RV2021-4.A25

Rated current	Suitable for three-phase motors[1] with *P*	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	Screw terminals		Spring-loaded terminals	
I_n			$I >$	I_{cu}	Article No.	Price per PU	Article No.	Price per PU
A	kW	A	A	kA				
Size S00								
0.16	0.04	0.11 ... 0.16	2.1	100	**3RV2011-0AA15**		**3RV2011-0AA25**	
0.2	0.06	0.14 ... 0.2	2.6	100	**3RV2011-0BA15**		**3RV2011-0BA25**	
0.25	0.06	0.18 ... 0.25	3.3	100	**3RV2011-0CA15**		**3RV2011-0CA25**	
0.32	0.09	0.22 ... 0.32	4.2	100	**3RV2011-0DA15**		**3RV2011-0DA25**	
0.4	0.09	0.28 ... 0.4	5.2	100	**3RV2011-0EA15**		**3RV2011-0EA25**	
0.5	0.12	0.35 ... 0.5	6.5	100	**3RV2011-0FA15**		**3RV2011-0FA25**	
0.63	0.18	0.45 ... 0.63	8.2	100	**3RV2011-0GA15**		**3RV2011-0GA25**	
0.8	0.18	0.55 ... 0.8	10	100	**3RV2011-0HA15**		**3RV2011-0HA25**	
1	0.25	0.7 ... 1	13	100	**3RV2011-0JA15**		**3RV2011-0JA25**	
1.25	0.37	0.9 ... 1.25	16	100	**3RV2011-0KA15**		**3RV2011-0KA25**	
1.6	0.55	1.1 ... 1.6	21	100	**3RV2011-1AA15**		**3RV2011-1AA25**	
2	0.75	1.4 ... 2	26	100	**3RV2011-1BA15**		**3RV2011-1BA25**	
2.5	0.75	1.8 ... 2.5	33	100	**3RV2011-1CA15**		**3RV2011-1CA25**	
3.2	1.1	2.2 ... 3.2	42	100	**3RV2011-1DA15**		**3RV2011-1DA25**	
4	1.5	2.8 ... 4	52	100	**3RV2011-1EA15**		**3RV2011-1EA25**	
5	1.5	3.5 ... 5	65	100	**3RV2011-1FA15**		**3RV2011-1FA25**	
6.3	2.2	4.5 ... 6.3	82	100	**3RV2011-1GA15**		**3RV2011-1GA25**	
8	3	5.5 ... 8	104	100	**3RV2011-1HA15**		**3RV2011-1HA25**	
10	4	7 ... 10	130	100	**3RV2011-1JA15**		**3RV2011-1JA25**	
12.5	5.5	9 ... 12.5	163	100	**3RV2011-1KA15**		**3RV2011-1KA25**	
16	7.5	10 ... 16	208	55	**3RV2011-4AA15**		**3RV2011-4AA25**	
For special operating conditions down to -50 °C[2)3)]								
2	0.06	1.4 ... 2	2.6	100	**3RV2011-1BA15-0BA0**		**--**	
2.5	0.75	1.8 ... 2.5	33	100	**3RV2011-1CA15-0BA0**		**--**	
4	1.5	2.8 ... 4	52	100	**3RV2011-1EA15-0BA0**		**3RV2011-1EA25-0BA0**	
5	1.5	3.5 ... 5	65	100	**3RV2011-1FA15-0BA0**		**--**	
6.3	2.2	4.5 ... 6.3	82	100	**3RV2011-1GA15-0BA0**		**--**	
8	3	5.5 ... 8	104	100	**3RV2011-1HA15-0BA0**		**--**	
12.5	5.5	9 ... 12.5	163	100	**3RV2011-1KA15-0BA0**		**--**	
16	7.5	10 ... 16	208	55	**3RV2011-4AA15-0BA0**		**--**	
Size S0								
16	7.5	10 ... 16	208	55	**3RV2021-4AA15**		**3RV2021-4AA25**	
20	7.5	13 ... 20	260	55	**3RV2021-4BA15**		**3RV2021-4BA25**	
22	11	16 ... 22	286	55	**3RV2021-4CA15**		**3RV2021-4CA25**	
25	11	18 ... 25	325	55	**3RV2021-4DA15**		**3RV2021-4DA25**	
28	15	23 ... 28	364	55	**3RV2021-4NA15**		**3RV2021-4NA25**	
32[4)]	15	27 ... 32	400	55	**3RV2021-4EA15**		**3RV2021-4EA25**	
36[5)]	18.5	30 ... 36	432	20	**3RV2021-4PA15**		**--**	
40[5)]	18.5	34 ... 40	480	20	**3RV2021-4FA15**		**--**	
For special operating conditions down to -50 °C[2)3)]								
20	7.5	13 ... 20	260	55	**3RV2021-4BA15-0BA0**		**--**	
32[4)]	15	27 ... 32	400	55	**3RV2021-4EA15-0BA0**		**--**	

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) The 3RV20.1-.....-0BA0 motor starter protectors in sizes S00 and S0 have a mechanical endurance of 500 operating cycles.

3) The motor starter protectors do not have UL/CSA approval and are not certified either according to the European Explosion Protection Directive (ATEX) or according to the International Explosion Protection Standard (IECEx).

4) Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S2.

5) The devices must not be mounted side-by-side and they must not be assembled with link modules with contactors. A lateral clearance of 9 mm is required. For use with IE3 and IE4 motors we recommend using 3RV2 motor starter protectors size S2.

Auxiliary switches and other accessories can be ordered separately (see page 7/48 onwards).

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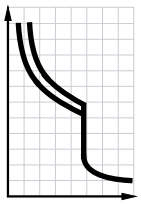
For motor protection ***IE3/IE4 ready*** **AC-3e**

CLASS 10, with transverse auxiliary switch (1 NO + 1 NC)



3RV2031-4..15,
3RV2031-4.A15-0BA0

3RV2032-4.A15

3RV2041-4.A15

Rated current	Suitable for three-phase motors[1] with *P*	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	**Screw terminals**		PU (UNIT, SET, M)	PS*	PG
I_n			$I >$	I_{cu}	Article No.	Price per PU			
A	kW	A	A	kA					
Size S2									
14	5.5	9.5 ... 14	208	65	**3RV2031-4SA15**		1	1 unit	41E
17	7.5	12 ... 17	260	65	**3RV2031-4TA15**		1	1 unit	41E
20	7.5	14 ... 20	260	65	**3RV2031-4BA15**		1	1 unit	41E
25	11	18 ... 25	325	65	**3RV2031-4DA15**		1	1 unit	41E
32	15	22 ... 32	416	65	**3RV2031-4EA15**		1	1 unit	41E
36	18.5	28 ... 36	520	65	**3RV2031-4PA15**		1	1 unit	41E
40	18.5	32 ... 40	585	65	**3RV2031-4UA15**		1	1 unit	41E
45	22	35 ... 45	650	65	**3RV2031-4VA15**		1	1 unit	41E
52	22	42 ... 52	741	65	**3RV2031-4WA15**		1	1 unit	41E
59	30	49 ... 59	845	65	**3RV2031-4XA15**		1	1 unit	41E
65	30	54 ... 65	845	65	**3RV2031-4JA15**		1	1 unit	41E
73	37	62 ... 73	949	65	**3RV2031-4KA15**		1	1 unit	41E
80[2]	37	70 ... 80	1 040	65	**3RV2031-4RA15**		1	1 unit	41E
For special operating conditions down to -50 °C[3][4]									
14	5.5	9.5 ... 14	208	65	**3RV2031-4SA15-0BA0**		1	1 unit	41E
20	7.5	14 ... 20	260	65	**3RV2031-4BA15-0BA0**		1	1 unit	41E
32	15	22 ... 32	416	65	**3RV2031-4EA15-0BA0**		1	1 unit	41E
45	22	35 ... 45	650	65	**3RV2031-4VA15-0BA0**		1	1 unit	41E
Size S2, with increased switching capacity									
14	5.5	9.5 ... 14	208	10	**3RV2032-4SA15**		1	1 unit	41E
17	7.5	12 ... 17	260	100	**3RV2032-4TA15**		1	1 unit	41E
20	7.5	14 ... 20	260	100	**3RV2032-4BA15**		1	1 unit	41E
25	11	18 ... 25	325	100	**3RV2032-4DA15**		1	1 unit	41E
32	15	22 ... 32	416	100	**3RV2032-4EA15**		1	1 unit	41E
36	18.5	28 ... 36	520	100	**3RV2032-4PA15**		1	1 unit	41E
40	18.5	32 ... 40	585	100	**3RV2032-4UA15**		1	1 unit	41E
45	22	35 ... 45	650	100	**3RV2032-4VA15**		1	1 unit	41E
52	22	42 ... 52	741	100	**3RV2032-4WA15**		1	1 unit	41E
59	30	49 ... 59	845	100	**3RV2032-4XA15**		1	1 unit	41E
65	30	54 ... 65	845	100	**3RV2032-4JA15**		1	1 unit	41E
73	37	62 ... 73	949	100	**3RV2032-4KA15**		1	1 unit	41E
80[2]	37	70 ... 80	1 040	100	**3RV2032-4RA15**		1	1 unit	41E
Size S3									
40	18.5	28 ... 40	520	65	**3RV2041-4FA15**		1	1 unit	41E
50	22	36 ... 50	650	65	**3RV2041-4HA15**		1	1 unit	41E
63	30	45 ... 63	819	65	**3RV2041-4JA15**		1	1 unit	41E
75	37	57 ... 75	975	65	**3RV2041-4KA15**		1	1 unit	41E
84	45	65 ... 84	1 170	65	**3RV2041-4RA15**		1	1 unit	41E
93	45	75 ... 93	1 300	65	**3RV2041-4YA15**		1	1 unit	41E
100[5]	45, 55	80 ... 100	1 300	65	**3RV2041-4MA15**		1	1 unit	41E

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) Suitable for use with IE3 and IE4 motors up to a starting current of 720 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S3.

3) The 3RV2031-.....-0BA0 motor starter protectors have a mechanical endurance of 250 operating cycles.

4) The motor starter protectors do not have UL/CSA approval and are not certified either according to the European Explosion Protection Directive (ATEX) or according to the International Explosion Protection Standard (IECEx).

5) Suitable for use with IE3 and IE4 motors up to a starting current of 780 A. For higher starting currents we recommend using 3VA circuit breakers (see Catalog LV 10).

Auxiliary switches and other accessories can be ordered separately (see page 7/48 onwards).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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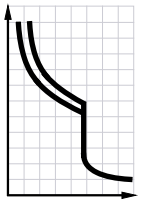
CLASS 20, without auxiliary switches



3RV2031-4.B10,
14 to 45 A;
3RV2031-4.B10-0BA0;
32 to 40 A

3RV2031-4.B10,
52 to 65 A

3RV2042-4.B10,
40 to 100 A

Rated current	Suitable for three-phase motors[1] with *P*	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	Screw terminals		PU (UNIT, SET, M)	PS*	PG
I_n			$I >$	I_{cu}	Article No.	Price per PU			
A	kW	A	A	kA					
Size S2									
14	5.5	9.5 ... 14	208	65	**3RV2031-4SB10**		1	1 unit	41E
17	7.5	12 ... 17	260	65	**3RV2031-4TB10**		1	1 unit	41E
20	7.5	14 ... 20	260	65	**3RV2031-4BB10**		1	1 unit	41E
25	11	18 ... 25	325	65	**3RV2031-4DB10**		1	1 unit	41E
32	15	22 ... 32	416	65	**3RV2031-4EB10**		1	1 unit	41E
36	18.5	28 ... 36	520	65	**3RV2031-4PB10**		1	1 unit	41E
40	18.5	32 ... 40	585	65	**3RV2031-4UB10**		1	1 unit	41E
45	22	35 ... 45	650	65	**3RV2031-4VB10**		1	1 unit	41E
52	22	42 ... 52	741	65	**3RV2031-4WB10**		1	1 unit	41E
59	30	49 ... 59	845	65	**3RV2031-4XB10**		1	1 unit	41E
65	30	54 ... 65	845	65	**3RV2031-4JB10**		1	1 unit	41E
For special operating conditions down to -50 °C[2][3]									
32	15	22 ... 32	416	65	**3RV2031-4EB10-0BA0**		1	1 unit	41E
36	18.5	28 ... 36	520	65	**3RV2031-4PB10-0BA0**		1	1 unit	41E
40	18.5	32 ... 40	585	65	**3RV2031-4UB10-0BA0**		1	1 unit	41E
Size S3, with increased switching capacity									
40	18.5	28 ... 40	520	100	**3RV2042-4FB10**		1	1 unit	41E
50	22	36 ... 50	650	100	**3RV2042-4HB10**		1	1 unit	41E
63	30	45 ... 63	819	100	**3RV2042-4JB10**		1	1 unit	41E
75	37	57 ... 75	975	100	**3RV2042-4KB10**		1	1 unit	41E
84	45	65 ... 84	1 170	100	**3RV2042-4RB10**		1	1 unit	41E
93	45	75 ... 93	1 300	100	**3RV2042-4YB10**		1	1 unit	41E
100[4]	45, 55	80 ... 100	1 300	100	**3RV2042-4MB10**		1	1 unit	41E

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[2] The 3RV2031-.....-0BA0 motor starter protectors have a mechanical endurance of 250 operating cycles.

[3] The motor starter protectors do not have UL/CSA approval and are not certified either according to the European Explosion Protection Directive (ATEX) or according to the International Explosion Protection Standard (IECEx).

[4] Suitable for use with IE3 and IE4 motors up to a starting current of 780 A. For higher starting currents we recommend using 3VA circuit breakers (see Catalog LV 10).

Auxiliary switches and other accessories can be ordered separately (see page 7/48 onwards).

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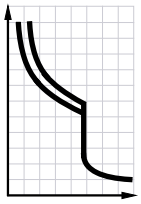
For motor protection ***IE3/IE4 ready*** **AC-3e**

CLASS 20, with transverse auxiliary switch (1 NO + 1 NC)



3RV2031-4.B15,
14 to 45 A

3RV2031-4.B15,
52 to 65 A

Rated current	Suitable for three-phase motors[1] with *P*	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	Screw terminals		PU (UNIT, SET, M)	PS*	PG
I_n		⊏	$I >$	I_{cu}	Article No.	Price per PU			
A	kW	A	A	kA					
Size S2									
14	5.5	9.5 ... 14	208	65	**3RV2031-4SB15**		1	1 unit	41E
17	7.5	12 ... 17	260	65	**3RV2031-4TB15**		1	1 unit	41E
20	7.5	14 ... 20	260	65	**3RV2031-4BB15**		1	1 unit	41E
25	11	18 ... 25	325	65	**3RV2031-4DB15**		1	1 unit	41E
32	15	22 ... 32	416	65	**3RV2031-4EB15**		1	1 unit	41E
36	18.5	28 ... 36	520	65	**3RV2031-4PB15**		1	1 unit	41E
40	18.5	32 ... 40	585	65	**3RV2031-4UB15**		1	1 unit	41E
45	22	35 ... 45	650	65	**3RV2031-4VB15**		1	1 unit	41E
52	22	42 ... 52	741	65	**3RV2031-4WB15**		1	1 unit	41E
59	30	49 ... 59	845	65	**3RV2031-4XB15**		1	1 unit	41E
65	30	54 ... 65	845	65	**3RV2031-4JB15**		1	1 unit	41E

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

Auxiliary switches and other accessories can be ordered separately (see page 7/48 onwards).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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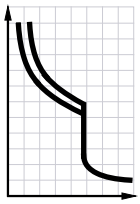
Selection and ordering data

CLASS 10, with overload relay function (automatic RESET), without auxiliary switches



3RV2111-..A10

3RV2121-4.A10

Rated current	Suitable for three-phase motors[1] with *P*	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	Screw terminals		PU (UNIT, SET, M)	PS*	PG
I_n			$I >$	I_{cu}	Article No.	Price per PU			
A	kW	A	A	kA					
Size S00[2]									
0.16	0.04	0.11 ... 0.16	2.1	100	**3RV2111-0AA10**		1	1 unit	41E
0.2	0.06	0.14 ... 0.2	2.6	100	**3RV2111-0BA10**		1	1 unit	41E
0.25	0.06	0.18 ... 0.25	3.3	100	**3RV2111-0CA10**		1	1 unit	41E
0.32	0.09	0.22 ... 0.32	4.2	100	**3RV2111-0DA10**		1	1 unit	41E
0.4	0.09	0.28 ... 0.4	5.2	100	**3RV2111-0EA10**		1	1 unit	41E
0.5	0.12	0.35 ... 0.5	6.5	100	**3RV2111-0FA10**		1	1 unit	41E
0.63	0.18	0.45 ... 0.63	8.2	100	**3RV2111-0GA10**		1	1 unit	41E
0.8	0.18	0.55 ... 0.8	10	100	**3RV2111-0HA10**		1	1 unit	41E
1	0.25	0.7 ... 1	13	100	**3RV2111-0JA10**		1	1 unit	41E
1.25	0.37	0.9 ... 1.25	16	100	**3RV2111-0KA10**		1	1 unit	41E
1.6	0.55	1.1 ... 1.6	21	100	**3RV2111-1AA10**		1	1 unit	41E
2	0.75	1.4 ... 2	26	100	**3RV2111-1BA10**		1	1 unit	41E
2.5	0.75	1.8 ... 2.5	33	100	**3RV2111-1CA10**		1	1 unit	41E
3.2	1.1	2.2 ... 3.2	42	100	**3RV2111-1DA10**		1	1 unit	41E
4	1.5	2.8 ... 4	52	100	**3RV2111-1EA10**		1	1 unit	41E
5	1.5	3.5 ... 5	65	100	**3RV2111-1FA10**		1	1 unit	41E
6.3	2.2	4.5 ... 6.3	82	100	**3RV2111-1GA10**		1	1 unit	41E
8	3	5.5 ... 8	104	100	**3RV2111-1HA10**		1	1 unit	41E
10	4	7 ... 10	130	100	**3RV2111-1JA10**		1	1 unit	41E
12.5	5.5	9 ... 12.5	163	100	**3RV2111-1KA10**		1	1 unit	41E
16	7.5	10 ... 16	208	55	**3RV2111-4AA10**		1	1 unit	41E
Size S0[2]									
16	7.5	10 ... 16	208	55	**3RV2121-4AA10**		1	1 unit	41E
20	7.5	13 ... 20	260	55	**3RV2121-4BA10**		1	1 unit	41E
22	11	16 ... 22	286	55	**3RV2121-4CA10**		1	1 unit	41E
25	11	18 ... 25	325	55	**3RV2121-4DA10**		1	1 unit	41E
28	15	23 ... 28	364	55	**3RV2121-4NA10**		1	1 unit	41E
32[3]	15	27 ... 32	400	55	**3RV2121-4EA10**		1	1 unit	41E

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[2] Accessories for mounting on the right and 3RV1915 3-phase busbars cannot be used.

[3] Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S2.

Auxiliary switches and other accessories can be ordered separately (see page 7/48 onwards).

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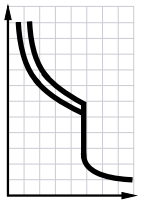
For motor protection with overload relay function IE3/IE4 ready AC-3e

CLASS 10, with overload relay function (Automatic RESET), without auxiliary switches



3RV2131-4.A10

3RV2142-4.A10

Rated current	Suitable for three-phase motors[1] with *P*	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	Screw terminals		PU (UNIT, SET, M)	PS*	PG
I_n			$I >$	I_{cu}	Article No.	Price per PU			
A	kW	A	A	kA					
Size S2[2]									
14	5.5	9.5 ... 14	208	65	**3RV2131-4SA10**		1	1 unit	41E
17	7.5	12 ... 17	260	65	**3RV2131-4TA10**		1	1 unit	41E
20	7.5	14 ... 20	260	65	**3RV2131-4BA10**		1	1 unit	41E
25	11	18 ... 25	325	65	**3RV2131-4DA10**		1	1 unit	41E
32	15	22 ... 32	416	65	**3RV2131-4EA10**		1	1 unit	41E
36	18.5	28 ... 36	520	65	**3RV2131-4PA10**		1	1 unit	41E
40	18.5	32 ... 40	585	65	**3RV2131-4UA10**		1	1 unit	41E
45	22	35 ... 45	650	65	**3RV2131-4VA10**		1	1 unit	41E
52	32	42 ... 52	741	65	**3RV2131-4WA10**		1	1 unit	41E
59	30	49 ... 59	845	65	**3RV2131-4XA10**		1	1 unit	41E
65	30	54 ... 65	845	65	**3RV2131-4JA10**		1	1 unit	41E
73	37	62 ... 73	949	65	**3RV2131-4KA10**		1	1 unit	41E
80[3]	37	70 ... 80	1 040	65	**3RV2131-4RA10**		1	1 unit	41E
Size S3, with increased switching capacity[2]									
40	18.5	28 ... 40	520	100	**3RV2142-4FA10**		1	1 unit	41E
50	22	36 ... 50	650	100	**3RV2142-4HA10**		1	1 unit	41E
63	30	45 ... 63	819	100	**3RV2142-4JA10**		1	1 unit	41E
75	37	57 ... 75	975	100	**3RV2142-4KA10**		1	1 unit	41E
84	45	65 ... 84	1 170	100	**3RV2142-4RA10**		1	1 unit	41E
93	45	75 ... 93	1 300	100	**3RV2142-4YA10**		1	1 unit	41E
100[4]	45, 55	80 ... 100	1 300	100	**3RV2142-4MA10**		1	1 unit	41E

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) Accessories for mounting on the right cannot be used.

3) Suitable for use with IE3 and IE4 motors up to a starting current of 720 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S3.

4) Suitable for use with IE3 and IE4 motors up to a starting current of 780 A. For higher starting currents we recommend using 3VA circuit breakers (see Catalog LV 10).

Auxiliary switches and other accessories can be ordered separately (see page 7/48 onwards).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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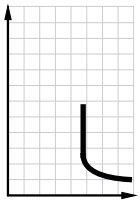
Selection and ordering data

Without auxiliary switches

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E



3RV2311-..C10

3RV2311-..C20,
3RV2311-4AC20-0BA0

Rated current	Suitable for three-phase motors[1] with *P*	Thermal overload release[2]	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	Screw terminals		Spring-loaded terminals	
I_n			$I >$	I_{cu}	Article No.	Price per PU	Article No.	Price per PU
A	kW	A	A	kA				
Size S00								
0.16	0.04	Without	2.1	100	**3RV2311-0AC10**		**3RV2311-0AC20**	
0.2	0.06	Without	2.6	100	**3RV2311-0BC10**		**3RV2311-0BC20**	
0.25	0.06	Without	3.3	100	**3RV2311-0CC10**		**3RV2311-0CC20**	
0.32	0.09	Without	4.2	100	**3RV2311-0DC10**		**3RV2311-0DC20**	
0.4	0.09	Without	5.2	100	**3RV2311-0EC10**		**3RV2311-0EC20**	
0.5	0.12	Without	6.5	100	**3RV2311-0FC10**		**3RV2311-0FC20**	
0.63	0.18	Without	8.2	100	**3RV2311-0GC10**		**3RV2311-0GC20**	
0.8	0.18	Without	10	100	**3RV2311-0HC10**		**3RV2311-0HC20**	
1	0.25	Without	13	100	**3RV2311-0JC10**		**3RV2311-0JC20**	
1.25	0.37	Without	16	100	**3RV2311-0KC10**		**3RV2311-0KC20**	
1.6	0.55	Without	21	100	**3RV2311-1AC10**		**3RV2311-1AC20**	
2	0.75	Without	26	100	**3RV2311-1BC10**		**3RV2311-1BC20**	
2.5	0.75	Without	33	100	**3RV2311-1CC10**		**3RV2311-1CC20**	
3.2	1.1	Without	42	100	**3RV2311-1DC10**		**3RV2311-1DC20**	
4	1.5	Without	52	100	**3RV2311-1EC10**		**3RV2311-1EC20**	
5	1.5	Without	65	100	**3RV2311-1FC10**		**3RV2311-1FC20**	
6.3	2.2	Without	82	100	**3RV2311-1GC10**		**3RV2311-1GC20**	
8	3	Without	104	100	**3RV2311-1HC10**		**3RV2311-1HC20**	
10	4	Without	130	100	**3RV2311-1JC10**		**3RV2311-1JC20**	
12.5	5.5	Without	163	100	**3RV2311-1KC10**		**3RV2311-1KC20**	
16	7.5	Without	208	55	**3RV2311-4AC10**		**3RV2311-4AC20**	
For special operating conditions down to -50 °C[3][4]								
16	7.5	Without	208	55	**--**		**3RV2311-4AC20-0BA0**	

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[2] For overload protection of the motors, appropriate overload relays must be used.

[3] The 3RV2311-.....-0BA0 motor starter protectors have a mechanical endurance of 500 operating cycles.

[4] The motor starter protectors do not have UL/CSA approval and are not certified either according to the European Explosion Protection Directive (ATEX) or according to the International Explosion Protection Standard (IECEx).

Auxiliary switches and other accessories can be ordered separately (see page 7/48 onwards).

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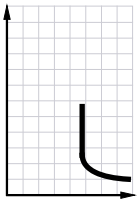
For starter combinations *IE3/IE4* ready AC-3e

Without auxiliary switches

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E



3RV2321-..C10

3RV2321-..C20,
3RV2321-4AC20-0BA0

Rated current	Suitable for three-phase motors[1] with *P*	Thermal overload release[2]	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	Screw terminals		Spring-loaded terminals	
I_n			$I >$	I_{cu}	Article No.	Price per PU	Article No.	Price per PU
A	kW	A	A	kA				
Size S0								
1.6	0.55	Without	21	100	**3RV2321-1AC10**		**3RV2321-1AC20**	
2	0.75	Without	26	100	**3RV2321-1BC10**		**3RV2321-1BC20**	
2.5	0.75	Without	33	100	**3RV2321-1CC10**		**3RV2321-1CC20**	
3.2	1.1	Without	42	100	**3RV2321-1DC10**		**3RV2321-1DC20**	
4	1.5	Without	52	100	**3RV2321-1EC10**		**3RV2321-1EC20**	
5	1.5	Without	65	100	**3RV2321-1FC10**		**3RV2321-1FC20**	
6.3	2.2	Without	82	100	**3RV2321-1GC10**		**3RV2321-1GC20**	
8	3	Without	104	100	**3RV2321-1HC10**		**3RV2321-1HC20**	
10	4	Without	130	100	**3RV2321-1JC10**		**3RV2321-1JC20**	
12.5	5.5	Without	163	100	**3RV2321-1KC10**		**3RV2321-1KC20**	
16	7.5	Without	208	55	**3RV2321-4AC10**		**3RV2321-4AC20**	
20	7.5	Without	260	55	**3RV2321-4BC10**		**3RV2321-4BC20**	
22	11	Without	286	55	**3RV2321-4CC10**		**3RV2321-4CC20**	
25	11	Without	325	55	**3RV2321-4DC10**		**3RV2321-4DC20**	
28	15	Without	364	55	**3RV2321-4NC10**		**3RV2321-4NC20**	
32[3]	15	Without	400	55	**3RV2321-4EC10**		**3RV2321-4EC20**	
36[4]	18.5	Without	432	20	**3RV2321-4PC10**		**--**	
40[4]	18.5	Without	480	20	**3RV2321-4FC10**		**--**	
For special operating conditions down to -50 °C[5][6]								
16	7.5	Without	208	55	**--**		**3RV2321-4AC20-0BA0**	

Auxiliary switches and other accessories can be ordered separately (see page 7/48 onwards).

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) For overload protection of the motors, appropriate overload relays must be used.

3) Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S2.

4) The devices must not be mounted side-by-side and they must not be assembled with link modules with contactors. A lateral clearance of 9 mm is required. For use with IE3 and IE4 motors we recommend using 3RV2 motor starter protectors size S2.

5) The 3RV2321-.....-0BA0 motor starter protectors have a mechanical endurance of 500 operating cycles.

6) The motor starter protectors do not have UL/CSA approval and are not certified either according to the European Explosion Protection Directive (ATEX) or according to the International Explosion Protection Standard (IECEx).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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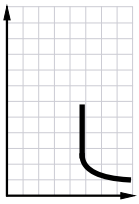
Without auxiliary switches



3RV2331-4.C10,
14 to 45 A

3RV2331-4.C10,
52 to 80 A

3RV2332-4.C10,
14 to 45 A

3RV2332-4.C10,
52 to 80 A

3RV234.-4.C10,
40 to 100 A

Rated current	Suitable for three-phase motors[1] with *P*	Thermal overload release[2]	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	Screw terminals		PU (UNIT, SET, M)	PS*	PG
I_n			$I >$	I_{cu}	Article No.	Price per PU			
A	kW	A	A	kA					
Size S2									
14	5.5	Without	208	65	**3RV2331-4SC10**		1	1 unit	41E
17	7.5	Without	260	65	**3RV2331-4TC10**		1	1 unit	41E
20	7.5	Without	260	65	**3RV2331-4BC10**		1	1 unit	41E
25	11	Without	325	65	**3RV2331-4DC10**		1	1 unit	41E
32	15	Without	416	65	**3RV2331-4EC10**		1	1 unit	41E
36	18.5	Without	520	65	**3RV2331-4PC10**		1	1 unit	41E
40	18.5	Without	585	65	**3RV2331-4UC10**		1	1 unit	41E
45	22	Without	650	65	**3RV2331-4VC10**		1	1 unit	41E
52	22	Without	741	65	**3RV2331-4WC10**		1	1 unit	41E
59	30	Without	845	65	**3RV2331-4XC10**		1	1 unit	41E
65	30	Without	845	65	**3RV2331-4JC10**		1	1 unit	41E
73	37	Without	949	65	**3RV2331-4KC10**		1	1 unit	41E
80[3]	37	Without	1040	65	**3RV2331-4RC10**		1	1 unit	41E
Size S2, with increased switching capacity									
14	5.5	Without	208	100	**3RV2332-4SC10**		1	1 unit	41E
17	7.5	Without	260	100	**3RV2332-4TC10**		1	1 unit	41E
20	7.5	Without	260	100	**3RV2332-4BC10**		1	1 unit	41E
25	11	Without	325	100	**3RV2332-4DC10**		1	1 unit	41E
32	15	Without	416	100	**3RV2332-4EC10**		1	1 unit	41E
36	18.5	Without	520	100	**3RV2332-4PC10**		1	1 unit	41E
40	18.5	Without	585	100	**3RV2332-4UC10**		1	1 unit	41E
45	22	Without	650	100	**3RV2332-4VC10**		1	1 unit	41E
52	22	Without	741	100	**3RV2332-4WC10**		1	1 unit	41E
59	30	Without	845	100	**3RV2332-4XC10**		1	1 unit	41E
65	30	Without	845	100	**3RV2332-4JC10**		1	1 unit	41E
73	37	Without	949	100	**3RV2332-4KC10**		1	1 unit	41E
80[3]	37	Without	1 040	100	**3RV2332-4RC10**		1	1 unit	41E
Size S3									
40	18.5	Without	520	65	**3RV2341-4FC10**		1	1 unit	41E
50	22	Without	650	65	**3RV2341-4HC10**		1	1 unit	41E
63	30	Without	819	65	**3RV2341-4JC10**		1	1 unit	41E
75	37	Without	975	65	**3RV2341-4KC10**		1	1 unit	41E
84	45	Without	1 170	65	**3RV2341-4RC10**		1	1 unit	41E
93	45	Without	1 300	65	**3RV2341-4YC10**		1	1 unit	41E
100[4]	45, 55	Without	1 300	65	**3RV2341-4MC10**		1	1 unit	41E
Size S3, with increased switching capacity									
40	18.5	Without	520	100	**3RV2342-4FC10**		1	1 unit	41E
50	22	Without	650	100	**3RV2342-4HC10**		1	1 unit	41E
63	30	Without	819	100	**3RV2342-4JC10**		1	1 unit	41E
75	37	Without	975	100	**3RV2342-4KC10**		1	1 unit	41E
84	45	Without	1 170	100	**3RV2342-4RC10**		1	1 unit	41E
93	45	Without	1 300	100	**3RV2342-4YC10**		1	1 unit	41E
100[4]	45, 55	Without	1 300	100	**3RV2342-4MC10**		1	1 unit	41E

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) For overload protection of the motors, appropriate overload relays must be used.

3) Suitable for use with IE3 and IE4 motors up to a starting current of 720 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S3.

4) Suitable for use with IE3 and IE4 motors up to a starting current of 780 A. For higher starting currents we recommend using 3VA circuit breakers (see Catalog LV 10).

Auxiliary switches and other accessories can be ordered separately (see page 7/48 onwards).

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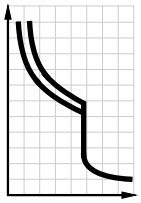
For transformer protection

Selection and ordering data

CLASS 10, without auxiliary switches

Motor starter protectors for the protection of transformers with high inrush current

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E



3RV2411-..A10,
3RV2411-..A10-0BA0

3RV2411-..A20

Rated current	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	Screw terminals		Spring-loaded terminals	
I_n		$I >$	I_{cu}	Article No.	Price per PU	Article No.	Price per PU
A	A	A	kA				
Size S00							
0.16	0.11 ... 0.16	3.3	100	**3RV2411-0AA10**		**3RV2411-0AA20**	
0.2	0.14 ... 0.2	4.2	100	**3RV2411-0BA10**		**3RV2411-0BA20**	
0.25	0.18 ... 0.25	5.2	100	**3RV2411-0CA10**		**3RV2411-0CA20**	
0.32	0.22 ... 0.32	6.5	100	**3RV2411-0DA10**		**3RV2411-0DA20**	
0.4	0.28 ... 0.4	8.2	100	**3RV2411-0EA10**		**3RV2411-0EA20**	
0.5	0.35 ... 0.5	10	100	**3RV2411-0FA10**		**3RV2411-0FA20**	
0.63	0.45 ... 0.63	13	100	**3RV2411-0GA10**		**3RV2411-0GA20**	
0.8	0.55 ... 0.8	16	100	**3RV2411-0HA10**		**3RV2411-0HA20**	
1	0.7 ... 1	21	100	**3RV2411-0JA10**		**3RV2411-0JA20**	
1.25	0.9 ... 1.25	26	100	**3RV2411-0KA10**		**3RV2411-0KA20**	
1.6	1.1 ... 1.6	33	100	**3RV2411-1AA10**		**3RV2411-1AA20**	
2	1.4 ... 2	42	100	**3RV2411-1BA10**		**3RV2411-1BA20**	
2.5	1.8 ... 2.5	52	100	**3RV2411-1CA10**		**3RV2411-1CA20**	
3.2	2.2 ... 3.2	65	100	**3RV2411-1DA10**		**3RV2411-1DA20**	
4	2.8 ... 4	82	100	**3RV2411-1EA10**		**3RV2411-1EA20**	
5	3.5 ... 5	104	100	**3RV2411-1FA10**		**3RV2411-1FA20**	
6.3	4.5 ... 6.3	130	100	**3RV2411-1GA10**		**3RV2411-1GA20**	
8	5.5 ... 8	163	100	**3RV2411-1HA10**		**3RV2411-1HA20**	
10	7 ... 10	208	100	**3RV2411-1JA10**		**3RV2411-1JA20**	
12.5	9 ... 12.5	260	100	**3RV2411-1KA10**		**3RV2411-1KA20**	
16	10 ... 16	286	55	**3RV2411-4AA10**		**3RV2411-4AA20**	
Without phase asymmetry/failure detection for 1-, 2- and 3-phase loads[1]							
0.4	0.28 ... 0.4	8.2	100	--		**3RV2411-0EA20-0DA0**	
1.6	1.1 ... 1.6	33	100	--		**3RV2411-1AA20-0DA0**	
2	1.4 ... 2	42	100	--		**3RV2411-1BA20-0DA0**	
2.5	1.8 ... 2.5	52	100	--		**3RV2411-1CA20-0DA0**	
3.2	2.2 ... 3.2	65	100	--		**3RV2411-1DA20-0DA0**	
4	2.8 ... 4	82	100	--		**3RV2411-1EA20-0DA0**	
5	3.5 ... 5	104	100	--		**3RV2411-1FA20-0DA0**	
6.3	4.5 ... 6.3	130	100	--		**3RV2411-1GA20-0DA0**	
8	5.5 ... 8	163	100	--		**3RV2411-1HA20-0DA0**	
10	7 ... 10	208	100	--		**3RV2411-1JA20-0DA0**	
For special operating conditions down to -50 °C[2][3]							
2.5	1.8 ... 2.5	52	100	**3RV2411-1CA10-0BA0**		--	
6.3	4.5 ... 6.3	130	100	**3RV2411-1GA10-0BA0**		--	
8	5.5 ... 8	163	100	**3RV2411-1HA10-0BA0**		--	
10	7 ... 10	208	100	**3RV2411-1JA10-0BA0**		--	
16	10 ... 16	286	55	**3RV2411-4AA10-0BA0**		--	

1) The motor starter protectors do not have UL/CSA approval and are not certified either according to the European Explosion Protection Directive (ATEX) or according to the International Explosion Protection Standard (IECEx).

2) The motor starter protectors have IEC approval, but not UL/CSA approval.

3) The 3RV2411-.....-0BA0 motor starter protectors have a mechanical endurance of 500 operating cycles.

Auxiliary switches and other accessories can be ordered separately (see page 7/48 onwards).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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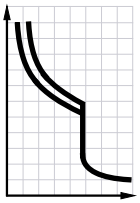
CLASS 10, without auxiliary switches

Motor starter protectors for the protection of transformers with high inrush current

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E



3RV2421-..A10,
3RV2421-4BA10-0BA0,
32 A

3RV2421-4.A20;
3RV2421-4.A20-0DA0,
16 and 20 A

Rated current	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	Screw terminals		Spring-loaded terminals	
I_n		$I >$	I_{cu}	Article No.	Price per PU	Article No.	Price per PU
A	A	A	kA				
Size S0							
0.16	0.11 ... 0.16	3.3	100	**3RV2421-0AA10**		--	
0.2	0.14 ... 0.2	4.2	100	**3RV2421-0BA10**		--	
0.25	0.18 ... 0.25	5.2	100	**3RV2421-0CA10**		--	
0.32	0.22 ... 0.32	6.5	100	**3RV2421-0DA10**		--	
0.4	0.28 ... 0.4	8.2	100	**3RV2421-0EA10**		--	
0.5	0.35 ... 0.5	10	100	**3RV2421-0FA10**		--	
0.63	0.45 ... 0.63	13	100	**3RV2421-0GA10**		--	
0.8	0.55 ... 0.8	16	100	**3RV2421-0HA10**		--	
1	0.7 ... 1	21	100	**3RV2421-0JA10**		--	
1.25	0.9 ... 1.25	26	100	**3RV2421-0KA10**		--	
1.6	1.1 ... 1.6	33	100	**3RV2421-1AA10**		--	
2	1.4 ... 2	42	100	**3RV2421-1BA10**		--	
2.5	1.8 ... 2.5	52	100	**3RV2421-1CA10**		--	
3.2	2.2 ... 3.2	65	100	**3RV2421-1DA10**		--	
4	2.8 ... 4	82	100	**3RV2421-1EA10**		--	
5	3.5 ... 5	104	100	**3RV2421-1FA10**		--	
6.3	4.5 ... 6.3	130	100	**3RV2421-1GA10**		--	
8	5.5 ... 8	163	100	**3RV2421-1HA10**		--	
10	7 ... 10	208	100	**3RV2421-1JA10**		--	
12.5	9 ... 12.5	260	100	**3RV2421-1KA10**		--	
16	10 ... 16	286	55	**3RV2421-4AA10**		**3RV2421-4AA20**	
20	13 ... 20	325	55	**3RV2421-4BA10**		**3RV2421-4BA20**	
22	16 ... 22	364	55	**3RV2421-4CA10**		**3RV2421-4CA20**	
25	18 ... 25	400	55	**3RV2421-4DA10**		**3RV2421-4DA20**	
***Without phase asymmetry/failure detection for 1-, 2- and 3-phase loads*[1)]**							
16	10 ... 16	286	55	--		**3RV2421-4AA20-0DA0**	
20	13 ... 20	325	55	--		**3RV2421-4BA20-0DA0**	
***For special operating conditions down to -50 °C*[2)3)]**							
20	13 ... 20	325	55	**3RV2421-4BA10-0BA0**		--	

1) The motor starter protectors do not have UL/CSA approval and are not certified either according to the European Explosion Protection Directive (ATEX) or according to the International Explosion Protection Standard (IECEx).

2) The motor starter protectors have IEC approval, but not UL/CSA approval.

3) The 3RV2431-.....-0BA0 motor starter protectors have a mechanical endurance of 250 operating cycles.

Auxiliary switches and other accessories can be ordered separately (see page 7/48 onwards).

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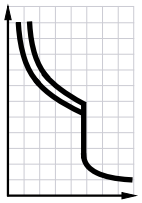
For transformer protection

CLASS 10, without auxiliary switches

Motor starter protectors for the protection of transformers with high inrush current

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E



3RV2431-4.A10,
14 to 40 A;
3RV2431-4EA10-0BA0,
32 A

3RV2431-4.A10,
45 to 65 A

Rated current	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	Screw terminals		Spring-loaded terminals	
I_n		$I >$	I_{cu}	Article No.	Price per PU	Article No.	Price per PU
A	A	A	kA				
Size S2							
14	9.5 ... 14	328	65	**3RV2431-4SA10**		--	
17	12 ... 17	410	65	**3RV2431-4TA10**		--	
20	14 ... 20	410	65	**3RV2431-4BA10**		--	
25	18 ... 25	512	65	**3RV2431-4DA10**		--	
32	22 ... 32	656	65	**3RV2431-4EA10**		--	
36	28 ... 36	820	65	**3RV2431-4PA10**		--	
40	32 ... 40	820	65	**3RV2431-4UA10**		--	
45	35 ... 45	922	65	**3RV2431-4VA10**		--	
52	42 ... 52	1 025	65	**3RV2431-4WA10**		--	
59	49 ... 59	1 040	65	**3RV2431-4XA10**		--	
65	54 ... 65	1 040	65	**3RV2431-4JA10**		--	
For special operating conditions down to -50 °C [1)2)]							
32	22 ... 32	656	65	**3RV2431-4EA10-0BA0**		--	

1) The motor starter protectors do not have UL/CSA approval and are not certified either according to the European Explosion Protection Directive (ATEX) or according to the International Explosion Protection Standard (IECEx).

2) The 3RV2431-.....-0BA0 motor starter protectors have a mechanical endurance of 250 operating cycles.

Auxiliary switches and other accessories can be ordered separately (see page 7/48 onwards).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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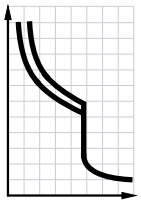
CLASS 10, with transverse auxiliary switch (1 NO + 1 NC)

Motor starter protectors for the protection of transformers with high inrush current



3RV2411-..A15

3RV2421-4.A15

Rated current	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
I_n		$I >$	I_{cu}	Article No. Price per PU			
A	A	A	kA				
Size S00							
0.16	0.11 ... 0.16	3.3	100	**3RV2411-0AA15**	1	1 unit	41E
0.2	0.14 ... 0.2	4.2	100	**3RV2411-0BA15**	1	1 unit	41E
0.25	0.18 ... 0.25	5.2	100	**3RV2411-0CA15**	1	1 unit	41E
0.32	0.22 ... 0.32	6.5	100	**3RV2411-0DA15**	1	1 unit	41E
0.4	0.28 ... 0.4	8.2	100	**3RV2411-0EA15**	1	1 unit	41E
0.5	0.35 ... 0.5	10	100	**3RV2411-0FA15**	1	1 unit	41E
0.63	0.45 ... 0.63	13	100	**3RV2411-0GA15**	1	1 unit	41E
0.8	0.55 ... 0.8	16	100	**3RV2411-0HA15**	1	1 unit	41E
1	0.7 ... 1	21	100	**3RV2411-0JA15**	1	1 unit	41E
1.25	0.9 ... 1.25	26	100	**3RV2411-0KA15**	1	1 unit	41E
1.6	1.1 ... 1.6	33	100	**3RV2411-1AA15**	1	1 unit	41E
2	1.4 ... 2	42	100	**3RV2411-1BA15**	1	1 unit	41E
2.5	1.8 ... 2.5	52	100	**3RV2411-1CA15**	1	1 unit	41E
3.2	2.2 ... 3.2	65	100	**3RV2411-1DA15**	1	1 unit	41E
4	2.8 ... 4	82	100	**3RV2411-1EA15**	1	1 unit	41E
5	3.5 ... 5	104	100	**3RV2411-1FA15**	1	1 unit	41E
6.3	4.5 ... 6.3	130	100	**3RV2411-1GA15**	1	1 unit	41E
8	5.5 ... 8	163	100	**3RV2411-1HA15**	1	1 unit	41E
10	7 ... 10	208	100	**3RV2411-1JA15**	1	1 unit	41E
12.5	9 ... 12.5	260	100	**3RV2411-1KA15**	1	1 unit	41E
16	10 ... 16	286	55	**3RV2411-4AA15**	1	1 unit	41E
Size S0							
16	10 ... 16	286	55	**3RV2421-4AA15**	1	1 unit	41E
20	13 ... 20	325	55	**3RV2421-4BA15**	1	1 unit	41E
22	16 ... 22	364	55	**3RV2421-4CA15**	1	1 unit	41E
25	18 ... 25	400	55	**3RV2421-4DA15**	1	1 unit	41E

Auxiliary switches and other accessories can be ordered separately (see page 7/48 onwards).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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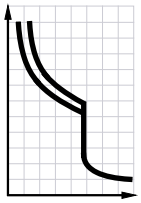
Selection and ordering data

CLASS 10, without auxiliary switches

The motor starter protectors are suitable for 1-, 2- and 3-phase loads and do not feature phase asymmetry and phase failure detection. They do not have UL/CSA approval and are not certified either according to the European Explosion Protection Directive (ATEX) or according to the International Explosion Protection Standard (IECEx).

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E



3RV2021-..A10-0DA0

3RV2021-1EA20-0DA0

3RV2041-4.A10-0DA0

Rated current	Suitable for three-phase motors[1] with ►	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	Screw terminals		Spring-loaded terminals	
I_n			$I >$	I_{cu}	Article No.	Price per PU	Article No.	Price per PU
A	kW	A	A	kA				
Size S0								
4	1.5	2.8 ... 4	52	100	**3RV2021-1EA10-0DA0**		**3RV2021-1EA20-0DA0**	
6.3	2.2	4.5 ... 6.3	82	100	**3RV2021-1GA10-0DA0**		**--**	
8	3	5.5 ... 8	104	100	**3RV2021-1HA10-0DA0**		**--**	
10	4	7 ... 10	130	100	**3RV2021-1JA10-0DA0**		**--**	
12.5	5.5	9 ... 12.5	163	100	**3RV2021-1KA10-0DA0**		**--**	
16	7.5	10 ... 16	208	55	**3RV2021-4AA10-0DA0**		**--**	
20	7.5	13 ... 20	260	55	**3RV2021-4BA10-0DA0**		**--**	
25	11	18 ... 25	325	55	**3RV2021-4DA10-0DA0**		**--**	
32	15	27 ... 32	400	55	**3RV2021-4EA10-0DA0**		**--**	
Size S3								
40	18.5	28 ... 40	520	65	**3RV2041-4FA10-0DA0**		**--**	
50	22	36 ... 50	650	65	**3RV2041-4HA10-0DA0**		**--**	
63	30	45 ... 63	819	65	**3RV2041-4JA10-0DA0**		**--**	
84	45	65 ... 84	1 170	65	**3RV2041-4RA10-0DA0**		**--**	
100	45, 55	80 ... 100	1 300	65	**3RV2041-4MA10-0DA0**		**--**	

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

Auxiliary switches and other accessories can be ordered separately (see page 7/48 onwards).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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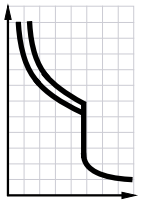
Selection and ordering data

Without auxiliary switches

Circuit breakers for system protection and non-motor loads according to UL/CSA



3RV2711-..D10

3RV2721-4.D10

3RV2742-5.D10

Rated current[1]	Thermal overload release (non-adjustable)	Instantaneous electronic release	Short-circuit breaking capacity at		Screw terminals		PU (UNIT, SET, M)	PS*	PG
			480 Y/277 V AC[2]	480 V AC	Article No.	Price per PU			
I_n[1]		I >	I_{bc}						
A	A	A	kA	kA					
Size S00									
0.16	0.16	2.1	65	--	**3RV2711-0AD10**		1	1 unit	41E
0.2	0.2	2.6	65	--	**3RV2711-0BD10**		1	1 unit	41E
0.25	0.25	3.3	65	--	**3RV2711-0CD10**		1	1 unit	41E
0.32	0.32	4.2	65	--	**3RV2711-0DD10**		1	1 unit	41E
0.4	0.4	5.2	65	--	**3RV2711-0ED10**		1	1 unit	41E
0.5	0.5	6.5	65	--	**3RV2711-0FD10**		1	1 unit	41E
0.63	0.63	8.2	65	--	**3RV2711-0GD10**		1	1 unit	41E
0.8	0.8	10	65	--	**3RV2711-0HD10**		1	1 unit	41E
1	1	13	65	--	**3RV2711-0JD10**		1	1 unit	41E
1.25	1.25	16	65	--	**3RV2711-0KD10**		1	1 unit	41E
1.6	1.6	21	65	--	**3RV2711-1AD10**		1	1 unit	41E
2	2	26	65	--	**3RV2711-1BD10**		1	1 unit	41E
2.5	2.5	33	65	--	**3RV2711-1CD10**		1	1 unit	41E
3.2	3.2	42	65	--	**3RV2711-1DD10**		1	1 unit	41E
4	4	52	65	--	**3RV2711-1ED10**		1	1 unit	41E
5	5	65	65	--	**3RV2711-1FD10**		1	1 unit	41E
6.3	6.3	82	65	--	**3RV2711-1GD10**		1	1 unit	41E
8	8	104	65	--	**3RV2711-1HD10**		1	1 unit	41E
10	10	130	65	--	**3RV2711-1JD10**		1	1 unit	41E
12.5	12.5	163	65	--	**3RV2711-1KD10**		1	1 unit	41E
15	15	208	65	--	**3RV2711-4AD10**		1	1 unit	41E
Size S0									
20	20	260	50	--	**3RV2721-4BD10**		1	1 unit	41E
22	22	286	50	--	**3RV2721-4CD10**		1	1 unit	41E
Size S3[3]									
10	10	150	65	65	**3RV2742-5AD10**		1	1 unit	41E
15	15	225	65	65	**3RV2742-5BD10**		1	1 unit	41E
20	20	260	65	65	**3RV2742-5CD10**		1	1 unit	41E
25	25	325	65	65	**3RV2742-5DD10**		1	1 unit	41E
30	30	390	65	65	**3RV2742-5ED10**		1	1 unit	41E
35	35	455	65	--	**3RV2742-5FD10**		1	1 unit	41E
40	40	520	65	--	**3RV2742-5GD10**		1	1 unit	41E
45	45	585	65	--	**3RV2742-5HD10**		1	1 unit	41E
50	50	650	65	--	**3RV2742-5JD10**		1	1 unit	41E
60	60	780	65	--	**3RV2742-5LD10**		1	1 unit	41E
70	70	910	65	--	**3RV2742-5QD10**		1	1 unit	41E

1) Rated value 100% according to UL 489 and IEC 60947-2 ("100% rated breaker").

2) Values for 600 Y/347 V AC, see page 7/17.

3) Transverse auxiliary switches cannot be used for 3RV2742.

Lateral and transverse auxiliary switches can be ordered separately (see from page 7/48 onwards).

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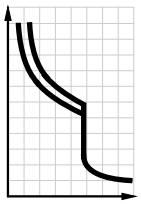
For transformer protection according to UL 489/CSA C22.2 No. 5

Selection and ordering data

Without auxiliary switches

Circuit breakers for system and transformer protection according to UL/CSA, specially designed for transformers with high inrush current



3RV2811-..D10

3RV2821-4.D10

Rated current[1]	Thermal overload release (non-adjustable)	Instantaneous electronic release	Short-circuit breaking capacity at 480 Y/277 V AC[2]	Screw terminals		PU (UNIT, SET, M)	PS*	PG
I_n[1]		$I >$	I_{bc}	Article No.	Price per PU			
A	A	A	kA					
Size S00								
0.16	0.16	3.3	65	**3RV2811-0AD10**		1	1 unit	41E
0.2	0.2	4.2	65	**3RV2811-0BD10**		1	1 unit	41E
0.25	0.25	5.2	65	**3RV2811-0CD10**		1	1 unit	41E
0.32	0.32	6.5	65	**3RV2811-0DD10**		1	1 unit	41E
0.4	0.4	8.2	65	**3RV2811-0ED10**		1	1 unit	41E
0.5	0.5	10	65	**3RV2811-0FD10**		1	1 unit	41E
0.63	0.63	13	65	**3RV2811-0GD10**		1	1 unit	41E
0.8	0.8	16	65	**3RV2811-0HD10**		1	1 unit	41E
1	1	21	65	**3RV2811-0JD10**		1	1 unit	41E
1.25	1.25	26	65	**3RV2811-0KD10**		1	1 unit	41E
1.6	1.6	33	65	**3RV2811-1AD10**		1	1 unit	41E
2	2	42	65	**3RV2811-1BD10**		1	1 unit	41E
2.5	2.5	52	65	**3RV2811-1CD10**		1	1 unit	41E
3.2	3.2	65	65	**3RV2811-1DD10**		1	1 unit	41E
4	4	82	65	**3RV2811-1ED10**		1	1 unit	41E
5	5	104	65	**3RV2811-1FD10**		1	1 unit	41E
6.3	6.3	130	65	**3RV2811-1GD10**		1	1 unit	41E
8	8	163	65	**3RV2811-1HD10**		1	1 unit	41E
10	10	208	65	**3RV2811-1JD10**		1	1 unit	41E
12.5	12.5	260	65	**3RV2811-1KD10**		1	1 unit	41E
15	15	286	65	**3RV2811-4AD10**		1	1 unit	41E
Size S0								
20	20	325	50	**3RV2821-4BD10**		1	1 unit	41E
22	22	364	50	**3RV2821-4CD10**		1	1 unit	41E

[1] Rated value 100% according to UL 489 and IEC 60947-2 ("100% rated breaker").

[2] Values for 600 Y/347 V AC, see page 7/17.

Lateral and transverse auxiliary switches can be ordered separately (see from page 7/48 onwards).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

Mounting location and function

The 3RV2 motor starter protectors/circuit breakers have three main contact elements. In order to achieve maximum flexibility, auxiliary switches, signaling switches, auxiliary releases and isolator modules can be supplied separately.

These components are easily fitted to the switches without the use of any tools according to requirements.

Overview graphic, see page 7/6.

Front side Notes: • A maximum of four auxiliary contacts with auxiliary switches can be mounted on each motor starter protector/circuit breaker. • Transverse auxiliary switches cannot be used for circuit breaker 3RV2742 (size S3).	**Transverse auxiliary switches, solid-state compatible transverse auxiliary switches** 1 NO + 1 NC or 2 NO or 1 CO	An auxiliary switch can be inserted transversely on the front. The overall width of the motor starter protectors/circuit breakers remains unchanged.
Left-hand side Notes: • A maximum of four auxiliary contacts with auxiliary switches can be mounted on each motor starter protector/circuit breaker. • Lateral auxiliary switches (two contacts) and signaling switches can be mounted separately or together. • Signaling switches cannot be used for 3RV1011, 3RV27 and 3RV28 motor starter protectors/circuit breakers. • Only lateral auxiliary switches can be used for 3RV2742 (size S3).	**Lateral auxiliary switches (two contacts)** 1 NO + 1 NC or 2 NO or 2 NC	One of the three lateral auxiliary switches can be mounted on the left side per motor starter protector/circuit breaker. The contacts of the auxiliary switch close and open together with the main contacts of the motor starter protector/circuit breaker. The width of the lateral auxiliary switch with two contacts is 9 mm.
	Lateral auxiliary switches (four contacts) 2 NO + 2 NC	One lateral auxiliary switch with four contacts can be mounted on the left side per motor starter protector/circuit breaker. The contacts of the auxiliary switch close and open together with the main contacts of the motor starter protector/circuit breaker. The width of the lateral auxiliary switch with four contacts is 18 mm.
	Signaling switches Tripping 1 NO + 1 NC Short circuit 1 NO + 1 NC	One signaling switch can be mounted on the left side of each motor starter protector. The signaling switch has two contact systems. One contact system always signals tripping irrespective of whether this was caused by a short circuit, an overload or an auxiliary release. The other contact system only switches in the event of a short circuit. There is no signaling as a result of switching off with the actuator. In order to be able to switch on the motor starter protector again after a short circuit, the signaling switch must be reset manually after the error cause has been eliminated. The width of the signaling switch is 18 mm.
Right-hand side Notes: • One auxiliary release can be mounted per motor starter protector/circuit breaker. • Accessories cannot be mounted on the right-hand side of the 3RV21 motor starter protectors for motor protection with overload relay function.	**Auxiliary releases**	
	Shunt releases	For remote-controlled tripping of the motor starter protector/circuit breaker. The release coil should only be energized for short periods (see circuit diagrams).
	or	
	Undervoltage releases	Trips the motor starter protector/circuit breaker when the voltage is interrupted and prevents the motor from being restarted accidentally when the voltage is restored. Used for remote-controlled tripping of the motor starter protector/circuit breaker. Particularly suitable for EMERGENCY OFF disconnection by way of corresponding EMERGENCY OFF pushbuttons according to IEC 60204-1.
	or	
	Undervoltage releases with leading auxiliary contacts 2 NO Own version for 3RV1011	Function and use as for the undervoltage release without leading auxiliary contacts, but with the following additional function: the auxiliary contacts will open in switch position OFF to deenergize the coil of the undervoltage release, thus interrupting energy consumption. In the "tripped" position, these auxiliary contacts are not guaranteed to open. The leading contacts permit the motor starter protector/circuit breaker to reclose. The width of the auxiliary release is 18 mm.
Top Notes: • Isolator modules cannot be used for 3RV1011, 3RV27 and 3RV28 motor starter protectors/circuit breakers. • The isolator module for size S2 can be used only with 3RV2 motor starter protectors/circuit breakers up to max. 65 A. • The isolator module cannot be used with the transverse auxiliary switch.	**Isolator modules**	Isolator modules can be mounted to the upper connection side of the motor starter protectors. The supply cable is connected to the motor starter protector through the isolator module. The plug can only be unplugged when the motor starter protector is open and isolates all 3 poles of the motor starter protector from the network. The shock-protected isolation point is clearly visible and secured with a padlock to prevent reinsertion of the plug.

For a complete overview of which accessories can be used for the various motor starter protectors/circuit breakers, see page 7/2.

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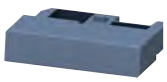
Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit (unless otherwise specified)
PG = 41E

	Version	For motor starter protectors/ circuit breakers	Screw terminals		Spring-loaded terminals	
		Size	Article No.	Price per PU	Article No.	Price per PU
Auxiliary switches[1]						
3RV2901-1E	**Transverse auxiliary switches**[2] For front mounting					
	1 CO	S00 ... S3	**3RV2901-1D**		--	
	1 NO + 1 NC		**3RV2901-1E**		**3RV2901-2E**	
	2 NO		**3RV2901-1F**		**3RV2901-2F**	
3RV2901-2E	**Solid-state compatible transverse auxiliary switches**[2] For mounting on the front, for operation in dusty atmosphere and in solid-state circuits with low operating currents					
3RV2901-1G	1 CO	S00 ... S3	**3RV2901-1G**		--	
 3RV2901-0H	**Covers for transverse auxiliary switches** (PS* = 10 units)	S00 ... S3	**3RV2901-0H**		--	
3RV2901-1A 3RV2901-2A	**Lateral auxiliary switches** For mounting on the left					
	1 NO + 1 NC	S00 ... S3	**3RV2901-1A**		**3RV2901-2A**	
	2 NO		**3RV2901-1B**		**3RV2901-2B**	
	2 NC		**3RV2901-1C**		**3RV2901-2C**	
	2 NO + 2 NC		**3RV2901-1J**		--	
Signaling switches[3]						
3RV2921-1M 3RV2921-2M	**Signaling switches** One signaling switch can be mounted on the left per motor starter protector. Separate tripped and short-circuit alarms, 1 NO + 1 NC each	S00[5] ... S3	**3RV2921-1M**		**3RV2921-2M**	
Isolator modules[3][4]						
3RV2928-1A 3RV2938-1A	**Isolator modules** Visible isolating distance for isolating individual motor starter protectors from the network, lockable in disconnected position	S00[5], S0	**3RV2928-1A**		--	
		S2	**3RV2938-1A**		--	

1) Each motor starter protector/circuit breaker can be fitted with one transverse and one lateral auxiliary switch. The lateral auxiliary switch with 2 NO + 2 NC is used without a transverse auxiliary switch.
2) Not for 3RV2742 circuit breakers.
3) This accessory cannot be used for the 3RV27 and 3RV28 circuit breakers (sizes S00, S0, S3).
4) The isolator module for size S2 can be used only with 3RV2 motor starter protectors/circuit breakers up to max. 65 A. Similarly, it cannot be used with the transverse auxiliary switch
5) Not for 3RV1011 motor starter protectors.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E

3RV2902-1AV0

3RV2902-2AV0

3RV2922-1CP0

3RV2902-2DB0

Rated control supply voltage U_s					For motor starter protectors/ circuit breakers	**Screw terminals**		**Spring-loaded terminals**	
AC 50 Hz	AC 60 Hz	AC 50/60 Hz 100% ON period[1]	AC/DC 50/60 Hz, DC 5 s ON period[2]	DC		Article No.	Price per PU	Article No.	Price per PU
V	V	V	V	V	Size				
Auxiliary releases[3]									
Undervoltage releases									
--	--	--	--	24	S00 ... S3	**3RV2902-1AB4**		**--**	
24	24	--	--	--	S00 ... S3	**3RV2902-1AB0**		**--**	
110	120	--	--	--	S00 ... S3	**3RV2902-1AF0**		**--**	
--	208	--	--	--	S00 ... S3	**3RV2902-1AM1**		**--**	
230	240	--	--	--	S00 ... S3	**3RV2902-1AP0**		**3RV2902-2AP0**	
400	440	--	--	--	S00 ... S3	**3RV2902-1AV0**		**3RV2902-2AV0**	
415	480	--	--	--	S00 ... S3	**3RV2902-1AV1**		**--**	
500	600	--	--	--	S00 ... S3	**3RV2902-1AS0**		**--**	
Undervoltage releases with leading auxiliary contacts 2 NO									
24	24	--	--	--	S00[4] ... S3	**3RV2922-1CB0**		**--**	
230	240	--	--	--	S00[4] ... S3	**3RV2922-1CP0**		**3RV2922-2CP0**	
400	440	--	--	--	S00[4] ... S3	**3RV2922-1CV0**		**3RV2922-2CV0**	
415	480	--	--	--	S00[4] ... S3	**3RV2922-1CV1**		**3RV2922-2CV1**	
Shunt releases									
--	--	20 ... 24	20 ... 70	--	S00 ... S3	**3RV2902-1DB0**		**3RV2902-2DB0**	
--	--	90 ... 110	70 ... 190	--	S00 ... S3	**3RV2902-1DF0**		**3RV2902-2DF0**	
--	--	210 ... 240	190 ... 330	--	S00 ... S3	**3RV2902-1DP0**		**3RV2902-2DP0**	
--	--	350 ... 415	330 ... 500	--	S00 ... S3	**3RV2902-1DV0**		**--**	
--	--	500	500	--	S00 ... S3	**3RV2902-1DS0**		**--**	

1) The voltage range is valid for 100% (infinite) ON period. The response voltage lies at 0.9 of the lower limit of the voltage range.

2) The voltage range is valid for 5 s ON period at 50/60 Hz AC and DC. The response voltage lies at 0.85 of the lower limit of the voltage range.

3) One auxiliary release can be mounted on the right per motor starter protector/circuit breaker (does not apply to 3RV21 motor starter protectors/circuit breakers with overload relay function).

4) Not for 3RV1011 motor starter protectors.

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Overview

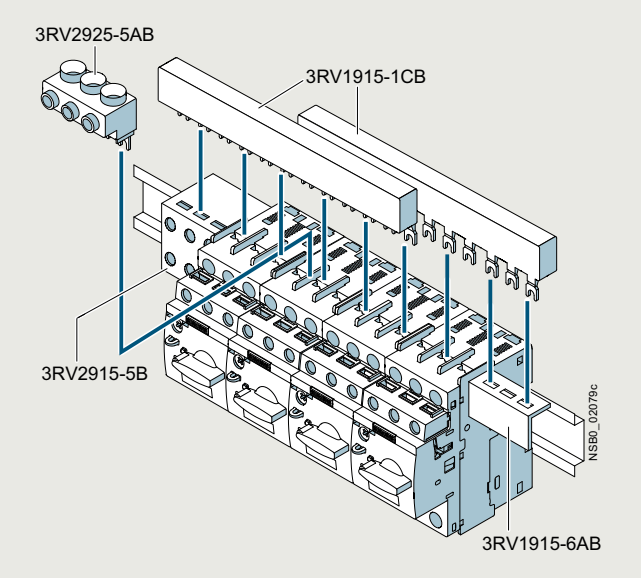
Insulated 3-phase busbar system

3-phase busbar systems provide an easy, time-saving and clearly arranged means of feeding 3RV2 motor starter protectors/circuit breakers with screw terminals. Different versions are available for sizes S00 to S2 and can be used for the different types of motor starter protectors/circuit breakers (size S0 up to 32 A).

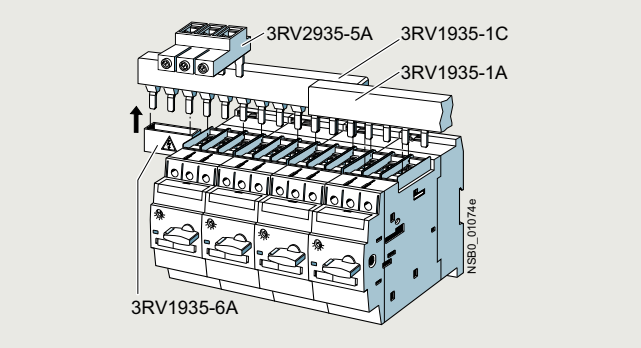
The 3RV1915 3-phase busbar systems are generally unsuitable for the 3RV21 motor starter protectors with sizes S00 and S0 for motor protection with overload relay function.

The busbars are suitable for between two and five motor starter protectors/circuit breakers. However, any kind of extension is possible by clamping the connection tags of an additional busbar (rotated by 180°) underneath the terminals of the respective last motor starter protector/circuit breaker.

A combination of motor starter protectors/circuit breakers of size S00 and S0 is possible. The motor starter protectors/ circuit breakers are supplied by appropriate infeed terminals.



SIRIUS 3-phase busbar system size S00/S0



SIRIUS 3-phase busbar system size S2

The 3-phase busbar systems are finger-safe. They are designed for any short-circuit stress which can occur at the output side of connected motor starter protectors/circuit breakers.

The 3-phase busbar systems can also be used to construct "Starters (Type E)" according to UL/CSA and for 3RV27 and 3RV28 circuit breakers according to UL 489. However, special infeed terminals, 3RV2925-5EB for sizes S00/S0 and 3RV2935-5E for size S2, must be used for this purpose, see page 7/52.

8US busbar adapters for 60 mm systems

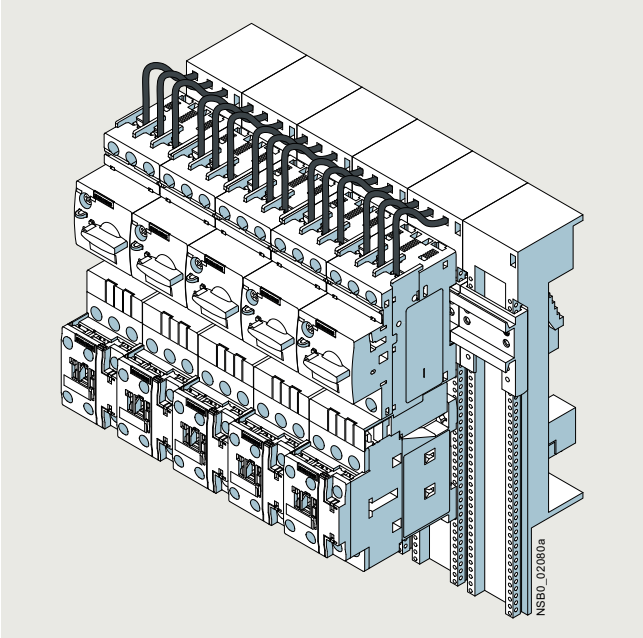
The motor starter protectors/circuit breakers are mounted directly with the aid of busbar adapters on busbar systems with 60 mm center-to-center clearance in order to save space and to reduce infeed times and costs.

Busbar adapters for busbar systems with 60 mm center-to-center clearance are suitable for copper busbars with a width of 12 mm to 30 mm. The busbars can be 5 mm or 10 mm thick.

The motor starter protectors/circuit breakers are snapped onto the adapter and connected on the line side. This prepared unit is then plugged directly onto the busbar system, and is thus connected both mechanically and electrically at the same time.

For the setup of UL feeders (Type E and F), Type E terminal blocks or phase barriers must be fitted to the infeed module on the motor starter protector (see from page 7/57).

For further busbar adapters for snap-mounting direct-on-line starters and reversing starters as well as additional accessories such as line terminals and outgoing terminals, flat copper profile, etc., see Catalog LV 10.



SIRIUS load feeders with busbar adapters snapped onto busbars

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Selection and ordering data

3-phase busbars

Modular spacing	Number of motor starter protectors that can be connected: without lateral accessories	with lateral auxiliary switch	incl. auxiliary release	Rated current I_n at 690 V	For motor starter protectors/ circuit breakers	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
mm				A	Size					
For feeding several motor starter protectors with screw terminals, mounted side by side on DIN rails, insulated, with touch protection										
45[1)2)]	2	--	--	63	S00, S0[3)]	**3RV1915-1AB**		1	1 unit	41E
	3	--	--	63	S00, S0[3)]	**3RV1915-1BB**		1	1 unit	41E
	4	--	--	63	S00, S0[3)]	**3RV1915-1CB**		1	1 unit	41E
	5	--	--	63	S00, S0[3)]	**3RV1915-1DB**		1	1 unit	41E
55[1)4)]	--	2	--	63	S00, S0[3)]	**3RV1915-2AB**		1	1 unit	41E
	--	3	--	63	S00, S0[3)]	**3RV1915-2BB**		1	1 unit	41E
	--	4	--	63	S00, S0[3)]	**3RV1915-2CB**		1	1 unit	41E
	--	5	--	63	S00, S0[3)]	**3RV1915-2DB**		1	1 unit	41E
	2	--	--	108	S2	**3RV1935-1A**		1	1 unit	41E
	3	--	--	108	S2	**3RV1935-1B**		1	1 unit	41E
	4	--	--	108	S2	**3RV1935-1C**		1	1 unit	41E
63[1)5)]	--	--	2	63	S00, S0[3)]	**3RV1915-3AB**		1	1 unit	41E
	--	--	4	63	S00, S0[3)]	**3RV1915-3CB**		1	1 unit	41E
75[5)]	--	2	2	108	S2	**3RV1935-3A**		1	1 unit	41E
	--	3	3	108	S2	**3RV1935-3B**		1	1 unit	41E
	--	4	4	108	S2	**3RV1935-3C**		1	1 unit	41E

3RV1915-1AB

3RV1915-1BB

3RV1915-1CB

3RV1915-1DB

1) Not suitable for 3RV21 motor starter protectors of sizes S00 and S0 with overload relay function.
2) For 3RV2 motor starter protectors without accessories mounted on the side.
3) Approved for motor starter protectors size S0 with $I_n \leq 32$ A.
4) For 3RV2 motor starter protectors with auxiliary switches with 1 NO + 1 NC, 2 NO and 2 NC mounted on the left (9 mm wide).
5) For 3RV20, 3RV21, 3RV23 and 3RV24 motor starter protectors with mounted accessories (18 mm wide). Auxiliary switches with 2 NO + 2 NC or signaling switch (mounted on the left) or with auxiliary release (mounted on the right).

Connecting pieces for 3-phase busbars

Version	Modular spacing	For motor starter protectors/ circuit breakers	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm	Size					
For connecting 3-phase busbars for 3RV2 motor starter protectors of size S00/S0 (left) to the 3RV1011 motor starter protector (right)	45	S00, S0	**3RV1915-5DB**		1	1 unit	41E

3RV1915-5DB

3-phase infeed terminals

Conductor cross-section: Solid or stranded	Finely stranded with end sleeve	AWG cables, solid or stranded	Tightening torque	For motor starter protectors/ circuit breakers	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
mm²	mm²	AWG	Nm	Size					
Connection from top									
2.5 … 25	4 … 16	10 … 4	4	S00[2)], S0	**3RV1915-5A**		1	1 unit	41E
2.5 … 25	2.5 … 16	10 … 4	3 … 4	S00, S0	**3RV2925-5AB**		1	1 unit	41E
2 x (2.5 … 50)[1)], 1 x (2.5 … 70)[1)]	2 x (2.5 … 35)[1)], 1 x (2.5 … 50)[1)]	2 x (10 … 1/0)[1)], 1 x (10 … 2/0)[1)]	4 … 6	S2	**3RV2935-5A**		1	1 unit	41E
Connection from below Terminal is connected in place of a switch, take space requirement into account									
2.5 … 25	2.5 … 16	10 … 4	Input: 4, output: 2 … 2.5	S00, S0	**3RV2915-5B**		1	1 unit	41E

3RV2925-5AB

3RV2935-5A

3RV2915-5B

1) If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.
2) Especially suitable for 3RV1011 motor starter protectors. If the 3RV2 motor starter protector is used, the terminal block extends beyond the device width.

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Accessories > Busbar accessories

	Conductor cross-section			Tightening torque	For motor starter protectors/ circuit breakers	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Solid or stranded	Finely stranded with end sleeve	AWG cables, solid or stranded							
	mm²	mm²	AWG	Nm	Size					
3-phase infeed terminals for constructing "starters (Type E)"										
3RV2925-5EB	**Connection from top**									
	2.5 … 25	2.5 … 16	10 ... 4	3 ... 4	S00, S0	**3RV2925-5EB**		1	1 unit	41E
3RV2935-5E	2 x (2.5 ... 50)[1], 1 x (2.5 ... 70)[1]	2 x (2.5 ... 35)[1], 1 x (2.5 ... 50)[1]	2 x (10 ... 1/0)[1], 1 x (10 ... 2/0)[1]	4 ... 6	S2	**3RV2935-5E**		1	1 unit	41E

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

	Version	For motor starter protectors/ circuit breakers	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		Size					
Covers for connection tags							
3RV1935-6A covers mounted on 3RV1915-1CB busbar	Touch protection for empty positions	S00, S0	**3RV1915-6AB**		1	10 units	41E
		S2	**3RV1935-6A**		1	5 units	41E

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Busbar adapters

8US1251-5DS10

8US1251-5DT11

8US1211-4TR00

8US1250-5AS10

8US1250-5AT10

For motor starter protectors/ circuit breakers	Rated current	Connecting cable	Adapter length	Adapter width	Rated voltage	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	A	AWG	mm	mm	V					
Busbar adapters for 60 mm systems										
For copper busbars according to DIN 46433 Width: 12 mm and 30 mm Thickness: 5 mm and 10 mm and for T and double-T special profiles										
• For motor starter protectors/circuit breakers with screw terminals[1]						**Screw terminals**				
S00[2], S0[3]	25	12	200	45	690	**8US1251-5DS10**		1	1 unit	14O
S00[2], S0	25	12	260	45	690	**8US1251-5DT10**		1	1 unit	14O
S0	32	10	200	45	690	**8US1251-5NS10**		1	1 unit	14O
S0[3]	32	10	260	45	690	**8US1251-5NT10**		1	1 unit	14O
S2	80	4	200	55	690	**8US1261-5MS13**		1	1 unit	14O
S2	80	4	260	55	690	**8US1261-6MT10**		1	1 unit	14O
S2[4]	80	4	260	118	690	**8US1211-6MT10**		1	1 unit	14O
S3	100/70[5]	4	215	72	690/600[5]	**8US1211-4TR00**		1	1 unit	14O
• For motor starter protectors/circuit breakers with spring-loaded terminals[6]						**Spring-loaded terminals**				
S00[2], S0[3]	25	12	200	45	690	**8US1251-5DS11**		1	1 unit	14O
S00[2], S0[3]	25	12	260	45	690	**8US1251-5DT11**		1	1 unit	14O
S0	32	10	200	45	690	**8US1251-5NS11**		1	1 unit	14O
S0[3]	32	10	260	45	690	**8US1251-5NT11**		1	1 unit	14O
Accessories										
Device holders For lateral attachment to busbar adapters	-- --	-- --	200 260	45 45	-- --	**8US1250-5AS10** **8US1250-5AT10**		1 1	1 unit 1 unit	14O 14O
Side modules For widening busbar adapters	--	--	200	9	--	**8US1998-2BJ10**		1	10 units	14O
Vibration and shock kits For high vibration and shock loads										
S2	--	--	--	--	--	**8US1998-1DA10**		1	1 unit	14O

1) For the setup of UL feeders (Type E and F), Type E terminal blocks or phase barriers (for sizes S00 to S2) must be fitted to the infeed module on the motor starter protector (see from page 7/57).

2) Not for 3RV1011 motor starter protectors.

3) Also approved for 3RV27, 3RV28 circuit breakers according to UL.

4) For the assembly of feeders for reversing starters consisting of a motor starter protector and two contactors.

5) Values according to UL/CSA:
- Rated current: 70 A at 600 V AC
- Short-circuit breaking capacity:
  480 V AC: 65 kA, up to I_n = 30 A,
  480 Y/277 V AC: 65 kA,
  600 Y/347 V AC: 20 kA.

6) It is not possible to set up UL feeders (Type E and F).

For additional busbar adapters and accessories, see Catalog LV 10.

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Overview

Door-coupling rotary operating mechanisms

Motor starter protectors/circuit breakers with a rotary operating mechanism can be mounted in a control cabinet and operated externally by means of a door-coupling rotary operating mechanism. When the cabinet door with motor starter protector/circuit breaker is closed, the operating mechanism is coupled. When the motor starter protector/circuit breaker closes, the coupling is locked which prevents the door from being opened unintentionally. This interlock can be defeated by the maintenance personnel. In the OFF position, the rotary operating mechanism can be secured against reclosing with up to three padlocks. Inadvertent opening of the door is not possible in this case either.

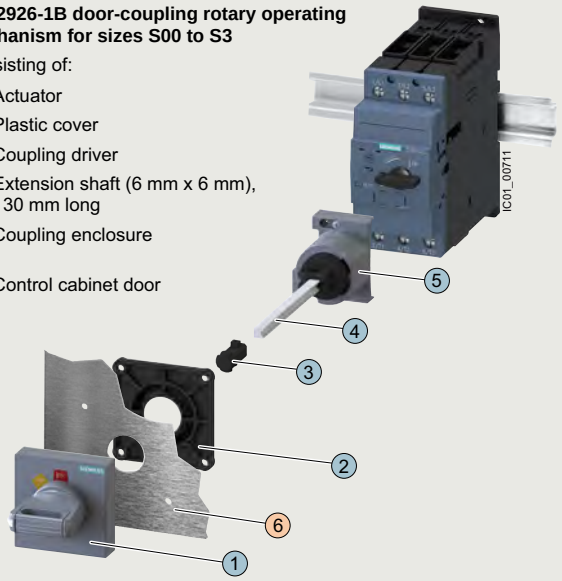
With the optional 3RV2926-.Q tolerance compensation, an offset can be compensated when installing the door-coupling rotary operating mechanism. For this purpose, the standard coupling head on the shaft is removed and replaced by the tolerance compensation.

Video: SIRIUS door-coupling rotary mechanism

3RV2926-1B door-coupling rotary operating mechanism for sizes S00 to S3

Consisting of:

1. Actuator
2. Plastic cover
3. Coupling driver
4. Extension shaft (6 mm x 6 mm), 130 mm long
5. Coupling enclosure
6. Control cabinet door

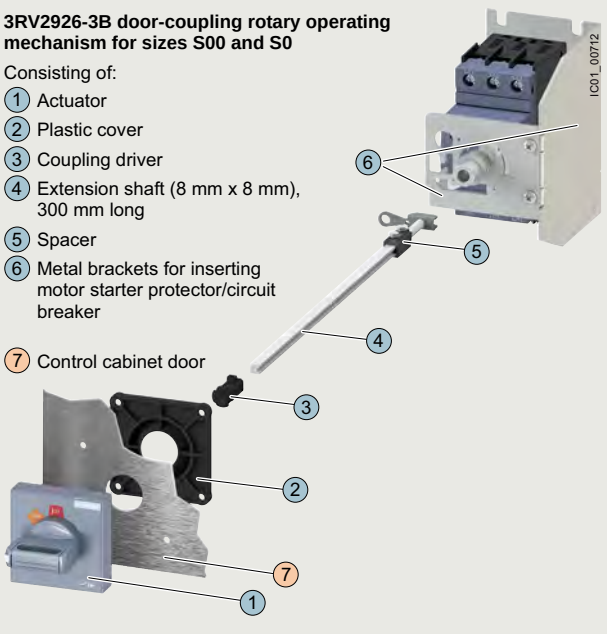


SIRIUS 3RV2926-1B door-coupling rotary operating mechanism

3RV2926-3B door-coupling rotary operating mechanism for sizes S00 and S0

Consisting of:

1. Actuator
2. Plastic cover
3. Coupling driver
4. Extension shaft (8 mm x 8 mm), 300 mm long
5. Spacer
6. Metal brackets for inserting motor starter protector/circuit breaker
7. Control cabinet door



SIRIUS 3RV2926-3B door-coupling rotary operating mechanism for harsh conditions

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Door-coupling rotary operating mechanism for mounting one main switch in size S3 according to UL 508A and NFPA 79

For the installation of a door-coupling rotary operating mechanism for harsh conditions for a main switch (only possible in size S3) in a UL control cabinet (according to UL 508A and NFPA 79), the standard stipulates a second handle in the control cabinet. With the cabinet door open, it shall only be possible to switch on this supplementary handle by means of a "deliberate action".

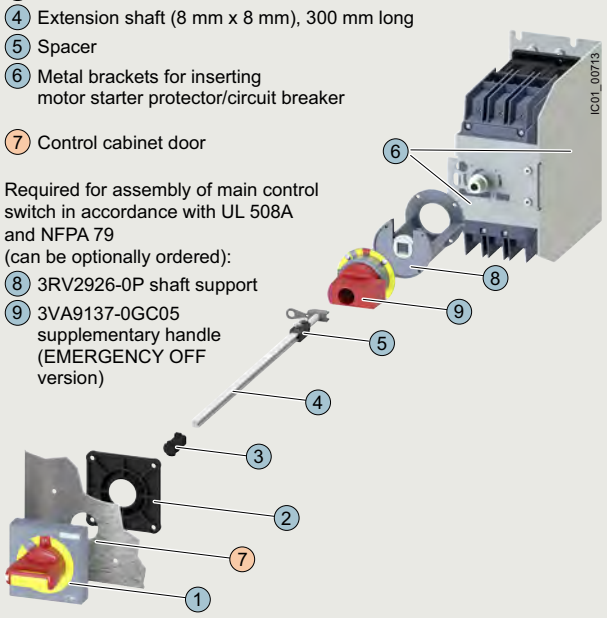
The figure below shows the setup required for this purpose, with the 3RV2946-3C door-coupling rotary operating mechanism for harsh conditions, the 3RV2926-0P shaft support, and the 3VA9137-0GC05 supplementary handle (EMERGENCY OFF version).

To switch on the supplementary handle, the handle must be pressed against a spring in the direction of the mounting plane. This is the required "deliberate action" so that the supplementary handle does not turn empty and the circuit breaker can be closed.

3RV2946-3C EMERGENCY OFF door-coupling rotary operating mechanism for size S3

Consisting of:
1. Actuator
2. Plastic cover
3. Coupling driver
4. Extension shaft (8 mm x 8 mm), 300 mm long
5. Spacer
6. Metal brackets for inserting motor starter protector/circuit breaker
7. Control cabinet door

Required for assembly of main control switch in accordance with UL 508A and NFPA 79 (can be optionally ordered):
8. 3RV2926-0P shaft support
9. 3VA9137-0GC05 supplementary handle (EMERGENCY OFF version)



SIRIUS 3RV2946-3C EMERGENCY OFF door-coupling rotary operating mechanism for harsh operating conditions according to UL 508A and NFPA 79 with optional shaft support and supplementary handle (EMERGENCY OFF version)

Selection and ordering data

Version	Color of actuator	Version of extension shaft	For motor starter protectors/ circuit breakers	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm	Size					
Door-coupling rotary operating mechanisms								
3RV2926-1B								
Door-coupling rotary operating mechanisms	Gray	130	S00[1] ... S3	**3RV2926-1B**		1	1 unit	41E
		330	S00[1] ... S3	**3RV2926-1K**		1	1 unit	41E
3RV2926-1C								
EMERGENCY OFF door-coupling rotary operating mechanisms	Red/ yellow	130	S00[1] ... S3	**3RV2926-1C**		1	1 unit	41E
		330	S00[1] ... S3	**3RV2926-1L**		1	1 unit	41E
Optional accessories								
3RV2926-0Q								
Tolerance compensation	--	--	--	**3RV2926-0Q**		1	1 unit	41E

[1] Not for 3RV1011 motor starter protectors.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Accessories > Rotary operating mechanisms

Version	Color of actuator	Version of extension shaft	For motor starter protectors/ circuit breakers	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm	Size					
Door-coupling rotary operating mechanisms for harsh conditions								

3RV2946-3B

The door-coupling rotary operating mechanisms consist of an actuator, a coupling driver, an extension shaft of 300 mm in length (8 mm x 8 mm), a spacer and two metal brackets, into which the motor starter protector/circuit breaker is inserted.

The door-coupling rotary operating mechanisms are designed to degree of protection IP65. For UL/CSA applications, they are tested for enclosure types 1, 3R and 12. The door interlocking reliably prevents opening of the control cabinet door in the ON position of the motor starter protector/circuit breaker. The OFF position can be locked with up to three padlocks.

Laterally mountable auxiliary releases and 2-pole auxiliary switches can be used.
The door-coupling rotary operating mechanisms thus meet the requirements for isolating functions according to IEC 60947-2.

With the optional 3RV2926-2Q tolerance compensation, an offset can be compensated when installing the door-coupling rotary operating mechanism for harsh conditions.

Door-coupling rotary operating mechanisms	Gray	300	S00[1], S0	**3RV2926-3B**	1	1 unit		41E
			S2	**3RV2936-3B**	1	1 unit		41E
			S3	**3RV2946-3B**	1	1 unit		41E

3RV2946-3C

EMERGENCY OFF door-coupling rotary operating mechanism	Red/ yellow	300	S00[1], S0	**3RV2926-3C**	1	1 unit		41E
			S2	**3RV2936-3C**	1	1 unit		41E
			S3	**3RV2946-3C**	1	1 unit		41E

Optional accessories

3RV2926-2Q

Tolerance compensation	--	--	S00 ... S3	**3RV2926-2Q**	1	1 unit		41E

Necessary accessories for mounting one main switch in size S3 according to UL 508A and NFPA 79
(see also page 7/55)

3RV2926-0P

Shaft supports	--	--	S00 ... S3	**3RV2926-0P**	1	1 unit		41E

Supplementary handles

3VA9137-0GC01

• Standard	Gray	--	S3	**3VA9137-0GC01**	1	1 unit		12P

3VA9137-0GC05

• EMERGENCY OFF	Red/ yellow	--	S3	**3VA9137-0GC05**	1	1 unit		12P

[1] Not for 3RV1011 motor starter protectors.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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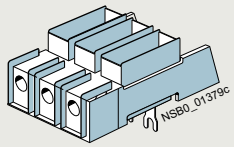
Overview

More information	
System Manual for modular system, see https://support.industry.siemens.com/cs/ww/en/view/60311318	Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/60279172

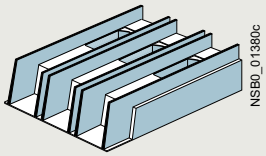
Accessories for "Self-Protected Combination Motor Controllers (Type E)" according to UL 508/UL 60947-4-1

The 3RV20 motor starter protectors with screw terminals are approved according to UL 508/UL 60947-4-1 as "Self-Protected Combination Motor Controllers (Type E)".
The 3RV1011 motor starter protectors do not have this UL approval.

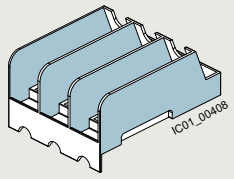
This requires increased clearance and creepage distances (1 inch and 2 inches respectively) at the input side of the device, which are achieved by mounting a terminal block or a phase barrier. No transverse auxiliary switches may be used when using 3RT2946-4GA07 terminal blocks for size S3.



SIRIUS 3RV2928-1H terminal block



SIRIUS 3RT2946-4GA07 terminal block (Type E)



SIRIUS 3RV2928-1K phase barrier

Motor starter protectors/ circuit breakers	Size	Essential accessories for "Self-Protected Combination Motor Controllers (Type E)" according to UL 508/UL 60947-4-1
3RV201., 3RV202.	S00/S0	3RV2928-1H terminal block or 3RV2928-1K phase barrier
3RV2031-4B.1., 3RV2031-4D.1., 3RV2031-4E.1., 3RV2031-4P.1., 3RV2031-4S.1., 3RV2031-4T.1., 3RV2031-4U.1., 3RV2031-4V.1.	S2	--
3RV2031-4J.1., 3RV2031-4K.1., 3RV2031-4R.1., 3RV2031-4W.1., 3RV2031-4X.1., 3RV2032	S2	3RV2938-1K phase barrier
3RV204.	S3	3RT2946-4GA07 terminal block

-- No accessories needed

Special 3-phase infeed terminals are required for constructing "Starters (Type E)" with an insulated 3-phase busbar system (see "Busbar accessories", page 7/52).

For the setup of "Starters (Type E)" with 8US busbar adapters, Type E terminal blocks or phase barriers (for sizes S00 to S2) must be fitted to the infeed module on the motor starter protector/circuit breaker, see page 7/60.

The 3RV29 infeed system also enables the assembly of "Starters (Type E)", see page 7/67 onwards.

Note:

According to CSA, these terminal blocks and the phase barriers can be omitted when the device is used as a "Self-Protected Combination Motor Controller (Type E)".

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Link modules

Feeders can be easily assembled from single devices with the help of the link modules. The following table shows the different combination options for devices with screw or spring-loaded terminals.

Combination devices	3RV2 motor starter protectors/ circuit breakers Size	3RT2 contactors; 3RW30, 3RW40 soft starters; 3RF34 solid-state contactors Size	Link modules Screw terminals	 Spring-loaded terminals
Link modules for connecting switching devices to 3RV2 motor starter protectors/circuit breakers[1)]				
3RT2 contactors with AC or DC coil	S00	S00	3RA1921-1DA00	3RA2911-2AA00
	S0	S00		--
	S2	S2	3RA2931-1AA00	--
	S3[2)]	S3[2)]	3RA1941-1AA00	--
3RT2 contactors with AC coil	S00	S0	3RA2921-1AA00	--
	S0	S0		3RA2921-2AA00[3)]
3RT2 contactors with DC or AC/DC coil	S00	S0	3RA2921-1BA00	--
	S0	S0		3RA2921-2AA00
3RW30 soft starters	S00	S00	3RA2921-1BA00	3RA2911-2GA00
	S0	S00		--
3RW30/3RW40 soft starters	S00	S0	3RA2921-1BA00	--
	S0	S0		3RA2921-2GA00
	S2[4)]	S2[4)]	3RA2931-1AA00	--
	S3[5)]	S3[5)]	3RA1941-1AA00	--
3RF34 solid-state contactors	S00/S0	S00	3RA2921-1BA00	--
Hybrid link modules for connecting contactors with spring-loaded terminals to 3RV2 motor starter protectors/circuit breakers with screw terminals[6)]				
3RT2 contactors with AC or DC coil	S00	S00	3RA2911-2FA00	--
	S0	S0	3RA2921-2FA00	--

-- Version not possible

1) The link modules cannot be used for 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV2.31-4K.1., 3RV2.31-4R.1., 3RV2.32-4K.1., 3RV2.32-4R.1., 3RV27, 3RV28 and 3RV1011 motor starter protectors/circuit breakers.

2) To assemble the feeder between a motor starter protector and a contactor in size S3, the 3RA2942-1AA00 DIN-rail adapter must be used.

3) A spacer for height compensation on AC contactors, size S0, is optionally available, see page 7/61.

4) To assemble the feeder between a motor starter protector and a soft starter in size S2, the 3RA2932-1CA00 DIN-rail adapter must be used.

5) It is only permissible to assemble the feeder between the motor starter protector and the soft starter in size S3 on a mounting plate.

6) The hybrid link modules for motor starter protector to contactor cannot be used for 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV27 and 3RV28 motor starter protectors/circuit breakers. They are suitable only for constructing direct-on-line starters.

Notes:

- Link modules can be used in
  - Size S00: up to max. 16 A
  - Size S0: up to max. 32 A
  - Size S2: up to max. 65 A
- Hybrid link modules can be used in
  - Size S00: up to max. 16 A
  - Size S0: up to max. 32 A

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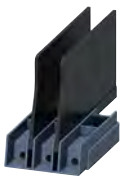
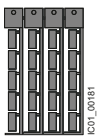
Selection and ordering data

Accessories

	Version	For motor starter protectors/ circuit breakers Size	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Covers							
3RV2 (size S3) with 3RT1946-4EA1 (below)	**Terminal covers** For cable lug and busbar connection for maintaining the required voltage clearances and as touch protection if box terminal is removed (two units can be mounted per motor starter protector/circuit breaker)	S3	**3RT1946-4EA1**		1	1 unit	41B
3RV2908-0P	**Scale covers** Sealable, for covering the set current scale	3RV20, 3RV21, 3RV24: S00 ... S3	**3RV2908-0P**		100	10 units	41E
3RT2936-4EA2	**Covers for devices with screw terminals (box terminals)**		**Screw terminals**				
	Additional touch protection to be fitted at the box terminals (two units required per device)						
	Main current level	S2	**3RT2936-4EA2**		1	1 unit	41B
		S3	**3RT2946-4EA2**		1	1 unit	41B
Terminal covers for box terminals on 3RV2742 and Type E terminal block 3RT2946-4GA07							
3RV2948-1LA00	Additional touch protection to be fitted at the 3RV2742 box terminals (two units required per device) and at 3RT2946-4GA07 terminal block (Type E)						
	Main current level	S3	**3RV2948-1LA00**		1	1 unit	41E
Phase barrier for constructing limiter combinations of size S3[1]							
 3RV2948-1K	Infeed to the limiter is always on the side 2T1/4T2/6T3. Use 3RV2948-1K phase barriers on the infeed side.						
	Main current level	S3	**3RV2948-1K**		1	1 unit	41E
Fixing accessories							
3RV2928-0B	**Push-in lugs** For screw fixing of the motor starter protector/ circuit breaker onto mounting plates	S00, S0	**3RV2928-0B**		100	10 units	41E
	Two units are required for each motor starter protector.						
Tools for opening spring-loaded terminals							
3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-loaded terminals		**Spring-loaded terminals**				
	Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	S00 ... S3	**3RA2908-1A**		1	1 unit	41B
Blank labels							
 3RT2900-1SB20	**Unit labeling plates**[1] For SIRIUS devices, 20 mm x 7 mm, titanium gray	S00 ... S3	**3RT2900-1SB20**		100	340 units	41B
	Adhesive labels For SIRIUS devices, 19 mm x 6 mm, titanium gray	S00 ... S3	**3RT2900-1SB60**		100	3 060 units	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

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Version	For motor starter protectors/ circuit breakers Size	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal blocks and phase barriers for "Self-Protected Combination Motor Controllers (Type E)" according to UL 508/UL 60947-4-1						
3RV2928-1H 3RT2946-4GA07 3RV2928-1K 3RV2938-1K	Note: UL 508/UL 60947-4-1 approval demands 1-inch clearance and 2-inch creepage distances for "Self-Protected Combination Motor Controllers (Type E)". The following terminal blocks or phase barriers must be used for the 3RV20 motor starter protectors with screw terminals. This also applies to construction with the 8US busbar adapter. 3RV20 motor starter protectors with spring-loaded terminals must be assembled with the 3RV29 infeed system for approval as "Self-Protected Combination Motor Controllers (Type E)" according to UL 508/UL 60947-4-1. The 3RV1011 motor starter protectors do not have UL approval as "Starters (Type E)". The terminal block or phase barriers cannot be used in combination with the 3RV19.5 3-phase busbars. For construction with 3-phase busbars, see "Busbar Accessories", from page 7/50 onwards.					
Terminal blocks Type E For increased clearance and creepage distances (1 and 2 inch)	S00[1], S0	**3RV2928-1H**		1	1 unit	41E
	S3[2]	**3RT2946-4GA07**		1	1 unit	41B
Phase barriers For increased clearance and creepage distances (1 and 2 inch)	S00[1], S0	**3RV2928-1K**		1	1 unit	41E
	S2	**3RV2938-1K**		1	1 unit	41E
Auxiliary conductor terminals, 3-pole						
3RT2946-4F	For connection of auxiliary and control cables to the main conductor connections (for one side)	S3	**3RT2946-4F**		1	1 unit	41B

1) Not for 3RV1011 motor starter protectors.
2) Cannot be used on 3RV2.4. motor starter protectors in combination with transverse auxiliary switches.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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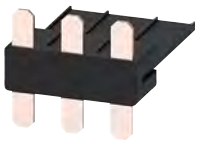
Link modules

For 3RV2 motor starter protectors/ circuit breakers	For 3RT2 contactors	Actuating voltage of contactor	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Size						
Link modules for motor starter protector to contactor[1]							
3RA2921-1AA00	For connection between motor starter protector and contactor with screw terminals		**Screw terminals**				
	Single-unit packaging						
S00/S0	S00	AC, DC	**3RA1921-1DA00**		1	1 unit	41B
S00/S0	S0	AC	**3RA2921-1AA00**		1	1 unit	41B
S00/S0	S0	DC, AC/DC	**3RA2921-1BA00**		1	1 unit	41B
S2	S2	AC, DC, AC/DC	**3RA2931-1AA00**		1	1 unit	41B
S3	S3	AC, DC, AC/DC	**3RA1941-1AA00**		1	1 unit	41B
3RA2931-1AA00	**Multi-unit packaging**						
S00/S0	S00	AC, DC	**3RA1921-1D**		1	10 units	41B
S00/S0	S0	AC	**3RA2921-1A**		1	10 units	41B
S00/S0	S0	DC, AC/DC	**3RA2921-1B**		1	10 units	41B
S2	S2	AC, DC, AC/DC	**3RA2931-1A**		1	5 units	41B
S3	S3	AC, DC, AC/DC	**3RA1941-1A**		1	5 units	41B
 3RA1941-1AA00							
3RA2911-2AA00	For connection between motor starter protector and contactor with spring-loaded terminals		**Spring-loaded terminals**				
	Single-unit packaging						
S00	S00	AC, DC	**3RA2911-2AA00**		1	1 unit	41B
S0	S0	AC[2], DC, AC/DC	**3RA2921-2AA00**		1	1 unit	41B
	Multi-unit packaging						
S00	S00	AC, DC	**3RA2911-2A**		1	10 units	41B
S0	S0	AC[2], DC, AC/DC	**3RA2921-2A**		1	10 units	41B
3RA2911-1CA00	**Spacers[2]** For height compensation on AC contactors size S0 with spring-loaded terminals						
S0	S0	Single-unit packaging	**3RA2911-1CA00**		1	1 unit	41B
S0	S0	Multi-unit packaging	**3RA2911-1C**		1	5 units	41B

1) The link modules for motor starter protector to contactor cannot be used for 3RV1011, 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV2.31-4K.1., 3RV2.31-4R.1., 3RV2.32-4K.1., 3RV2.32-4R.1., 3RV27 and 3RV28 motor starter protectors/circuit breakers.

2) A spacer for height compensation on AC contactors size S0 is optionally available.

Note:

Link modules can be used in

- Size S00: up to max. 16 A
- Size S0: up to max. 32 A
- Size S2: up to max. 65 A

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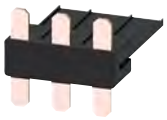
For 3RV2 motor starter protectors/circuit breakers Size	For 3RW30, 3RW40 soft starters; 3RF34 solid-state contactors Size	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Link modules for motor starter protector to soft starter[1] and motor starter protector to solid-state contactor[1]						
Connection between motor starter protector and soft starter/solid-state contactor with screw terminals		**Screw terminals**				
Single-unit packaging						
S00/S0	S00/S0	**3RA2921-1BA00**		1	1 unit	41B
S2[2]	S2[2]	**3RA2931-1AA00**		1	1 unit	41B
S3[3]	S3[3]	**3RA1941-1AA00**		1	1 unit	41B
Multi-unit packaging						
S00/S0	S00/S0	**3RA2921-1B**		1	10 units	41B
S2[2]	S2[2]	**3RA2931-1A**		1	5 units	41B
S3[3]	S3[3]	**3RA1941-1A**		1	5 units	41B
Connection between motor starter protector and soft starter with spring-loaded terminals		**Spring-loaded terminals**				
Single-unit packaging						
S00	S00	**3RA2911-2GA00**		1	1 unit	41B
S0	S0	**3RA2921-2GA00**		1	1 unit	41B

3RA2921-1BA00

3RA2931-1AA00


3RA1941-1A

3RA2911-2GA00

1) The link modules from motor starter protector to soft starter and motor starter protector to solid-state contactor cannot be used for the 3RV1011, 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV2.31-4K.1., 3RV2.31-4R.1., 3RV2.32-4K.1., 3RV2.32-4R.1., 3RV27 and 3RV28 motor starter protectors/circuit breakers.

2) To assemble the feeder between a motor starter protector and a soft starter in size S2, the 3RA2932-1CA00 DIN-rail adapter must be used.

3) It is only permissible to assemble the feeder between the motor starter protector and the soft starter in size S3 on a mounting plate.

Note:

Link modules can be used in

- Size S00: up to max. 16 A
- Size S0: up to max. 32 A
- Size S2: up to max. 65 A

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	For 3RV2 motor starter protectors/ circuit breakers	For 3RT2 contactors	Actuating voltage of contactor	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Size	Size						
Hybrid link modules for motor starter protector to contactor[1]								
3RA2911-2FA00	Mechanical and electrical connection between motor starter protector with screw terminals and contactor with spring-loaded terminals							
	Single-unit packaging							
	S00	S00	AC, DC	**3RA2911-2FA00**		1	1 unit	41B
	S0	S0	AC[2], DC, AC/DC	**3RA2921-2FA00**		1	1 unit	41B
3RA2921-2FA00	**Multi-unit packaging**							
	S00	S00	AC, DC	**3RA2911-2F**		1	10 units	41B
	S0	S0	AC[2], DC, AC/DC	**3RA2921-2F**		1	10 units	41B
3RA2911-1CA00	**Spacers[2]** For height compensation on AC contactors size S0 with spring-loaded terminals							
	S0	S0	Single-unit packaging	**3RA2911-1CA00**		1	1 unit	41B
	S0	S0	Multi-unit packaging	**3RA2911-1C**		1	5 units	41B

1) The hybrid link modules for motor starter protector to contactor cannot be used for 3RV1011, 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV27 and 3RV28 motor starter protectors/circuit breakers. They are suitable only for constructing direct-on-line starters.

2) A spacer for height compensation on AC contactors size S0 is optionally available.

Note:

Link modules can be used in

- Size S00: up to max. 16 A
- Size S0: up to max. 32 A

	For motor starter protectors/ circuit breakers	Version	Screw terminals ⊕ Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Type						
Connection module (adapter and plug) for motor starter protectors/ circuit breakers with screw terminals							
		The connection module comprises an adapter and a motor feeder connector.					
3RT1926-4RD01		**Adapter** Ambient temperature $t_{u\ max.}$ = 60 °C					
	3RV2.2	Size S0, rated operational current I_e at AC-3/AC-3e/400 V: 25 A	**3RT1926-4RD01**		1	1 unit	41B
3RT1900-4RE01	3RV2.2	**Motor feeder connector** Size S0	**3RT1900-4RE01**		1	1 unit	41B

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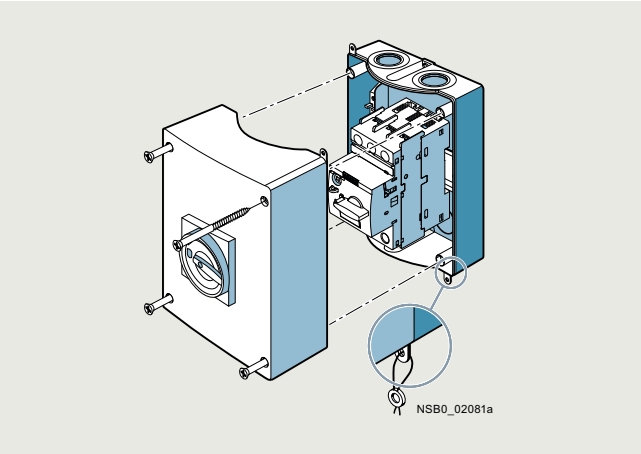
Overview

Enclosures

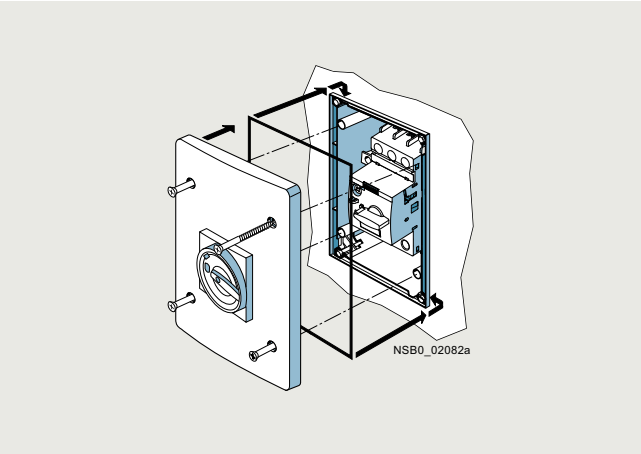
For the stand-alone installation of 3RV20 to 3RV24 motor starter protectors size S00 ($I_{n\ max}$ = 16 A), S0 ($I_{n\ max}$ = 32 A), S2 ($I_{n\ max}$ = 65 A), and for 3RV1011 motor starter protectors, molded-plastic and cast aluminum enclosures for surface mounting and molded-plastic enclosures for flush mounting are available in various dimensions.

When installed in a molded-plastic enclosure, the motor starter protectors have a rated operational voltage U_e of 500 V.

The enclosures for surface mounting have the degree of protection IP55; the enclosures for flush mounting also comply with the degree of protection IP55 at the front. The cast aluminum enclosures for surface mounting achieve degree of protection IP65.



Enclosures for surface mounting



Enclosures for flush mounting (only for sizes S00 and S0)

There are two knock-out cable entries for cable glands at the top and two at the bottom; also on the rear corresponding cable entries are scored. There is a knockout on the top of the enclosure for indicator lights that are available as accessories.

The narrow enclosure can accommodate a motor starter protector without accessories, with transverse auxiliary switch and with lateral auxiliary switch. There is no provision for installing a motor starter protector with a signaling switch.

With size S00 to S2 3RV2 circuit breakers, the molded-plastic enclosures are equipped with a rotary operating mechanism.

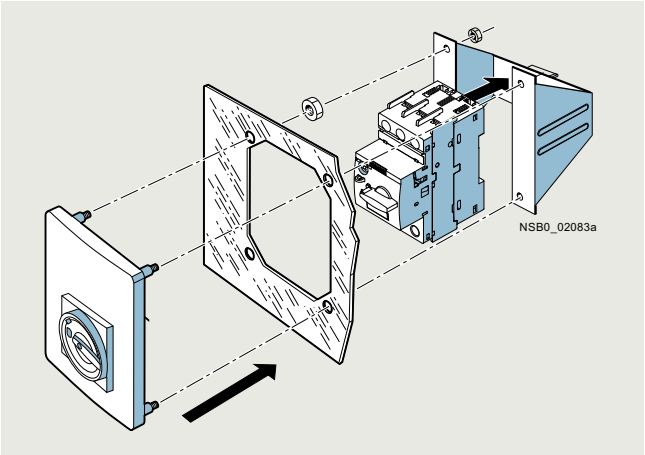
The enclosures can be supplied with either a black rotary operating mechanism or with an EMERGENCY OFF rotary operating mechanism with a red/yellow knob.

In the OFF position, all rotary operating mechanisms can be locked with up to three padlocks. These enclosures are not suitable for 3RV1011 motor starter protectors.

Front plates

Motor starter protectors are frequently required to be actuated in any enclosure. Front plates equipped with a rotary operating mechanism for 3RV20 to 3RV24 motor starter protectors sizes S00 to S3 are available for this purpose.

A holder for the motor starter protectors sizes S00 and S0, into which the motor starter protectors can be snapped, is available for the front plates. It is not possible to use a signaling switch or 4-pole auxiliary switch. The front plates are not suitable for 3RV1011 motor starter protectors.



Front plate (including holder) for sizes S00 and S0

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Selection and ordering data

	Version	Degree of protection	Integrated terminals	Width	For 3RV20 to 3RV24 motor starter protectors	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				mm	Size					
Molded-plastic enclosures for surface mounting[1]										
3RV1933-1DA00	**With rotary operating mechanism,** lockable in 0 position	IP55	N and PE	54 (for motor starter protector + lateral auxiliary switch)	S00[3], S0	**3RV1923-1CA00**		1	1 unit	41E
				72 (for motor starter protector + lateral auxiliary switch[2] + auxiliary release)	S00[3], S0	**3RV1923-1DA00**		1	1 unit	41E
				82 (for motor starter protector + lateral auxiliary switch[2] + auxiliary release)	S2	**3RV1933-1DA00**		1	1 unit	41E
3RV1923-1FA00, 3RV1933-1GA00	**With EMERGENCY OFF rotary operating mechanism,** lockable in 0 position	IP55	N and PE	54 (for motor starter protector + lateral auxiliary switch)	S00[3], S0	**3RV1923-1FA00**		1	1 unit	41E
				72 (for motor starter protector + lateral auxiliary switch[2] + auxiliary release)	S00[3], S0	**3RV1923-1GA00**		1	1 unit	41E
				82 (for motor starter protector + lateral auxiliary switch[2] + auxiliary release)	S2	**3RV1933-1GA00**		1	1 unit	41E
Cast aluminum enclosures for surface mounting[1]										
3RV1923-1DA01	**With rotary operating mechanism,** lockable in 0 position	IP65	PE[4]	72 (for motor starter protector + lateral auxiliary switch[2] + auxiliary release)	S00[3], S0	**3RV1923-1DA01**		1	1 unit	41E
	With EMERGENCY OFF rotary operating mechanism, lockable in 0 position	IP65	PE[4]	72 (for motor starter protector + lateral auxiliary switch[2] + auxiliary release)	S00[3], S0	**3RV1923-1GA01**		1	1 unit	41E
Molded-plastic enclosures for flush mounting[5]										
3RV1923-2DA00	**With rotary operating mechanism,** lockable in 0 position	IP55 (front side)	N and PE	72 (for motor starter protector + lateral auxiliary switch[2] + auxiliary release)	S00[3], S0	**3RV1923-2DA00**		1	1 unit	41E
	With EMERGENCY OFF rotary operating mechanism, lockable in 0 position	IP55 (front side)	N and PE	72 (for motor starter protector + lateral auxiliary switch[2] + auxiliary release)	S00[3], S0	**3RV1923-2GA00**		1	1 unit	41E
3RV1913-2DA00	**With actuator diaphragm**	IP55 (front side)	N and PE	72 (for motor starter protector + lateral auxiliary switch[2] + auxiliary release)	S00[6]	**3RV1913-2DA00**		1	1 unit	41E
Molded-plastic enclosures for surface mounting										
3RV1913-1CA00	**With actuator diaphragm**	IP55	N and PE	85	S00[6]	**3RV1913-1CA00**		1	1 unit	41E
				105	S00[6]	**3RV1913-1DA00**		1	1 unit	41E

1) The rear cable bushings cannot be used on 3RV2.11-...2. and 3RV2.21-...2. devices with spring-loaded terminals.
2) Only valid for lateral auxiliary switches with two auxiliary contacts.
3) Not for 3RV1011 motor starter protectors.
4) If required, an additional N terminal can be mounted (e.g. 8WA1011-1BG11).
5) Not suitable for 3RV2.11-...2. and 3RV2.21-...2. devices with spring-loaded terminals.
6) Only for 3RV1011 motor starter protectors.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Accessories > Enclosures and front plates

	Version	Degree of protection	For 3RV20 to 3RV24 motor starter protectors	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			Size					
Front plates[1]								
3RV1923-4B + 3RV1923-4G	**Molded-plastic front plates with rotary operating mechanism,** lockable in 0 position For actuation of 3RV2 motor starter protectors in any enclosure	IP55 (front side)	S00[2] up to S3	**3RV1923-4B**		1	1 unit	41E
	Molded-plastic front plates with EMERGENCY OFF rotary operating mechanism, red/yellow, lockable in 0 position EMERGENCY OFF actuation of 3RV2 motor starter protectors in any enclosure	IP55 (front side)	S00[2] up to S3	**3RV1923-4E**		1	1 unit	41E
	Holders for front plates Holder is mounted on front plate, motor starter protector with and without accessories is snapped in.	--	S00[2], S0	**3RV1923-4G**		1	1 unit	41E

1) It is not possible to use a signaling switch or 4-pole auxiliary switch with front plates.
2) Not for 3RV1011 motor starter protectors.

	Version	Rated control supply voltage U_s	For 3RV20 to 3RV24 motor starter protectors	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V	Size					
Indicator lights								
3RV1903-5B	**Indicator lights** For all enclosures and front plates • With LED lamp for versions 110 ... 120 V, with glow lamp for versions 220 ... 500 V • With colored lenses red, green, yellow-orange and clear	110 ... 120 220 ... 240 380 ... 415 480 ... 500	S00 to S3	**3RV1903-5B** **3RV1903-5C** **3RV1903-5E** **3RV1903-5G**		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41E 41E 41E 41E

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

The 3RV29 infeed system is a convenient means of energy supply and distribution for a group of several motor starter protectors or complete load feeders with screw or spring-loaded terminals in sizes S00 and S0. Motor starter protectors or load feeders with a rated current of maximum 32 A each can be used. 3RV21 motor starter protectors cannot be used in this system.

The system is based on a basic module complete with a lateral incoming unit (3-phase busbar with infeed). This infeed with spring-loaded terminals is mounted on the right or left, depending on the version, and can be supplied with a maximum conductor cross-section of 25 mm^2 (with end sleeve). A basic module has two sockets onto each of which a motor starter protector can be snapped.

Expansion modules (3-phase busbars for system expansion) are available for extending the system. The individual modules are connected through an expansion plug.

The electrical connection between the 3-phase busbars and the motor starter protectors is implemented through plug-in connectors. The complete system can be mounted on a TH 35 DIN rail to IEC 60715, and can be expanded as required up to a maximum current carrying capacity of 63 A.

The system is mounted extremely quickly and easily thanks to the simple plug-in terminals. Thanks to the lateral infeed, the system also saves space in the control cabinet.

The additional height required for the infeed unit is only 30 mm. The alternative infeed possibilities on each side offer a high degree of flexibility for configuring the control cabinet: Infeed on left-hand or right-hand side as well as infeed on one side and outfeed on the other side to supply further loads are all possible. A terminal block with spring-loaded terminals in combination with a DIN rail enables the integration of not only SIRIUS motor starter protectors but also 1-phase, 2-phase and 3-phase components such as 5SY miniature circuit breakers or SIRIUS relay components.

The 3RV29 infeed system is approved in accordance with IEC to 500 V. It is also UL-approved and authorized for "Self-Protected Combination Motor Controllers" starters (Type E), for starters (Type F) (starters (Type E) + contactors) and for circuit breakers according to UL 489 (3RV27/3RV28).

Assembly kits for constructing the infeed system with spring-loaded terminals

The following versions can be ordered:

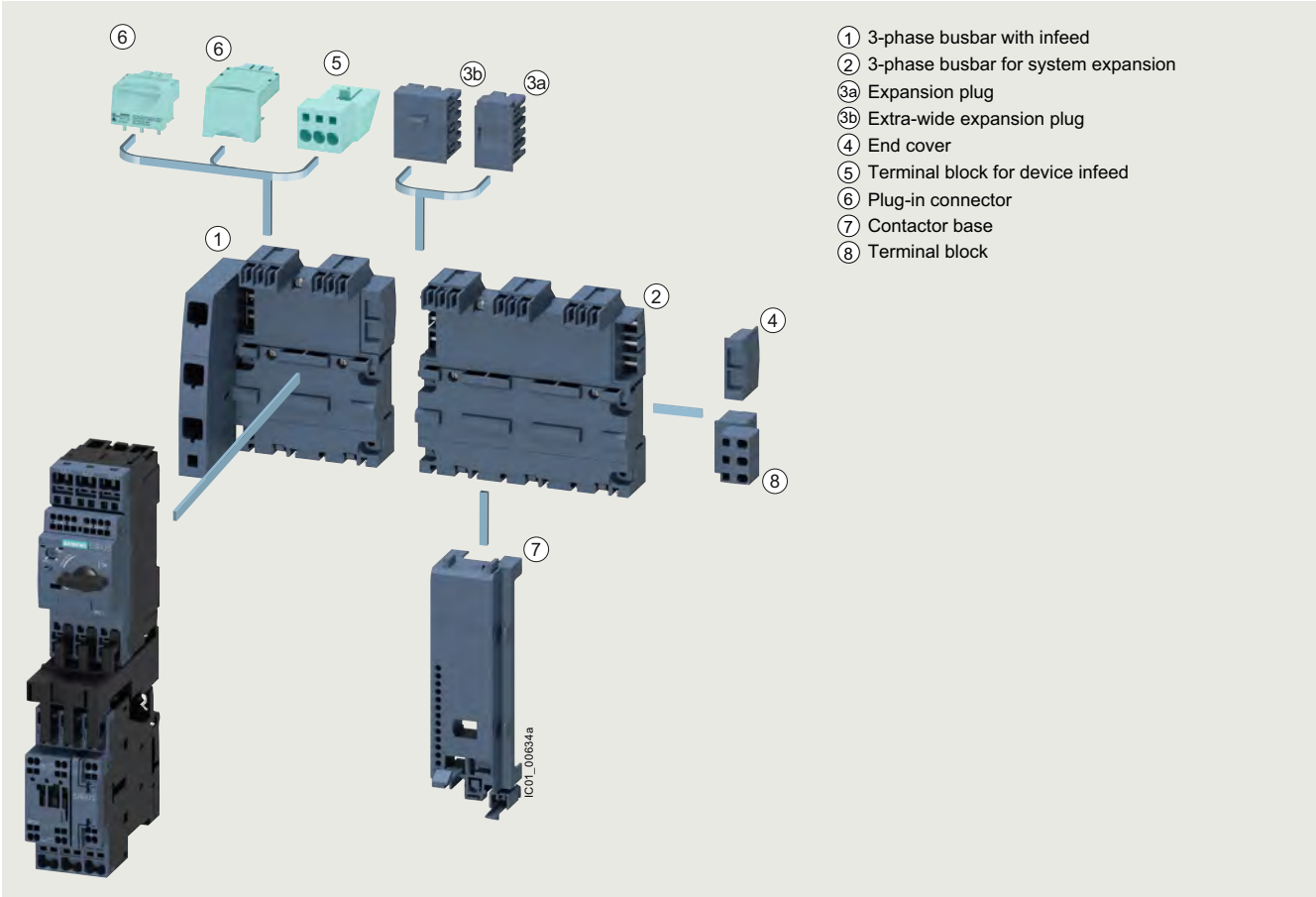
- Basic set for two feeders
- Expansion sets for two or three feeders

The assembly kits contain 3-phase busbars, plug-in connectors and contactor bases (see page 7/72).

Note:

Each set contains plug-in connectors for sizes S00 and S0.

Example: The basic set contains four plug-in connectors (two each for S00 and S0).



SIRIUS 3RV29 infeed system

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3RV29 infeed system

① *3-phase busbars with infeed*

A 3-phase busbar with infeed unit is required for connecting the incoming supply. These modules comprise one infeed module and two sockets which each accept one motor starter protector. A choice of two versions with infeed on the left or right is available. The infeed is connected to spring-loaded terminals. They permit an infeed with conductor cross-sections of up to 25 mm^2 with end sleeve. An end cover is supplied with each module.

② *3-phase busbars for system expansion*

The 3-phase busbars for system expansion support expansion of the system. There is a choice of modules with two or three sockets. The system can be expanded as required up to a maximum current carrying capacity of 63 A. An expansion plug is supplied with each module.

③a *Expansion plug*

The expansion plug is used for electrical connection of adjacent 3-phase busbars. The current carrying capacity of this plug equals 63 A. One expansion plug is supplied with each 3-phase busbar for system expansion. Additional expansion plugs are therefore only required as spare parts.

③b *Extra-wide expansion plug*

The wide expansion plug makes the electrical connection between two 3-phase busbars, thus performing the same function as the 3RV2917-5BA00 expansion plug; the electrical characteristics (e.g. a current carrying capacity of 63 A) are identical.

The 3RV2917-5E expansion plug is 10 mm wider than the 3RV2917-5BA00 expansion plug, hence in the plugged state there is a distance of 10 mm between the connected 3-phase busbars. This distance can be used to lay the auxiliary current and control current wiring ("wiring duct"). The motor starter protector and contactor can be wired from underneath, which means that the complete cable duct above the system can be omitted.

④ *End cover*

The end cover is used to cover the 3-phase busbar at the open end of the system. This cover is therefore only required once for each system. An end cover is supplied with each 3-phase busbar system with infeed. Further end covers are therefore only required as spare parts.

⑤ *Terminal block for device infeed*

A new addition to the system is a plug for outfeeding to a device slot within a module. This offers the option not only of connecting three-phase loads to the system, but also of integrating 1-phase loads into the infeed system.

⑥ *Plug-in connector*

The plug-in connector is used for the electrical connection between the 3-phase busbar and the 3RV2 or 3RV1011 motor starter protector. These plug-in connectors are available for screw or spring-loaded terminals.

⑦ *Contactor base*

Load feeders can be assembled in the system using the S00 and S0 contactor base. The contactor bases are suitable for contactors of sizes S00 and S0 with screw and spring-loaded terminals and are simply snapped onto the 3-phase busbars. Direct-on-line starters and reversing starters are possible. One contactor base is required for direct-on-line starters and two are required for reversing starters.

To assemble load feeders for reversing starters, the contactor bases can be arranged alongside each other (90 mm overall width). In this case the mechanical interlocking of the contactors is possible. The S0 contactor bases are also suitable for soft starters size S00 and S0 with screw terminal.

The infeed system is designed for mounting on a TH 35 DIN rail with 7.5 mm overall depth. This DIN rail gives the contactor base a stable mounting surface to sit on. If DIN rails with a depth of 15 mm are used, the spacer connected to the bottom of the contactor base must be knocked out and plugged into the DIN rail mating piece, which is also located on the underside. Then the contactor base also has a stable mounting surface. When DIN rails with a depth of 7.5 mm are used, the spacer has no function and can be removed.

The link modules are used for direct on-line starters, in which case the use of a contactor base is not absolutely necessary. Motor starter protector and contactor assemblies can then be directly snapped onto the sockets of the 3-phase busbars. For feeders of sizes S00 and S0, the corresponding 3RA1921-1...., 3RA2911-2...., 3RA2921-1.... or 3RA2921-2.... link modules should generally be used.

⑧ *Terminal block*

The 3RV2917-5D terminal block enables the integration of not only SIRIUS motor starter protectors but also 1-phase, 2-phase and 3-phase components. The three phases can be fed out of the system using the terminal block; which means that single-phase loads can also be integrated in the system. The terminal block is plugged into the slot of the expansion plug and thus enables outfeeding from the middle or end of the infeed system. The terminal block can be rotated through 180° and be locked to the support modules of the infeed system. In addition, the 45 mm wide TH 35 3RV1917-7B DIN rail option for screwing onto the support plate facilitates plugging the 1-phase, 2-phase and 3-phase components onto the infeed system.

Video:
SIRIUS News SIRIUS 3RV29 infeed system - Assembly without tools

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Technical specifications

More information
Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/60279172

General data

Type					**3RV29.7**
Size					S00, S0
Standards					
• IEC 60947-2					Yes
• IEC 60947-4-1					Yes
• UL 508/UL 60947-4-1					Yes
Rated current I_n				A	63
Permissible rated current at inside temperature of control cabinet					
Motor starter protectors	Size	Rated current	Inside temperature of control cabinet		
• 3RV2.11/3RV1011	S00	... 14 A	60 °C	%	100
		> 14 ... 16 A	40 °C 60 °C	% %	100 87
• 3RV2.21	S0	... 16 A	60 °C	%	100
		> 16 ... 25 A	40 °C 60 °C	% %	100 87
		> 25 ... 32 A	40 °C	%	87
Permissible ambient temperature					
• Storage/transport				°C	-50 ... +80
• Operation				°C	-20 ... +60
Rated operational voltage U_e					
• According to IEC		10% overvoltage		V AC	500
		5% overvoltage		V AC	525
• According to UL/CSA				V AC	600
Rated frequency				Hz	50/60
Rated impulse withstand voltage U_{imp}				kV	6
Short-circuit strength					corresponds to the mounted motor starter protector or load feeder. The assembly instructions must be followed, see Operating Instructions
Degree of protection IP on the front according to IEC 60529					IP20 with cover and 25 mm^2 conductor cross-section at the infeed terminal
Touch protection on the front according to IEC 60529					Finger-safe for vertical touching from the front with cover and 25 mm^2 conductor cross-section at the infeed terminal

Conductor cross-sections

Type		**3-phase busbar with infeed 3RV2917-1A, 3RV2917-1E**	**Terminal block 3RV2917-5D**	**Terminal block for device infeed 3RV2917-5FA00**
Conductor cross-sections (min./max.)				
• Solid or stranded	mm^2	4 ... 25	1.5 ... 6	1 ... 10
• Finely stranded with end sleeve	mm^2	4 ... 25	1.5 ... 4	1 ... 6
• Finely stranded without end sleeve	mm^2	6 … 25	1.5 ... 6	--
• AWG cables	AWG	10 ... 3	15 ... 10	18 ... 8

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3RV29 infeed system

Selection and ordering data

Type	Version	For 3RV20, 3RV23, 3RV24, 3RV27, 3RV28, 3RV1011 motor starter protectors Size	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3-phase busbars with infeed							
 3RV2917-1A	**3-phase busbars with infeed** Incl. 3RV2917-6A end cover	For two motor starter protectors with screw or spring-loaded terminals					
	• With infeed on the left	S00, S0	**3RV2917-1A**		1	1 unit	41E
	• With infeed on the right	S00, S0	**3RV2917-1E**		1	1 unit	41E
3-phase busbars for system expansion							
 3RV2917-4A	**3-phase busbars** Incl. 3RV2917-5BA00 expansion plug	For motor starter protectors with screw or spring-loaded terminals					
	• For 2 motor starter protectors	S00, S0	**3RV2917-4A**		1	1 unit	41E
	• For 3 motor starter protectors	S00, S0	**3RV2917-4B**		1	1 unit	41E
Plug-in connectors							
 3RV2917-5AA00	**Plug-in connectors** To make contact with the 3RV2 motor starter protectors	• For spring-loaded terminals	**Spring-loaded terminals**				
	- Single-unit packaging	S00[1] S0[2]	**3RV2917-5AA00** **3RV2927-5AA00**		1 1	1 unit 1 unit	41E 41E
	- Multi-unit packaging	S00[1] S0[2]	**3RV2917-5A** **3RV2927-5A**		1 1	10 units 10 units	41E 41E
	• For screw terminals		**Screw terminals**				
 3RV2917-5CA00	- Single-unit packaging	S00[1][3] S0[2][4]	**3RV2917-5CA00** **3RV1927-5AA00**		1 1	1 unit 1 unit	41E 41E
	- Multi-unit packaging	S00[1][3] S0[2][4]	**3RV2917-5C** **3RV1927-5A**		1 1	10 units 10 units	41E 41E
	Plug-in connectors To make contact with the 3RV1011 motor starter protectors	• For screw terminals					
	- Single-unit packaging	S00	**3RV1917-5CA00**		1	1 unit	41E
	- Multi-unit packaging	S00	**3RV1917-5C**		1	10 units	41E

[1] I > 14 A, please note derating.
[2] I > 16 A, please note derating.
[3] The plug-in connector cannot be used for the 3RV2711 and 3RV2811 circuit breakers with size S00.
[4] The plug-in connector can be used for the 3RV2711, 3RV2811 (size S00) and 3RV2721, 3RV2821 (size S0) circuit breakers.

Type	Version	For contactors Size	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Contactor bases							
 3RV2927-7AA00	**Contactor bases** For mounting direct-on-line or reversing starters	Single-unit packaging					
		S00[1]	**3RV2917-7AA00**		1	1 unit	41E
		S00[1], S0	**3RV2927-7AA00**		1	1 unit	41E

[1] Not for 3RV1011 motor starter protectors.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Type	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal blocks							
3RV2917-5D	**Terminal blocks** For integration of 1-phase, 2-phase and 3-phase components	Single-unit packaging	**3RV2917-5D**		1	1 unit	41E
TH 35 DIN rails, width 45 mm							
3RV1917-7B	**TH 35 DIN rails** According to IEC 60715, width 45 mm For mounting on 3-phase busbars	Single-unit packaging	**3RV1917-7B**		1	1 unit	41E
Extra-wide expansion plugs							
3RV2917-5E	**Extra-wide expansion plugs** As accessory	Single-unit packaging	**3RV2917-5E**		1	1 unit	41E
Expansion plugs							
3RV2917-5BA00	**Expansion plugs**[1] As spare part	Single-unit packaging	**3RV2917-5BA00**		1	1 unit	41E
End covers							
3RV2917-6A	**End covers**[2] As spare part	Multi-unit packaging	**3RV2917-6A**		100	10 units	41E
Terminal blocks for device infeed							
3RV2917-5FA00	**Terminal blocks for device infeed**	Single-unit packaging	**3RV2917-5FA00**		1	1 unit	41E

[1] The expansion plug is included in the scope of supply of the 3RV2917-4. 3-phase busbars for system expansion.

[2] The end cover is included in the scope of supply of the 3RV2917-1. 3-phase busbars with infeed system.

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3RV29 infeed system

Version	For motor starter protectors/ circuit breakers with spring-loaded terminals	Spring-loaded terminals	PU (UNIT, SET, M)	PS*	PG
	Size	Article No. / Price per PU			
Assembly kits for constructing the infeed system with spring-loaded terminals[1]					
Basic set for two feeders contains: • 1 x 3-phase busbars 3RV2917-1A (incl. end cover 3RV2917-6A), with infeed left, for two motor starter protectors with spring-loaded terminals • 2 x plug-in connectors for spring-loaded terminals 3RV2917-5AA00 • 2 x plug-in connectors for spring-loaded terminals 3RV2927-5AA00 • 2 x 3RV2927-7AA00 contactor bases	S00, S0 S00 S0 S00, S0	**3RV2907-1AB00**	1	1 unit	41E
Expansion set for two feeders contains: • 1 x 3-phase busbars 3RV2917-4A (incl. expansion plug 3RV2917-5BA00), for two motor starter protectors with spring-loaded terminals • 2 x plug-in connectors for spring-loaded terminals 3RV2917-5AA00 • 2 x plug-in connectors for spring-loaded terminals 3RV2927-5AA00 • 2 x 3RV2927-7AA00 contactor bases	S00, S0 S00 S0 S00, S0	**3RV2907-4AB00**	1	1 unit	41E
Expansion set for three feeders contains: • 1 x 3-phase busbars 3RV2917-4B (incl. expansion plug 3RV2917-5BA00), for three motor starter protectors with spring-loaded terminals • 3 x plug-in connectors for spring-loaded terminals 3RV2917-5AA00 • 3 x plug-in connectors for spring-loaded terminals 3RV2927-5AA00 • 3 x 3RV2927-7AA00 contactor bases	S00, S0 S00 S0 S00, S0	**3RV2907-4BB00**	1	1 unit	41E

[1] Not for 3RV1011 motor starter protectors.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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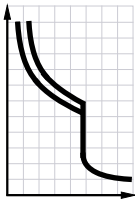
Technical specifications

See pages 7/9, 7/11, 7/14, 7/19, 7/20 and 7/23

Selection and ordering data

Without auxiliary switches



Rated current	Thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	Screw terminals	PU (UNIT, SET, M)	PS*	PG
I_n		$I >$	I_{cu}	Article No. / Price per PU			
A	A	A	kA				
Size S00							
0.2	0.2	1.2	100	**3RV1611-0BD10**	1	1 unit	41E

3RV1611-0BD10

Note:

The auxiliary switch required for signaling must be ordered separately.

Accessories

Version	Contacts	Screw terminals	PU (UNIT, SET, M)	PS*	PG
		Article No. / Price per PU			
Mountable auxiliary switches (essential accessories)					
Transverse auxiliary switches With screw terminals, mountable on the front	1 NO + 1 NC	**3RV2901-1E**	1	1 unit	41E
Lateral auxiliary switches With screw terminals, mountable on the left	1 NO + 1 NC	**3RV2901-1A**	1	1 unit	41E

3RV2901-1E

3RV2901-1A

Additional auxiliary switches and other accessories, see from page 7/47 onwards.

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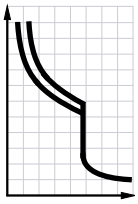
For distance protection

Technical specifications

See page 7/24

Selection and ordering data

Voltage transformer motor starter protectors with transverse auxiliary switches (1 CO)



Rated current	Thermal overload release	Instantaneous electronic release	Auxiliary switch integrated in the motor starter protector, transverse	Short-circuit breaking capacity at 400 V AC	Screw terminals	PU (UNIT, SET, M)	PS*	PG
I_n	⊏	$I >$		I_{cu}	Article No. / Price per PU			
A	A	A		kA				
Size S00								
1.4	1.4	6	1 CO	50	**3RV1611-1AG14**	1	1 unit	41E
2.5	2.5	10.5	1 CO	50	**3RV1611-1CG14**	1	1 unit	41E
3	3	20	1 CO	50	**3RV1611-1DG14**	1	1 unit	41E

3RV1611-1.G14

Accessories

Version	Contacts	Screw terminals	PU (UNIT, SET, M)	PS*	PG
		Article No. / Price per PU			
Mountable auxiliary switches for other signaling purposes					
Lateral auxiliary switches With screw terminals, mountable on the left	1 NO + 1 NC	**3RV2901-1A**	1	1 unit	41E

3RV2901-1A

Additional auxiliary switches and other accessories, see from page 7/47 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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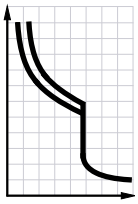
Selection and ordering data

CLASS 10, without auxiliary switches



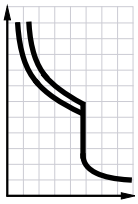
Rated current	Suitable for three-phase motors[1] with *P*	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
I_n		⊏	$I >$	I_{cu}					
A	kW	A	A	kA					
Size S00									
0.16	0.04	0.11 ... 0.16	2.1	100	**3RV1011-0AA10**		1	1 unit	41E
0.2	0.06	0.14 ... 0.2	2.6	100	**3RV1011-0BA10**		1	1 unit	41E
0.25	0.06	0.18 ... 0.25	3.3	100	**3RV1011-0CA10**		1	1 unit	41E
0.32	0.09	0.22 ... 0.32	4.2	100	**3RV1011-0DA10**		1	1 unit	41E
0.4	0.09	0.28 ... 0.4	5.2	100	**3RV1011-0EA10**		1	1 unit	41E
0.5	0.12	0.35 ... 0.5	6.5	100	**3RV1011-0FA10**		1	1 unit	41E
0.63	0.18	0.45 ... 0.63	8.2	100	**3RV1011-0GA10**		1	1 unit	41E
0.8	0.18	0.55 ... 0.8	10	100	**3RV1011-0HA10**		1	1 unit	41E
1	0.25	0.7 ... 1	13	100	**3RV1011-0JA10**		1	1 unit	41E
1.25	0.37	0.9 ... 1.25	16	100	**3RV1011-0KA10**		1	1 unit	41E
1.6	0.55	1.1 ... 1.6	21	100	**3RV1011-1AA10**		1	1 unit	41E
2	0.75	1.4 ... 2	26	100	**3RV1011-1BA10**		1	1 unit	41E
2.5	0.75	1.8 ... 2.5	33	100	**3RV1011-1CA10**		1	1 unit	41E
3.2	1.1	2.2 ... 3.2	42	100	**3RV1011-1DA10**		1	1 unit	41E
4	1.5	2.8 ... 4	52	100	**3RV1011-1EA10**		1	1 unit	41E
5	1.5	3.5 ... 5	65	100	**3RV1011-1FA10**		1	1 unit	41E
6.3	2.2	4.5 ... 6.3	82	100	**3RV1011-1GA10**		1	1 unit	41E
8	3	5.5 ... 8	104	50	**3RV1011-1HA10**		1	1 unit	41E
10	4	7 ... 10	130	50	**3RV1011-1JA10**		1	1 unit	41E
12	5.5	9 ... 12	156	50	**3RV1011-1KA10**		1	1 unit	41E

3RV1011-..A10

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

The accessories of 3RV2 motor starter protectors/circuit breakers can be used with exceptions, see page 7/47 onwards.

CLASS 10, with transverse auxiliary switch (1 NO + 1 NC)



Rated current	Suitable for three-phase motors[1] with *P*	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
I_n		⊏	$I >$	I_{cu}					
A	kW	A	A	kA					
Size S00									
0.16	0.04	0.11 ... 0.16	2.1	100	**3RV1011-0AA15**		1	1 unit	41E
0.2	0.06	0.14 ... 0.2	2.6	100	**3RV1011-0BA15**		1	1 unit	41E
0.25	0.06	0.18 ... 0.25	3.3	100	**3RV1011-0CA15**		1	1 unit	41E
0.32	0.09	0.22 ... 0.32	4.2	100	**3RV1011-0DA15**		1	1 unit	41E
0.4	0.09	0.28 ... 0.4	5.2	100	**3RV1011-0EA15**		1	1 unit	41E
0.5	0.12	0.35 ... 0.5	6.5	100	**3RV1011-0FA15**		1	1 unit	41E
0.63	0.18	0.45 ... 0.63	8.2	100	**3RV1011-0GA15**		1	1 unit	41E
0.8	0.18	0.55 ... 0.8	10	100	**3RV1011-0HA15**		1	1 unit	41E
1	0.25	0.7 ... 1	13	100	**3RV1011-0JA15**		1	1 unit	41E
1.25	0.37	0.9 ... 1.25	16	100	**3RV1011-0KA15**		1	1 unit	41E
1.6	0.55	1.1 ... 1.6	21	100	**3RV1011-1AA15**		1	1 unit	41E
2	0.75	1.4 ... 2	26	100	**3RV1011-1BA15**		1	1 unit	41E
2.5	0.75	1.8 ... 2.5	33	100	**3RV1011-1CA15**		1	1 unit	41E
3.2	1.1	2.2 ... 3.2	42	100	**3RV1011-1DA15**		1	1 unit	41E
4	1.5	2.8 ... 4	52	100	**3RV1011-1EA15**		1	1 unit	41E
5	1.5	3.5 ... 5	65	100	**3RV1011-1FA15**		1	1 unit	41E
6.3	2.2	4.5 ... 6.3	82	100	**3RV1011-1GA15**		1	1 unit	41E
8	3	5.5 ... 8	104	50	**3RV1011-1HA15**		1	1 unit	41E
10	4	7 ... 10	130	50	**3RV1011-1JA15**		1	1 unit	41E
12	5.5	9 ... 12	156	50	**3RV1011-1KA15**		1	1 unit	41E

3RV1011-..A15 with integrated transverse auxiliary switch

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

The accessories of 3RV2 motor starter protectors/circuit breakers can be used with exceptions, see page 7/47 onwards.

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General data

Overview

More information	
Homepage, see www.siemens.com/sirius-control Industry Mall, see • www.siemens.com/product?3RU2 • www.siemens.com/product?3RB3 • www.siemens.com/product?3RB2	TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=ElectronicOverloadRelay Configuration Manual for load feeders, see https://support.industry.siemens.com/cs/ww/en/view/39714188 Conversion tool, see www.siemens.com/conversion-tool

Features	3RU21	3RB30/3RB31	3RB20/3RB21	3RB22/3RB23	3RB24	Benefits
General data						
Sizes	S00 ... S3	S00 ... S3	S6 ... S12	S00 ... S12	S00 ... S12	• Are coordinated with the dimensions, connections and technical characteristics of the other devices in the SIRIUS modular system (contactors, etc.) • Permit the mounting of slim and compact load feeders in widths of 45 mm (S00, S0), 55 mm (S2), 70 mm (S3), 120 mm (S6) and 145 mm (S10/S12); this does not include the current measuring modules for the 3RB22 to 3RB24 evaluation modules sizes S00 to S3 • Simplify configuration
Seamless current range	0.11 ... 100 A	0.1 ... 115 A	50 ... 630 A	0.3 ... 630 A (up to 820 A)[1]	0.3 ... 630 A (up to 820 A)[1]	• Allows easy and consistent configuration with one series of overload relays (for small to large loads)
Protection functions						
Tripping due to overload	✓	✓	✓	✓	✓	• Provides optimum inverse-time delayed protection of loads against excessive temperature rises due to overload
Tripping due to phase asymmetry	✓	✓	✓	✓	✓	• Provides optimum inverse-time delayed protection of loads against excessive temperature rises due to phase asymmetry
Tripping due to phase failure	✓	✓	✓	✓	✓	• Minimizes heating of three-phase motors during phase failure
Protection of single-phase loads	✓	--	--	✓	✓	• Enables the protection of single-phase loads
Tripping in the event of overheating by **Integrated thermistor motor protection function**	--[2]	--[2]	--[2]	✓	✓	• Provides optimum temperature-dependent protection of loads against excessive temperature rises, e.g. for stator-critical motors or in the event of insufficient coolant flow, contamination of the motor surface or long starting or braking operations • Eliminates the need for additional special equipment • Saves space in the control cabinet • Reduces wiring outlay and costs
Tripping in the event of a ground fault by **Internal ground-fault detection (activatable)**	--	✓ (only 3RB31)	✓ (only 3RB21)	✓	✓	• Provides optimum protection of loads against incomplete ground faults due to moisture, condensed water, damage to the insulation material, etc. • Eliminates the need for additional special equipment • Saves space in the control cabinet • Reduces wiring outlay and costs

✓ Available
-- Not available

[1] Motor currents up to 820 A can be recorded and evaluated, e.g. by a 3RB2906-2BG1 current measuring module (0.3 to 3 A), in combination with a 3UF1868-3GA00 (820 A/1 A) series transformer.
For 3UF18 transformers, see page 10/21.

[2] The SIRIUS 3RN thermistor motor protection devices can be used to provide additional temperature-dependent protection.

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Features	3RU21	3RB30/3RB31	3RB20/3RB21	3RB22/3RB23	3RB24	Benefits
Features						
RESET function	✓	✓	✓	✓	✓	• Allows manual or automatic resetting of the device
Remote RESET function	✓ (by means of separate module)	✓ (only with 3RB31 and external auxiliary voltage 24 V DC)	✓ (only with 3RB21 and external auxiliary voltage 24 V DC)	✓ (electrically via external button)	✓ (electrically with button or via IO-Link)	• Allows the remote resetting of the device
TEST function for auxiliary contacts	✓	✓	✓	✓	✓	• Allows easy checking of the function and wiring
TEST function for electronics	--	✓	✓	✓	✓	• Allows checking of the electronics
Status display	✓	✓	✓	✓	✓	• Displays the current operating state
Large current adjustment button	✓	✓	✓	✓	✓	• Makes it easier to set the relay exactly to the correct current value
Integrated auxiliary contacts (1 NO + 1 NC)	✓	✓	✓	✓ (2 x)	--	• Allow the load to be switched off if necessary • Can be used to output signals
Integrated auxiliary contacts (1 CO and 1 NO in series)	--	--	--	--	✓	• Enable the controlling of contactors directly from the higher-level control system through IO-Link
IO-Link connection	--	--	--	--	✓	• Reduction of wiring in the control cabinet • Enables communication
Connection of optional handheld device	--	--	--	--	✓	• Enables local operation
Communication capability through IO-Link						
Full starter functionality through IO-Link	--	--	--	--	✓	• Enables in combination with the SIRIUS 3RT contactors the assembly of communication-capable motor starters (direct-on-line, reversing and star-delta (wye-delta) starting)
Readout of diagnostics functions	--	--	--	--	✓	• Enables the readout of diagnostics information such as overload, open circuit, ground fault, etc.
Readout of current values	--	--	--	--	✓	• Enables the readout of current values and their direct processing in the higher-level control system
Readout of all set parameters	--	--	--	--	✓	• Enables the readout of all set parameters, e.g. for plant documentation

✓ Available

-- Not available

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General data

Features	3RU21	3RB30/3RB31	3RB20/3RB21	3RB22/3RB23	3RB24	Benefits
Design of load feeders						
Short-circuit strength up to 100 kA at 690 V (in conjunction with the corresponding fuses or the corresponding motor starter protector)	✓	✓	✓	✓	✓	• Provides optimum protection of the loads and operating personnel in the event of short circuits due to insulation faults or faulty switching operations
Electrical and mechanical matching to 3RT contactors	✓	✓	✓	✓[1]	✓[1]	• Simplifies configuration • Reduces wiring outlay and costs • Enables stand-alone installation as well as space-saving direct mounting
Straight-through transformers for main circuit[2] (in this case the cables are routed through the feed-through openings of the overload relay and connected directly to the box terminals of the contactor)	--	✓ (S2, S3)	✓ (S6)	✓ (S00 ... S6)	✓ (S00 ... S6)	• Reduce the contact resistance (only one point of contact) • Save wiring costs (easy, no need for tools, and fast) • Save material costs • Reduce installation costs
Spring-loaded terminals for main circuit[2]	✓ (S00, S0)	✓ (S00, S0)	--	--	--	• Enable fast connections • Permit vibration-resistant connections • Enable maintenance-free connections
Spring-loaded terminals for auxiliary circuits[2]	✓	✓	✓	✓	✓	• Enable fast connections • Permit vibration-resistant connections • Enable maintenance-free connections
Full starter functionality through IO-Link	--	--	--	--	✓	• Enables in combination with the SIRIUS 3RT contactors the assembly of communication-capable motor starters (direct-on-line, reversing and star-delta (wye-delta) starting)
Starter function	--	--	--	--	✓	• Integration of feeders via IO-Link in the control system up to 630 A or 820 A

✓ Available
-- Not available

[1] Exception: up to size S3, only stand-alone installation is possible.
[2] Available as an alternative to screw terminals.

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Features	3RU21	3RB30/3RB31	3RB20/3RB21	3RB22/3RB23	3RB24	Benefits
Other features						
Temperature compensation	✓	✓	✓	✓	✓	• Allows the use of the relays at high temperatures without derating • Prevents premature tripping • Allows compact installation of the control cabinet without distance between the devices/load feeders • Simplifies configuration • Enables space to be saved in the control cabinet
Very high long-term stability	✓	✓	✓	✓	✓	• Provides safe protection for the loads even after years of use in harsh operating conditions
Wide setting ranges	--	✓ (1:4)	✓ (1:4)	✓ (1:10)	✓ (1:10)	• Minimize the configuring outlay and costs • Minimize storage overhead, storage costs, and tied-up capital
Fixed trip class	CLASS 10, CLASS 10A	3RB30: CLASS 10E or CLASS 20E	3RB20: CLASS 10E or CLASS 20E	--	--	• Optimum motor protection for standard starts
CLASS 5E, 10E, 20E, 30E trip classes adjustable on the device	--	✓ (only 3RB31)	✓ (only 3RB21)	✓	✓	• Enable solutions for very fast starting motors requiring special protection (e.g. Ex motors) • Enable heavy starting solutions • Reduce the number of variants • Minimize the configuring outlay and costs • Minimize storage overhead, storage costs, and tied-up capital
Low power loss	--	✓	✓	✓	✓	• Reduces power consumption and energy costs (up to 98% less power is used than for thermal overload relays) • Minimizes temperature rises of the contactor and control cabinet – in some cases this may eliminate the need for control cabinet cooling • Direct mounting to contactor saves space, even for high motor currents (i.e. no heat decoupling is required)
Internal power supply	--[1)]	✓	✓	--	--	• Eliminates the need for configuration and connecting an additional control circuit
Supplied from an external source via IO-Link	--	--	--	--	✓	• Eliminates the need for configuration and connecting an additional control circuit

✓ Available
-- Not available

[1)] SIRIUS 3RU21 thermal overload relays use a bimetal contactor and therefore do not require a control supply voltage.

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General data

Features	3RU21	3RB30/3RB31	3RB20/3RB21	3RB22/3RB23	3RB24	Benefits
Other features (continued)						
Overload warning	--	--	--	✓	✓	• Indicates imminent tripping of the relay directly on the device due to overload, phase asymmetry or phase failure through flickering of the LEDs or in the case of the 3RB24 as a signal through IO-Link • Allows the imminent tripping of the relay to be signaled • Allows measures to be taken in time in the event of inverse-time delayed overloading for an extended period over the current limit • Eliminates the need for an additional device • Saves space in the control cabinet • Reduces wiring outlay and costs
Analog output	--	--	--	✓	✓	• Allows the output of an analog output signal for actuating moving-coil measuring instruments, feeding programmable logic controllers or transfer to bus systems • Eliminates the need for an additional instrument transformer and signal converter • Saves space in the control cabinet • Reduces wiring outlay and costs

✓ Available
-- Not available

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Overview of overload relays – matching contactors

	Overload relays	Current measure-ment	Current range	**Contactors** (type, size, rating in kW)							
				3RT201.	**3RT202.**	**3RT203.**	**3RT204.**	**3RT105.**	**3RT106.**	**3RT107.**	**3TF68/3TF69**
				S00	S0	S2	S3	S6	S10	S12	14
	Type		A	3/4/5.5/7.5	5.5/7.5/11/15/18.5	15/18.5/22/30/37	37/45/55	55/75/90	110/132/160	200/250	375/450
SIRIUS 3RU21 thermal overload relays											
3RU21	3RU211	Integrated	0.11 … 16	✓	--	--	--	--	--	--	--
	3RU212	Integrated	1.8 … 40	--	✓	--	--	--	--	--	--
	3RU213	Integrated	11 … 80	--	--	✓	--	--	--	--	--
	3RU214	Integrated	28 ... 100	--	--	--	✓	--	--	--	--
SIRIUS 3RB30 electronic overload relays[1]											
3RB30	3RB301	Integrated	0.1 … 16	✓	--	--	--	--	--	--	--
	3RB302	Integrated	0.1 … 40	--	✓	--	--	--	--	--	--
	3RB303	Integrated	12.5 … 80	--	--	✓	--	--	--	--	--
	3RB304	Integrated	32 ... 115	--	--	--	✓	--	--	--	--
SIRIUS 3RB31 electronic overload relays[1]											
3RB31	3RB311	Integrated	0.1 … 16	✓	--	--	--	--	--	--	--
	3RB312	Integrated	0.1 … 40	--	✓	--	--	--	--	--	--
	3RB313	Integrated	12.5 … 80	--	--	✓	--	--	--	--	--
	3RB314	Integrated	32 ... 115	--	--	--	✓	--	--	--	--
SIRIUS 3RB20 electronic overload relays[1]											
3RB20	3RB205	Integrated	50 … 200	--	--	--	--	✓	--	--	--
	3RB206	Integrated	55 … 630	--	--	--	--	--	✓	✓	✓
	3RB201 + 3UF18	Integrated	630 … 820	--	--	--	--	--	--	--	✓
SIRIUS 3RB21 electronic overload relays[1]											
3RB21	3RB215	Integrated	50 … 200	--	--	--	--	✓	--	--	--
	3RB216	Integrated	55 … 630	--	--	--	--	--	✓	✓	✓
	3RB211 + 3UF18	Integrated	630 … 820	--	--	--	--	--	--	--	✓
SIRIUS 3RB22 to 3RB24 electronic overload relays[1]											
3RB22, 3RB23, 3RB24	3RB2283/ 3RB2383/ 3RB2483 +	3RB2906	0.3 … 25	✓	✓	--	--	--	--	--	--
		3RB2906	10 … 100	✓	✓	✓	✓	--	--	--	--
		3RB2956	20 … 200	--	✓	✓	✓	✓	--	--	--
		3RB2966	63 … 630	--	--	--	--	--	✓	✓	✓
		3RB2906 + 3UF18	630 … 820	--	--	--	--	--	--	--	✓

✓ Can be used
-- Cannot be used

[1] "Technical specifications" for the use of overload relays with trip class ≥ CLASS 20E, see "Short-circuit protection with fuses for motor feeders" in the Configuration Manual.

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General data

Connection methods

3RU2 thermal overload relays

- Sizes S00 and S0:
  - Main and auxiliary circuit: Either screw or spring-loaded terminals
- Sizes S2 and S3:
  - Main circuit: Screw terminals with box terminal
  - Auxiliary circuit: Either screw or spring-loaded terminals

3RB3 electronic overload relays

- Sizes S00 and S0:
  - Main and auxiliary circuit: Either screw or spring-loaded terminals
- Sizes S2 and S3:
  - Main circuit: Screw terminals with box terminal or as straight-through transformer
  - Auxiliary circuit: Either screw or spring-loaded terminals

3RB2 electronic overload relays

3RB20 and 3RB21 overload relays:

- Size S6:
  - Main circuit: With busbar connection or as straight-through transformer
  - Auxiliary circuit: Either screw or spring-loaded terminals
- Sizes S10/S12:
  - Main circuit: With busbar connection
  - Auxiliary circuit: Either screw or spring-loaded terminals

3RB22 to 3RB24 evaluation modules:

- Screw or spring-loaded terminals

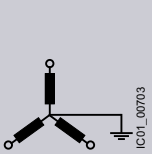
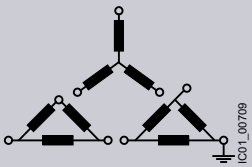
3RB29 current measuring modules:

- Up to size S3: Straight-through transformers
- As from size S6:
  - Main circuit: With busbar connection
  - Auxiliary circuit: Either screw or spring-loaded terminals

	Screw terminals
	Spring-loaded terminals
	Busbar connections
	Straight-through transformers
	The various terminals and straight-through transformers are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Voltage data

The data for 3-phase power systems according to IEC 60947-4-1 are valid for the following line system configurations:

Voltage U_e	Line system configurations	
	Three-phase four-wire networks 	Three-phase three-wire networks 
V	V	V
230	--	230
400	230/400	400
440	260/440	440
500	--	500
690	400/690	690 (only as from size S3)
1 000	--	1 000

-- Not specified

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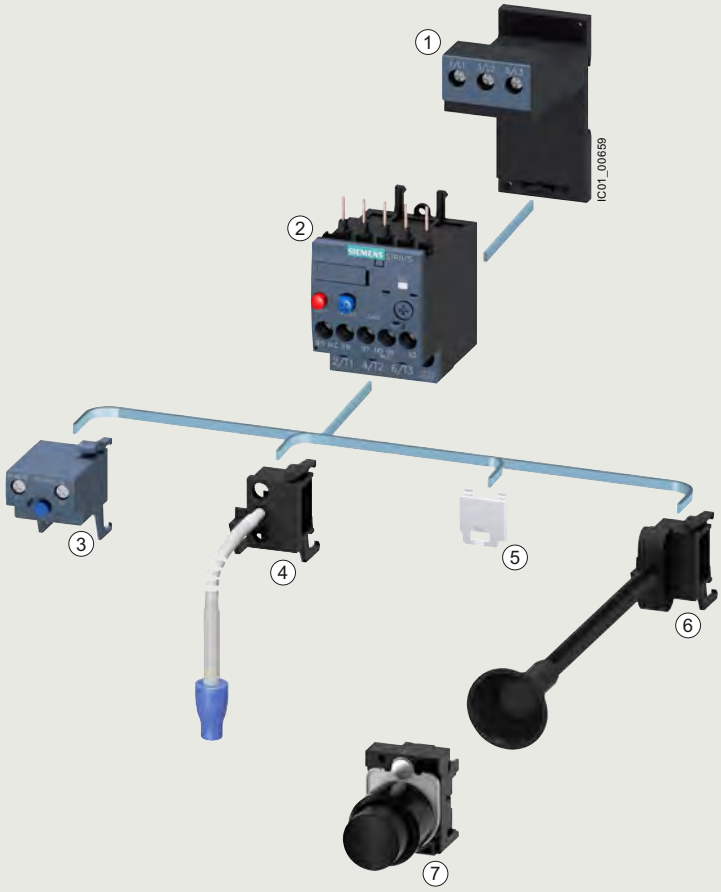
Overview

More information	
Homepage, see www.siemens.com/sirius-control	Application Manual for switching devices with IE3 and IE4 motors, see https://support.industry.siemens.com/cs/ww/en/view/94770820
Industry Mall, see www.siemens.com/product?3RU2	Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/60298164
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=ThermalOverloadRelay	Characteristics and certificates, see https://support.industry.siemens.com/cs/ww/en/ps/16271
Conversion tool, see www.siemens.com/conversion-tool	



1 Stand-alone assembly support for 3RU2 and 3RB3
2 3RU21 thermal overload relay
Sizes S00 to S3

Mountable accessories
3 Module for Remote RESET
4 Cable release with holder for RESET
5 Sealable cover
6 Mechanical RESET
7 Pushbutton

Mountable accessories for 3RU thermal overload relay

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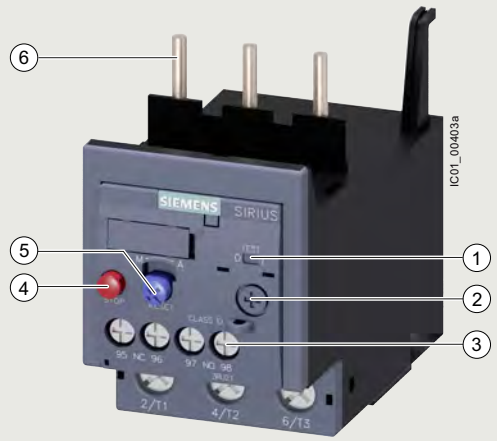
3RU2 for standard applications



(1) Switch position indicator and TEST function of the wiring:
Indicates a trip and enables the wiring test.

(2) Motor current setting:
Setting the device to the rated motor current is easy with the large rotary knob.

(3) Connecting terminals:
Depending on the device version, the connecting terminals are screw terminals or spring-loaded terminals for the main and auxiliary circuits.

(4) STOP button:
If the STOP button is pressed, the NC contact is opened. This switches off the contactor downstream. The NC contact is closed again when the button is released.

(5) Selector switch for Manual/Automatic RESET and RESET button:
With this switch you can choose between Manual and Automatic RESET. A device set to Manual RESET can be reset locally by pressing the RESET button. A Remote RESET is possible using the RESET modules (accessories), which are independent of size.

(6) Connection for mounting onto contactors:
Optimally adapted in electrical, mechanical and design terms to the contactors. The overload relay can be connected directly to the contactor using these pins. Stand-alone installation is possible as an alternative (in conjunction with a terminal support for stand-alone installation).

A sealable transparent cover can be optionally mounted (accessory).
It secures the motor current setting against adjustment.

SIRIUS 3RU2136-4.B0 thermal overload relay

3RU21 thermal overload relays up to 100 A have been designed to provide inverse-time delayed protection for loads with normal starting against impermissibly high temperature rises due to overload or phase failure.

An overload or phase failure results in an increase of the motor current beyond the set rated motor current. Via heating elements, this current rise heats up the bimetal strips inside the device which then bend and as a result trigger the auxiliary contacts by means of a tripping mechanism. The auxiliary contacts then switch off the load by means of a contactor. The break time depends on the ratio between the tripping current and the current setting I_e and is stored in the form of a long-term stable tripping characteristic curve, see Characteristic curves.

The "tripped" status is signaled by means of a switch position indicator. The relay is reset manually or automatically after a recovery time has elapsed.

The 3RU2 thermal overload relays are suitable for operation with frequency converters.

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials. They comply with all important worldwide standards and approvals.

Use in hazardous areas

The 3RU2 overload relays are certified in accordance with both the European Explosion Protection Directive (ATEX) and the International Explosion Protection Standard (IECEx), see Certificates.

Article number scheme

Product versions		Article number
Thermal overload relays		**3RU2 □ □ □ – □ □ □ □**
Device type	e.g. 1 = CLASS 10, 1 NO + 1 NC	□
Size, rated operational current and power	e.g. 16 = 16 A (7.5 kW) for size S00	□ □
Setting range for overload release	e.g. 0A = 0.11 ... 0.16 A	□ □
Connection methods	e.g. B = screw terminals	□
Installation type	e.g. 0 = mounting on contactor	□
Example		**3RU2 1 1 6 – 0 A B 0**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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Benefits

The most important features and benefits of the 3RU21 thermal overload relays are listed in the overview table (see "General data", page 7/76 onwards).

Application

Industries

The 3RU21 thermal overload relays are suitable for customers from all industries who want to guarantee optimum inverse-time delayed protection of their electrical loads (e.g. motors) under normal starting conditions (CLASS 10, 10A).

Application

The 3RU21 thermal overload relays have been designed for the protection of three-phase and single-phase AC and DC motors.

If single-phase AC or DC loads are to be protected by the 3RU21 thermal overload relays, all three bimetal strips must be heated. For this purpose, all main conducting paths of the relay must be connected in series.

Ambient conditions

3RU21 thermal overload relays compensate temperature in the temperature range from -40 to +60 °C according to IEC 60947-4-1. At temperatures from +60 to +70 °C, the upper set value of the setting range has to be reduced by a specific factor.

Use of SIRIUS protection devices in conjunction with IE3 and IE4 motors

Note:

For the use of 3RU21 thermal overload relays in conjunction with highly efficient IE3 and IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

For more information, see page 1/8.

Technical specifications

More information	
System Manual for modular system, see https://support.industry.siemens.com/cs/ww/en/view/60311318	Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/60298164
Configuration Manual for load feeders, see https://support.industry.siemens.com/cs/ww/en/view/39714188	Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16270/td

The following technical information is intended to provide an initial overview of the various types of devices and functions.

Type		**3RU2116**	**3RU2126**	**3RU2136**	**3RU2146**
Size		S00	S0	S2	S3
Dimensions (W x H x D) (overload relay with stand-alone installation support)					
• Screw terminals	mm	45 x 89 x 80	45 x 97 x 95	55 x 105 x 117	70 x 106 x 124
• Spring-loaded terminals	mm	45 x 102 x 79	45 x 114 x 95	55 x 105 x 117	70 x 106 x 124
General data					
Tripping in the event of		Overload and phase failure			
Trip class according to IEC 60947-4-1	CLASS	10		10, 10A	
Phase failure sensitivity		Yes			
Overload warning		No			
Reset and recovery					
• Reset options after tripping		Manual, Auto and Remote RESET (Remote RESET in conjunction with the appropriate accessories)			
• Recovery time					
- For Automatic RESET	min.	Depends on the strength of the tripping current and characteristic			
- For Manual RESET	min.	Depends on the strength of the tripping current and characteristic			
- For Remote RESET	min.	Depends on the strength of the tripping current and characteristic			
Features					
• Display of operating state on device		Yes, by means of TEST function/switch position indicator slide			
• TEST function		Yes			
• RESET button		Yes			
• STOP button		Yes			
Protection of motors in hazardous environments					
• Certificate of suitability/explosion protection type according to ATEX Directive 2014/34/EU		DMT 98 ATEX G 001 Ex II (2) GD			
• According to international standard IECEx		IECEx BVS 15.0046 see https://support.industry.siemens.com/cs/ww/en/ps/16270/cert			

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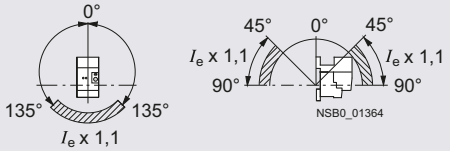
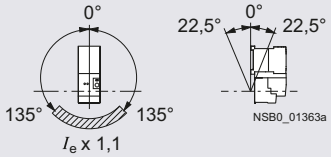
3RU2 for standard applications

Type		**3RU2116**	**3RU2126**	**3RU2136**	**3RU2146**
Size		S00	S0	S2	S3
Dimensions (W x H x D) (overload relay with stand-alone installation support)					
• Screw terminals	mm	45 x 89 x 80	45 x 97 x 95	55 x 105 x 117	70 x 106 x 124
• Spring-loaded terminals	mm	45 x 102 x 79	45 x 114 x 95	55 x 105 x 117	70 x 106 x 124
General data (continued)					
Ambient temperature					
• Storage/transport	°C	-55 ... +80			
• Operation	°C	-40 ... +70			
• Temperature compensation	°C	Up to +60			
• Permissible rated current at					
- Temperature inside control cabinet 60 °C	%	100 (current reduction is required above +60 °C)			
- Temperature inside control cabinet 70 °C	%	87			
Repeat terminals					
• Coil repeat terminals		Yes	Not required		
• Auxiliary contact repeat terminals		Yes	Not required		
Degree of protection IP on the front according to IEC 60529		IP20 (screw terminals and spring-loaded terminals)			
Touch protection on the front according to IEC 60529		Finger-safe for vertical touching from the front (screw and spring-loaded terminals)			
Shock resistance with sine according to IEC 60068-2-27	*g*/ms	15/11 (auxiliary contacts 95/96 and 97/98: 8 *g*/11 ms)			
Electromagnetic compatibility (EMC)					
• Interference immunity		Not relevant			
• Emitted interference		Not relevant			
Installation altitude above sea level	m	Up to 2 000			
Mounting position		The diagrams show the permissible mounting positions for mounting on contactors and stand-alone installation. For mounting position in the hatched area, a setting correction of 10% must be implemented.			
Type of mounting		For mounting on contactor or stand-alone installation with terminal support, screw and snap-on mounting on DIN rail.			

Stand-alone installation:



Contactor + overload relay:



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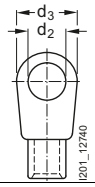
Type		**3RU2116**	**3RU2126**	**3RU2136**	**3RU2146**
Size		S00	S0	S2	S3
Main circuit					
Rated insulation voltage U_i (pollution degree 3)	V	690			1 000
Rated impulse withstand voltage U_{imp}	kV	6			8
Rated operational voltage U_e	V	690			
Type of current					
• Direct current		Yes			
• Alternating current		Yes, frequency range up to 400 Hz			
Current setting	A	0.11 ... 0.16 to 11 ... 16	1.8 ... 2.5 to 34 ... 40	11 ... 16 to 70 ... 80	28 ... 40 to 80 ... 100
	A				
Power loss per unit (max.)	W	4.8 ... 7.5	5.7 ... 9.6	10.5 ... 18.9	13.5 ... 21
Short-circuit protection					
• With fuse without contactor		See "Selection and ordering data", pages 7/89 ... 7/92			
• With fuse and contactor		"Short-Circuit Protection with Fuses/Motor Starter Protectors for Motor Feeders", see Configuration Manual.			
Protective separation between main and auxiliary conducting paths According to IEC 60947-1					
• Screw terminals or ring cable lug connections	V	440	690: Setting range ≤ 25 A	690	
• Spring-loaded terminals	V	440	440: Setting range > 25 A	690	
Conductor cross-sections of main circuit					
Connection type		**Screw terminals**			**Screw terminals with box terminal**
Terminal screw		M3, Pozidriv size 2	M4, Pozidriv size 2	M6, Pozidriv size 2	4 mm Allen screw
Operating devices	mm	⌀ 5 ... 6	⌀ 5 ... 6	⌀ 5 ... 6	4 mm Allen screw
Prescribed tightening torque	Nm	0.8 ... 1.2	2 ... 2.5	3 ... 4.5	4.5 ... 6
Conductor cross-sections (min./max.), one or two conductors can be connected					
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1], max. 2 x 4	2 x (1 ... 2.5)[1], 2 x (2.5 ... 10)[1]	2 x (2.5 ... 35)[1], 1 x (2.5 ... 50)[1]	2 x (2.5 ... 16)[1], 2 x (10 ... 50)[1], 1 x (10 ... 70)[1]
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1]	2 x (1 ... 2.5)[1], 2 x (2.5 ... 6)[1], max. 1 x 10	2 x (1 ... 25)[1], 1 x (1 ... 35)[1]	2 x (2.5 ... 35)[1], 1 x (2.5 ... 50)[1]
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1], 2 x (18 ... 14)[1], 2 x 12	2 x (16 ... 12)[1], 2 x (14 ... 8)[1]	2 x (18 ... 2)[1], 1 x (18 ... 1)[1]	2 x (10 ... 1/0)[1], 1 x (10 ... 2/0)[1]
Removable box terminals[2]					
• With copper bars[3]	mm	--	--	--	2 x 12 x 4
• With cable lugs[4]					
- Terminal screw		--	--	--	M6
- Prescribed tightening torque	Nm	--	--	--	4.5 ... 6
- Usable ring cable lugs	mm	--	--	--	d_2 = min. 6.3 d_3 = max. 19
Connection type		**Spring-loaded terminals**			
Operating devices	mm	3.0 x 0.5 and 3.5 x 0.5			
Conductor cross-sections (min./max.), one conductor can be connected					
• Solid or stranded	mm^2	1 x (0.5 ... 4)	1 x (1 ... 10)	--	
• Finely stranded without end sleeve	mm^2	1 x (0.5 ... 2.5)	1 x (1 ... 6)	--	
• Finely stranded with end sleeve (DIN 46228)	mm^2	1 x (0.5 ... 2.5)	1 x (1 ... 6)	--	
• AWG cables, solid or stranded	AWG	1 x (20 ... 12)	1 x (18 ... 8)	--	
• Max. external diameter of the conductor insulation	mm	3.6	6.4	--	



1) If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

2) Cable lug and busbar connection possible after removing the box terminals.

3) If bars larger than 12 mm x 10 mm are connected, a 3RT2946-4EA2 cover is needed to maintain the required phase clearance, see page 7/94.

4) If conductors larger than 25 mm^2 are connected, the 3RT2946-4EA2 cover is needed to maintain the required phase clearance, see page 7/94.

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3RU2 for standard applications

Type		3RU2116	3RU2126	3RU2136	3RU2146
Size		S00	S0	S2	S3
Auxiliary circuit					
Number of NO contacts		1			
Number of NC contacts		1			
Auxiliary contacts – Assignment		1 NO for the signal "tripped"; 1 NC for disconnecting the contactor			
Rated insulation voltage U_i (pollution degree 3)	V	690			
Rated impulse withstand voltage U_{imp}	kV	6			
Contact rating of the auxiliary contacts					
• NC, NO contacts with alternating current AC-15, rated operational current I_e at U_e					
- 24 V	A	3			
- 120 V	A	3			
- 125 V	A	3			
- 230 V	A	2			
- 400 V	A	1			
- 600 V	A	0.75			
- 690 V	A	0.75			
• NC, NO contacts with direct current DC-13, rated operational current I_e at U_e					
- 24 V	A	1			
- 110 V	A	0.22			
- 125 V	A	0.22			
- 220 V	A	0.11			
• Contact reliability (suitability for PLC control; 17 V, 5 mA)		Yes			
Short-circuit protection					
• With fuse					
- Operational class gG	A	6			
- Quick	A	10			
• With miniature circuit breaker (C characteristic)	A	6 (up to $I_k \leq 0.5$ kA; $U \leq 260$ V)			
Reliable operational voltage for protective separation between auxiliary conducting paths According to IEC 60947-1	V	440			
CSA, UL and UR rated data					
Auxiliary circuit – Switching capacity		B600, R300			
Conductor cross-sections for auxiliary circuit					
Connection type		**Screw terminals**			
Terminal screw		M3, Pozidriv size 2			
Operating devices	mm	⌀ 5 ... 6			
Prescribed tightening torque	Nm	0.8 ... 1.2			
Conductor cross-sections (min./max.), one or two conductors can be connected					
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1]			
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1]			
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1], 2 x (18 ... 14)[1]			
Connection type		**Spring-loaded terminals**			
Operating devices	mm	3.0 x 0.5 and 3.5 x 0.5			
Conductor cross-sections (min./max.), one or two conductors can be connected					
• Solid or stranded	mm^2	2 x (0.5 ... 2.5)			
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)			
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)			
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)			
• Max. external diameter of the conductor insulation	mm	3.6			

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

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Selection and ordering data

3RU21 thermal overload relays for mounting on contactor[1], sizes S00 and S0, CLASS 10

Features and technical specifications:

- Connection methods
  Main and auxiliary circuit: Either screw or spring-loaded terminals
- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and Automatic RESET
- Switch position indicator
- TEST function
- STOP button
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41F

3RU2116-..B0

3RU2116-..C0

3RU2126-..B0

3RU2126-..C0

Size contactor	Trip class	Rated power for three-phase motors, rated value[2]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[3]	Screw terminals		Spring-loaded terminals	
					Article No.	Price per PU	Article No.	Price per PU
	CLASS	kW	A	A				
Size S00								
S00	10	0.04	0.11 ... 0.16	0.5	**3RU2116-0AB0**		**3RU2116-0AC0**	
	10	0.06	0.14 ... 0.2	1	**3RU2116-0BB0**		**3RU2116-0BC0**	
	10	0.06	0.18 ... 0.25	1	**3RU2116-0CB0**		**3RU2116-0CC0**	
	10	0.09	0.22 ... 0.32	1.6	**3RU2116-0DB0**		**3RU2116-0DC0**	
	10	0.09	0.28 ... 0.4	2	**3RU2116-0EB0**		**3RU2116-0EC0**	
	10	0.12	0.35 ... 0.5	2	**3RU2116-0FB0**		**3RU2116-0FC0**	
	10	0.18	0.45 ... 0.63	2	**3RU2116-0GB0**		**3RU2116-0GC0**	
	10	0.18	0.55 ... 0.8	4	**3RU2116-0HB0**		**3RU2116-0HC0**	
	10	0.25	0.7 ... 1	4	**3RU2116-0JB0**		**3RU2116-0JC0**	
	10	0.37	0.9 ... 1.25	4	**3RU2116-0KB0**		**3RU2116-0KC0**	
	10	0.55	1.1 ... 1.6	6	**3RU2116-1AB0**		**3RU2116-1AC0**	
	10	0.75	1.4 ... 2	6	**3RU2116-1BB0**		**3RU2116-1BC0**	
	10	0.75	1.8 ... 2.5	10	**3RU2116-1CB0**		**3RU2116-1CC0**	
	10	1.1	2.2 ... 3.2	10	**3RU2116-1DB0**		**3RU2116-1DC0**	
	10	1.5	2.8 ... 4	16	**3RU2116-1EB0**		**3RU2116-1EC0**	
	10	1.5	3.5 ... 5	20	**3RU2116-1FB0**		**3RU2116-1FC0**	
	10	2.2	4.5 ... 6.3	20	**3RU2116-1GB0**		**3RU2116-1GC0**	
	10	3	5.5 ... 8	25	**3RU2116-1HB0**		**3RU2116-1HC0**	
	10	4	7 ... 10	35	**3RU2116-1JB0**		**3RU2116-1JC0**	
	10	5.5	9 ... 12.5	35	**3RU2116-1KB0**		**3RU2116-1KC0**	
	10	7.5	11 ... 16	40	**3RU2116-4AB0**		**3RU2116-4AC0**	
Size S0								
S0	10	0.75	1.8 ... 2.5	10	**3RU2126-1CB0**		**3RU2126-1CC0**	
	10	1.1	2.2 ... 3.2	10	**3RU2126-1DB0**		**3RU2126-1DC0**	
	10	1.5	2.8 ... 4	16	**3RU2126-1EB0**		**3RU2126-1EC0**	
	10	1.5	3.5 ... 5	20	**3RU2126-1FB0**		**3RU2126-1FC0**	
	10	2.2	4.5 ... 6.3	20	**3RU2126-1GB0**		**3RU2126-1GC0**	
	10	3	5.5 ... 8	25	**3RU2126-1HB0**		**3RU2126-1HC0**	
	10	4	7 ... 10	35	**3RU2126-1JB0**		**3RU2126-1JC0**	
	10	5.5	9 ... 12.5	35	**3RU2126-1KB0**		**3RU2126-1KC0**	
	10	7.5	11 ... 16	40	**3RU2126-4AB0**		**3RU2126-4AC0**	
	10	7.5	14 ... 20	50	**3RU2126-4BB0**		**3RU2126-4BC0**	
	10	11	17 ... 22	63	**3RU2126-4CB0**		**3RU2126-4CC0**	
	10	11	20 ... 25	63	**3RU2126-4DB0**		**3RU2126-4DC0**	
	10	15	23 ... 28	63	**3RU2126-4NB0**		**3RU2126-4NC0**	
	10	15	27 ... 32	80	**3RU2126-4EB0**		**3RU2126-4EC0**	
	10	18.5	30 ... 36	80	**3RU2126-4PB0**		**3RU2126-4PC0**	
	10	18.5	34 ... 40	80	**3RU2126-4FB0**		**3RU2126-4FC0**	

[1] With the appropriate terminal supports (see page 7/93), the 3RU2 overload relays for mounting on contactors can also be installed as stand-alone units.

[2] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[3] Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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3RU2 for standard applications *IE3/IE4* ready

3RU21 thermal overload relays for mounting on contactor[1], sizes *S2 and S3, CLASS 10 or 10A*

Features and technical specifications:

- Connection methods
  - Main circuit: Screw terminals with box terminal
  - Auxiliary circuit: Either screw or spring-loaded terminals
- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and Automatic RESET
- Switch position indicator
- TEST function
- STOP button
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41F

3RU2136-..B0

3RU2136-..D0

3RU2146-4.B0

3RU2146-4.D0

Size contactor	Trip class	Rated power for three-phase motors, rated value[2]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[3]	**Screw terminals**		**Spring-loaded terminals** (on auxiliary current side)	
					Article No.	Price per PU	Article No.	Price per PU
	CLASS	kW	A	A				
Size S2								
S2	10	3	5.5 ... 8	25	**3RU2136-1HB0**		**3RU2136-1HD0**	
	10	4	7 ... 10	35	**3RU2136-1JB0**		**3RU2136-1JD0**	
	10	5.5	9 ... 12.5	35	**3RU2136-1KB0**		**3RU2136-1KD0**	
	10	7.5	11 ... 16	40	**3RU2136-4AB0**		**3RU2136-4AD0**	
	10	7.5	14 ... 20	50	**3RU2136-4BB0**		**3RU2136-4BD0**	
	10	11	18 ... 25	63	**3RU2136-4DB0**		**3RU2136-4DD0**	
	10	15	22 ... 32	80	**3RU2136-4EB0**		**3RU2136-4ED0**	
	10	18.5	28 ... 40	80	**3RU2136-4FB0**		**3RU2136-4FD0**	
	10	22	36 ... 45	100	**3RU2136-4GB0**		**3RU2136-4GD0**	
	10	22	40 ... 50	100	**3RU2136-4HB0**		**3RU2136-4HD0**	
	10	30	47 ... 57	100	**3RU2136-4QB0**		**3RU2136-4QD0**	
	10	30	54 ... 65	125	**3RU2136-4JB0**		**3RU2136-4JD0**	
	10A	37	62 ... 73	160	**3RU2136-4KB0**		**3RU2136-4KD0**	
	10A	37	70 ... 80	160	**3RU2136-4RB0**		**3RU2136-4RD0**	
Size S3								
S3	10	18.5	28 ... 40	80	**3RU2146-4FB0**		**3RU2146-4FD0**	
	10	22	36 ... 50	125	**3RU2146-4HB0**		**3RU2146-4HD0**	
	10	30	45 ... 63	125	**3RU2146-4JB0**		**3RU2146-4JD0**	
	10	37	57 ... 75	160	**3RU2146-4KB0**		**3RU2146-4KD0**	
	10	45	70 ... 90	160	**3RU2146-4LB0**		**3RU2146-4LD0**	
	10	45	80 ... 100[4]	200	**3RU2146-4MB0**		**3RU2146-4MD0**	

1) With the appropriate terminal supports (see page 7/93), the 3RU2 overload relays for mounting on contactors can also be installed as stand-alone units.
2) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.
3) Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.
4) For overload relays > 100 A, see 3RB2 electronic overload relays, page 7/107 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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3RU21 thermal overload relays for stand-alone installation, sizes S00 and S0, CLASS 10

Features and technical specifications:

- Connection methods
  Main and auxiliary circuit: Either screw or spring-loaded terminals
- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and Automatic RESET
- Switch position indicator
- TEST function
- STOP button
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41F

3RU2116-..B1

3RU2116-..C1

3RU2126-4.B1

3RU2126-4.C1

Size contactor	Trip class	Rated power for three-phase motors, rated value[1]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[2]	Screw terminals		Spring-loaded terminals	
					Article No.	Price per PU	Article No.	Price per PU
	CLASS	kW	A	A				
Size S00								
S00	10	0.04	0.11 ... 0.16	0.5	**3RU2116-0AB1**		**3RU2116-0AC1**	
	10	0.06	0.14 ... 0.2	1	**3RU2116-0BB1**		**3RU2116-0BC1**	
	10	0.06	0.18 ... 0.25	1	**3RU2116-0CB1**		**3RU2116-0CC1**	
	10	0.09	0.22 ... 0.32	1.6	**3RU2116-0DB1**		**3RU2116-0DC1**	
	10	0.09	0.28 ... 0.4	2	**3RU2116-0EB1**		**3RU2116-0EC1**	
	10	0.12	0.35 ... 0.5	2	**3RU2116-0FB1**		**3RU2116-0FC1**	
	10	0.18	0.45 ... 0.63	2	**3RU2116-0GB1**		**3RU2116-0GC1**	
	10	0.18	0.55 ... 0.8	4	**3RU2116-0HB1**		**3RU2116-0HC1**	
	10	0.25	0.7 ... 1	4	**3RU2116-0JB1**		**3RU2116-0JC1**	
	10	0.37	0.9 ... 1.25	4	**3RU2116-0KB1**		**3RU2116-0KC1**	
	10	0.55	1.1 ... 1.6	6	**3RU2116-1AB1**		**3RU2116-1AC1**	
	10	0.75	1.4 ... 2	6	**3RU2116-1BB1**		**3RU2116-1BC1**	
	10	0.75	1.8 ... 2.5	10	**3RU2116-1CB1**		**3RU2116-1CC1**	
	10	1.1	2.2 ... 3.2	10	**3RU2116-1DB1**		**3RU2116-1DC1**	
	10	1.5	2.8 ... 4	16	**3RU2116-1EB1**		**3RU2116-1EC1**	
	10	1.5	3.5 ... 5	20	**3RU2116-1FB1**		**3RU2116-1FC1**	
	10	2.2	4.5 ... 6.3	20	**3RU2116-1GB1**		**3RU2116-1GC1**	
	10	3	5.5 ... 8	25	**3RU2116-1HB1**		**3RU2116-1HC1**	
	10	4	7 ... 10	35	**3RU2116-1JB1**		**3RU2116-1JC1**	
	10	5.5	9 ... 12.5	35	**3RU2116-1KB1**		**3RU2116-1KC1**	
	10	7.5	11 ... 16	40	**3RU2116-4AB1**		**3RU2116-4AC1**	
Size S0								
S0	10	7.5	14 ... 20	50	**3RU2126-4BB1**		**3RU2126-4BC1**	
	10	11	17 ... 22	63	**3RU2126-4CB1**		**3RU2126-4CC1**	
	10	11	20 ... 25	63	**3RU2126-4DB1**		**3RU2126-4DC1**	
	10	15	23 ... 28	63	**3RU2126-4NB1**		**3RU2126-4NC1**	
	10	15	27 ... 32	80	**3RU2126-4EB1**		**3RU2126-4EC1**	
	10	18.5	30 ... 36	80	**3RU2126-4PB1**		**3RU2126-4PC1**	
	10	18.5	34 ... 40	80	**3RU2126-4FB1**		**3RU2126-4FC1**	

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[2] Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

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Illustrations are approximate

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3RU2 for standard applications *IE3/IE4* ready

3RU21 thermal overload relays for stand-alone installation, sizes S2 and S3, CLASS 10 or 10A

Features and technical specifications:

- Connection methods
  - Main circuit: Screw terminals with box terminal
  - Auxiliary circuit: Either screw or spring-loaded terminals
- Auxiliary contacts 1 NO + 1 NC
- Manual and Automatic RESET
- Switch position indicator
- TEST function
- STOP button
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41F

3RU2136-4.B1

3RU2136-4.D1

3RU2146-4.B1

3RU2146-4.D1

Size contactor	Trip class	Rated power for three-phase motors, rated value[1]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[2]	Screw terminals		Spring-loaded terminals	
					Article No.	Price per PU	Article No.	Price per PU
	CLASS	kW	A	A				
Size S2								
S2	10	15	22 ... 32	80	**3RU2136-4EB1**		**3RU2136-4ED1**	
	10	18.5	28 ... 40	80	**3RU2136-4FB1**		**3RU2136-4FD1**	
	10	22	36 ... 45	100	**3RU2136-4GB1**		**3RU2136-4GD1**	
	10	22	40 ... 50	100	**3RU2136-4HB1**		**3RU2136-4HD1**	
	10	30	47 ... 57	100	**3RU2136-4QB1**		**3RU2136-4QD1**	
	10	30	54 ... 65	125	**3RU2136-4JB1**		**3RU2136-4JD1**	
	10A	37	62 ... 73	160	**3RU2136-4KB1**		**3RU2136-4KD1**	
	10A	37	70 ... 80	160	**3RU2136-4RB1**		**3RU2136-4RD1**	
Size S3								
S3	10	30	45 ... 63	125	**3RU2146-4JB1**		**3RU2146-4JD1**	
	10	37	57 ... 75	160	**3RU2146-4KB1**		**3RU2146-4KD1**	
	10	45	70 ... 90	160	**3RU2146-4LB1**		**3RU2146-4LD1**	
	10	45	80 ... 100[3]	200	**3RU2146-4MB1**		**3RU2146-4MD1**	

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

3) For overload relays > 100 A, see 3RB2 electronic overload relays, page 7/107 onwards.

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Illustrations are approximate

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Overview

The following optional accessories are available for the 3RU21 thermal overload relays:

- Size-specific terminal support for stand-alone installation, in sizes S00 and S0 also with spring-loaded terminals
- Mechanical RESET (for all sizes)
- Cable release for resetting devices which are difficult to access (for all sizes)
- Electrical Remote RESET module in three voltage variants (for all sizes)
- Sealable cover (for all sizes)
- Size-specific terminal covers for devices with screw terminals (box terminals)

Selection and ordering data

	Version	Size	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal supports for stand-alone installation							
3RU2916-3AA01 3RU2916-3AC01	**Terminal supports for overload relays with screw terminals**		**Screw terminals**				
	For separate mounting of the overload relays; screw and snap-on mounting on DIN rail	S00	**3RU2916-3AA01**		1	1 unit	41F
		S0	**3RU2926-3AA01**		1	1 unit	41F
		S2	**3RU2936-3AA01**		1	1 unit	41F
		S3	**3RU2946-3AA01**		1	1 unit	41F
3RU2926-3AA01 3RU2926-3AC01	**Terminal supports for overload relays with spring-loaded terminals**		**Spring-loaded terminals**				
	For separate mounting of the overload relays; screw and snap-on mounting on DIN rail	S00	**3RU2916-3AC01**		1	1 unit	41F
		S0	**3RU2926-3AC01**		1	1 unit	41F
3RU2936-3AA01							
3RU2946-3AA01							
Mechanical RESET							
3RU2900-1A	**Resetting plungers, holders and formers**	S00 ... S3	**3RU2900-1A**		1	1 unit	41F
3SU1200-0FB10-0AA0	**Pushbuttons with extended stroke** (12 mm), IP65, ⌀ 22 mm	S00 ... S3	**3SU1200-0FB10-0AA0**		1	1 unit	41J
3SU1900-0KG10-0AA0	**Extension plungers** For compensation of the distance between the pushbutton and the resetting plunger of the relay	S00 ... S3	**3SU1900-0KG10-0AA0**		1	1 unit	41J

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* You can order this quantity or a multiple thereof.
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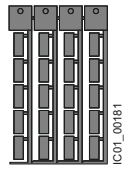
Accessories

	Version	Size	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Cable releases with holder for RESET							
3RU2900-1B	For ⌀ 6.5 mm holes in the control panel; max. control panel thickness 8 mm						
	• Length 400 mm	S00 ... S3	**3RU2900-1B**		1	1 unit	41F
	• Length 600 mm	S00 ... S3	**3RU2900-1C**		1	1 unit	41F
Modules for Remote RESET, electrical							
3RU1900-2AM71	Operating range 0.85 ... 1.1 x U_s, Power consumption 80 VA AC, 70 W DC, ON period 0.2 ... 4 s, Switching frequency 60/h						
	• 24 ... 30 V AC/DC	S00 ... S3	**3RU1900-2AB71**		1	1 unit	41F
	• 110 ... 127 V AC/DC	S00 ... S3	**3RU1900-2AF71**		1	1 unit	41F
	• 220 ... 250 V AC/DC	S00 ... S3	**3RU1900-2AM71**		1	1 unit	41F
Sealable covers							
3RV2908-0P	For covering the setting knobs	S00 ... S3	**3RV2908-0P**		100	10 units	41E
Terminal covers							
3RT1946-4EA1	**Covers for contactors with cable lug and busbar connections** For complying with the phase clearances and as touch protection if box terminal is removed	S3	**3RT1946-4EA1**		1	1 unit	41B
3RT2936-4EA2	**Covers for devices with screw terminals (box terminals)** Additional touch protection for fastening to the box terminals		**Screw terminals**				
	• Main current level	S2	**3RT2936-4EA2**		1	1 unit	41B
		S3	**3RT2946-4EA2**		1	1 unit	41B

General accessories

	Version	Size	Color	For overload relays	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Tools for opening spring-loaded terminals									
3RA2908-1A					**Spring-loaded terminals**				
	Screwdrivers For all SIRIUS devices with spring-loaded terminals	Length approx. 200 mm, 3.0 mm x 0.5 mm	Titanium gray/ black, partially insulated	Main and auxiliary circuit connection: 3RU2	**3RA2908-1A**		1	1 unit	41B
Blank labels									
 3RT2900-1SB20	**Unit labeling plates**[1] For SIRIUS devices	20 mm x 7 mm	Titanium gray	3RU2	**3RT2900-1SB20**		100	340 units	41B
	Adhesive labels For SIRIUS devices	19 mm x 6 mm	Titanium gray	3RB2	**3RT2900-1SB60**		100	3 060 units	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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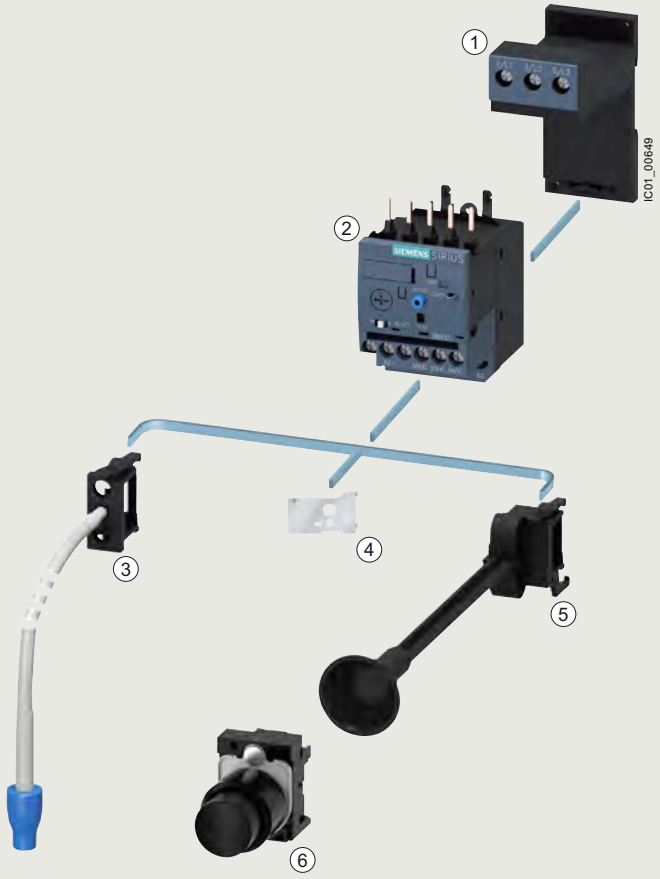
Overview

More information	
Homepage, see www.siemens.com/sirius-control	Application Manual for switching devices with IE3 and IE4 motors, see https://support.industry.siemens.com/cs/ww/en/view/94770820
Industry Mall, see www.siemens.com/product?3RB3	Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/60298164
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=ElectronicOverloadRelay	Characteristics and certificates, see https://support.industry.siemens.com/cs/ww/en/ps/16276
Conversion tool, see www.siemens.com/conversion-tool	



1. Stand-alone assembly support for 3RU2 and 3RB3
2. 3RB30, 3RB31 electronic overload relay, sizes S00 to S3

Mountable accessories

3. Cable release with holder for RESET
4. Sealable cover
5. Mechanical RESET
6. Pushbutton

Mountable accessories for 3RB30 and 3RB31 electronic overload relays

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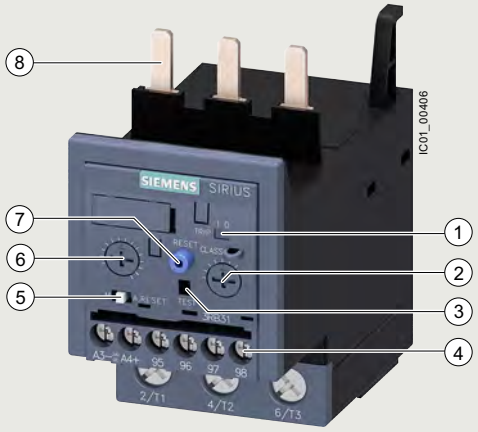
3RB30, 3RB31 for standard applications



(1) Switch position indicator and TEST function of the wiring:
Indicates a trip and enables the wiring test.

(2) Trip class setting/internal ground-fault detection (only 3RB31):
Using the rotary switch you can set the required trip class and activate the internal ground-fault detection dependent on the starting conditions.

(3) Solid-state test (device test):
Enables a test of all important device components and functions.

(4) Connecting terminals (removable terminal block for auxiliary circuits):
Depending on the device version, the connecting terminals are screw terminals or spring-loaded terminals for the main and auxiliary circuits.

(5) Selector switch for Manual/Automatic RESET:
With the slide switch you can choose between Manual and Automatic RESET.

(6) Motor current setting:
Setting the device to the rated motor current is easy with the large rotary knob.

(7) A device set to Manual RESET can be reset locally by pressing the RESET button. On 3RB31 overload relays an electrical Remote RESET is integrated.

(8) Connection for mounting onto contactors:
Optimally adapted in electrical, mechanical and design terms to the 3RT2 contactors. The overload relay can be connected directly using these connection pins. Stand-alone installation is possible as an alternative (in conjunction with a terminal support for stand-alone installation).

A sealable transparent cover can be optionally mounted (accessory). It secures the motor current setting against adjustment.

SIRIUS 3RB3133-4.B0 electronic overload relay

The 3RB30/3RB31 electronic overload relays up to 115 A with internal power supply have been designed for current-dependent protection of loads with normal and heavy starting, and to protect against excessive temperature rises due to overload, phase asymmetry or phase failure. An overload, phase asymmetry or phase failure result in an increase of the motor current beyond the set rated motor current. This current rise is detected by the current transformers integrated into the devices and evaluated by corresponding solid-state circuits which then output a pulse to the auxiliary contacts. The auxiliary contacts then switch off the load by means of a contactor. The break time depends on the ratio between the tripping current and the current setting I_e and is stored in the form of a long-term stable tripping characteristic curve, see Characteristics.

In addition to inverse-time delayed protection of loads against excessive temperature rises due to overload, phase asymmetry and phase failure, the 3RB31 electronic overload relays also allow internal ground-fault detection (not possible in conjunction with contactor assemblies for star-delta (wye-delta) starting). This provides protection of loads against incomplete ground faults due to damage to the insulation material, moisture, condensed water, etc.

The "tripped" status is signaled by means of a switch position indicator. The relay is reset manually or automatically after the recovery time has elapsed.

The 3RB3 electronic overload relays are suitable for operation with frequency converters.

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials. They comply with all important worldwide standards and approvals.

For 3RB20 and 3RB21 overload relays in sizes S6 to S10/S12, see page 7/114 onwards.

Use in hazardous areas

The 3RB30/3RB31 electronic overload relays are suitable for the overload protection of motors with the following types of protection:

- Ex II (2) G [Ex e] [Ex d] [Ex px]
- Ex II (2) D [Ex t] [Ex p]

EC type-examination certificate for Group II, Category (2) G/D exists. It has the number PTB 09 ATEX 3001.

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Article number scheme

Product versions		Article number
Electronic overload relays		**3RB3** □ □ □ – □ □ □ □
Device type	e.g. 0 = standard device, with internal supply, for three-phase loads	□
Size, rated operational current and power	e.g. 1 = 16 A (7.5 kW) for size S00	□
Version of the Automatic RESET, electrical Remote RESET	e.g. 6 = switchable between Manual/Automatic RESET	□
Trip class (CLASS)	e.g. 1 = CLASS 10E	□
Setting range of the overload release	e.g. R = 0.1 ... 0.4 A	□
Connection methods	e.g. B = screw terminals for main and auxiliary circuits	□
Installation type	e.g. 0 = for mounting onto contactors	□
Example		**3RB3 0 1 6 – 1 R B 0**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

The most important features and benefits of the 3RB30/3RB31 electronic overload relays are listed in the overview table (see "General Data" page 7/76 onwards.)

Application

Industries

The 3RB30/3RB31 electronic overload relays are suitable for customers from all industries who want to guarantee optimum inverse-time delayed protection of their electrical loads (e.g. motors) under normal and heavy starting conditions (CLASS 5E to 30E), minimize project completion times, inventories and energy consumption, and optimize plant availability and maintenance management.

Application

The 3RB30/3RB31 electronic overload relays have been designed for the protection of three-phase motors in sinusoidal 50/60 Hz voltage networks. The relays are not suitable for the protection of single-phase AC or DC loads.

The 3RU21 thermal overload relay or the 3RB22/3RB23/3RB24 electronic overload relay can be used for single-phase AC loads. For DC loads we recommend the 3RU21 thermal overload relay.

Ambient conditions

The devices are insensitive to external influences such as shocks, corrosive ambient conditions, aging and temperature fluctuations.

For the temperature range from -25 to +60 °C, the 3RB30/3RB31 electronic overload relays compensate the temperature in accordance with IEC 60947-4-1.

Use of SIRIUS protection devices in conjunction with IE3 and IE4 motors

Note:

For the use of 3RB30/3RB31 electronic overload relays in conjunction with highly efficient IE3 and IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

For more information, see page 1/8.

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Technical specifications

More information	
System Manual for modular system, see https://support.industry.siemens.com/cs/ww/en/view/60311318	Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/60298164
Configuration Manual for load feeders, see https://support.industry.siemens.com/cs/ww/en/view/39714188	Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16276/td

The following technical information is intended to provide an initial overview of the various types of devices and functions.

Type		**3RB3016, 3RB3113**	**3RB3026, 3RB3123**	**3RB3036, 3RB3133**	**3RB3046, 3RB3143**
Size		S00	S0	S2	S3
Dimensions (W x H x D) (overload relay with stand-alone installation support)					
• Screw terminals	mm	45 x 89 x 80	45 x 97 x 94	55 x 105 x 117	70 x 106 x 124
• Spring-loaded terminals	mm	45 x 102 x 80	45 x 116 x 95	55 x 105 x 117	70 x 106 x 124
General data					
Tripping in the event of		Overload, phase failure, and phase asymmetry + ground fault (for 3RB31 only)			
Trip class according to IEC 60947-4-1	CLASS	3RB30: 10E, 20E; 3RB31: 5E, 10E, 20E or 30E adjustable			
Phase failure sensitivity		Yes			
Reset and recovery					
• Reset options after tripping		Manual and Automatic RESET, 3RB31 has an integrated connection for electrical Remote RESET (24 V DC)			
• Recovery time					
- For Automatic RESET		Approx. 3 min			
- For Manual RESET		Immediately			
- For Remote RESET		Immediately			
Features					
• Display of operating state on device		Yes, by means of switch position indicator slide			
• TEST function		Yes, test of electronics by pressing the TEST button/ test of auxiliary contacts and wiring of control circuit by actuating the switch position indicator slide/self-monitoring			
• RESET button		Yes			
• STOP button		No			
Protection and operation of explosion-proof motors					
Certificate of suitability/explosion protection type according to ATEX Directive 2014/34/EU		PTB 09 ATEX 3001 Ex II (2) G [Ex e] [Ex d] [Ex px] Ex II (2) G [Ex t] [Ex p] see https://support.industry.siemens.com/cs/ww/en/view/40591327			
Ambient temperatures					
• Storage/transport	°C	-40 ... +80			
• Operation	°C	-25 ... +60			
• Temperature compensation	°C	+60			
• Permissible rated current at					
- Temperature inside control cabinet 60 °C	%	100			
- Temperature inside control cabinet 70 °C	%	On request			
Repeat terminals					
• Coil repeat terminals		Yes	Not required		
• Auxiliary contact repeat terminals		Yes	Not required		
Degree of protection IP on the front according to IEC 60529					
• Screw terminals/spring-loaded terminals		IP20			
• Straight-through transformers		--		IP20	
Touch protection on the front according to IEC 60529					
• Screw terminals/spring-loaded terminals		Finger-safe for vertical touching from the front			
• Straight-through transformers		--		Finger-safe for vertical touching from the front	
Shock resistance with sine according to IEC 60068-2-27	*g*/ms	15/11 (signaling contact 97/98 in position "tripped": 9 *g*/11 ms)		15/11 (signaling contact 97/98 in position "tripped": 8 *g*/11 ms)	

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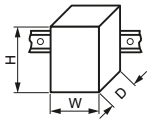
Type		**3RB3016, 3RB3113**	**3RB3026, 3RB3123**	**3RB3036, 3RB3133**	**3RB3046, 3RB3143**
Size		S00	S0	S2	S3
Dimensions (W x H x D) (overload relay with stand-alone installation support)					
• Screw terminals	mm	45 x 89 x 80	45 x 97 x 94	55 x 105 x 117	70 x 106 x 124
• Spring-loaded terminals	mm	45 x 102 x 80	45 x 116 x 95	55 x 105 x 117	70 x 106 x 124
General data (continued)					
Electromagnetic compatibility (EMC) – Interference immunity					
• Conductor-related interference					
- Burst according to IEC 61000-4-4 (corresponds to degree of severity 3)	kV	2 (power ports), 1 (signal port)			
- Surge according to IEC 61000-4-5 (corresponds to degree of severity 3)	kV	2 (line to earth), 1 (line to line)			
• Electrostatic discharge according to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	8 (air discharge), 6 (contact discharge)			
• Field-related interference according to IEC 61000-4-3 (corresponds to degree of severity 3)	V/m	10			
Electromagnetic compatibility (EMC) – Emitted interference		Degree of severity B according to EN 55011 (CISPR 11) and EN 55022 (CISPR 22)			
Installation altitude above sea level	m	Up to 2 000			
Mounting position		Any			
Type of mounting		Direct mounting/stand-alone installation with terminal support			

Type		**3RB3016, 3RB3113**	**3RB3026, 3RB3123**	**3RB3036, 3RB3133**	**3RB3046, 3RB3143**
Size		S00	S0	S2	S3
Main circuit					
Rated insulation voltage U_i (pollution degree 3)	V	690		690 1 000 with straight-through transformer	1 000
Rated impulse withstand voltage U_{imp}	kV	6		6 8 with straight-through transformer	8
Rated operational voltage U_e	V	690		690 1 000 with straight-through transformer	1 000
Type of current					
• Direct current		No			
• Alternating current		Yes, 50/60 Hz ±5%			
Current setting	A A	0.1 ... 0.4 to 4 ... 16	0.1 ... 0.4 to 10 ... 40	12.5 ... 50 and 20 ... 80	12.5 ... 50 and 32 ... 115
Heavy starting		See Equipment Manual			
Power loss per unit (max.)	W	0.1 ... 1.1	0.1 ... 4.5	0.5 ... 4.6	0.9 ... 4.6
Short-circuit protection					
• With fuse without contactor		See "Selection and ordering data", pages 7/102 ... 7/104			
• With fuse and contactor		"Short-Circuit Protection with Fuses/Motor Starter Protectors for Motor Feeders", see Configuration Manual.			
Protective separation between main and auxiliary conducting paths According to IEC 60947-1 (pollution degree 2)					
• For systems with grounded neutral point	V	690			
• For systems with ungrounded neutral point	V	600			

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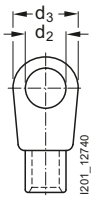
3RB30, 3RB31 for standard applications

Type		**3RB3016, 3RB3113**	**3RB3026, 3RB3123**	**3RB3036, 3RB3133**	**3RB3046, 3RB3143**
Size		S00	S0	S2	S3
Conductor cross-sections of main circuit					
Connection type		**Screw terminals**			**Screw terminals with box terminal**
Terminal screw		M3, Pozidriv size 2	M4, Pozidriv size 2		4 mm Allen screw
Operating devices	mm	⌀ 5 ... 6	⌀ 5 ... 6		4 mm Allen screw
Prescribed tightening torque	Nm	0.8 ... 1.2	2 ... 2.5		4.5 ... 6
Conductor cross-sections (min./max.), one or two conductors can be connected					
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1], 2 x (0.5 ... 4)[1]	2 x (1 ... 2.5)[1], 2 x (2.5 ... 10)[1]	1 x (1 ... 50)[1], 2 x (1 ... 35)[1]	2 x (2.5 ... 16)[1], 2 x (10 ... 50)[1], 1 x (10 ... 70)[1]
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1]	2 x (1 ... 2.5)[1], 2 x (2.5 ... 6)[1], max. 1 x 10	2 x (1 ... 25)[1], 1 x (1 ... 35)[1]	2 x (2.5 ... 35)[1], 1 x (2.5 ... 50)[1]
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1], 2 x (18 ... 14)[1], 2 x 12	2 x (16 ... 12)[1], 2 x (14 ... 8)[1]	2 x (18 ... 2)[1], 1 x (18 ... 1)[1]	2 x (10 ... 1/0)[1], 1 x (10 ... 2/0)[1]
Removable box terminals[2]					
• With copper bars[3]	mm	--	--	--	2 x 12 x 4
• With cable lugs[4]					
- Terminal screw		--	--	--	M6
- Prescribed tightening torque	Nm	--	--	--	4.5 ... 6
- Usable ring cable lugs	mm	--	--	--	d_2 = min. 6.3 d_3 = max. 19
Connection type		**Spring-loaded terminals**			
Operating devices	mm	3.0 x 0.5 and 3.5 x 0.5			
Conductor cross-sections (min./max.), one conductor can be connected					
• Solid or stranded	mm^2	1 x (0.5 ... 4)	1 x (1 ... 10)	--	
• Finely stranded without end sleeve	mm^2	1 x (0.5 ... 2.5)	1 x (1 ... 6)	--	
• Finely stranded with end sleeve (DIN 46228)	mm^2	1 x (0.5 ... 2.5)	1 x (1 ... 6)	--	
• AWG cables, solid or stranded	AWG	1 x (20 ... 12)	1 x (18 ... 8)	--	
• Max. external diameter of the conductor insulation	mm	3.6	6.4	--	
Connection type		**Straight-through transformers**			
Diameter of opening	mm	--		15	18



1) If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.
2) Cable lug and busbar connection possible after removing the box terminals.
3) If bars larger than 12 mm x 10 mm are connected, a 3RT2946-4EA2 cover is needed to maintain the required phase clearance, see page 7/106.
4) If conductors larger than 25 mm^2 are connected, the 3RT2946-4EA2 cover is needed to maintain the required phase clearance, see page 7/106.

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Type		**3RB3016, 3RB3113**	**3RB3026, 3RB3123**	**3RB3036, 3RB3133**	**3RB3046, 3RB3143**
Size		S00	S0	S2	S3
Auxiliary circuit					
Number of NO contacts		1			
Number of NC contacts		1			
Auxiliary contacts – Assignment		1 NO for the signal "tripped"; 1 NC for disconnecting the contactor			
Rated insulation voltage U_i (pollution degree 3)	V	300			
Rated impulse withstand voltage U_{imp}	kV	4			
Auxiliary contacts – Contact rating					
• NC, NO contact with alternating current AC-14/AC-15, rated operational current I_e at U_e					
- 24 V	A	4			
- 120 V	A	4			
- 125 V	A	4			
- 250 V	A	3			
• NC, NO contacts with direct current DC-13, rated operational current I_e at U_e					
- 24 V	A	2			
- 60 V	A	0.55			
- 110 V	A	0.3			
- 125 V	A	0.3			
- 250 V	A	0.11			
• Conventional thermal current I_{th}	A	5			
• Contact reliability (suitability for PLC control; 17 V, 5 mA)		Yes			
Short-circuit protection					
• With fuse, operational class gG	A	6			
Ground-fault protection (only 3RB31)		The information refers to sinusoidal residual currents at 50/60 Hz.			
• Tripping value I_Δ		> 0.75 x I_{motor}			
• Operating range I		Lower current setting < I_{motor} < 3.5 x upper current setting			
• Response time t_{trip} (in steady-state condition)	s	< 1			
Integrated electrical Remote RESET (only 3RB31)					
Connecting terminals A3, A4		24 V DC, max. 200 mA for approx. 20 ms, then < 10 mA			
Protective separation between auxiliary conducting paths according to IEC 60947-1	V	300			

Type		**3RB3016, 3RB3113**	**3RB3026, 3RB3123**	**3RB3036, 3RB3133**	**3RB3046, 3RB3143**
Size		S00	S0	S2	S3
CSA, UL and UR rated data					
Auxiliary circuit – Switching capacity		B600, R300			
Conductor cross-sections for auxiliary circuit					
Connection type		**Screw terminals**			
Terminal screw		M3, Pozidriv size 2			
Operating devices	mm	⌀ 5 ... 6			
Prescribed tightening torque	Nm	0.8 ... 1.2			
Conductor cross-sections (min./max.), one or two conductors can be connected					
• Solid or stranded	mm^2	1 x (0.5 ... 4)[1], 2 x (0.5 ... 2.5)[1]			
• Finely stranded with end sleeve (DIN 46228)	mm^2	1 x (0.5 ... 2.5)[1], 2 x (0.5 ... 1.5)[1]			
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)			
Connection type		**Spring-loaded terminals**			
Operating devices	mm	3.0 x 0.5			
Conductor cross-sections (min./max.), one or two conductors can be connected					
• Solid or stranded	mm^2	2 x (0.25 ... 1.5)			
• Finely stranded without end sleeve	mm^2	2 x (0.25 ... 1.5)			
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.25 ... 1.5)			
• AWG cables, solid or stranded	AWG	2 x (24 ... 16)			

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

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3RB30, 3RB31 for standard applications *IE3/IE4 ready*

Selection and ordering data

3RB30 electronic overload relays, CLASS 10E

Features and technical specifications:

- Connection methods
  - Sizes S00 and S0
    Main and auxiliary circuit: Either screw or spring-loaded terminals
  - Sizes S2 and S3
    Main circuit: Screw terminals with box terminal or as straight-through transformer
    Auxiliary circuit: Either screw or spring-loaded terminals
- Overload protection, phase failure protection and asymmetry protection
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and Automatic RESET
- Switch position indicator
- TEST function and self-monitoring
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41G

3RB3016-1.B0

3RB3026-1.B0

3RB3036-1.B0

3RB3036-1.W1

3RB3046-1.B0

3RB3046-1.W1

Size contactor	Rated power for three-phase motors, rated value[1]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[2]	Screw terminals		Spring-loaded terminals	
				Article No.	Price per PU	Article No.	Price per PU
	kW	A	A				
Size S00							
S00	***Devices for mounting on contactor[3]***						
	0.04 ... 0.09	0.1 ... 0.4	4	**3RB3016-1RB0**		**3RB3016-1RE0**	
	0.12 ... 0.37	0.32 ... 1.25	6	**3RB3016-1NB0**		**3RB3016-1NE0**	
	0.37 ... 1.5	1 ... 4	20	**3RB3016-1PB0**		**3RB3016-1PE0**	
	1.5 ... 5.5	3 ... 12	50	**3RB3016-1SB0**		**3RB3016-1SE0**	
	2.2 ... 7.5	4 ... 16	50	**3RB3016-1TB0**		**3RB3016-1TE0**	
Size S0							
S0	***Devices for mounting on contactor[3]***						
	0.04 ... 0.09	0.1 ... 0.4	4	**3RB3026-1RB0**		**3RB3026-1RE0**	
	0.12 ... 0.37	0.32 ... 1.25	6	**3RB3026-1NB0**		**3RB3026-1NE0**	
	0.37 ... 1.5	1 ... 4	20	**3RB3026-1PB0**		**3RB3026-1PE0**	
	1.5 ... 5.5	3 ... 12	50	**3RB3026-1SB0**		**3RB3026-1SE0**	
	3 ... 11	6 ... 25	63	**3RB3026-1QB0**		**3RB3026-1QE0**	
	5.5 ... 18.5	10 ... 40	80	**3RB3026-1VB0**		**3RB3026-1VE0**	
Size S2							
S2	***Devices with screw terminals (main current side) and for mounting on contactor[3]***						
	7.5 ... 22	12.5 ... 50	200	**3RB3036-1UB0**		**3RB3036-1UD0**	
	11 ... 37	20 ... 80	250	**3RB3036-1WB0**		**3RB3036-1WD0**	
	Devices with straight-through transformer for stand-alone installation						
	7.5 ... 22	12.5 ... 50	200	**3RB3036-1UW1**		**3RB3036-1UX1**	
	11 ... 37	20 ... 80	250	**3RB3036-1WW1**		**3RB3036-1WX1**	
Size S3							
S3	***Devices with screw terminals (main current side) and for mounting on contactor[3]***						
	7.5 ... 22	12.5 ... 50	200	**3RB3046-1UB0**		**3RB3046-1UD0**	
	18.5 ... 55	32 ... 115	315	**3RB3046-1XB0**		**3RB3046-1XD0**	
	Devices with straight-through transformer for stand-alone installation						
	7.5 ... 22	12.5 ... 50	200	**3RB3046-1UW1**		**3RB3046-1UX1**	
	18.5 ... 55	32 ... 115	315	**3RB3046-1XW1**		**3RB3046-1XX1**	

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

3) With the appropriate terminal supports (see page 7/105), these overload relays can also be installed as stand-alone units.

Note:

For reliable operational current, note derating information, see Equipment Manual.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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3RB30 electronic overload relays, CLASS 20E

Features and technical specifications:

- Connection methods
  - Sizes S00 and S0
    Main and auxiliary circuit: Either screw or spring-loaded terminals
  - Sizes S2 and S3
    Main circuit: Screw terminals with box terminal or as straight-through transformer
    Auxiliary circuit: Either screw or spring-loaded terminals
- Overload protection, phase failure protection and asymmetry protection
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and Automatic RESET
- Switch position indicator
- TEST function and self-monitoring
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41G

3RB3016-2.B0

3RB3026-2.B0

3RB3036-2.B0

3RB3036-2.W1

3RB3046-2.B0

3RB3046-2.W1

Size contactor	Rated power for three-phase motors, rated value[1]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[2]	Screw terminals		Spring-loaded terminals	
				Article No.	Price per PU	Article No.	Price per PU
	kW	A	A				
Size S00							
S00	***Devices for mounting on contactor[3]***						
	0.04 ... 0.09	0.1 ... 0.4	4	**3RB3016-2RB0**		**3RB3016-2RE0**	
	0.12 ... 0.37	0.32 ... 1.25	6	**3RB3016-2NB0**		**3RB3016-2NE0**	
	0.37 ... 1.5	1 ... 4	20	**3RB3016-2PB0**		**3RB3016-2PE0**	
	1.5 ... 5.5	3 ... 12	50	**3RB3016-2SB0**		**3RB3016-2SE0**	
	2.2 ... 7.5	4 ... 16	50	**3RB3016-2TB0**		**3RB3016-2TE0**	
Size S0							
S0	***Devices for mounting on contactor[3]***						
	0.04 ... 0.09	0.1 ... 0.4	4	**3RB3026-2RB0**		**3RB3026-2RE0**	
	0.12 ... 0.37	0.32 ... 1.25	6	**3RB3026-2NB0**		**3RB3026-2NE0**	
	0.37 ... 1.5	1 ... 4	20	**3RB3026-2PB0**		**3RB3026-2PE0**	
	1.5 ... 5.5	3 ... 12	50	**3RB3026-2SB0**		**3RB3026-2SE0**	
	3 ... 11	6 ... 25	63	**3RB3026-2QB0**		**3RB3026-2QE0**	
	5.5 ... 18.5	10 ... 40	80	**3RB3026-2VB0**		**3RB3026-2VE0**	
Size S2							
S2	***Devices with screw terminals (main current side) and for mounting on contactor[3]***						
	7.5 ... 22	12.5 ... 50	200	**3RB3036-2UB0**		**3RB3036-2UD0**	
	11 ... 37	20 ... 80	250	**3RB3036-2WB0**		**3RB3036-2WD0**	
	Devices with straight-through transformer for stand-alone installation						
	7.5 ... 22	12.5 ... 50	200	**3RB3036-2UW1**		**3RB3036-2UX1**	
	11 ... 37	20 ... 80	250	**3RB3036-2WW1**		**3RB3036-2WX1**	
Size S3							
S3	***Devices with screw terminals (main current side) and for mounting on contactor[3]***						
	7.5 ... 22	12.5 ... 50	200	**3RB3046-2UB0**		**3RB3046-2UD0**	
	18.5 ... 55	32 ... 115	315	**3RB3046-2XB0**		**3RB3046-2XD0**	
	Devices with straight-through transformer for stand-alone installation						
	7.5 ... 22	12.5 ... 50	200	**3RB3046-2UW1**		**3RB3046-2UX1**	
	18.5 ... 55	32 ... 115	315	**3RB3046-2XW1**		**3RB3046-2XX1**	

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[2] Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

[3] With the appropriate terminal supports (see page 7/105), these overload relays can also be installed as stand-alone units.

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3RB30, 3RB31 for standard applications *IE3/IE4 ready*

3RB31 electronic overload relays, CLASS 5E, 10E, 20E or 30E (adjustable)

Features and technical specifications:

- Connection methods
  - Sizes S00 and S0
    Main and auxiliary circuit: Either screw or spring-loaded terminals
  - Sizes S2 and S3
    Main circuit: Screw terminals with box terminal or as straight-through transformer
    Auxiliary circuit: Either screw or spring-loaded terminals
- Overload protection, phase failure protection and asymmetry protection
- Internal ground-fault detection (activatable)
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and Automatic RESET
- Electrical Remote RESET integrated
- Switch position indicator
- TEST function and self-monitoring
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41G

3RB3113-4.B0

3RB3123-4.B0

3RB3133-4.B0

3RB3133-4.W1

3RB3143-4.B0

3RB3143-4.W1

Size contactor	Rated power for three-phase motors, rated value[1]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[2]	Screw terminals		Spring-loaded terminals	
				Article No.	Price per PU	Article No.	Price per PU
	kW	A	A				
Size S00							
S00	***Devices for mounting on contactor[3]***						
	0.04 ... 0.09	0.1 ... 0.4	4	**3RB3113-4RB0**		**3RB3113-4RE0**	
	0.12 ... 0.37	0.32 ... 1.25	6	**3RB3113-4NB0**		**3RB3113-4NE0**	
	0.37 ... 1.5	1 ... 4	20	**3RB3113-4PB0**		**3RB3113-4PE0**	
	1.5 ... 5.5	3 ... 12	50	**3RB3113-4SB0**		**3RB3113-4SE0**	
	2.2 ... 7.5	4 ... 16	50	**3RB3113-4TB0**		**3RB3113-4TE0**	
Size S0							
S0	***Devices for mounting on contactor[3]***						
	0.04 ... 0.09	0.1 ... 0.4	4	**3RB3123-4RB0**		**3RB3123-4RE0**	
	0.12 ... 0.37	0.32 ... 1.25	6	**3RB3123-4NB0**		**3RB3123-4NE0**	
	0.37 ... 1.5	1 ... 4	20	**3RB3123-4PB0**		**3RB3123-4PE0**	
	1.5 ... 5.5	3 ... 12	50	**3RB3123-4SB0**		**3RB3123-4SE0**	
	3 ... 11	6 ... 25	63	**3RB3123-4QB0**		**3RB3123-4QE0**	
	5.5 ... 18.5	10 ... 40	80	**3RB3123-4VB0**		**3RB3123-4VE0**	
Size S2							
S2	***Devices with screw terminals (main current side) and for mounting on contactor[3]***						
	7.5 ... 22	12.5 ... 50	200	**3RB3133-4UB0**		**3RB3133-4UD0**	
	11 ... 37	20 ... 80	250	**3RB3133-4WB0**		**3RB3133-4WD0**	
	Devices with straight-through transformer for stand-alone installation						
	7.5 ... 22	12.5 ... 50	200	**3RB3133-4UW1**		**3RB3133-4UX1**	
	11 ... 37	20 ... 80	250	**3RB3133-4WW1**		**3RB3133-4WX1**	
Size S3							
S3	***Devices with screw terminals (main current side) and for mounting on contactor[3]***						
	7.5 ... 22	12.5 ... 50	200	**3RB3143-4UB0**		**3RB3143-4UD0**	
	18.5 ... 55	32 ... 115	315	**3RB3143-4XB0**		**3RB3143-4XD0**	
	Devices with straight-through transformer for stand-alone installation						
	7.5 ... 22	12.5 ... 50	200	**3RB3143-4UW1**		**3RB3143-4UX1**	
	18.5 ... 55	32 ... 115	315	**3RB3143-4XW1**		**3RB3143-4XX1**	

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

3) With the appropriate terminal supports (see page 7/105), these overload relays can also be installed as stand-alone units.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

The following optional accessories are available for the 3RB30/3RB31 electronic overload relays:

- Size-specific terminal support for stand-alone installation, in sizes S00 and S0 also with spring-loaded terminals
- Mechanical RESET (for all sizes)
- Cable release for resetting devices which are difficult to access (for all sizes)
- Sealable cover (for all sizes)
- Size-specific terminal covers for devices with screw terminals (box terminals)

Selection and ordering data

	Version	Size	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal supports for stand-alone installation							
3RU2916-3AA01 3RU2916-3AC01	**Terminal supports for overload relays with screw terminals**		**Screw terminals**				
	For separate mounting of the overload relays; screw and snap-on mounting on DIN rail	S00	**3RU2916-3AA01**		1	1 unit	41F
		S0	**3RU2926-3AA01**		1	1 unit	41F
		S2	**3RU2936-3AA01**		1	1 unit	41F
		S3	**3RU2946-3AA01**		1	1 unit	41F
3RU2926-3AA01 3RU2926-3AC01	**Terminal supports for overload relays with spring-loaded terminals**		**Spring-loaded terminals**				
	For separate mounting of the overload relays; screw and snap-on mounting on DIN rail	S00	**3RU2916-3AC01**		1	1 unit	41F
		S0	**3RU2926-3AC01**		1	1 unit	41F
3RU2936-3AA01							
3RU2946-3AA01							
Mechanical RESET							
3RB3980-0A	**Resetting plungers, holders and formers**	S00 ... S3	**3RB3980-0A**		1	1 unit	41F
3SU1200-0FB10-0AA0	**Pushbuttons with extended stroke** (12 mm), IP65, ⌀ 22 mm	S00 ... S3	**3SU1200-0FB10-0AA0**		1	1 unit	41J
3SU1900-0KG10-0AA0	**Extension plungers** For compensation of the distance between the pushbutton and the resetting plunger of the relay	S00 ... S3	**3SU1900-0KG10-0AA0**		1	1 unit	41J

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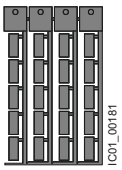
Accessories

	Version	Size	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Cable releases with holder for RESET							
3RB3980-0B	For ⌀ 6.5 mm holes in the control panel; max. control panel thickness 8 mm						
	• Length 400 mm	S00 ... S3	**3RB3980-0B**		1	1 unit	41F
	• Length 600 mm	S00 ... S3	**3RB3980-0C**		1	1 unit	41F
Sealable covers							
3RB3984-0	For covering the setting knobs	S00 ... S3	**3RB3984-0**		1	1 unit	41F
Terminal covers							
3RT1946-4EA1	**Covers for contactors with cable lug and busbar connections** For complying with the phase clearances and as touch protection if box terminal is removed	S3	**3RT1946-4EA1**		1	1 unit	41B
3RT2936-4EA2	**Covers for devices with screw terminals (box terminals)** Additional touch protection for fastening to the box terminals		**Screw terminals**				
	• Main current level	S2	**3RT2936-4EA2**		1	1 unit	41B
		S3	**3RT2946-4EA2**		1	1 unit	41B

General accessories

	Version	Size	Color	For overload relays	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Tools for opening spring-loaded terminals									
3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-loaded terminals	Length approx. 200 mm, 3.0 mm x 0.5 mm	Titanium gray/ black, partially insulated	Main and auxiliary circuit connection: 3RB3	**Spring-loaded terminals** **3RA2908-1A**		1	1 unit	41B
Blank labels									
 3RT2900-1SB20	**Unit labeling plates**[1] For SIRIUS devices	20 mm x 7 mm	Titanium gray	3RB3	**3RT2900-1SB20**		100	340 units	41B
	Adhesive labels For SIRIUS devices	19 mm x 6 mm	Titanium gray	3RB2	**3RT2900-1SB60**		100	3 060 units	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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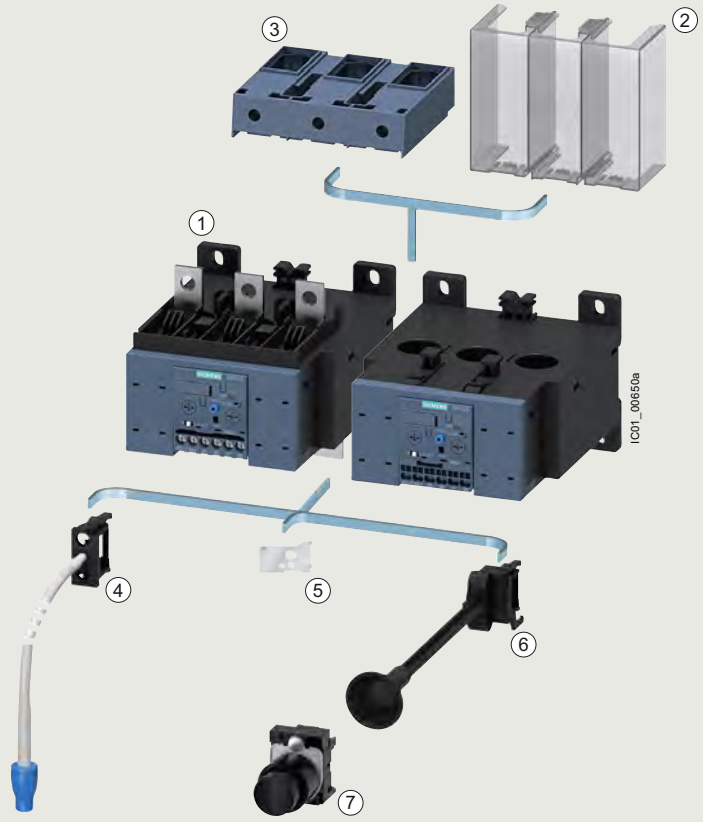
Overview

More information	
Homepage, see www.siemens.com/sirius-control	Application Manual for switching devices with IE3 and IE4 motors, see https://support.industry.siemens.com/cs/ww/en/view/94770820
Industry Mall, see www.siemens.com/product?3RB2	Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/60298164
Conversion tool, see www.siemens.com/conversion-tool	Characteristics and certificates, see https://support.industry.siemens.com/cs/ww/en/ps/16278



① 3RB2 overload relay
Sizes S6 to S10/S12

Mountable accessories
② Terminal cover
③ Box terminals
④ Cable release with holder for RESET
⑤ Sealable cover
⑥ Mechanical RESET
⑦ Pushbutton

Mountable accessories for 3RB2 electronic overload relays (sizes S6 to S10/S12)

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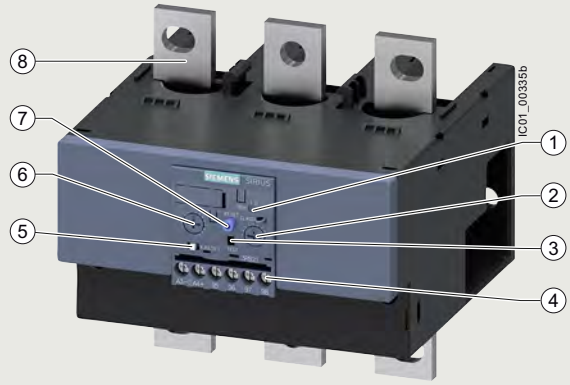

(1) Switch position indicator and TEST function of the wiring:
Indicates a trip and enables the wiring test.

(2) Trip class setting/internal ground-fault detection (only 3RB21):
Using the rotary switch you can set the required trip class and activate the internal ground-fault detection dependent on the starting conditions.

(3) Solid-state test (device test):
Enables a test of all important device components and functions.

(4) Connecting terminals (removable terminal block for auxiliary circuits):
The generously sized terminals permit connection of two conductors with different cross-sections for the main and auxiliary circuits. The auxiliary circuit can be connected with screw terminals and alternatively with spring-loaded terminals.

(5) Selector switch for Manual/Automatic RESET:
With the slide switch you can choose between Manual and Automatic RESET.

(6) Motor current setting:
Setting the device to the rated motor current is easy with the large rotary knob.

(7) A device set to Manual RESET can be reset locally by pressing the RESET button. On the 3RB21 overload relay a solid-state Remote RESET is integrated.

(8) Connection for mounting onto contactors:
Optimally adapted in electrical, mechanical and design terms to the 3RT1 contactors. These connecting pins can be used for direct mounting of the overload relay to the contactor. Stand-alone installation is possible as an alternative (partly in conjunction with a terminal support for stand-alone installation).

SIRIUS 3RB2153-4FW2 electronic overload relays

The 3RB20 and 3RB21 electronic overload relays up to 630 A with internal power supply have been designed for inverse-time delayed protection of loads with normal and heavy starting (see Equipment Manual) against excessive temperature rises due to overload, phase asymmetry or phase failure.

An overload, phase asymmetry or phase failure result in an increase of the motor current beyond the set rated motor current. This current rise is detected by the current transformers integrated into the devices and evaluated by corresponding solid-state circuits which then output a pulse to the auxiliary contacts. The auxiliary contacts then switch off the load by means of a contactor. The break time depends on the ratio between the tripping current and the current setting I_e and is stored in the form of a long-term stable tripping characteristic curve, see Characteristics.

In addition to inverse-time delayed protection of loads against excessive temperature rises due to overload, phase asymmetry and phase failure, the 3RB21 electronic overload relays also allow internal ground-fault detection (not possible in conjunction with contactor assemblies for star-delta (wye-delta) starting). This provides protection of loads against incomplete ground faults due to damage to the insulation material, moisture, condensed water, etc.

The "tripped" status is signaled by means of a switch position indicator. The relay is reset manually or automatically after the recovery time has elapsed.

The 3RB2 electronic overload relays are suitable for operation with frequency converters, see Equipment Manual.

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials. They comply with all important worldwide standards and approvals.

For 3RB30 and 3RB31 overload relays sizes S00 to S3, see page 7/102 onwards.

Use in hazardous areas

The 3RB20/3RB21 electronic overload relays are suitable for the overload protection of motors with the following types of protection:

- Ex II (2) G [Ex e] [Ex d] [Ex px]
- Ex II (2) D [Ex t] [Ex p]

EC type-examination certificate for Group II, Category (2) G/D exists. It has the number PTB 06 ATEX 3001.

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Article number scheme

Product versions		Article number
Electronic overload relays		**3RB2** ☐ ☐ ☐ – ☐ ☐ ☐ ☐
Device type	e.g. 0 = standard device, with internal supply, for three-phase loads	☐
Size, rated operational current and power	e.g. 5 = 200 A (90 kW) for size S6	☐
Version of the Automatic RESET, electrical Remote RESET	e.g. 6 = switchable between Manual/Automatic RESET	☐
Trip class (CLASS)	e.g. 1 = CLASS 10E	☐
Setting range of the overload release	e.g. F = 5 ... 200 A	☐
Connection methods	e.g. C = busbar connections main circuit; screw terminals auxiliary circuit	☐
Installation type	e.g. 2 = mounting on contactor and stand-alone installation	☐
Example		**3RB2 0 5 6 – 1 F C 2**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

The most important features and benefits of the 3RB20/3RB21 electronic overload relays are listed in the overview table (see "General data", page 7/76 onwards).

Application

Industries

The 3RB20 and 3RB21 electronic overload relays are suitable for customers from all industries who want to guarantee optimum inverse-time delayed protection of their electrical loads (e.g. motors) under normal and heavy starting conditions (CLASS 5E to 30E), minimize project completion times, inventories and energy consumption, and optimize plant availability and maintenance management.

Application

The 3RB20 and 3RB21 electronic overload relays have been designed for the protection of three-phase motors in sinusoidal 50/60 Hz voltage networks. The relays are not suitable for the protection of single-phase AC or DC loads.

The 3RU21 thermal overload relays or the 3RB22 to 3RB24 electronic overload relays can be used for single-phase AC loads. For DC loads we recommend the 3RU21 thermal overload relay.

Ambient conditions

The devices are insensitive to external influences such as shocks, corrosive ambient conditions, aging and temperature fluctuations.

For the temperature range from -25 to +60 °C, the 3RB20 and 3RB21 electronic overload relays compensate the temperature in accordance with IEC 60947-4-1.

For the 3RB20 and 3RB21 electronic overload relays with the sizes S6, S10 and S12, the upper set value of the setting range must be reduced for ambient temperatures > 50 °C by a certain factor.

Use of SIRIUS protection devices in conjunction with IE3 and IE4 motors

Note:

For the use of 3RB20 and 3RB21 electronic overload relays in conjunction with highly efficient IE3 and IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

For more information, see page 1/8.

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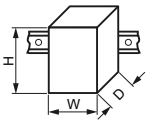
Technical specifications

More information	
Configuration Manual for load feeders, see https://support.industry.siemens.com/cs/ww/en/view/39714188 Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/60298164	Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16278/td

The following technical information is intended to provide an initial overview of the various types of devices and functions.

Type			**3RB2056, 3RB2153**	**3RB2066, 3RB2163**
Size			S6	S10/S12
Dimensions (W x H x D) (overload relay with stand-alone installation support)		mm	120 x 119 x 155	145 x 147 x 156
General data				
Tripping in the event of			Overload, phase failure, and phase asymmetry + ground fault (for 3RB21 only)	
Trip class according to IEC 60947-4-1		CLASS	3RB20: 10E or 20E; 3RB21: 5E, 10E, 20E and 30E adjustable	
Phase failure sensitivity			Yes	
Overload warning			No	
Reset and recovery				
• Reset options after tripping			3RB20: Manual and Automatic RESET; 3RB21: Manual, Automatic and Remote RESET	
• Recovery time				
- For Automatic RESET			Approx. 3 min	
- For Manual RESET			Immediately	
- For Remote RESET			Immediately	
Features				
• Display of operating state on device			Yes, by means of switch position indicator slide	
• TEST function			Yes, test of electronics by pressing the TEST button/ test of auxiliary contacts and wiring of control circuit by actuating the switch position indicator slide/self-monitoring	
• RESET button			Yes	
• STOP button			No	
Protection and operation of explosion-proof motors				
Certificate of suitability/explosion protection type according to ATEX Directive 2014/34/EU			PTB 06 ATEX 3001 Ⓔx II (2) G [Ex e] [Ex d] [Ex px] Ⓔx II (2) G [Ex t] [Ex p] See https://support.industry.siemens.com/cs/ww/en/view/23814648	
Ambient temperatures				
• Storage/transport		°C	-40 ... +80	
• Operation		°C	-25 ... +60	
• Temperature compensation		°C	+60	
• Permissible rated current at				
- Temperature inside control cabinet 60 °C, stand-alone installation		%	100	100 or 90[1)]
- Temperature inside control cabinet 60 °C, mounted on contactor		%	70	70
- Temperature inside control cabinet 70 °C		%	On request	
Degree of protection IP on the front according to IEC 60529				
• Screw terminals/busbar connections			IP00 (IP20 with box terminal/cover)	
• Straight-through transformers			IP20	--
Touch protection on the front according to IEC 60529				
• Screw terminals/busbar connections			Finger-safe for vertical touching from the front (with box terminals/cover)	
• Straight-through transformers			Finger-safe for vertical touching from the front	--

1) 90% for relay with current setting range 160 A to 630 A.

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Type		**3RB2056, 3RB2153**	**3RB2066, 3RB2163**
Size		S6	S10/S12
Dimensions (W x H x D) (overload relay with stand-alone installation support)	mm	120 x 119 x 155	145 x 147 x 156
General data (continued)			
Shock resistance with sine according to IEC 60068-2-27	*g*/ms	15/11 (signaling contact 97/98 in position "tripped": 4 g/11 ms	
Electromagnetic compatibility (EMC) – Interference immunity			
• Conductor-related interference			
- Burst according to IEC 61000-4-4 (corresponds to degree of severity 3)	kV	2 (power ports), 1 (signal port)	
- Surge according to IEC 61000-4-5 (corresponds to degree of severity 3)	kV	2 (line to earth), 1 (line to line)	
• Electrostatic discharge according to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	8 (air discharge), 6 (contact discharge)	
• Field-related interference according to IEC 61000-4-3 (corresponds to degree of severity 3)	V/m	10	
Electromagnetic compatibility (EMC) – Emitted interference		Degree of severity B according to EN 55011 (CISPR 11) and EN 55022 (CISPR 22)	
Installation altitude above sea level	m	Up to 2 000	
Mounting position		Any	
Type of mounting		Direct mounting/stand-alone installation	

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3RB20, 3RB21 for standard applications

Type		**3RB2056, 3RB2153**	**3RB2066, 3RB2163**
Size		S6	S10/S12
Main circuit			
Rated insulation voltage U_i (pollution degree 3)	V	1 000	
Rated impulse withstand voltage U_{imp}	kV	8	
Rated operational voltage U_e	V	1 000	
Type of current			
• Direct current		No	
• Alternating current		Yes, 50/60 Hz ±5%	
Current setting	A	50 ... 200	55 ... 250, 160 ... 630
Power loss per unit (max.)	W	0.05	
Short-circuit protection			
• With fuse without contactor		See "Selection and ordering data", pages 7/114 ... 7/116	
• With fuse and contactor		"Short-Circuit Protection with Fuses/Motor Starter Protectors for Motor Feeders", see Configuration Manual.	
Protective separation between main and auxiliary conducting paths According to IEC 60947-1 (pollution degree 2)			
• For systems with grounded neutral point	V	690	
• For systems with ungrounded neutral point	V	600	
Conductor cross-sections of the main circuit			
Connection type		**Screw terminals with box terminal**	
Terminal screw	mm	4 mm Allen screw	5 mm Allen screw
Operating devices	mm	4 mm Allen screw	5 mm Allen screw
Prescribed tightening torque	Nm	10 ... 12	20 ... 22
Conductor cross-sections (min./max.), one or two conductors can be connected			
• Solid	mm^2	--	--
• Finely stranded without end sleeve	mm^2	With 3RT1955-4G box terminal: 2 x (1 x max. 50, 1 x max. 70), 1 x (10 ... 70); With 3RT1956-4G box terminal: 2 x (1 x max. 95, 1 x max. 120), 1 x (10 ... 120)	2 x (50 ... 185), Front clamping point only: 1 x (70 ... 240); Rear clamping point only: 1 x (120 ... 185)
• Finely stranded with end sleeve (DIN 46228)	mm^2	With 3RT1955-4G box terminal: 2 x (1 x max. 50, 1 x max. 70), 1 x (10 ... 70); With 3RT1956-4G box terminal: 2 x (1 x max. 95, 1 x max. 120), 1 x (10 ... 120)	2 x (50 ... 185), Front clamping point only: 1 x (70 ... 240); Rear clamping point only: 1 x (120 ... 185)
• Stranded	mm^2	With 3RT1955-4G box terminal: 2 x (max. 70), 1 x (16 ... 70); With 3RT1956-4G box terminal: 2 x (max. 120), 1 x (16 ... 120)	2 x (70 ... 240), Front clamping point only: 1 x (95 ... 300); Rear clamping point only: 1 x (120 ... 240)
• AWG cables, solid or stranded	AWG	With 3RT1955-4G box terminal: 2 x (max. 1/0), 1 x (6 ... 2/0); With 3RT1956-4G box terminal: 2 x (max. 3/0), 1 x (6 ... 250 kcmil)	2 x (2/0 ... 500 kcmil), Front clamping point only: 1 x (3/0 ... 600 kcmil); Rear clamping point only: 1 x (250 kcmil ... 500 kcmil)
• Ribbon cables (number x width x thickness)	mm	With 3RT1955-4G box terminal: 2 x (6 x 15.5 x 0.8), 1 x (3 x 9 x 0.8 ... 6 x 15.5 x 0.8); With 3RT1956-4G box terminal: 2 x (10 x 15.5 x 0.8), 1 x (3 x 9 x 0.8 ... 10 x 15.5 x 0.8)	2 x (20 x 24 x 0.5), 1 x (6 x 9 x 0.8 ... 20 x 24 x 0.5)
Connection type		**Busbar connections**	
Terminal screw		M8 x 25	M10 x 30
Prescribed tightening torque	Nm	10 ... 14	14 ... 24
Conductor cross-sections (min./max.)			
• Finely stranded with cable lug	mm^2	16 ... 95[1)]	50 ... 240[2)]
• Stranded with cable lug	mm^2	25 ... 120[1)]	70 ... 240[2)]
• AWG cables, solid or stranded, with cable lug	AWG	4 ... 250 kcmil	2/0 ... 500 kcmil
• With connecting bars (max. width)	mm	15	25
Connection type		**Straight-through transformers**	
Diameter of opening	mm	24.5	--

1) When connecting cable lugs according to DIN 46235 with conductor cross-sections from 95 mm^2, the 3RT1956-4EA1 terminal cover must be used to ensure phase clearance, see page 7/117.

2) When connecting cable lugs according to DIN 46234 for conductor cross-sections from 240 mm^2, as well as DIN 46235 for cable cross-sections from 185 mm^2, the 3RT1956-4EA1 terminal cover must be used to ensure phase clearance, see page 7/117.

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Type		**3RB2056, 3RB2153**	**3RB2066, 3RB2163**
Size		S6	S10/S12
Auxiliary circuit			
Number of NO contacts		1	
Number of NC contacts		1	
Auxiliary contacts – Assignment		1 NO for the signal "tripped"; 1 NC for disconnecting the contactor	
Rated insulation voltage U_i (pollution degree 3)	V	300	
Rated impulse withstand voltage U_{imp}	kV	4	
Auxiliary contacts – Contact rating			
• NC contact with alternating current AC-14/AC-15, rated operational current I_e at U_e:			
- 24 V	A	4	
- 120 V	A	4	
- 125 V	A	4	
- 250 V	A	3	
• NO contact with alternating current AC-14/AC-15, rated operational current I_e at U_e:			
- 24 V	A	4	
- 120 V	A	4	
- 125 V	A	4	
- 250 V	A	3	
• NC, NO contacts with direct current DC-13, rated operational current I_e at U_e:			
- 24 V	A	2	
- 60 V	A	0.55	
- 110 V	A	0.3	
- 125 V	A	0.3	
- 250 V	A	0.11	
• Conventional thermal current I_{th}	A	5	
• Contact reliability (suitability for PLC control; 17 V, 5 mA)		Yes	
Short-circuit protection			
• With fuse, operational class gG	A	6	
Ground-fault protection (only 3RB21)		The information refers to sinusoidal residual currents at 50/60 Hz.	
• Tripping value I_Δ		> 0.75 × I_{motor}	
• Operating range I		Lower current setting < I_{motor} < 3.5 × upper current setting	
• Response time t_{trip} (in steady-state condition)	s	< 1	
Integrated electrical Remote RESET (only 3RB21)			
Connecting terminals A3, A4		24 V DC, 100 mA, 2.4 W short-term	
Protective separation between auxiliary conducting paths According to IEC 60947-1	V	300	
CSA, UL and UR rated data			
Auxiliary circuit – Switching capacity		B300, R300	
Conductor cross-sections of the auxiliary circuit			
Connection type		**Screw terminals**	
Terminal screw		M3, Pozidriv size 2	
Operating devices	mm	⌀ 5 ... 6	
Prescribed tightening torque	Nm	0.8 ... 1.2	
Conductor cross-sections (min./max.), one or two conductors can be connected			
• Solid and stranded	mm^2	1 x (0.5 ... 4)[1], 2 x (0.5 ... 2.5)[1]	
• Finely stranded without end sleeve	mm^2	--	
• Finely stranded with end sleeve (DIN 46228)	mm^2	1 x (0.5 ... 2.5)[1], 2 x (0.5 ... 1.5)[1]	
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)	
Connection type		**Spring-loaded terminals**	
Operating devices	mm	3.0 x 0.5	
Conductor cross-sections (min./max.), one or two conductors can be connected			
• Solid and stranded	mm^2	2 x (0.25 ... 1.5)	
• Finely stranded without end sleeve	mm^2	--	
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.25 ... 1.5)	
• AWG cables, solid or stranded	AWG	2 x (24 ... 16)	

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

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Selection and ordering data

3RB20 electronic overload relays for mounting on contactors and stand-alone installation, CLASS 10E

Features and technical specifications:

- Connection methods
  - Size S6
    Main circuit: With busbar connection or as straight-through transformer (an appropriate connection kit with screws, spring washers and nuts is enclosed with the devices with busbar connection)
    Auxiliary circuit: Either screw or spring-loaded terminals
  - Sizes S10/S12
    Main circuit: With busbar connection (an appropriate connection kit with screws, spring washers and nuts is enclosed)
    Auxiliary circuit: Either screw or spring-loaded terminals
- Overload protection, phase failure protection and asymmetry protection
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and Automatic RESET
- Switch position indicator
- TEST function and self-monitoring

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41G

3RB2056-1FW2

3RB2066-1MF2

Size contactor	Rated power for three-phase motors, rated value[1]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[2]	**Screw terminals** (on auxiliary current side)		**Spring-loaded terminals** (on auxiliary current side)	
				Article No.	Price per PU	Article No.	Price per PU
	kW	A	A				
Size S6							
Devices with busbar connection, for mounting onto contactor and stand-alone installation							
S6	30 ... 90	50 … 200	315	**3RB2056-1FC2**		**3RB2056-1FF2**	
Devices with straight-through transformer, for mounting on contactor and stand-alone installation							
For mounting on S6 contactors with box terminals	30 ... 90	50 … 200	315	**3RB2056-1FW2**		**3RB2056-1FX2**	
Size S10/S12							
Devices with busbar connection, for mounting onto contactor and stand-alone installation							
S10/S12 and size 14 (3TF68/ 3TF69)[3]	30 ... 132	55 … 250	400	**3RB2066-1GC2**		**3RB2066-1GF2**	
	90 ... 355	160 … 630	800	**3RB2066-1MC2**		**3RB2066-1MF2**	

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

3) For 3TF68/3TF69 contactors, direct mounting is not possible.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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3RB20 electronic overload relays for mounting on contactors and stand-alone installation, CLASS 20E

Features and technical specifications:

- Connection methods
  - Size S6
    Main circuit: With busbar connection or as straight-through transformer (an appropriate connection kit with screws, spring washers and nuts is enclosed with the devices with busbar connection)
    Auxiliary circuit: Either screw or spring-loaded terminals
  - Sizes S10/S12
    Main circuit: With busbar connection (an appropriate connection kit with screws, spring washers and nuts is enclosed)
    Auxiliary circuit: Either screw or spring-loaded terminals
- Overload protection, phase failure protection and asymmetry protection
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and Automatic RESET
- Switch position indicator
- TEST function and self-monitoring

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41G

3RB2056-2FW2

3RB2066-2MF2

Size contactor	Rated power for three-phase motors, rated value[1]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[2]	**Screw terminals** (on auxiliary current side)		**Spring-loaded terminals** (on auxiliary current side)	
				Article No.	Price per PU	Article No.	Price per PU
	kW	A	A				
Size S6							
Devices with busbar connection, for mounting onto contactor and stand-alone installation							
S6	30 ... 90	50 … 200	315	**3RB2056-2FC2**		**3RB2056-2FF2**	
Devices with straight-through transformer, for mounting on contactor and stand-alone installation							
For mounting on S6 contactors with box terminals	30 ... 90	50 … 200	315	**3RB2056-2FW2**		**3RB2056-2FX2**	
Size S10/S12[2]							
Devices with busbar connection, for mounting onto contactor and stand-alone installation							
S10/S12 and size 14 (3TF68/ 3TF69)[3]	30 ... 132 90 ... 355	55 … 250 160 … 630	400 800	**3RB2066-2GC2** **3RB2066-2MC2**		**3RB2066-2GF2** **3RB2066-2MF2**	

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

3) For 3TF68/3TF69 contactors, direct mounting is not possible.

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3RB20, 3RB21 for standard applications *IE3/IE4 ready*

3RB21 electronic overload relays for mounting on contactors and stand-alone installation, CLASS 5E, 10E, 20E and 30E adjustable

Features and technical specifications:

- Connection methods
  - Size S6
    Main circuit: With busbar connection or as straight-through transformer (an appropriate connection kit with screws, spring washers and nuts is enclosed with the devices with busbar connection)
    Auxiliary circuit: Either screw or spring-loaded terminals
  - Sizes S10/S12
    Main circuit: With busbar connection (an appropriate connection kit with screws, spring washers and nuts is enclosed)
    Auxiliary circuit: Either screw or spring-loaded terminals
- Overload protection, phase failure protection and asymmetry protection
- Internal ground-fault detection (activatable)
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and Automatic RESET
- Electrical Remote RESET integrated
- Switch position indicator
- TEST function and self-monitoring

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41G

3RB2153-4FW2

3RB2163-4MF2

Size contactor	Rated power for three-phase motors, rated value[1]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[2]	**Screw terminals** (on auxiliary current side)		**Spring-loaded terminals** (on auxiliary current side)	
				Article No.	Price per PU	Article No.	Price per PU
	kW	A	A				
Size S6							
Devices with busbar connection, for mounting onto contactor and stand-alone installation							
S6	30 ... 90	50 … 200	315	**3RB2153-4FC2**		**3RB2153-4FF2**	
Devices with straight-through transformer, for mounting on contactor and stand-alone installation							
For mounting on S6 contactors with box terminals	30 ... 90	50 … 200	315	**3RB2153-4FW2**		**3RB2153-4FX2**	
Size S10/S12[2]							
Devices with busbar connection, for mounting onto contactor and stand-alone installation							
S10/S12 and size 14 (3TF68/ 3TF69)[3]	30 ... 132 90 ... 355	55 … 250 160 … 630	400 800	**3RB2163-4GC2** **3RB2163-4MC2**		**3RB2163-4GF2** **3RB2163-4MF2**	

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

3) For 3TF68/3TF69 contactors, direct mounting is not possible.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

Overload relays for standard applications

The following optional accessories are available for the 3RB20 and 3RB21 electronic overload relays:

- Mechanical RESET (for all sizes)
- Cable release for resetting devices which are difficult to access (for all sizes)
- Sealable cover (for all sizes)
- Terminal covers for sizes S6 and S10/S12
- Box terminal blocks for sizes S6 and S10/S12

Selection and ordering data

	Version	Size	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mechanical RESET							
3RB3980-0A	**Resetting plungers, holders and formers**	S6 ... S12	**3RB3980-0A**		1	1 unit	41F
3SU1200-0FB10-0AA0	**Pushbuttons with extended stroke** (12 mm), IP65, ⌀ 22 mm	S6 ... S12	**3SU1200-0FB10-0AA0**		1	1 unit	41J
3SU1900-0KG10-0AA0	**Extension plungers** For compensation of the distance between the pushbutton and the resetting plunger of the relay	S6 ... S12	**3SU1900-0KG10-0AA0**		1	1 unit	41J
Cable releases with holder for RESET							
3RU3980-0B	For ⌀ 6.5 mm holes in the control panel; max. control panel thickness 8 mm						
	• Length 400 mm	S6 ... S12	**3RB3980-0B**		1	1 unit	41F
	• Length 600 mm	S6 ... S12	**3RB3980-0C**		1	1 unit	41F
Sealable covers							
3RB3984-0	For covering the setting knobs	S6 ... S12	**3RB3984-0**		1	1 unit	41F
Terminal covers							
3RT1956-4EA1	**Covers for cable lugs and busbar connections**						
	• Length 100 mm	S6	**3RT1956-4EA1**		1	1 unit	41B
	• Length 120 mm	S10/S12	**3RT1966-4EA1**		1	1 unit	41B
	Covers for box terminals						
	• Length 25 mm	S6	**3RT1956-4EA2**		1	1 unit	41B
	• Length 30 mm	S10/S12	**3RT1966-4EA2**		1	1 unit	41B
3RT1956-4EA2	**Covers for screw terminals** Between contactor and overload relay, without box terminals (1 unit required per combination)	S6	**3RT1956-4EA3**		1	1 unit	41B
		S10/S12	**3RT1966-4EA3**		1	1 unit	41B
Box terminal blocks							
3RT1955-4G	For round and ribbon cables						
	• Up to 70 mm^2	S6[1)]	**3RT1955-4G**		1	1 unit	41B
	• Up to 120 mm^2	S6	**3RT1956-4G**		1	1 unit	41B
	• Up to 240 mm^2	S10/S12	**3RT1966-4G**		1	1 unit	41B

1) In the scope of supply for 3RT1054-1 contactors (55 kW).

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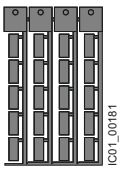
Accessories for 3RB20, 3RB21

General accessories

	Version	Size	Color	For overload relays	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Tools for opening spring-loaded terminals									
3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-loaded terminals	Length approx. 200 mm, 3.0 mm x 0.5 mm	Titanium gray/ black, partially insulated	Main and auxiliary circuit connection: 3RB2	**Spring-loaded terminals** **3RA2908-1A**		1	1 unit	41B
Blank labels									
 3RT2900-1SB20	**Unit labeling plates**[1] For SIRIUS devices	20 mm x 7 mm	Titanium gray	3RB2	**3RT2900-1SB20**		100	340 units	41B
	Adhesive labels For SIRIUS devices	19 mm x 6 mm	Titanium gray	3RB2	**3RT2900-1SB60**		100	3 060 units	41B

1) PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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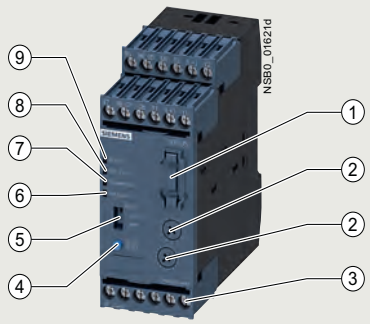
Overview

More information

Homepage, see www.siemens.com/sirius-control
Industry Mall, see www.siemens.com/product?3RB2

Application Manual for switching devices with IE3 and IE4 motors, see https://support.industry.siemens.com/cs/ww/en/view/94770820
Operating Instructions, see https://support.industry.siemens.com/cs/ww/en/view/21833251
Characteristics and certificates, see https://support.industry.siemens.com/cs/ww/en/ps/16280



(1) 3RB2985 function expansion module:
Enables more functions to be added, e.g. internal ground-fault detection and/or an analog output with corresponding signals.

(2) Motor current and trip class setting:
Setting the device to the motor current and to the required trip class dependent on the starting conditions is easy with the two rotary switches.

(3) Connecting terminals (removable terminal block):
The generously sized terminals permit connection of two conductors with different cross-sections for the auxiliary, control and sensor circuits. Connection is possible with screw terminals and alternatively with spring-loaded terminals.

(4) Test/RESET button:
Enables testing of all important device components and functions, plus resetting of the device after a trip when Manual RESET is selected.

(5) Selector switch for Manual/Automatic RESET:
With this switch you can choose between Manual and Automatic RESET.

(6) Red LED "OVERLOAD":
A continuous red light signals an active overload trip; a flickering red light signals an imminent trip (overload warning).

(7) Red LED "THERMISTOR":
A continuous red light signals an active thermistor trip.

(8) Red LED "GND FAULT":
A continuous red light signals a ground-fault tripping.

(9) Green LED "READY":
A continuous green light signals that the device is working correctly.

SIRIUS 3RB22 and 3RB23 evaluation modules

The 3RB22 and 3RB23 electronic overload relays up to 630 A (up to 820 A possible in combination with a series transformer) are from a modular system and comprise an evaluation unit, a current measuring module and a connecting cable. The 3RB22 overload relays (with monostable auxiliary contacts) and the 3RB23 overload relays (with bistable auxiliary contacts) are supplied from an external voltage.

They have been designed for inverse-time delayed protection of loads with normal and heavy starting against excessive temperature rises due to overload, phase asymmetry or phase failure. An overload, phase asymmetry or phase failure result in an increase of the motor current beyond the set rated motor current.

This current rise is detected by means of a current measuring module (see page 7/137) and electronically evaluated by the evaluation module which is connected to it. The evaluation electronics sends a signal to the auxiliary contacts. The auxiliary contacts then switch off the load by means of a contactor.

The break time depends on the ratio between the tripping current and the current setting I_e and is stored in the form of a long-term stable tripping characteristic curve, see Characteristics. The "tripped" status is signaled by means of a continuously illuminated red "OVERLOAD" LED.

The LED indicates imminent tripping of the relay due to overload, phase asymmetry or phase failure by flickering when the limit current has been violated. In the case of the 3RB22 and 3RB23 overload relays this warning can also be issued through auxiliary contacts.

In addition to the described inverse-time delayed protection of loads against excessive temperature rises, the 3RB22 and 3RB23 electronic overload relays also allow direct temperature monitoring of the motor windings (full motor protection!) by connection with broken-wire interlock of a PTC sensor circuit. With this temperature-dependent protection, the loads can be protected against overheating caused, for example, indirectly by reduced coolant flow and which cannot be detected by means of the current alone. In the event of overheating, the devices switch off the contactor, and thus the load, by means of the auxiliary contacts. The "tripped" status is signaled by means of a continuously illuminated "THERMISTOR" LED.

To protect the loads against incomplete ground faults due to damage to the insulation, humidity, condensed water, etc., the 3RB22 and 3RB23 electronic overload relays offer the possibility of internal ground fault monitoring in conjunction with a function expansion module (for details, see Operating Instructions, not possible in conjunction with contactor assemblies for star-delta (wye-delta) starting). In the event of a ground fault, the 3RB22 and 3RB23 relays trip instantaneously.

The "tripped" status is signaled by means of a continuous red "Ground Fault" LED. Signaling through auxiliary contacts is also possible.

After tripping due to overload, phase asymmetry, phase failure, thermistor or ground-fault tripping, the relay is reset manually or automatically after the recovery time has elapsed.

In conjunction with a corresponding function expansion module, the motor current measured by the microprocessor can be output in the form of a DC 4 to 20 mA analog signal for operating rotary coil instruments or for feeding into analog inputs of programmable logic controllers.

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3RB22, 3RB23 for high-feature applications

With an additional AS-Interface analog module the current values can also be transferred via the AS-i bus system.

The 3RB2 electronic overload relays are suitable for operation with frequency converters.

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials. They comply with all important worldwide standards and approvals.

Article number scheme

Product versions		Article number
Electronic overload relays		**3RB2** □ □ □ – □ □ □ □
Device type	e.g. 2 = monostable device for high-feature applications, supplied from external source, for three-phase loads	□
Size, rated operational current and power	e.g. 8 = irrespective of size and current	□
Version of the Automatic RESET, electrical Remote RESET	e.g. 3 = switchable between Manual/Automatic RESET, with integral electrical Remote RESET	□
Trip class (CLASS)	e.g. 4 = CLASS 5E, 10E, 20E, 30E (adjustable)	□
Setting range of the overload release	e.g. A = none specified	□
Connection methods	e.g. A = screw terminals for auxiliary, control and main circuits	□
Installation type	e.g. 1 = stand-alone installation	□
Example		**3RB2 2 8 3 – 4 A A 1**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

The most important features and benefits of the 3RB22 and 3RB23 electronic overload relays are listed in the overview table, see "General data", page 7/76 onwards.

Application

Industries

The 3RB22 and 3RB23 electronic overload relays are suitable for customers from all industries who want to guarantee optimum inverse-time delayed and temperature-dependent protection of their electrical loads (e.g. motors) under normal and heavy starting conditions (CLASS 5 to CLASS 30), minimize project completion times, inventories and power consumption, and optimize plant availability and maintenance management.

Application

The 3RB22 and 3RB23 devices have been designed for the protection of three-phase asynchronous and single-phase AC motors.

If single-phase AC motors are to be protected by the 3RB22 and 3RB23 electronic overload relays, the main conducting paths of the current measuring modules must be series-connected. For circuit diagrams, see Operating Instructions.

Use in hazardous areas

The 3RB22 electronic overload relays (monostable) with the 3RB29 current measuring module are suitable for the overload protection of explosion-proof motors.

EC type-examination certificate for Category (2) G/D exists. It has the number PTB 05 ATEX 3022.

Ambient conditions

The devices are insensitive to external influences such as shocks, corrosive ambient conditions, aging and temperature fluctuations.

For the temperature range from -25 to +60 °C, the 3RB22 and 3RB23 electronic overload relays compensate the temperature in accordance with IEC 60947-4-1.

Configuration notes for use of the devices below -25 °C or above +60 °C on request.

Use of SIRIUS protection devices in conjunction with IE3 and IE4 motors

Note:

For the use of 3RB22 and 3RB23 electronic overload relays in conjunction with highly efficient IE3 and IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

For more information, see page 1/8.

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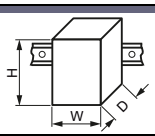
Technical specifications

More information	
Application Manual for switching devices with IE3 and IE4 motors, see https://support.industry.siemens.com/cs/ww/en/view/94770820	Operating Instructions, see https://support.industry.siemens.com/cs/ww/en/view/21833251
Configuration Manual for load feeders, see https://support.industry.siemens.com/cs/ww/en/view/39714188	Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16280/td

The following technical information is intended to provide an initial overview of the various types of devices and functions.

Type – Overload relay: Evaluation modules			**3RB2283-4A.1**	**3RB2383-4A.1**
Size contactor			S00 ... S10/S12	
Dimensions of evaluation modules (W x H x D)		mm	45 x 111 x 95	
General data				
Tripping in the event of			Overload, phase failure and phase asymmetry (> 40% according to NEMA), + ground fault (with corresponding function expansion module) and activation of the thermistor motor protection (with closed PTC sensor circuit)	
Trip class according to IEC 60947-4-1		CLASS	5E, 10E, 20E and 30E adjustable	
Phase failure sensitivity			Yes	
Overload warning			Yes, from 1.125 × I_e for symmetrical loads and from 0.85 × I_e for asymmetrical loads	
Reset and recovery				
• Reset options after tripping			Manual, Automatic and Remote RESET	
• Recovery time				
- For Automatic RESET		min.	- For tripping due to overcurrent: 3 (stored permanently) - For tripping by thermistor: time until the motor temperature has fallen 5 K below the response temperature - For tripping due to a ground fault: no Automatic RESET	
- For Manual RESET		min.	- For tripping due to overcurrent: 3 (stored permanently) - For tripping by thermistor: time until the motor temperature has fallen 5 K below the response temperature - For tripping due to a ground fault: immediately	
- For Remote RESET		min.	- For tripping due to overcurrent: 3 (stored permanently) - For tripping by thermistor: time until the motor temperature has fallen 5 K below the response temperature - For tripping due to a ground fault: immediately	
Features				
• Display of operating state on device			Yes, with four LEDs: - Green LED "Ready" - Red LED "Ground Fault" - Red LED "Thermistor" - Red LED "Overload"	
• TEST function			Yes, test of LEDs, electronics, auxiliary contacts and wiring of control circuit by pressing the button TEST/RESET/self-monitoring	
• RESET button			Yes, with the TEST/RESET button	
• STOP button			No	
Protection and operation of explosion-proof motors				
Certificate of suitability/explosion protection type according to ATEX Directive 2014/34/EU			PTB 05 ATEX 3022 Ex II (2) GD see https://support.automation.siemens.com/WW/view/en/23115758	--
Ambient temperatures				
• Storage/transport		°C	-40 ... +80	
• Operation		°C	-25 ... +60	
• Temperature compensation		°C	+60	
• Permissible rated current				
- Temperature inside control cabinet 60 °C		%	100	
- Temperature inside control cabinet 70 °C		%	On request	
Degree of protection IP on the front according to IEC 60529			IP20	
Touch protection on the front according to IEC 60529			Finger-safe for vertical touching from the front	
Shock resistance with sine according to IEC 60068-2-27		*g*/ms	15/11	

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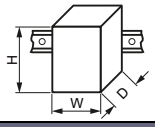
3RB22, 3RB23 for high-feature applications

Type – Overload relay: Evaluation modules		**3RB2283-4A.1**	**3RB2383-4A.1**
Size contactor		S00 ... S10/S12	
Dimensions of evaluation modules (W x H x D)	mm	45 x 111 x 95	



General data (continued)

Electromagnetic compatibility (EMC) – Interference immunity		
• Conductor-related interference		
- Burst according to IEC 61000-4-4 (corresponds to degree of severity 3)	kV	2 (power ports), 1 (signal port)
- Surge according to IEC 61000-4-5 (corresponds to degree of severity 3)	kV	2 (line to earth), 1 (line to line)
• Electrostatic discharge according to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	8 (air discharge), 6 (contact discharge)
• Field-related interference according to IEC 61000-4-3 (corresponds to degree of severity 3)	V/m	10
Electromagnetic compatibility (EMC) – Emitted interference		Degree of severity A according to EN 55011 (CISPR 11) and EN 55022 (CISPR 22)
Installation altitude above sea level	m	Up to 2 000
Mounting position		Any
Type of mounting		
• Evaluation modules		Stand-alone installation
• Current measuring modules	Size	S00 to S3: Stand-alone installation, S6 and S10/S12: Stand-alone installation or mounting on contactors

Type – Overload relay: Evaluation modules		**3RB2283-4A.1, 3RB2383-4A.1**
Size contactor		S00 ... S10/S12
Auxiliary circuit		
Number of NO contacts		2
Number of NC contacts		2
Number of CO contacts		--
Auxiliary contacts – Assignment		• Alternative 1 - 1 NO for the signal "tripped by overload and/or thermistor", - 1 NC for disconnecting the contactor, - 1 NO for the signal "tripped by ground fault", - 1 NC for disconnecting the contactor or[1)] • Alternative 2 - 1 NO for the signal "tripped by overload and/or thermistor and/or ground fault", - 1 NC for disconnecting the contactor, - 1 NO for overload warning, - 1 NC for disconnecting the contactor
Rated insulation voltage U_i (pollution degree 3)	V	300
Rated impulse withstand voltage U_{imp}	kV	4
Auxiliary contacts – Contact rating		
• NC, NO contact with alternating current AC-14/AC-15, rated operational current I_e at U_e		
- 24 V	A	6
- 120 V	A	6
- 125 V	A	6
- 250 V	A	3
• NC, NO contacts with direct current DC-13, rated operational current I_e at U_e		
- 24 V	A	2
- 60 V	A	0.55
- 110 V	A	0.3
- 125 V	A	0.3
- 250 V	A	0.2
• Conventional thermal current I_{th}	A	5
• Contact reliability (suitability for PLC control; 17 V, 5 mA)		Yes
Short-circuit protection		
• With fuse, operational class gG	A	6
• With miniature circuit breaker, C characteristic	A	1.6
Protective separation between auxiliary conducting paths According to IEC 60947-1	V	300
CSA, UL and UR rated data		
Auxiliary circuit – Switching capacity		B300, R300

[1)] The assignment of auxiliary contacts may be influenced by function expansion modules.

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Type – Overload relay: Evaluation modules		**3RB2283-4A.1, 3RB2383-4A.1**
Size contactor		S00 ... S10/S12
Control circuit		
Rated insulation voltage U_i (pollution degree 3)	V	300
Rated impulse withstand voltage U_{imp}	kV	4
Rated control supply voltage U_s		
• 50/60 Hz AC	V	24 ... 240
• DC	V	24 ... 240
Operating range		
• 50/60 Hz AC		$0.85 \times U_{s\,min} \leq U_s \leq 1.1 \times U_{s\,max}$
• DC		$0.85 \times U_{s\,min} \leq U_s \leq 1.1 \times U_{s\,max}$
Rated power		
• 50/60 Hz AC	W	0.5
• DC	W	0.5
Mains buffering time	ms	200
Sensor circuit		
Thermistor motor protection (PTC thermistor sensor)		
• Summation cold resistance	kΩ	≤ 1.5
• Response value	kΩ	3.4 ... 3.8
• Return value	kΩ	1.5 ... 1.65
Ground-fault detection		The information refers to sinusoidal residual currents at 50/60 Hz.
• Tripping value I_Δ [1]		
- For $0.3 \times I_e < I_{motor} < 2.0 \times I_e$		$> 0.3 \times I_e$
- For $2.0 \times I_e < I_{motor} < 8.0 \times I_e$		$> 0.15 \times I_{motor}$
• Response time t_{trip}	ms	500 ... 1 000
Analog output [1] [2]		
Rated values		
• Output signal	mA	4 ... 20
• Measuring range		0 ... 1.25 x I_e 4 mA corresponds to 0 x I_e 16.8 mA corresponds to 1.0 x I_e 20 mA corresponds to 1.25 x I_e
• Load, max.	Ω	100
Conductor cross-sections for the auxiliary, control and sensor circuits as well as the analog output		
Connection type		**Screw terminals**
Terminal screw		M3, Pozidriv size 2
Operating devices	mm	3.0 x 0.5
Prescribed tightening torque	Nm	0.8 ... 1.2
Conductor cross-sections (min./max.), one or two conductors can be connected		
• Solid or stranded	mm^2	1 x (0.5 ... 4) [3], 2 x (0.5 ... 2.5) [3]
• Finely stranded without end sleeve	mm^2	--
• Finely stranded with end sleeve (DIN 46228)	mm^2	1 x (0.5 ... 2.5) [3], 2 x (0.5 ... 1.5) [3]
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)
Connection type		**Spring-loaded terminals**
Operating devices	mm	3.0 x 0.5
Conductor cross-sections (min./max.), one or two conductors can be connected		
• Solid or stranded	mm^2	2 x (0.25 ... 1.5)
• Finely stranded without end sleeve	mm^2	--
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.25 ... 1.5)
• AWG cables, solid or stranded	AWG	2 x (24 ... 16)

1) For the 3RB22 and 3RB23 overload relays in combination with a corresponding function expansion module.

2) Analog input modules, e.g. SM 331, must be configured for four-wire measuring transducers. In this case the analog input module must not supply current to the analog output of the 3RB22 and 3RB23 relay.

3) If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

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3RB22, 3RB23 for high-feature applications

Functions of the 3RB22 and 3RB23 evaluation modules in combination with the 3RB2985 function expansion modules

Evaluation modules	With function expansion module	Basic functions	Inputs		
			A1/A2	T1/T2	Y1/Y2
3RB2283-4AA1 3RB2283-4AC1 3RB2383-4AA1 3RB2383-4AC1	--	Inverse-time delayed protection, temperature-dependent protection, electrical Remote RESET, overload warning	Power supply 24 ... 240 V AC/DC	Connection for PTC sensor	Electrical Remote RESET
	3RB2985-2CA1	Inverse-time delayed protection, temperature-dependent protection, internal ground-fault detection, electrical Remote RESET, overload warning	Power supply 24 ... 240 V AC/DC	Connection for PTC sensor	Electrical Remote RESET
	3RB2985-2CB1	Inverse-time delayed protection, temperature-dependent protection, internal ground-fault detection, electrical Remote RESET, ground-fault signal	Power supply 24 ... 240 V AC/DC	Connection for PTC sensor	Electrical Remote RESET
	3RB2985-2AA0	Inverse-time delayed protection, temperature-dependent protection, electrical Remote RESET, overload warning, analog output	Power supply 24 ... 240 V AC/DC	Connection for PTC sensor	Electrical Remote RESET
	3RB2985-2AA1	Inverse-time delayed protection, temperature-dependent protection, internal ground-fault detection, electrical Remote RESET, overload warning, analog output	Power supply 24 ... 240 V AC/DC	Connection for PTC sensor	Electrical Remote RESET
	3RB2985-2AB1	Inverse-time delayed protection, temperature-dependent protection, internal ground-fault detection, electrical Remote RESET, ground-fault signal, analog output	Power supply 24 ... 240 V AC/DC	Connection for PTC sensor	Electrical Remote RESET

Evaluation modules	With function expansion module	Outputs				
		I (–)/I (+)	95/96 NC	97/98 NO	05/06 NC	07/08 NO
3RB2283-4AA1 3RB2283-4AC1 3RB2383-4AA1 3RB2383-4AC1	--	No	Disconnection of the contactor (inverse-time delayed/ temperature-dependent protection)	Signal "tripped"	Overload warning	Overload warning
	3RB2985-2CA1	No	Disconnection of the contactor (inverse-time delayed/ temperature-dependent protection + ground fault)	Signal "tripped"	Overload warning	Overload warning
	3RB2985-2CB1	No	Disconnection of the contactor (inverse-time delayed/ temperature-dependent protection)	Signal "tripped"	Disconnection of the contactor (ground fault)	Signal "ground-fault tripping"
	3RB2985-2AA0	Analog signal	Disconnection of the contactor (inverse-time delayed/ temperature-dependent protection)	Signal "tripped"	Overload warning	Overload warning
	3RB2985-2AA1	Analog signal	Disconnection of the contactor (inverse-time delayed/ temperature-dependent protection + ground fault)	Signal "tripped"	Overload warning	Overload warning
	3RB2985-2AB1	Analog signal	Disconnection of the contactor (inverse-time delayed/ temperature-dependent protection)	Signal "tripped"	Disconnection of the contactor (ground fault)	Signal "ground-fault tripping"

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IE3/IE4 ready **3RB22, 3RB23 for high-feature applications**

3RB22 and 3RB23 electronic overload relays (evaluation modules) for full motor protection for stand-alone installation, CLASS 5E, 10E, 20E and 30E (adjustable)

Type	3RB2283-4A.1, 3RB2383-4A.1
Features and technical specifications	
Overload protection, phase failure protection and asymmetry protection	✓
Supplied from an external source	✓ 24 ... 240 V AC/DC
Auxiliary contacts	✓ 2 NO + 2 NC
Electrical Remote RESET integrated	✓
Four LEDs for operating and status displays	✓
TEST function and self-monitoring	✓
Internal ground-fault detection	✓ (with function expansion module)
Screw or spring-loaded terminals for auxiliary, control and sensor circuits	✓
Input for PTC sensor circuit	✓
Analog output	✓ (with function expansion module)

✓ Available

Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41G

3RB2283-4AA1

3RB2283-4AC1

Size contactor	Version	Screw terminals Article No.	Screw terminals Price per PU	Spring-loaded terminals Article No.	Spring-loaded terminals Price per PU
Evaluation modules					
S00 ... S12	Monostable	**3RB2283-4AA1**		**3RB2283-4AC1**	
	Bistable	**3RB2383-4AA1**		**3RB2383-4AC1**	

Note:

Overview of overload relays – matching contactors, see page 7/81.

Current measuring modules and related connecting cables, see page 7/137, general accessories, see page 7/138 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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3RB22, 3RB23 for high-feature applications *IE3/IE4* ready

Function expansion modules for 3RB22 and 3RB23 overload relays (evaluation modules)

	Size contactor	Version	For overload relays	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Sizes S00 to S12								
		For plugging into evaluation module (1 unit)						
3RB2985-2..1	S00 ... S12	**Analog Basic 1 modules**[1] Analog output 4 ... 20 mA DC, with overload warning	3RB22, 3RB23	**3RB2985-2AA0**		1	1 unit	41F
		Analog Basic 1 GF modules[1)2)] Analog output 4 ... 20 mA DC, with internal ground-fault detection and overload warning	3RB22, 3RB23	**3RB2985-2AA1**		1	1 unit	41F
		Analog Basic 2 GF modules[1)2)] Analog output 4 ... 20 mA DC, with internal ground-fault detection and ground-fault signaling	3RB22, 3RB23	**3RB2985-2AB1**		1	1 unit	41F
		Basic 1 GF modules[2)] with internal ground-fault detection and overload warning	3RB22, 3RB23	**3RB2985-2CA1**		1	1 unit	41F
		Basic 2 GF modules[2)] with internal ground-fault detection and ground-fault signaling	3RB22, 3RB23	**3RB2985-2CB1**		1	1 unit	41F

1) The analog signal 4 to 20 mA DC can be used for operating rotary coil instruments or for feeding into analog inputs of programmable logic controllers.

2) The following information on ground-fault protection refers to sinusoidal residual currents at 50/60 Hz:
- With a motor current of between 0.3 and 2 times the current setting I_e, the unit will trip at a ground-fault current equal to 30% of the current setting.
- With a motor current of between 2 and 8 times the current setting I_e, the unit will trip at a ground-fault current equal to 15% of the motor current.
- The response delay amounts to between 0.5 s and 1 s.

Note:

Analog input modules, e.g. SM 331, must be configured for four-wire measuring transducers. In this case the analog input module must not supply current to the analog output of the 3RB22/3RB23 relay.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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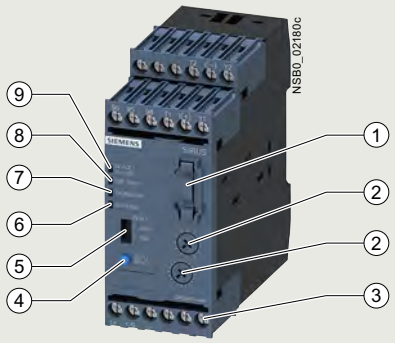
Overview

More information

Homepage, see www.siemens.com/sirius-control
Industry Mall, see www.siemens.com/product?3RB2

Application Manual for switching devices with IE3 and IE4 motors, see https://support.industry.siemens.com/cs/ww/en/view/94770820
Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/46165627
Certificates, see https://support.industry.siemens.com/cs/ww/en/ps/16281/cert



1. Plug-in point for operator panel:
enables connection of the 3RA6935-0A operator panel.
2. Motor current and trip class setting:
Setting the device to the motor current and to the required trip class dependent on the starting conditions is easy with the two rotary switches.
3. Connecting terminals (removable terminal block):
The generously sized terminals permit connection of two conductors with different cross-sections for the auxiliary, control and sensor circuits. Connection is possible with screw terminals and alternatively with spring-loaded terminals.
4. Test/RESET button:
Enables testing of all important device components and functions, plus resetting of the device after a trip when Manual RESET is selected.
5. Selector switch for Manual/Automatic RESET:
With this switch you can choose between Manual and Automatic RESET.
6. Red LED "OVERLOAD":
A continuous red light signals an active overload trip; a flickering led light signals an imminent trip (overload warning).
7. Red LED "THERMISTOR":
A continuous red light signals an active thermistor trip.
8. Red LED "GND FAULT":
A continuous red light signals an active ground-fault trip.
9. Green LED "DEVICE/IO-Link:
A continuous green light signals that the device is working correctly, a green flickering light signals the communication through IO-Link.

SIRIUS 3RB24 evaluation module

The modular, IO-Link powered 3RB24 electronic overload relays (with monostable auxiliary contacts) up to 630 A (up to 820 A possible with a series transformer) have been designed for inverse-time delayed protection of loads with normal and heavy starting against excessive temperature rises due to overload, phase asymmetry or phase failure. These comprise an evaluation unit, a current measuring module and a connecting cable.

The 3RB24 evaluation module also offers a motor starter function: The contactors, which are connected via the auxiliary contacts, can also be actuated for operation via IO-Link. In this way, direct, reversing and star-delta (wye-delta) starters up to 630 A (or 830 A) can be connected to the controller via the IO-Link.

An overload, phase asymmetry or phase failure result in an increase of the motor current beyond the set rated motor current.

This current rise is detected by means of the current measuring module (see page 7/137) and electronically evaluated by the evaluation module which is connected to it. The evaluation electronics sends a signal to the auxiliary contacts. The auxiliary contacts then switch off the load by means of a contactor.

The break time depends on the ratio between the tripping current and the current setting I_e and is stored in the form of a long-term stable tripping characteristic curve, see Equipment Manual. The "tripped" status is signaled by means of a continuously illuminated red "OVERLOAD" LED and also reported as a group fault via IO-Link.

The LED indicates imminent tripping of the relay due to overload, phase asymmetry or phase failure by flickering when the limit current has been violated. This warning can also be reported to the higher-level PLC via IO-Link at the 3RB24 overload relays.

In addition to the described inverse-time delayed protection of loads against excessive temperature rises, the 3RB24 electronic overload relays also allow direct temperature monitoring of the motor windings (full motor protection!) by connection with broken-wire interlock of a PTC sensor circuit. With this temperature-dependent protection, the loads can be protected against overheating caused, for example, indirectly by reduced coolant flow and which cannot be detected by means of the current alone. In the event of overheating, the devices switch off the contactor, and thus the load, by means of the auxiliary contacts. The "tripped" status is signaled by means of a continuously illuminated "THERMISTOR" LED and also reported as a group fault via IO-Link.

To protect the loads against incomplete ground faults due to damage to the insulation, humidity, condensation, etc., the 3RB24 electronic overload relays offer the possibility of internal ground-fault detection (for details, see Equipment Manual, not possible in conjunction with contactor assemblies for star-delta (wye-delta) starting). In the event of a ground fault, the 3RB24 relays trip instantaneously.

The "tripped" status is signaled by means of a flashing red "Ground Fault" LED and reported at the 3RB24 overload relay as a group fault via IO-Link.

The reset after overload, phase asymmetry, phase failure, thermistor or ground-fault tripping is performed manually by key on site, via IO-Link or by electrical Remote RESET or automatically after the cooling time (motor model) or for thermistor protection after sufficient cooling. Trips in devices initiated by function monitoring systems (broken wire or short-circuit on the thermistor) can only be reset locally.

A motor current measured by the microprocessor can be output in the form of an analog signal 4 to 20 mA DC for operating rotary coil instruments or for feeding into analog inputs of programmable logic controllers.

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3RB24 for IO-Link for high-feature applications

The current values can be transmitted to the higher-level controller via IO-Link.

The 3RB24 electronic overload relay for IO-Link is suitable for operation with frequency converters.

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials. They comply with all important worldwide standards and approvals.

Use in hazardous areas

The 3RB24 electronic overload relays for IO-Link with the 3RB29 current measuring module are suitable for the overload protection of motors with the following types of protection:

- Ex II (2) G [Ex e] [Ex d] [Ex px]
- Ex II (2) D [Ex t] [Ex p]

EC type-examination certificate for Group II, Category (2) G/D exists. It has the number PTB 11 ATEX 3014.

Article number scheme

Product versions		**Article number**
Electronic overload relays		**3RB2** □ □ □ – □ □ □ □
Device type	e.g. 4 = monostable device for high-feature applications, supplied from external source (24 V DC), for three-phase loads	□
Size, rated operational current and power	e.g. 8 = irrespective of size and current	□
Version of the Automatic RESET, electrical Remote RESET	e.g. 3 = switchable between Manual/Automatic RESET, with integral electrical Remote RESET	□
Trip class (CLASS)	e.g. 4 = CLASS 5E, 10E, 20E, 30E (adjustable)	□
Setting range of the overload release	e.g. A = none specified	□
Connection methods	e.g. A = screw terminals for auxiliary, control and main circuits	□
Installation type	e.g. 1 = stand-alone installation	□
Example		**3RB2 4 8 3 – 4 A A 1**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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Application

Industries

The 3RB24 electronic overload relays are suitable for customers from all industries who want to guarantee optimum current and temperature-dependent protection of their electrical loads (e.g. motors) under normal and heavy starting conditions (CLASS 5E to 30E), minimize project completion times, inventories and energy consumption, and optimize plant availability and maintenance management.

Application

The 3RB24 electronic overload relays have been designed for the protection of three-phase asynchronous and single-phase AC motors.

In addition to protection function, these devices can be used together with contactors as direct-on-line or reversing starters (star-delta (wye-delta) start also possible), which are controlled via IO-Link. This makes it possible to directly control drives via IO-Link from a higher-level controller or on site via the optional handheld device and also, for example, to return current values directly via IO-Link.

If single-phase AC motors are to be protected by the 3RB24 electronic overload relays, the main conducting paths of the current measuring modules must be series-connected (circuit diagrams, see Equipment Manual).

Ambient conditions

The devices are insensitive to external influences such as shocks, corrosive ambient conditions, aging and temperature fluctuations.

In the temperature range from -25 to +60 °C, the 3RB24 electronic overload relays compensate the temperature in accordance with IEC 60947-4-1.

Configuration notes for use of the devices below -25 °C or above +60 °C on request.

Use of SIRIUS protection devices in conjunction with IE3 and IE4 motors

Note:

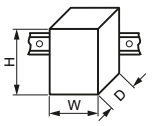
For the use of 3RB24 electronic overload relays in conjunction with highly efficient IE3 and IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

For more information, see page 1/8.

Technical specifications

More information	
Application Manual for switching devices with IE3 and IE4 motors, see https://support.industry.siemens.com/cs/ww/en/view/94770820	Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/46165627
Configuration Manual for load feeders, see https://support.industry.siemens.com/cs/ww/en/view/39714188	Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16281/td

The following technical information is intended to provide an initial overview of the various types of devices and functions.

Type – Overload relay: Evaluation modules			**3RB2483-4A.1**
Size contactor			S00 ... S10/S12
Dimensions of evaluation modules (W x H x D)		mm	45 x 111 x 95
General data			
Tripping in the event of			Overload, phase failure and phase asymmetry (> 40% according to NEMA), + ground fault (connectable and disconnectable) and activation of the thermistor motor protection (with closed PTC sensor circuit)
Trip class according to IEC 60947-4-1		CLASS	5E, 10E, 20E and 30E adjustable
Phase failure sensitivity			Yes
Overload warning			Yes, from 1.125 × I_e for symmetrical loads and from 0.85 × I_e for asymmetrical loads
Reset and recovery			
• Reset options after tripping			Manual and Automatic RESET, electrical Remote RESET or via IO-Link
• Recovery time			
- For Automatic RESET		min.	- For tripping due to overcurrent: 3 (stored permanently) - For tripping by thermistor: time until the motor temperature has fallen 5 K below the response temperature - For tripping due to a ground fault: no Automatic RESET
- For Manual RESET		min.	- For tripping due to overcurrent: 3 (stored permanently) - For tripping by thermistor: time until the motor temperature has fallen 5 K below the response temperature - For tripping due to a ground fault: immediately
- For Remote RESET		min.	- For tripping due to overcurrent: 3 (stored permanently) - For tripping by thermistor: time until the motor temperature has fallen 5 K below the response temperature - For tripping due to a ground fault: immediately

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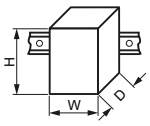
3RB24 for IO-Link for high-feature applications

Type – Overload relay: Evaluation modules		**3RB2483-4A.1**
Size contactor		S00 ... S10/S12
Dimensions of evaluation modules (W x H x D)	mm	45 x 111 x 95

General data (continued)

Features		
• Display of operating state on device		Yes, with four LEDs: - Green "DEVICE/IO-Link" LED - Red LED "Ground Fault" - Red LED "Thermistor" - Red LED "Overload"
• TEST function		Yes, test of LEDs, electronics, auxiliary contacts and wiring of control circuit by pressing the TEST/RESET button/self-monitoring
• RESET button		Yes, with the TEST/RESET button
• STOP button		No
Protection and operation of explosion-proof motors		
Certificate of suitability/explosion protection type according to ATEX Directive 2014/34/EU		PTB 11 ATEX 3014 Ex II (2) G [Ex e] [Ex d] [Ex px] Ex II (2) D [Ex t] [Ex p] See https://support.industry.siemens.com/cs/ww/en/view/60524083
Ambient temperatures		
• Storage/transport	°C	-40 ... +80
• Operation	°C	-25 ... +60
• Temperature compensation	°C	+60
• Permissible rated current		
- Temperature inside control cabinet 60 °C	%	100
- Temperature inside control cabinet 70 °C	%	On request
Degree of protection IP on the front according to IEC 60529		IP20
Touch protection on the front according to IEC 60529		Finger-safe for vertical touching from the front
Shock resistance with sine according to IEC 60068-2-27	g/ms	15/11
Electromagnetic compatibility (EMC) – Interference immunity		
• Conductor-related interference		
- Burst according to IEC 61000-4-4 (corresponds to degree of severity 3)	kV	2 (power ports), 1 (signal port)
- Surge according to IEC 61000-4-5 (corresponds to degree of severity 3)	kV	2 (line to earth), 1 (line to line)
• Electrostatic discharge according to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	8 (air discharge), 6 (contact discharge)
• Field-related interference according to IEC 61000-4-3 (corresponds to degree of severity 3)	V/m	10
Electromagnetic compatibility (EMC) – Emitted interference		Degree of severity A according to EN 55011 (CISPR 11) and EN 55022 (CISPR 22)
Installation altitude above sea level	m	Up to 2 000
Mounting position		Any
Type of mounting		
• Evaluation modules		Stand-alone installation
• Current measuring modules	Size	S00 to S3: Stand-alone installation, S6 and S10/S12: Stand-alone installation or mounting on contactors

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Type – Overload relay: Evaluation modules		**3RB2483-4A.1**
Size contactor		S00 ... S10/S12
Auxiliary circuit		
Number of auxiliary switches		1 CO contact, 1 NO contact connected in series internally
Auxiliary contacts – Assignment		• 1 CO contact for selecting the contactor (for reversing starter function), actuated by the control system • 1 NO contact for normal switching duty, actuated by the control system (opens automatically when tripping occurs)
Rated insulation voltage U_i (pollution degree 3)	V	300
Rated impulse withstand voltage U_{imp}	kV	4
Auxiliary contacts – Contact rating		
• NC, NO contact with alternating current AC-14/AC-15, rated operational current I_e at U_e		
- 24 V	A	6
- 120 V	A	6
- 125 V	A	6
- 250 V	A	3
• NC, NO contacts with direct current DC-13, rated operational current I_e at U_e		
- 24 V	A	2
- 60 V	A	0.55
- 110 V	A	0.3
- 125 V	A	0.3
- 250 V	A	0.2
• Conventional thermal current I_{th}	A	5
• Contact reliability (suitability for PLC control; 17 V, 5 mA)		Yes
Short-circuit protection		
• With fuse, operational class gG	A	6
• With miniature circuit breaker, C characteristic	A	1.6
Protective separation between auxiliary conducting paths according to IEC 60947-1	V	300
CSA, UL and UR rated data		
Auxiliary circuit – Switching capacity		B300, R300
Conductor cross-sections of the auxiliary circuit		
Connection type		**Screw terminals**
Terminal screw		M3, Pozidriv size 2
Operating devices	mm	3.0 x 0.5
Prescribed tightening torque	Nm	0.8 ... 1.2
Conductor cross-sections (min./max.), one or two conductors can be connected		
• Solid or stranded	mm^2	1 x (0.5 ... 4)[1], 2 x (0.5 ... 2.5)[1]
• Finely stranded without end sleeve	mm^2	--
• Finely stranded with end sleeve (DIN 46228)	mm^2	1 x (0.5 ... 2.5)[1], 2 x (0.5 ... 1.5)[1]
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)
Connection type		**Spring-loaded terminals**
Operating devices	mm	3.0 x 0.5
Conductor cross-sections (min./max.), one or two conductors can be connected		
• Solid or stranded	mm^2	2 x (0.25 ... 1.5)
• Finely stranded without end sleeve	mm^2	–
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.25 ... 1.5)
• AWG cables, solid or stranded	AWG	2 x (24 ... 16)

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

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3RB24 for IO-Link for high-feature applications

Type – Overload relay: Evaluation modules		3RB2483-4A.1
Size contactor		S00 ... S10/S12
Control circuit		
Rated insulation voltage U_i (pollution degree 3)	V	300
Rated impulse withstand voltage U_{imp}	kV	4
Rated control supply voltage U_s [1]		
• DC	V	24 via IO-Link
Operating range		
• DC		0.85 x $U_{s\,min} \leq U_s \leq$ 1.1 x $U_{s\,max}$
Rated power		
• DC	W	0.5
Mains buffering time	ms	200
Sensor circuit		
Thermistor motor protection (PTC thermistor sensor)		
• Summation cold resistance	kΩ	≤ 1.5
• Response value	kΩ	3.4 ... 3.8
• Return value	kΩ	1.5 ... 1.65
Ground-fault detection		The information refers to sinusoidal residual currents at 50/60 Hz.
• Tripping value I_Δ		
- For 0.3 × I_e < I_{motor} < 2.0 × I_e		> 0.3 x I_e
- For 2.0 × I_e < I_{motor} < 8.0 × I_e		> 0.15 x I_{motor}
• Response time t_{trip}	ms	500 ... 1 000
Analog output [1]		
Rated values		
• Output signal	mA	4 ... 20
• Measuring range		0 ... 1.25 x I_e 4 mA corresponds to 0 x I_e 16.8 mA corresponds to 1.0 x I_e 20 mA corresponds to 1.25 x I_e
• Load, max.	Ω	100
Conductor cross-sections for the control and sensor circuit as well as the analog output		
Connection type		**Screw terminals**
Terminal screw		M3, Pozidriv size 2
Operating devices	mm	3.0 x 0.5
Prescribed tightening torque	Nm	0.8 ... 1.2
Conductor cross-sections (min./max.), one or two conductors can be connected		
• Solid	mm^2	1 x (0.5 ... 4)[2], 2 x (0.5 ... 2.5)[2]
• Finely stranded without end sleeve	mm^2	--
• Finely stranded with end sleeve (DIN 46228)	mm^2	1 x (0.5 ... 2.5)[2], 2 x (0.5 ... 1.5)[2]
• Stranded	mm^2	--
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)
Connection type		**Spring-loaded terminals**
Operating devices	mm	3.0 x 0.5
Conductor cross-sections (min./max.), one or two conductors can be connected		
• Solid	mm^2	2 x (0.25 ... 1.5)
• Finely stranded without end sleeve	mm^2	--
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.25 ... 1.5)
• Stranded	mm^2	2 x (0.25 ... 1.5)
• AWG cables, solid or stranded	AWG	2 x (24 ... 16)

[1] Analog input modules, e.g. SM 331, must be configured for four-wire measuring transducers. The analog input module may not supply current to the analog output of the 3RB24 overload relay.

[2] If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

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3RB24 electronic overload relays (evaluation modules) for full motor protection for stand-alone installation, CLASS 5E, 10E, 20E and 30E (adjustable)

Type	3RB2483-4A.1
Features and technical specifications	
Overload protection, phase failure protection and asymmetry protection	✓
Supplied from an external source	✓ 24 V DC via IO-Link
Direct-on-line or reversing starters (star-delta (wye-delta) starting also possible) controllable via IO-Link	✓
Auxiliary contacts	✓ 1 CO and 1 NO in series
Manual and Automatic RESET	✓
Remote RESET	✓ (electrically or via IO-Link)
Four LEDs for operating and status displays	✓
TEST function and self-monitoring	✓
Internal ground-fault detection	✓
Screw or spring-loaded terminals for auxiliary, control and sensor circuits	✓
Input for thermistor (PTC) sensor circuit	✓
Analog output	✓
IO-Link-specific functions	
• Connection of direct-on-line, reversing and star-delta (wye-delta) starters to the controller via IO-Link	✓
• On-site controlling of the starter using the handheld device	✓
• Accessing process data (e.g. current values in all three phases) via IO-Link	✓
• Accessing parameterization and diagnostics data (e.g. tripped signals) via IO-Link	✓

✓ Available

Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41G

3RB2483-4AA1

3RB2483-4AC1

Size contactor	Version	Screw terminals		Spring-loaded terminals	
		Article No.	Price per PU	Article No.	Price per PU
Evaluation modules					
S00 ... S12	Monostable	**3RB2483-4AA1**		**3RB2483-4AC1**	

Notes:

- Overview of overload relays – matching contactors, see page 7/81.
- Analog input modules, e.g. SM 331, must be configured for four-wire measuring transducers. The analog input module may not supply current to the analog output of the 3RB24 relay.

Current measuring modules and related connecting cables, see page 7/137. More accessories, see page 7/138 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Current measuring modules for 3RB22, 3RB23 and 3RB24

Overview

More information	
Homepage, see www.siemens.com/sirius-control Industry Mall, see www.siemens.com/product?3RB2	Application Manual for switching devices with IE3 and IE4 motors, see https://support.industry.siemens.com/cs/ww/en/view/94770820 Other manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16282/man

SIRIUS 3RB2906 current measuring module

The current measuring modules are designed as system components for connecting to 3RB22 to 3RB24 evaluation units. Using these evaluation units the motor current is measured and the measured value sent to the evaluation unit for evaluation.

The current measuring modules in sizes up to S3 are equipped with straight-through transformers and can be snap-fitted under the evaluation units. The larger evaluation units are installed directly on the contactor or as stand-alone units.

Application

Use of SIRIUS protection devices in conjunction with IE3 and IE4 motors

Note:

For the use of current measuring modules for 3RB22, 3RB23, 3RB24 in conjunction with highly efficient IE3 and IE4 motors, please observe the information on dimensioning and configuration, see Application Manual.

For more information, see page 1/8.

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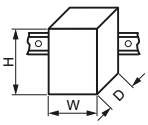
Technical specifications

More information	
Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16282/man	Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16282/td

The following technical information is intended to provide an initial overview of the various types of devices and functions.

Type – Overload relays: Current measuring modules 		**3RB2906**		**3RB2956**	**3RB2966**
Size contactor		S00/S0	S2/S3	S6	S10/S12
Dimensions of current measuring modules (W x H x D)	mm	45 x 84 x 45	55 x 94 x 72	120 x 119 x 145	145 x 147 x 148
Main circuit					
Rated insulation voltage U_i (pollution degree 3)	V	690		1 000	
Rated impulse withstand voltage U_{imp}	kV	6		8	
Rated operational voltage U_e	V	690		1 000	
Type of current					
• Direct current		No			
• Alternating current		Yes, 50/60 Hz ±5%			
Current setting	A	0.3 ... 3; 2.4 ... 25	10 ... 100	20 ... 200	63 ... 630
Power loss per unit (max.)	W	0.5			
Short-circuit protection					
• With fuse without contactor		See "Selection and ordering data", page 7/137			
• With fuse and contactor		See Configuration Manual			
Degree of protection IP on the front according to IEC 60529					
• Screw terminals/busbar connections		IP20		IP00 (IP20 with box terminal/cover)	
• Straight-through transformers		IP20		IP20	--
Touch protection on the front according to IEC 60529					
• Screw terminals/busbar connections		Finger-safe for vertical touching from the front		Finger-safe for vertical touching from the front (with box terminals/cover)	
• Straight-through transformers		Finger-safe for vertical touching from the front		Finger-safe for vertical touching from the front	--
Protective separation between main and auxiliary conducting paths According to IEC 60947-1 (pollution degree 2)					
• For systems with grounded neutral point	V	690			
• For systems with ungrounded neutral point	V	600			

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Current measuring modules for 3RB22, 3RB23 and 3RB24

Type – Overload relays: Current measuring modules		**3RB2906**		**3RB2956**	**3RB2966**
Size contactor		S00/S0	S2/S3	S6	S10/S12
Dimensions of current measuring modules (W x H x D)	mm	45 x 84 x 45	55 x 94 x 72	120 x 119 x 145	145 x 147 x 148
Conductor cross-sections of main circuit					
Connection type		**Screw terminals with box terminal**			
Terminal screw	mm	--		4 mm Allen screw	5 mm Allen screw
Operating devices	mm	--		4 mm Allen screw	5 mm Allen screw
Prescribed tightening torque	Nm	--		10 ... 12	20 ... 22
Conductor cross-sections (min./max.), one or two conductors can be connected					
• Solid or stranded	mm^2	--		With 3RT1955-4G box terminal: 2 x (max. 70), 1 x (16 ... 70)	2 x (70 ... 240), Front clamping point only: 1 x (95 ... 300)
				With 3RT1956-4G box terminal: 2 x (max. 120), 1 x (16 ... 120)	Rear clamping point only: 1 x (120 ... 240)
• Finely stranded without end sleeve	mm^2	--		With 3RT1955-4G box terminal: 2 x (1 x max. 50, 1 x max. 70), 1 x (10 ... 70)	2 x (50 ... 185), Front clamping point only: 1 x (70 ... 240)
				With 3RT1956-4G box terminal: 2 x (1 x max. 95, 1 x max. 120), 1 x (10 ... 120)	Rear clamping point only: 1 x (120 ... 185)
• Finely stranded with end sleeve (DIN 46228)	mm^2	--		With 3RT1955-4G box terminal: 2 x (1 x max. 50, 1 x max. 70), 1 x (10 ... 70)	2 x (50 ... 185), Front clamping point only: 1 x (70 ... 240)
				With 3RT1956-4G box terminal: 2 x (1 x max. 95, 1 x max. 120), 1 x (10 ... 120)	Rear clamping point only: 1 x (120 ... 185)
• AWG cables	AWG	--		With 3RT1955-4G box terminal: 2 x (max. 1/0), 1 x (6 ... 2/0)	2 x (2/0 ... 500 kcmil), Front clamping point only: 1 x (3/0 ... 600 kcmil)
				With 3RT1956-4G box terminal: 2 x (max. 3/0), 1 x (6 ... 250 kcmil)	Rear clamping point only: 1 x (250 kcmil ... 500 kcmil)
• Ribbon cables (number x width x thickness)	mm	--		With 3RT1955-4G box terminal: 2 x (6 x 15.5 x 0.8), 1 x (3 x 9 x 0.8 ... 6 x 15.5 x 0.8)	2 x (20 x 24 x 0.5), 1 x (6 x 9 x 0.8 ... 20 x 24 x 0.5)
				With 3RT1956-4G box terminal: 2 x (10 x 15.5 x 0.8), 1 x (3 x 9 x 0.8 ... 10 x 15.5 x 0.8)	
Connection type		**Busbar connections**			
Terminal screw		--		M8 x 25	M10 x 30
Prescribed tightening torque	Nm	--		10 ... 14	14 ... 24
Conductor cross-sections (min./max.), one or two conductors can be connected					
• Solid with cable lug	mm^2	--		16 ... 95[1)]	50 ... 240[2)]
• Stranded with cable lug	mm^2	--		25 ... 120[1)]	70 ... 240[2)]
• AWG cables, solid or stranded, with cable lug	AWG	--		4 ... 250 kcmil	2/0 ... 500 kcmil
• With connecting bars (max. width)	mm	--		17	25
Connection type		**Straight-through transformers**			
Diameter of opening	mm	7.5	14	25	--

1) When connecting cable lugs according to DIN 46235 with conductor cross-sections from 95 mm^2, the 3RT1956-4EA1 terminal cover must be used to ensure phase clearance, see page 7/138.

2) When connecting cable lugs according to DIN 46234 for conductor cross-sections from 240 mm^2, as well as DIN 46235 for cable cross-sections from 185 mm^2, the 3RT1956-4EA1 terminal cover must be used to ensure phase clearance, see page 7/138.

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Selection and ordering data

Current measuring modules (essential accessories)

3RB2906-2BG1

3RB2906-2DG1

3RB2906-2JG1

3RB2956-2TG2

3RB2966-2WH2

Size contactor	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[1]	For overload relays	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	A						
Sizes S00/S0								
Devices with straight-through transformer for stand-alone installation								
S00/S0	0.3 … 3	20	3RB22 to 3RB24	**3RB2906-2BG1**		1	1 unit	41G
	2.4 … 25	63		**3RB2906-2DG1**		1	1 unit	41G
Sizes S2/S3								
Devices with straight-through transformer for stand-alone installation								
S2/S3	10 … 100	315	3RB22 to 3RB24	**3RB2906-2JG1**		1	1 unit	41G
Size S6								
Devices with busbar connection, for mounting on contactor and stand-alone installation (an appropriate connection kit with screws, spring washers and nuts is enclosed)								
S6	20 … 200	315	3RB22 to 3RB24	**3RB2956-2TH2**		1	1 unit	41G
Devices with straight-through transformer, for mounting on contactor and stand-alone installation								
For mounting on S6 contactors with box terminals	20 … 200	315	3RB22 to 3RB24	**3RB2956-2TG2**		1	1 unit	41G
Sizes S10/S12[2]								
Devices with busbar connection, for mounting on contactor and stand-alone installation (an appropriate connection kit with screws, spring washers and nuts is enclosed)								
S10/S12 and size 14 (3TF68/3TF69)[2]	63 … 630	800	3RB22 to 3RB24	**3RB2966-2WH2**		1	1 unit	41G

[1] Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

[2] For 3TF68/3TF69 contactors, direct mounting is not possible.

Note:

The connecting cable between the current measuring module and the evaluation module is not included in the scope of supply; please order separately (see "Accessories").

Accessories

	Size contactor	Version	For overload relays	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Connecting cables (essential accessories)								
3RB2987-2D		For connection between evaluation module and current measuring module						
	S00 ... S3	• Length 0.1 m (only for mounting of the evaluation module directly on the current measuring module)	3RB22 to 3RB24	**3RB2987-2B**		1	1 unit	41F
	S00 ... S12	• Length 0.5 m	3RB22 to 3RB24	**3RB2987-2D**		1	1 unit	41F

Additional general accessories, see page 7/138.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Accessories for 3RB22, 3RB23, 3RB24

Overview

More information

Homepage, see www.siemens.com/sirius-control
Industry Mall, see www.siemens.com/product?3RB2
Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16283/man

The following optional accessories are available for the 3RB22 to 3RB24 electronic overload relays:

- Operator panel for the 3RB24 evaluation modules
- Sealable cover for the 3RB22 to 3RB24 evaluation modules
- Terminal covers for the 3RB29 current measuring modules size S6 and S10/S12
- Box terminal blocks for the 3RB29 current measuring modules size S6 and S10/S12
- Push-in lugs for screw fixing for 3RB22 to 3RB24 evaluation modules and 3RB2906 current measuring modules

Selection and ordering data

Accessories for 3RB24 overload relays

Version	For overload relays	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operator panels for evaluation modules						
3RA6935-0A **Operator panels (set)** One set comprises: • 1 x operator panel • 1 x 3RA6936-0A enabling module • 1 x 3RA6936-0B interface cover • 1 x fixing terminal Note: The connecting cable between the evaluation module and the operator panel is not included in the scope of supply; please order separately.	3RB24	**3RA6935-0A**		1	1 unit	42F
Connecting cable Length 2.5 m (round), for connecting the evaluation module to the operator panel	3RB24	**3UF7933-0BA00-0**		1	1 unit	42J
Enabling modules (spare part)	3RB24	**3RA6936-0A**		1	1 unit	42F
Interface covers	3RB24	**3RA6936-0B**		1	5 units	42F

General accessories

Version	Size	For overload relays	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Sealable covers for evaluation modules							
3RB2984-2 For covering the setting knobs	--	3RB22 to 3RB24	**3RB2984-2**		1	10 units	41F
Terminal covers for current measuring modules							
3RT1956-4EA1 **Covers for cable lugs and busbar connections**							
• Length 100 mm	S6	3RB2956	**3RT1956-4EA1**		1	1 unit	41B
• Length 120 mm	S10/S12	3RB2966	**3RT1966-4EA1**		1	1 unit	41B
Covers for box terminals							
• Length 25 mm	S6	3RB2956	**3RT1956-4EA2**		1	1 unit	41B
• Length 30 mm	S10/S12	3RB2966	**3RT1966-4EA2**		1	1 unit	41B
3RT1956-4EA2 **Covers for screw terminals** Between contactor and overload relay, without box terminals (1 unit required per combination)	S6 S10/S12	3RB2956 3RB2966	**3RT1956-4EA3** **3RT1966-4EA3**		1 1	1 unit 1 unit	41B 41B
Box terminal blocks for current measuring modules							
3RT1955-4G For round and ribbon cables							
• Up to 70 mm^2	S6[1)]	3RB2956	**3RT1955-4G**		1	1 unit	41B
• Up to 120 mm^2	S6	3RB2956	**3RT1956-4G**		1	1 unit	41B
• Up to 240 mm^2	S10/S12	3RB2966	**3RT1966-4G**		1	1 unit	41B

1) In the scope of supply for 3RT1054-1 contactors (55 kW).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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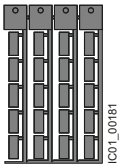
	Version	Size	For overload relays	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Push-in lugs for evaluation modules and current measuring modules								
3RP1903	For screw fixing the evaluation modules	--	3RB22 to 3RB24	**3RP1903**		1	10 units	41H
3RB1900-0B	For screw fixing the current measuring modules (2 units per module)	S00 ... S3	3RB2906	**3RB1900-0B**		100	10 units	41F

	Version	Size	Color	For overload relays	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Tools for opening spring-loaded terminals									
					Spring-loaded terminals				
3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-loaded terminals	Length approx. 200 mm, 3.0 mm x 0.5 mm	Titanium gray/ black, partially insulated	Main and auxiliary circuit connection: 3RB2	**3RA2908-1A**		1	1 unit	41B
Blank labels									
 3RT2900-1SB20	**Unit labeling plates**[1] For SIRIUS devices	20 mm x 7 mm	Titanium gray	3RB2	**3RT2900-1SB20**		100	340 units	41B
	Adhesive labels For SIRIUS devices	19 mm x 6 mm	Titanium gray	3RB2	**3RT2900-1SB60**		100	3 060 units	41B

1) PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

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Notes

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	Price groups PG 14O, 255, 41B, 41D, 41E, 41L, 42C, 42D, 42F, 42G
8/2	**Introduction**
	SIRIUS 3RA2 load feeders
8/5	General data
	3RA21 direct-on-line starters
8/22	- for DIN-rail mounting or screw fixing
8/30	- for 60 mm busbars
	3RA22 reversing starters
8/34	- for DIN-rail mounting or screw fixing
8/40	- for 60 mm busbars
8/45	Accessories
8/56	3RV29 infeed system for load feeders
	SIRIUS 3RA6 compact starters
8/57	General data
	3RA61, 3RA62 compact starters
8/65	- 3RA61 direct-on-line starters
8/66	- 3RA62 reversing starters
	3RA64, 3RA65 compact starters for IO-Link
8/67	- 3RA64 direct-on-line starters
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8/69	Accessories
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8/76	Infeed system for 3RA6
8/83	**SIRIUS 3RM1 motor starters**
8/94	**ET 200SP motor starters**

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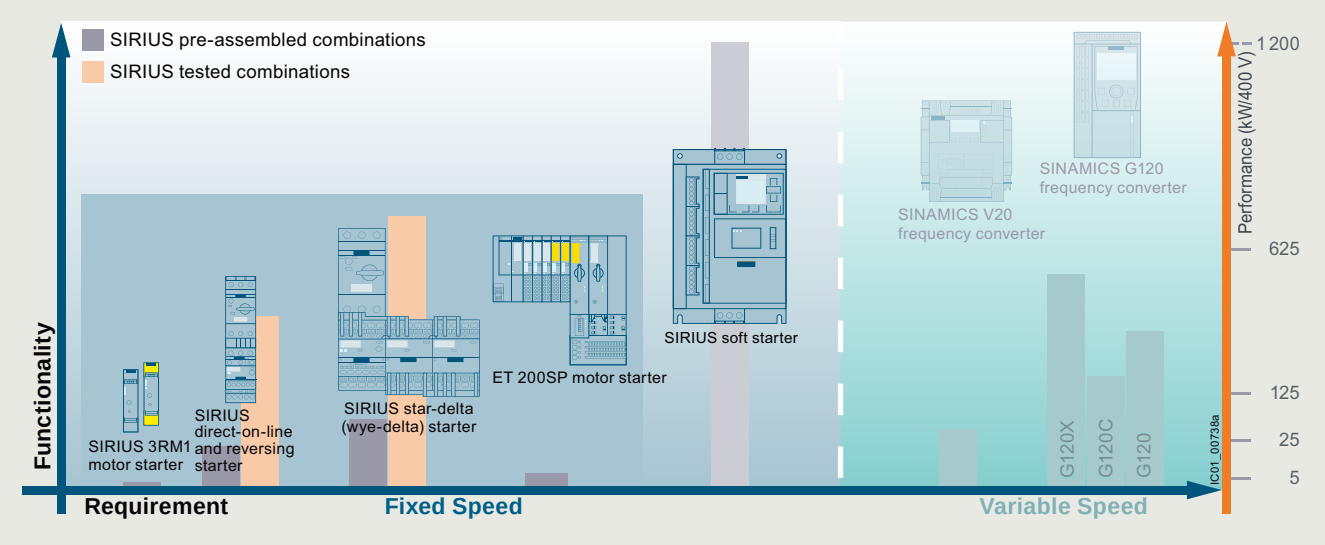
Introduction

Overview

Central and compact starter solutions

Our range offers you many different possibilities for simple and practical starter solutions in the control cabinet. Features common to all our load feeders, compact starters and motor starters: Like all SIRIUS devices they are optimally coordinated with each other, have a very compact design and are particularly easy and quick to install and wire up.

In addition there is a seamless range of SIRIUS 3RW soft starters available for soft starting in the control cabinet (see page 6/2).



Central and compact starter solutions

Decision support for motor start – Starting and operating three-phase asynchronous motors efficiently

Decision support tool for motor start

This tool guides you to the optimum individual drive solution via a short query about the application.

Based on this solution approach, you will then be directed to the right product configurator for selecting the appropriate products, see www.siemens.com/motorstart-guide.

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3RA2110

3RA2110

3RA2210

3RA2210

3RA2130
3RA2150

3RA61

3RA62

3RA68

		Type	Page
SIRIUS 3RA2 load feeders			
	• The 3RA2 fuseless load feeders consist of the 3RV2 motor starter protector and the 3RT2 contactor. The motor starter protector and contactor are prewired and mechanically and electrically connected in prefabricated assembly kits (link modules, wiring kits and DIN-rail or busbar adapters) • 4 sizes (S00, S0, S2, S3) • Can be supplied for direct-on-line starting or reversing operation as - a complete unit or - single devices for self-assembly • Can be supplied with screw or spring-loaded terminals		
3RA21 direct-on-line starters for DIN-rail mounting or screw fixing	• Rated control supply voltage 50/60 Hz 230 V AC and 24 V DC	**3RA21**	8/22
3RA21 direct-on-line starters for 60 mm busbars	• Rated control supply voltage 50/60 Hz 230 V AC and 24 V DC	**3RA21**	8/30
3RA22 reversing starters for DIN-rail mounting or screw fixing	• Rated control supply voltage 50/60 Hz 230 V AC and 24 V DC	**3RA22**	8/34
3RA22 reversing starters for 60 mm busbars	• Rated control supply voltage 50/60 Hz 230 V AC and 24 V DC	**3RA22**	8/40
Accessories for 3RA2 direct-on-line and reversing starters			8/45
Infeed system	• The infeed system is a convenient means of energy supply and distribution for a group of several motor starter protectors or complete load feeders with screw or spring-loaded terminals up to size S0.	**3RV29**	7/67, 8/56
SIRIUS 3RA6 compact starters			
	• Integrated functionality of a motor starter protector, contactor and electronic overload relay and various functions of optional mountable accessories • Can be used for direct starting of standard three-phase motors up to 32 A		
3RA61 direct-on-line starters	• Up to 15 kW/400 V, weld-free, wide setting range, removable terminals	**3RA61**	8/65
3RA62 reversing starters	• Up to 15 kW/400 V, weld-free, wide setting range, removable terminals	**3RA62**	8/66
3RA64 direct-on-line starters for IO-Link	• Up to 15 kW/400 V, weld-free, wide setting range, removable terminals	**3RA64**	8/67
3RA65 reversing starters for IO-Link	• Up to 15 kW/400 V, weld-free, wide setting range, removable terminals	**3RA65**	8/68
Accessories for 3RA6 direct-on-line and reversing starters		**3RA69**	8/69
Add-on modules for AS-Interface		**3RA69**	8/74
Infeed system for 3RA6	• Modular expandability, up to 100 A, terminals up to 70 mm^2	**3RA68**	8/76
	• 3-phase infeeds and expansion modules		8/79
	• Expansion modules		8/80
	• Accessories for infeed systems for 3RA6		8/81

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Load feeders and motor starters for use in the control cabinet

Introduction

3RM12

3RM13

3RK1308

3RK1308

3RK1908-0

3RK1908-1A

		Type	Page
SIRIUS 3RM1 motor starters			
	• For switching three-phase motors up to 3 kW (at 400 V) and resistive loads up to 10 A at AC voltages up to 500 V under normal operating conditions • Space-saving design (width 22.5 mm)		
3RM10 direct-on-line starters	• Direct-on-line starting with electronic overload protection	**3RM10**	8/90
3RM12 reversing starters	• Reversing functionality with electronic overload protection	**3RM12**	8/90
3RM11 Failsafe direct-on-line starters	• As 3RM10 plus safety-related shutdown	**3RM11**	8/90
3RM13 Failsafe reversing starters	• As 3RM12 plus safety-related shutdown	**3RM13**	8/90
Accessories for 3RM1 motor starters	• 3RM19 3-phase infeed system for the main circuit	**3RM19**	8/91
	• Fuse modules for the use of 3RM1 motor starters on 8US busbar systems and mounting rails	**3RM19**	8/88
	• Adapters	**8US1**	8/91
	• Cover profiles	**8US1922**	8/92
	• Device connectors for the control circuit	**3ZY1212**	8/92
	• Spare terminals for main and control circuits	**3ZY11**	8/93
	• Push-in lugs for wall mounting, integrated sealable cover, coding pins	**3ZY1**	8/93
ET 200SP motor starters			
	• In hybrid technology in the SIMATIC ET 200SP I/O system • For the switching and protection of three-phase asynchronous motors, 1-phase AC motors and 1-phase asynchronous motors up to 5.5 kW (at 400 V)		
3RK1308 direct-on-line starters	• Direct-on-line starting with electronic overload protection	**3RK1308-0A.0**	8/100
3RK1308 reversing starters	• Reversing functionality with electronic overload protection	**3RK1308-0B.0**	8/100
3RK1308 fail-safe direct-on-line starters	• Direct-on-line starting with electronic overload protection	**3RK1308-0C.0**	8/100
3RK1308 fail-safe reversing starters	• Reversing functionality with electronic overload protection	**3RK1308-0D.0**	8/100
BaseUnits	• Mounting components for infeed and for integration into the ET 200SP I/O system	**3RK1908-0AP00**	8/101
3DI/LC control module	• Module with three digital inputs for the use of additional functions such as "Quick stop", and for manual-local operation	**3RK1908-1AA00**	8/101
Accessories	• Cover for BaseUnit and infeed bus, additional mechanical mounting unit, fan	**3RK19, 3RW49**	8/102

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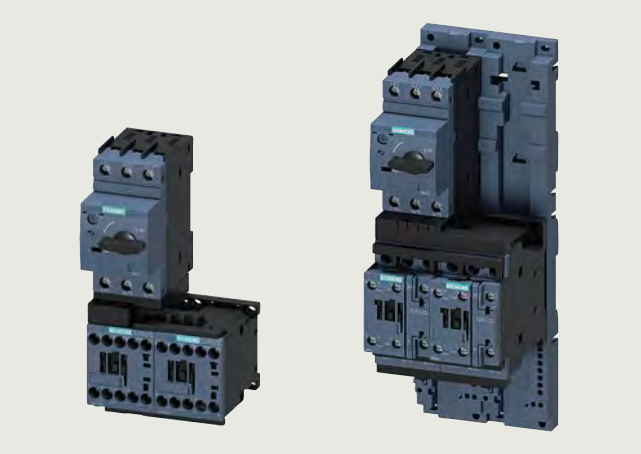
Overview

3RA2 load feeders



3RA22 reversing starters for DIN-rail mounting or screw fixing with screw terminals

The 3RA2 fuseless load feeders consist of the 3RV2 motor starter protector and the 3RT2 electromechanical contactor. The devices are electrically and mechanically connected using prefabricated assembly kits (link modules, wiring kits and DIN-rail or busbar adapters).

Around 500 preassembled 3RA2 combinations can be ordered for direct-on-line and reversing starting of standard three-phase motors up to 65 A (approx. 37 kW/400 V). Prefabricated assembly kits are available as accessories for the power spectrum up to 45 kW. The desired fuseless load feeder can thus be assembled quickly and economically by the customer. A time saving is also achieved in connection with switchgear acceptances, as – unlike with conventional wiring systems – there is no need to rectify possible wiring errors.

In the 3RA2 load feeder, the 3RV2 motor starter protector is responsible for overload and short-circuit protection. Back-up protective devices, such as melting fuses or limiters, are superfluous here, as the motor starter protector is short-circuit proof up to 150 kA at 400 V.

The 3RT2 contactor is particularly suitable for extremely complex switching tasks requiring the greatest endurance.

The 3RA2 load feeders are available with setting ranges from 0.14 to 65 A in sizes S00, S0 and S2. Load feeders in size S3 up to 100 A are available for customer assembly.

Size	Width Direct-on-line starters/ reversing starters	Max. rated current $I_{n\ max}$	For three-phase motors up to
	mm	A	kW
S00	45/90	16	7.5
S0	45/90	32	15
S2	55/120	65	37
S3	70/150	100	45

The size of the 3RA2 load feeders is based on the size of the contactor:

Size 3RA2	S00	S0	S2	S3
Size of 3RV2 motor starter protector	S00	S00[1], S0	S2	S3
Size of 3RT2 contactor	S00	S0	S2	S3

[1] The combination of an S00 motor starter protector with an S0 contactor is possible only for screw terminal versions.

More information

Homepage, see www.siemens.com/sirius-control

Industry Mall, see www.siemens.com/product?3RA2

Online configurator, see www.siemens.com/sirius/configurators

TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=LoadFeeder

Decision support for motor start – Starting and operating three-phase asynchronous motors efficiently, see www.siemens.com/motorstart-guide

Operating conditions

3RA2 load feeders are climate-proof. They are intended for use in enclosed rooms in which no severe operating conditions (such as dust, caustic vapors, hazardous gases) prevail. Suitable covers must be provided for installation in dusty and damp locations.

Behavior in the event of short circuit

EN 60947-4-1 (VDE 0660 Part 102) and IEC 60947-4-1 make a distinction between two different types of coordination, which are referred to as type of coordination "1" and type of coordination "2". Any short circuits that occur are cleared safely by both types of coordination. The only differences concern the extent of the damage caused to the device by a short circuit.

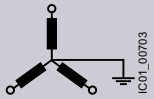
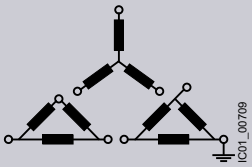
ToC 1 Type of coordination "1"
The load feeder may be non-operational after a short circuit has been cleared. Damage to the contactor or to the overload release is permissible.

ToC 2 Type of coordination "2"
There must be no damage to the overload release or to any other components after a short circuit has been cleared. The load feeder can resume operation without needing to be renewed. At most, welding of the contactor contacts is permissible if they can be disconnected easily without any significant deformation.

The types of coordination are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Voltage specifications

The specifications for 3-phase systems according to IEC 60947-4-1 apply for the following line system configurations:

Voltage U_e	Line system configurations	
	Three-phase four-wire systems	Three-phase three-wire systems
	 IC01_00703	 IC01_00709
V	V	V
230	--	230
400	230/400	400
440	260/440	440
500	--	500
690	400/690	690 (only from size S3)

-- Not specified

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General data

Tripping times

All 3RA2 load feeders described here are designed for normal starting, in other words for overload tripping times of less than 10 s (CLASS 10). At rated-load operating temperature the tripping times are shorter, depending on the particular equipment and the setting range. The exact values can be derived from the tripping characteristics of the motor starter protectors.

Connection methods

For all 3RA2 feeders up to 32 A, spring-loaded terminals are available as well as screw terminals. To connect two devices with spring-loaded terminals, there are plug-in link module for sizes S00 and S0 which enable very quick mounting of the feeders and a vibration-resistant assembly.

To connect a motor starter protector with screw terminals to a contactor with spring-loaded terminals there are special hybrid link modules for the sizes S00 and S0.

	Screw terminals
	Spring-loaded terminals
	The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Use of load feeders in conjunction with IE3 and IE4 motors

Note:

For the use of SIRIUS 3RA2 load feeders in conjunction with highly efficient IE3 and IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

For more information, see page 1/8.

3RA2 complete units

The 3RA2 fuseless load feeders can be ordered as preassembled complete units for direct-on-line starting (3RA21) or for reversing operation (3RA22) with screw or spring-loaded terminals. From size S2, complete units for direct-on-line starting (3RA21) are only available with screw terminals.

There are control supply voltages available of 50 Hz 230 V AC and 24 V DC.

A distinction is also drawn between whether the feeder is mounted on a 35 mm DIN rail, on a flat surface using screws, or on a 60 mm busbar system.

3RA21 load feeders in the S0 size must be configured on DIN-rail adapters if high vibration and shock loads (railways, Kraftwerk Union, etc.) are involved.

A vibration and shock kit is available for mounting on busbar adapters.

Accessories

As the 3RA2 fuseless load feeders are constructed from 3RV2 motor starter protectors and 3RT2 contactors, the same accessories – such as auxiliary switches, undervoltage releases or door-coupling rotary operating mechanisms – can be used for the 3RA2 fuseless load feeders as for these motor starter protectors and contactors.

In particular, certain accessories have been optimized for the fuseless load feeders. These include the top-connected, transverse auxiliary switch on the motor starter protector, which is available in a range of different versions. Special auxiliary switches that can be snapped on from below are available for the contactor. These two accessories enable the fuseless load feeders to be wired simply without having to route cables through the device.

Incoming power supply

In total, four different energy supply options are available (see "3RV29 infeed system for load feeders" on page 8/56).

Customer assembly of fuseless load feeders

Whereas preassembled 3RA2s can be ordered up to 65 A, combinations in size S3 up to 100 A (approx. 45 kW/400 V) are also possible for customer assembly.

The standard devices can be combined optimally – in terms of both technical specifications and dimensions, thanks to the modular system of the SIRIUS series.

The fuseless load feeders can thus be assembled easily by the customer. It is simply necessary to assemble the standard 3RV2 motor starter protector, the 3RT2 contactor and the appropriate assembly kit.

For single devices and assembly kits, see the "Selection and ordering data" for 3RA21 direct-on-line starters and 3RA22 reversing starters, page 8/22 or 8/34 onwards.

For assembly kits for direct-on-line starting or reversing operation for mounting onto DIN rails or busbars, see page 8/50.

For size S3 direct-on-line starters and sizes S0, S2 and S3 reversing starters, it is imperative that a DIN-rail adapter is used to ensure the necessary mechanical strength. If a busbar adapter is used (not possible for size S3) then a DIN-rail adapter is not necessary.

SENTRON 3VA circuit breakers and SIRIUS 3RT contactors are available for rated currents >100 A.

Single devices for customer assembly can be ordered if other rated control supply voltages are required. Assembly kits can be used to facilitate assembly.

Customers can also assemble tested combinations of motor starter protectors with electronic controls (soft starters, solid-state contactors) and load feeders with additional monitoring and control devices (3RR monitoring relays, SIMOCODE 3UF).

For the electrical and mechanical connection of protection equipment and controls, there are prefabricated assembly kits (link modules, wiring kits and DIN-rail or busbar adapters).

The following types of configuration are possible:

- Direct-on-line/reversing starting
- Star-delta (wye-delta) starting
- Solid-state/soft starting

For more information and assignment tables for combinations of the 3RA2 generation for self-assembly, see

- Configuration Manual for load feeders, https://support.industry.siemens.com/cs/ww/en/view/39714188
- Equipment Manual, https://support.industry.siemens.com/cs/ww/en/view/60284351

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Customer assembly of fused load feeders

The flexible, modular system of SIRIUS also enables the configuration of fused load feeders up to 100 A (approx. 45 kW/400 V). Up to 32 A is also available for 45 mm installation widths.

Compact 3NW7...-1 cylindrical fuse holders for IEC fuses size 10 x 38 mm, or 3NW7...-1HG holders for Class CC UL fuses, can be used for this purpose.

For more information about fuse systems, see Catalog LV 10.

Communication link through IO-Link

Load feeders can also be assembled with IO-Link for connection to the higher-level control system. For each feeder, this requires a contactor with a voltage tap onto which a 3RA2711 function module is plugged (various versions for direct-on-line, reversing and star-delta (wye-delta) starters). The design of the SIRIUS load feeders permits a group of up to four SIRIUS controls to be conveniently connected through the standardized open system IO-Link to a control system, thus reducing wiring considerably compared to the conventional parallel wiring method. The electrical connection is made using only three standard cables.

The function modules perform not only the communication (contactor operation and feedback, ready signal) but also the electrical interlocking (for reversing and star-delta (wye-delta) starters) and the timing relay function (star-delta (wye-delta) reversing time).

Communication information and control supply voltages are passed on through ribbon cables so that the complete control current wiring on the feeder is no longer needed.

The monitoring and maintenance of a plant is made considerably easier by transmitting diverse diagnostics data from the function modules (e.g. missing main and auxiliary voltage, local disconnection…) through IO-Link to the higher-level control system. Also, feeders equipped for IO-Link can be conveniently controlled from the control cabinet door using the optional operator panel.

More information:

- IO-Link, see page 2/88 onwards
- 3RA27 function modules, see pages 3/73, 3/80 and 3/101

Communication link through AS-Interface

Connection of the load feeders to the higher-level control system is possible not only through IO-Link but also through AS-Interface. The AS-Interface connection is recommended wherever load feeders are used in distributed applications. In this case, too, a contactor with a voltage tap is required with a corresponding 3RA2712 function module (various versions for direct-on-line, reversing and star-delta (wye-delta) starters). The devices are implemented in A/B technology, making it easy to connect up to 62 feeders to an AS-i master (regardless of whether they are direct-on-line, reversing or star-delta (wye-delta) starters). This results in a significant reduction of wiring compared to the conventional parallel wiring method. The electrical connection is made using standard cables.

The function modules perform not only the communication (contactor operation and feedback, ready signal) but also the electrical interlocking (for reversing and star-delta (wye-delta) starters) and the timing relay function (star-delta (wye-delta) reversing time).

Communication information and control supply voltages are passed on through ribbon cables so that the complete control current wiring on the starter is no longer needed.

More information:

- AS-Interface see page 2/19 onwards
- 3RA27 function modules, see pages 3/73, 3/80 and 3/101

Contactors with voltage tap

For configuring load feeders with communication links (AS-i/IO-Link), contactors with voltage taps are required. These contactors are not included as standard in the preassembled 3RA2 load feeders. A load feeder with communication link must be assembled therefore from single devices.

Complete integration in the automation landscape

As the result of the communication link through IO-Link or AS-i, the SIRIUS load feeders are fully integrated in the automation landscape and can draw on all the advantages of TIA (e.g. integration in the TIA Maintenance Station).

Mounting

3RA2 fuseless load feeders can be supplied:

- For mounting onto TH 35 DIN rails according to IEC 60715 (depth 15 mm)
- For mounting onto busbar adapters (busbar center-to-center clearance 60 mm, busbar thickness 5 to 10 mm with beveled edges)

The fuseless load feeders are also suitable for screw fixing using two 3RV2928-0B push-in lugs.

3RA2 fuseless load feeders can also be installed using the 3RV29 infeed system (S0 and S00 only, see page 7/67).

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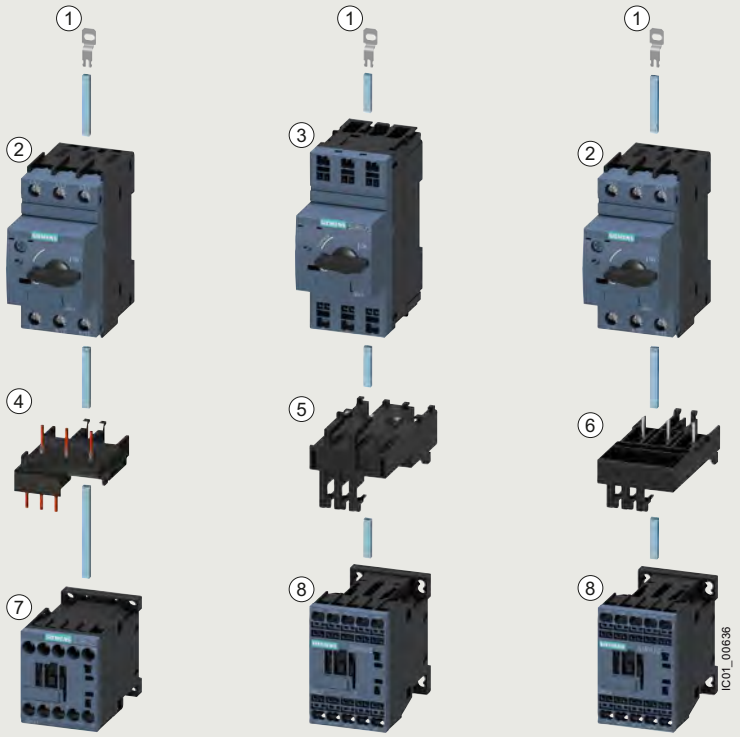
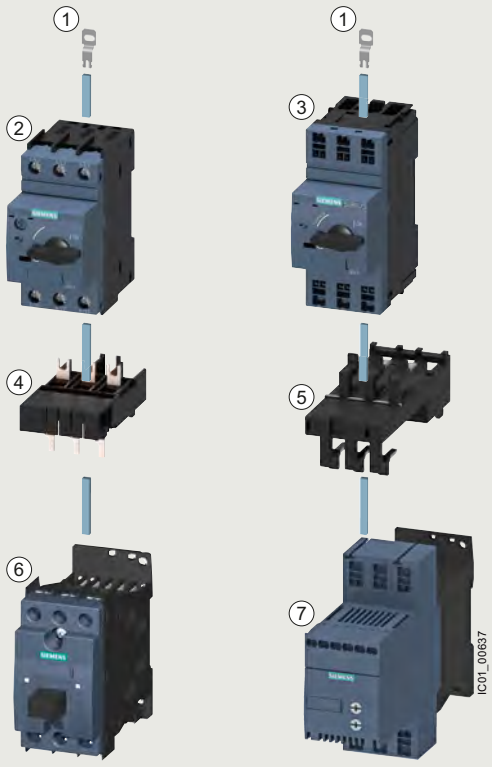
General data

Direct-on-line starting • For DIN-rail mounting or screw fixing • Sizes S00 and S0



1. **2 push-in lugs**
   3RV2928-0B
   (only for screw fixing)
2. **Motor starter protector**
   Size S00/S0
   Screw terminals
3. **Motor starter protector**
   Size S00/S0
   Spring-loaded terminals
4. **Link module**
   (Screw terminals)
   3RA1921-1DA00 (for S00)
   3RA2921-1AA00 (for S0, AC contactor)
   3RA2921-1BA00 (for S0, DC contactor)
5. **Link module**
   (Spring-loaded terminals)
   3RA2911-2AA00 for S00
   3RA2921-2AA00 for S0
6. **Link module**
   (Hybrid)
   3RA2911-2FA00 for S00
   3RA2921-2FA00 for S0
7. **Contactor**
   Size S00/S0
   Screw terminals
8. **Contactor**
   Size S00/S0
   Spring-loaded terminals

Left: 3RA21 load feeder with screw terminals
Center: 3RA21 load feeder with spring-loaded terminals
Right: Combination of motor starter protector with screw terminals and contactor with spring-loaded terminals



1. **2 push-in lugs**
   3RV2928-0B
   (only for screw fixing)
2. **Motor starter protector**
   Size S00/S0
   Screw terminals
3. **Motor starter protector**
   Size S00/S0
   Screw terminals/spring-loaded terminals
4. **Link module**
   3RA2921-1BA00 (Screw terminals)
5. **Link module**
   3RA2921-1BA00 for S00/S0 and screw terminals
   3RA2911-2GA00 for S00 and spring-loaded terminals
   3RA2921-2GA00 for S0 and spring-loaded terminals
6. **Solid-state switching device** (Screw terminals)
7. **Soft starter**
   Size S00/S0
   Screw terminals/spring-loaded terminals

Left: Combination of motor starter protector and solid-state switching device with screw terminals
Right: Combination of motor starter protector and soft starter with spring-loaded terminals

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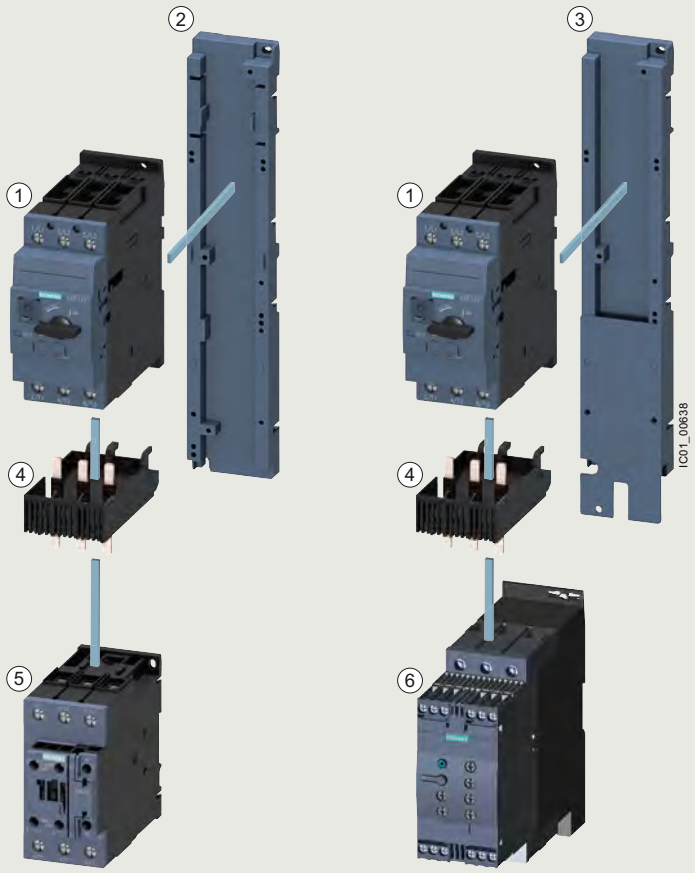
Direct-on-line starting • For DIN-rail mounting • Size S2



1. **Motor starter protector**
   Size S2
   Screw terminals
2. **DIN-rail adapter** (optional)
   3RA2932-1AA00
   Alternatively, the device can be mounted on two DIN rails spaced at a distance of 175 mm without a DIN-rail adapter.
3. **DIN-rail adapter**
   3RA2932-1CA00
4. **Link module**
   3RA2931-1AA00
   Screw terminals
5. **Contactor**
   Size S2
   Screw terminals
6. **Soft starter**
   Size S2
   Screw terminals

Left: 3RA21 load feeder with screw terminals
Right: Combination of motor starter protector and soft starter with screw terminals

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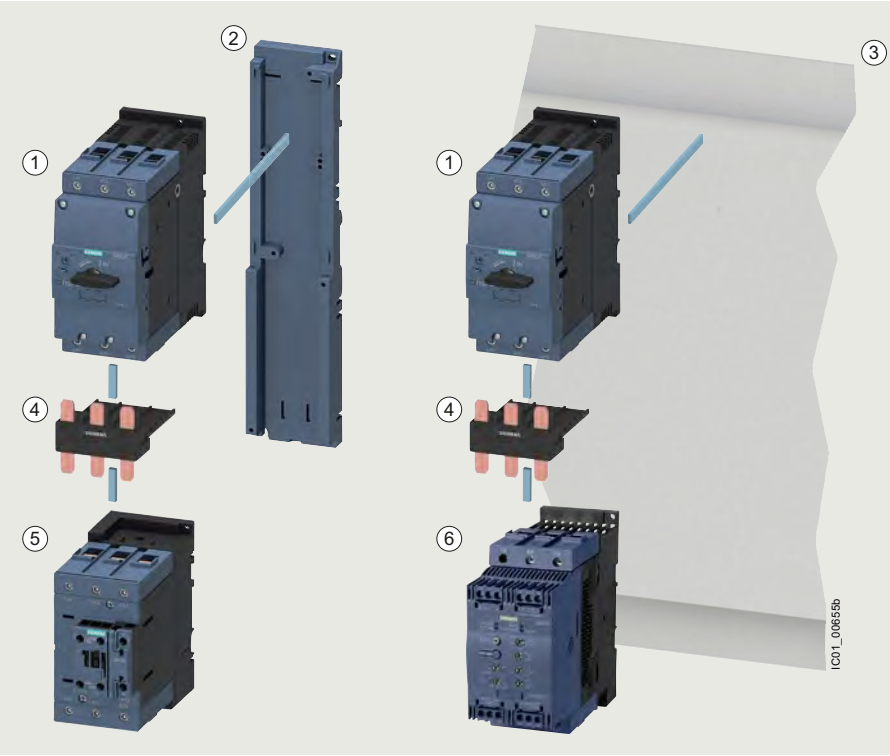
General data

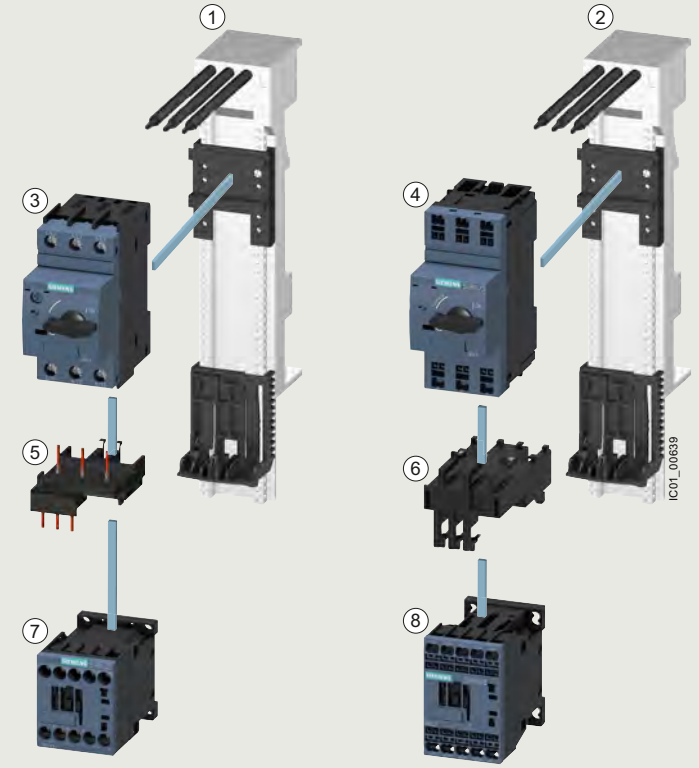
Direct-on-line starting • For DIN-rail mounting • Size S3



1. **Motor starter protector**
   Size S3
   Screw terminals
2. **DIN-rail adapter**
   3RA2942-1AA00
3. **Mounting plate**
4. **Link module**
   3RA1941-1AA00
   Screw terminals
5. **Contactor**
   Size S3
   Screw terminals
6. **Soft starter**
   Size S3
   Screw terminals

3RA21 load feeder for direct-on-line starting and DIN-rail mounting in size S3
(the version with screw terminals is shown in the picture)

Direct-on-line starting • For 60 mm busbar systems • Sizes S00 and S0



1. **60 mm busbar adapter for screw terminals**
   8US1251-5DS10 for S00
   8US1251-5NT10 for S0
2. **60 mm busbar adapter for spring-loaded terminals**
   8US1251-5DT11 for S00
   8US1251-5NT11 for S0
3. **Motor starter protector**
   Size S00/S0
   Screw terminals
4. **Motor starter protector**
   Size S00/S0
   Spring-loaded terminals
5. **Link module**
   Screw terminals
   3RA1921-1DA00 for S00
   3RA2921-1AA00 for S0, AC contactor
   3RA2921-1BA00 for S0, DC contactor
6. **Link module**
   3RA2911-2AA00 for S00
   3RA2921-2AA00 for S0
   (additional 3RA2911-1CA00 spacer for height compensation on AC contactors size S0 with spring-loaded terminals)
7. **Contactor**
   Size S00/S0
   Screw terminals
8. **Contactor**
   Size S00/S0
   Spring-loaded terminals

Left: 3RA21 load feeder for direct-on-line starting with busbar adapter with screw terminals
Right: 3RA21 load feeder for direct-on-line starting with busbar adapter with spring-loaded terminals

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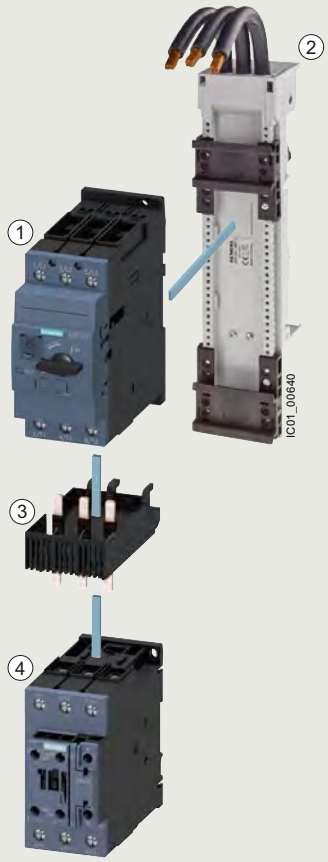
Direct-on-line starting • For 60 mm busbar systems • Size S2



1. **Motor starter protector**
   Size S2
   Screw terminals
2. **Busbar adapter 60 mm**
   8US1261-6MT10
3. **Link module**
   3RA2931-1AA00
   Screw terminals
4. **Contactor**
   Size S2
   Screw terminals

3RA21 load feeder for direct-on-line starting with busbar adapter with screw terminals

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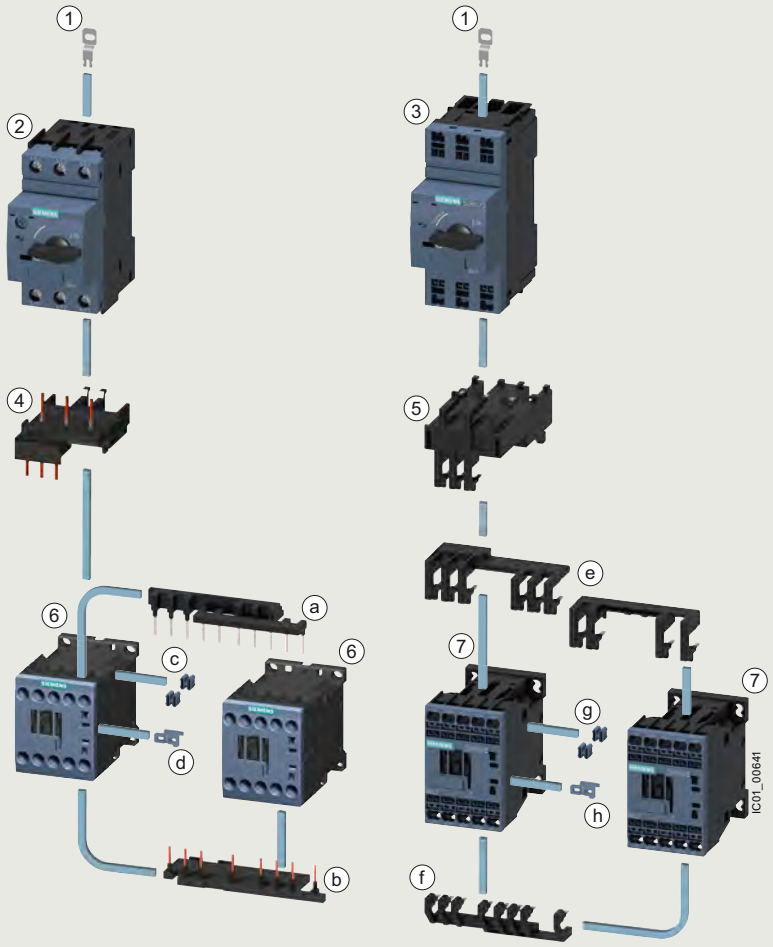
General data

Reversing operation • For DIN-rail mounting or screw fixing • Size S00



1. **Push-in lug**
   3RV2928-0B
   (only for screw fixing)
2. **Motor starter protector**
   Size S00/S0
   Screw terminals
3. **Motor starter protector**
   Size S00/S0
   Spring-loaded terminals
4. **Link module**
   Screw terminals
   3RA1921-1DA00 for S00
   3RA2921-1AA00 for S0, AC contactor
   3RA2921-1BA00 for S0, DC contactor
5. **Link module**
   Spring-loaded terminals
   3RA2911-2AA00 for S00
   3RA2921-2AA00 for S0
6. **Contactor**
   Size S00/S0
   Screw terminals
7. **Contactor**
   Size S00/S0
   Spring-loaded terminals

Wiring kit
3RA2913-2AA1

a. Upper wiring module
b. Lower wiring module
c. Two connecting clips for two contactors
d. Mechanical interlock
   (can be removed if necessary)

Wiring kit
3RA2913-2AA2

e. Upper wiring module
f. Lower wiring module
g. Two connecting clips for two contactors
h. Mechanical interlock
   (can be removed if necessary)

Left: 3RA22 load feeder with screw terminals with push-in lugs with two contactors for reversing operation and wiring kit 3RA2913-2AA1 for connecting the contactors (including mechanical interlocking and connecting clips)
Right: 3RA22 load feeder with spring-loaded terminals with push-in lugs with two contactors for reversing operation and wiring kit 3RA2913-2AA2 (including mechanical interlocking and connecting clips)

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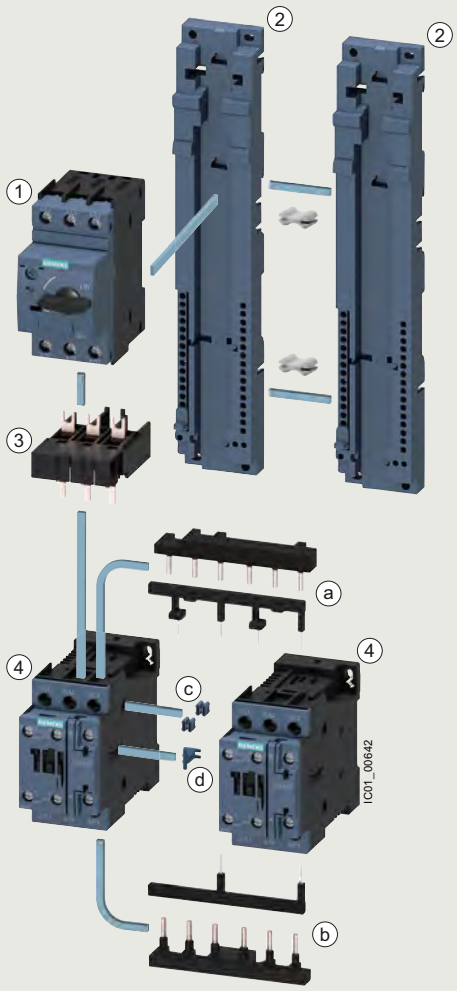
Reversing operation • For DIN-rail mounting • Size S0



RH assembly kit for reversing operation and DIN-rail mounting in size S0

Screw terminals
3RA2923-1BB1

Spring-loaded terminals
3RA2923-1BB2[1)]

Consisting of:
- Wiring kit for the main and auxiliary circuits
- Two DIN-rail adapters
- Two connecting wedges
- Mechanical interlock
- Two connecting clips
- Fixing accessories

(1) **Motor starter protector**
Size S0
Screw terminals/spring-loaded terminals

(2) **DIN-rail adapters**
3RA2922-1AA00
with two connecting wedges
8US1998-1AA00

(3) **Link module**
Screw terminals
3RA2921-1AA00 for S0, AC contactor
3RA2921-1BA00 for S0, DC contactor
Spring-loaded terminals
3RA2921-2AA00[2)]

(4) **Contactor**
Size S0
Screw terminals/spring-loaded terminals

Wiring kit
Screw terminals
3RA2923-2AA1

Spring-loaded terminals
3RA2923-2AA2

(a) Upper wiring module

(b) Lower wiring module

(c) Two connecting clips for two contactors

(d) Mechanical interlock
(can be removed if necessary)

[1)] Contains two 3RA2911-1CA00 spacers for height compensation on AC contactors size S0 with spring-loaded terminals.

[2)] Additionally two 3RA2911-1CA00 spacers for height compensation on AC contactors size S0 with spring-loaded terminals.

3RA22 load feeder for reversing operation and DIN-rail mounting in size S0 (the version with screw terminals is shown in the picture)

RH mounting kits for reversing operation and DIN-rail mounting in size S0, see page 8/52.

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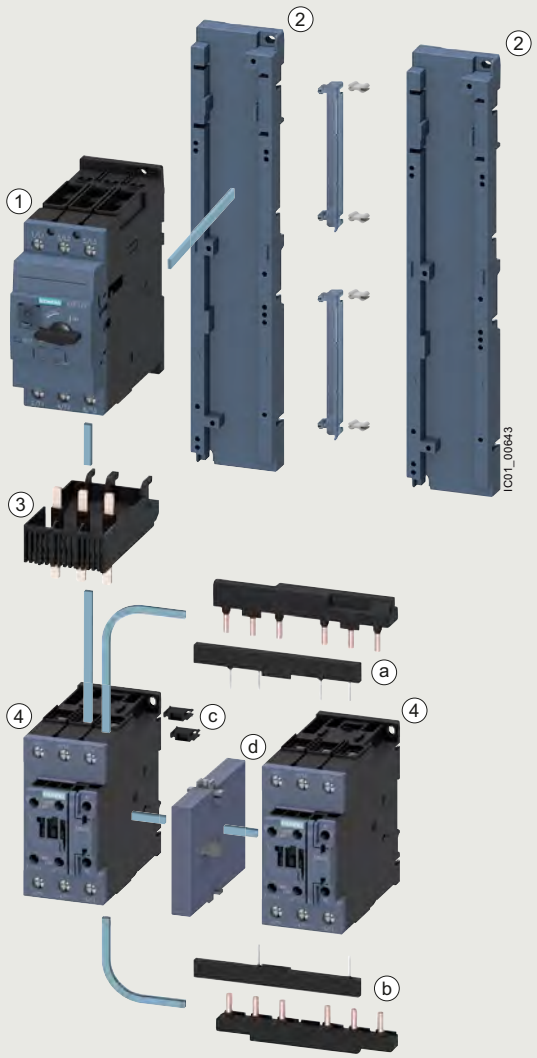
General data

Reversing operation • For DIN-rail mounting • Size S2



RH assembly kit for reversing operation and DIN-rail mounting in size S2

3RA2933-1BB1

Consisting of:
- Wiring kit for the main and auxiliary circuits
- Two DIN-rail adapters
- Two side modules
- Four connecting wedges
- Mechanical interlock
- Two connectors for two contactors
- Fixing accessories

(1) **Motor starter protector**
Size S2
Screw terminals

(2) **DIN-rail adapter**
3RA2932-1AA00
with two side modules
3RA2902-1B
and four connecting wedges
8US1998-1AA00

(3) **Link module**
3RA2931-1AA00
Screw terminals

(4) **Contactor**
Size S2
Screw terminals

Wiring kit
Screw terminals
3RA2933-2AA1

(a) Upper wiring module

(b) Lower wiring module

(c) Two connectors for two contactors

(d) Mechanical interlock
3RA2934-2B (not part of the wiring kit, must be ordered separately)

3RA22 load feeder for reversing operation and DIN-rail mounting in size S2 (the version with screw terminals is shown in the picture)

RH mounting kits for reversing operation and DIN-rail mounting in size S2, see page 8/52.

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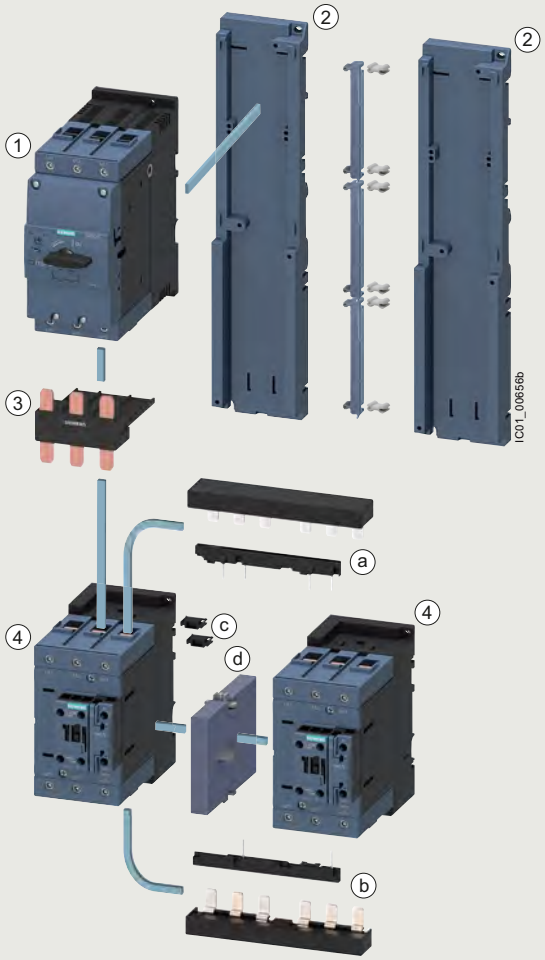
Reversing operation • For DIN-rail mounting • Size S3



RH assembly kit for reversing operation and DIN-rail mounting in size S3

3RA2943-1BB1

Consisting of:
- Wiring kit for the main and auxiliary circuits
- Two DIN-rail adapters
- Three side modules
- Six connecting wedges
- Mechanical interlock
- Two connectors for two contactors
- Fixing accessories

(1) **Motor starter protector**
Size S3

(2) **DIN-rail adapter**
3RA2942-1AA00
with two side modules
3RA2902-1B
and four connecting wedges
8US1998-1AA00

(3) **Link module**
3RA1941-1AA00

(4) **Contactor**
Size S3

Wiring kit
Screw terminals
3RA2943-2AA1
(a) Upper wiring module
(b) Lower wiring module
(c) Two connectors for two contactors
(d) Mechanical interlock
3RA2934-2B (not part of the wiring kit, must be ordered separately)

3RA22 load feeder for reversing operation and DIN-rail mounting in size S3 (the version with screw terminals is shown in the picture)

RH mounting kits for reversing operation and DIN-rail mounting in size S3, see page 8/52.

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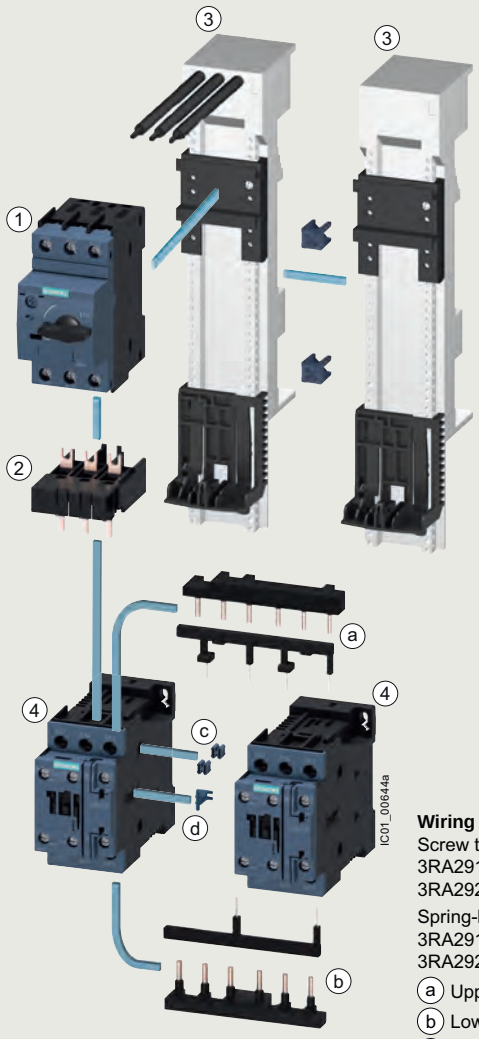
General data

Reversing operation • For 60 mm busbar systems • Sizes S00 and S0



Wiring kit
Screw terminals
3RA2913-2AA1 for S00
3RA2923-2AA1 for S0
Spring-loaded terminals
3RA2913-2AA2 for S00
3RA2923-2AA2 for S0

(a) Upper wiring module
(b) Lower wiring module
(c) Two connecting clips for two contactors
(d) Mechanical interlock
(can be removed if necessary)

RS assembly kit for reversing operation and busbar mounting in size S00/S0

Screw terminals
3RA2913-1DB1 for S00
3RA2923-1DB1 for S0
Spring-loaded terminals
3RA2913-1DB2 for S00
3RA2923-1DB2 for S0[1)]
Consisting of:
- Wiring kit for the main and auxiliary circuits
- Busbar adapter
- Device holder
- Two connecting wedges
- Mechanical interlock
- Two connecting clips for two contactors
- Fixing accessories

(1) **Motor starter protector**
Size S00/S0
Screw terminals/spring-loaded terminals

(2) **Link module**
Screw terminals
3RA1921-1DA00 for S00
3RA2921-1AA00 for S0, AC contactor
3RA2921-1BA00 for S0, DC contactor
Spring-loaded terminals
3RA2911-2AA00 for S00
3RA2921-2AA00 for S0[2)]

(3) **60 mm busbar adapter**
Screw terminals
8US1251-5DS10 for S00/S0
8US1251-5NT10 for S0
Spring-loaded terminals
8US1251-5DT11 for S00/S0
8US1251-5NT11 for S0
With two connecting wedges
8US1998-1AA10

60 mm device holder
8US1250-5AS10 or
8US1250-5AT10
(according to length of left adapter)

(4) **Contactor**
Size S00/S0
Screw terminals/spring-loaded terminals

[1)] Contains two 3RA2911-1CA00 spacers for height compensation on AC contactors size S0 with spring-loaded terminals.

[2)] Additionally two 3RA2911-1CA00 spacers for height compensation on AC contactors size S0 with spring-loaded terminals.

3RA22 load feeder for reversing operation and 60 mm busbar
(the version with screw terminals is shown in the picture)

RS mounting kits for reversing operation and busbar mounting in size S00/S0, see page 8/54.

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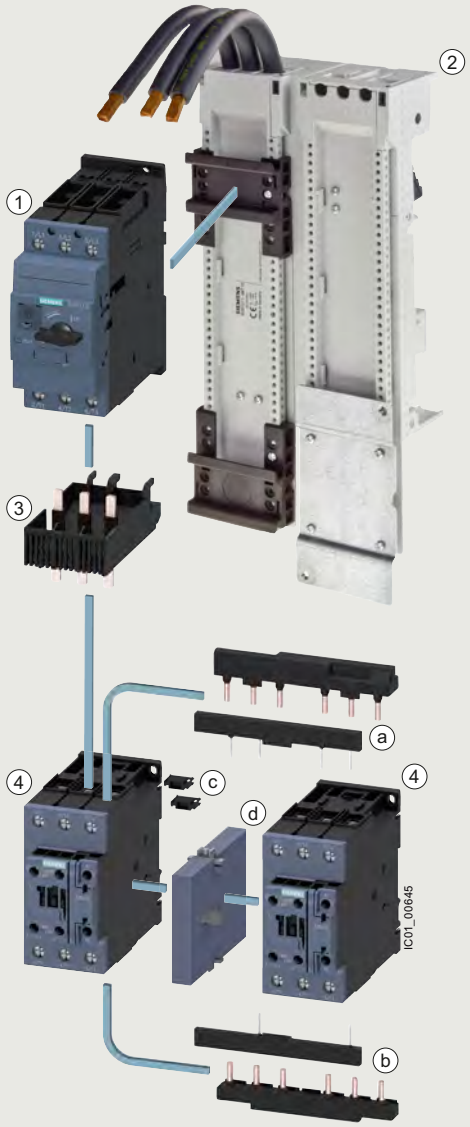
Reversing operation • For 60 mm busbar systems • Size S2



RS assembly kit for reversing operation and busbar mounting in size S2

3RA2933-1DB1

Consisting of:
- Wiring kit for the main and auxiliary circuits
- Busbar adapter
- Mechanical interlock
- Two connectors for two contactors
- Fixing accessories

(1) **Motor starter protector**
Size S2
Screw terminals

(2) **Busbar adapter 60 mm**
8US1211-6MT10

(3) **Link module**
3RA2931-1AA00
Screw terminals

(4) **Contactor**
Size S2
Screw terminals

Wiring kit
Screw terminals
3RA2933-2AA1

(a) Upper wiring module

(b) Lower wiring module

(c) Two connectors for two contactors

(d) Mechanical interlock
3RA2934-2B (not part of the wiring kit, must be ordered separately)

3RA22 load feeder for reversing operation and 60 mm busbar in size S2 (the version with screw terminals is shown in the picture)

RS mounting kits for reversing operation and busbar mounting in size S2, see page 8/54.

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General data

Article number scheme

Product versions		Article number															
SIRIUS load feeders		**3RA2**	□	□	**0**	**–**	□	□	□	□	□	**–**	□	□	□	□	
Product function	Direct-on-line starter		**1**														For motor standard output 0.06 ... 45 kW
	Reversing starter		**2**														For motor standard output 0.06 ... 45 kW
Size	S00			**1**													
	S0			**2**													
	e.g. 3 = S2			□													At I_q = 100 kA at 400 V
	e.g. 5 = S2			□													At I_q = 150 kA at 400 V
Setting range of the overload release	e.g. 0B = 0.14 ... 0.2 A						□	□									
Assembly, assembly type, connection method	e.g. A = S00, S0, S2								□								Direct mounting, screw terminals
Contactor size, rated power at 400 V AC	e.g. 15 = S00/3 kW									□	□						
Version Auxiliary switches on the contactor	e.g. 0 = S0, S2												□				1 NO + 1 NC integrated in contactor
	e.g. 1 = S00												□				1 NO integrated in contactor
	e.g. 2 = S00												□				1 NC integrated in contactor
Operating range of solenoid coil (contactor)	e.g. A = S00, S0, S2													□			AC 0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$, standard coil without RC circuit
Rated control supply voltage (contactor)	230 V AC														**P**	**0**	50/60 Hz AC for S00, 50 Hz AC for S0 ... S3
	24 V DC														**B**	**4**	
Example		**3RA2**	**1**	**1**	**0**	**–**	**0**	**B**	**A**	**1**	**5**	**–**	**1**	**A**	**P**	**0**	

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Minimum planning and assembly work and far less wiring with the preassembled complete units (only one article number 3RA2)
- Plug-in connectors from the motor starter protector to all types of SIRIUS controls, for quicker and error-free assembly of feeders with screw and spring-loaded terminals
- High planning reliability through consistent combination tests for fuseless and fused configuration in accordance with IEC and UL/CSA
- Comprehensive approvals for use world-wide on request, see page 16/9 onwards.
- High operational reliability through short-circuit breaking capacity of 150 kA with type of coordination "1" and "2"
- Uniform accessories for sizes S00, S0, S2 and S3
- Spring-loaded terminals possible throughout: Enhanced operational reliability (vibration-resistant wiring) and less wiring work thanks to plug-in connections (S00 and S0 only)
- Power loss 5 to 10% smaller than for comparable devices, hence lower energy consumption
- Connection of feeders to the control system through standardized system connection (IO-Link and AS-i), for fast integration in TIA and less wiring work

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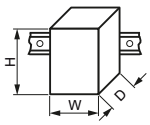
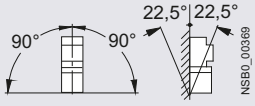
Technical specifications

More information	
Industry Mall, see www.siemens.com/product?3RA2	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16289/faq
Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/60284351	
Configuration Manual, see https://support.industry.siemens.com/cs/ww/en/view/39714188	

Direct-on-line starters/ reversing starters	Size	Connection method	Mounting	Control voltage	Width W	Height H	Depth D
					mm	mm	mm
Mounting dimensions							
Direct-on-line starters	S00	Screw terminals	DIN rails	AC/DC	45	167	97
3RA21.	3RA211.		Busbar adapters	AC/DC	45	200	155
(Size S3 or larger is only available for self-assembly)		Spring-loaded terminals	DIN rails	AC/DC	45	198	97
			Busbar adapters	AC/DC	45	260	155
	S0	Screw terminals	DIN rails	AC	45	193	97
	3RA212.			DC	45	193	107
			Busbar adapters	AC	45	260	155
				DC	45	260	165
		Spring-loaded terminals	DIN rails	AC/DC	45	243	107
			Busbar adapters	AC/DC	45	260	165
	S2	Screw terminals	DIN rails	AC/DC	55	274	150
	3RA213./3RA215.		Busbar adapters	AC/DC	55	350	208
	S3 (self-assembly only)	Screw terminals	DIN-rail adapters	AC/DC	70	333	198
Reversing starters	S00	Screw terminals	DIN rails	AC/DC	90	170	97
3RA22.	3RA221.		Busbar adapters	AC/DC	90	200	155
(Size S2 or larger is only available for self-assembly)		Spring-loaded terminals	DIN rails	AC/DC	90	204	97
			Busbar adapters	AC/DC	90	260	155
	S0	Screw terminals	DIN-rail adapters	AC	90	265	120.3
	3RA222.			DC	90	265	130
			Busbar adapters	AC	90	260	155
				DC	90	260	165
		Spring-loaded terminals	DIN-rail adapters	AC/DC	90	270	131
			Busbar adapters	AC/DC	90	260	165
	S2 (self-assembly only)	Screw terminals	DIN rails	AC/DC	120	295	175
			Busbar adapters	AC/DC	120	361	208
	S3 (self-assembly only)	Screw terminals	DIN-rail adapters	AC/DC	150	333	198

Type			3RA2.1	3RA2.2	3RA213, 3RA215	For self-assembly
Size			S00	S0	S2	S3
Number of poles			3	3	3	3
Mechanics and environment						
Permissible ambient temperature						
• During operation		°C	-20 ... +60			
• During storage and transport		°C	-55 ... +80			
Weight		kg	0.6 ... 1.5	0.8 ... 2.3	2.2 ... 2.5	4.0 ... 4.2
Permissible mounting position			 Important: According to DIN 43602 start command "I" at the right or top			
Shock resistance	IEC 60068-2-27	*g*/ms	6/11 (sine pulse)			On request
Degree of protection IP on the front	According to IEC 60529		IP20			
Touch protection on the front	According to IEC 60529		Finger-safe for vertical touching from the front			

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General data

Type			**3RA2.1**	**3RA2.2**	**3RA213, 3RA215**	**For self-assembly**
Size			**S00**	**S0**	**S2**	**S3**
Number of poles			**3**	**3**	**3**	**3**
Electrical specifications						
Standards			• IEC 60947-1, EN 60947-1 (VDE 0660 Part 100) • IEC 60947-2; EN 60947-2 (VDE 0660 Part 101) • IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102)			
Max. rated current $I_{n\ max}$ (= max. rated operational current I_e)		A	16	32	65	100
Rated operational voltage U_e		V	690			
Rated frequency		Hz	50/60			
Rated insulation voltage U_i (pollution degree 3)		V	690			
Rated impulse withstand voltage U_{imp}		kV	6			
Trip class (CLASS)	According to IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102)		10			
Rated short-circuit current I_q At 50/60 Hz 400 V AC	According to IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102)	kA	150		3RA213: 100 3RA215: 150	With 3RV2041: 100 With 3RV2042: 150
Types of coordination	According to IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102)		See "Selection and ordering data", page 8/22 onwards			
Power loss P_v of all main conducting paths Dependent on rated current I_n (upper setting range)			See technical specifications of the individual devices: • "Switching Devices - Contactors and Contactor Assemblies", page 3/25 onwards • "Protection Equipment" → "Motor starter protectors/circuit breakers", page 7/18 onwards			
Power consumption of the solenoid coils with contactors			See technical specifications of the contactor, page 3/26 onwards			
Solenoid coil operating range with contactors						
Endurance of the motor starter protector						
• Mechanical endurance		Operating cycles	100 000		Up to 52 A: 50 000	25 000
• Electrical endurance		Operating cycles	100 000		From 59 A: 20 000	25 000
• Max. switching frequency per hour (motor starts)		1/h	15			
Endurance of contactor						
• Mechanical endurance		Operating cycles	30 million	10 million		
• Electrical endurance		Operating cycles	See endurance characteristic curves of the contactors, page 3/26 onwards			
Phase failure sensitivity of the motor starter protector	According to IEC 60947-1, EN 60947-1 (VDE 0660 Part 102)		✓			
Isolating features of the motor starter protector	According to IEC 60947-2, EN 60947-2 (VDE 0660 Part 101)		✓			
Main and EMERGENCY STOP switch characteristics of the motor starter protector and accessories	According to IEC 60204-1, EN 60204-1 (VDE 0113 Part 1)		✓ (With overvoltage releases of category "1" under conditions of proper use)			
Protective separation between main and auxiliary circuits	According to EN 60947-1, Annex N	V	Up to 400			
Mirror contacts for contactors Integrated auxiliary switches			✓ According to IEC 60947-4-1, Annex F			

✓ Function available

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Conductor cross-sections of main circuit

Type		3RA2.10	3RA2.20	3RA2130-4E..., 3RA2130-4P..., 3RA2130-4U..., 3RA2130-4V...	3RA2130-4W..., 3RA2130-4X..., 3RA2130-4J..., 3RA2130-4K..., 3RA2150	For self-assembly
Size		S00	S0	S2		S3
Connection type		**Screw terminals**				**Screw terminals with box terminal**
Terminal screw		M3, Pozidriv size 2	M4, Pozidriv size 2	M6, Pozidriv size 2		4 mm Allen screw
Operating devices	mm	⌀ 5 ... 6	⌀ 5 ... 6	⌀ 5 ... 6		Allen screw
Prescribed tightening torque	Nm	0.8 ... 1.2	2 ... 2.5	3.0 ... 4.5		4.5 ... 6
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected						
• Solid or stranded	mm^2	2 x (0.75 ... 2.5)[1], 2 x (0.5 ... 1.5)[1], for contactor only 2 x 4	2 x (1 ... 2.5)[1], 2 x (2.5 ... 10)[1]	2 x (1 ... 25)[1], 1 x (1 ... 35)[1]	2 x (1 ... 35)[1], 1 x (1 ... 50)[1]	2 x (2.5 ... 16)[1] 2 x (10 ... 50)[1], 1 x (10 ... 70)[1]
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1]	2 x (1 ... 2.5)[1], 2 x (2.5 ... 6)[1], 1 x 10	2 x (1 ... 16)[1], 1 x (1 ... 25)[1]	2 x (1 ... 25)[1], 1 x (1 ... 35)[1]	2 x (2.5 ... 35)[1], 1 x (2.5 ... 50)[1]
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1], for contactor only 2 x (18 ... 14)[1], 2 x 12	2 x (16 ... 12)[1], 2 x (14 ... 8)[1]	2 x (18 ... 3)[1], 1 x (18 ... 2)[1]	2 x (18 ... 2)[1], 1 x (18 ... 1)[1]	2 x (10 ... 1/0)[1] 1 x (10 ... 2/0)[1]
• Ribbon cable conductors (Number x Width x Thickness)	mm	--				2 x (6 x 9 x 0.8)
Connection type		**Spring-loaded terminals**				
Operating devices	mm	3.0 x 0.5 and 3.5 x 0.5				
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected						
• Solid or stranded	mm^2	2 x (0.5 ... 4)	2 x (1 ... 10)	--		
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)	2 x (1 ... 6)	--		
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 2.5)	2 x (1 ... 6)	--		
• AWG cables, solid or stranded	AWG	2 x (20 ... 12)	2 x (18 ... 8)	--		
Max. external diameter of the conductor insulation	mm	3.6	3.6	--		

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

Conductor cross-sections for auxiliary and control circuits

Type		3RA2110 3RA2210	3RA2120 3RA2220	3RA2130 3RA2150	For self-assembly
Size		S00	S0	S2	S3
Connection type		**Screw terminals**			
Terminal screw		M3, Pozidriv size 2			
Operating devices	mm	⌀ 5 ... 6			
Prescribed tightening torque	Nm	0.8 ... 1.2			
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1]			
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)[1], 2 x (0.75 ... 2.5)[1]			
• AWG cables, solid or stranded	AWG	2 x (18 ... 14)[1], 2 x (20 ... 16)[1], 2 x 12 for contactor S00 only			
Connection type		**Spring-loaded terminals**			
Operating devices	mm	3.0 x 0.5 and 3.5 x 0.5			
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid or stranded	mm^2	2 x (0.5 ... 2.5)			
• Finely stranded without end sleeve	mm^2	2 x (0.5 ... 2.5)			
• Finely stranded with end sleeve (DIN 46228)	mm^2	2 x (0.5 ... 1.5)			
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)			
Max. external diameter of the conductor insulation	mm	3.6			

[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

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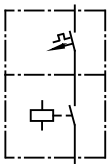
Selection and ordering data

3RA2110

3RA2120

3RA2150

Direct-on-line starting



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0, S2 and S3
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO,
  Contactor sizes S0, S2 and S3: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	**Comprising the following single devices**			**Fuseless load feeder**		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module	**Screw terminals**				
							Article No.	Basic price per PU			
	kW	A	A								
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")				**3RV20**	**3RT20**	**3RA**	ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP01	1921-1DA00	**3RA2110-0BA15-1AP0**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA10			**3RA2110-0CA15-1AP0**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA10			**3RA2110-0DA15-1AP0**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA10			**3RA2110-0EA15-1AP0**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA10			**3RA2110-0FA15-1AP0**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA10			**3RA2110-0GA15-1AP0**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA10			**3RA2110-0HA15-1AP0**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA10			**3RA2110-0JA15-1AP0**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA10			**3RA2110-0KA15-1AP0**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA10			**3RA2110-1AA15-1AP0**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA10			**3RA2110-1BA15-1AP0**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA10			**3RA2110-1CA15-1AP0**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA10			**3RA2110-1DA15-1AP0**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA10			**3RA2110-1EA15-1AP0**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1AP00	2921-1AA00	**3RA2120-1FA24-0AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10			**3RA2120-1GA24-0AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			**3RA2120-1HA24-0AP0**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10			**3RA2120-1JA24-0AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA10			**3RA2120-1KA24-0AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA10	26-1AP00		**3RA2120-4AA26-0AP0**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA10	27-1AP00		**3RA2120-4BA27-0AP0**		1	1 unit	41D
	11	22	16 ... 22	21-4CA10			**3RA2120-4CA27-0AP0**		1	1 unit	41D
	11	22	18 ... 25	21-4DA10			**3RA2120-4DA27-0AP0**		1	1 unit	41D
	15	28	23 ... 28	21-4NA10			**3RA2120-4NA27-0AP0**		1	1 unit	41D
	15	29[4)]	27 ... 32	21-4EA10			**3RA2120-4EA27-0AP0**		1	1 unit	41D
S2	15	29	22 ... 32	32-4EA10	35-1AP00	2931-1AA00	**3RA2150-4EA35-0AP0**		1	1 unit	41D
	18.5	35	28 ... 36	32-4PA10			**3RA2150-4PA35-0AP0**		1	1 unit	41D
	18.5	35	32 ... 40	32-4UA10			**3RA2150-4UA35-0AP0**		1	1 unit	41D
	22	41	35 ... 45	32-4VA10	36-1AP00		**3RA2150-4VA36-0AP0**		1	1 unit	41D
	22	41	42 ... 50	32-4WA10			**3RA2150-4WA36-0AP0**		1	1 unit	41D
	30	55	49 ... 59	32-4XA10	37-1AP00		**3RA2150-4XA37-0AP0**		1	1 unit	41D
	30	55	54 ... 65	32-4JA10			**3RA2150-4JA37-0AP0**		1	1 unit	41D
	37[5)]	66	62 ... 75	32-4KA10	38-1AP00		**3RA2150-4KA38-0AP0**		1	1 unit	41D
S3	Size S3 available on request						Size S3 is only available for self-assembly				

1) Push-in lugs, see "Accessories", page 8/52.
2) Auxiliary switches, see "Accessories", page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.
5) Maximum permissible current setting at motor starter protector 65 A, as the maximum permissible current of the 3RA2931-1AA00 link module is 65 A.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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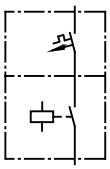
3RA2110

Direct-on-line starting



Rated control supply voltage
50/60 Hz 230 V AC for S00
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches: Contactor size S00: 1 NO

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module	**Screw terminals**			
							Article No.			
	kW	A	A					Basic price per PU		
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")				**3RV20**	**3RT20**	**3RA**		ToC 1		
S00	Load feeders for lower outputs, see table for type of coordination "2" on the previous page.									
	1.5	3.6	3.5 ... 5	11-1FA10	15-1AP01	1921-1DA00	**3RA2110-1FA15-1AP0**	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10			**3RA2110-1GA15-1AP0**	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			**3RA2110-1HA15-1AP0**	1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10	16-1AP01		**3RA2110-1JA16-1AP0**	1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA10	17-1AP01		**3RA2110-1KA17-1AP0**	1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1AP01		**3RA2110-4AA18-1AP0**	1	1 unit	41D

1) Push-in lugs, see "Accessories", page 8/52.
2) Auxiliary switches, see "Accessories", page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.

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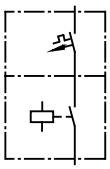
3RA21 direct-on-line starters > for DIN-rail mounting or screw fixing IE3/IE4 ready AC-3e

3RA2130

Direct-on-line starting



Rated control supply voltage
50 Hz 230 V AC for S2 and S3
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches: Contactor sizes S2 and S3: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module	Screw terminals				
							Article No.	Basic price per PU			
	kW	A	A								
Type of coordination "2" at I_q = 100 kA at 400 V (the motor starter protector is compatible with type of coordination "2")				**3RV20**	**3RT20**	**3RA**					
S2	15	29	22 ... 32	31-4EA10	35-1AP00	2931-1AA00	**3RA2130-4EA35-0AP0**		1	1 unit	41D
	18.5	35	28 ... 36	31-4PA10			**3RA2130-4PA35-0AP0**		1	1 unit	41D
	18.5	35	32 ... 40	31-4UA10			**3RA2130-4UA35-0AP0**		1	1 unit	41D
	22	41	35 ... 45	31-4VA10	36-1AP00		**3RA2130-4VA36-0AP0**		1	1 unit	41D
	22	41	42 ... 50	31-4WA10			**3RA2130-4WA36-0AP0**		1	1 unit	41D
	30	55	49 ... 59	31-4XA10	37-1AP00		**3RA2130-4XA37-0AP0**		1	1 unit	41D
	30	55	54 ... 65	31-4JA10			**3RA2130-4JA37-0AP0**		1	1 unit	41D
	37[4)]	66	62 ... 73	31-4KA10	38-1AP00		**3RA2130-4KA38-0AP0**		1	1 unit	41D
S3	Size S3 available on request						Size S3 is only available for self-assembly				

1) Push-in lugs, see "Accessories", page 8/52.
2) Auxiliary switches, see "Accessories", page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) Maximum permissible current setting at motor starter protector 65 A, as the maximum permissible current of the 3RA2931-1AA00 link module is 65 A.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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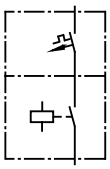
AC-3e ***IE3/IE4* ready** **3RA21 direct-on-line starters > for DIN-rail mounting or screw fixing**

3RA2110

3RA2120

Direct-on-line starting



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0
With spring-loaded terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO,
  Contactor size S0: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module	Spring-loaded terminals			
	kW	A	A				Article No.			
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")										
				3RV20	3RT20	3RA29	ToC 2			
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2AP01	11-2AA00	**3RA2110-0BE15-1AP0**	1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20			**3RA2110-0CE15-1AP0**	1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20			**3RA2110-0DE15-1AP0**	1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			**3RA2110-0EE15-1AP0**	1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			**3RA2110-0FE15-1AP0**	1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			**3RA2110-0GE15-1AP0**	1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			**3RA2110-0HE15-1AP0**	1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			**3RA2110-0JE15-1AP0**	1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			**3RA2110-0KE15-1AP0**	1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			**3RA2110-1AE15-1AP0**	1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			**3RA2110-1BE15-1AP0**	1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			**3RA2110-1CE15-1AP0**	1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			**3RA2110-1DE15-1AP0**	1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			**3RA2110-1EE15-1AP0**	1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2AP00	21-2AA00	**3RA2120-1FE24-0AP0**	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20			**3RA2120-1GE24-0AP0**	1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20			**3RA2120-1HE24-0AP0**	1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			**3RA2120-1JE24-0AP0**	1	1 unit	41D
	5.5	11.5	9 ... 12.5	21-1KA20			**3RA2120-1KE24-0AP0**	1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2AP00		**3RA2120-4AE26-0AP0**	1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2AP00		**3RA2120-4BE27-0AP0**	1	1 unit	41D
	11	22	16 ... 22	21-4CA20			**3RA2120-4CE27-0AP0**	1	1 unit	41D
	11	22	18 ... 25	21-4DA20			**3RA2120-4DE27-0AP0**	1	1 unit	41D
	15	28	23 ... 28	21-4NA20			**3RA2120-4NE27-0AP0**	1	1 unit	41D
	15	29[4)]	27 ... 32	21-4EA20			**3RA2120-4EE27-0AP0**	1	1 unit	41D
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")										
S00	For load feeders for lower outputs, see this table at type of coordination "2".						ToC 1			
	1.5	3.6	3.5 ... 5	11-1FA20	15-2AP01	11-2AA00	**3RA2110-1FE15-1AP0**	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20			**3RA2110-1GE15-1AP0**	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20			**3RA2110-1HE15-1AP0**	1	1 unit	41D
	4	8.5	7 ... 10	11-1JA20	16-2AP01		**3RA2110-1JE16-1AP0**	1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA20	17-2AP01		**3RA2110-1KE17-1AP0**	1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2AP01		**3RA2110-4AE18-1AP0**	1	1 unit	41D

1) Push-in lugs, see "Accessories", page 8/52.
2) Auxiliary switches, see "Accessories", page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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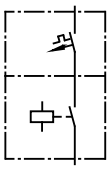
3RA2110

3RA2120

3RA2150

Direct-on-line starting



Rated control supply voltage 24 V DC
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO,
  Contactor sizes S0, S2 and S3: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module	Screw terminals				
							Article No.	Basic price per PU			
	kW	A	A								
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")											
				3RV20	3RT20	3RA					
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB41	1921-1DA00	**3RA2110-0BA15-1BB4**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA10			**3RA2110-0CA15-1BB4**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA10			**3RA2110-0DA15-1BB4**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA10			**3RA2110-0EA15-1BB4**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA10			**3RA2110-0FA15-1BB4**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA10			**3RA2110-0GA15-1BB4**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA10			**3RA2110-0HA15-1BB4**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA10			**3RA2110-0JA15-1BB4**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA10			**3RA2110-0KA15-1BB4**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA10			**3RA2110-1AA15-1BB4**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA10			**3RA2110-1BA15-1BB4**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA10			**3RA2110-1CA15-1BB4**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA10			**3RA2110-1DA15-1BB4**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA10			**3RA2110-1EA15-1BB4**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1BB40	2921-1BA00	**3RA2120-1FA24-0BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10			**3RA2120-1GA24-0BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			**3RA2120-1HA24-0BB4**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10			**3RA2120-1JA24-0BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA10			**3RA2120-1KA24-0BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA10	26-1BB40		**3RA2120-4AA26-0BB4**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA10	27-1BB40		**3RA2120-4BA27-0BB4**		1	1 unit	41D
	11	22	16 ... 22	21-4CA10			**3RA2120-4CA27-0BB4**		1	1 unit	41D
	11	22	18 ... 25	21-4DA10			**3RA2120-4DA27-0BB4**		1	1 unit	41D
	15	28	23 ... 28	21-4NA10			**3RA2120-4NA27-0BB4**		1	1 unit	41D
	15	29[4)]	27 ... 32	21-4EA10			**3RA2120-4EA27-0BB4**		1	1 unit	41D
S2	15	29	22 ... 32	32-4EA10	35-1NB30	2931-1AA00	**3RA2150-4EA35-0NB3**		1	1 unit	41D
	18.5	35	28 ... 36	32-4PA10			**3RA2150-4PA35-0NB3**		1	1 unit	41D
	18.5	35	32 ... 40	32-4UA10			**3RA2150-4UA35-0NB3**		1	1 unit	41D
	22	41	35 ... 45	32-4VA10	36-1NB30		**3RA2150-4VA36-0NB3**		1	1 unit	41D
	22	41	42 ... 50	32-4WA10			**3RA2150-4WA36-0NB3**		1	1 unit	41D
	30	55	49 ... 59	32-4XA10	37-1NB30		**3RA2150-4XA37-0NB3**		1	1 unit	41D
	30	55	54 ... 65	32-4JA10			**3RA2150-4JA37-0NB3**		1	1 unit	41D
	37[5)]	66	62 ... 73	32-4KA10	38-1NB30		**3RA2150-4KA38-0NB3**		1	1 unit	41D
S3	Size S3 available on request						Size S3 is only available for self-assembly				

1) Push-in lugs, see "Accessories", page 8/52.
2) Auxiliary switches, see "Accessories", page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.
5) Maximum permissible current setting at motor starter protector 65 A, as the maximum permissible current of the 3RA2931-1AA00 link module is 65 A.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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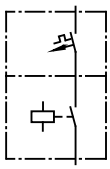
3RA2110

Direct-on-line starting



Rated control supply voltage 24 V DC
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches: Contactor size S00: 1 NO

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module	Screw terminals				
							Article No.	Basic price per PU			
	kW	A	A								
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")											
				3RV20	**3RT20**	**3RA**					
S00	Load feeders for lower outputs, see table for type of coordination "2" on the previous page.										
	1.5	3.6	3.5 ... 5	11-1FA10	15-1BB41	1921-1DA00	**3RA2110-1FA15-1BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10			**3RA2110-1GA15-1BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			**3RA2110-1HA15-1BB4**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10	16-1BB41		**3RA2110-1JA16-1BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA10	17-1BB41		**3RA2110-1KA17-1BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1BB41		**3RA2110-4AA18-1BB4**		1	1 unit	41D

1) Push-in lugs, see "Accessories", page 8/52.
2) Auxiliary switches, see "Accessories", page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.

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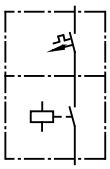
3RA21 direct-on-line starters > for DIN-rail mounting or screw fixing *IE3/IE4* ready AC-3e

3RA2130

Direct-on-line starting



Rated control supply voltage 24 V DC
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches: Contactor sizes S2 and S3: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module	Screw terminals				
							Article No.	Basic price per PU			
	kW	A	A								
Type of coordination "2" at I_q = 100 kA at 400 V (the motor starter protector is compatible with type of coordination "2")				**3RV20**	**3RT20**	**3RA**					
S2	15	29	22 ... 32	31-4EA10	35-1NB30	2931-1AA00	**3RA2130-4EA35-0NB3**		1	1 unit	41D
	18.5	35	28 ... 36	31-4PA10			**3RA2130-4PA35-0NB3**		1	1 unit	41D
	18.5	35	32 ... 40	31-4UA10			**3RA2130-4UA35-0NB3**		1	1 unit	41D
	22	41	35 ... 45	31-4VA10	36-1NB30		**3RA2130-4VA36-0NB3**		1	1 unit	41D
	22	41	42 ... 50	31-4WA10			**3RA2130-4WA36-0NB3**		1	1 unit	41D
	30	55	49 ... 59	31-4XA10	37-1NB30		**3RA2130-4XA37-0NB3**		1	1 unit	41D
	30	55	54 ... 65	31-4JA10			**3RA2130-4JA37-0NB3**		1	1 unit	41D
	37[4)]	66	62 ... 73	31-4KA10	38-1NB30		**3RA2130-4KA38-0NB3**		1	1 unit	41D
S3	Size S3 available on request						Size S3 is only available for self-assembly				

1) Push-in lugs, see "Accessories", page 8/52.
2) Auxiliary switches, see "Accessories", page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) Maximum permissible current setting at motor starter protector 65 A, as the maximum permissible current of the 3RA2931-1AA00 link module is 65 A.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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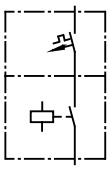
AC-3e ***IE3/IE4 ready*** **3RA21 direct-on-line starters > for DIN-rail mounting or screw fixing**

3RA2110

3RA2120

Direct-on-line starting



Rated control supply voltage 24 V DC
With spring-loaded terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO,
  Contactor size S0: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module	Spring-loaded terminals				
							Article No.	Basic price per PU			
	kW	A	A								
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")				**3RV20**	**3RT20**	**3RA29**					
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2BB41	11-2AA00	**3RA2110-0BE15-1BB4**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20			**3RA2110-0CE15-1BB4**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20			**3RA2110-0DE15-1BB4**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			**3RA2110-0EE15-1BB4**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			**3RA2110-0FE15-1BB4**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			**3RA2110-0GE15-1BB4**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			**3RA2110-0HE15-1BB4**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			**3RA2110-0JE15-1BB4**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			**3RA2110-0KE15-1BB4**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			**3RA2110-1AE15-1BB4**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			**3RA2110-1BE15-1BB4**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			**3RA2110-1CE15-1BB4**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			**3RA2110-1DE15-1BB4**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			**3RA2110-1EE15-1BB4**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2BB40	21-2AA00	**3RA2120-1FE24-0BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20			**3RA2120-1GE24-0BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20			**3RA2120-1HE24-0BB4**		1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			**3RA2120-1JE24-0BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	21-1KA20			**3RA2120-1KE24-0BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2BB40		**3RA2120-4AE26-0BB4**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2BB40		**3RA2120-4BE27-0BB4**		1	1 unit	41D
	11	22	16 ... 22	21-4CA20			**3RA2120-4CE27-0BB4**		1	1 unit	41D
	11	22	18 ... 25	21-4DA20			**3RA2120-4DE27-0BB4**		1	1 unit	41D
	15	28	23 ... 28	21-4NA20			**3RA2120-4NE27-0BB4**		1	1 unit	41D
	15	29[4)]	27 ... 32	21-4EA20			**3RA2120-4EE27-0BB4**		1	1 unit	41D
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")											
S00	For load feeders for lower outputs, see this table at type of coordination "2".										
	1.5	3.6	3.5 ... 5	11-1FA20	15-2BB41	11-2AA00	**3RA2110-1FE15-1BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20			**3RA2110-1GE15-1BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20			**3RA2110-1HE15-1BB4**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA20	16-2BB41		**3RA2110-1JE16-1BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA20	17-2BB41		**3RA2110-1KE17-1BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2BB40		**3RA2110-4AE18-1BB4**		1	1 unit	41D

1) Push-in lugs, see "Accessories", page 8/52.
2) Auxiliary switches, see "Accessories", page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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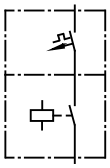
3RA21 direct-on-line starters > for 60 mm busbars *IE3/IE4 ready* AC-3e

Selection and ordering data

3RA2110

3RA2120

Direct-on-line starting



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0 and S2
With screw terminals

- With busbar adapter
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[1] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO,
  Contactor sizes S0 and S2: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[2]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module + Busbar adapter	Screw terminals				
							Article No.	Basic price per PU			
	kW	A	A								
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")				3RV20	3RT20	3RA	ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP01	1921-1DA00	**3RA2110-0BD15-1AP0**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 8US1251-	**3RA2110-0CD15-1AP0**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA10		5DS10	**3RA2110-0DD15-1AP0**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA10			**3RA2110-0ED15-1AP0**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA10			**3RA2110-0FD15-1AP0**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA10			**3RA2110-0GD15-1AP0**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA10			**3RA2110-0HD15-1AP0**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA10			**3RA2110-0JD15-1AP0**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA10			**3RA2110-0KD15-1AP0**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA10			**3RA2110-1AD15-1AP0**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA10			**3RA2110-1BD15-1AP0**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA10			**3RA2110-1CD15-1AP0**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA10			**3RA2110-1DD15-1AP0**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA10			**3RA2110-1ED15-1AP0**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1AP00	2921-1AA00	**3RA2120-1FD24-0AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 8US1251-	**3RA2120-1GD24-0AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10		5DT10	**3RA2120-1HD24-0AP0**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10			**3RA2120-1JD24-0AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA10			**3RA2120-1KD24-0AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA10	26-1AP00	2921-1AA00	**3RA2120-4AD26-0AP0**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA10	27-1AP00	+ 8US1251-	**3RA2120-4BD27-0AP0**		1	1 unit	41D
	11	22	16 ... 22	21-4CA10		5NT10	**3RA2120-4CD27-0AP0**		1	1 unit	41D
	11	22	18 ... 25	21-4DA10			**3RA2120-4DD27-0AP0**		1	1 unit	41D
	15	28	23 ... 28	21-4NA10			**3RA2120-4ND27-0AP0**		1	1 unit	41D
	15	29[3]	27 ... 32	21-4EA10			**3RA2120-4ED27-0AP0**		1	1 unit	41D
S2	15	29	22 ... 32	32-4EA10	35-1AP00	2931-1AA00	Size S2 is only available for self-assembly.				
	18.5	35	28 ... 36	32-4PA10		+ 8US1261-					
	18.5	35	32 ... 40	32-4UA10		6MT10					
	22	41	35 ... 45	32-4VA10	36-1AP00						
	22	41	42 ... 50	32-4WA10							
	30	55	49 ... 59	32-4XA10	37-1AP00						
	30	55	54 ... 65	32-4JA10							
	37[4]	66	62 ... 73	32-4KA10	38-1AP00						
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")											
S00	For load feeders for lower outputs, see this table at type of coordination "2".						ToC 1				
	1.5	3.6	3.5 ... 5	11-1FA10	15-1AP01	1921-1DA00	**3RA2110-1FD15-1AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 8US1251-	**3RA2110-1GD15-1AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10		5DS10	**3RA2110-1HD15-1AP0**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10	16-1AP01		**3RA2110-1JD16-1AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA10	17-1AP01		**3RA2110-1KD17-1AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1AP01		**3RA2110-4AD18-1AP0**		1	1 unit	41D

[1] Auxiliary switches, see "Accessories", page 8/45.

[2] The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[3] Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

[4] Maximum permissible current setting at motor starter protector 65 A, as the maximum permissible current of the 3RA2931-1AA00 link module is 65 A.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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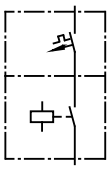
3RA2110

3RA2120

Direct-on-line starting



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0
With spring-loaded terminals

- With busbar adapter
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[1] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO,
  Contactor size S0: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[2]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module + Busbar adapter	Spring-loaded terminals				
							Article No.	Basic price per PU			
	kW	A	A								
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")											
				3RV20	**3RT20**	**3RA29**	ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2AP01	11-2AA00	**3RA2110-0BH15-1AP0**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 8US1251-	**3RA2110-0CH15-1AP0**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20		5DT11	**3RA2110-0DH15-1AP0**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			**3RA2110-0EH15-1AP0**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			**3RA2110-0FH15-1AP0**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			**3RA2110-0GH15-1AP0**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			**3RA2110-0HH15-1AP0**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			**3RA2110-0JH15-1AP0**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			**3RA2110-0KH15-1AP0**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			**3RA2110-1AH15-1AP0**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			**3RA2110-1BH15-1AP0**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			**3RA2110-1CH15-1AP0**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			**3RA2110-1DH15-1AP0**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			**3RA2110-1EH15-1AP0**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2AP00	21-2AA00	**3RA2120-1FH24-0AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20		+ 8US1251-	**3RA2120-1GH24-0AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20		5NT11[3]	**3RA2120-1HH24-0AP0**		1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			**3RA2120-1JH24-0AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	21-1KA20			**3RA2120-1KH24-0AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2AP00		**3RA2120-4AH26-0AP0**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2AP00		**3RA2120-4BH27-0AP0**		1	1 unit	41D
	11	22	16 ... 22	21-4CA20			**3RA2120-4CH27-0AP0**		1	1 unit	41D
	11	22	18 ... 25	21-4DA20			**3RA2120-4DH27-0AP0**		1	1 unit	41D
	15	28	23 ... 28	21-4NA20			**3RA2120-4NH27-0AP0**		1	1 unit	41D
	15	29[4]	27 ... 32	21-4EA20			**3RA2120-4EH27-0AP0**		1	1 unit	41D
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")											
S00	For load feeders for lower outputs, see this table at type of coordination "2".						ToC 1				
	1.5	3.6	3.5 ... 5	11-1FA20	15-2AP01	11-2AA00	**3RA2110-1FH15-1AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 8US1251-	**3RA2110-1GH15-1AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20		5DT11	**3RA2110-1HH15-1AP0**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA20	16-2AP01		**3RA2110-1JH16-1AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA20	17-2AP01		**3RA2110-1KH17-1AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2AP01		**3RA2110-4AH18-1AP0**		1	1 unit	41D

1) Auxiliary switches, see "Accessories", page 8/45.

2) The actual starting and rated data of the motor to be protected must be considered when selecting the units.

3) A 3RA2911-1CA00 spacer for height compensation on AC contactors size S0 with spring-loaded terminals is included in the scope of supply.

4) Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

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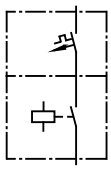
3RA21 direct-on-line starters > for 60 mm busbars IE3/IE4 ready AC-3e

3RA2110

3RA2120

Direct-on-line starting



Rated control supply voltage 24 V DC
With screw terminals

- With busbar adapter
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[1] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO,
  Contactor sizes S0 and S2: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[2]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module + Busbar adapter	Screw terminals				
							Article No.	Basic price per PU			
	kW	A	A								
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")											
				3RV20	3RT20	3RA	ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB41	1921-1DA00	**3RA2110-0BD15-1BB4**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 8US1251-	**3RA2110-0CD15-1BB4**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA10		5DS10	**3RA2110-0DD15-1BB4**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA10			**3RA2110-0ED15-1BB4**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA10			**3RA2110-0FD15-1BB4**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA10			**3RA2110-0GD15-1BB4**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA10			**3RA2110-0HD15-1BB4**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA10			**3RA2110-0JD15-1BB4**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA10			**3RA2110-0KD15-1BB4**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA10			**3RA2110-1AD15-1BB4**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA10			**3RA2110-1BD15-1BB4**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA10			**3RA2110-1CD15-1BB4**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA10			**3RA2110-1DD15-1BB4**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA10			**3RA2110-1ED15-1BB4**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1BB40	2921-1BA00	**3RA2120-1FD24-0BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 8US1251-	**3RA2120-1GD24-0BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10		5DT10	**3RA2120-1HD24-0BB4**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10			**3RA2120-1JD24-0BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA10			**3RA2120-1KD24-0BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA10	26-1BB40	2921-1BA00	**3RA2120-4AD26-0BB4**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA10	27-1BB40	+ 8US1251-	**3RA2120-4BD27-0BB4**		1	1 unit	41D
	11	22	16 ... 22	21-4CA10		5NT10	**3RA2120-4CD27-0BB4**		1	1 unit	41D
	11	22	18 ... 25	21-4DA10			**3RA2120-4DD27-0BB4**		1	1 unit	41D
	15	28	23 ... 28	21-4NA10			**3RA2120-4ND27-0BB4**		1	1 unit	41D
	15	29[3]	27 ... 32	21-4EA10			**3RA2120-4ED27-0BB4**		1	1 unit	41D
S2	15	29	22 ... 32	32-4EA10	35-1NB30	2931-1AA00	Size S2 is only available for self-assembly.				
	18.5	35	28 ... 36	32-4PA10		+ 8US1261-					
	18.5	35	32 ... 40	32-4UA10		6MT10					
	22	41	35 ... 45	32-4VA10	36-1NB30						
	22	41	42 ... 50	32-4WA10							
	30	55	49 ... 59	32-4XA10	37-1NB30						
	30	55	54 ... 65	32-4JA10							
	37[4]	66	62 ... 73	32-4KA10	38-1NB30						
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")											
S00	For load feeders for lower outputs, see this table at type of coordination "2".						ToC 1				
	1.5	3.6	3.5 ... 5	11-1FA10	15-1BB41	1921-1DA00	**3RA2110-1FD15-1BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 8US1251-	**3RA2110-1GD15-1BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10		5DS10	**3RA2110-1HD15-1BB4**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10	16-1BB41		**3RA2110-1JD16-1BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA10	17-1BB41		**3RA2110-1KD17-1BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1BB41		**3RA2110-4AD18-1BB4**		1	1 unit	41D

[1] Auxiliary switches, see "Accessories", page 8/45.

[2] The actual starting and rated data of the motor to be protected must be considered when selecting the units.

[3] Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

[4] Maximum permissible current setting at motor starter protector 65 A, as the maximum permissible current of the 3RA2931-1AA00 link module is 65 A.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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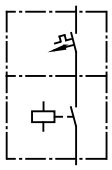
AC-3e ***IE3/IE4* ready** **3RA21 direct-on-line starters > for 60 mm busbars**

3RA2110

3RA2120

Direct-on-line starting



Rated control supply voltage 24 V DC
With spring-loaded terminals

- With busbar adapter
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[1] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
  Contactor size S00: 1 NO,
  Contactor size S0: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC[2]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module + Busbar adapter	Spring-loaded terminals				
							Article No.	Basic price per PU			
	kW	A	A								
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")											
				3RV20	**3RT20**	**3RA29**	ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2BB41	11-2AA00	**3RA2110-0BH15-1BB4**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 8US1251-	**3RA2110-0CH15-1BB4**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20		5DT11	**3RA2110-0DH15-1BB4**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			**3RA2110-0EH15-1BB4**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			**3RA2110-0FH15-1BB4**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			**3RA2110-0GH15-1BB4**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			**3RA2110-0HH15-1BB4**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			**3RA2110-0JH15-1BB4**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			**3RA2110-0KH15-1BB4**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			**3RA2110-1AH15-1BB4**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			**3RA2110-1BH15-1BB4**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			**3RA2110-1CH15-1BB4**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			**3RA2110-1DH15-1BB4**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			**3RA2110-1EH15-1BB4**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2BB40	21-2AA00	**3RA2120-1FH24-0BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20		+ 8US1251-	**3RA2120-1GH24-0BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20		5NT11	**3RA2120-1HH24-0BB4**		1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			**3RA2120-1JH24-0BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	21-1KA20			**3RA2120-1KH24-0BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2BB40		**3RA2120-4AH26-0BB4**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2BB40		**3RA2120-4BH27-0BB4**		1	1 unit	41D
	11	22	16 ... 22	21-4CA20			**3RA2120-4CH27-0BB4**		1	1 unit	41D
	11	22	18 ... 25	21-4DA20			**3RA2120-4DH27-0BB4**		1	1 unit	41D
	15	28	23 ... 28	21-4NA20			**3RA2120-4NH27-0BB4**		1	1 unit	41D
	15	29[3]	27 ... 32	21-4EA20			**3RA2120-4EH27-0BB4**		1	1 unit	41D
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")											
S00	For load feeders for lower outputs, see this table at type of coordination "2".						ToC 1				
	1.5	3.6	3.5 ... 5	11-1FA20	15-2BB41	11-2AA00	**3RA2110-1FH15-1BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 8US1251-	**3RA2110-1GH15-1BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20		5DT11	**3RA2110-1HH15-1BB4**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA20	16-2BB41		**3RA2110-1JH16-1BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA20	17-2BB41		**3RA2110-1KH17-1BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2BB40		**3RA2110-4AH18-1BB4**		1	1 unit	41D

[1] Auxiliary switches, see "Accessories", page 8/45.
[2] The actual starting and rated data of the motor to be protected must be considered when selecting the units.
[3] Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

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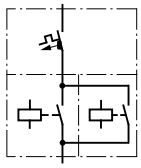
Selection and ordering data

3RA2210

3RA2220

Reversing operation



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0, S2 and S3
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- Without DIN-rail adapter for size S00
- With 2 DIN-rail adapters for size S0 for mechanical reinforcement (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With contactor sizes S0, S2 and S3, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ Link module + RH mounting kit[4)]/wiring kit	Screw terminals				
							Article No.	Basic price per PU			
	kW	A	A								
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")											
				3RV20	3RT20	3RA					
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP02	1921-1DA00	**3RA2210-0BA15-2AP0**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 2913-2AA1	**3RA2210-0CA15-2AP0**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA10			**3RA2210-0DA15-2AP0**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA10			**3RA2210-0EA15-2AP0**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA10			**3RA2210-0FA15-2AP0**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA10			**3RA2210-0GA15-2AP0**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA10			**3RA2210-0HA15-2AP0**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA10			**3RA2210-0JA15-2AP0**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA10			**3RA2210-0KA15-2AP0**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA10			**3RA2210-1AA15-2AP0**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA10			**3RA2210-1BA15-2AP0**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA10			**3RA2210-1CA15-2AP0**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA10			**3RA2210-1DA15-2AP0**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA10			**3RA2210-1EA15-2AP0**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1AP00	2921-1AA00	**3RA2220-1FB24-0AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2923-1BB1	**3RA2220-1GB24-0AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			**3RA2220-1HB24-0AP0**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10			**3RA2220-1JB24-0AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA10			**3RA2220-1KB24-0AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA10	26-1AP00		**3RA2220-4AB26-0AP0**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA10	27-1AP00		**3RA2220-4BB27-0AP0**		1	1 unit	41D
	11	22	16 ... 22	21-4CA10			**3RA2220-4CB27-0AP0**		1	1 unit	41D
	11	22	18 ... 25	21-4DA10			**3RA2220-4DB27-0AP0**		1	1 unit	41D
	15	28	23 ... 28	21-4NA10			**3RA2220-4NB27-0AP0**		1	1 unit	41D
	15	29[5)]	27 ... 32	21-4EA10			**3RA2220-4EB27-0AP0**		1	1 unit	41D
S2	15	29	22 ... 32	32-4EA10	35-1AP00	2931-1AA00	Size S2 is only available for self-assembly.				
	18.5	35	28 ... 36	32-4PA10		+ 2933-1BB1					
	18.5	35	32 ... 40	32-4UA10							
	22	41	35 ... 45	32-4VA10	36-1AP00						
	22	41	42 ... 50	32-4WA10							
	30	55	49 ... 59	32-4XA10	37-1AP00						
	30	55	54 ... 65	32-4JA10							
	37[6)]	66	62 ... 73	32-4KA10	38-1AP00						
S3	Size S3 available on request						Size S3 is only available for self-assembly				

1) Push-in lugs, see "Accessories", page 8/52.
2) Auxiliary switches, see "Accessories", page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) RH = Mounting kit for reversing operation and DIN-rail mounting in sizes S0 and S2.
5) Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.
6) Maximum permissible current setting at motor starter protector 65 A, as the maximum permissible current of the 3RA2931-1AA00 link module is 65 A.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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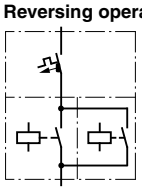
3RA2210

Reversing operation



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- Without DIN-rail adapter for size S00
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ Link module + RH mounting kit[4)]/wiring kit	Screw terminals			
							Article No.			
	kW	A	A							
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")				**3RV20**	**3RT20**	**3RA**				
S00	Load feeders for lower outputs, see table for type of coordination "2" on the previous page.									
	1.5	3.6	3.5 ... 5	11-1FA10	15-1AP02	1921-1DA00	**3RA2210-1FA15-2AP0**	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2913-2AA1	**3RA2210-1GA15-2AP0**	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			**3RA2210-1HA15-2AP0**	1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10	16-1AP02		**3RA2210-1JA16-2AP0**	1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA10	17-1AP02		**3RA2210-1KA17-2AP0**	1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1AP02		**3RA2210-4AA18-2AP0**	1	1 unit	41D

1) Push-in lugs, see "Accessories", page 8/52.
2) Auxiliary switches, see "Accessories", page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) RH = Mounting kit for reversing operation and DIN-rail mounting in sizes S0 and S2.

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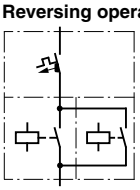
3RA22 reversing starters > for DIN-rail mounting or screw fixing *IE3/IE4* ready AC-3e

3RA2210

3RA2220

Reversing operation



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0
With spring-loaded terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- Without DIN-rail adapter for size S00
- With two DIN-rail adapters for size S0 for mechanical reinforcement (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With the contactor S0, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ Link module + RH mounting kit[4)]/wiring kit	Spring-loaded terminals				
							Article No.	Basic price per PU			
	kW	A	A								
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")				**3RV20**	**3RT20**	**3RA29**	ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2AP02	11-2AA00	**3RA2210-0BE15-2AP0**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 2913-2AA2	**3RA2210-0CE15-2AP0**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20			**3RA2210-0DE15-2AP0**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			**3RA2210-0EE15-2AP0**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			**3RA2210-0FE15-2AP0**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			**3RA2210-0GE15-2AP0**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			**3RA2210-0HE15-2AP0**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			**3RA2210-0JE15-2AP0**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			**3RA2210-0KE15-2AP0**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			**3RA2210-1AE15-2AP0**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			**3RA2210-1BE15-2AP0**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			**3RA2210-1CE15-2AP0**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			**3RA2210-1DE15-2AP0**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			**3RA2210-1EE15-2AP0**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2AP00	21-2AA00	**3RA2220-1FF24-0AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20		+ 2923-1BB2[5)]	**3RA2220-1GF24-0AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20			**3RA2220-1HF24-0AP0**		1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			**3RA2220-1JF24-0AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	21-1KA20			**3RA2220-1KF24-0AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2AP00		**3RA2220-4AF26-0AP0**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2AP00		**3RA2220-4BF27-0AP0**		1	1 unit	41D
	11	22	16 ... 22	21-4CA20			**3RA2220-4CF27-0AP0**		1	1 unit	41D
	11	22	18 ... 25	21-4DA20			**3RA2220-4DF27-0AP0**		1	1 unit	41D
	15	28	23 ... 28	21-4NA20			**3RA2220-4NF27-0AP0**		1	1 unit	41D
	15	29[6)]	27 ... 32	21-4EA20			**3RA2220-4EF27-0AP0**		1	1 unit	41D
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")											
S00	For load feeders for lower outputs, see this table at type of coordination "2".						ToC 1				
	1.5	3.6	3.5 ... 5	11-1FA20	15-2AP02	11-2AA00	**3RA2210-1FE15-2AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 2913-2AA2	**3RA2210-1GE15-2AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20			**3RA2210-1HE15-2AP0**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA20	16-2AP02		**3RA2210-1JE16-2AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA20	17-2AP02		**3RA2210-1KE17-2AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2AP02		**3RA2210-4AE18-2AP0**		1	1 unit	41D

1) Push-in lugs, see "Accessories", page 8/52.
2) Auxiliary switches, see "Accessories", page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) RH = Mounting kit for reversing operation and DIN-rail mounting in size S0.
5) The RH mounting kit also includes the 3RA2911-1CA00 spacer for height compensation on AC contactors size S0 with spring-loaded terminals.
6) Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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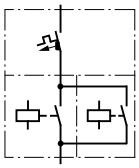
3RA2210

3RA2220

Reversing operation



Rated control supply voltage 24 V DC
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- Without DIN-rail adapter for size S00
- With two DIN-rail adapters for size S0 for mechanical reinforcement (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With contactor sizes S0, S2 and S3, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ Link module + RH mounting kit[4)]/wiring kit	Screw terminals			
							Article No.			
	kW	A	A							
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")										
				3RV20	3RT20	3RA	ToC 2			
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB42	1921-1DA00	**3RA2210-0BA15-2BB4**	1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 2913-2AA1	**3RA2210-0CA15-2BB4**	1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA10			**3RA2210-0DA15-2BB4**	1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA10			**3RA2210-0EA15-2BB4**	1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA10			**3RA2210-0FA15-2BB4**	1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA10			**3RA2210-0GA15-2BB4**	1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA10			**3RA2210-0HA15-2BB4**	1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA10			**3RA2210-0JA15-2BB4**	1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA10			**3RA2210-0KA15-2BB4**	1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA10			**3RA2210-1AA15-2BB4**	1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA10			**3RA2210-1BA15-2BB4**	1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA10			**3RA2210-1CA15-2BB4**	1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA10			**3RA2210-1DA15-2BB4**	1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA10			**3RA2210-1EA15-2BB4**	1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1BB40	2921-1BA00	**3RA2220-1FB24-0BB4**	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2923-1BB1	**3RA2220-1GB24-0BB4**	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			**3RA2220-1HB24-0BB4**	1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10			**3RA2220-1JB24-0BB4**	1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA10			**3RA2220-1KB24-0BB4**	1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA10	26-1BB40		**3RA2220-4AB26-0BB4**	1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA10	27-1BB40		**3RA2220-4BB27-0BB4**	1	1 unit	41D
	11	22	16 ... 22	21-4CA10			**3RA2220-4CB27-0BB4**	1	1 unit	41D
	11	22	18 ... 25	21-4DA10			**3RA2220-4DB27-0BB4**	1	1 unit	41D
	15	28	23 ... 28	21-4NA10			**3RA2220-4NB27-0BB4**	1	1 unit	41D
	15	29[5)]	27 ... 32	21-4EA10			**3RA2220-4EB27-0BB4**	1	1 unit	41D
S2	15	29	22 ... 32	32-4EA10	35-1NB30	2931-1AA00	Size S2 is only available for self-assembly.			
	18.5	35	28 ... 36	32-4PA10		+ 2933-1BB1				
	18.5	35	32 ... 40	32-4UA10						
	22	41	35 ... 45	32-4VA10	36-1NB30					
	22	41	42 ... 50	32-4WA10						
	30	55	49 ... 59	32-4XA10	37-1NB30					
	30	55	54 ... 65	32-4JA10						
	37[6)]	66	62 ... 73	32-4KA10	38-1NB30					
S3	Size S3 available on request						Size S3 is only available for self-assembly.			

1) Push-in lugs, see "Accessories", page 8/52.
2) Auxiliary switches, see "Accessories", page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) RH = Mounting kit for reversing operation and DIN-rail mounting in sizes S0 and S2.
5) Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.
6) Maximum permissible current setting at motor starter protector 65 A, as the maximum permissible current of the 3RA2931-1AA00 link module is 65 A.

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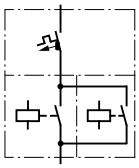
3RA22 reversing starters > for DIN-rail mounting or screw fixing *IE3/IE4* ready AC-3e

3RA2210

Reversing operation



Rated control supply voltage 24 V DC
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- Without DIN-rail adapter for size S00
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ Link module + Wiring kit	Screw terminals				
							Article No.	Basic price per PU			
	kW	A	A								
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")				**3RV20**	**3RT20**	**3RA**					
S00	Load feeders for lower outputs, see table for type of coordination "2" on the previous page.										
	1.5	3.6	3.5 ... 5	11-1FA10	15-1BB42	1921-1DA00	**3RA2210-1FA15-2BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2913-2AA1	**3RA2210-1GA15-2BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			**3RA2210-1HA15-2BB4**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10	16-1BB42		**3RA2210-1JA16-2BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA10	17-1BB42		**3RA2210-1KA17-2BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1BB42		**3RA2210-4AA18-2BB4**		1	1 unit	41D

1) Push-in lugs, see "Accessories", page 8/52.
2) Auxiliary switches, see "Accessories", page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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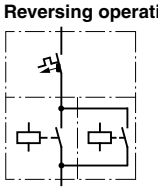
AC-3e ***IE3/IE4* ready** **3RA22 reversing starters > for DIN-rail mounting or screw fixing**

3RA2210

3RA2220

Reversing operation



Rated control supply voltage 24 V DC
With spring-loaded terminals

- Screw fixing with two push-in lugs per load feeder possible[1)]
- Without DIN-rail adapter for size S00
- With two DIN-rail adapters for size S0 for mechanical reinforcement (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[2)] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With the contactor S0, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC[3)]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ Link module + RH mounting kit[4)]/wiring kit	Spring-loaded terminals				
							Article No.	Basic price per PU			
	kW	A	A								
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")											
				3RV20	**3RT20**	**3RA29**	ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2BB42	11-2AA00	**3RA2210-0BE15-2BB4**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 2913-2AA2	**3RA2210-0CE15-2BB4**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20			**3RA2210-0DE15-2BB4**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			**3RA2210-0EE15-2BB4**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			**3RA2210-0FE15-2BB4**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			**3RA2210-0GE15-2BB4**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			**3RA2210-0HE15-2BB4**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			**3RA2210-0JE15-2BB4**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			**3RA2210-0KE15-2BB4**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			**3RA2210-1AE15-2BB4**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			**3RA2210-1BE15-2BB4**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			**3RA2210-1CE15-2BB4**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			**3RA2210-1DE15-2BB4**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			**3RA2210-1EE15-2BB4**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2BB40	21-2AA00	**3RA2220-1FF24-0BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20		+ 2923-1BB2	**3RA2220-1GF24-0BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20			**3RA2220-1HF24-0BB4**		1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			**3RA2220-1JF24-0BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	21-1KA20			**3RA2220-1KF24-0BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2BB40		**3RA2220-4AF26-0BB4**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2BB40		**3RA2220-4BF27-0BB4**		1	1 unit	41D
	11	22	16 ... 22	21-4CA20			**3RA2220-4CF27-0BB4**		1	1 unit	41D
	11	22	18 ... 25	21-4DA20			**3RA2220-4DF27-0BB4**		1	1 unit	41D
	15	28	23 ... 28	21-4NA20			**3RA2220-4NF27-0BB4**		1	1 unit	41D
	15	29[5)]	27 ... 32	21-4EA20			**3RA2220-4EF27-0BB4**		1	1 unit	41D
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")											
S00	For load feeders for lower outputs, see this table at type of coordination "2".						ToC 1				
	1.5	3.6	3.5 ... 5	11-1FA20	15-2BB42	11-2AA00	**3RA2210-1FE15-2BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 2913-2AA2	**3RA2210-1GE15-2BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20			**3RA2210-1HE15-2BB4**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA20	16-2BB42		**3RA2210-1JE16-2BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA20	17-2BB42		**3RA2210-1KE17-2BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2BB42		**3RA2210-4AE18-2BB4**		1	1 unit	41D

1) Push-in lugs, see "Accessories", page 8/52.
2) Auxiliary switches, see "Accessories", page 8/45.
3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
4) RH = Mounting kit for reversing operation and DIN-rail mounting in size S0.
5) Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

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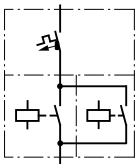
3RA22 reversing starters > for 60 mm busbars *IE3/IE4 ready* AC-3e

Selection and ordering data

3RA2210

3RA2220

Reversing operation



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0 and S2
With screw terminals

- With busbar adapter and device holder (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[1] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With contactor sizes S0 and S2, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC[2]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ Link module + RS mounting kit[3]/ wiring kit	Screw terminals			
							Article No.	Basic price per PU		
	kW	A	A							
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")				3RV20	3RT20	3RA	ToC 2			
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP02	1921-1DA00	**3RA2210-0BD15-2AP0**	1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 2913-1DB1	**3RA2210-0CD15-2AP0**	1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA10			**3RA2210-0DD15-2AP0**	1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA10			**3RA2210-0ED15-2AP0**	1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA10			**3RA2210-0FD15-2AP0**	1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA10			**3RA2210-0GD15-2AP0**	1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA10			**3RA2210-0HD15-2AP0**	1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA10			**3RA2210-0JD15-2AP0**	1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA10			**3RA2210-0KD15-2AP0**	1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA10			**3RA2210-1AD15-2AP0**	1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA10			**3RA2210-1BD15-2AP0**	1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA10			**3RA2210-1CD15-2AP0**	1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA10			**3RA2210-1DD15-2AP0**	1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA10			**3RA2210-1ED15-2AP0**	1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1AP00	2921-1AA00	**3RA2220-1FD24-0AP0**	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2923-1DB1	**3RA2220-1GD24-0AP0**	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			**3RA2220-1HD24-0AP0**	1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10			**3RA2220-1JD24-0AP0**	1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA10			**3RA2220-1KD24-0AP0**	1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA10	26-1AP00		**3RA2220-4AD26-0AP0**	1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA10	27-1AP00		**3RA2220-4BD27-0AP0**	1	1 unit	41D
	11	22	16 ... 22	21-4CA10			**3RA2220-4CD27-0AP0**	1	1 unit	41D
	11	22	18 ... 25	21-4DA10			**3RA2220-4DD27-0AP0**	1	1 unit	41D
	15	28	23 ... 28	21-4NA10			**3RA2220-4ND27-0AP0**	1	1 unit	41D
	15	29[4]	27 ... 32	21-4EA10			**3RA2220-4ED27-0AP0**	1	1 unit	41D
S2	15	29	22 ... 32	32-4EA10	35-1AP00	2931-1AA00	Size S2 is only available for self-assembly.			
	18.5	35	28 ... 36	32-4PA10		+ 2933-1DB1				
	18.5	35	32 ... 40	32-4UA10						
	22	41	35 ... 45	32-4VA10	36-1AP00					
	22	41	42 ... 50	32-4WA10						
	30	55	49 ... 59	32-4XA10	37-1AP00					
	30	55	54 ... 65	32-4JA10						
	37[5]	66	62 ... 73	32-4KA10	38-1AP00					

1) Auxiliary switches, see "Accessories", page 8/45.
2) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
3) RS = Mounting kit for reversing operation and busbar mounting.
4) Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.
5) Maximum permissible current setting at motor starter protector 65 A, as the maximum permissible current of the 3RA2931-1AA00 link module is 65 A.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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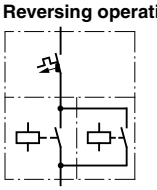
3RA2210

Reversing operation



Rated control supply voltage
50/60 Hz 230 V AC for S00
With screw terminals

- With busbar adapter and device holder (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[1] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.

Size	Standard three-phase motor 4-pole at 400 V AC[2]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ Link module + RS mounting kit[3]/wiring kit	**Screw terminals**			
							Article No.		Basic price per PU	
	kW	A	A							
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")				**3RV20**	**3RT20**	**3RA**	ToC 1			
S00	Load feeders for lower outputs, see table for type of coordination "2" on the previous page.									
	1.5	3.6	3.5 ... 5	11-1FA10	15-1AP02	1921-1DA00	**3RA2210-1FD15-2AP0**	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2913-1DB1	**3RA2210-1GD15-2AP0**	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			**3RA2210-1HD15-2AP0**	1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10	16-1AP02		**3RA2210-1JD16-2AP0**	1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA10	17-1AP02		**3RA2210-1KD17-2AP0**	1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1AP02		**3RA2210-4AD18-2AP0**	1	1 unit	41D

1) Auxiliary switches, see "Accessories", page 8/45.
2) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
3) RS = Mounting kit for reversing operation and busbar mounting.

8

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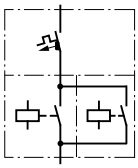
3RA22 reversing starters > for 60 mm busbars *IE3/IE4 ready* AC-3e

3RA2210

3RA2220

Reversing operation



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0
With spring-loaded terminals

- With busbar adapter and device holder (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[1] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With the contactor S0, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC[2]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ Link module + RS mounting kit[3]/wiring kit	Spring-loaded terminals				
							Article No.	Basic price per PU			
	kW	A	A								
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")											
				3RV20	**3RT20**	**3RA29**	ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2AP02	11-2AA00	**3RA2210-0BH15-2AP0**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 13-1DB2	**3RA2210-0CH15-2AP0**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20			**3RA2210-0DH15-2AP0**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			**3RA2210-0EH15-2AP0**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			**3RA2210-0FH15-2AP0**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			**3RA2210-0GH15-2AP0**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			**3RA2210-0HH15-2AP0**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			**3RA2210-0JH15-2AP0**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			**3RA2210-0KH15-2AP0**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			**3RA2210-1AH15-2AP0**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			**3RA2210-1BH15-2AP0**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			**3RA2210-1CH15-2AP0**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			**3RA2210-1DH15-2AP0**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			**3RA2210-1EH15-2AP0**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2AP00	21-2AA00	**3RA2220-1FH24-0AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20		+ 23-1DB2[4]	**3RA2220-1GH24-0AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20			**3RA2220-1HH24-0AP0**		1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			**3RA2220-1JH24-0AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	21-1KA20			**3RA2220-1KH24-0AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2AP00		**3RA2220-4AH26-0AP0**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2AP00		**3RA2220-4BH27-0AP0**		1	1 unit	41D
	11	22	16 ... 22	21-4CA20			**3RA2220-4CH27-0AP0**		1	1 unit	41D
	11	22	18 ... 25	21-4DA20			**3RA2220-4DH27-0AP0**		1	1 unit	41D
	15	28	23 ... 28	21-4NA20			**3RA2220-4NH27-0AP0**		1	1 unit	41D
	15	29[5]	27 ... 32	21-4EA20			**3RA2220-4EH27-0AP0**		1	1 unit	41D
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")											
S00	For load feeders for lower outputs, see this table at type of coordination "2".						ToC 1				
	1.5	3.6	3.5 ... 5	11-1FA20	15-2AP02	11-2AA00	**3RA2210-1FH15-2AP0**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 13-1DB2	**3RA2210-1GH15-2AP0**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20			**3RA2210-1HH15-2AP0**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA20	16-2AP02		**3RA2210-1JH16-2AP0**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA20	17-2AP02		**3RA2210-1KH17-2AP0**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2AP02		**3RA2210-4AH18-2AP0**		1	1 unit	41D

1) Auxiliary switches, see "Accessories", page 8/45.

2) The actual starting and rated data of the motor to be protected must be considered when selecting the units.

3) RS = Mounting kit for reversing operation and busbar mounting.

4) The RS mounting kit also includes the 3RA2911-1CA00 spacer for height compensation on AC contactors size S0 with spring-loaded terminals.

5) Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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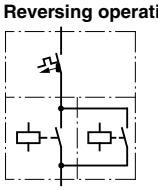
AC-3e ***IE3/IE4* ready** **3RA22 reversing starters > for 60 mm busbars**

3RA2210

3RA2220

Reversing operation



Rated control supply voltage 24 V DC
With screw terminals

- With busbar adapter and device holder (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[1] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With contactor sizes S0 and S2, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC[2]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ Link module + RS mounting kit[3]/wiring kit	Screw terminals				
							Article No.	Basic price per PU			
	kW	A	A								
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")				**3RV20**	**3RT20**	**3RA**					
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB42	1921-1DA00	**3RA2210-0BD15-2BB4**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 2913-1DB1	**3RA2210-0CD15-2BB4**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA10			**3RA2210-0DD15-2BB4**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA10			**3RA2210-0ED15-2BB4**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA10			**3RA2210-0FD15-2BB4**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA10			**3RA2210-0GD15-2BB4**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA10			**3RA2210-0HD15-2BB4**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA10			**3RA2210-0JD15-2BB4**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA10			**3RA2210-0KD15-2BB4**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA10			**3RA2210-1AD15-2BB4**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA10			**3RA2210-1BD15-2BB4**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA10			**3RA2210-1CD15-2BB4**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA10			**3RA2210-1DD15-2BB4**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA10			**3RA2210-1ED15-2BB4**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1BB40	2921-1BA00	**3RA2220-1FD24-0BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2923-1DB1	**3RA2220-1GD24-0BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			**3RA2220-1HD24-0BB4**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10			**3RA2220-1JD24-0BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA10			**3RA2220-1KD24-0BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA10	26-1BB40		**3RA2220-4AD26-0BB4**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA10	27-1BB40		**3RA2220-4BD27-0BB4**		1	1 unit	41D
	11	22	16 ... 22	21-4CA10			**3RA2220-4CD27-0BB4**		1	1 unit	41D
	11	22	18 ... 25	21-4DA10			**3RA2220-4DD27-0BB4**		1	1 unit	41D
	15	28	23 ... 28	21-4NA10			**3RA2220-4ND27-0BB4**		1	1 unit	41D
	15	29[4]	27 ... 32	21-4EA10			**3RA2220-4ED27-0BB4**		1	1 unit	41D
S2	15	29	22 ... 32	32-4EA10	35-1NB30	2931-1AA00	Size S2 is only available for self-assembly.				
	18.5	35	28 ... 36	32-4PA10		+ 2933-1DB1					
	18.5	35	32 ... 40	32-4UA10							
	22	41	35 ... 45	32-4VA10	36-1NB30						
	22	41	42 ... 50	32-4WA10							
	30	55	49 ... 59	32-4XA10	37-1NB30						
	30	55	54 ... 65	32-4JA10							
	37[5]	66	62 ... 73	32-4KA10	38-1NB30						
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")											
S00	For load feeders for lower outputs, see this table at type of coordination "2".										
	1.5	3.6	3.5 ... 5	11-1FA10	15-1BB42	1921-1DA00	**3RA2210-1FD15-2BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2913-1DB1	**3RA2210-1GD15-2BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			**3RA2210-1HD15-2BB4**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10	16-1BB42		**3RA2210-1JD16-2BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA10	17-1BB42		**3RA2210-1KD17-2BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1BB42		**3RA2210-4AD18-2BB4**		1	1 unit	41D

1) Auxiliary switches, see "Accessories", page 8/45.
2) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
3) RS = Mounting kit for reversing operation and busbar mounting.
4) Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.
5) Maximum permissible current setting at motor starter protector 65 A, as the maximum permissible current of the 3RA2931-1AA00 link module is 65 A.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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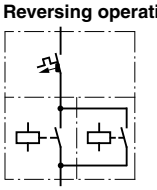
3RA22 reversing starters > for 60 mm busbars *IE3/IE4* ready AC-3e

3RA2210

3RA2220

Reversing operation



Rated control supply voltage 24 V DC
With spring-loaded terminals

- With busbar adapter and device holder (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches[1] on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With the contactor S0, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC[2]		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			Fuseless load feeder		PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ Link module + RS mounting kit[3]/wiring kit	Spring-loaded terminals				
							Article No.	Basic price per PU			
	kW	A	A								
Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")											
				3RV20	3RT20	3RA29	ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2BB42	11-2AA00	**3RA2210-0BH15-2BB4**		1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 13-1DB2	**3RA2210-0CH15-2BB4**		1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20			**3RA2210-0DH15-2BB4**		1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			**3RA2210-0EH15-2BB4**		1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			**3RA2210-0FH15-2BB4**		1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			**3RA2210-0GH15-2BB4**		1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			**3RA2210-0HH15-2BB4**		1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			**3RA2210-0JH15-2BB4**		1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			**3RA2210-0KH15-2BB4**		1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			**3RA2210-1AH15-2BB4**		1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			**3RA2210-1BH15-2BB4**		1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			**3RA2210-1CH15-2BB4**		1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			**3RA2210-1DH15-2BB4**		1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			**3RA2210-1EH15-2BB4**		1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2BB40	21-2AA00	**3RA2220-1FH24-0BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20		+ 23-1DB2	**3RA2220-1GH24-0BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20			**3RA2220-1HH24-0BB4**		1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			**3RA2220-1JH24-0BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	21-1KA20			**3RA2220-1KH24-0BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2BB40		**3RA2220-4AH26-0BB4**		1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2BB40		**3RA2220-4BH27-0BB4**		1	1 unit	41D
	11	22	16 ... 22	21-4CA20			**3RA2220-4CH27-0BB4**		1	1 unit	41D
	11	22	18 ... 25	21-4DA20			**3RA2220-4DH27-0BB4**		1	1 unit	41D
	15	28	23 ... 28	21-4NA20			**3RA2220-4NH27-0BB4**		1	1 unit	41D
	15	29[4]	27 ... 32	21-4EA20			**3RA2220-4EH27-0BB4**		1	1 unit	41D
Type of coordination "1" at I_q = 150 kA at 400 V (the motor starter protector is compatible with type of coordination "2")											
S00	For load feeders for lower outputs, see this table at type of coordination "2".						ToC 1				
	1.5	3.6	3.5 ... 5	11-1FA20	15-2BB42	11-2AA00	**3RA2210-1FH15-2BB4**		1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 13-1DB2	**3RA2210-1GH15-2BB4**		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20			**3RA2210-1HH15-2BB4**		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA20	16-2BB42		**3RA2210-1JH16-2BB4**		1	1 unit	41D
	5.5	11.5	9 ... 12.5	11-1KA20	17-2BB42		**3RA2210-1KH17-2BB4**		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2BB42		**3RA2210-4AH18-2BB4**		1	1 unit	41D

1) Auxiliary switches, see "Accessories", page 8/45.

2) The actual starting and rated data of the motor to be protected must be considered when selecting the units.

3) RS = Mounting kit for reversing operation and busbar mounting.

4) Suitable for use with IE3 and IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

The accessories listed here are parts and add-ons for the 3RA2 direct-on-line and reversing starters as well as components for the customer assembly of fuseless load feeders.

Selection and ordering data

Accessories for motor starter protectors

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E

3RV2901-1E

3RV2901-2E

3RV2901-1A

3RV2901-2A

Version	For motor starter protectors	Screw terminals		Spring-loaded terminals	
		Article No.	Price per PU	Article No.	Price per PU
	Size				
Auxiliary switches[1]					
Transverse auxiliary switches For front mounting					
1 CO	S00 ... S3	**3RV2901-1D**		--	
1 NO + 1 NC		**3RV2901-1E**		**3RV2901-2E**	
2 NO		**3RV2901-1F**		**3RV2901-2F**	
Lateral auxiliary switches For mounting on the left					
1 NO + 1 NC	S00 ... S3	**3RV2901-1A**		**3RV2901-2A**	

[1] Each motor starter protector can be fitted with one transverse and one lateral auxiliary switch. The lateral auxiliary switch with 2 NO + 2 NC is used without a transverse auxiliary switch.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E

3RV2902-1A..

3RV2902-2A..

Rated control supply voltage U_s				For motor starter protectors	Screw terminals		Spring-loaded terminals	
AC 50 Hz	AC 60 Hz	AC 50/60 Hz 100% ON period[1]	AC/DC 50/60 Hz, DC 5 s ON period[2]		Article No.	Price per PU	Article No.	Price per PU
V	V	V	V	Size				
Auxiliary releases for motor starter protectors[3]								
Undervoltage releases								
230	240	--	--	S00 ... S3	**3RV2902-1AP0**		**3RV2902-2AP0**	
Shunt releases								
--	--	210 ... 240	190 ... 330	S00 ... S3	**3RV2902-1DP0**		**3RV2902-2DP0**	

[1] The voltage range is valid for 100% (infinite) ON period. The response voltage lies at 0.9 of the lower limit of the voltage range.

[2] The voltage range is valid for 5 s ON period at 50/60 Hz AC and DC. The response voltage lies at 0.85 of the lower limit of the voltage range.

[3] One auxiliary release can be mounted on the right per motor starter protector (does not apply to 3RV21 motor starter protectors with overload relay function).

For the complete range of accessories for the motor starter protectors, see page 7/47 onwards.

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Accessories

Accessories for contactors

	For contactors Size	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Auxiliary switches for snapping onto the front of contactors							
3RH2911-1BA..			**Screw terminals**				
	Cable entry from below						
	S00 ... S3	1-pole					
		- 1 NO	**3RH2911-1BA10**		1	1 unit	41B
		- 1 NC	**3RH2911-1BA01**		1	1 unit	41B
3RH2911-1MA..	S00 ... S3	2-pole					
		- 1 NO + 1 NC	**3RH2911-1MA11**		1	1 unit	41B
		- 2 NO	**3RH2911-1MA20**		1	1 unit	41B
Auxiliary switches for contactors, for lateral mounting							
3RH2911-1DA..			**Screw terminals**				
	S00	2 NC	**3RH2911-1DA02**		1	1 unit	41B
	S00	1 NO + 1 NC	**3RH2911-1DA11**		1	1 unit	41B
	S00	2 NO	**3RH2911-1DA20**		1	1 unit	41B
	S0/S3	2 NC	**3RH2921-1DA02**		1	1 unit	41B
	S0/S3	1 NO + 1 NC	**3RH2921-1DA11**		1	1 unit	41B
	S0/S3	2 NO	**3RH2921-1DA20**		1	1 unit	41B
3RH2911-2DA..			**Spring-loaded terminals**				
	S00	2 NC	**3RH2911-2DA02**		1	1 unit	41B
	S00	1 NO + 1 NC	**3RH2911-2DA11**		1	1 unit	41B
	S00	2 NO	**3RH2911-2DA20**		1	1 unit	41B
	S0/S3	2 NC	**3RH2921-2DA02**		1	1 unit	41B
	S0/S3	1 NO + 1 NC	**3RH2921-2DA11**		1	1 unit	41B
	S0/S3	2 NO	**3RH2921-2DA20**		1	1 unit	41B
Connection module (adapter and plug) for contactors with screw terminals (can only be used for direct-on-line starters)							
3RT1926-4RD01	The connection module comprises an adapter and a motor feeder connector.		**Screw terminals**				
	Adapters Ambient temperature $T_{u\,max.}$ = 60 °C						
	S00	Rated operational current I_e at AC-3 and AC-3e/400 V: 20 A	**3RT1916-4RD01**		1	1 unit	41B
	S0	Rated operational current I_e at AC-3 and AC-3e/400 V: 25 A	**3RT1926-4RD01**		1	1 unit	41B
3RT1900-4RE01	**Motor feeder connector**						
	S00, S0	--	**3RT1900-4RE01**		1	1 unit	41B

For the complete range of accessories for the 3RT contactors, see page 3/69 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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For contactors Type	Version	Rated control supply voltage U_s[1] AC operation V AC	DC operation V DC	Article No.[2]	Price per PU	PU (UNIT, SET, M)	PS*	PG
Surge suppressors without LED for contactors (also for spring-loaded terminals)								
	Size S00							
	For plugging onto the front side of the contactors (with or without auxiliary switches)							
3RT2.1	**Varistors**	24 ... 48	24 ... 70	**3RT2916-1BB00**		1	1 unit	41B
		127 ... 240	150 ... 250	**3RT2916-1BD00**		1	1 unit	41B
3RT2.1	**RC element**	24 ... 48	24 ... 70	**3RT2916-1CB00**		1	1 unit	41B
		127 ... 240	150 ... 250	**3RT2916-1CD00**		1	1 unit	41B
3RT2.1	**Interference suppression diode**	--	12 ... 250	**3RT2916-1DG00**		1	1 unit	41B
3RT2.1	**Diode assemblies** (diode and Zener diode) For DC operation	--	12 ... 250	**3RT2916-1EH00**		1	1 unit	41B
	Size S0							
	For plugging onto the front side of the contactors (before installing the auxiliary switch)							
3RT2.2	**Varistors**[2]	24 ... 48	24 ... 70	**3RT2926-1BB00**		1	1 unit	41B
		127 ... 240	150 ... 250	**3RT2926-1BD00**		1	1 unit	41B
3RT2.2	**RC element**	24 ... 48	24 ... 70	**3RT2926-1CB00**		1	1 unit	41B
		127 ... 240	150 ... 250	**3RT2926-1CD00**		1	1 unit	41B
3RT2.2	**Diode assemblies**	--	24	**3RT2926-1ER00**		1	1 unit	41B
	For DC operation	--	30 ... 250	**3RT2926-1ES00**		1	1 unit	41B
	Size S2							
	For plugging onto the front side of the contactors (before installing the auxiliary switch)							
3RT2.3	**Varistors**[2]	24 ... 48	--	**3RT2936-1BB00**		1	1 unit	41B
		127 ... 240	--	**3RT2936-1BD00**		1	1 unit	41B
3RT2.3	**RC element**	24 ... 48	24 ... 70	**3RT2936-1CB00**		1	1 unit	41B
		127 ... 240	150 ... 250	**3RT2936-1CD00**		1	1 unit	41B
3RT2.3	**Diode assemblies**	--	24	**3RT2936-1ER00**		1	1 unit	41B
	For DC operation	--	30 ... 250	**3RT2936-1ES00**		1	1 unit	41B
	Size S3							
	For plugging onto the front side of the contactors (before installing the auxiliary switch)							
3RT2.4	**Varistors**[2]	24 ... 48	--	**3RT2936-1BB00**		1	1 unit	41B
		127 ... 240	--	**3RT2936-1BD00**		1	1 unit	41B
3RT2.4	**Diode assemblies**	--	24	**3RT2936-1ER00**		1	1 unit	41B
	For DC operation	--	30 ... 250	**3RT2936-1ES00**		1	1 unit	41B
	For plugging into the two recesses on the left of the connection block for auxiliary switches and coils A1 and A2. The connecting cables are wired to A1 and A2, see also page 3/11.							
3RT2.4	**RC element**	24 ... 48	24 ... 70	**3RT2946-1CB00**		1	1 unit	41B
		127 ... 240	150 ... 250	**3RT2946-1CD00**		1	1 unit	41B

3RT2916-1B.00

3RT2926-1E.00

3RT2936-1B.00

3RT2936-1B.00

3RT2946-1C.00

1) Can be used for AC operation for 50/60 Hz.
Please inquire about further voltages.

2) The varistor is already integrated on the AC/DC contactors.

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Accessories

Accessories for the customer assembly of fuseless load feeders

	For motor starter protectors	For contactors	Control circuit voltage contactors	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Size	Size						
Link modules from motor starter protector to contactor[1]								
	Connection between motor starter protector and contactor with screw terminals			**Screw terminals**				
	Single-unit packaging							
3RA2921-1AA00	S00/S0	S00	AC/DC	**3RA1921-1DA00**		1	1 unit	41B
	S00/S0	S0	AC	**3RA2921-1AA00**		1	1 unit	41B
3RA2931-1AA00	S00/S0	S0	DC, AC/DC	**3RA2921-1BA00**		1	1 unit	41B
	S2	S2	AC, DC, AC/DC	**3RA2931-1AA00**		1	1 unit	41B
	S3	S3	AC, DC, AC/DC	**3RA1941-1AA00**		1	1 unit	41B
	Multi-unit packaging							
3RA1941-1AA00	S00/S0	S00	AC/DC	**3RA1921-1D**		1	10 units	41B
	S00/S0	S0	AC	**3RA2921-1A**		1	10 units	41B
	S00/S0	S0	DC, AC/DC	**3RA2921-1B**		1	10 units	41B
	S2	S2	AC, DC, AC/DC	**3RA2931-1A**		1	5 units	41B
	S3	S3	AC, DC, AC/DC	**3RA1941-1A**		1	5 units	41B
	Connection between motor starter protector and contactor with spring-loaded terminals			**Spring-loaded terminals**				
	Single-unit packaging							
3RA2911-2AA00	S00	S00	AC/DC	**3RA2911-2AA00**		1	1 unit	41B
	S0	S0	AC[2], DC, AC/DC	**3RA2921-2AA00**		1	1 unit	41B
	Multi-unit packaging							
	S00	S00	AC/DC	**3RA2911-2A**		1	10 units	41B
	S0	S0	AC[2], DC, AC/DC	**3RA2921-2A**		1	10 units	41B
Hybrid link modules from motor starter protector to contactor[3]								
	Connection between motor starter protector with screw terminals and contactor with spring-loaded terminals							
	Single-unit packaging							
3RA2911-2FA00	S00	S00	AC/DC	**3RA2911-2FA00**		1	1 unit	41B
	S0	S0	AC[2], DC, AC/DC	**3RA2921-2FA00**		1	1 unit	41B
	Multi-unit packaging							
3RA2921-2FA00	S00	S00	AC/DC	**3RA2911-2F**		1	10 units	41B
	S0	S0	AC[2], DC, AC/DC	**3RA2921-2F**		1	10 units	41B

1) The link modules from motor starter protector to contactor cannot be used for the 3RV1011, 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV2.31-4K.1., 3RV2.31-4R.1., 3RV2.32-4K.1., 3RV2.32-4R.1., 3RV27 and 3RV28 motor starter protectors/circuit breakers.

2) A spacer for height compensation on AC contactors, size S0, is optionally available, see page 8/54.

3) The hybrid link modules for motor starter protector to contactor cannot be used for the 3RV1011, 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV27 and 3RV28 motor starter protectors/circuit breakers. They are only suitable for assembling direct-on-line starters.

Note:

Link modules can be used in

- Size S00 up to max. 16 A
- Size S0 up to max. 32 A
- Size S2 up to max. 65 A

Hybrid link modules can be used in

- Size S00 up to max. 16 A
- Size S0 up to max. 32 A

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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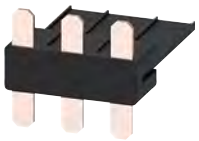
	For motor starter protectors	For 3RW30, 3RW40 soft starters; 3RF34 solid-state contactors	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Size	Size					
Link modules for motor starter protector to soft starter[1] and motor starter protector to solid-state contactor[1]							
3RA2921-1BA00	Connection between motor starter protector and soft starter/solid-state contactor with screw terminals		**Screw terminals**				
	Single-unit packaging						
	S00/S0	S00/S0	**3RA2921-1BA00**		1	1 unit	41B
	S2[2]	S2	**3RA2931-1AA00**		1	1 unit	41B
	S3[3]	S3	**3RA1941-1AA00**		1	1 unit	41B
	Multi-unit packaging						
3RA2931-1AA00	S00/S0	S00/S0	**3RA2921-1B**		1	10 units	41B
	S2[2]	S2[2]	**3RA2931-1A**		1	5 units	41B
	S3[3]	S3[3]	**3RA1941-1A**		1	5 units	41B
	Connection between motor starter protector and soft starter with spring-loaded terminals		**Spring-loaded terminals**				
	Single-unit packaging						
 3RA1941-1AA00	S00	S00	**3RA2911-2GA00**		1	1 unit	41B
	S0	S0	**3RA2921-2GA00**		1	1 unit	41B
3RA2921-2GA00							

1) The link modules from motor starter protector to soft starter and motor starter protector to solid-state contactor cannot be used for the 3RV1011, 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV2.31-4K.1., 3RV2.31-4R.1., 3RV2.32-4K.1., 3RV2.32-4R.1., 3RV27 and 3RV28 motor starter protectors/circuit breakers.

2) To assemble the feeder between a motor starter protector and a soft starter in size S2, the 3RA2932-1CA00 DIN-rail adapter must be used.

3) It is only permitted to assemble the feeder between the motor starter protector and the soft starter in size S3 on a mounting plate.

Note:

Link modules can be used in

- Size S00 up to max. 16 A
- Size S0 up to max. 32 A
- Size S2 up to max. 65 A

8

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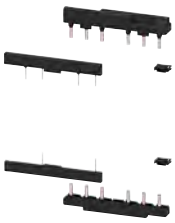
Accessories

PU (UNIT, SET, M) = 1
PS* = 1 unit (unless otherwise specified)
PG = 41B

3RA2923-2AA1



3RA2933-2AA1

3RA2923-2AA2

For contactors	Size	Version	Screw terminals		Spring-loaded terminals	
Type			Article No.	Price per PU	Article No.	Price per PU
Assembly kits for reversing contactor assemblies for making 3-pole contactor assemblies						
3RT201	**S00-S00**	The assembly kit contains: Mechanical interlock, two connecting clips for two contactors, wiring modules on the top and bottom				
		• For main, auxiliary and control circuits	**3RA2913-2AA1**		**3RA2913-2AA2**	
3RT202	**S0-S0**	The assembly kit contains: Mechanical interlock, two connecting clips for two contactors, wiring modules on the top and bottom				
		• For main, auxiliary and control circuits[1]	**3RA2923-2AA1**		--	
		• Only for main circuit[2]	--		**3RA2923-2AA2**	
3RT203	**S2-S2**	The assembly kit contains: Two connectors for two contactors, wiring modules on the top and bottom (3RA2934-2B mechanical interlock must be ordered separately, see page 3/108)				
		• For main and auxiliary circuits	**3RA2933-2AA1**		--	
		• Only for main circuit[3]	--		**3RA2933-2AA2**	
3RT204	**S3-S3**	The assembly kit contains: Two connectors for two contactors, wiring modules on the top and bottom (3RA2934-2B mechanical interlock must be ordered separately, see page 3/108)				
		• For main and auxiliary circuits	**3RA2943-2AA1**		--	
		• Only for main circuit[3]	--		**3RA2943-2AA2**	

1) Use of the 3RA2923-2AA1 assembly kit in conjunction with the 3RT202.-.....-3MA0 contactors is limited because the auxiliary switches in the basic unit are not allowed to be used on account of the permanently mounted auxiliary switch.

2) Version in size S0 with spring-loaded terminals:
Only the wiring modules for the main circuit are included.
No connecting clips are included for the auxiliary and control circuit.

3) Version in sizes S2 and S3 with spring-loaded terminals in the auxiliary and control circuits: Only the wiring modules for the main circuit are included.
A cable set is included for the auxiliary circuit.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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For contactors Size	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Safety main circuit connectors for two contactors						
	For switching two contactors in series	**Screw terminals**				
S00		**3RA2916-1A**		1	1 unit	41B
S0		**3RA2926-1A**		1	1 unit	41B
S2		**3RA2936-1A**		1	1 unit	41B

3RA2916-1A

For motor starter protectors	For contactors	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mounting rails for mounting contactors for the customer assembly of 3RA21 load feeders with busbar adapters for 60 mm systems							
		For the discrete configuration of direct-on-line starters a further mounting rail is needed for the contactor in addition to the mounting rail for the motor starter protector existing on the busbar adapter.					
--	S0	For pushing onto the device adapter, including fixing screws	**8US1998-7CB45**		1	10 units	14O

8US1998-7CB45

DIN-rail adapters							
		For mechanical fixing of motor starter protector and contactor; for snapping onto DIN rail or for screw fixing					
S00, S00	S00, S00	**Short, single-unit packaging**	**3RA2922-1BA00**		1	1 unit	41B
S00, S00	S00, S00	**Short, multi-unit packaging**	**3RA2922-1B**		1	5 units	41B
S00, S0	S00, S0	**Single-unit packaging**	**3RA2922-1AA00**		1	1 unit	41B
S00, S0	S00, S0	**Multi-unit packaging**	**3RA2922-1A**		1	5 units	41B
S2	S2	**Single-unit packaging**	**3RA2932-1AA00**		1	1 unit	41B
S2	S2	**Multi-unit packaging**	**3RA2932-1A**		1	5 units	41B
S3	S3	**Single-unit packaging**	**3RA2942-1AA00**		1	1 unit	41B
S3	S3	**Multi-unit packaging**	**3RA2942-1A**		1	5 units	41B

3RA2922-1AA00

		For mechanical fixing of motor starter protector and soft starter; for snapping onto DIN rail or for screw fixing					
S2	S2	**Single-unit packaging**	**3RA2932-1CA00**		1	1 unit	41B

3RA2932-1CA00

Side modules for DIN-rail adapters							
S00 ... S3	S00 ... S3	For DIN-rail adapters 10 mm wide, 96 mm long: for widening DIN-rail adapters when using lateral auxiliary switches, 2 units required	**3RA2902-1B**		1	10 units	41B

3RA2902-1B

Connecting wedges							
		For mechanical linking of DIN-rail adapters (2 units required for mounting)	**8US1998-1AA00**		100	100 units	14O

8US1998-1AA00

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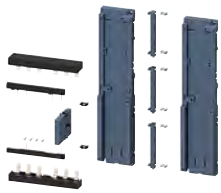
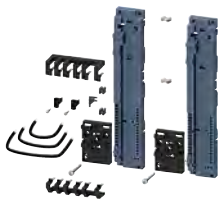
Accessories

	For motor starter protectors	For contactors	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
RH mounting kits for reversing operation and DIN-rail mounting								
	RH mounting kits for screw terminals			**Screw terminals**				
3RA2923-1BB1	S0	S0	Comprising: • Wiring kit for main and auxiliary circuit • Two DIN-rail adapters • Two connecting wedges • Mechanical interlocks • Two connecting clips for two contactors • Fixing accessories Link modules must be ordered separately.	**3RA2923-1BB1**		1	1 unit	41B
3RA2933-1BB1	S2	S2	Comprising: • Wiring kit for main and auxiliary circuit • Two DIN-rail adapters • Two side modules • Four connecting wedges • Mechanical interlocks • Two connectors for two contactors • Fixing accessories Link modules must be ordered separately.	**3RA2933-1BB1**		1	1 unit	41B
 3RA2943-1BB1	S3	S3	Comprising: • Wiring kit for main and auxiliary circuit • Two DIN-rail adapters • Three side modules • Six connecting wedges • Mechanical interlocks • Two connectors for two contactors • Fixing accessories Link modules must be ordered separately.	**3RA2943-1BB1**		1	1 unit	41B
	RH mounting kits for spring-loaded terminals			**Spring-loaded terminals**				
 3RA2923-1BB2	S0	S0	Comprising: • Wiring kit for main and auxiliary circuit • Two DIN-rail adapters • Two connecting wedges • Mechanical interlocks • Two connecting clips for two contactors • Two spacers • Fixing accessories Link modules must be ordered separately.	**3RA2923-1BB2**		1	1 unit	41B
Push-in lugs for screw fixing								
3RV2928-0B	S00, S0	--	For screw fixing of motor starter protector (of the load feeder) on mounting plates; 2 units are required for each motor starter protector	**3RV2928-0B**		100	10 units	41E

For overview graphics for RH mounting kits, see page 8/13 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Busbar adapters

8US1251-5DS10

8US1251-5DT11

8US1250-5AS10

8US1250-5AT10

For load feeders	Rated current	Connecting cable	Adapter length	Adapter width	Rated voltage	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	A	AWG	mm	mm	V					
Busbar adapters for 60 mm systems										
For copper busbars according to DIN 46433 Width: 12 mm and 30 mm Thickness: 5 mm and 10 mm and for T and double-T special profiles										
• For load feeders with screw terminals						**Screw terminals**				
S00/S0	25	12	200	45	690	**8US1251-5DS10**		1	1 unit	14O
S00 (motor starter protector)/ S0 (contactor)	25	12	260	45	690	**8US1251-5DT10**		1	1 unit	14O
S0	32	10	200	45	690	**8US1251-5NS10**		1	1 unit	14O
S0	32	10	260	45	690	**8US1251-5NT10**		1	1 unit	14O
S2	80	4	260	55	690	**8US1261-6MT10**		1	1 unit	14O
S2[1]	80	4	260	118	690	**8US1211-6MT10**		1	1 unit	14O
• For load feeders with spring-loaded terminals						**Spring-loaded terminals**				
S00	25	12	200	45	690	**8US1251-5DS11**		1	1 unit	14O
S00/S0	25	12	260	45	690	**8US1251-5DT11**		1	1 unit	14O
S0	32	10	200	45	690	**8US1251-5NS11**		1	1 unit	14O
S0	32	10	260	45	690	**8US1251-5NT11**		1	1 unit	14O
Accessories[2]										
Device holders For lateral attachment to busbar adapters	-- --	-- --	200 260	45 45	-- --	**8US1250-5AS10** **8US1250-5AT10**		1 1	1 unit 1 unit	14O 14O
Side modules For widening busbar adapters	--	--	200	9	--	**8US1998-2BJ10**		1	10 units	14O
Vibration and shock kits For high vibration and shock loads										
S2	--	--	--	--	--	**8US1998-1DA10**		1	1 unit	14O

[1] For the assembly of load feeders for reversing starters comprising a motor starter protector and two contactors.

[2] Additional mounting rails for busbar adapters, see page 8/51.

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Accessories

	For motor starter protectors Size	For contac-tors Size	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
RS mounting kits for reversing operation and 60 mm busbar systems								
			RS mounting kits for screw terminals	**Screw terminals**				
3RA2913-1DB1	S00, S0	S00	Comprising:	**3RA2913-1DB1**		1	1 unit	41B
	S0	S0	• Wiring kit for main and auxiliary circuit	**3RA2923-1DB1**		1	1 unit	41B
	S00	S0	• Busbar adapters	**3RA2923-1EB1**		1	1 unit	41B
			• Device holders					
			• Two connecting wedges					
			• Mechanical interlocks					
			• Two connecting clips for two contactors					
			• Fixing accessories					
			Link modules must be ordered separately.					
3RA2933-1DB1	S2	S2	Comprising:	**3RA2933-1DB1**		1	1 unit	41B
			• Wiring kit for main and auxiliary circuit					
			• Busbar adapters					
			• Mechanical interlocks					
			• Two connectors for two contactors					
			• Fixing accessories					
			Link modules must be ordered separately.					
			RS mounting kits for spring-loaded terminals	**Spring-loaded terminals**				
3RA2913-1DB2	S00	S00	Comprising:	**3RA2913-1DB2**		1	1 unit	41B
	S0	S0	• Wiring kit for main and auxiliary circuit	**3RA2923-1DB2**		1	1 unit	41B
			• Busbar adapters					
			• Device holders					
			• Two connecting wedges					
			• Mechanical interlocks					
			• Two connectors for two contactors					
			• Two spacers (for size S0 only)					
			• Fixing accessories					
			Link modules must be ordered separately.					

For overview graphics for RS mounting kits, see page 8/16 onwards.

	For motor starter protectors Size	For contac-tors Size	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Connecting wedges								
8US1998-1AA10			For mechanical linking of busbar adapters and device holders	**8US1998-1AA10**		1	50 units	14O
Spacers								
3RA2911-1CA00			For height compensation on AC contactors size S0 with spring-loaded terminals	**Spring-loaded terminals**				
	S0	S0	**Single-unit packaging**	**3RA2911-1CA00**		1	1 unit	41B
	S0	S0	**Multi-unit packaging**	**3RA2911-1C**		1	5 units	41B

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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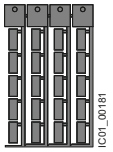
	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Tools for opening spring-loaded terminals						
3RA2908-1A	**Screwdriver** For all SIRIUS devices with spring-loaded terminals Length, approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**Spring-loaded terminals** **3RA2908-1A**		1	1 unit	41B
Blank labels						
 3RT2900-1SB20	**Unit labeling plates**[1] For SIRIUS devices 20 mm x 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B
Manuals						
	Configuration Manual for load feeders see https://support.industry.siemens.com/cs/ww/en/view/39714188.					

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

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3RV29 infeed system for load feeders

Overview

Types of infeed for 3RA2 fuseless load feeders

On the whole four different power infeed possibilities are available:

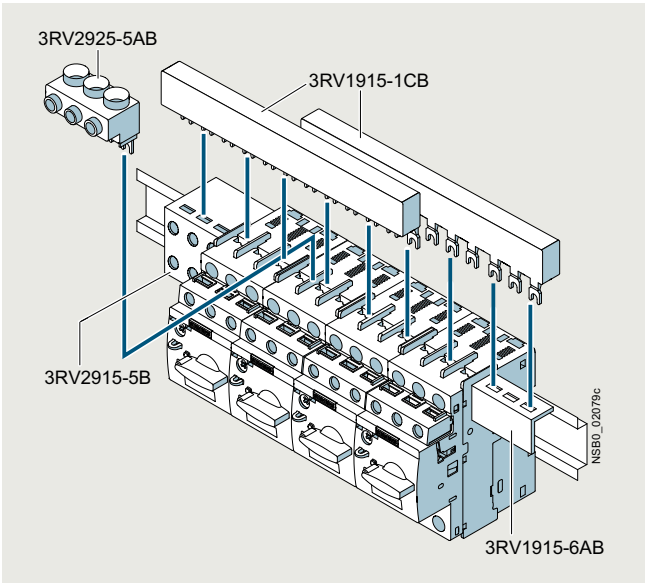
- Parallel wiring
- Use of 3-phase busbars (combination with SIRIUS motor starter protectors and contactors possible)
- 8US busbar adapters
- SIRIUS 3RV29 infeed systems

Insulated 3-phase busbar system

3-phase busbar systems provide an easy, time-saving and clearly arranged means of feeding 3RA2 load feeders with screw terminals. Different versions are available for sizes S00 and S0 and can also be used for the various different types of motor starter protectors.

The busbars are suitable for between two and five feeders. However, any kind of extension is possible by clamping the connection tags of an additional busbar (rotated 180°) underneath the terminals of the respective last motor starter protector.

A combination of feeders of different sizes is possible with sizes S00 and S0. Connecting pieces are available for this purpose. The motor starter protectors are supplied by appropriate infeed terminals.



SIRIUS 3-phase busbar system size S00/S0

The 3-phase busbar systems are finger-safe. They are designed for any short-circuit stress which can occur at the output side of connected motor starter protectors.

The 3-phase busbar systems can also be used to construct "Starters (Type E)" of size S0 or S2 according to UL/CSA. However, special infeed terminals must be used for this purpose, see page 7/52.

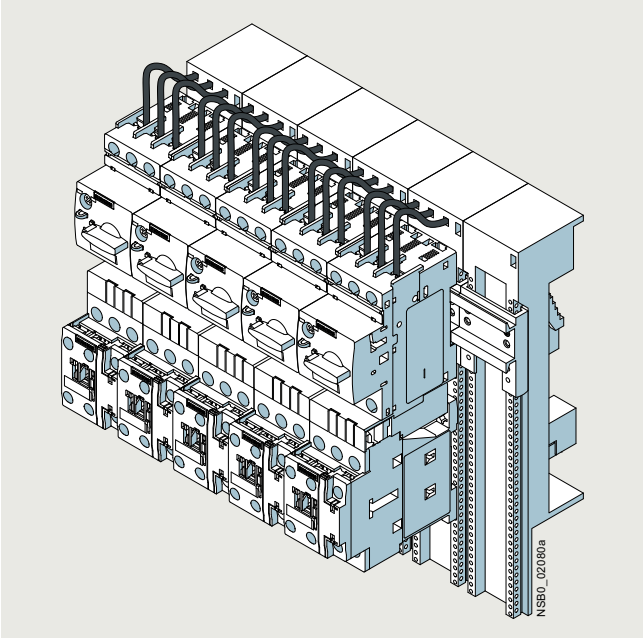
8US busbar adapters for 60 mm systems

The load feeders are mounted directly with the aid of busbar adapters on busbar systems with 60 mm center-to-center clearance in order to save space and to reduce infeed times and costs.

The busbar adapters for busbar systems with 60 mm center-to-center clearance are suitable for copper busbars with a width of 12 to 30 mm. The busbars can be 4 to 5 mm or 10 mm thick.

The feeders are snapped onto the adapter and connected on the line side. This prepared unit is then plugged directly onto the busbar system, and is thus connected both mechanically and electrically at the same time.

"Selection and ordering data", see page 8/53.



SIRIUS load feeders with busbar adapters snapped onto busbars

SIRIUS 3RV29 infeed system

The 3RV29 infeed system is a convenient means of energy supply and distribution for a group of several motor starter protectors or complete load feeders with screw or spring-loaded terminals up to size S0.

The system is based on a basic module complete with a lateral incoming unit (3-phase busbar with infeed) which has two slots.

Expansion modules are available for extending the system (3-phase busbars for system expansion).

3RV29 infeed system, see page 7/67.

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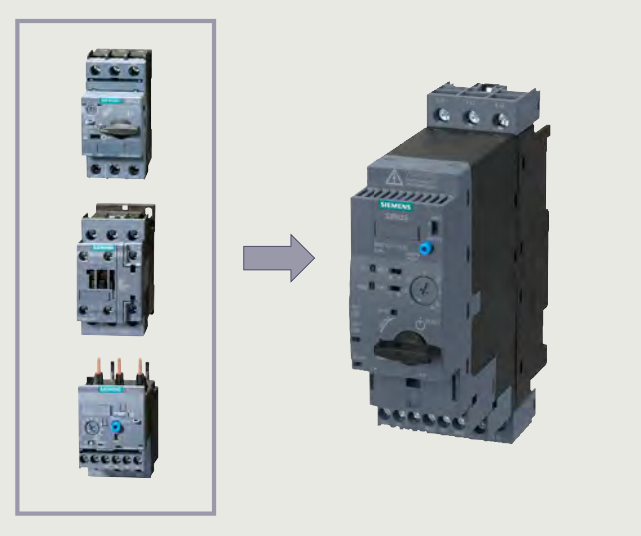
Overview

3RA6 fuseless compact starters and infeed system for 3RA6

3RA62 reversing starter

Integrated functionality

The SIRIUS 3RA6 compact starters are a generation of special load feeders with the integrated functionality of a motor starter protector, contactor and electronic overload relay. In addition, various functions of optional mountable accessories (e.g. auxiliary switches, surge suppressors) are already integrated in the SIRIUS compact starter.



3RA6 compact starters with the integrated functionality of a motor starter protector, contactor and electronic overload relay

Applications

SIRIUS compact starters can be used wherever standard three-phase motors or resistive loads up to 32 A (approx. 15 kW/400 V) are directly started or switched.

The compact starters are not suitable for the protection of DC loads.

Approvals according to IEC, UL, CSA and CCC standards have been issued for the compact starters.

More information

Homepage, see www.siemens.com/sirius-compact-starters
Industry Mall, see www.siemens.com/product?3RA6
Online configurator, see www.siemens.com/sirius/configurators

Very high operational reliability

The high short-circuit breaking capacity and defined shutdown when the end of service life is reached mean that the SIRIUS compact starter achieves a very high level of operational reliability that would otherwise have only been possible with considerable additional outlay. This sets it apart from devices with similar functionality.

Safe disconnection

The auxiliary switches (NC contacts) of the 3RA6 compact starters are designed as mirror contacts. This enables their use for safe disconnection, e.g. EMERGENCY STOP up to SIL 1 (IEC 62061) or PL c (ISO 13849-1) or, if used in conjunction with an additional infeed contactor, up to SIL 3 (IEC 62061) or PL e (ISO 13849-1).

Communication link through AS-Interface

For communication link through AS-Interface there is an AS-i add-on module available in several versions for mounting instead of the control circuit terminals on the SIRIUS compact starter.

The design of the AS-i add-on module permits a group of up to 62 feeders with a total of four cables to be connected to the control system. This reduces wiring work considerably compared to the parallel wiring method.

Communication link through IO-Link

Up to four compact starters in IO-Link version (reversing and direct-on-line starters) can be connected together and conveniently linked to the IO-Link master through a standardized IO-Link connection.

The IO-Link connection enables a high density of information in the local range.

For details regarding the communication link using IO-Link, see page 2/88 onwards.

The diagnostics data of the process collected by the 3RA6 compact starter, e.g. short circuit, end of service life, limit position, etc., are not only indicated on the compact starter itself but also transmitted to the higher-level control system through IO-Link.

Thanks to the optionally available operator panel, which can be installed in the control cabinet door, it is easy to control the 3RA6 compact starters with IO-Link from the control cabinet door.

Permanent wiring/easy replacement

Using the SIRIUS infeed system for 3RA6 (see page 8/76), it is possible to carry out the wiring in advance without a compact starter having to be connected.

A compact starter is very easily replaced simply by pulling it out of the device without disconnecting the wiring.

Even with screw fixing or mounting on a DIN rail there is no need to disconnect any wiring (on account of the removable main and control circuit terminals) in order to replace a compact starter.

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General data

Consistent solution from the infeed to the motor feeder

The SIRIUS feeder system for 3RA6 with integral PE bar is available as a user-friendly system for supplying summation current up to 100 A with a maximum conductor cross-section of 70 mm² and for direct connection of the motor cable without additional intermediate terminals.

Screw and spring-loaded terminals

The SIRIUS compact starters and the infeed system for 3RA6 are available with screw and spring-loaded terminals.

	Screw terminals
	Spring-loaded terminals
	The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

System configurator for engineering

A free system configurator is available to reduce further the amount of engineering work for selecting the required compact starters and matching infeed.

Use of load feeders in conjunction with IE3 and IE4 motors

Note:

For the use of SIRIUS 3RA6 compact starters in conjunction with highly efficient IE3 and IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

For more information, see page 1/8.

Types of infeed for the 3RA6 fuseless compact starters

On the whole four different infeed possibilities are available:

- Parallel wiring
- Use of 3-phase busbars (combination with SIRIUS motor starter protectors and SIRIUS contactors possible)
- 8US busbar adapters
- SIRIUS infeed system for 3RA6 (see page 8/76)

To comply with the clearance and creepage distances required according to UL 508, there are the following infeed possibilities:

Type of infeed	Infeed terminal (according to UL 508, Type E)	Type
Parallel wiring	Terminal block for "Self-Protected Combination Motor Controller (Type E)"	**3RV2928-1H**
3-phase busbars	3-phase infeed terminal for constructing "Starters (Type E)", UL 508	**3RV2925-5EB**
Infeed system for 3RA6	Infeed on left, 50/70 mm², screw terminal with 3 sockets, outgoing terminal with screw/spring-loaded terminals incl. PE bar	**3RA6813-8AB** (screw terminals), **3RA6813-8AC** (spring-loaded terminals)

SIRIUS 3RA6 compact starters

SIRIUS 3RA6 compact starters are universal motor feeders according to IEC 60947-6-2. As control and protective switching devices (CPS) they can connect, convey and disconnect the thermal, dynamic and electrical loads from short-circuit currents up to I_q = 53 kA, i.e. they are practically weld-free. They combine the functions of a motor starter protector, a contactor and an electronic overload relay in one enclosure. The versions available are the 45-mm-wide direct-on-line starters and the 90-mm-wide reversing starters.

The reversing starter version comes with not only an internal electrical interlock but also with a mechanical interlock to prevent simultaneous actuation of both directions of rotation.

The compact starters have isolating features in accordance with IEC 60947-2 and can be used as disconnector units (main control switch according to EN 60204 or VDE 0113). Isolation is effected by moving the handle into the "OFF" position; disconnection by means of the control contacts is not enough.

3RA6 fuseless compact starters are available in five current setting ranges. The 3RA61 and 3RA62 have two control voltage ranges (AC/DC), and the 3RA64 and 3RA65 have one control voltage range (DC):

Current setting range	At 400 V AC for three-phase motors Standard output *P*	Rated control supply voltage for 3RA61, 3RA62 compact starters	Rated control supply voltage for 3RA64, 3RA65 compact starters for IO-Link
A	kW	V AC/DC	V DC
0.1 ... 0.4	0.09	24	24
0.32 ... 1.25	0.37	110 ... 240	
1 ... 4	1.5		
3 ... 12	5.5		
8 ... 32	15		

Notes:

The 3RA2 load feeders can be used for fuseless load feeders > 32 A up to 65 A. Load feeders in size S3 up to 100 A are available for customer assembly (see also page 8/5).

The SENTRON 3VL circuit breakers and the SIRIUS 3RT contactors can be used for fuseless load feeders > 100 A.

Operating conditions

The SIRIUS 3RA6 compact starters are suitable for use in any climate. They are intended for use in enclosed rooms in which no severe operating conditions (such as dust, caustic vapors, hazardous gases) prevail. Suitable covers must be provided for installation in dusty and damp locations.

The permissible ambient temperature during operation is -20 to +60 °C. The rated short-circuit current I_{CS} according to IEC 60947-6-2 is 53 kA at 400 V.

Note:

The maximum permissible short-circuit currents of the device versions for the various line system configurations and voltages are available upon request from Technical Support: www.siemens.com/support-request

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Overload tripping times

The tripping time in the event of overload can be set on the device to normal starting conditions (CLASS 10) and to heavy starting conditions (CLASS 20). As the breaker mechanism still remains closed after an overload, resetting is possible by either local Manual RESET or Auto RESET[1)] after three minutes cooling time.

With Auto RESET, there is no need to open the control cabinet.

Diagnostics options

The compact starter provides the following diagnostics options:

- With LEDs
  - Connection to the control voltage
  - Position of the main contacts
- With mechanical display
  - Tripping due to overload
  - Tripping due to short circuit
  - Tripping due to malfunction (end of service life reached because of worn switching contacts or a worn switching mechanism or faults in the control electronics)

These states can also be evaluated in the higher-level control system:

- With parallel wiring using the integrated auxiliary and signaling switches of the compact starter
- With AS-Interface or IO-Link in even greater detail using the respective communications interface

Four complement versions for 3RA61 and 3RA62 compact starters

- For DIN-rail mounting or screw fixing:
  basic version including one pair of main circuit terminals and one pair of control circuit terminals
- For DIN-rail mounting or screw fixing when using the AS-i add-on module:
  without control circuit terminals because the AS-i add-on module is plugged on instead
- For use in the infeed system for 3RA6:
  without main circuit terminals because they are supplied with the infeed system and the expansion modules
- For use in the infeed system for 3RA6 and AS-i add-on module: without terminal complement (also for reordering when replacing the compact starter)

The control circuit terminals are always required by the compact starters for IO-Link; the main circuit terminals depend on the use of the infeed system.

1) The Auto RESET function is not available for versions 3RA6120-.B/.C with a rated current of 1.25 A and 3RA6250-.B/-.C with a rated current of 4 A. The reset can be alternatively carried out by disconnecting the supply voltage A1/A2 via the NC contacts 95/96 (overload signaling contact). The Auto RESET function is provided with this circuitry.

More components of the 3RA6

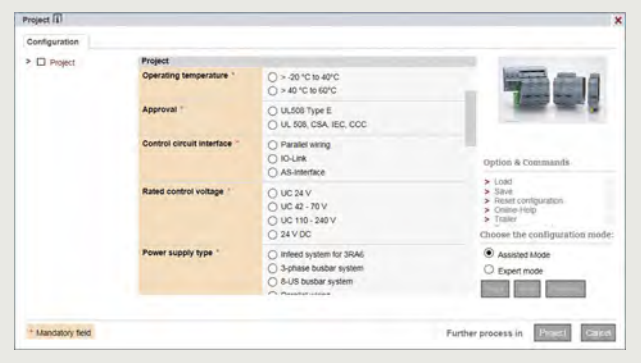
Apart from the control supply voltage, "Overload" (1 CO) and "Short circuit/Function fault" (1 NO) signaling contacts are already integrated into the 3RA61/3RA62 – and lockable via two 6-pole removable control circuit terminals. The 3RA61 has two auxiliary contacts (1 NO + 1 NC) for displaying the position of the main contacts. Unlike the 3RA61 direct-on-line starter, the 3RA62 reversing starter has one auxiliary contact (1 NO) per direction of rotation per main contact.

A slot for an optional auxiliary switch (either 2 NO, 2 NC or 1 NO + 1 NC) is available for the 3RA61 and 3RA64 direct-on-line starters. For the 3RA62 and 3RA65 reversing starters, two slots are available (auxiliary switches, see "Accessories", page 8/70).

Force-guided operation of the auxiliary contacts

Force-guided operation between individual auxiliary circuits exists for the compact starter in the version as a direct-on-line starter for parallel wiring (3RA61) between the auxiliary circuits of the NC contacts (NC 21-22) and the NO contacts (NO 13-14) in the basic unit.
In addition, the optional auxiliary switch offers force-guided contacts in the 3RA6913-1A version, each with one normally closed contact and one normally open contact.

Configurator



Configurator

Advantages:

- Simple usage – from individual compact starters or also with corresponding infeed system and AS-i connection
- In the final configuration, you will be presented with additional technical information such as CAD data and product data sheets as well as characteristic curves, operating instructions, manuals, etc.

See www.siemens.com/sirius/configurators

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General data

Article number scheme

Product versions		Article number										
Compact starters		**3RA6**	□	□	□	–	□	□	□	□	□	
Product function	Direct-on-line starter		**1**	**2**	**0**							For motor standard output 0.09 ... 15 kW[1]
	Reversing starter		**2**	**5**	**0**							For motor standard output 0.09 ... 15 kW[1]
	Direct-on-line starter for IO-Link		**4**	**0**	**0**							For motor standard output 0.09 ... 15 kW[1]
	Reversing starter for IO-Link		**5**	**0**	**0**							For motor standard output 0.09 ... 15 kW[1]
	Infeed system		**8**									
	Accessories		**9**									
	• Auxiliary switches			**1**	□							
	• Terminals			**2**	□							
	• IO-Link accessories			**3**	□							
	• Fixing elements			**4**	□							
	• Control kit			**5**	□							
Connection methods	No terminals						**0**					
	Screw terminals						**1**					
	Spring-loaded terminals						**2**					
Setting range	0.1 ... 0.4 A							**A**				
	0.32 ... 1.25 A							**B**				
	1 ... 4 A							**C**				
	3 ... 12 A							**D**				
	8 ... 32 A							**E**				
Rated control supply voltage	24 V DC								**B**	**4**		For direct-on-line/reversing starters for IO-Link
	24 V AC/DC								**B**	**3**		For direct-on-line/reversing starters
	110 ... 240 V AC/DC								**P**	**3**		For direct-on-line/reversing starters
Terminal complement versions	None										**0**	Without main and control circuit terminals
	1/1										**2**	With 1 pair of main circuit and 1 pair of control circuit terminals
	0/1										**3**	Without main circuit terminals, with 1 pair of control circuit terminals
	1/0										**4**	With 1 pair of main circuit terminals, without control circuit terminals
Special versions												
Example		**3RA6**	**1**	**2**	**0**	**–**	**0**	**A**	**B**	**3**	**0**	

[1] Standard three-phase motor, basis 4-pole at 400 V AC; the actual starting and rated data of the motor to be protected must be considered when selecting the units.

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

Product advantages

The SIRIUS 3RA6 compact starters offer a number of benefits:

- Compact design saves space in the control cabinet
- Little planning and assembly work and far less wiring thanks to a single complete unit with one article number
- Low variance and therefore low stock levels, with two wide voltage ranges and five wide setting ranges for the rated current
- High plant availability through integrated functionalities such as prevention of main contact welding and disconnection at end of service life
- Enhanced productivity through automatic device RESET[1] in case of overload and differentiated detection of overload and short circuit
- Easy checking of the wiring and testing of the motor direction prior to startup thanks to optional control kits
- Quick replacement of devices thanks to removable terminals with spring-loaded and screw terminals in the main and control circuit
- Efficient power distribution through the related SIRIUS infeed system for 3RA6
- Direct connection of the motor feeder cable to the SIRIUS infeed system for 3RA6 thanks to integrated PE bar
- Connecting and looping through of incoming feeders up to a cross-section of 70 mm^2
- When using the infeed system for 3RA6, possibility of directly connecting the motor cable without intermediate terminals
- Integration in Totally Integrated Automation thanks to the optional connection to AS-Interface or IO-Link

[1] The Auto RESET function is not available for versions 3RA6120-.B/.C with a rated current of 1.25 A and 3RA6250-.B/-.C with a rated current of 4 A. The reset can be alternatively carried out by disconnecting the supply voltage A1/A2 via the NC contacts 95/96 (overload signaling contact). The Auto RESET function is provided with this circuitry.

The SIRIUS 3RA6 compact starters create the basis for high-availability and future-proof machine concepts.

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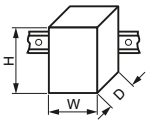
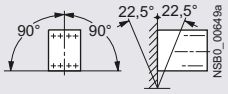
Technical specifications

More information	
Industry Mall, see www.siemens.com/product?3RA6 System Manual, see http://support.industry.siemens.com/cs/ww/en/view/27865747. FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16301/faq	Notes on security: In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept. For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Type			3RA61	3RA62	3RA64	3RA65
Mechanics and environment						
Mounting dimensions (W x H x D) • Screw terminals • Spring-loaded terminals		mm mm	45 x 170 x 165 45 x 191 x 165	90 x 170 x 165 90 x 191 x 165	45 x 170 x 165 45 x 191 x 165	90 x 170 x 165 90 x 191 x 165
Depth from DIN rail		mm	160			
Permissible ambient temperature • During operation (permissible operational current, see the following section "Electrical specifications") • During storage • During transport		°C °C °C	-20 ... +70, restriction as from 60 depending on design -55 ... +80 -55 ... +80			
Permissible mounting position						
Shock resistance (sine-wave pulse)			a = 60 m/s² = 6 g with 10 ms; for every 3 shocks in all axes			
Vibratory load			f = 4 ... 5.8 Hz; d = 15 mm; f = 5.8 ... 500 Hz; a = 20 m/s²; 10 cycles			
Degree of protection IP on the front	According to IEC 60529		IP20			
Touch protection on the front	According to IEC 60529		Finger-safe for vertical touching from the front			
Installation altitude		m	Up to 2 000 above sea level without restriction			
Relative air humidity		%	10 ... 90			
Pollution degree			3			
Electrical specifications						
Device standard			IEC 60947-6-2			
Maximum rated operational voltage U_e		V V	690 400 at 3RA6250-.E... and 3RA6500-.E... (Reversing starter 32 A versions)			
Rated frequency		Hz	50/60			
Rated insulation voltage U_i (pollution degree 3)		V	690			
Rated impulse withstand voltage U_{imp}		kV	6			
Rated current I_e[1] and setting range for overload release	0.1 ... 0.4 A 0.32 ... 1.25 A 1 ... 4 A 3 ... 12 A 8 ... 32 A	A A A A A	0.4 1.25 4 12 32			
Permissible operational current of the compact starter[2] When several compact starters are mounted side-by-side in the infeed system for 3RA6 (for more details on the various design versions, see System Manual) • For a control cabinet inside temperature of • For a control cabinet inside temperature of • For a control cabinet inside temperature of	 +40 °C +60 °C +70 °C	 % % %	 100 80 60			
Trip class (CLASS)	According to IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102)		10/20			
Overload function Ratio of lower to upper current mark			1:4			
Rated service short-circuit breaking capacity I_{CS} at 50/60 Hz, 400 V AC		kA	53			
Rated service short-circuit breaking capacity I_{CSIT} at 50/60 Hz 400/690 V AC in IT systems		kA	1.5			

[1] For the use of 3RA6 compact starters in conjunction with highly efficient IE3 and IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

[2] Details about installation conditions and the use of the compact starters, and particularly about the derating of the rated current, can be found in the System Manual.

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General data

Type			3RA61	3RA62	3RA64	3RA65
Electrical specifications (continued)						
Power loss $P_{V\ max}$ of all main conducting paths	0.4 A	mW	10			
Dependent on rated current I_e	1.25 A	mW	100			
(upper setting range)	4 A	W	1			
	12 A	W	1.8			
	32 A	W	5.4			
Max. switching frequency	AC-41	1/h	750			
	AC-43	1/h	250			
	AC-44	1/h	15			
No-load switching frequency		1/h	3 600		3 600, depending on the IO-Link communication time	
Isolating features of the compact starter	According to IEC 60947-3		✓ Isolation is assured only by moving the handle into the "OFF" position.			
Main and EMERGENCY OFF switch characteristics of the compact starter and accessories	According to IEC 60204		✓			
Protective separation	According to IEC 60947-2					
Control circuit to auxiliary circuit						
• Horizontal DIN rail		V	Up to 400			
• Other mounting position		V	Up to 250			
Auxiliary circuit to auxiliary circuit						
• Horizontal DIN rail		V	Up to 400			
• Other mounting position		V	Up to 250			
Main circuit to auxiliary circuit						
• Any mounting position		V	Up to 400			
EMC interference immunity	According to IEC 60947-1		Corresponds to degree of severity 3			
Conducted interference	BURST according to IEC 61000-4-4					
• In the main circuit		kV	4		4	
• In the auxiliary circuit		kV	3		2	
Conducted interference	SURGE according to IEC 61000-4-5					
• In the main circuit						
- Conductor - Ground		kV	4		2	
- Conductor - Conductor		kV	2		1	
• In the auxiliary circuit						
- Conductor - Ground		kV	2		0.5[1]	
- Conductor - Conductor		kV	1		0.5[1]	
Auxiliary switches						
• Integrated						
- Position of the main contacts			1 NO + 1 NC	2 NO	1 NO + 1 NC	2 NO
- Overload/short circuit and malfunction signal			1 CO/1 NO			
• Expandable						
- Position of the main contacts			2 NO, 2 NC, 1 NO, 1 NC			
Surge suppressors			Integrated (varistor)			
Electromagnetic operating mechanisms						
Control voltage		V	24 AC/DC		24 DC	
		V	110 ... 240 AC/DC		--	
Frequency	At AC	Hz	50/60 (± 5%)			
Operating range			0.7 ... 1.25 U_s		0.85 ... 1.2 U_s	
No-load switching frequency		1/h	3 600			
Line protection	At 10 kA	mm²	2.5			
	At 50 kA	mm²	4			
Shock resistance						
• Breaker mechanism OFF		*g*	25			
• Breaker mechanism ON		*g*	15			
Normal switching duty						
Making capacity			12 x I_n			
Breaking capacity			10 x I_n			
Switching capacity dependent on rated current	Up to 12 A	kW	5.5			
	Up to 32 A	kW	15			
Endurance in operating cycles						
• Electrical endurance	At I_e = 0.9 x I_n and 400 V		3 ... 10 000 000	2 x 3 ... 10 000 000	3 000 000	2 x 1 500 000

✓ Function available

1) To maintain maximum interference immunity in a harsh electromagnetic environment, additional overvoltage protection should be provided in the control circuit. The 5SD7432-4 plug-in surge arrester with remote signaling, for instance, is suitable, see Catalog LV 10.

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Type		**3RA6120-.☐B3., 3RA6250-.☐B3.** **☐ = A, B, C or D** **Rated operational current ≤ 12 A**		**3RA6120-.EB3., 3RA6250-.EB3.** **Rated operational current 32 A**	
Rated control supply voltage	**V**	**24 AC**	**24 DC**	**24 AC**	**24 DC**
Inrush peak current	A	0.59	0.47	0.59	0.47
Hold current	A	0.13	0.12	0.17	0.14
Closed	W	2.8	2.9	3.5	3.1
Operating times, typical					
• On	ms	< 160	< 140	< 160	< 140
• Off	ms	< 35	< 35	< 30	< 30

Type		**3RA6120-.☐P3., 3RA6250-.☐P3.** **☐ = A, B, C or D** **Rated operational current ≤ 12 A**				**3RA6120-.EP3., 3RA6250-.EP3.** **Rated operational current 32 A**			
Rated control supply voltage	**V**	**110 AC**	**240 AC**	**110 DC**	**240 DC**	**110 AC**	**240 AC**	**110 DC**	**240 DC**
Inrush peak current	A	0.24	0.40	0.17	0.29	0.24	0.40	0.17	0.29
Hold current	A	0.06	0.08	0.03	0.02	0.06	0.07	0.04	0.03
Closed	W	3.8	6	3.1	5.1	3.7	5.2	3.4	5.8
Operating times, typical									
• On	ms	< 160	< 140	< 150	< 140	< 160	< 140	< 150	< 140
• Off	ms	< 50	< 80	< 50	< 70	< 40	< 60	< 40	< 60

Type		**3RA6400-.☐B4., 3RA6500-.☐B4.** **☐ = A, B, C or D** **Rated operational current ≤ 12 A**	**3RA6400-.EB4., 3RA6500-.EB4.** **Rated operational current 32 A**
Rated control supply voltage	**V**	**24 DC**	**24 DC**
Inrush peak current	A	0.39	0.53
Hold current	A	0.13	0.15
Closed	W	2.9	3.4
Operating times, typical[1)]			
• On	ms	< 140	< 140
• Off	ms	< 35	< 30

1) Plus IO-Link communication.

Type				**3RA6**
Control circuit				
Rated operational voltage				
• External auxiliary switch			V	400/690
• Internal auxiliary switch			V	400/690
• Short-circuit signaling switch			V	400
• Overload signaling switch			V	400
Switching capacity				
• External auxiliary switch	**AC-15**			
	• Up to U_e = 230 V		A	6
	• Up to U_e = 400 V		A	3
	• Up to U_e = 289/500 V		A	2
	• Up to U_e = 400/690 V		A	1
	DC-13			
	• Up to U_e = 24 V		A	6
	• Up to U_e = 60 V		A	0.9
	• Up to U_e = 125 V		A	0.55
	• Up to U_e = 250 V		A	0.27
• Internal auxiliary switch	**AC-15**			
	• Up to U_e = 230 V		A	6
	• Up to U_e = 400 V		A	3
	• Up to U_e = 289/500 V		A	2
	• Up to U_e = 400/690 V		A	1
	DC-13			
	• Up to U_e = 24 V		A	10
	• Up to U_e = 60 V		A	2
	• Up to U_e = 125 V		A	1
	• Up to U_e = 250 V		A	0.27
	• Up to U_e = 480 V		A	0.1
• Signaling switch	**AC-15**			
	• Up to U_e = 230 V		A	3
	• Up to U_e = 400 V		A	1
	DC-13			
	• Up to U_e = 24 V		A	2
	• Up to U_e = 250 V		A	0.11

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General data

Type			3RA61, 3RA62	3RA64, 3RA65
External auxiliary switches, internal auxiliary switches				
Endurance in operating cycles				
• Mechanical endurance			10 000 000	3 000 000
• Electrical endurance	**AC-15, 230 V**			
	• Up to 6 A		200 000	
	• Up to 3 A		500 000	
	• Up to 1 A		2 000 000	
	• Up to 0.3 A		10 000 000	
	DC-13, 24 V			
	• Up to 6 A		30 000	
	• Up to 3 A		100 000	
	• Up to 0.5 A		2 000 000	
	• Up to 0.2 A		10 000 000	
	DC-13, 110 V			
	• Up to 1 A		40 000	
	• Up to 0.55 A		100 000	
	• Up to 0.3 A		300 000	
	• Up to 0.1 A		2 000 000	
	• Up to 0.04 A		10 000 000	
	DC-13, 220 V			
	• Up to 0.3 A		110 000	
	• Up to 0.1 A		650 000	
	• Up to 0.05 A		2 000 000	
	• Up to 0.018 A		10 000 000	
Contact reliability	At 17 V and 5 mA	Operating cycles	1 incorrect switching operation per 100 000 000	
Short-circuit protection				
• Short-circuit current $I_K \leq 1.1$ kA	Fuse links, operational class gG - NEOZED type 5SE - DIAZED type 5SB - LV HRC type 3NA	A	10	
• Short-circuit current $I_K < 400$ A	Miniature circuit breaker up to 230 V with C characteristic	A	10	
Signaling switches				
Endurance in operating cycles				
• Mechanical endurance			20 000	
• Electrical endurance AC-15	At 230 V and 3 A		6 050	
Contact reliability	At 17 V and 5 mA	Operating cycles	1 incorrect switching operation per 100 000 000	
Short-circuit protection				
• Short-circuit current $I_K \leq 1.1$ kA	Fuse links, operational class gG - NEOZED type 5SE - DIAZED type 5SB - LV HRC type 3NA	A	6	
• Short-circuit current $I_K < 400$ A	Miniature circuit breaker up to 230 V with C characteristic	A	6	
Overload (short-circuit current $I_K \leq 1.1$ kA)	Fuse links, operational class gG - NEOZED type 5SE - DIAZED type 5SB - LV HRC type 3NA	A	4	

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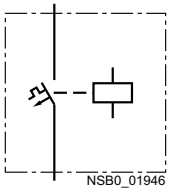
Selection and ordering data

3RA6120-1CB32

3RA6120-2EB32

Direct-on-line starting



Width 45 mm

Rated short-circuit current I_{CS} = 53 kA at 400 V

A set of 3RA6940-0A adapters is required for screw fixing.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 42F

Standard three-phase motor 4-pole at 400 V AC[1] Standard output *P*	Setting range for electronic overload release	Instantaneous electronic release	Article No.	Price per PU	Article No.	Price per PU
kW	A	A				
For use in the infeed system for 3RA6 and with AS-i add-on module or as a replacement device, without main and control circuit terminals						
0.09	0.1 ... 0.4	56	**3RA6120-0A□30**		**--**	
0.37	0.32 ... 1.25	56	**3RA6120-0B□30**		**--**	
1.5	1 ... 4	56	**3RA6120-0C□30**		**--**	
5.5	3 ... 12	168	**3RA6120-0D□30**		**--**	
15	8 ... 32	448	**3RA6120-0E□30**		**--**	
			Screw terminals		**Spring-loaded terminals**	
For DIN-rail mounting or screw fixing, with 1 pair of main circuit terminals and 1 pair of control circuit terminals						
0.09	0.1 ... 0.4	56	**3RA6120-1A□32**		**3RA6120-2A□32**	
0.37	0.32 ... 1.25	56	**3RA6120-1B□32**		**3RA6120-2B□32**	
1.5	1 ... 4	56	**3RA6120-1C□32**		**3RA6120-2C□32**	
5.5	3 ... 12	168	**3RA6120-1D□32**		**3RA6120-2D□32**	
15	8 ... 32	448	**3RA6120-1E□32**		**3RA6120-2E□32**	
For use in the infeed system for 3RA6, without main circuit terminals, with 1 pair of control circuit terminals						
0.09	0.1 ... 0.4	56	**3RA6120-1A□33**		**3RA6120-2A□33**	
0.37	0.32 ... 1.25	56	**3RA6120-1B□33**		**3RA6120-2B□33**	
1.5	1 ... 4	56	**3RA6120-1C□33**		**3RA6120-2C□33**	
5.5	3 ... 12	168	**3RA6120-1D□33**		**3RA6120-2D□33**	
15	8 ... 32	448	**3RA6120-1E□33**		**3RA6120-2E□33**	
Article No. supplements for rated control supply voltage						
• 24 V AC/DC			**B**		**B**	
• 110 ... 240 V AC/DC			**P**		**P**	
For DIN-rail mounting or screw fixing, for use with AS-i add-on module with 1 pair of main circuit terminals, without control circuit terminals Rated control supply voltage 24 V AC/DC						
0.09	0.1 ... 0.4	56	**3RA6120-1AB34**		**3RA6120-2AB34**	
0.37	0.32 ... 1.25	56	**3RA6120-1BB34**		**3RA6120-2BB34**	
1.5	1 ... 4	56	**3RA6120-1CB34**		**3RA6120-2CB34**	
5.5	3 ... 12	168	**3RA6120-1DB34**		**3RA6120-2DB34**	
15	8 ... 32	448	**3RA6120-1EB34**		**3RA6120-2EB34**	

[1] The actual starting and rated data of the motor to be protected must be considered when selecting the units.

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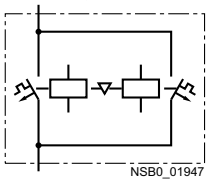
Selection and ordering data

3RA6250-1CP32

3RA6250-2DP32

Reversing operation



Width 90 mm

Rated short-circuit current I_{CS} = 53 kA at 400 V

Two sets of 3RA6940-0A adapters are required for screw fixing.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 42F

Standard three-phase motor 4-pole at 400 V AC[1] Standard output *P*	Setting range for electronic overload release	Instantaneous electronic release	Article No.	Price per PU	Article No.	Price per PU
kW	A	A				
For use in the infeed system for 3RA6, and with AS-i add-on module or as a replacement device, without main and control circuit terminals						
0.09	0.1 ... 0.4	56	**3RA6250-0A□30**		**--**	
0.37	0.32 ... 1.25	56	**3RA6250-0B□30**		**--**	
1.5	1 ... 4	56	**3RA6250-0C□30**		**--**	
5.5	3 ... 12	168	**3RA6250-0D□30**		**--**	
15	8 ... 32	448	**3RA6250-0E□30**		**--**	
			Screw terminals		**Spring-loaded terminals**	
For DIN-rail mounting or screw fixing, with 1 pair of main circuit terminals and 1 pair of control circuit terminals						
0.09	0.1 ... 0.4	56	**3RA6250-1A□32**		**3RA6250-2A□32**	
0.37	0.32 ... 1.25	56	**3RA6250-1B□32**		**3RA6250-2B□32**	
1.5	1 ... 4	56	**3RA6250-1C□32**		**3RA6250-2C□32**	
5.5	3 ... 12	168	**3RA6250-1D□32**		**3RA6250-2D□32**	
15	8 ... 32	448	**3RA6250-1E□32**		**3RA6250-2E□32**	
For use in the infeed system for 3RA6, without main circuit terminals, with 1 pair of control circuit terminals						
0.09	0.1 ... 0.4	56	**3RA6250-1A□33**		**3RA6250-2A□33**	
0.37	0.32 ... 1.25	56	**3RA6250-1B□33**		**3RA6250-2B□33**	
1.5	1 ... 4	56	**3RA6250-1C□33**		**3RA6250-2C□33**	
5.5	3 ... 12	168	**3RA6250-1D□33**		**3RA6250-2D□33**	
15	8 ... 32	448	**3RA6250-1E□33**		**3RA6250-2E□33**	
Article No. supplements for rated control supply voltage						
• 24 V AC/DC			**B**		**B**	
• 110 ... 240 V AC/DC			**P**		**P**	
For DIN-rail mounting or screw fixing, for use with AS-i add-on module with 1 pair of main circuit terminals, without control circuit terminals Rated control supply voltage 24 V AC/DC						
0.09	0.1 ... 0.4	56	**3RA6250-1AB34**		**3RA6250-2AB34**	
0.37	0.32 ... 1.25	56	**3RA6250-1BB34**		**3RA6250-2BB34**	
1.5	1 ... 4	56	**3RA6250-1CB34**		**3RA6250-2CB34**	
5.5	3 ... 12	168	**3RA6250-1DB34**		**3RA6250-2DB34**	
15	8 ... 32	448	**3RA6250-1EB34**		**3RA6250-2EB34**	

[1] The actual starting and rated data of the motor to be protected must be considered when selecting the units.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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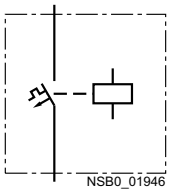
Selection and ordering data

3RA64 with 3RA6911-1A auxiliary switch

Direct-on-line starting



Rated control supply voltage 24 V DC

Width 45 mm

Rated short-circuit current I_{CS} = 53 kA at 400 V

A set of 3RA6940-0A adapters is required for screw fixing.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 42F

Standard three-phase motor 4-pole at 400 V AC[1] Standard output *P*	Setting range for electronic overload release	Instantaneous electronic release	Article No.	Price per PU	Article No.	Price per PU
			Screw terminals		**Spring-loaded terminals**	
kW	A	A				
For DIN-rail mounting or screw fixing, with 1 pair of main circuit terminals and 1 pair of control circuit terminals						
0.09	0.1 ... 0.4	56	**3RA6400-1AB42**		**3RA6400-2AB42**	
0.37	0.32 ... 1.25	56	**3RA6400-1BB42**		**3RA6400-2BB42**	
1.5	1 ... 4	56	**3RA6400-1CB42**		**3RA6400-2CB42**	
5.5	3 ... 12	168	**3RA6400-1DB42**		**3RA6400-2DB42**	
15	8 ... 32	448	**3RA6400-1EB42**		**3RA6400-2EB42**	
For use in the infeed system for 3RA6, without main circuit terminals, with 1 pair of control circuit terminals						
0.09	0.1 ... 0.4	56	**3RA6400-1AB43**		**3RA6400-2AB43**	
0.37	0.32 ... 1.25	56	**3RA6400-1BB43**		**3RA6400-2BB43**	
1.5	1 ... 4	56	**3RA6400-1CB43**		**3RA6400-2CB43**	
5.5	3 ... 12	168	**3RA6400-1DB43**		**3RA6400-2DB43**	
15	8 ... 32	448	**3RA6400-1EB43**		**3RA6400-2EB43**	

[1] The actual starting and rated data of the motor to be protected must be considered when selecting the units.

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*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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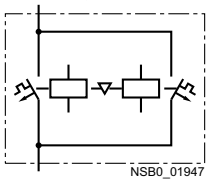
Selection and ordering data

3RA65 with 3RA6911-1A auxiliary switch

Reversing operation



Rated control supply voltage 24 V DC

Width 90 mm

Rated short-circuit current I_{CS} = 53 kA at 400 V

Two sets of 3RA6940-0A adapters are required for screw fixing.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 42F

Standard three-phase motor 4-pole at 400 V AC[1] Standard output *P*	Setting range for electronic overload release	Instantaneous electronic release	Article No.	Price per PU	Article No.	Price per PU
			Screw terminals		**Spring-loaded terminals**	
kW	A	A				
For DIN-rail mounting or screw fixing, with 1 pair of main circuit terminals and 1 pair of control circuit terminals						
0.09	0.1 ... 0.4	56	**3RA6500-1AB42**		**3RA6500-2AB42**	
0.37	0.32 ... 1.25	56	**3RA6500-1BB42**		**3RA6500-2BB42**	
1.5	1 ... 4	56	**3RA6500-1CB42**		**3RA6500-2CB42**	
5.5	3 ... 12	168	**3RA6500-1DB42**		**3RA6500-2DB42**	
15	8 ... 32	448	**3RA6500-1EB42**		**3RA6500-2EB42**	
For use in the infeed system for 3RA6, without main circuit terminals, with 1 pair of control circuit terminals						
0.09	0.1 ... 0.4	56	**3RA6500-1AB43**		**3RA6500-2AB43**	
0.37	0.32 ... 1.25	56	**3RA6500-1BB43**		**3RA6500-2BB43**	
1.5	1 ... 4	56	**3RA6500-1CB43**		**3RA6500-2CB43**	
5.5	3 ... 12	168	**3RA6500-1DB43**		**3RA6500-2DB43**	
15	8 ... 32	448	**3RA6500-1EB43**		**3RA6500-2EB43**	

[1] The actual starting and rated data of the motor to be protected must be considered when selecting the units.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

Accessories for SIRIUS 3RA6 compact starters

The following accessories are available specially for the 3RA6 compact starters:

- Infeed system for 3RA6, see page 8/76 onwards
- For AS-i add-on modules, see "Add-on modules for AS-Interface", page 8/74 onwards
- External auxiliary switches: Snap-on auxiliary switch as versions 2 NO, 2 NC and 1 NO + 1 NC with screw or spring-loaded terminals; the contacts of the auxiliary switch open and close jointly with the main contacts of the compact starter. The NC contacts are designed as mirror contacts.
- Control kit: Aid for manually closing the main contacts in order to check the wiring and motor direction under conditions of short-circuit protection
- Adapter for screw fixing the compact starter, including push-in lugs
- Main circuit terminal: Available with screw and spring-loaded terminals
- Main circuit terminal mixed connection method:
  With the main circuit terminal mixed connection method, it is also possible to switch from screw connection on the line side to spring-loaded terminals on the outgoing side in the main circuit.
  This means for example that several compact starters can be mounted side by side and be cost-efficiently connected using the 3-phase busbars on the infeed side. The motors are then connected directly by the quick and reliably contacting spring-loaded terminals.

Accessories for UL applications

The terminal block for "Self-Protected Combination Motor Controller (Type E)" is available for complying with the clearance and creepage distances required according to UL 508.

Accessories for infeed using 3-phase busbar systems

The 3RV1915-1.B 3-phase busbars can be used as an easy, time-saving and clearly arranged means of feeding SIRIUS 3RA6 compact starters with screw terminals. Motor starter protector sizes S00 and S0 can also be integrated.

The busbars are suitable for between two and five devices. However, any kind of extension up to a maximum summation current of 63 A is possible by clamping the tags of an additional busbar (rotated by 180°) underneath the terminals of the respective last circuit breaker.

Motor starter protectors S00 and S0 of the 3RV2 series can be combined in any way. The motor starter protectors are supplied by appropriate infeed terminals. Special infeed terminals are required for constructing "Starters (Type E)" according to UL/CSA.

The 3-phase busbar systems have touch protection but empty connection tags must be fitted with covers. They are designed for any short-circuit stress which can occur at the output side of connected SIRIUS 3RA6 compact starters or motor starter protectors.

Busbar adapters for 60 mm systems

The compact starters are mounted directly with the aid of busbar adapters on busbar systems with 60 mm center-to-center clearance in order to save space and to reduce infeed times and costs. These feeders are suitable for copper busbars with a width from 12 to 30 mm. The busbars can be 4 to 5 mm or 10 mm thick.

The 8US busbar system can be loaded with a maximum summation current of 630 A.

The "reversing starter" version requires a device holder alongside the busbar adapter for lateral mounting.

The compact starters are snapped onto the adapter and connected on the line side. This prepared unit is then plugged directly onto the busbar system, and is thus connected both mechanically and electrically at the same time.

For further accessories, such as incoming and outgoing terminals, flat copper profiles etc., see Catalog LV 10.

Accessories for SIRIUS 3RA6 compact starters in IO-Link version

The following accessories are available specially for the 3RA64, 3RA65 compact starters:

- Additional connecting cables for side-by-side mounting of up to four compact starters
- Operator panel for on-site control and diagnostics of up to four compact starters coupled to each other

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Accessories

Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories specially for 3RA6 compact starters					
3RA6950-0A **Control kit** For mechanical actuation of the compact starter	**3RA6950-0A**		1	1 unit	42F
3RA6940-0A **Adapters for screw fixing the compact starter** (set including push-in lugs) Direct-on-line starters require one set, reversing starters two sets.	**3RA6940-0A**		1	1 unit	42F
	Screw terminals				
3RA6911-1A **Auxiliary switches for compact starters**					
• 2 NO	**3RA6911-1A**		1	1 unit	42F
• 2 NC	**3RA6912-1A**		1	1 unit	42F
• 1 NO + 1 NC (these auxiliary contacts are force-guided)	**3RA6913-1A**		1	1 unit	42F
3RA6920-1A **Main circuit terminals** (line side and outgoing side)	**3RA6920-1A**		1	1 unit	42F
3RA6920-1B **Control circuit terminals** (1 set comprising 2 terminals)					
• For 3RA61	**3RA6920-1B**		1	1 unit	42F
• For 3RA62	**3RA6920-1C**		1	1 unit	42F
	Spring-loaded terminals				
3RA6911-2A **Auxiliary switches for compact starters**					
• 2 NO	**3RA6911-2A**		1	1 unit	42F
• 2 NC	**3RA6912-2A**		1	1 unit	42F
• 1 NO + 1 NC (these auxiliary contacts are force-guided)	**3RA6913-2A**		1	1 unit	42F
3RA6920-2A **Main circuit terminals** (line side and outgoing side)	**3RA6920-2A**		1	1 unit	42F
3RA6920-2B **Control circuit terminals** (1 set comprising 2 terminals)					
• For 3RA61	**3RA6920-2B**		1	1 unit	42F
• For 3RA62	**3RA6920-2C**		1	1 unit	42F

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories specially for 3RA6 compact starters (continued)					
3RA6920-3A **Main circuit terminals, mixed connection method** 1 set comprises: • 1 joint block on the line side with screw terminals • 1 joint block on the outgoing side with spring-loaded terminals	**3RA6920-3A**		1	1 unit	42F

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories specially for 3RA64, 3RA65 compact starters for IO-Link					
3RA6931-0A **Additional connecting cables (flat)** for side-by-side mounting of up to 4 compact starters					
• 10-pole					
- 8 mm[1]	**3RA6932-0A**		1	5 units	42F
- 200 mm[1]	**3RA6933-0B**		1	5 units	42F
• 14-pole					
- 8 mm[2]	**3RA6931-0A**		1	5 units	42F
- 200 mm	**3RA6933-0C**		1	5 units	42F
3RA6935-0A **Operator panels (set)** • 1 operator panel • 1 enabling module • 1 interface cover • 1 fixing terminal	**3RA6935-0A**		1	1 unit	42F
Enabling modules (replacement)	**3RA6936-0A**		1	1 unit	42F
Interface covers (replacement)	**3RA6936-0B**		1	5 units	42F
Connecting cables (round) For connecting the operator panel 10-pole, 2 000 mm	**3RA6933-0A**		1	1 unit	42F

[1] 10-pole connecting cables are required for EMERGENCY OFF group concepts.

[2] Is included in the scope of supply of the SIRIUS 3RA6 compact starter in IO-Link version.

Matching IO-Link masters, see page 2/98 onwards.

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminals for "Self-Protected Combination Motor Controllers (Type E)" according to UL 508 for infeed through parallel wiring with compact starters					
3RV2928-1H **Terminal blocks Type E** For extended clearance and creepage distances (1 and 2 inch) Note: UL 508 demands 1-inch clearance and 2-inch creepage distance at line side for "Combination motor controller (Type E)". Terminal blocks are not required for use according to CSA. These terminal blocks cannot be used in combination with 3RV19.5 3-phase busbars.	**3RV2928-1H**		1	1 unit	41E

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Accessories

3-phase busbars for infeed with 3RA6

Number of compact starters and motor starter protectors Without lateral accessories	Modular spacing	Rated current I_n at 690 V	For motor starter protectors	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm	A	Size					
For feeding several compact starters and/or motor starter protectors with screw terminals, mounted side-by-side on DIN rails, insulated, with touch protection.								
2	45	63	S00, S0[1]	**3RV1915-1AB**		1	1 unit	41E
3	45	63	S00, S0[1]	**3RV1915-1BB**		1	1 unit	41E
4	45	63	S00, S0[1]	**3RV1915-1CB**		1	1 unit	41E
5	45	63	S00, S0[1]	**3RV1915-1DB**		1	1 unit	41E

3RV1915-1AB

3RV1915-1BB

3RV1915-1CB

3RV1915-1DB

[1] Not suitable for 3RV21 motor starter protectors for motor protection with overload relay function and for 3RV27 and 3RV28 circuit breakers according to UL 489/CSA C22.2 No. 5.

Covers for connection tags of the 3-phase busbars

Version	Modular spacing	For motor starter protectors	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm	Size					
Touch protection for empty positions	--	S00, S0	**3RV1915-6AB**		1	10 units	41E

3RV1915-6AB

3-phase infeed terminals for 3-phase busbars according to IEC and for constructing "Starters (Type E)" according to UL 508

Conductor cross-section: Solid or stranded	Conductor cross-section: Finely stranded with end sleeve	Conductor cross-section: AWG cables, solid or stranded	Tightening torque	For compact starters and motor starter protectors	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
mm^2	mm^2	AWG	Nm	Size					
Connection from top									
2.5 … 25	2.5 … 16	10 ... 4	3 ... 4	S00, S0	**3RV2925-5EB**		1	1 unit	41E

3RV2925-5EB

3-phase infeed terminals for 3-phase busbars

Conductor cross-section: Solid or stranded	Conductor cross-section: Finely stranded with end sleeve	Conductor cross-section: AWG cables, solid or stranded	Tightening torque	For compact starters and motor starter protectors	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
mm^2	mm^2	AWG	Nm	Size					
Connection from below[1]									
2.5 … 25	2.5 … 16	10 ... 4	Input: 4; Output: 2 ... 2.5	S00, S0	**3RV2915-5B**		1	1 unit	41E

3RV2915-5B

[1] This terminal is connected in place of a compact starter, please take the space requirement (45 mm) into account.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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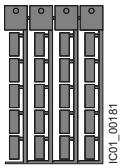
	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Busbar adapters for 60 mm systems						
8US1211-1NS10	For copper busbars according to DIN 46433 Width: 12 ... 30 mm Thickness: 4 ... 5 mm or 10 mm	**8US1211-1NS10**		1	1 unit	14O
Device holders for lateral mounting alongside the busbar adapter for 60 mm systems						
8US1250-1AA10	Required in addition to the busbar adapter for mounting a reversing starter	**8US1250-1AA10**		1	1 unit	14O
Tools for opening spring-loaded terminals						
3RA2908-1A	**Screwdriver** For all SIRIUS devices with spring-loaded terminals Length, approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**Spring-loaded terminals** **3RA2908-1A**		1	1 unit	41B
Blank labels						
 3RT2900-1SB20	**Unit labeling plates**[1] For SIRIUS devices 20 mm x 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B
Manuals						
	System Manual for 3RA6 compact starter and infeed system for the 3RA6, see https://support.industry.siemens.com/cs/ww/en/view/27865747					

1) PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/18).

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Overview

Various AS-i add-on modules are available for communication of the 3RA6 compact starter with the control system using AS-Interface:

- Standard version
- With two local inputs
- With two free external inputs
- With one free external input and one free external output
- With two free external outputs
- For local control

The AS-i add-on modules can be combined only in connection with compact starters with a rated control supply voltage of 24 V AC/DC.

AS-i add-on module for local control

With this new module it is also possible for the connected compact starter to be operated directly using simple switches, i.e. without recourse to AS-i communication, if required.

"Automatic" mode

NC contacts can be connected to the inputs Y2 and Y4 through the local terminals on the AS-i add-on module. If the "+" connections are connected simultaneously to both local inputs, the AS-i add-on module will be in "Automatic" mode, i.e. it will communicate with the control system through AS-Interface.

Local control

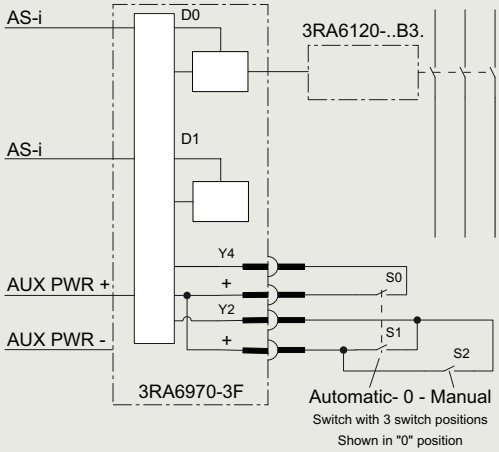
Opening the two inputs Y2 and Y4 will result in the direct disconnection of the compact starter. Operation through AS-i communication is finished and the compact starter can now be switched on and off directly using NO contacts (one NO contact per direction of rotation on the reversing starter).

"LED AUX Power" must light up green, the 24 V DC supply must be ensured and the AS-i control supply voltage must no longer be applied.

Resetting to "Automatic" mode

If a "1" signal is simultaneously applied at the local inputs, the availability bit DI 0 is switched to a "1" signal.

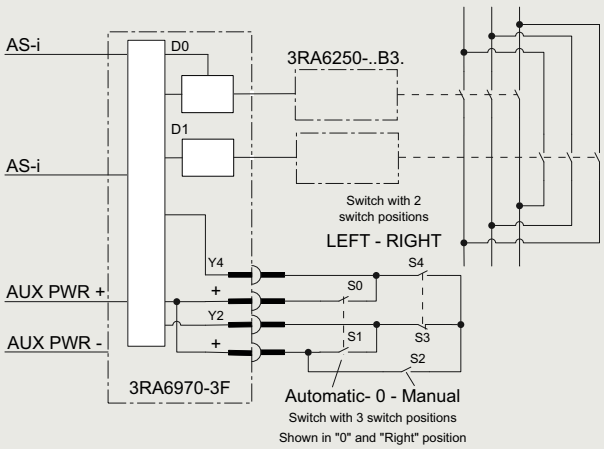
If AS-i communication is reset, the motor is first switched off and then on again when requested by the control system.



Switch with 3 switch positions			
Switch	Automatic	0	Manual
S0	Closed	Open	Open
S1	Closed	Open	Open
S2	Open	Open	Closed

NSB0_02096a

Circuit diagram example for controlling a 3RA6120 direct-on-line starter using an AS-i add-on module for local control



Switch with 3 switch positions			
Switch	Automatic	0	Manual
S0	Closed	Open	Open
S1	Closed	Open	Open
S2	Open	Open	Closed

Switch with 2 switch positions		
Switch	LEFT	RIGHT
S3	Open	Closed
S4	Closed	Open

NSB0_02097a

Circuit diagram example for controlling a 3RA6250 reversing starter using an AS-i add-on module for local control

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Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
AS-i add-on modules					
3RA6970-3A 3RA6970-3B to -3F	**Standard version** For communication of the compact starter with the control system through AS-Interface	**3RA6970-3A**	1	1 unit	42F
	With two local inputs For safe disconnection through local safety relays, e.g. cable-operated switches	**3RA6970-3B**	1	1 unit	42F
	With two free external inputs Replaces the digital standard inputs "Motor On" and "Group warning"	**3RA6970-3C**	1	1 unit	42F
	With one free external input and one free external output Replaces the digital standard input "Group warning"	**3RA6970-3D**	1	1 unit	42F
	With two free external outputs Only for direct-on-line starters, replaces the digital standard input "Motor CCW"	**3RA6970-3E**	1	1 unit	42F
	For local control Control of the compact starter optionally using AS-Interface or local switches	**3RA6970-3F**	1	1 unit	42F
Spare parts for AS-i add-on modules					
3RK1901-0NA00, 3RK1901-0PA00	**Connection plugs for data and auxiliary supply cable** With 2 insulation displacement terminations for standard stranded wires 2 x 0.5 ... 0.75 mm²				
	• Flat, yellow, extender	**3RK1901-0NA00**	1	5 units	42C
	• Flat, black, extender	**3RK1901-0PA00**	1	5 units	42C
Accessories for AS-i add-on modules					
3RK1904-2AB02	**AS-Interface addressing unit V3.0** • For AS-Interface modules and sensors and actuators with integrated AS-Interface according to AS-i specification V3.0 • For setting the AS-i address of standard slaves, and slaves with extended addressing mode (A/B slaves) • With input/output test function and many other commissioning functions • Battery operation with four type AA batteries (IEC LR6, NEDA 15) • Scope of supply: - Addressing unit with four batteries - Addressing cable, with M12 plug to addressing plug (hollow plug), length 1.5 m	**3RK1904-2AB02**	1	1 unit	42C

For matching AS-Interface masters, routers and power supply units, see pages 2/29, 2/41 and 2/67 onwards.

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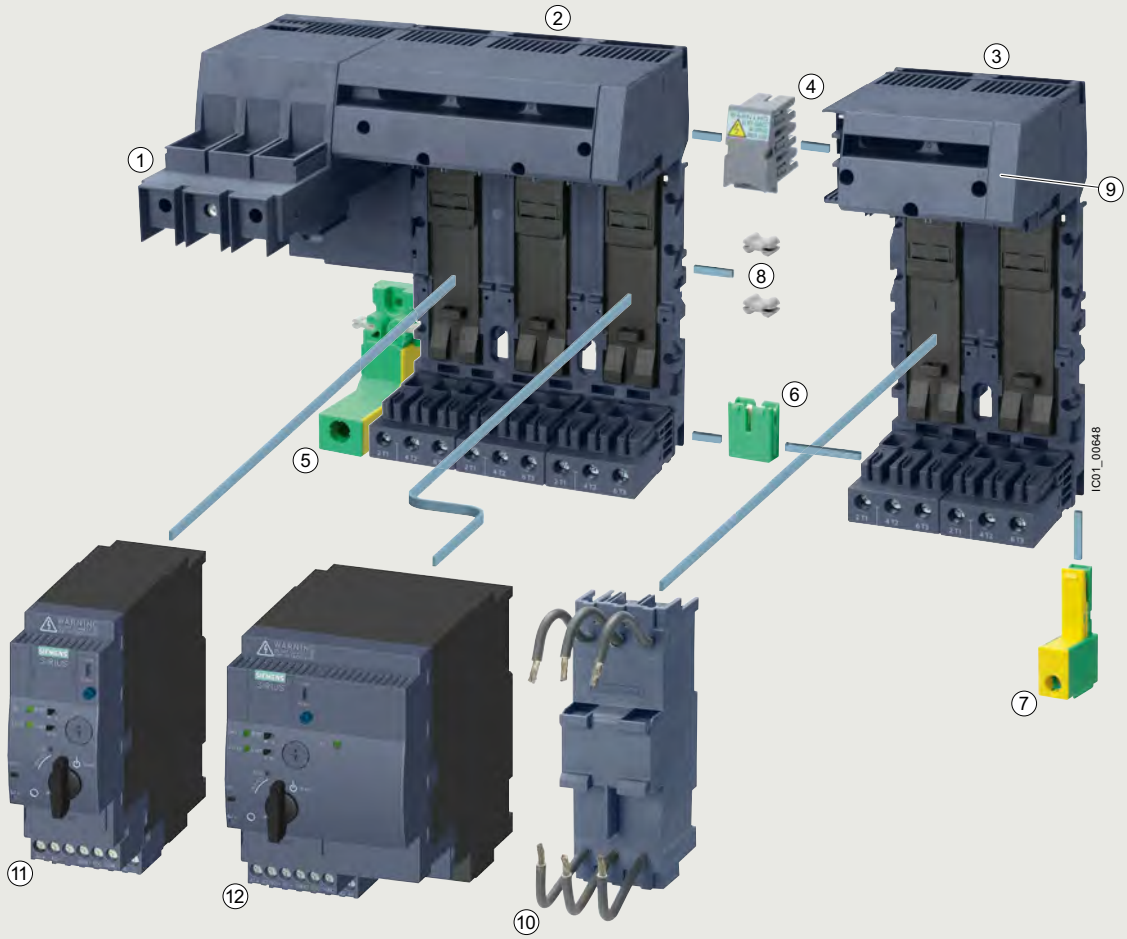
Infeed system for 3RA6

Overview

More information	
Homepage, see www.siemens.com/sirius-infeed-system Industry Mall, see www.siemens.com/product?3RA68	Online configurator, see www.siemens.com/sirius/configurators

The infeed system for 3RA6 compact starters enables far less wiring in the main circuit and, thanks to the easy exchangeability of the compact starters, reduces the usual downtimes for maintenance work during the plant's operating phase. The infeed system provides the possibility of completely prewiring the main circuit without a compact starter needing to be connected at the same time. As the result of the removable terminals in the main circuit, compact starters can be integrated in an infeed system in easy manner (without the use of tools).



1 Infeed terminal
2 3-socket expansion module
3 2-socket expansion module
4 Expansion plug
5 PE infeed
6 PE expansion plug
7 PE pick-off
8 Connecting wedges
9 End cover
10 45 mm adapter for SIRIUS motor starter protector size S0
11 3RA61 direct-on-line starter
12 3RA62 reversing starter

Infeed system for 3RA6 compact starters

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In addition, the integrated PE bar means it is optionally possible to connect the motor cable directly to the infeed system without additional intermediate terminals. The infeed system for 3RA6 compact starters is designed for summation currents up to 100 A with a maximum conductor cross-section of up to 70 mm^2 on the infeed terminal block.

The infeed system can be mounted on a DIN rail or flat surfaces.

① Infeed

The 3-phase infeed is available as an infeed with screw terminal (25/35 mm^2 up to 63 A or 50/70 mm^2 up to 100 A) and as an infeed with spring-loaded terminal (25/35 mm^2 up to 63 A).

The infeed with spring-loaded terminal can be fitted on the left as well as on the right of an expansion module.

The infeed with screw terminal is supplied only with a 3-socket expansion module and permanently fitted on the left side.

The infeeds with screw terminal enable connection of the main conductors (L1, L2, L3) either from above or from below.

The infeed with screw terminal is supplied complete with one end cover, the infeed with spring-loaded terminal complete with two end covers.

② 3-socket expansion module

The expansion module with three sockets for compact starters is available with screw terminals and with spring-loaded terminals.

Expansion modules enable the infeed system to be expanded and can be fitted to each other in any number.

Two expansion modules are held together with the help of two connecting wedges and one expansion plug. These assembly parts are included in the scope of supply of the respective expansion module.

When the infeed system for 3RA6 compact starters is used, the compact starters (plug-in modules) are easily assembled and disassembled even when live.

Optional possibilities:
- PE connection on motor outgoing side
- Outfeed for external auxiliary devices
- Connection to 3RV29 infeed system
- Integration of SIRIUS 3RV2 motor starter protectors size S0 up to 25 A (using 3RA6890-0BA adapter)

③ 2-socket expansion module

If only two instead of three additional sockets are required, then the 2-socket expansion module is the right choice. It has the same functionality as the 3-socket expansion module.

④ Expansion plug

Two expansion modules can be connected together using the expansion plug. Flexible expansion of the infeed system is thus possible.

⑤ PE infeed

This module enables a PE cable to be connected.

The PE infeed can be ordered with screw terminals and spring-loaded terminals (35 mm^2) and can be fitted on the left or right of the expansion block.

⑥ PE expansion plug

The PE expansion plug is inserted from below and enables two PE bars to be connected.

⑦ PE pick-off

The PE pick-off is available with screw terminals and spring-loaded terminals (6/10 mm^2). It is snapped into the infeed system from below.

⑧ Connecting wedges

Two connecting wedges are used to hold together two expansion modules.

⑨ End covers

On the last expansion module of a row, the socket provided for the expansion plug can be covered by inserting the end cover.

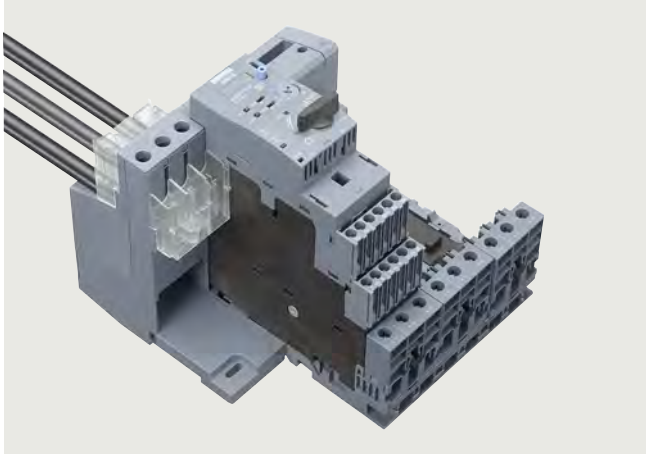
⑩ 45 mm adapter for SIRIUS motor starter protectors size S0

SIRIUS 3RV2 motor starter protectors size S0 with screw terminals can be fitted to the adapter, enabling them to be plugged into the infeed system.

Terminal covers for increasing finger protection on the front

Universally configured terminal covers are available for the 25/35 mm^2 and 50/70 mm^2 3-phase infeeds with screw terminal:
- 3RA6880-2AB terminal covers for infeeds with screw terminal 25/35 mm^2 (3RA6812-8AB/AC)
- 3RA6880-3AB terminal covers for infeeds with screw terminal 50/70 mm^2 (3RA6813-8AB/AC)

The terminal covers can be used in two ways on the infeed terminals of the infeeds with screw terminal 25/35 mm^2 and 50/70 mm^2 (see illustration):
- If the terminals are connected, the cables are also covered:
  - by approx. 14 mm with the 3RA6880-2AB
  - by approx. 18 mm with the 3RA6880-3AB
- On clamping points without connected cables, the covers can be turned once and then pushed over the clamping points for finger-safe covering of the metal parts.



Use of the 3RA6880-2AB terminal cover on the infeed with screw terminal 25/35 mm^2 (3RA6812-8AB/AC). The upper cover increases the finger-safety for the connected conductors. The identical lower cover is turned for use and prevents touching of the voltage-carrying metal parts of the infeed terminal. For better recognition, the covers are shown as transparent in this illustration and not in their original color.

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Infeed system for 3RA6

Terminal blocks

Using the terminal block the three phases can be fed out of the system; this means that 1-phase, 2-phase and 3-phase components can also be integrated in the system.

After the end cover is pulled out, the terminal block can be plugged onto an expansion module.

Expansion plug for SIRIUS 3RV29 infeed systems

After the end cover is pulled out, the expansion plug for the SIRIUS 3RV29 infeed system can be plugged onto an expansion module. It connects the infeed system for 3RA6 compact starters with the SIRIUS 3RV29 infeed system.

Maximum rated operational current

The following maximum rated operational currents apply for the components of the infeed system for 3RA6:

Component	Maximum rated operational current A
Infeed with screw terminal 50/70 mm²	100
Infeed with screw terminal 25/35 mm²	63
Infeed with spring-loaded terminal 25/35 mm²	63
Expansion plug	63

With side-by-side mounting of several expansion modules, the maximum rated operational current from the second expansion module to the end of the row is 63 A.

Proposal for upstream short-circuit protection devices

The following short-circuit data apply for the components of the infeed system for 3RA6 compact starters:

Conductor cross-section mm²	Maximum let-through current $I_{d,max}$ and current integral I^2t	Proposal for upstream short-circuit protection device	Maximum prospective $I_{short-circuit}$ kA
Short-circuit protection for 3RA681.-8A. infeed with screw terminal (25/35 mm² and 50/70 mm²)			
2.5 … 35 2.5 ... 70	$I_{d,\,max}$ < 21 kA, I^2t = 530 kA²s	**3RV2041-4MA10** (NH gG 3NA3; 315 A)	**50**
Short-circuit protection for infeed with spring-loaded terminal 25/35 mm², 3RA6830-5AC			
4	$I_{d,\,max}$ < 9.5 kA, I^2t = 85 kA²s	**3RV2021-4DA10**	**40**
6	$I_{d,\,max}$ < 12.5 kA, I^2t = 140 kA²s	**3RV2031-4EA10**	**30**
10	$I_{d,\,max}$ < 15 kA, I^2t = 180 kA²s	**3RV2031-4WA10**	**25**
16/25	$I_{d,\,max}$ < 19 kA, I^2t = 440 kA²s	**3RV2031-4JA10**	**65**
		3RV2041-4JA10	**65**
35	$I_{d,\,max}$ < 21 kA, I^2t = 530 kA²s	**3RV2041-4MA10** (NH gG 3NA3; 315 A)	**50**
Short-circuit protection for terminal block, 3RV2917-5D			
1.5	$I_{d,\,max}$ < 7.5 kA	**5SY...** 1)	
2.5	$I_{d,\,max}$ < 9.5 kA		
4	$I_{d,\,max}$ < 9.5 kA		
6	$I_{d,max}$ < 12.5 kA		

1) To prevent the possibility of short circuits, the cables on the terminal block must be installed so that they are short-circuit-proof.

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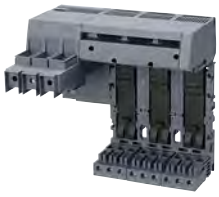
Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3-phase infeeds and expansion modules					
Infeeds with screw terminal 25/35 mm² left					
Infeed with screw terminal at line side with a permanently fitted 3-socket expansion module with screw or spring-loaded terminals on the outgoing side and integrated PE bar **Expansion module** with 3 sockets for 3 direct-on-line starters or 1 direct-on-line starter and 1 reversing starter					
	Screw terminals				
• Screw terminals on the outgoing side	**3RA6812-8AB**		1	1 unit	42F
	Spring-loaded terminals				
• Spring-loaded terminals on the outgoing side	**3RA6812-8AC**		1	1 unit	42F
Infeeds with screw terminal 50/70 mm² left					
Infeed with screw terminal at line side with a permanently fitted 3-socket expansion module with screw or spring-loaded terminals on the outgoing side and integrated PE bar **Expansion module** with 3 sockets for 3 direct-on-line starters or 1 direct-on-line starter and 1 reversing starter, suitable for UL operation according to UL 508 Type E					
	Screw terminals				
• Screw terminals on the outgoing side	**3RA6813-8AB**		1	1 unit	42F
	Spring-loaded terminals				
• Spring-loaded terminals on the outgoing side	**3RA6813-8AC**		1	1 unit	42F
Infeeds with spring-loaded terminals 25/35 mm² left or right					
	Spring-loaded terminals				
Up to 63 A	**3RA6830-5AC**		1	1 unit	42F

3RA6812-8AB

3RA6812-8AC


3RA6813-8AB

3RA6813-8AC

3RA6830-5AC

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Infeed system for 3RA6

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Expansion modules						
3RA6822-0AB	***2-socket expansion modules***					
	With screw or spring-loaded terminals and integrated PE bar With 2 sockets for 2 direct-on-line starters or 1 reversing starter Expansion plug and 2 connecting wedges are included in the scope of supply.					
		Screw terminals				
	• Version with screw terminals	**3RA6822-0AB**		1	1 unit	42F
3RA6822-0AC		**Spring-loaded terminals**				
	• Version with spring-loaded terminals	**3RA6822-0AC**		1	1 unit	42F
3RA6823-0AB	***3-socket expansion modules***					
	With screw or spring-loaded terminals and integrated PE bar With 3 sockets for 3 direct-on-line starters or 1 direct-on-line starter and 1 reversing starter Expansion plug and 2 connecting wedges are included in the scope of supply.					
		Screw terminals				
	• Version with screw terminals	**3RA6823-0AB**		1	1 unit	42F
3RA6823-0AC		**Spring-loaded terminals**				
	• Version with spring-loaded terminals	**3RA6823-0AC**		1	1 unit	42F

8

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for infeed systems for 3RA6						
	PE infeeds, 25/35 mm²					
3RA6860-6AB	• Version with screw terminals	**Screw terminals** **3RA6860-6AB**		1	1 unit	42F
3RA6860-5AC	• Version with spring-loaded terminals	**Spring-loaded terminals** **3RA6860-5AC**		1	1 unit	42F
	PE pick-offs 6/10 mm²					
3RA6870-4AB	• Version with screw terminals	**Screw terminals** **3RA6870-4AB**		1	1 unit	42F
3RA6870-3AC	• Version with spring-loaded terminals	**Spring-loaded terminals** **3RA6870-3AC**		1	1 unit	42F
	Expansion plugs					
3RA6890-0EA	**PE expansion plugs**	**3RA6890-0EA**		1	1 unit	42F
3RA6890-1AB	**Expansion plugs** Between 2 expansion modules Included in the scope of supply of the expansion modules	**3RA6890-1AB**		1	1 unit	42F
3RA6890-1AA	**Expansion plugs for SIRIUS 3RV29 infeed system** Connect infeed system for 3RA6 to 3RV29 infeed system	**3RA6890-1AA**		1	1 unit	42F

8

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Infeed system for 3RA6

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for infeed systems for 3RA6 (continued)						
3RA6890-0BA	***45 mm adapters***					
	For SIRIUS 3RV2.2 motor starter protectors/circuit breakers size S0 up to 25 A	**Screw terminals**				
	• Screw terminals (conductor cross-section AWG 10)	**3RA6890-0BA**		1	1 unit	42F
	Terminal covers for infeeds with screw terminals					
3RA6880-2AB	**IP20 terminal covers for infeeds with screw terminal 25/35 mm² (3RA6812-8AB/AC)** (2 units per pack)	**3RA6880-2AB**		1	1 unit	42F
3RA6880-3AB	**IP20 terminal covers for infeeds with screw terminal 50/70 mm² (3RA6813-8AB/AC)** (2 units per pack)	**3RA6880-3AB**		1	1 unit	42F
	Terminal blocks					
3RV2917-5D	For integration of 1-phase, 2-phase and 3-phase external components	**Spring-loaded terminals**				
	• Spring-loaded terminals	**3RV2917-5D**		1	1 unit	41E
Tools for opening spring-loaded terminals						
	Screwdriver					
3RA2908-1A	For all SIRIUS devices with spring-loaded terminals	**Spring-loaded terminals**				
	Length, approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**3RA2908-1A**		1	1 unit	41B
Manuals						
	System Manual for 3RA6 compact starter and infeed system for 3RA6, see https://support.industry.siemens.com/cs/ww/en/view/27865747					

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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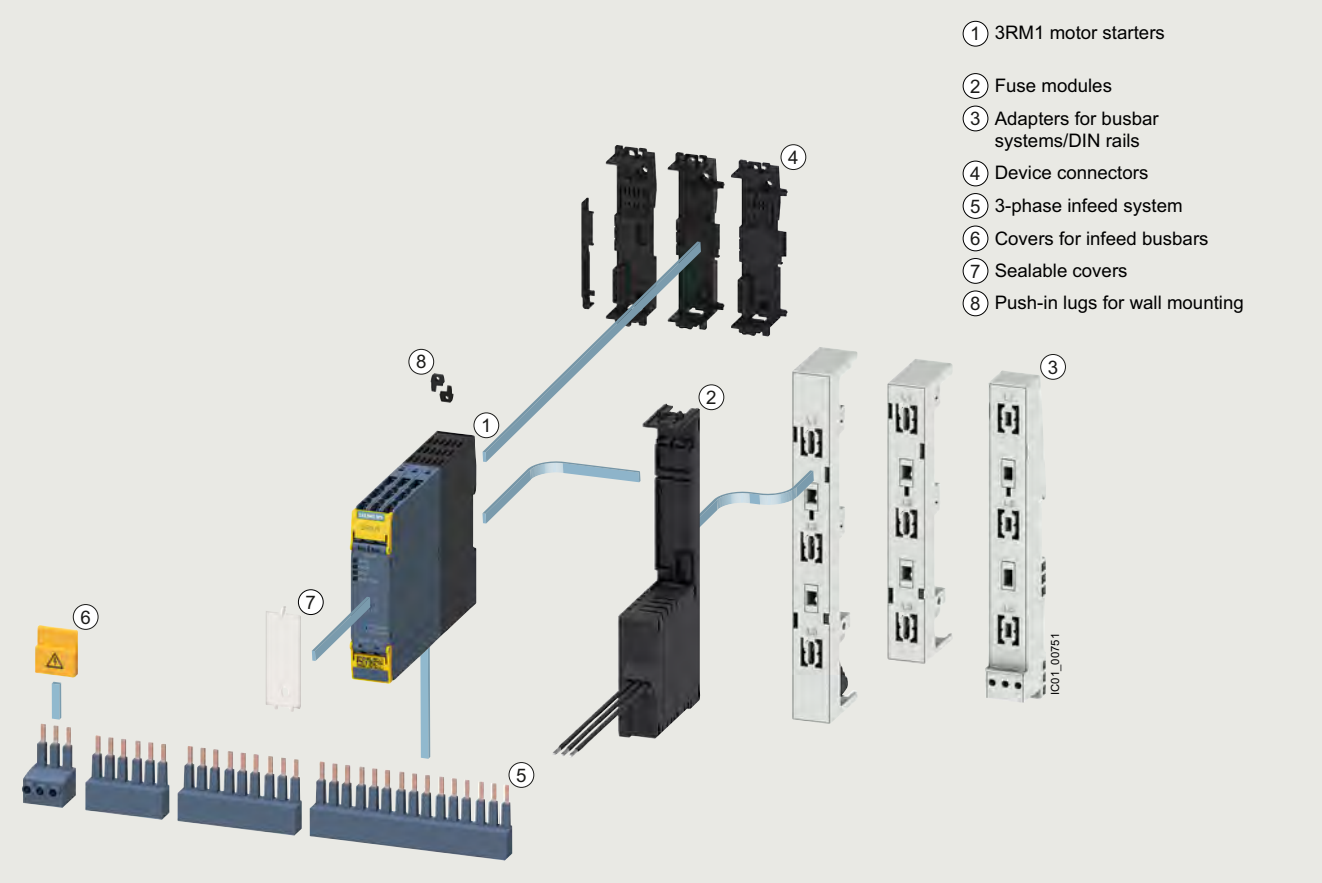
Overview



SIRIUS 3RM1 motor starters with accessories

More information

3RM1 motor starters:
- Homepage, see www.siemens.com/sirius-motor-starter-3RM1
- Industry Mall, see www.siemens.com/product?3RM1
- Online configurator, see www.siemens.com/sirius/configurators

3SK safety relays for protecting the 3RM1 motor starters:
- Homepage, see www.siemens.com/sirius-safety-relays
- Industry Mall, see www.siemens.com/product?3SK

TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=MotorStarter3RM1

Decision support for motor start – Starting and operating three-phase asynchronous motors efficiently, see www.siemens.com/motorstart-guide

Industry Online Support (SIOS) topic page with information on the planning and operating phases, see https://support.industry.siemens.com/cs/ww/en/view/109792664

SIRIUS 3RM1 motor starters are compact devices, 22.5 mm wide, combining a large number of functions in a single enclosure. They consist of combinations of relay contacts, power semiconductors (hybrid technology), and an electronic overload relay for operational switching of three-phase motors up to 3 kW (at 400 V) and resistive loads up to 10 A at AC voltages up to 500 V.

The 3RM1 motor starters with overload protection with wide setting range are available as direct-on-line starters and reversing starters and as versions with safety-related shutdown up to SIL 3 and PL e.

Video: SIRIUS 3RM1 motor starters – Compact, economical, simple

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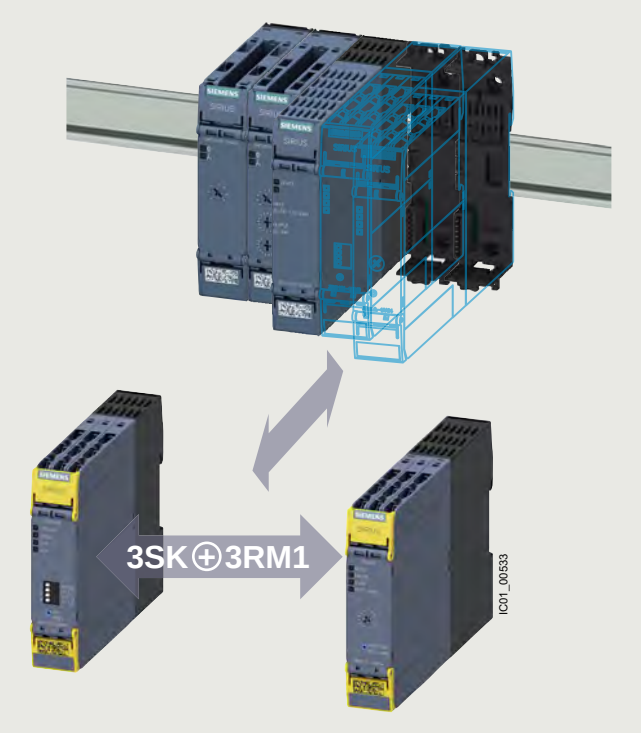
SIRIUS 3RM1 motor starters

Seamlessly integrated safety right through to the main circuit



Problem-free integration of functional safety into the main circuit through the simple combination of 3RM1 and 3SK devices

Functional safety in the main circuit needs to be both simple and flexible.

The unique compatibility of hybrid 3RM1 fail-safe motor starters and 3SK safety relays means that integrated functional safety right through to the main circuit is no longer a problem.

Their compact design allows the motor starters to be installed to the right of the safety relay in a simple manner, just like an output expansion. The wiring of the safety-related signals to the relay can be performed simply, quickly and in an error-free manner using the device connector.

The ergonomically designed enclosure with removable terminals and terminal labeling in the hinged cover allows for the cables to be conveniently diagonally mounted from the front. Either screw or spring-loaded terminals with push-in technology are available.

Highlights

- Fail-safe disconnection of motors up to 3 kW
- Problem-free combination of fail-safe motor starters and safety relays
- End-to-end system, simple setup using device connectors
- Ergonomic enclosure

Note:

For SIRIUS 3SK safety relays, see page 11/13.

Online configurator

Online configurator

An online configurator with a wide range of functions is available for the SIRIUS 3RM1 motor starters.
(see www.siemens.com/sirius/configurators):

- Create individual motor starters or a complex motor starter group
- Individual selection options, such as direct or reversing starting, spring-loaded or screw terminals, as well as motor current and control voltage
- Graphic representation of the design during configuration
- Automatic calculation of the matching motor starter protector/circuit breaker (for group configuration)

Ordering notes for multi-unit packaging

SIRIUS 3RM1 motor starters can also be ordered in practical, environment-friendly multi-unit packaging on request.

Multi-unit packaging with order code X90

When ordering products in multi-unit packaging, the article number of the product concerned must be supplemented with **"-Z"** and, in addition, the order code "**X90**" must be specified.

Ordering example:

3RM1201-2AA04-Z X90;
purchase order quantity 12 units → Delivery of one package containing 12 units

For more information, see page 16/7.

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Article number scheme

Product versions		Article number								
Product function	Direct-on-line starters	**3RM10**	**0**	**☐**	**–**	**☐**	**AA**	**☐**	**4**	
	Failsafe direct-on-line starters	**3RM11**	**0**	**☐**	**–**	**☐**	**AA**	**☐**	**4**	With ATEX certification and safety-related shutdown
	Reversing starters	**3RM12**	**0**	**☐**	**–**	**☐**	**AA**	**☐**	**4**	
	Failsafe reversing starters	**3RM13**	**0**	**☐**	**–**	**☐**	**AA**	**☐**	**4**	With ATEX certification and safety-related shutdown
Wide setting range for electronic overload release	0.1 ... 0.5 A			**1**						For motor standard output 0 ... 0.12 kW[2]
	0.4 ... 2.0 A			**2**						For motor standard output 0.09 ... 0.75 kW[2]
	1.6 ... 7.0 A (10 A)[1]			**7**						For motor standard output 0.55 ... 3 kW[2]
Connection method	Screw terminals					**1**				
	Spring-loaded terminals (push-in)					**2**				
	Mixed connection method					**3**				Spring-loaded terminals (push-in)
Rated control supply voltage U_s	24 V DC							**0**		
	110 ... 230 V AC, 110 V DC							**1**		
Example		**3RM13**	**0**	**1**	**–**	**2**	**AA**	**0**	**4**	

[1] Operation of resistive loads with up to 10 A.

[2] Standard three-phase motor, basis 4-pole at 400 V AC; the actual starting and rated data of the motor to be protected must be considered when selecting the units.

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Less space required in the control cabinet (20 to 80%) thanks to high functional density, which also means reduced wiring and testing
- Greater endurance and reduced heat losses thanks to hybrid technology
- Lower costs for stock keeping and configuration as a result of the wide setting range of the electronic overload release (up to 1:5)
- Fast wiring without tools for rigid conductors or conductors equipped with end sleeves thanks to spring-loaded terminals (push-in)
- Safety-related shutdown in accordance with SIL 3 and PL e by shutting down the control supply voltage without additional devices in the main circuit
- The motor starters can be ideally combined with 3SK safety relays for safety-related shutdown (see page 11/13)
- Motor status feedback to the higher-level control system in the case of 3RM10 and 3RM12 motor starters in the 24 V DC version
- Virtually error-free wiring on the mains connection side and reduction in short-circuit protective devices by means of 3RM19 infeed system
- ATEX certification of the overload protection of the 3RM1 Failsafe motor starters: "Increased safety" type of protection EEx e according to ATEX directive 2014/34/EU
- The 3RM1 motor starters can be used with highly efficient IE3 and IE4 motors. In this regard, please observe the information on dimensioning and configuring, see Application Manual.
  For more information, see page 1/8.

Standards and approvals

- IEC/EN 60947-4-2
- UL 60947-4-2
- CSA[1]
- ATEX
- IEC 61508: SIL 3
- IEC 62061: SIL 3
- ISO 13849-1: PL e
- CCC approval for China

[1] The CSA approval is valid for a maximum operational voltage of 400 V, see https://support.industry.siemens.com/cs/ww/en/view/109481789.

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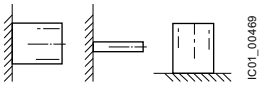
Technical specifications

More information	
Industry Mall, see www.siemens.com/product?3RM1	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16311/faq
Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/66295730	

Article number			3RM1
General technical specifications			
Dimensions (W x H x D)		mm	22.5 x 100 x 141.6
Ambient temperature			
• During operation		°C	-25 … +60
• During storage		°C	-40 … +70
• During transport		°C	-40 … +70
Installation altitude at height above sea level, maximum		m	4 000 (observe derating)
Shock resistance			6 *g*/11 ms
Vibration resistance			1 ... 6 Hz, 15 mm; 20 m/s², 500 Hz
Degree of protection IP on the front	According to IEC 60529		IP20
Touch protection on the front	According to IEC 60529		Finger-safe for vertical touching from the front
Mounting position			Vertical, horizontal, standing (consider derating)

Article number			3RM1.01	3RM1.02	3RM1.07
Main circuit					
Operational voltage, rated value, maximum		V	500		
Operating frequency		Hz	50/60		
Operational current at AC-53a at 400 V at an ambient temperature of 40 °C		A	0.5	2	7
Minimum load [%]		%	20		
Adjustable current response value of the inverse-time delayed overload release		A	0.1 ... 0.5	0.4 ... 2	1.6 ... 7

Article number			3RM1.0.-.AA04	3RM1.0.-.AA14
Control circuit				
Type of voltage of the control supply voltage			DC	AC/DC
Control supply voltage				
• At DC		V	24	110
• At AC at 50 Hz		V	--	110 … 230
Frequency of the control supply voltage		Hz	--	50/60

Type			3RM1.0.-1AA.4	3RM1.0.-3AA.4	3RM1.0.-2AA.4
Connections/terminals					
Type of electrical connection for the main circuit (1 or 2 conductors can be connected)			**Screw terminals**		**Spring-loaded terminals (push-in)**
Connectable conductor cross-section for main contacts					
• Solid		mm²	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)		1 x (0.5 ... 4)
• Finely stranded					
- With end sleeve		mm²	1 x (0.5 ... 4), 2 x (0.5 ... 1.5)		1 x (0.5 ... 2.5)
- Without end sleeve		mm²	--		1 x (0.5 ... 4)
Type of electrical connection for auxiliary and control circuits (1 or 2 conductors can be connected)			**Screw terminals**	**Spring-loaded terminals (push-in)**	
Type of connectable conductor cross-sections for auxiliary contacts					
• Solid		mm²	1 x (0.5 ... 2.5) 2 x (1.0 ... 1.5)	1 x (0.5 ... 1.5), 2 x (0.5 ... 1.5)	
• Finely stranded					
- With end sleeve		mm²	1 x (0.5 ... 2.5) 2 x (0.5 ... 1)	1 x (0.5 ... 1.0), 2 x (0.5 ... 1.0)	
- Without end sleeve		mm²	--	1 x (0.5 ... 1.5), 2 x (0.5 ... 1.5)	
Type of connectable conductor cross-sections for AWG cables					
• For main contacts			1 x (20 ... 12), 2 x (20 ... 14)		1 x (20 ... 12)
• For auxiliary contacts			1 x (20 ... 14), 2 x (18 ... 16)	1 x (20 ... 16), 2 x (20 ... 16)	

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Accessories

More information

Equipment Manual, see
https://support.industry.siemens.com/cs/ww/en/view/66295730

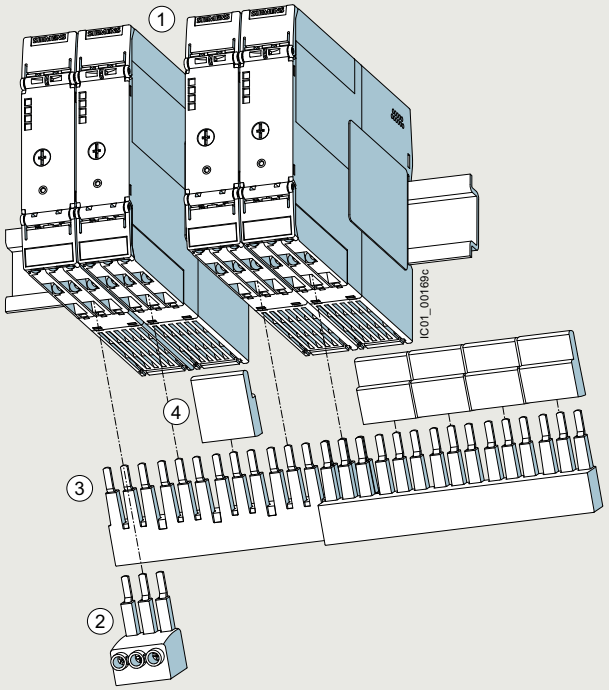
3-phase infeed system (3RM19 3-phase busbar system)

The system permits an easy, time-saving and safe means of feeding two or more 3RM1 motor starters. It can be used only with motor starters with screw terminals and in combination with 8US1716-0RK00 adapters for mounting rails in the main circuit.

The maximum summation current must not exceed 25 A.
The primary infeed is connected via a 3-phase infeed terminal.

The busbars are available in three lengths, for two, three or five motor starters. More than five devices can be connected by clamping the connection tags of a second busbar underneath, rotated 180°.

The 3-phase busbars have touch protection but empty connection tags must be fitted with covers.



1 Four 3RM1 motor starters on DIN rail with one free slot
2 3RM1920-1AA 3-phase infeed terminal
3 Two 3RM1910-1DA 3-phase busbars rotated through 180° for the connection of up to nine motor starters
4 Covers for three 3RM1910-6AA connection tags respectively for unused slots

3RM19 infeed system with 3-phase infeed terminal: In the above example, two 3-phase busbars (5-pole busbars) rotated 180° allow up to nine 3RM1 motor starters to be connected. Contact with the unused connection tags in unoccupied positions is prevented safely by the covers.

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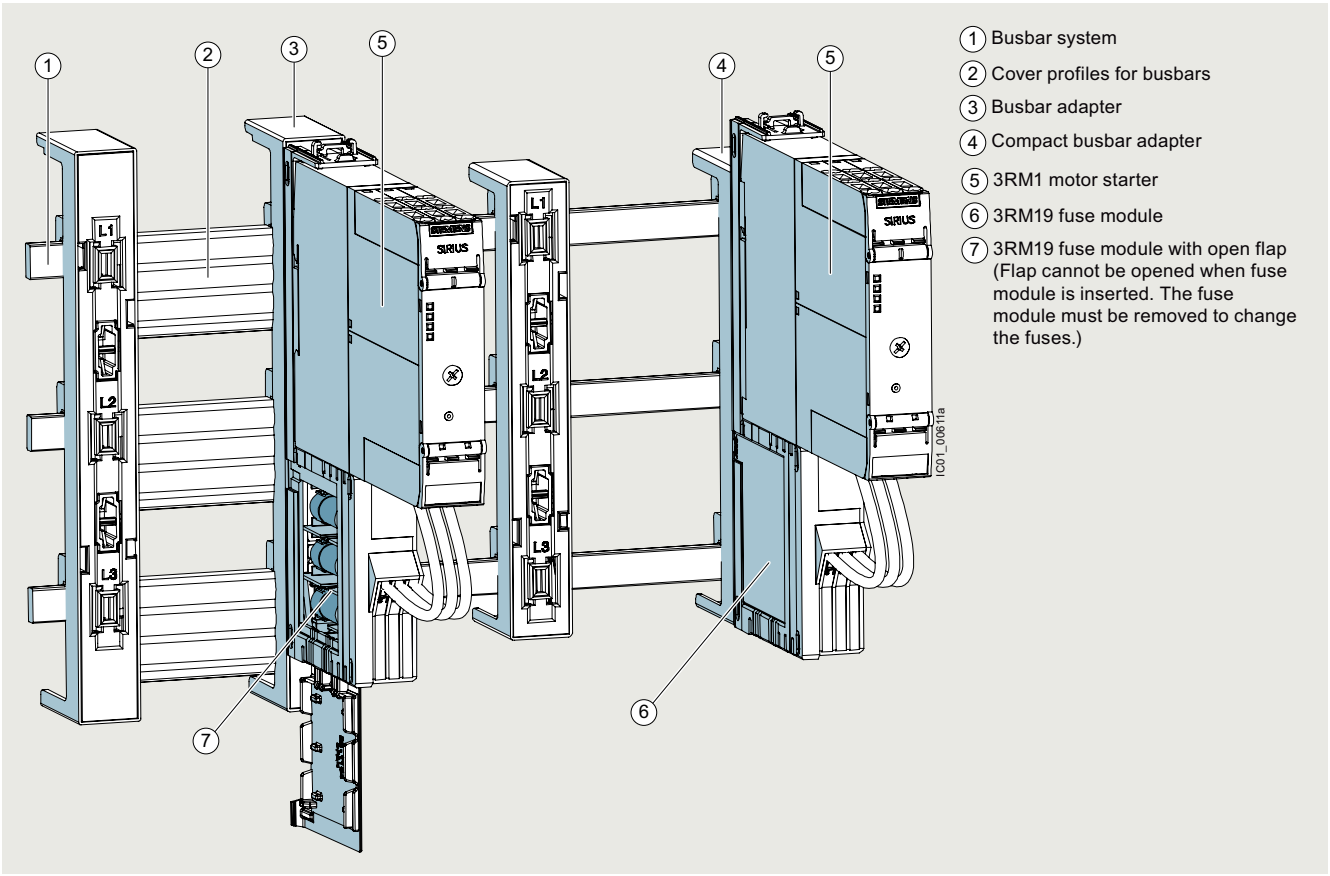
SIRIUS 3RM1 motor starters

Fuse module for the use of 3RM1 motor starters on 8US busbar systems and mounting rails

The fuse module permits the very compact construction of a load feeder with a maximum width of 22.5 mm. The 3RM1 motor starter in combination with the integrated fuses for short-circuit protection can thus be used in this way on 8US busbar systems.
By means of different adapters, the fuse module can be used in all 60 mm busbar systems and also in compact busbar systems, as well as on mounting rails. The interface to the adapter also permits a simple and secure replacement of the load feeder.

The fuse module can be combined with all 3RM1 motor starters. The easily replaceable fuses protect the motor starter, the connected motor and the cables.



By means of the fuse module, 3RM1 motor starters can be used in busbar systems and 8US compact busbar systems as well as on mounting rails

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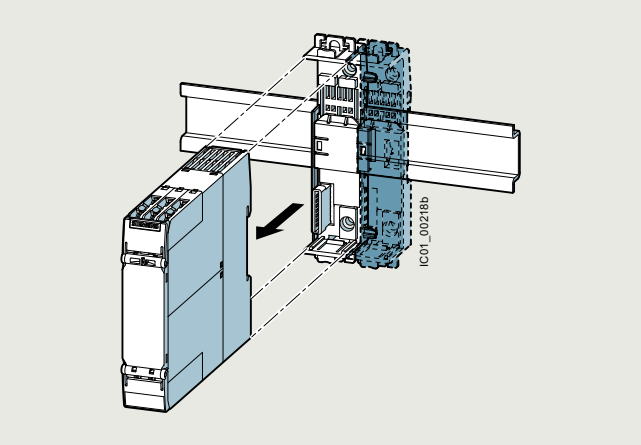
Device connectors for the control circuit

The device connectors for 3RM1 motor starters (24 V DC control supply voltage only) reduce the outlay for cabling by looping through the control supply voltage. The device connectors can be snapped onto a DIN rail or fixed to a level mounting panel using screws.



Device connector with 3RM1 motor starter

Using the device connectors exclusively for feeding in the control supply voltage

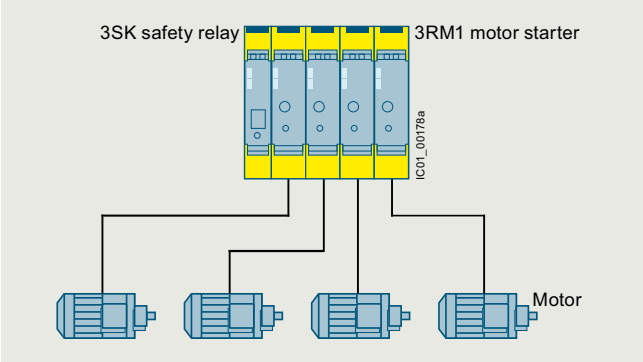
By using device connectors, a maximum of five motor starters can be supplied with 24 V DC control supply voltage. This requires the control supply voltage to be applied to the A1 and A2 terminals of only one motor starter.

Device daisy chain connectors can be used for gaps between two motor starters. Device termination connectors terminate a group.

Using the device connectors for safe group shutdown

In combination with the 3RM11 and 3RM13 fail-safe motor starters, the device connector can also be used for safety-related shutdown. For this application, groups of no more than five fail-safe motor starters can be connected using a device connector, and the group must be terminated with a termination connector. Removing the control voltage supply from the first motor starter will safely shut down the whole group.

Safe group shutdown can be implemented particularly easily in conjunction with 3SK safety relays. In this case, up to five motor starters can be directly connected to 3SK safety relays via the device connector and then safely shut down (see page 11/13).



Ideal connection: Combination of four SIRIUS 3RM1 Failsafe motor starters with SIRIUS 3SK safety relays

Electromechanical switching devices in series with hybrid motor starters

Switching an inductive load - in particular of motors < 1 kW with high inductance - with an electromechanical switching device (e.g. contactor) can cause high and steep voltage edges.

The resulting faults/damage can be prevented by first disconnecting with the hybrid motor starter or by using EMC suppression modules:

- For 3RT2916-1P.. EMC suppression modules for direct mounting on the contactor, see page 3/113
- For motor suppression modules that are fitted in the main circuit, see page 8/93

Note:

For more information, see https://support.industry.siemens.com/cs/ww/en/view/109758696.

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SIRIUS 3RM1 motor starters *IE3/IE4 ready*

Selection and ordering data

More information

Industry Mall, see www.siemens.com/product?3RM1

Multi-unit packaging see page 16/7.

Ratings of three-phase motors at 400 V[1]	Adjustable current response value of the inverse-time delayed overload release	Control supply voltage at DC	Control supply voltage at AC at 50 Hz	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
kW	A	V	V					
Direct-on-line starters								
0 … 0.12	0.1 … 0.5	24	--	**3RM1001-□AA04**		1	1 unit	41D
0.09 … 0.75	0.4 … 2	24	--	**3RM1002-□AA04**		1	1 unit	41D
0.55 … 3	1.6 … 7	24	--	**3RM1007-□AA04**		1	1 unit	41D
0 … 0.12	0.1 … 0.5	110	110 ... 230	**3RM1001-□AA14**		1	1 unit	41D
0.09 … 0.75	0.4 … 2	110	110 ... 230	**3RM1002-□AA14**		1	1 unit	41D
0.55 … 3	1.6 … 7	110	110 ... 230	**3RM1007-□AA14**		1	1 unit	41D

3RM1001-1AA04

Reversing starters								
0 … 0.12	0.1 … 0.5	24	--	**3RM1201-□AA04**		1	1 unit	41D
0.09 … 0.75	0.4 … 2	24	--	**3RM1202-□AA04**		1	1 unit	41D
0.55 … 3	1.6 … 7	24	--	**3RM1207-□AA04**		1	1 unit	41D
0 … 0.12	0.1 … 0.5	110	110 ... 230	**3RM1201-□AA14**		1	1 unit	41D
0.09 … 0.75	0.4 … 2	110	110 ... 230	**3RM1202-□AA14**		1	1 unit	41D
0.55 … 3	1.6 … 7	110	110 ... 230	**3RM1207-□AA14**		1	1 unit	41D

3RM1201-1AA04

Failsafe direct-on-line starters								
0 … 0.12	0.1 … 0.5	24	--	**3RM1101-□AA04**		1	1 unit	41D
0.09 … 0.75	0.4 … 2	24	--	**3RM1102-□AA04**		1	1 unit	41D
0.55 … 3	1.6 … 7	24	--	**3RM1107-□AA04**		1	1 unit	41D
0 … 0.12	0.1 … 0.5	110	110 ... 230	**3RM1101-□AA14**		1	1 unit	41D
0.09 … 0.75	0.4 … 2	110	110 ... 230	**3RM1102-□AA14**		1	1 unit	41D
0.55 … 3	1.6 … 7	110	110 ... 230	**3RM1107-□AA14**		1	1 unit	41D

3RM1101-1AA04

Failsafe reversing starters								
0 … 0.12	0.1 … 0.5	24	--	**3RM1301-□AA04**		1	1 unit	41D
0.09 … 0.75	0.4 … 2	24	--	**3RM1302-□AA04**		1	1 unit	41D
0.55 … 3	1.6 … 7	24	--	**3RM1307-□AA04**		1	1 unit	41D
0 … 0.12	0.1 … 0.5	110	110 ... 230	**3RM1301-□AA14**		1	1 unit	41D
0.09 … 0.75	0.4 … 2	110	110 ... 230	**3RM1302-□AA14**		1	1 unit	41D
0.55 … 3	1.6 … 7	110	110 ... 230	**3RM1307-□AA14**		1	1 unit	41D

3RM1301-1AA04

Type of electrical connection

- Screw terminals for main circuit, screw terminals for control circuit
- Spring-loaded terminals (push-in) for main circuit, spring-loaded terminals (push-in) for control circuit
- Screw terminals for main circuit, spring-loaded terminals (push-in) for control circuit

1
2
3

[1] The actual starting and rated data of the motor to be protected must be considered when selecting the units.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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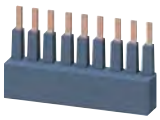
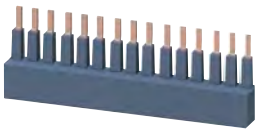
	Product designation	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3-phase infeed system for 3RM1 with screw terminals						
3RM1920-1AA	**3-phase infeed terminals** • For 3-phase busbars	**3RM1920-1AA**		1	1 unit	41D
	3-phase busbars					
3RM1910-1AA	• For 2 motor starters	**3RM1910-1AA**		1	1 unit	41D
 3RM1910-1BA	• For 3 motor starters	**3RM1910-1BA**		1	1 unit	41D
 3RM1910-1DA	• For 5 motor starters	**3RM1910-1DA**		1	1 unit	41D
3RM1910-6AA	**Covers** For 3 connection tags of the 3-phase busbars	**3RM1910-6AA**		1	10 units	41D
Fuse modules for 3RM1 for use on busbars or mounting rails						
3RM1932-1AB	**Fuse module with 3NW6007-1 fuse**	**3RM1932-1AB**		1	1 unit	41D
	Fuse module without fuse[1)]	**3RM1930-1AA**		1	1 unit	41D
Adapters						
8US1216-0AS00	**Adapters for 60 mm busbar systems** 22.5 mm x 200 mm x 41.5 mm Note: The adapter can be used on busbars with a width of 12 mm, 15 mm, 20 mm, 25 mm or 30 mm and a thickness of 5 mm or 10 mm.	**8US1216-0AS00**		1	1 unit	14O
8US1616-0AK02	**Adapters for 60 mm compact busbar systems** 22.5 mm x 160 mm x 41.5 mm Note: The adapter can be used on busbars with a width of 12 mm and a thickness of 5 mm or 10 mm.	**8US1616-0AK02**		1	1 unit	14O

[1)] For details of alternative fuses, see Equipment Manual.

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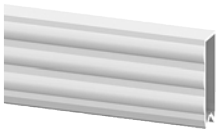
SIRIUS 3RM1 motor starters

	Product designation	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Adapters						
8US1716-0RK00	**Adapter for 35 mm DIN mounting rails** 22.5 mm x 185 mm x 23.5 mm	**8US1716-0RK00**		1	1 unit	14O
Cover profiles[1)2)]						
Cover profiles for busbars						
8US1922-2CA00	12 mm x 5 mm x 1 000 mm 40 mm or 60 mm center-to-center busbar clearance depending on busbar system	**8US1922-2CA00**		1	10 units	14O
8US1922-2AA00	15 mm x 5 mm x 1 000 mm 20 mm x 5 mm x 1 000 mm 25 mm x 5 mm x 1 000 mm 30 mm x 5 mm x 1 000 mm 40 mm or 60 mm center-to-center busbar clearance depending on busbar system	**8US1922-2AA00**		1	10 units	14O
 8US1922-2BA00	12 mm x 10 mm x 1 000 mm 15 mm x 10 mm x 1 000 mm 20 mm x 10 mm x 1 000 mm 25 mm x 10 mm x 1 000 mm 30 mm x 10 mm x 1 000 mm 60 mm center-to-center busbar clearance	**8US1922-2BA00**		1	10 units	14O
Device connectors						
3ZY1212-2EA00	**Device connectors** For 3RM1 motor starters, 24 V DC, 22.5 mm	**3ZY1212-2EA00**		1	1 unit	41L
3ZY1212-2AB00	**Device daisy chain connectors** For 3RM1 motor starters, 24 V DC, 22.5 mm For gaps without motor starters in assemblies	**3ZY1212-2AB00**		1	1 unit	41L
3ZY1212-2FA00	**Device termination connectors** For 3RM1 motor starters, 24 V DC, 22.5 mm	**3ZY1212-2FA00**		1	1 unit	41L

1) The cover profiles for busbars can be used for maintaining minimum spacing between the load feeders.

2) For further accessories for the configuration of a busbar system, see Catalog LV 10.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Product designation	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Removable terminals						
3ZY1122-1BA00	**Terminals for main circuit, 2-pole**					
		Screw terminals				
	• Version with screw terminals, up to max. 1 x 4 mm² or 2 x 2.5 mm²	**3ZY1122-1BA00**		1	6 units	41L
		Spring-loaded terminals (push-in)				
	• Version with spring-loaded terminals (push-in), up to max. 1 x 4 mm² or 2 x 1.5 mm² (both in one end sleeve)	**3ZY1122-2BA00**		1	6 units	41L
3ZY1131-1BA00	**Terminals for control circuit, 3-pole**					
		Screw terminals				
	• Version with screw terminals, up to max. 2 x 1.5 mm² or 1 x 2.5 mm²	**3ZY1131-1BA00**		1	6 units	41L
		Spring-loaded terminals (push-in)				
	• Version with spring-loaded terminals (push-in), up to max. 2 x 1.5 mm²	**3ZY1131-2BA00**		1	6 units	41L
Further accessories						
3ZY1311-0AA00	**Push-in lugs for wall mounting** 2 lugs per device are required	**3ZY1311-0AA00**		1	10 units	41L
3ZY1321-2AA00	**Sealable covers, 22.5 mm** For simple protection against unauthorized access	**3ZY1321-2AA00**		1	5 units	41L
3ZY1440-1AA00	**Coding pins for removable terminals** For mechanical coding of the terminals	**3ZY1440-1AA00**		1	12 units	41L
3ZY1450-1AB00	**Hinged cover** Replacement cover, without terminal labeling, 22.5 mm wide					
	• Titanium gray	**3ZY1450-1AB00**		1	5 units	41L
	• Yellow	**3ZY1450-1BB00**		1	5 units	41L
3RK1911-6EA00	**Motor suppression module**					
	• Square	**3RK1911-6EA00**		1	1 unit	42D
	• Round	**3RK1911-6EB00**		1	1 unit	42D
3RA2908-1A	**Screwdriver** For all SIRIUS devices with spring-loaded terminals	**Spring-loaded terminals**				
	Length, approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**3RA2908-1A**		1	1 unit	41B

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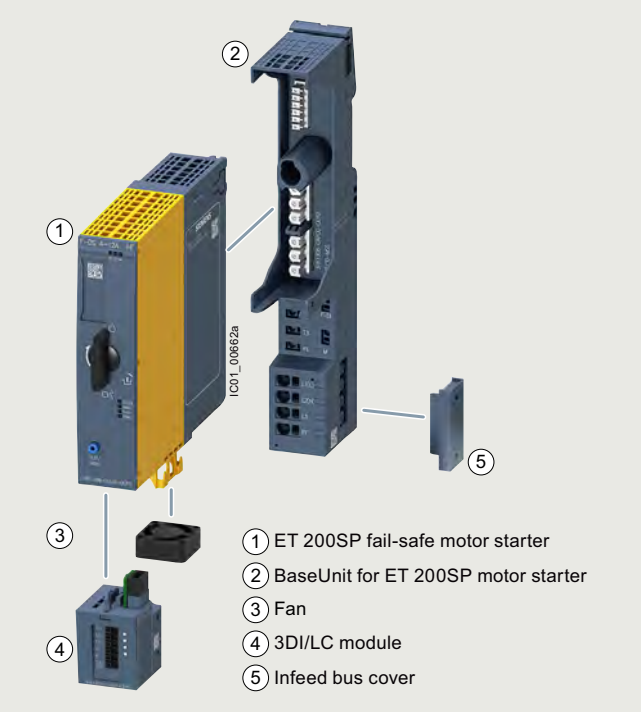
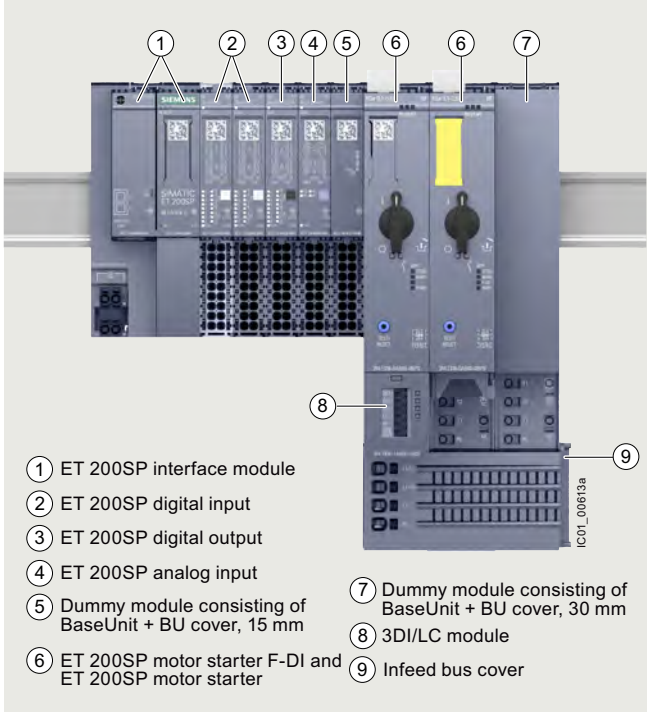
ET 200SP motor starters

Overview



Motor starter, BaseUnit, fan and 3DI/LC control module



3RK1308 motor starter in the ET 200SP I/O system

More information

Homepage, see www.siemens.com/sirius-motor-starter-et200sp

Industry Mall, see www.siemens.com/product?3RK1308

TIA Selection Tool, see www.siemens.com/TST

Decision support for motor start – Starting and operating three-phase asynchronous motors efficiently, see www.siemens.com/motorstart-guide

Industry Online Support (SIOS) topic page with information on the planning and operating phases, see https://support.industry.siemens.com/cs/ww/en/view/109792664

Further components in the ET 200SP I/O system:
- Catalog ST 70
- Homepage, see www.siemens.com/et200sp

ET 200SP motor starters

ET 200SP is a scalable and extremely flexible modular I/O system with degree of protection IP20.

As I/O modules, the ET 200SP motor starters are an integral part of this I/O system. They are switching and protection devices for 1- and 3-phase loads and are available as direct-on-line or reversing starters.

Video: SIMATIC ET 200SP motor starter - Flexible, powerful, space-saving

Basic functionality

All versions of the ET 200SP motor starter feature the following functionality:

- Fully pre-wired motor starters for switching and protecting any AC loads up to 5.5 kW from 48 V AC to 500 V AC
- Disconnection possible via fail-safe motor starters up to SIL 3 and PL e Cat. 4
- With self-assembling 32 A power bus, i.e. the load voltage is only fed in once for a group of motor starters
- All supply voltages connected only once, i.e. when modules are added, they are automatically connected to the next module
- Hot swapping is permissible
- Digital inputs can optionally be used via a 3DI/LC module
- Control of the motor starter from the control system and of the diagnostics status via the cyclic process image
- Diagnostics capability for active monitoring of the switching and protection functions
- The signal states in the process image of the motor starter provide information about protective devices (short circuit or overload), the switching states of the motor starter, and system faults.

Starter kit

The 3RK1908-1SK00 starter kit is a favorably priced complete package for switching and monitoring motors in the ET 200SP system, see page 8/102.

It contains:

- A 3RK1308-0BC00-0CP0 reversing starter (0.9 to 3 A)
- A 3RK1908-0AP00-0AP0 BaseUnit with 500 V and 24 V AC/DC infeed
- An EMC distance module (consisting of 6ES7193-6BP00-0BA0 BaseUnit plus 6ES7133-6CV15-1AM0 BU cover 15 mm)

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Use of fan

For motor starters with a 12 A rated current, the 3RW4928-8VB00 fan is included in the scope of supply.

This fan can also be ordered as an option for motor starters with lower rated currents, if the boundary conditions demand this. For information on the ambient conditions for the use of motor starters, see chapter "Product features" in the Equipment Manual.

Designing interference-free motor starters

For interference-free operation of the ET 200SP station in accordance with IEC 60947-4-2 standard, use a dummy module before the first motor starter. The dummy module consists of the 6ES7193-6BP00-0BA0 or 6ES7193-6BP00-0DA0 BaseUnit and the 6ES7133-6CV15-1AM0 BU cover 15 mm.

The 15 mm BU cover protects the plug contacts of the BaseUnit against dirt.

Electromechanical switching devices in series with hybrid motor starters

Switching an inductive load - in particular of motors <1 kW with high inductance - with an electromechanical switching device (e.g. contactor) can cause high and steep voltage edges.

The resulting faults/damage can be prevented by first disconnecting with the hybrid motor starter or by using EMC suppression modules:

- For 3RT2916-1P.. EMC suppression modules for direct mounting on the contactor, see page 3/113
- For motor suppression modules that are fitted in the main circuit, see page 8/102

Note:

For more information, see https://support.industry.siemens.com/cs/ww/en/view/109758696.

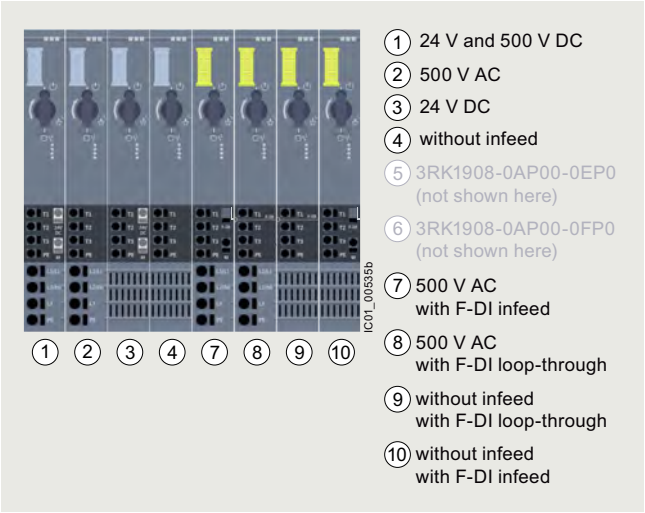
3DI/LC control module

3DI/LC control module

This is a digital input module with three inputs for local motor starter functions such as "manual local control", "implementation of fast inputs" or "end position disconnection". For a list of all the functions permitted by the 3DI/LC module, see chapter "Functions" in the Equipment Manual.

The module is plugged into the front of the motor starter from which it is supplied with a 24 V DC operational voltage.

BaseUnits for motor starters



View of the BaseUnit infeeds for the motor starters

BaseUnits are components used for mounting the ET 200SP I/O modules.

The self-assembling voltage buses integrated into the BaseUnits reduce wiring outlay to the single infeed (both of auxiliary and load voltage).

All modules following on the right are automatically supplied upon plugging the BaseUnits together, if BaseUnits are inserted with a loop-through.

The rugged design and keyed connection technology enables use in harsh industrial conditions.

The BaseUnits are available with various infeeds for the motor starters.

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ET 200SP motor starters

Article number schemes

Product versions		Article number												
Motor starters		**3RK1308**	**–**	**0**	**□**	**□**	**0**	**0**	**–**	**0**	**C**	**P**	**0**	
Product function	Direct-on-line starters				**A**									For motor standard output 0.09 ... 5.5 kW[1]
	Reversing starters				**B**									For motor standard output 0.09 ... 5.5 kW[1]
	Fail-safe direct-on-line starters				**C**									For motor standard output 0.09 ... 5.5 kW[1]
	Fail-safe reversing starters				**D**									For motor standard output 0.09 ... 5.5 kW[1]
Current range	0.1 ... 0.4 A					**A**								Maximum current-carrying capacity when starting 4 A
	0.3 ... 1 A					**B**								Maximum current-carrying capacity when starting 10 A
	0.9 ... 3 A					**C**								Maximum current-carrying capacity when starting 30 A
	2.8 ... 9 A					**D**								Maximum current-carrying capacity when starting 90 A
	4 ... 12 A					**E**								Including fan (3RW4928-8VB00), maximum current-carrying capacity when starting 100 A
Example		**3RK1308**	**–**	**0**	**A**	**D**	**0**	**0**	**–**	**0**	**C**	**P**	**0**	

[1] For standard motors: 1-phase or 3-phase asynchronous motors, 1-phase AC motors, 1-phase asynchronous motors, at 400 V AC and 500 V AC; the actual starting and rated data of the motor to be protected must be considered when selecting the units.

Product versions		Article number										
BaseUnit		**3RK1908**	**–**	**0**	**A**	**P**	**0**	**0**	**–**	**0**	**□**	**P**	**0**	
BU infeed	24 V DC and 500 V AC										**A**			
	24 V DC										**B**			
	500 V AC										**C**			
	Without infeed										**D**			
	500 V AC										**G**			With F-DI infeed
	500 V AC										**H**			With F-DI loop-through
	Without infeed										**J**			With F-DI loop-through
	Without infeed										**K**			With F-DI infeed
Example		**3RK1908**	**–**	**0**	**A**	**P**	**0**	**0**	**–**	**0**	**A**	**P**	**0**	

Note:

The article number schemes show an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

The ET 200SP motor starters offer a number of advantages:

- Fully integrated into the ET 200SP I/O system (including TIA Selection Tool and TIA Portal)
- High degree of flexibility when it comes to safety applications via SIMATIC F-CPU or 3SK safety relays up to SIL 3 and PL e Cat. 4.
- Simple, integrated current value transmission
- Extensive parameterization by means of TIA Portal
- Increase of plant availability through fast replacement of units (easy mounting and plug-in technology)
- Greater endurance and reduced heat losses thanks to hybrid technology
- Less space required in the control cabinet (20 to 80%) as a result of greater functional density (direct-on-line and reversing starters in same width)
- Extensive diagnostics and information for preventive maintenance
- Parameterizable inputs via 3DI/LC control module
- Less wiring and testing required as a result of integrating several functions into a single device
- Lower overheads for stock keeping and configuration as a result of the wide setting range of the electronic overload release (up to 1:3)
- Technology has lower inherent power losses than speed-controlled drive systems, so that less cooling (and smaller footprint) are possible
- The ET 200SP motor starters can be used with highly efficient IE3 and IE4 motors, see Application Manual.
  Take the current characteristics of the connected motor and motor starter into account when dimensioning.
  In addition to the rated current, the maximum permissible current range of the motor starter and the ratio of the rated current to the starting current of the motor are relevant.
  For more information, see page 1/8.

Standards and approvals

- IEC/EN 60947-4-2
- UL 60947-4-2
- CSA
- ATEX
- IEC 62061: SIL 3
- ISO 13849-1: PL e
- CCC approval for China

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Application

The ET 200SP motor starters are suitable for the following applications:

- Switching and monitoring of
  - 3-phase motors with overload and short-circuit protection (e.g. 400 V asynchronous motors for secondary drives in conveyor systems)
  - 1-phase motors with overload and short-circuit protection (e.g. 230 V motors for pump applications)
  - Resistive loads by means of current value and diagnostics via the maintenance function (e.g. for heaters)
- Plant monitoring and energy management in conveyor systems:
  By means of the phase asymmetry and zero current detection during current measurement, drive belt monitoring and blocking monitoring are possible, for example.
- Track switching and lifting table control in conveyor systems:
  Track switches can be implemented by means of the quick stop function and lifting table controls by means of the "immediate end position disconnection" function without any laborious programming.
- Safe isolation of drive from main power supply:
  The isolating functions in accordance with IEC 60947-1 offer protection against inadvertent activation during plant maintenance.

Motor starters in the process industry

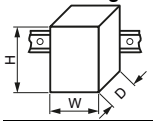
For the ET 200SP motor starters, special 3RK1908-0AP00-0.H0 BaseUnits are available that enable the devices to also be used in the ET 200SP HA I/O system. This is typically used in process engineering applications.

For more information, see https://mall.industry.siemens.com/mall/ww/en/Catalog/Products/10398144?tree=CatalogTree.

Technical specifications

More information	
Industry Mall, see www.siemens.com/product?3RK1308 Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/109479973	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/21800/faq

ET 200SP motor starters

Article number		3RK1308-0.A00-0CP0	3RK1308-0.B00-0CP0	3RK1308-0.C00-0CP0	3RK1308-0.D00-0CP0	3RK1308-0.E00-0CP0
Product category		**Motor starters**				
General technical specifications						
Width x height x depth 	mm	30 x 142 x 150				
Design of the switching contact		Hybrid				
Design of the motor protection		Electronic				
Installation altitude at height above sea level, maximum	m	4 000, derating, see Manual				
Mounting position		Vertical, horizontal, (observe derating)				
Type of mounting		Can be plugged into BaseUnit				
Ambient temperature						
• During operation	°C	-25 ... +60				
• During transport	°C	-40 ... +70				
• During storage	°C	-40 ... +70				
Relative humidity during operation	%	10 ... 95				
Vibration resistance		15 mm up to 6 Hz; 2 *g* up to 500 Hz				
Shock resistance		6 *g*/11 ms				
Degree of protection IP on the front according to IEC 60529		IP20				
Touch protection on the front according to IEC 60529		Finger-safe				
Type of coordination		1				
Electrical specifications						
Supply voltage at DC rated value	V	24				
Operational power for AC-53a at 400 V rated value	kW	0.12	0.25	1.1	4	5.5
Operating frequency, rated value	Hz	50 ... 60				
Ultimate short-circuit current breaking capacity (I_{cu})						
• At 400 V rated value	kA	55				
• At 500 V rated value	kA	55				
Adjustable current response value of the inverse-time delayed overload release	A	0.1 ... 0.4	0.3 ... 1	0.9 ... 3	2.8 ... 9	4 ... 12
Max. current-carrying capacity on starting	A	4	10	30	90	100
Max. permissible voltage for protective separation between main and auxiliary circuit	V	500				
Insulation voltage, rated value	V	500				
Trip class		CLASS OFF/5/10 can be set				

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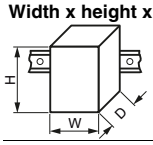
ET 200SP motor starters

BaseUnits for motor starters

Article number		3RK1908-0AP00-0AP0	3RK1908-0AP00-0BP0	3RK1908-0AP00-0CP0 3RK1908-0AP00-0GP0 3RK1908-0AP00-0HP0	3RK1908-0AP00-0DP0 3RK1908-0AP00-0JP0 3RK1908-0AP00-0KP0
Product designation		**BaseUnit**			
General technical specifications					
Width x height x depth	mm	30 x 215 x 75			
					
Ambient temperature					
• During operation	°C	-25 ... +60			
• During transport	°C	-40 ... +70			
• During storage	°C	-40 ... +70			
Degree of protection IP on the front according to IEC 60529		IP20			
Touch protection on the front according to IEC 60529		Finger-safe			
Connections/terminals					
Type of connectable conductor cross-sections					
• At the inputs for supply voltage					
- Solid		1 x 0.5 ... 2.5 mm^2		--	
- Finely stranded with end sleeve		1 x 0.5 ... 2.5 mm^2		--	
- Finely stranded without end sleeve		1 x 0.5 ... 2.5 mm^2		--	
- Solid for AWG cables		1 x 20 ... 12		--	
• For infeed					
- Solid		1 x 1 ... 6 mm^2	--	1 x 1 ... 6 mm^2	--
- Finely stranded with end sleeve		1 x 1 ... 6 mm^2	--	1 x 1 ... 6 mm^2	--
- Finely stranded without end sleeve		1 x 1 ... 6 mm^2	--	1 x 1 ... 6 mm^2	--
- For AWG cables		1 x 18 ... 10	--	1 x 18 ... 10	--
• For load-side outgoing feeder					
- Solid		1 x 0.5 ... 2.5 mm^2			
- Finely stranded with end sleeve		1 x 0.5 ... 2.5 mm^2			
- Finely stranded without end sleeve		1 x 0.5 ... 2.5 mm^2			
- For AWG cables		1 x 20 ... 12			
Type of electrical connection for auxiliary and control circuits		Spring-loaded terminals (push-in)			
Miscellaneous					
Type of screwdriver tip		Slotted			
Size of screwdriver tip		Standard screwdriver 0.6 mm x 3.5 mm			

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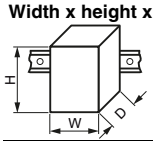
3DI/LC control module

Article number		3RK1908-1AA00-0BP0
Product designation		**3DI/LC control module**
General technical specifications		
Width x height x depth	mm	30 x 54.5 x 42.3
		
Product version		Accessories
Number of digital inputs		4
Installation altitude at height above sea level, maximum	m	2 000
Mounting position		Vertical, horizontal, flat
Type of mounting		Can be plugged onto motor starter
Ambient temperature		
• During operation	°C	-25 ... +60
• During transport	°C	-40 ... +70
• During storage	°C	-40 ... +70
Connections/terminals		
Connectable conductor cross-section for auxiliary contacts		
• Solid or stranded	mm^2	0.2 ... 1.5
• Finely stranded with end sleeve	mm^2	0.25 ... 1.5
• Finely stranded without end sleeve	mm^2	0.2 ... 1.5
AWG number as coded connectable conductor cross-section for auxiliary contacts		24 ... 16
Type of electrical connection for auxiliary and control circuits		Spring-loaded terminals (push-in)
Electrical specifications		
Type of voltage of the control supply voltage		DC
Control supply voltage at DC rated value	V	20.4 ... 28.8
Miscellaneous		
Type of screwdriver tip		Slotted
Size of screwdriver tip		Standard screwdriver 0.6 mm x 3.5 mm

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ET 200SP motor starters *IE3/IE4* ready

Selection and ordering data

	Adjustable current response value of the inverse-time delayed overload release	Max. current-carrying capacity on starting	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	A					
Motor starters							
	Direct-on-line starters						
3RK1308-0AB00-0CP0	0.1 ... 0.4	4	**3RK1308-0AA00-0CP0**		1	1 unit	42D
	0.3 ... 1	10	**3RK1308-0AB00-0CP0**		1	1 unit	42D
	0.9 ... 3	30	**3RK1308-0AC00-0CP0**		1	1 unit	42D
	2.8 ... 9	90	**3RK1308-0AD00-0CP0**		1	1 unit	42D
	4 ... 12	100	**3RK1308-0AE00-0CP0**		1	1 unit	42D
	Reversing starters						
3RK1308-0BB00-0CP0	0.1 ... 0.4	4	**3RK1308-0BA00-0CP0**		1	1 unit	42D
	0.3 ... 1	10	**3RK1308-0BB00-0CP0**		1	1 unit	42D
	0.9 ... 3	30	**3RK1308-0BC00-0CP0**		1	1 unit	42D
	2.8 ... 9	90	**3RK1308-0BD00-0CP0**		1	1 unit	42D
	4 ... 12	100	**3RK1308-0BE00-0CP0**		1	1 unit	42D
	Fail-safe direct-on-line starters						
3RK1308-0CE00-0CP0	0.1 ... 0.4	4	**3RK1308-0CA00-0CP0**		1	1 unit	42D
	0.3 ... 1	10	**3RK1308-0CB00-0CP0**		1	1 unit	42D
	0.9 ... 3	30	**3RK1308-0CC00-0CP0**		1	1 unit	42D
	2.8 ... 9	90	**3RK1308-0CD00-0CP0**		1	1 unit	42D
	4 ... 12	100	**3RK1308-0CE00-0CP0**		1	1 unit	42D
	Fail-safe reversing starters						
3RK1308-0DE00-0CP0	0.1 ... 0.4	4	**3RK1308-0DA00-0CP0**		1	1 unit	42D
	0.3 ... 1	10	**3RK1308-0DB00-0CP0**		1	1 unit	42D
	0.9 ... 3	30	**3RK1308-0DC00-0CP0**		1	1 unit	42D
	2.8 ... 9	90	**3RK1308-0DD00-0CP0**		1	1 unit	42D
	4 ... 12	100	**3RK1308-0DE00-0CP0**		1	1 unit	42D

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Product version	Operational voltage of AC infeed	Supply voltage of DC infeed	Push-in terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V	V					
BaseUnits[1]								
	For motor starters							
	• With AC/DC infeed	500	24	**3RK1908-0AP00-0AP0**		1	1 unit	42D
	• With DC infeed	--	24	**3RK1908-0AP00-0BP0**		1	1 unit	42D
	• With AC infeed	500	--	**3RK1908-0AP00-0CP0**		1	1 unit	42D
	• Without infeed	--	--	**3RK1908-0AP00-0DP0**		1	1 unit	42D
	For fail-safe motor starters							
	• With AC infeed, with F-DI infeed	500	--	**3RK1908-0AP00-0GP0**		1	1 unit	42D
3RK1908-0AP00-0AP0	• With AC infeed, with F-DI loop-through	500	--	**3RK1908-0AP00-0HP0**		1	1 unit	42D
	• Without AC/DC infeed, with F-DI loop-through	--	--	**3RK1908-0AP00-0JP0**		1	1 unit	42D
	• Without AC/DC infeed, with F-DI infeed	--	--	**3RK1908-0AP00-0KP0**		1	1 unit	42D

[1] The voltage is looped-through from BaseUnits with infeed to subsequent BaseUnits without infeed.

	Product version	Supply voltage at DC rated value	Loop through the potential group from the left	Push-in terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V						
BaseUnits								
	For dummy modules							
	• Dark, looping through the potential group	24	Yes	**6ES7193-6BP00-0BA0**		1	1 unit	255
6ES7193-6BP00-0BA0	• Light, opening a new potential group	24	No	**6ES7193-6BP00-0DA0**		1	1 unit	255

	Control supply voltage at DC rated value	Product function		Push-in terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		local control	digital inputs parameterizable					
	V							
3DI/LC control module								
	20.4 ... 28.8	Yes	Yes	**3RK1908-1AA00-0BP0**		1	1 unit	42D
3RK1908-1AA00-0BP0								

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ET 200SP motor starters

	Product designation	Product version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories							
6ES7133-6CV15-1AM0	**BU cover 15 mm**	For BaseUnits Type A0 or A1	**6ES7133-6CV15-1AM0**		1	5 units	255
3RK1908-1CA00-0BP0	**BU cover 30 mm**	For protection of empty slots, 30 mm	**3RK1908-1CA00-0BP0**		1	1 unit	42D
3RK1908-1DA00-2BP0	**Covers Infeed bus** (1 bag containing 10 covers)	For ET 200SP	**3RK1908-1DA00-2BP0**		1	1 unit	42D
3RK1908-1EA00-1BP0	**Additional mounting base unit** (1 bag containing 5 additional mounting base units)	Mechanical, for ET 200SP	**3RK1908-1EA00-1BP0**		1	1 unit	42D
3RW4928-8VB00	**Fan**	Can be used for 3RK1308	**3RW4928-8VB00**		1	1 unit	42G
	Motor suppression module						
3RK1911-6EA00	• Square		**3RK1911-6EA00**		1	1 unit	42D
3RK1911-6EB00	• Round		**3RK1911-6EB00**		1	1 unit	42D
3RK1908-1SK00	**Starter kit**	Consists of 3RK1308-0BC00-0CP0 reversing starter (0.9 ... 3 A), 3RK1908-0AP00-0AP0 BaseUnit with 500 V and 24 V AC/DC infeed, and EMC distance module (consisting of 6ES7193-6BP00-0BA0 BaseUnit plus 6ES7133-6CV15-1AM0 BU cover 15 mm)	**3RK1908-1SK00**		1	1 unit	42D

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Price groups
	PG 241, 250, 368, 41J, 42C, 42D, 5K1, 5K2
9/2	**Introduction**
	ET 200pro motor starters
9/3	General data
9/8	Standard motor starters
9/9	High Feature motor starters
9/10	ET 200pro isolator modules
	ET 200pro Safety motor starters Solution PROFIsafe
9/11	- Safety modules PROFIsafe
9/13	Accessories for ET 200pro motor starters
	Software
9/18	Motor Starter ES
	SIRIUS M200D motor starters
9/19	General data
	M200D motor starters for AS-Interface
9/21	General data
9/25	M200D Basic motor starters
9/26	M200D Standard motor starters
	M200D motor starters for PROFIBUS/PROFINET
9/27	General data
9/33	Communications modules, motor starter modules
	Software
9/34	Motor Starter ES
	Accessories
9/35	For all M200D motor starters
9/40	For M200D motor starters for AS-Interface
9/42	For M200D motor starters for PROFIBUS
9/43	For M200D motor starters for PROFINET

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Motor starters for use in the field, high degree of protection

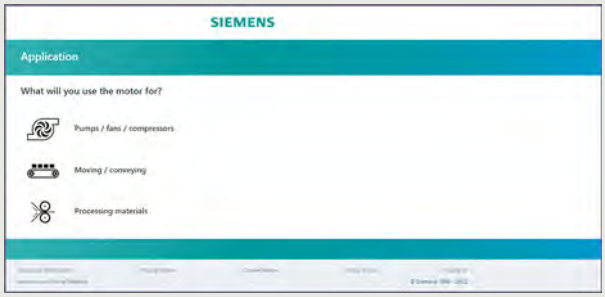
Introduction

Overview

Flexible and cost-efficient distributed starter solutions

Be it their high degree of protection, compact design or integrated multifunctionality – our motor starters and soft starters for use in the field are ideal for realizing distributed drive solutions. The modular concepts, distributed power supply and integrated safety technology of our portfolio for a high degree of protection consistently supports current trends in drive technology.

Decision support for motor start – Starting and operating three-phase asynchronous motors efficiently



Decision support tool for motor start

This tool guides you to the optimum individual drive solution via a short query about the application.

Based on this solution approach, you will then be directed to the right product configurator for selecting the appropriate products, see www.siemens.com/motorstart-guide.

3RK1304

3RK1315

		Type	Page
ET 200pro motor starters			
Motor starters in the SIMATIC ET 200pro I/O system up to 5.5 kW			
Standard motor starters		**3RK1304**	9/8
High Feature motor starters		**3RK1304**	9/9
ET 200pro isolator modules	• With switch disconnector function for safe disconnection	**3RK1304**	9/10
Safety modules PROFIsafe	• F-Switch PROFIsafe	**6ES7148**	9/11
	• 400 V disconnecting module	**3RK1304**	9/11
Accessories for ET 200pro motor starters	• Incoming power supply, power loop-through connection on the field device, motor cable, power bus with power terminal connectors	**3RK19**	9/13
ET 200pro – interface modules	• For communication with PROFIBUS, PROFINET and IWLAN	**6ES71**	ST 70
ET 200pro – CPUs	• Standard CPUs, fail-safe CPUs	**6ES71**	ST 70
ET 200pro – I/O modules	• Digital/analog expansion modules, fail-safe expansion modules, power modules, ET 200pro pneumatic interfaces	**6ES71**	ST 70
ET 200pro PS	• Stabilized power supplies	**6ES7148**	ST 70
ET 200pro FC-2 frequency converters		**6SL35**	D 31.2
ET 200pro add-on products	• Modules for EtherNet/IP	**ZNX:EIP**	ST 70
SIRIUS M200D motor starters			
Distributed motor starters up to 5.5 kW			
M200D AS-i Basic motor starters		**3RK1315**	9/25
M200D AS-i Standard motor starters		**3RK1325**	9/26
M200D communications modules for PROFIBUS		**3RK1305**	9/33
M200D communications modules for PROFINET		**3RK1335**	9/33
M200D motor starter modules		**3RK1395**	9/33
Accessories	• Incoming power supply, motor cable, power bus with power terminal connectors	**3RK1911**	9/37
	• Motor control with I/O communication	**3RK1902**	9/39
	• Motor control with AS-i communication	**3RK1902**	9/40
	• Motor control with PROFIBUS	**3RK1902**	9/42
	• Motor control with PROFINET	**3RK1902**	9/43

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Overview

ET 200pro motor starters in ET 200pro I/O system

SIMATIC ET 200pro is the modular I/O system with high degree of protection IP65/66/67 for local, cabinet-free use. The ET 200pro motor starters with the high degree of protection IP65 are an integral part of ET 200pro.

ET 200pro motor starter: Isolator module, Standard starter and High Feature starter mounted on a wide module rack

ET 200pro motor starters (see pages 9/8 and 9/9)

- Only two versions up to 5.5 kW
- All settings can be parameterized by bus
- Comprehensive diagnostic messages
- Support for PROFIenergy
- Overload can be acknowledged by Remote RESET
- Current asymmetry monitoring
- Stall protection
- EMERGENCY START function on overload
- Current value transmission by bus
- Current limit monitoring
- Full support of acyclic services
- Direct-on-line or reversing starters
- Power bus connection can be plugged in using Han Q4/2 plug-in connectors
- Motor feeder with Han Q8/0 connector
- Conductor cross-sections up to 6 x 4 mm^2
- 25 A per segment (power looped through using jumper plug)
- In the Standard and High Feature versions (with 4 DI on-board)
- Electromechanical switching and electronic switching
- Electronic starter for direct activation or with integrated soft starter function
- Supplied with 400 V AC brake contact as an option
- Temperature sensor can be connected (Thermoclick or PTC type A)
- Provision of the motor current in PROFIenergy format to higher-level systems, motor current shutdown in dead times using PROFIenergy

More information

Homepage, see www.siemens.com/sirius-motor-starter-et200pro

Industry Mall, see www.siemens.com/product?ET200pro

Decision support for motor start – Starting and operating three-phase asynchronous motors efficiently, see www.siemens.com/motorstart-guide

Further components in the ET 200pro distributed I/O system:
- Interface modules, central processing units, I/O modules, ET 200pro PS, see Catalog ST 70
- ET 200pro FC-2 frequency converters, see Catalog D 31.2

ET 200pro isolator modules (see page 9/10)

The isolator module with switch disconnector function is used for safe disconnection of the 400 V operational voltage during repair work in the plant and provides an integrated group fusing function (i.e. additional group short-circuit protection for all subsequently supplied motor starters).

Depending on the power distribution concept, all stations can be equipped with an isolator module as an option.

Safety applications

Safety Solution PROFIsafe (see page 9/11)

With the Safety modules PROFIsafe
- F-Switch and
- 400 V disconnecting module

with an appropriate connection, safety levels SIL 3 (according to IEC 62061) or PL e (according to ISO 13849-1) can also be reached.

Functionality

With the ET 200pro motor starters, any AC loads can be protected and switched.

The ET 200pro motor starters are available both with mechanical as well as electronic contacts.

The ET 200pro electromechanical starters are offered as direct-on-line starters (DSe) and reversing starters (RSe) as Standard and High Feature versions. There are device versions with or without control for externally supplied brakes with 400 V AC.

Compared with the Standard motor starters, the High Feature, mechanical motor starter also has:
- Four digital inputs
- Advanced parameterization options

The ET 200pro electronic starters are offered as direct-on-line starters (sDSSte/sDSte) and reversing starters (sRSSte/sRSte) in the High Feature version.

Compared with the High Feature mechanical motor starters, the High Feature electronic motor starter also has:
- Soft starting and smooth ramp-down function
- Deactivated soft start function as an electronic starter for applications with a high switching frequency
- Advanced parameterization options

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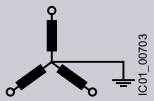
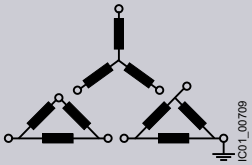
General data

As a result of the protection concept with solid-state overload evaluation and the use of SIRIUS switching devices, size S00, additional advantages are realized on the Standard and High Feature motor starters – advantages that soon make themselves positively felt particularly in manufacturing processes with high plant stoppage costs:

- Configuration is made easier by the fine modular structure with ET 200pro. When using the ET 200pro motor starters, the parts list per load feeder is reduced to two main items: the bus module and the motor starter. This makes the ET 200pro ideal for modular machine concepts or solutions for conveyor systems and in machine-tool construction.
- Expansions are easily possible through the subsequent adding of modules. The innovative plug-in technology also does away with the wiring needed up to now. Through the hot swapping function (disconnection and connection during operation) a motor starter can be replaced within seconds if necessary, without having to shut down the ET 200pro station and with it the process in the plant. The motor starters are therefore recommendable in particular for applications with special demands on availability. Storage costs are also optimized by the low level of variance (two units up to 5.5 kW).
- With four locally acting inputs available on the High Feature motor starter it is possible to realize autonomous special functions which work independently of the bus and the higher-level control system, e.g. as a quick stop on gate valve controls or limit position disconnectors. In parallel with this, the states of these inputs are signaled to the control system.

Voltage data

The specifications for 3-phase systems according to IEC 60947-4-1 apply for the following line system configurations:

Voltage U_e	Line system configurations	
	Three-phase four-wire systems	Three-phase three-wire systems
	 IC01_00703	 IC01_00709
V	V	V
230	--	230
400	230/400	400
440	260/440	440
500	--	500

-- Not specified

Article number schemes

Product versions		Article number													
Motor starters		**3RK1304**	**–**	**5**	**□**	**S**	**□**	**0**	**–**	**□**	**A**	**A**	**□**	
Setting range	0.15 ... 2.0 A				**K**									
	1.5 ... 12 A				**L**									
Product function	Direct-on-line starters DSe						**4**			**4**				Standard
	Reversing starters RSe						**4**			**5**				Standard
	Direct-on-line starters DSe						**4**			**2**				High Feature
	Reversing starters RSe						**4**			**3**				High Feature
	Direct-on-line starters sDSSte/sDSte						**7**			**2**				High Feature
	Reversing starters sDSSte/sDSte						**7**			**3**				High Feature
Inputs/outputs	Without brake output												**0**	
	With brake output												**3**	400 V AC, with High Feature + 4 inputs
Example		**3RK1304**	**–**	**5**	**K**	**S**	**4**	**0**	**–**	**4**	**A**	**A**	**0**	

Product versions		Article number												
Modules		**3RK1304**	**–**	**0**	**H**	**S**	**0**	**0**	**–**	**□**	**A**	**A**	**0**	
Product function	Isolator modules									**6**				
	400 V disconnecting modules									**8**				Safety modules PROFIsafe
Example		**3RK1304**	**–**	**0**	**H**	**S**	**0**	**0**	**–**	**6**	**A**	**A**	**0**	

Note:

The article number schemes show an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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Type		Standard motor starters	High Feature motor starters	
Technology designation[1]		DSe, RSe	DSe, RSe	sDSSte, sDSte, sRSSte, sRSte
Device functions (firmware features)				
Parameterizable rated operational current		✓		
Integrated short-circuit protection		✓		
Parameterizable current limit values		--	✓ 2 limit values	
Parameterizable response in case of current limit violation		--	✓	
Zero current monitoring		✓		
Parameterizable response in case of zero current violation		✓		
Parameterizable current asymmetry limit	%	-- Fixed limit value (30 x I_e)	✓ 30 ... 60 x I_e	
Parameterizable response in case of asymmetry limit violation		✓		
Motor blocking monitoring		--	✓	
Parameterizable blocking current limit	%	--	✓ 150 ... 1 000 x I_e	
Parameterizable blocking time limit	s	--	✓ 1 ... 5	
Current value transmission		✓		
Group warning diagnostics		--	✓ Parameterizable	
Group diagnostics		✓ Parameterizable		
EMERGENCY START		✓		
Digital inputs		--	✓ 4 inputs	
• Parameterizable input signal		--	✓ Latching/non-latching	
• Parameterizable input level		--	✓ NC/NO contacts	
• Parameterizable input signal delay	ms	--	✓ 10 ... 80	
• Parameterizable input signal extension	ms	--	✓ 0 ... 200	
• Parameterizable input control actions		--	✓ 12 different actions	
Brake output (400 V AC)		✓ Order option		
Parameterizable brake enabling delay	s	✓ -2.5 ... +2.5		
Parameterizable holding time of the brake during stopping	s	✓ 0 ... 25		
Parameterizable startup type		--		✓
Parameterizable ramp-down time		--		✓
Parameterizable starting voltage		--		✓
Parameterizable stopping voltage		--		✓
Local device interface		✓		
Firmware update		✓ By specialists		
Thermal motor model		✓		
Parameterizable trip class		-- CLASS 10 fixed	✓ CLASS 5, 10, 15, 20	
Parameterizable response in case of overload of thermal motor model		--	✓ 3 possible states	
Advance warning limit for motor heating	%	--	✓ Parameterizable 0 ... 95	
Advance warning limit time-related trip reserve	s	--	✓ Parameterizable 0 ... 500	
Parameterizable recovery time	min	--	✓ 1 ... 30	
Parameterizable protection against voltage failure		-- Permanently integrated	✓	
Reversing start function		✓ Order option		
Parameterizable interlock time for reversing starters		-- 150 ms fixed	✓ 0 ... 60 s	
Integrated logbook functions		✓ 3 device logbooks		
Integrated statistics data memory		✓		
Parameterizable response in case of CPU/master stop		✓		
PROFIenergy profile support				
• Disconnection of the motor current during dead times		✓		
• Measured motor current values		✓		
Device indications				
• Group fault		SF LED (red)		
• Switching state		STATE LED (red, yellow, green)		
• Device status		DEVICE LED (red, yellow, green)		
• Digital inputs		--	IN 1 ... IN 4, LED	

✓ Function available

-- Function not available

[1] DS .... Direct-on-line starters
RS .... Reversing starters
DSS .. Direct-on-line soft starters
RSS .. Reversing soft starters
e ..... Electronic motor protection
te ..... Full motor protection (thermal + electronic)
s ..... Electronic switching with semiconductor.

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General data

Benefits

ET 200pro motor starters provide the following advantages:

- High flexibility thanks to a modular and compact design
- Little variance among all motor starter versions (two units up to 5.5 kW)
- Extensive parameterization using STEP 7 HW Config
- Increase of plant availability through fast replacement of units (easy mounting and plug-in technology)
- Extensive diagnostics and information for preventive maintenance
- Parameterizable inputs for local control functions (High Feature)
- Cabinet-free design thanks to high degree of protection IP65

Application

The SIMATIC ET 200pro motor starters are ideal for the use of several spatially concentrated distributed drive solutions in which several motors, or digital or analog sensors and actuators are addressed from a distributed station. They are perfectly suited for protecting and switching any AC loads.

Application areas

The SIMATIC ET 200pro motor starters are suitable for numerous sectors of industry, e.g. machinery and plant engineering or conveying applications.

Use of ET 200pro motor starters in conjunction with IE3 and IE4 motors

Note:

For the use of ET 200pro motor starters in conjunction with highly efficient IE3 and IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

For more information, see page 1/8.

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Technical specifications

More information	
Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/22332388	Notes on security: System networking requires suitable protective measures (including network segmentation for IT security) in order to ensure safe plant operation. For more information on the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Type		**Standard motor starters**	**High Feature motor starters**	
		Mechanical switching without inputs	**Mechanical switching with inputs**	**Electronic switching with inputs and soft starter function**
Technology designation[1]		**DSe, RSe**	**DSe, RSe**	**sDSSte, sDSte, sRSSte, sRSte**
Mechanics and environment				
Motor starters or modules that can be connected to ET 200pro With width of 110 mm		max. 8		
Mounting dimensions (W x H x D)				
• Direct-on-line starters and reversing starters	mm	110 x 230 x 150		110 x 230 x 160
Permissible ambient temperature				
• During operation	°C	-25 ... +55, from +40 with derating		
• During storage	°C	-40 ... +70		
Permissible mounting position		Vertical, horizontal		
Vibration resistance according to IEC 60068, Part 2-6	*g*	2		
Shock resistance according to IEC 60068, Part 2-27	*g*/ms	Half-sine 15/11		
Degree of protection		IP65		
Pollution degree		3, IEC 60664 (IEC 61131)		
Electrical specifications				
Power consumption at 24 V DC				
• From auxiliary circuit L+/M (U1)	mA	Approx. 40		
• From auxiliary circuit A1/A2 (U2)	mA	Approx. 200		
Rated operational current I_e for power bus	A	25		
Rated operational voltage U_e	V AC	400 (50/60 Hz)		
• Approval according to EN 60947-1, Annex N	V AC	Up to 400 (50/60 Hz)		Up to 400 (50/60 Hz)
• Approval according to CSA and UL	V AC	Up to 600 (50/60 Hz)		Up to 480 (50/60 Hz)
Approval				
• DIN VDE 0106, Part 101	V	Up to 400		Up to 480
• CSA and UL approval	V	Up to 600		Up to 480
Conductor cross-sections				
• Incoming power supply	mm^2	Max. 6 x 4		
Touch protection		Finger-safe		
Rated impulse withstand voltage U_{imp}	kV	6		
Rated insulation voltage U_i	V	400		
Rated operational current I_e for starters				
• AC-1/2/3 at 40 °C				
- At 400 V	A	0.15 ... 2.0/1.5 ... 12.0		0.15 ... 2.0/1.5 ... 12.0[2]
- At 500 V	A	0.15 ... 2.0/1.5 ... 9.0		
• AC-4 at 40 °C				
- At 400 V	A	0.15 ... 2.0/1.5 ... 4.0		
Rated short-circuit breaking capacity	kA	100 at 400 V		
Type of coordination according to IEC 60947-4-1		1		
Power of three-phase motors at 400 V	kW	Max. 5.5		Max. 5.5/4[3]
Utilization categories		AC-1, AC-3, AC-4		AC-53a[4] (max. 9 A with deactivated soft start function up to CLASS 10)
Protective separation between main and auxiliary circuits	V	400, according to EN 60947-1, Annex N		
Endurance of contactor				
• Mechanical	Operating cycles	30 million		--
• Electrical	Operating cycles	Up to 10 million; depending on the current loading (see manual)		--
Permissible switching frequency		Depending on the current loading, motor starting time, and relative ON period (see manual)		
Operating times for 0.85 ... 1.1 x U_e				
• Closing delay	ms	11 ... 50		--
• Opening delay	ms	5 ... 45		--

1) DS .... Direct-on-line starters
RS .... Reversing starters
DSS .. Direct-on-line soft starters
RSS .. Reversing soft starters
e ..... Electronic motor protection
te ..... Full motor protection (thermal + electronic)
s ..... Electronic switching with semiconductor.

2) If the soft starter control function is deactivated, the permissible rated operational current is reduced to 9 A up to CLASS 10.

3) With parameterization as electronic starter max. 4 kW.

4) 8-hour operation.

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Overview

The functionality, device functions, and technical specifications of the Standard motor starter are described in "ET 200pro motor starters, General data" (see page 9/3 onwards).

Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Standard motor starters, mechanical **Motor protection: thermal model**					
DSe Standard					
Direct-on-line starters DSe[1]					
• Without brake output	**3RK1304-5□S40-4AA0**		1	1 unit	42D
• With brake output 400 V AC	**3RK1304-5□S40-4AA3**		1	1 unit	42D
Reversing starters RSe[1]					
• Without brake output	**3RK1304-5□S40-5AA0**		1	1 unit	42D
• With brake output 400 V AC	**3RK1304-5□S40-5AA3**		1	1 unit	42D
Setting range Rated operational current	K L	Add. price			
• 0.15 ... 2.0 A	K	None			
• 1.5 ... 12.0 A	L	✓			

✓ = Additional price

1) Only functions when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see "Accessories for ET 200pro motor starters", page 9/17).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

The functionality, device functions, and technical specifications of the High Feature motor starter are described in "ET 200pro motor starters, General data" (see page 9/3 onwards).

The High Feature motor starter differs from the Standard motor starter in having more parameters and four integrated, freely-parameterizable digital inputs.

Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
High Feature motor starters, mechanical Motor protection: thermal model					
 RSe High Feature					
Direct-on-line starters DSe[1]					
• Without brake output and with 4 inputs	**3RK1304-5□S40-2AA0**		1	1 unit	42D
• With brake output 400 V AC and 4 inputs	**3RK1304-5□S40-2AA3**		1	1 unit	42D
Reversing starters RSe[1]					
• Without brake output and with 4 inputs	**3RK1304-5□S40-3AA0**		1	1 unit	42D
• With brake output 400 V AC and 4 inputs	**3RK1304-5□S40-3AA3**		1	1 unit	42D
Setting range Rated operational current		Add. price			
• 0.15 ... 2.0 A	K	None			
• 1.5 ... 12.0 A	L	✓			
High Feature motor starters[2], electronic Full motor protection, comprising thermal motor protection and thermistor motor protection					
 sRSSte High Feature					
Direct-on-line starters sDSSte/sDSte[1][2]					
• Without brake output and with 4 inputs	**3RK1304-5□S70-2AA0**		1	1 unit	42D
• With brake output 400 V AC and 4 inputs	**3RK1304-5□S70-2AA3**		1	1 unit	42D
Reversing starters sRSSte/sRSte[1][2]					
• Without brake output and with 4 inputs	**3RK1304-5□S70-3AA0**		1	1 unit	42D
• With brake output 400 V AC and 4 inputs	**3RK1304-5□S70-3AA3**		1	1 unit	42D
Setting range Rated operational current		Add. price			
• 0.15 ... 2.0 A	K	None			
• 1.5 ... 12.0 A	L	✓			

✓ = Additional price

1) Only functions when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see "Accessories for ET 200pro motor starters", page 9/17).

2) The electronic motor starters can be used not only as electronic motor starters with a high level of switching frequency but also as fully fledged soft starters for soft starting and stopping. The changeover from motor starter to soft starter takes place through reparameterization in HW Config. Depending on the setting, this results in the following current ranges:
- Parameterization as electronic motor starter: 0.15 to 2 A and 1.5 to 9 A (4 kW)
- Parameterization as soft starter: 0.15 to 2 A and 1.5 to 12 A (5.5 kW).

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ET 200pro isolator modules *IE3/IE4* ready

Overview

The isolator module with integrated group fusing function (i.e. additional group short-circuit protection for all subsequently supplied motor starters) and switch disconnector function is used for safe disconnection of the 400 V operational voltage during repair work in the plant.

Depending on the power distribution concept, all stations can be equipped with an isolator module as an option.

The following properties apply to the isolator module:

- Increase of plant availability through fast replacement of units (easy mounting and plug-in technology)
- Cabinet-free design thanks to high degree of protection IP65

Technical specifications

Type		Isolator modules
General data		
Mounting dimensions (W x H x D)		
• Direct-on-line starters and reversing starters	mm	110 x 230 x 170
Permissible ambient temperature		
• During operation	°C	-25 ... +55
• During storage	°C	-40 ... +70
Permissible mounting position		Any
Vibration resistance according to IEC 60068, Part 2-6	*g*	2
Shock resistance according to IEC 60068, Part 2-27	*g*/ms	Half-sine 15/11
Power consumption		
• From auxiliary circuit L+/M (U1)	mA	Approx. 20
• From auxiliary circuit A1/A2 (U2)		--
Rated operational current I_e for power bus	A	25
Rated operational voltage U_e	V	400
Approvals according to		
• DIN VDE 0106, Part 101	V	Up to 500
• CSA and UL	V	Up to 600
Conductor cross-sections		
• Incoming power supply	mm^2	Max. 6 x 4

Type		Isolator modules
Degree of protection		IP65
Touch protection		Finger-safe
Pollution degree		3, IEC 60664 (IEC 61131)
Rated impulse withstand voltage U_{imp}	kV	6
Rated insulation voltage U_i	V	400
Rated operational current I_e for starters		
• AC-1/2/3 at 40 °C		
- At 400 V	A	25
- At 500 V	A	25
Rated short-circuit breaking capacity	kA	50 at 400 V
Type of coordination according to IEC 60947-4-1		2
Protective separation between main and auxiliary circuits	V	400, according to DIN VDE 0106, Part 101
Device functions		
• Group diagnostics		Yes, parameterizable
Device indications		
• Group fault		SF LED (red)

Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
ET 200pro isolator modules, mechanical					
3RK1304-0HS00-6AA0 **Isolator modules**[1] Rated operational current 25 A	**3RK1304-0HS00-6AA0**		1	1 unit	42D

[1] Only functions when used together with the related 110 mm backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see page 9/17).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

Safety Solution PROFIsafe

With the Safety modules PROFIsafe
- F-Switch and
- 400 V disconnecting module

with an appropriate connection, safety levels SIL 3 (according to IEC 62061) or PL e (according to ISO 13849-1) can be reached.

F-Switch PROFIsafe

Fail-safe digital inputs/outputs in degrees of protection IP65 to IP67 for near-machine, cabinet-free use.

Fail-safe digital inputs

- For the fail-safe reading in of sensor information (1-/2-channel)
- Including integrated discrepancy evaluation for 2v2 signals
- Internal sensor supplies (incl. testing) available

Fail-safe digital outputs

- Three fail-safe PP-switching outputs for safe switching of the backplane busbars

The F-Switch is certified up to SIL 3/PL e and has detailed diagnostics. It supports PROFIsafe in PROFIBUS configurations as well as in PROFINET configurations.

Note:

Safety characteristics, see page 16/9.

Functionality

The F-Switch PROFIsafe is a fail-safe solid-state module for PROFIsafe safety applications. It has two fail-safe inputs and outputs for safe switching of the 24 V supply over backplane busbars. In combination with the 400 V disconnecting module, fail-safe disconnection of ET 200pro motor starters is possible in PROFIsafe applications up to SIL 3/PL e.

400 V disconnecting module

The 400 V disconnecting module enables the safe disconnection of an operational voltage of 400 V up to SIL 3/PL e. For operation in a Safety PROFIsafe application it functions only in combination with the F-Switch.

Functionality

The 400 V disconnecting module can be used together with the F-Switch for PROFIsafe safety applications. It contains two contactors connected in series for safety-related disconnection of the main circuit. The auxiliary circuit supply of the device is provided via a safety power rail in the backplane bus module. The 400 V disconnecting module can be used in conjunction with the
F-Switch for safety applications up to SIL 3/PL e.

Technical specifications

Type		400 V disconnecting module
General data		
Mounting dimensions (W x H x D)		
• Direct-on-line starters and reversing starters	mm	110 x 230 x 150
Permissible ambient temperature		
• During operation	°C	-25 ... +55
• During storage	°C	-40 ... +70
Permissible mounting position		Any
Vibration resistance according to IEC 60068, Part 2-6		2 *g*
Shock resistance according to IEC 60068, Part 2-27		Half-sine 15 *g*/11 ms
Power consumption		
• From auxiliary circuit L+/M (U1)	mA	Approx. 20
• From auxiliary circuit A1/A2 (U2)		--
Rated operational current I_e for power bus	A	25
Rated operational voltage U_e	V	400 (50/60 Hz)
Approval DIN VDE 0106, Part 101	V	Up to 500
CSA and UL approval	V	Up to 600
Conductor cross-sections		
Incoming power supply	mm^2	Max. 6 x 4
Degree of protection		IP65
Touch protection		Finger-safe
Pollution degree		3, IEC 60664 (IEC 61131)
Rated impulse withstand voltage U_{imp}	kV	6
Rated insulation voltage U_i	V	400
Rated operational current I_e for starters		
• AC-1/2/3 at 40 °C		
- At 400 V	A	25
- At 500 V	A	25
Rated short-circuit breaking capacity	kA	50 at 400 V
Type of coordination according to IEC 60947-4-1		2
Protective separation between main and auxiliary circuits	V	400, according to DIN VDE 0106, Part 101
Operating times for 0.85 ... 1.1 x U_e		
• Closing delay	ms	25 ... 100
• Opening delay	ms	7 ... 10
Device functions		
• Group diagnostics		Yes, parameterizable
Device indications		
• Group fault		SF LED (red)

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Selection and ordering data

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Safety modules PROFIsafe						
3RK1304-0HS00-8AA0	**400 V disconnecting module**[1)2)] Rated operational current 25 A	**3RK1304-0HS00-8AA0**		1	1 unit	42D
6ES7148-1FS00-0AB0	**F-Switch PROFIsafe** 24 V DC, including bus module Note: Connection module must be ordered separately	**6ES7148-4FS00-0AB0**		1	1 unit	241
	Connection module for F-Switch 24 V DC	**6ES7194-4DA00-0AA0**		1	1 unit	241

1) The 400 V disconnecting module functions only when used together with the F-Switch PROFIsafe.

2) The 400 V disconnecting module functions only when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see "Accessories for ET 200pro motor starters", page 9/17).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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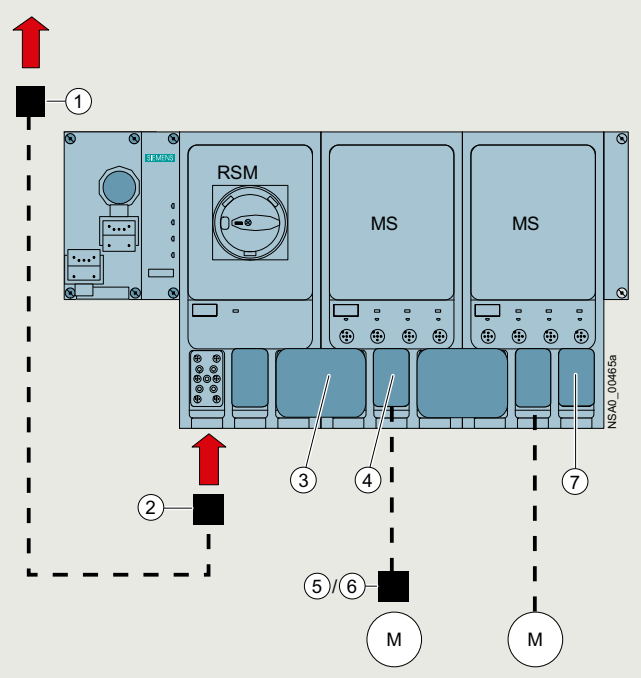
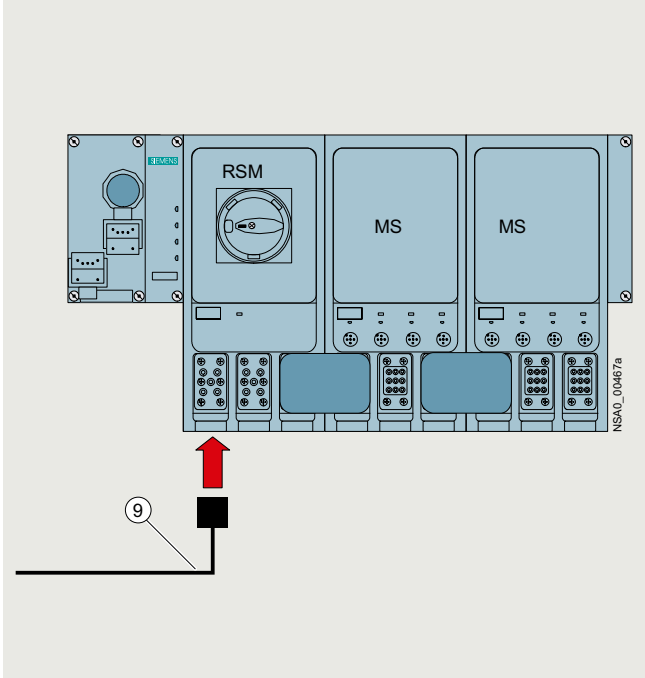
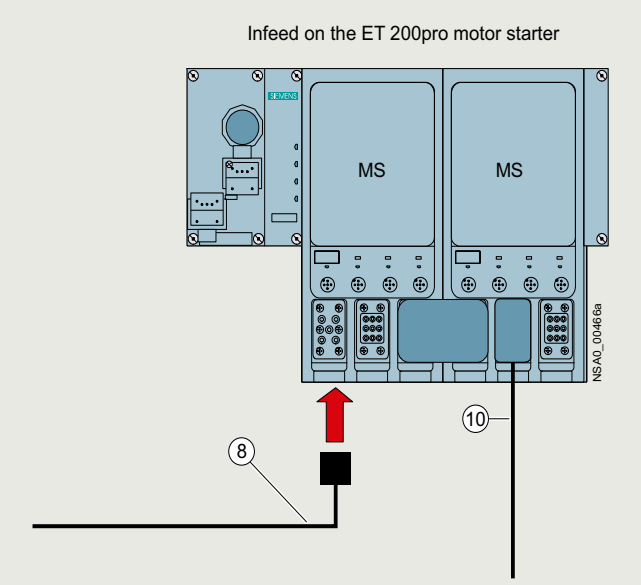
Overview



Basic design of an ET 200pro version with (from the left) connection module for IM, interface module for communication (IM), RSM isolator module, two ET 200pro motor starters (MS), and connections for energy



Infeed on the RSM isolator module



Infeed on the ET 200pro motor starter

Legend:

① Power feeder plug (see page 9/15)
② Power connection plug (see page 9/15)
③ Power jumper plug (see page 9/15)
④ Motor connection plug (see page 9/15)
⑤ Motor plug (see page 9/15)
⑥ Motor plug with EMC suppressor circuit (see page 9/15)
⑦ Power loop-through plug (see page 9/15)
⑧ Power connecting cable (see page 9/15)
⑨ Power connecting cable for isolator module (see page 9/15)
⑩ Motor cable (see page 9/16)

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Accessories for ET 200pro motor starters

Power bus

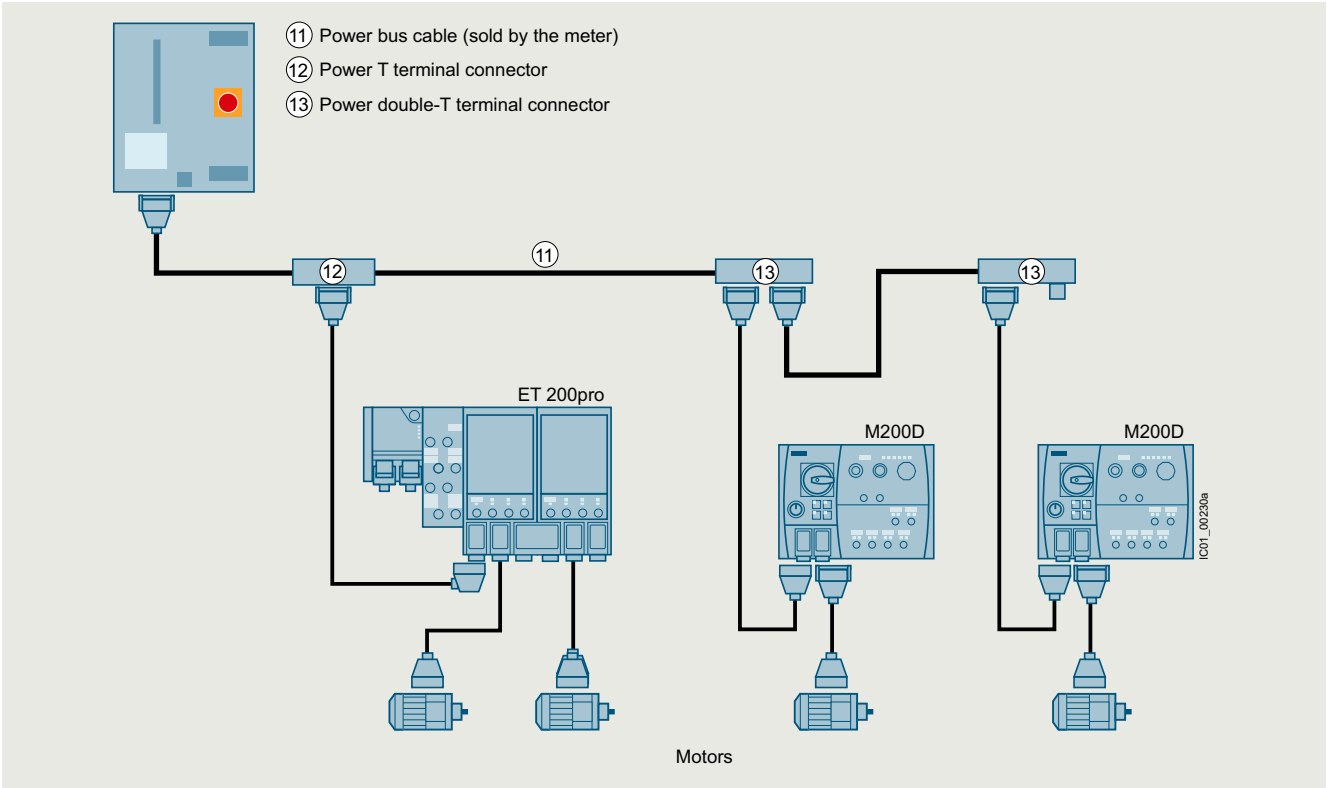
The power supply to the field devices (ET 200pro motor starters, M200D motor starters) is provided via the power bus, in which the power T terminal connectors or power double-T terminal connectors are connected by power bus cables.

Feeders

From the terminal connectors, spur lines with Han Q4/2 plugs lead to the field devices, from which the motors are supplied with power via motor connecting cables.

Interruption-free thanks to power terminal connectors

In finger-safe connection technology the power T terminal connectors and power double-T terminal connectors connect the components of a feeder to the power bus. They ensure interruption-free operation, i.e. when the components are plugged in, the power bus is not interrupted.



Power supply to the motors via the power bus with power T and double-T terminal connectors linked by power bus cables, spur lines to the field devices (motor starters), and power loop-through connections to the motors via motor connecting cables

Motor control via PROFIBUS

The interface modules (IM) for PROFIBUS can be combined with two different connection modules for connecting PROFIBUS DP and the power supply:

- Direct connection with cable gland
- M12, 7/8" connection
  - with M12 connecting cable and M12 plugs for data transmission with PROFIBUS DP
  - with 7/8" connecting cable and 7/8" plugs for the power supply

For connection modules with the relevant accessories, see "Accessories for ET 200pro interface modules" in Catalog ST 70 or the Industry Mall.

Motor control via PROFINET

For connection modules with the relevant accessories, see "Accessories for ET 200pro interface modules" in Catalog ST 70 or the Industry Mall.

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Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Incoming power supply					
① **Power feeder plugs** Connector set for energy supply, e.g. for connecting to T terminal connectors, comprising a coupling enclosure, straight outgoing feeder (with bracket), pin insert for HAN Q4/2, incl. gland					
• 5 male contacts, 2.5 mm²	**3RK1911-2BS60**		1	1 unit	42D
• 5 male contacts, 4 mm²	**3RK1911-2BS20**		1	1 unit	42D
• 5 male contacts, 6 mm²	**3RK1911-2BS40**		1	1 unit	42D
② **Power connection plugs** Connector set for incoming power supply for connection to ET 200pro motor starters/ET 200pro isolator modules, comprising a cable-end connector hood, angled outgoing feeder, female insert for HAN Q4/2, incl. gland					
• 5 female contacts, 2.5 mm²	**3RK1911-2BE50**		1	1 unit	42D
• 5 female contacts, 4 mm²	**3RK1911-2BE10**		1	1 unit	42D
• 5 female contacts, 6 mm²	**3RK1911-2BE30**		1	1 unit	42D
⑧ **Power connecting cables, assembled at one end** Power connecting cable for ET 200pro motor starters, open at one end, for HAN Q4/2, angled, 4 x 4 mm²					
• Length 1.5 m	**3RK1911-0DB13**		1	1 unit	42D
• Length 5.0 m	**3RK1911-0DB33**		1	1 unit	42D
⑨ **Power connecting cables for isolator module, assembled at one end** Power connecting cable for ET 200pro isolator modules, open at one end, for HAN Q4/2, angled, insert turned at isolator module end, 4 x 4 mm²					
• Length 1.5 m	**3RK1911-0DF13**		1	1 unit	42D
• Length 5.0 m	**3RK1911-0DF33**		1	1 unit	42D
Power loop-through on the field device					
③ **Power jumper plugs**	**3RK1922-2BQ00**		1	1 unit	42D
⑦ **Power loop-through plugs** Connector set for power loop-through for connection to ET 200pro motor starters/ET 200pro isolator modules, comprising a cable-end connector hood, angled outgoing feeder, pin insert for HAN Q4/2, incl. gland					
• 4 male contacts, 2.5 mm²	**3RK1911-2BF50**		1	1 unit	42D
• 4 male contacts, 4 mm²	**3RK1911-2BF10**		1	1 unit	42D
Motor cables					
④ **Motor connection plugs** Connector set for motor cable for connection to ET 200pro motor starters, comprising a cable-end connector hood, angled outgoing feeder, pin insert for HAN Q8/0, incl. gland					
• 8 male contacts, 1.5 mm²	**3RK1902-0CE00**		1	1 unit	42D
• 6 male contacts, 2.5 mm²	**3RK1902-0CC00**		1	1 unit	42D
⑤ **Motor plugs** Connector set for motor cable for connection to motors, comprising a cable-end connector hood, straight outgoing feeder, female insert for HAN 10e, incl. star jumper, incl. gland					
• 7 female contacts, 1.5 mm²	**3RK1911-2BM21**		1	1 set	42D
• 7 female contacts, 2.5 mm²	**3RK1911-2BM22**		1	1 set	42D
⑥ **Motor plugs with EMC suppressor circuit** Connector set for motor cable for connection to motors, comprising a cable-end connector hood, straight outgoing feeder, female insert for HAN 10e with EMC suppressor circuit, incl. star jumper, incl. gland					
• 7 female contacts, 1.5 mm²	**3RK1911-2BL21**		1	1 set	42D
• 7 female contacts, 2.5 mm²	**3RK1911-2BL22**		1	1 set	42D

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Accessories for ET 200pro motor starters

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Motor cables (continued)					
⑩ **Motor cables, assembled at one end** Open at one end, HAN Q8, angled length 5 m					
• For motor without brake, for ET 200pro, 4 x 1.5 mm^2	**3RK1911-0EB31**		1	1 unit	42D
• For motor with brake for ET 200pro, 6 x 1.5 mm^2	**3RK1911-0ED31**		1	1 unit	42D
• For motor without brake, with thermistor, for ET 200pro, 6 x 1.5 mm^2	**3RK1911-0EF31**		1	1 unit	42D
• For motor with brake and thermistor for ET 200pro, 8 x 1.5 mm^2	**3RK1911-0EG31**		1	1 unit	42D
Power bus					
⑫ **Power T terminal connectors** For 400 V AC, for connection of feeders (e.g. motor starters) by means of standard round cable at any point of the power bus, by insulation displacement connection, used with preassembled bus segments					
• 2.5 mm^2/4 mm^2	**3RK1911-2BF01**		1	1 unit	42D
• 4 mm^2/6 mm^2	**3RK1911-2BF02**		1	1 unit	42D
⑬ **Power double-T terminal connectors** For 400 V AC, for connection of feeders (e.g. motor starters) by means of standard round cable at any point of the power bus, by insulation displacement connection, used with preassembled bus segments, connection of two motor starters possible					
• 4 mm^2/6 mm^2	**3RK1911-2BG02**		1	1 unit	42D
Sealing set (comprising 2 seals) For power T/power double-T terminal connectors					
• For power cables with Ø 10 ... 13 mm	**3RK1911-5BA00**		1	1 unit	42D
• For power cables with Ø 13 ... 16 mm	**3RK1911-5BA10**		1	1 unit	42D
• For power cables with Ø 16 ... 19 mm	**3RK1911-5BA20**		1	1 unit	42D
• For power cables with Ø 19 ... 22 mm	**3RK1911-5BA30**		1	1 unit	42D
• Blanking plugs	**3RK1911-5BA50**		1	1 unit	42D
Further accessories for power connections					
 3RK1902-0CW00 **Crimping tool** For pins/sockets, 4 mm^2 and 6 mm^2	**3RK1902-0CW00**		1	1 unit	42D
Dismantling tools					
• For male and female contacts for 9-pole HAN Q4/2 inserts	**3RK1902-0AB00**		1	1 unit	42D
• For male and female contacts for 9-pole HAN Q8 inserts	**3RK1902-0AJ00**		1	1 unit	42D
 3RK1902-0CK00 **Sealing caps** For 9-pole power sockets					
• 1 unit per pack	**3RK1902-0CK00**		1	1 unit	42D
• 10 units per pack	**3RK1902-0CJ00**		1	10 units	42D

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Further accessories						
	Module racks, wide[1]					
	• Length 500 mm	**6ES7194-4GB00-0AA0**		1	1 unit	250
	• Length 1 000 mm	**6ES7194-4GB60-0AA0**		1	1 unit	250
	• Length 2 000 mm	**6ES7194-4GB20-0AA0**		1	1 unit	250
	Module racks, wide, compact[1]					
	• Length 500 mm	**6ES7194-4GD00-0AA0**		1	1 unit	250
	• Length 1 000 mm	**6ES7194-4GD10-0AA0**		1	1 unit	250
	• Length 2 000 mm	**6ES7194-4GD20-0AA0**		1	1 unit	250
	Backplane bus modules 110 mm[2]	**3RK1922-2BA00**		1	1 unit	42D
3RK1922-3BA00	**Handheld devices** For ET 200pro motor starters (or for ET 200S High Feature and M200D motor starters) for local operation. Notes: • The motor-starter-specific serial interface cables must be ordered separately. • The RS 232 interface cable 3RK1922-2BP00 is used for the MS ET 200pro.	**3RK1922-3BA00**		1	1 unit	42D
	RS 232 interface cable Serial data connection between ET 200pro (or M200D) motor starters and the RS 232 interface of a PC/PG/laptop (with the Motor Starter ES software) or the handheld device 3RK1922-3BA00.	**3RK1922-2BP00**		1	1 unit	42D
	USB interface cable, 2.5 m Serial data connection between ET 200pro (or M200D) motor starters and the USB interface of a PC/PG/laptop (with the Motor Starter ES software).	**6SL3555-0PA00-2AA0**		1	1 unit	368
3RK1901-1KA00	**M12 sealing caps** For sealing unused M12 input or output sockets (one set contains ten sealing caps)	**3RK1901-1KA00**		100	10 units	42C
3RK1911-6EA00	**Motor suppression module** RC element for installation in motor terminal box					
	• Angled design	**3RK1911-6EA00**		1	1 unit	42D
3RK1911-6EB00	• Round design	**3RK1911-6EB00**		1	1 unit	42D

[1] The wide module rack can accommodate all ET 200pro motor starters and any optional modules (isolator module, 400 V disconnecting module).

[2] The backplane bus module is a prerequisite for operation of the ET 200pro motor starter and the optional module.

For more connection technology products, see https://support.industry.siemens.com/cs/ww/en/view/65355810.

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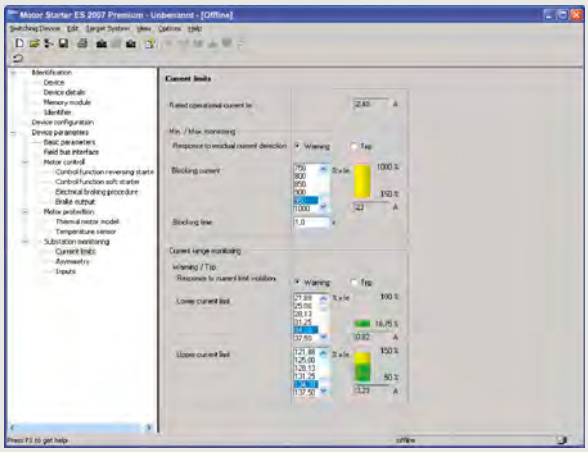
Motor Starter ES

Overview



Motor Starter ES for parameterization, monitoring, diagnostics and testing of motor starters

More information

Industry Mall, see www.siemens.com/product?3ZS1

Technical specifications and system requirements, see https://support.industry.siemens.com/cs/ww/en/ps/16713/td

Motor Starter ES is used for start-up, parameterization, diagnostics, documentation and the preventative maintenance of the motor starters in the SIMATIC ET 200S, ET 200pro, ECOFAST and M200D product families.

The software program is available in three versions which differ in their user-friendliness, scope of functions and price.

For detailed information on the Motor Starter ES software, see page 14/10.

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Overview

SIRIUS M200D AS-i Basic motor starter with manual local operation

The intelligent and highly flexible SIRIUS M200D motor starters for distributed installation start, monitor and protect motors and loads up to 5.5 kW.

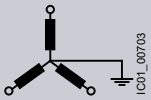
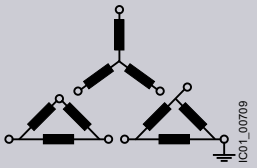
The M200D motor starters are available in four versions:

M200D AS-i Basic	M200D AS-i Standard	M200D PROFIBUS	M200D PROFINET
Motor control with AS-i communication		PROFIBUS	PROFINET
Mechanical or electronic switching			
✓	✓	✓	✓
Electronic switching with soft starter functionality			
--	✓	✓	✓

✓ Function available
-- Function not available

Voltage data

The specifications for 3-phase systems according to IEC 60947-4-1 apply for the following line system configurations:

Voltage U_e	Line system configurations	
	Three-phase four-wire systems	Three-phase three-wire systems
		
V	V	V
230	--	230
400	230/400	400
440	260/440	440
500	--	500

-- Not specified

More information

Homepage, see www.siemens.com/sirius-motor-starter-m200d

Industry Mall, see www.siemens.com/product?M200D

Decision support for motor start – Starting and operating three-phase asynchronous motors efficiently, see www.siemens.com/motorstart-guide

TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=MS_M200D

Basic functionality

The versions of the M200D motor starter are equipped with the following properties and functions:

- Available as direct-on-line and reversing starters in a rugged design
- Electromechanical or electronic switching version
- Low variance – only two device versions up to 5.5kW thanks to wide range setting
- All versions have the same enclosure size.
- Degree of protection IP65
- Quick and fail-safe wiring of system and motor cables using ISO 23570 plug-in connector technology (Q4/2 and Q8/0)
- Robust and widely used M12 connection method for digital inputs and outputs
- Integrated feeder connector monitoring
- Full motor protection through overload protection and a temperature sensor (PTC, TC)
- Short-circuit and overload protection integrated
- Integrated repair switch lockable with three locks (multi-level service)
- Uniform wiring to the SINAMICS G115D and SINAMICS G120D frequency converters and to the ET 200pro distributed I/O system
- Extensive diagnostics concept using LEDs
- Optionally available integrated manual local control with key-operated switch (ordering option)
- Optionally available brake actuation with voltages from 180 V DC (no rectifier needed in motor) or 230/400 V AC (order versions)

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General data

Article number scheme

Product versions		Article number															
Motor starters		**3RK13**	☐	**5**	**–**	**6**	☐	**S**	☐	**1**	**–**	☐	**A**	☐	☐		
Type	AS-i Basic		**1**											**A**			
	AS-i Standard		**2**											**A**			
	PROFIBUS/PROFINET		**9**											**D**			
Setting range for rated operational current I_A	0.15 ... 2 A						**K**										
	1.5 ... 9 A						**N**										
	1.5 ... 12 A						**L**										
Starter version	Electromechanical starters								**4**							With integrated contactor	
	Electronic starters								**7**							With thyristors	
Product function	Direct-on-line starters											**0**					
	Reversing starters											**1**					
	Direct-on-line starters											**2**				With manual local operation	
	Reversing starters											**3**				With manual local operation	
Brake actuation	None														**0**		
	230/400 V AC														**3**		
	180 V DC														**5**		
Example		**3RK13**	**1**	**5**	**–**	**6**	**K**	**S**	**4**	**1**	**–**	**3**	**A**	**A**	**0**		

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

M200D motor starters provide the following advantages for customers:

- High plant availability through plug-in capability of the main circuit, communication and I/Os – relevant for installing and replacing devices
- Cabinet-free construction and near-motor installation thanks to the high degree of protection IP65
- The motor starters record the actual current flow for the parameterizable electronic motor overload protection. Reliable messages concerning the overshooting or undershooting of setpoint values ensure comprehensive motor protection. All motor protection functions can be defined by simple parameterization
- Low stock levels and low ordering effort thanks to a wide setting range for the electronic motor protection of 1:10 (only two device versions up to 5.5 kW)
- The integrated wide range for the current enables a single device to cover numerous standard motors of different sizes.
- Comprehensive offering of accessories, including ready-assembled cables
- The M200D motor starters can be installed with a few manual steps. The integrated plug-in technology enables far lower wiring outlay:
  Preassembled cables can be plugged directly onto the motor starter module.
- Easy and user-friendly installation because all versions have the same enclosure dimensions.
- Fast and user-friendly commissioning using optional manual local operation
- Increase of process speed through integrated functions such as "Quick Stop" and "Disable Quick Stop", e.g. at points and crossings
- Optional manual local control with momentary-contact and latching operation for easier startup and easier servicing

Application

The high degree of protection IP65 makes the M200D motor starters suitable in particular for use on extensive conveying systems such as are found in mail sorting centers, airports, automotive factories and the packing industry.

For simple drive tasks, particularly in conveyor applications, the new SINAMICS G115D frequency converter series with a performance range from 0.37 kW to 7.5 kW and degree of protection IP65 is the ideal partner for the M200D motor starters.

SINAMICS G115D converters allow for continuous speed control of three-phase asynchronous motors and comply with the requirements of conveyor technology applications with frequency control (for more information, see Catalog D 31.2).

Use of SIRIUS M200D motor starters in conjunction with IE3 and IE4 motors

Note:

For the use of SIRIUS M200D motor starters in conjunction with highly efficient IE3 and IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

For more information, see page 1/8.

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Overview

For motor control using AS-Interface there are the following M200D motor starter versions: SIRIUS M200D AS-i Basic and SIRIUS M200D AS-i Standard (basic functionality, see page 9/19 "SIRIUS M200D motor starters" ➞ "General data" ➞ "Overview").

SIRIUS M200D AS-i Basic

Functionality

- Easy and fast on-site startup through parameterization of local setting knobs (DIP switches) and rotary coding switches for adjusting the rated operational current. The rotary coding switch has an OFF position for deactivating the overload protection with the help of the thermal motor model when using a temperature sensor.

Communications

- AS-i communication with A/B addressing according to Spec V2.1
- The AS-i bus is connected cost-effectively using an M12 connection on the device. Of the four digital inputs, two are contained in the process image and can therefore be used in the PLC program. The other two inputs are locally effective and permanently assigned with functions.
- The LEDs can provide comprehensive diagnostics of the device on the spot. In addition to diagnostics using the PAE process image, the device can create up to 15 different diagnostic messages per slave. The message with the highest priority can be read out through the AS-i communication. This is yet another new development which distinguishes the M200D AS-i Basic motor starter from the rest of the market and adds innovative technology, maximum availability and transparency to the system.

SIRIUS M200D AS-i Standard

The intelligent and highly flexible M200D AS-i Standard motor starter in A/B technology starts and protects motors and loads up to 5.5 kW. It is available in direct-on-line or reversing starter versions, in a mechanical version and also a solid-state version (the latter with soft start function).

The M200D AS-i Standard motor starter is the most functional member of the SIRIUS motor starter family in the high degree of protection IP65 for AS-i communication. Consistency with other products of the SIRIUS M200D motor starter range and with the frequency converter and ET 200pro I/O system is assured.

Functionality

- AS-i communication with A/B addressing according to Spec 3.0
- Solid-state version also with soft start function
- AS-i slave profile 7AE/7A5 with process image 6E/4A
- Full TIA integration: All digital inputs and outputs exist in the cyclic process image and are visible through AS-i, providing maximum flexibility and best adaptability to the application.
- Additionally expanded diagnostics using data record through AS-i bus
- Complete plant monitoring using statistics data record and current value monitoring by means of data records
- Parameterization through AS-i bus with the help of data records or an expanded process image from the user program
- Control of the motor starter using a command data record from the user program
- Flexible assignment of the digital inputs and outputs with all available assignable input actions
- Parameterization using Motor Starter ES at the local interface (ordering option for startup software)
- Diagnostics with the help of Motor Starter ES (ordering option for startup software)

Mounting and installation

The M200D motor starters can be installed with a few manual steps. The integrated plug-in technology enables far lower wiring outlay. Connecting cables can be plugged directly onto the motor starter module. Swapping of the connecting wires and malfunctions within the plant are prevented by preassembled cables. The AS-i bus is connected cost-effectively using an M12 connection on the device. All versions have identical enclosure dimensions for easier system design and conversion.

Parameterization and configuration

The particularly robust M200D AS-i Standard motor starter is characterized by numerous functions which can be flexibly parameterized. It enables highly flexible parameterization through the AS-i bus using data records from the user program as well as user-friendly local parameterization using the Motor Starter ES startup software through the local point-to-point interface.

Functions can be flexibly assigned to the digital inputs and outputs, adapting them to all possible conveyor applications. All motor protection functions, limit values and reactions can be defined by parameterization. The AS-i Standard is unique. In its 6E/4A process image the motor starter sends all four digital inputs and the digital output via the process image to the PLC in cyclic mode. System configuration and system documentation are facilitated not least by a number of CAX data.

Operation

The new generation of motor starters is characterized by its advanced functionality, maximum flexibility and extremely high degree of automation.

All digital inputs and outputs exist in the cyclic process image. All limit values for monitoring functions and their reactions are parameterizable and therefore adaptable to the application. The motor starters record the actual current flow. Evaluating the current of the parameterizable electronic overload protection increases the availability of the drives, as do reliable messages concerning the overshooting or undershooting of setpoint values.

Diagnostics and preventive maintenance

The M200D sets new standards for diagnostics. In addition to diagnostics using the PAE process image and diagnostics by "parameter echo" (up to 15 different diagnostic messages per slave can be read out via AS-i communication), the possibility of reading out diagnostic data records is unique on the market.

The AS-i Standard is recommended in particular for expansive and highly automated system components because the possibility of monitoring devices and systems with data records (statistical data, measured values and device diagnostics) provides an in-depth view of the plant from the control room, guaranteeing the monitoring process and increasing plant availability.

Preventive maintenance can be carried out with the integrated maintenance timer and plant downtimes prevented as a result in advance.

Local control of a drive is possible using the ordering option with integrated manual local operation. This is yet another new development which distinguishes the M200D AS-i Standard motor starter from the rest of the market and adds innovative technology, maximum availability and transparency to the plant.

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General data

	SIRIUS M200D AS-i Basic	SIRIUS M200D AS-i Standard
Device functions (firmware features)		
Slave on the bus		
Fieldbus	✓ AS-i	
Slave type	✓ A/B according to Spec 2.1	✓ A/B according to Spec 3.0
Profile	✓ 7.A.E	✓ 7.A.E & 7.A.5
Number of assigned AS-i addresses on the bus	✓ 1	✓ 2
Number of stations per AS-i master	✓ Max. 62 devices	✓ Max. 31 devices
AS-i master profile	✓ M3 and higher	✓ M4 and higher
Parameter assignment		
DIP switches	✓	--
Potentiometer for rated operational current	✓	--
Motor Starter ES	--	✓
Data records through AS-i	--	✓
Diagnostics		
Diagnostics through parameter channel	✓	
Acyclic through data records	--	✓
Expanded process image PAE 4 bytes	--	✓
Process image		
Process image	✓ 4E/3A	✓ 6E/4A
Data channels		
Local optical interface (manual local)	✓	
AS-i bus	✓	
Motor Starter ES through local interface	--	✓
Motor Starter ES through bus	--	
Data records[1] (acyclic)		
Parameter assignment	--	✓
Diagnostics	--	✓
Measured values	--	✓
Statistics	--	✓
Commands	--	✓
Inputs		
Number	✓ 4	
• Of these in the process image	✓ 2 through AS-i	✓ 4 through AS-i
Input action	✓ For permanently assigned functions, see manual	✓ Parameterizable: flexible
Quick stop	✓ Permanent function: latching, edge-triggered	✓ Parameterizable function: latching (edge-triggered), non-latching (level-triggered)
Outputs		
Number	✓ 1	
Output action	✓ Permanent function: assigned with group fault	✓ Parameterizable: For function, see manual
Brake output		
180 V DC/230/400 V AC/without	✓	
Motor protection		
Overload protection	✓ Electronic, wide range 1:10	
Short-circuit protection	✓	
Full motor protection	✓	
Temperature sensor	✓ Parameterizable using DIP switches: PTC or Thermoclick or deactivated	✓ Parameterizable via Motor Starter ES, data record: PTC or Thermoclick or deactivated

✓ Function available
-- Function not available

1) The data records are a reduced selection compared with PROFIBUS/PROFINET.

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	SIRIUS M200D AS-i Basic	**SIRIUS M200D AS-i Standard**
Device functions (firmware features) (continued)		
Device function		
Repair switch	✓	
Current limit monitoring bottom	--	✓ Parameterizable
Current limit monitoring top	--	✓ Parameterizable
Residual current detection	✓ Permanent function: disconnection, less than 18.75% of the rated operational current I_e	✓ Parameterizable
Blocking current	✓ Permanent function: starting up of the motor: tripping limit up to 800% of the rated operational current I_e for 10 s Active operation: threshold for tripping "blocking current" up to 400% of the rated operational current I_e	✓ Parameterizable
Asymmetry	✓ Permanent function: up to 30% of the rated operational current I_e (only mechanical MS)	✓ Parameterizable
Load type	✓ Permanent function: 3-phase	✓ Parameterizable: 1-phase and 3-phase
Shutdown class	✓ Parameterizable using DIP switches: CLASS 10/deactivated	Parameterizable via Motor Starter ES, data record: CLASS 5, 10, 15, 20
Protection against voltage failure	✓	✓ Parameterizable: activated/deactivated
Soft starter control function		
Soft start function	--	✓ Only solid-state version
Bypass function	--	✓ Only solid-state version

✓ Function available
-- Function not available

Application

The M200D AS-i Standard is particularly suitable for highly automated applications in conveyor systems requiring devices and systems to be monitored to prevent or limit plant downtime. The option of parameterizing the functions of the motor starter or its interfaces also creates the prerequisite for fine-adjustment to the function of the motor starter in the application and hence provides for extreme flexibility.

Use of M200D motor starters in conjunction with IE3 and IE4 motors

Note:

For the use of SIRIUS M200D motor starters in conjunction with highly efficient IE3 and IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

For more information, see page 1/8.

Technical specifications

More information	
Manuals for SIRIUS M200D: • AS-i Basic, see https://support.industry.siemens.com/cs/ww/en/view/35016496 • AS-i Standard, see https://support.industry.siemens.com/cs/ww/en/view/38722160 FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16324/faq	Notes on security: In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept. For more information on the subject of Industrial Security, see www.siemens.com/industrialsecurity.

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General data

Type		M200D motor starters			
		AS-i Basic electromechanical switching	AS-i Basic electronic switching	AS-i Standard electromechanical switching	AS-i Standard electronic switching
Technology designation[1]		DSte/RSte	sDSte/sRSte	DSte/RSte	sDSSte/sRSSte
Mechanics and environment					
Mounting dimensions (W x H x D)	mm	294 x 215 x 159			
Permissible ambient temperature					
• During operation	°C	-25 ... +55			
• During storage	°C	-40 ... +70			
Weight	g	2 880/3 130	3 220/3 420	2 880/3 130	3 220/3 420
Permissible mounting position		Vertical, horizontal, lying			
Vibration resistance according to IEC 60068-2-6	*g*	2			
Shock resistance					
• According to IEC 60068-2-27	*g*/ms	12/11 half-sine			
• Without influencing the contact position	*g*/ms	9.8/5 or 5.9/10			
Degree of protection according to IEC 529		IP65			
Installation altitude					
• Up to 1 000 m		No derating			
• Up to 2 000 m		1% per 100 m			
Cooling		Convection			
Protection class IEC 536 (DIN VDE 0106-1)		1			
Electrical specifications					
Control circuit					
Operational voltage U_{As-i}	V DC	26.5 ... 31.6			
Supply voltage U_{aux}	V DC	20.4 ... 28.8			
Power consumption from AS-i (incl. 200 mA sensor supply)	mA	< 300			
Current consumption from U_{aux} (without digital output)					
• Max.	mA	155	15 (direct-on-line)/ 175 (reversing)	155	15 (direct-on-line)/ 175 (reversing)
• Typ.	mA	75	10 (direct-on-line)/ 75 (reversing)	75	10 (direct-on-line)/ 75 (reversing)
Main circuit					
Maximum power of three-phase motors at 400 V AC	kW	5.5	4	5.5	5.5
Rated operational voltage U_e					
• Approval according to IEC 60947-1	V AC	400 (50/60 Hz)			
• Approval according to UL and CSA	V AC	600 (50/60 Hz)	480 (50/60 Hz)	600 (50/60 Hz)	480 (50/60 Hz)
• Rated operational current range	A	0.15 ... 2/1.5 ... 12	--	0.15 ... 2/1.5 ... 12	--
• Rated operational current range for soft starting	A	--			0.15 ... 2/1.5 ... 12
• Rated operational current range for direct-on-line starting	A	--	0.15 ... 2/1.5 ... 9	--	0.15 ... 2/1.5 ... 9
Rated operational current I_e for starters at 400 V AC					
• 400 V at AC-1, AC-3 and AC-3e	A	12	--	12	--
• 500 V at AC-1, AC-3 and AC-3e	A	9	--	9	--
• 400 V at AC-4	A	4	--	4	--
• 400 V at AC-53a	A	--	9	--	12 for soft starting 9 for direct-on-line starting
Mechanical endurance of contactor	Operating cycles	30 million	--	30 million	--
Trip class		CLASS 10		CLASS 5, 10, 15, 20	
Type of coordination according to IEC 60947-4-1		1 (2 for device version 2A)	1	1 (2 for device version 2A)	1
Permissible switching frequency		see manual		see manual	
Rated ultimate short-circuit breaking capacity I_q					
• At 400 V AC	kA	50			
• At 500 V AC	kA	50[2]	20[2]	50	20[2]
Short-circuit protection					
• At I_{emax} = 2 A		Integrated, 2 x 3 I_e = 26 A			
• At I_{emax} = 9/12 A		Integrated, 2 x 3 I_e = 208 A			
Brake actuation (option)					
Operational voltage	V	230/400 AC or 180 DC			
Uninterrupted current	A	< 0.5 at 230/400 V AC < 0.8 at 180 V DC			
Short-circuit protection		Yes, 1 A melting fuse			

[1] DS .... Direct-on-line starters
RS .... Reversing starters
DSS .. Direct-on-line soft starters
RSS .. Reversing soft starters
te ..... Full motor protection (thermal + electronic)
s ..... Electronic switching with semiconductor.

[2] Only systems with grounded neutral point permitted.

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Selection and ordering data

M200D AS-i Basic without manual local operation

M200D AS-i Basic with manual local operation

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Electromechanical starters (with integrated contactor)					
	3RK1315-6□S41-□AA□		1	1 unit	42D
Rated operational current setting range/A		Add. price			
• 0.15 ... 2	K	None			
• 1.5 ... 12	L	✓			
Direct-on-line starters/reversing starters					
• Direct-on-line starters	0	None			
• Reversing starters	1	✓			
• Direct-on-line starters with manual local operation	2	✓			
• Reversing starters with manual local operation	3	✓			
Brake actuation					
• Without brake actuation	0	None			
• Brake actuation (230/400 V AC)	3	✓			
• Brake actuation (180 V DC)	5	✓			
Electronic starters (with thyristors)					
	3RK1315-6□S71-□AA□		1	1 unit	42D
Rated operational current setting range/A		Add. price			
• 0.15 ... 2	K	None			
• 1.5 ... 9	N	✓			
Direct-on-line starters/reversing starters					
• Direct-on-line starters	0	None			
• Reversing starters	1	✓			
• Direct-on-line starters with manual local operation	2	✓			
• Reversing starters with manual local operation	3	✓			
Brake actuation					
• Without brake actuation	0	None			
• Brake actuation (230/400 V AC)	3	✓			
• Brake actuation (180 V DC)	5	✓			

✓ = Additional price

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*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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M200D Standard motor starters *IE3/IE4* ready AC-3e

Selection and ordering data

M200D AS-i Standard without manual local operation

M200D AS-i Standard with manual local operation

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Electromechanical starters (with integrated contactor)					
	3RK1325-6□S41-□AA□		1	1 unit	42D
Rated operational current setting range/A		Add. price			
• 0.15 ... 2	K	None			
• 1.5 ... 12	L	✓			
Direct-on-line starters/reversing starters					
• Direct-on-line starters	0	None			
• Reversing starters	1	✓			
• Direct-on-line starters with manual local operation	2	✓			
• Reversing starters with manual local operation	3	✓			
Brake actuation					
• Without brake actuation	0	None			
• Brake actuation (230/400 V AC)	3	✓			
• Brake actuation (180 V DC)	5	✓			
Electronic starters (with thyristors)					
	3RK1325-6□S71-□AA□		1	1 unit	42D
Rated operational current setting range/A		Add. price			
• 0.15 ... 2	K	None			
• 1.5 ... 12	L	✓			
Direct-on-line starters/reversing starters					
• Direct-on-line starters	0	None			
• Reversing starters	1	✓			
• Direct-on-line starters with manual local operation	2	✓			
• Reversing starters with manual local operation	3	✓			
Brake actuation					
• Without brake actuation	0	None			
• Brake actuation (230/400 V AC)	3	✓			
• Brake actuation (180 V DC)	5	✓			

✓ = Additional price

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

The intelligent, highly flexible M200D PROFIBUS/PROFINET motor starters are the most functional motor starters of the SIRIUS motor starter family in the high degree of protection IP65 for PROFIBUS/PROFINET communication.

They start and protect motors and loads up to 5.5 kW. Direct-on-line and reversing starter versions are available in a mechanical version and also a solid-state version (the latter with soft start function).

The particularly robust M200D PROFIBUS/PROFINET motor starters are characterized by numerous functions which can be flexibly parameterized. Their modular design comprises a motor starter module and a communications module.

The M200D PROFINET motor starters enable TIA-integrated parameterization through PROFINET from STEP 7 – in familiar, user-friendly manner with the look and feel of PROFIBUS.

Functionality

- For basic functionality, see page 9/19 "SIRIUS M200D motor starters" ➞ "General data" ➞ "Overview"
- Solid-state version also with soft start function
- Robust and widely used M12 connection method for the digital inputs and outputs and the PROFIBUS/PROFINET bus connection
- All four digital inputs and two digital outputs exist in the cyclic process image. This provides complete transparency of the process on the control level
- Full TIA integration: All digital inputs and outputs exist in the cyclic process image and are visible via the bus, providing maximum flexibility and excellent adaptability to the application
- Flexible assignment of the digital inputs and outputs with all available assignable input actions
- Extensive diagnostics concept using LEDs and through the bus with the TIA-compatible mechanisms
- Expanded diagnostics using data records
- Complete plant monitoring using statistics data record and current value monitoring by means of data records
- Parameterization through PROFIBUS/PROFINET bus with the help of data records from the user program
- Control of the motor starter using a command data record from the user program
- Removable modular control unit – quicker device replacement and therefore lower costs when device outages occur – since existing wiring is on the control unit and only one device needs to be replaced
- Parameterization in STEP 7 HW Config via Motor Starter ES (ordering option for startup software)
- Startup and diagnostics with the help of Motor Starter ES (ordering option for startup software)
- Trace function through Motor Starter ES for optimized startup and tracking of process and device values

Only with PROFINET:

- Just one bus system from the MES level to the devices – no routers
- More stations on the bus and possible configuration of flexible bus structures
- Automatic re-parameterization in case of device replacement thanks to proximity detection
- Wireless integration of plant segments in difficult environments using WLAN
- Easier expansion of the system thanks to a higher number of stations on the bus and elimination of terminating resistors

M200D motor starter module for PROFIBUS/PROFINET (without communications module)

M200D communications module for PROFIBUS

M200D communications module for PROFINET

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General data

Mounting and installation

The M200D PROFIBUS/PROFINET motor starter is comprised of the communications module and the motor starter module. Only the motor starter module has to be replaced therefore when replacing devices. This saves time and money. The communications module remains as an active station on the bus and all other system components continue running. This prevents downtimes.

The integrated plug-in technology enables far lower wiring outlay: Connecting cables can be plugged directly onto the motor starter module. The PROFINET bus is connected cost-effectively using an M12 connection on the device. All versions have identical enclosure dimensions for easier system design and conversion.

Parameterization and configuration

All motor protection functions, limit values and reactions can be defined by parameterization.

The user has several user-friendly options for the parameterization. In addition to parameterization directly from STEP 7, which also permits automatic re-parameterization in case of device replacement, it is possible to use the user-friendly Motor Starter ES startup software. By connecting a programming device directly to PROFIBUS/PROFINET and the Motor Starter ES startup software, the devices can also be conveniently programmed from a central point through the bus. Also, parameters can be changed during operation from the user program using the data record mechanism so that the function of the motor starter is adapted to the process when required. With the help of a PC and the Motor Starter ES software it is also possible to perform the parameterization through the local point-to-point interface on-site.

Functions can be flexibly assigned to the digital inputs and outputs, adapting them to all possible conveyor applications. All digital inputs and outputs exist in the cyclic process image. All limit values for monitoring functions and their reactions are parameterizable and therefore adaptable to the application. Consistency with other products of the SIRIUS M200D motor starter range and with the frequency converter and ET 200pro I/O system is assured.

Only with M200D PROFINET motor starters

Thanks to the integrated proximity detection, the device name does not need to be issued manually when a device is replaced. The name is issued automatically by the neighboring devices which note the "names" of the devices in their proximity. No additional startup measures are required therefore when replacing a device.

The new motor starter generation is characterized by high functionality, maximum flexibility and the highest level of automation. PROFINET is especially recommended for large-scale and highly automated system components, since the possibility of monitoring the devices or systems with data records (statistical data, measured values and device diagnostics) ensures a broader insight into the plant by the control room, and hence increases the availability of the plant sustainably.

Operation

The motor starters record the actual current flow. Evaluating the current of the parameterizable electronic overload protection increases the availability of the drives, as do reliable signals concerning the overshooting or undershooting of setpoint values.

Diagnostics and preventive maintenance

Diagnostics is provided through numerous mechanisms – and can be used as the customer prefers.

The motor starter is TIA-diagnostics compatible, which means that when a fault is identified, a diagnostics alarm is distributed, which invokes the diagnostics-OB with a SIMATIC control. The fault can be evaluated as usual in the user program.

The M200D motor starter offers a large variety of diagnostics data through data records. Its functionality is without equal on the market. There are extensive options for reading out data from the motor starter for monitoring devices, systems or processes.

The motor starter is equipped internally with three logbooks for device faults, motor starter trips and events that are issued with a time stamp. These logbooks can be read out of the motor starter at any time in the form of data records and provide the plant operator with plenty of information about the state of his plant and process which he can use to carry out improvements.

With the slave pointer and statistical data functions it is possible to read out, for example, the maximum internal current values or the number of motor starter connection operations for plant monitoring purposes. This allows deviations in the process to be monitored, but also optimum initial commissioning to take place. The user can draw conclusions about the actual load conditions of the devices in his process and on this basis can optimize his plant maintenance intervals.

The device diagnostics data record contains details of all the states of the motor starter, the device configuration and the communication status as a basis for central monitoring of devices and systems.

With installation and maintenance functions (I&M), information on modules employed and data specified by the user during configuration, such as location designations, are stored in the motor starter. I&M functions are used for troubleshooting faults and localizing changes in hardware in a plant or checking the system configuration. Reordering a device is particularly easy as the result.

The integrated maintenance timer can be used to implement preventive maintenance and avoid plant downtimes through look-ahead servicing.

Another new addition is the TRACE integrated into the Motor Starter ES software. It can be used to record measured values as a function of time following a trigger event. This enables process flows to be recorded and their timing optimized.

Local control of a drive is possible using the ordering option with integrated manual operation. This is yet another new development which distinguishes the M200D PROFIBUS/PROFINET motor starter from the rest of the market and adds innovative technology, maximum availability and transparency to the system.

M200D PROFINET motor starters with PROFIenergy

Increasing energy prices, far-reaching ecological problems worldwide and the threat of climate change make it necessary for you to be more conscious about your use of energy.

Active and effective energy management is possible with PROFIenergy.

PROFIenergy is a manufacturer-independent profile on PROFINET, which can be used by all manufacturers, has been standardized by PNO[1)] and supports switching off electrical devices during dead times and measuring the energy flow.

[1)] In the PNO (PROFIBUS Nutzerorganisation e. V. – PROFIBUS User Organization), manufacturers and users have come together to agree on the standardized communication technologies PROFIBUS and PROFINET.

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Switching off during dead times

PROFIenergy supports the targeted switching-off of loads during dead time.

These can be planned short breaks of a few minutes (such as lunch breaks), longer dead times (such as nights) or unplanned dead times. Energy is always saved when no power is required.

Measuring and visualizing the energy flow as a basis of energy management

The objective of energy management is to optimize the use of energy in a company – from the purchasing of energy through to the consumption of energy – economically and ecologically.

Analyses of energy consumption over time can be used to control energy flows, avoid energy peaks, improve ratings and thus save costs.

PROFIenergy enables consumption data to be read off from the devices in a unified form. This is recorded during operation and can be displayed on a control panel, for example, or on overlying energy management software packages. This ensures that the measured variables are in a uniform manufacturer-independent form and structure that is available to the user for further processing. These PROFIenergy functions thus provide the basis for active load and energy management during operation.

PROFIenergy in the M200D PROFINET motor starter

The M200D PROFINET motor starter supports the "switching during dead times" and "current measurement values" of the motor current using PROFIenergy. These are called commands, because they trigger a reaction in the M200D motor starter.

	SIRIUS M200D PROFIBUS	SIRIUS M200D PROFINET
Device functions (firmware features)		
Slave on the bus		
Fieldbus	✓ PROFIBUS to M12	✓ PROFINET to M12
Adjustable number of stations	✓ 1 ... 125	✓ 1 ... 128 with CPU 315, CPU 317 1 ... 1 256 with CPU 319
Parameter assignment		
DIP switches	✓ For address setting and terminating resistor	--
Motor Starter ES	✓ Through bus, optical interface	
PROFIBUS/PROFINET data records	✓	
From STEP 7/HW Config	✓	
Diagnostics		
Acyclic through data records	✓	
Diagnostics alarm	✓	
Process image		
Process image	✓ 2 bytes PAE/2 bytes PAA	
Data channels		
Local optical interface (manual local)	✓	
Using Motor Starter ES through local interface	✓	
Using Motor Starter ES through bus	✓	
Data records (acyclic)		
Parameter assignment	✓ Using DS 131 (DS = data record)	
Diagnostics	✓ Device-specific DS 92	
Measured values	✓ Measured values DS 94	
Statistics	✓ Statistical data DS 95	
Commands	✓ Using DS 93	
Slave pointer	✓ Slave pointer DS 96	
Logbook	✓ Using Motor Starter ES and data records: device faults DS 72, tripping operation DS 73, events DS 75	
Device identification	✓ Using DS 100	
I&M data	✓ Using DS 231 ... 234	✓ Using data records 0xAFF0 ... 0xAFF3
Inputs		
Number	✓ 4	
• Of these in the process image	✓ 4	
Input action	✓ Parameterizable: For flexibly assignable action, see manual	
Quick stop	✓ Parameterizable: latching, non-latching	

✓ Function available
-- Function not available

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General data

	SIRIUS M200D PROFIBUS	SIRIUS M200D PROFINET
Device functions (firmware features) (continued)		
Outputs		
Number	✓ 2	
• Of these in the process image	✓ 2	
Output action	✓ Parameterizable: For flexibly assignable action, see manual	
Brake output		
180 V DC/230/400 V AC/without	✓	
Motor protection		
Overload protection	✓ Electronic, wide range 1:10	
Short-circuit protection	✓	
Full motor protection	✓	
Temperature sensor	✓ Parameterizable via Motor Starter ES, data record: PTC or Thermoclick or deactivated	
Device function		
Repair switch	✓	
Current limit monitoring bottom	✓ Parameterizable	
Current limit monitoring top	✓ Parameterizable	
Residual current detection	✓ Parameterizable: tripping, warning	
Blocking current	✓ Parameterizable	
Asymmetry	✓ Parameterizable	
Load type	✓ Parameterizable: 1-phase and 3-phase	
Shutdown class	✓ Parameterizable via Motor Starter ES, data record: CLASS 5, 10, 15, 20	
Protection against voltage failure	✓ Parameterizable: activated/deactivated	
Support for PROFIenergy profile		
Switching during dead times	--	3
Measured motor current values	--	3
Soft starter control function		
Soft start function	✓	
Bypass function	✓ Only solid-state version	

✓ Function available
-- Function not available

Benefits

M200D PROFINET motor starters with PROFIenergy

Both standards and laws are making environmental protection and energy management increasingly important, as is the desire to cut energy costs in production facilities and thus ensure a sustainable competitive advantage.

It is thus an objective within the industry to save energy and actively reduce CO_2 emissions. By the careful use of valuable resources, the manufacturer-independent PROFIenergy profile on PROFINET can make an active contribution to environmental protection.

Application

M200D PROFIBUS/PROFINET motor starters are particularly suitable for fully TIA-integrated, highly automated conveyor applications that meet all needs with regard to the monitoring of devices and systems and preventive maintenance.

Adaptability of the motor starter functions and maximum flexibility of the device enable a broad range of application without any limits. The PROFINET-specific expansions are the best assurance of a future-proof investment.

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Technical specifications

More information	
Equipment Manual for M200D PROFIBUS/PROFINET, see https://support.industry.siemens.com/cs/ww/en/view/38823402 FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16325/faq	Notes on security: In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept. For more information on the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Type		**M200D PROFIBUS/PROFINET motor starter modules**	
		Electromechanical switching	**Electronic switching**
Technology designation[1]		**DSte/RSte**	**sDSSte/sRSSte**
Mechanics and environment			
Mounting dimensions (W x H x D)			
• Without communications module	mm	294 x 215 x 159	
• With communications module	mm	295 x 215 x 163	
Permissible ambient temperature			
• During operation	°C	-25 ... +55	
• During storage	°C	-40 ... +70	
Weight	g	2 820/3 080	3 160/3 360
Permissible mounting position		Vertical, horizontal, lying	
Vibration resistance according to IEC 60068-2-6	*g*	2	
Shock resistance			
• According to IEC 60068-2-27	*g*/ms	12/11 half-sine	
• Without influencing the contact position	*g*/ms	9.8/5 or 5.9/10	
Degree of protection according to IEC 529		IP65	
Installation altitude			
• Up to 1 000 m		No derating	
• Up to 2 000 m		1% per 100 m	
Cooling		Convection	
Protection class IEC 536 (DIN VDE 0106-1)		1	
Electrical specifications			
Main circuit			
Maximum power of three-phase motors at 400 V AC	kW	5.5	
Rated operational voltage U_e			
• Approval according to EN 60947-1	V AC	400 (50/60 Hz)	
• Approval according to UL and CSA	V AC	600 (50/60 Hz)	480 (50/60 Hz)
• Rated operational current range	A	0.15 ... 2/1.5 ... 12	--
• Rated operational current range for soft starting	A	--	0.15 ... 2/1.5 ... 12
• Rated operational current range for direct-on-line starting	A	--	0.15 ... 2/1.5 ... 9
Rated operational current I_e for starters at 400 V AC			
• 400 V at AC-1, AC-3 and AC-3e	A	12	--
• 500 V at AC-1, AC-3 and AC-3e	A	9	--
• 400 V at AC-4	A	4	--
• 400 V at AC-53a	A	--	12 for soft starting, 9 for direct-on-line starting
Mechanical endurance of contactor	Operating cycles	30 million	--
Trip class		CLASS 5, 10, 15, 20	
Permissible switching frequency		see manual	
Rated ultimate short-circuit breaking capacity I_q			
• At 400 V AC	kA	50	
• At 500 V AC	kA	50	20[2]
Short-circuit protection			
• At I_{emax} = 2 A		Integrated, 2 x 13 I_e = 26 A	
• At I_{emax} = 9/12 A		Integrated, 2 x 13 I_e = 208 A	

1) DS .... Direct-on-line starters
RS .... Reversing starters
DSS .. Direct-on-line soft starters
RSS .. Reversing soft starters
te ..... Full motor protection (thermal + electronic)
s ..... Electronic switching with semiconductor.

2) Only systems with grounded neutral point permitted.

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General data

		Line voltage				
		380 V AC	**400 V AC**	**440 V AC**	**480 V AC**	**500 V AC**
Brake voltage with brake actuation 180 V DC[1)]						
Operational voltage	V	230/400 AC or 180 DC				
Uninterrupted current	A	< 0.5 at 230/400 V AC, < 0.8 at 180 V DC				
Short-circuit protection		Yes, 1 A melting fuse				
Rectified brake voltage	V DC	171	180	198	216	225
Recommended brake coil voltage for Siemens motors	V DC	170 ... 200	170 ... 200	184 ... 218	184 ... 218	--

1) Integrated brake actuation supplies DC power supply for the brake.

Type		**M200D communications modules**	
		For PROFIBUS	**For PROFINET**
Mechanics and environment			
Mounting dimensions (W x H x D)	mm	174 x 139 x 40	
Permissible ambient temperature			
• During operation	°C	-25 ... +55	
• During storage	°C	-40 ... +70	
Weight	g	300	
Permissible mounting position		Vertical, horizontal, lying	
Vibration resistance according to IEC 60068-2-6	*g*	2	
Shock resistance			
• According to IEC 60068-2-27	*g*/ms	12/11 half-sine	
• Without influencing the contact position	*g*/ms	9.8/5 or 5.9/10	
Degree of protection according to IEC 529		IP65	
Installation altitude			
• Up to 1 000 m		No derating	
• Up to 2 000 m		1% per 100 m	
Cooling		Convection	
Protection class IEC 536 (DIN VDE 0106-1)		1	
Electrical specifications			
Control circuit			
Operational voltage			
• $U_{DC24V-NS}$	V DC	20.4 ... 28.8	
• $U_{DC24V-S}$	V DC	20.4 ... 28.8	
Power consumption from			
• $U_{DC24V-NS}$	mA	< 300	
• $U_{DC24V-S}$	mA	< 100	

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Selection and ordering data

M200D motor starter module
PROFIBUS/PROFINET
(without communications module)

M200D motor starter
PROFIBUS

M200D motor starter
PROFINET

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
M200D communications modules for PROFIBUS					
Communications module for PROFIBUS M12 connection for communication, 7/8" for 24 V power supply	**3RK1305-0AS01-0AA0**		1	1 unit	42D
M200D communications modules for PROFINET					
Communications module for PROFINET M12 connection for communication, 7/8" for 24 V power supply	**3RK1335-0AS01-0AA0**		1	1 unit	42D
M200D PROFIBUS/PROFINET motor starter modules					
Electromechanical starters (with integrated contactor)					
	3RK1395-6□S41-□AD□		1	1 unit	42D
Rated operational current setting range/A		Add. price			
• 0.15 ... 2	K	None			
• 1.5 ... 12	L	✓			
Direct-on-line starters/reversing starters					
• Direct-on-line starters	0	None			
• Reversing starters	1	✓			
• Direct-on-line starters with manual local operation	2	✓			
• Reversing starters with manual local operation	3	✓			
Brake actuation					
• Without brake actuation	0	None			
• Brake actuation (230/400 V AC)	3	✓			
• Brake actuation (180 V DC)	5	✓			
Electronic starters (with thyristors)					
	3RK1395-6□S71-□AD□		1	1 unit	42D
Rated operational current setting range/A		Add. price			
• 0.15 ... 2	K	None			
• 1.5 ... 12	L	✓			
Direct-on-line starters/reversing starters					
• Direct-on-line starters	0	None			
• Reversing starters	1	✓			
• Direct-on-line starters with manual local operation	2	✓			
• Reversing starters with manual local operation	3	✓			
Brake actuation					
• Without brake actuation	0	None			
• Brake actuation (230/400 V AC)	3	✓			
• Brake actuation (180 V DC)	5	✓			

✓ = Additional price

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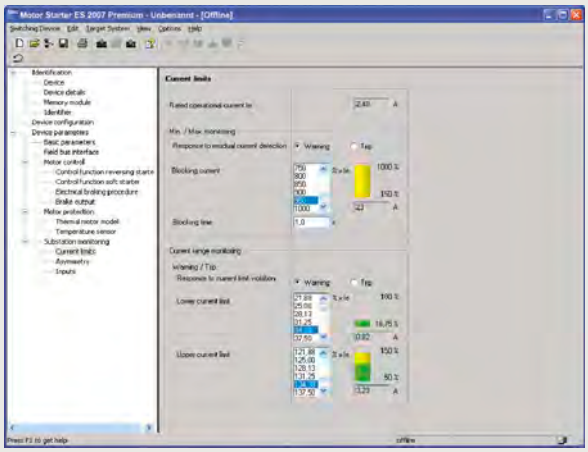
Motor Starter ES

Overview



Motor Starter ES for parameterization, monitoring, diagnostics and testing of motor starters

More information

Industry Mall, see www.siemens.com/product?3ZS1

Technical specifications and system requirements, see https://support.industry.siemens.com/cs/ww/en/ps/16713/td

Motor Starter ES is used for start-up, parameterization, diagnostics, documentation and the preventative maintenance of the motor starters in the SIMATIC ET 200S, ET 200pro, ECOFAST and M200D product families.

The software program is available in three versions which differ in their user-friendliness, scope of functions and price.

For detailed information on the Motor Starter ES software, see page 14/10.

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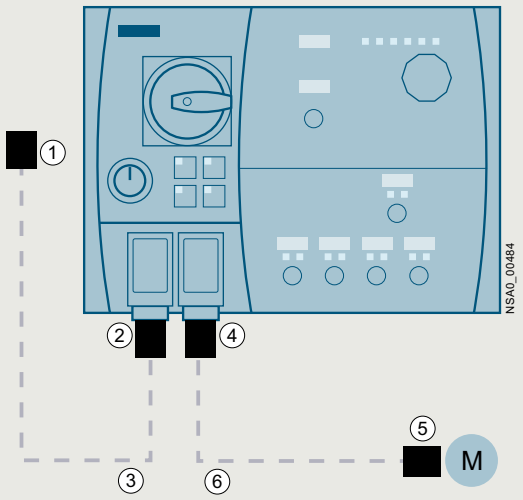
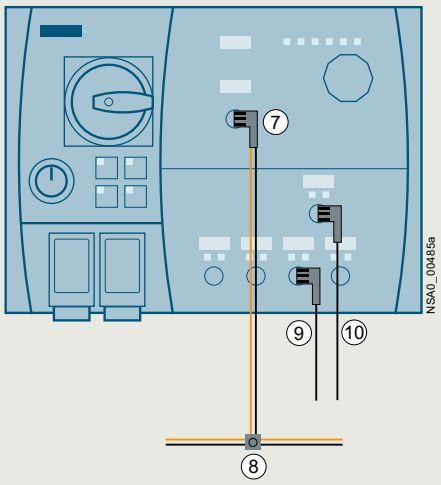
Overview



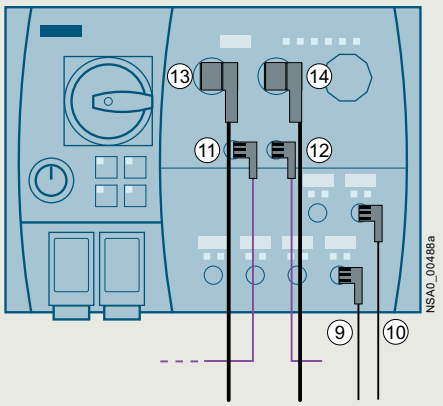
1. Power feeder plug
2. Power connection plug
3. Power connecting cable
4. Motor connection plug
5. Motor plug
6. Motor cable

Power and motor connection on the M200D motor starter
(in this example: M200D for AS-i)



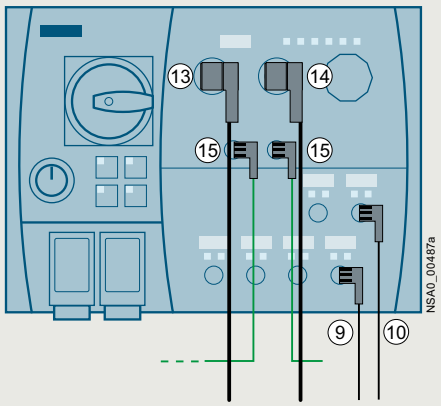
7. Connection for motor control with AS-i communication
8. AS-Interface M12 feeder
9. Connection for digital input
(IO communication, 5-pole)
10. Connection for digital output
(IO communication, 4- or 5-pole)

Communication link using AS-Interface and digital inputs and outputs



9. Connection for digital input
(IO communication, 5-pole)
10. Connection for digital output
(IO communication, 4- or 5-pole)
11. PROFIBUS connection (input)
12. PROFIBUS connection (loop)
13. Connection for 24 V supply (infeed)
14. Connection for 24 V supply (loop)

Communication link using PROFIBUS and digital inputs and outputs



9. Connection for digital input
(IO communication, 5-pole)
10. Connection for digital output
(IO communication, 4- or 5-pole)
13. Connection for 24 V supply (infeed)
14. Connection for 24 V supply (loop)
15. Connection with PROFINET
(input on the left, loop on the right)

Communication link using PROFINET and digital inputs and outputs

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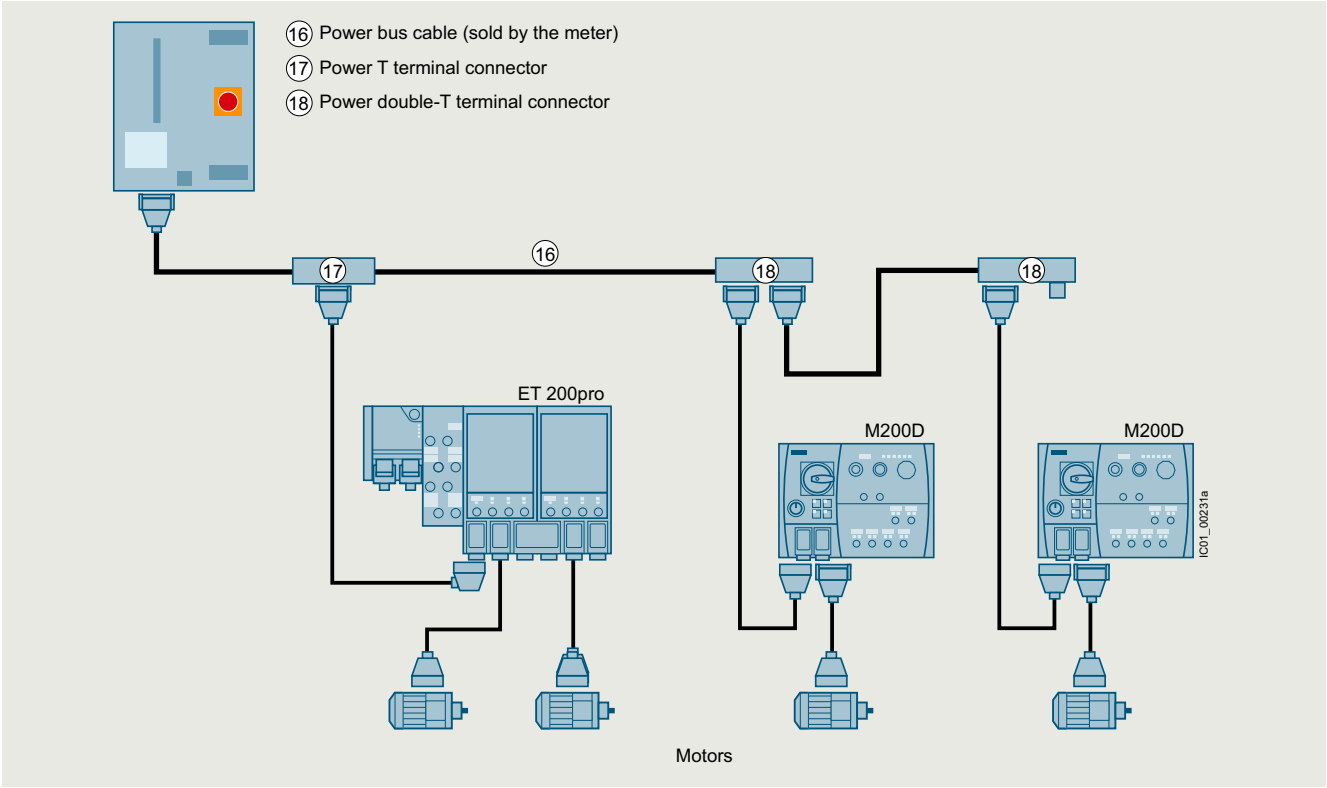
For all M200D motor starters



Power supply to the motors via the power bus with power T and double-T terminal connectors linked by power bus cables, spur lines to the field devices (motor starters), and power loop-through connections to the motors via motor connecting cables

Power bus

The power supply to the field devices (ET 200pro motor starters, M200D motor starters) is provided via the power bus, in which the power T terminal connectors or power double-T terminal connectors are connected by power bus cables.

Feeders

From the terminal connectors, spur lines with Han Q4/2 plugs lead to the field devices, from which the motors are supplied with power via motor connecting cables.

Interruption-free thanks to power terminal connectors

In finger-safe connection technology the power T terminal connectors and power double-T terminal connectors connect the components of a feeder to the power bus. They ensure interruption-free operation, i.e. when the components are plugged in, the power bus is not interrupted.

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Selection and ordering data

The accessories listed below represent a basic selection sorted by:

- Accessories for all M200D motor starters
- Accessories for M200D motor starters for AS-Interface
- Accessories for M200D motor starters for PROFIBUS
- Accessories for M200D motor starters for PROFINET

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mountable accessories					
M200D protective brackets	**3RK1911-3BA00**		1	1 unit	42D
Incoming power supply					
① **Power feeder plugs** Connector set for power supply, e.g. for connecting to T terminal connectors, comprising a coupling enclosure, straight outgoing feeder (with bracket), pin insert for HAN Q4/2, incl. gland					
• 5 male contacts, 2.5 mm²	**3RK1911-2BS60**		1	1 unit	42D
• 5 male contacts, 4 mm²	**3RK1911-2BS20**		1	1 unit	42D
• 5 male contacts, 6 mm²	**3RK1911-2BS40**		1	1 unit	42D
② **Power connection plugs** Connector set for energy supply for connection to M200D motor starters, comprising a cable-end connector hood, angled outgoing feeder, female insert for HAN Q4/2, incl. gland					
• 5 female contacts, 2.5 mm², 2 female contacts, 0.5 mm²	**3RK1911-2BE50**		1	1 unit	42D
• 5 female contacts, 4 mm², 2 female contacts, 0.5 mm²	**3RK1911-2BE10**		1	1 unit	42D
• 5 female contacts, 6 mm², 2 female contacts, 0.5 mm²	**3RK1911-2BE30**		1	1 unit	42D
② + ③ **Power connecting cables** Assembled at one end with "N" and jumper pin 11 and 12 for plug monitoring, with HAN Q4/2, angled; open at one end; 5 x 4 mm²					
• Length 1.5 m	**3RK1911-0DC13**		1	1 unit	42D
• Length 5.0 m	**3RK1911-0DC33**		1	1 unit	42D
Motor cables					
④ **Motor connection plugs** Connector set for motor cable for connection to M200D motor starters, comprising a cable-end connector hood, angled outgoing feeder, pin insert for HAN Q8/0, incl. gland					
• 8 male contacts, 1.5 mm²	**3RK1902-0CE00**		1	1 unit	42D
• 6 male contacts, 2.5 mm²	**3RK1902-0CC00**		1	1 unit	42D
⑤ **Motor plugs** Connector set for motor cable for connection to motors, comprising a cable-end connector hood, straight outgoing feeder, female insert for HAN 10e, incl. star jumper, incl. gland					
• 7 female contacts, 1.5 mm²	**3RK1911-2BM21**		1	1 set	42D
• 7 female contacts, 2.5 mm²	**3RK1911-2BM22**		1	1 set	42D
④ + ⑥ **Motor cables, assembled at one end** For connection to M200D motor starter, HAN Q8/0, angled, length 5 m					
• Motor cables for motor without brake, 4 x 1.5 mm²	**3RK1911-0EB31**		1	1 unit	42D
• Motor cables for motor without brake with thermistor, 6 x 1.5 mm²	**3RK1911-0EF31**		1	1 unit	42D
• Motor cables for motor with brake actuation, brake voltage 400 V AC or 180 V DC, 6 x 1.5 mm²	**3RK1911-0ED31**		1	1 unit	42D
• Motor cables for motor with brake actuation, brake voltage 400 V AC or 180 V DC and thermistor, 8 x 1.5 mm²	**3RK1911-0EG31**		1	1 unit	42D
• Motor cables for motor with brake actuation, brake voltage 230 V AC, 6 x 1.5 mm²	**3RK1911-0EH31**		1	1 unit	42D
• Motor cables for motor with brake actuation, brake voltage 230 V AC and thermistor, 8 x 1.5 mm²	**3RK1911-0EE31**		1	1 unit	42D

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For all M200D motor starters

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Power bus					
⑰ **Power T terminal connectors** For 400 V AC, for connection of feeders (e.g. motor starters) by means of standard round cable at any point of the power bus, by insulation displacement connection, used with preassembled bus segments					
• 2.5 mm²/4 mm²	**3RK1911-2BF01**		1	1 unit	42D
• 4 mm²/6 mm²	**3RK1911-2BF02**		1	1 unit	42D
⑱ **Power double-T terminal connectors** For 400 V AC, for connection of feeders (e.g. motor starters) by means of standard round cable at any point of the power bus, by insulation displacement connection, used with preassembled bus segments, connection of two motor starters possible					
• 4 mm²/6 mm²	**3RK1911-2BG02**		1	1 unit	42D
Sealing set (comprising 2 seals) For power T/power double-T terminal connectors					
• For power cables with					
- Ø 10 ... 13 mm	**3RK1911-5BA00**		1	1 unit	42D
- Ø 13 ... 16 mm	**3RK1911-5BA10**		1	1 unit	42D
- Ø 16 ... 19 mm	**3RK1911-5BA20**		1	1 unit	42D
- Ø 19 ... 22 mm	**3RK1911-5BA30**		1	1 unit	42D
• Blanking plugs	**3RK1911-5BA50**		1	1 unit	42D
Further accessories for power connections					
Crimping tools for pins/sockets 4 mm² and 6 mm²	**3RK1902-0CW00**		1	1 unit	42D
Dismantling tools					
• For male and female contacts for 9-pole HAN Q4/2 inserts	**3RK1902-0AB00**		1	1 unit	42D
• For male and female contacts for 9-pole HAN Q8 inserts	**3RK1902-0AJ00**		1	1 unit	42D
Sealing caps For 9-pole power sockets					
• 1 unit per pack	**3RK1902-0CK00**		1	1 unit	42D
• 10 units per pack	**3RK1902-0CJ00**		1	10 units	42D

3RK1902-0CW00

3RK1902-0CK00

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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For all M200D motor starters

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Motor control with I/O communication						
3RK1902-4BA00-5AA0	**M12 plugs, straight** Screw fixing, 5-pole screw terminals, max. 0.75 mm², A-coded, max. 4 A	**3RK1902-4BA00-5AA0**		1	1 unit	42D
3RK1902-4DA00-5AA0	⑩ **M12 plugs, angled** Screw fixing, 5-pole screw terminals, max. 0.75 mm², A-coded, max. 4 A	**3RK1902-4DA00-5AA0**		1	1 unit	42D
3RK1902-4H...-5AA0	⑨, ⑩ **Control cables, assembled at one end** M12 plug, angled, screw fixing, 5-pole, 5 x 0.34 mm², A-coded, black PUR sheath, max. 4 A					
	• Cable length 1.5 m	**3RK1902-4HB15-5AA0**		1	1 unit	42D
	• Cable length 5 m	**3RK1902-4HB50-5AA0**		1	1 unit	42D
	• Cable length 10 m	**3RK1902-4HC01-5AA0**		1	1 unit	42D
3RK1902-4PB15-3AA0	**Control cables, assembled at both ends** Straight M12 plug, straight M12 socket, screw fixing, 3-pole, 3 x 0.34 mm², A-coded, black PUR sheath, max. 4 A					
	• Cable length 1.5 m	**3RK1902-4PB15-3AA0**		1	1 unit	42D
Further accessories						
3RK1922-3BA00	**Handheld devices** For M200D motor starters (or for ET 200pro and ET 200S High Feature motor starters) for local operation. The motor starter-specific serial interface cables must be ordered separately. The RS 232 interface cable 3RK1922-2BP00 is used for the MS M200D.	**3RK1922-3BA00**		1	1 unit	42D
	RS 232 interface cable Serial data connection between M200D (or ET 200pro) motor starters and the RS 232 interface of a PC/PG/laptop (with the Motor Starter ES software) or the handheld device 3RK1922-3BA00	**3RK1922-2BP00**		1	1 unit	42D
	USB interface cable, 2.5 m Serial data connection between M200D (or ET 200pro) motor starters and the USB interface of a PC/PG/laptop (with the Motor Starter ES software).	**6SL3555-0PA00-2AA0**		1	1 unit	368
3RK1901-1KA00	**M12 sealing caps** For sealing unused M12 input or output sockets and M12 sockets for PROFIBUS and PROFINET communications modules (one set contains ten sealing caps)	**3RK1901-1KA00**		100	10 units	42C
3SU1950-0FB80-0AA0	**RONIS SB30 keys** Spare key for M200D for "manual local control" ordering option	**3SU1950-0FB80-0AA0**		1	1 unit	41J

For more connection technology products, see https://support.industry.siemens.com/cs/ww/en/view/65355810.

*** You can order this quantity or a multiple thereof.**
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For M200D motor starters for AS-Interface

Selection and ordering data

Version				Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Motor control with AS-i communication								
3RK1902-4GB50-4AA0	⑦ **Control cables, assembled at one end** M12 socket, angled, screw fixing, 4-pole, 4 x 0.34 mm², A-coded, black PUR sheath, max. 4 A							
	• Cable length 5 m			**3RK1902-4GB50-4AA0**		1	1 unit	42D
3RK1902-4CA00-4AA0	⑦ **M12 sockets, angled** For screw fixing, 4-pole screw terminals, max. 0.75 mm², A-coded, max. 4 A			**3RK1902-4CA00-4AA0**		1	1 unit	42D
3RK1901-2NR21	⑧ **AS-Interface M12 feeders**							
	For flat cable	For	Cable length	Cable end in feeder				
	AS-i/U_{aux}	M12 socket	--	Not available	**3RK1901-2NR20**		1	1 unit	42C
		M12 cable box	1 m	Not available	**3RK1901-2NR21**		1	1 unit	42C
			2 m	Not available	**3RK1901-2NR22**		1	1 unit	42C
3RK1901-1MN00	**Cable end terminators** For sealing of open cable ends (AS-Interface shaped cable) in IP67				**3RK1901-1MN00**		1	10 units	42C
3RX90..-0AA00	**AS-Interface shaped cables,** see also page 2/76							
	Material	Color	Quantity					
	Rubber	Yellow (AS-Interface)	100 m roll		**3RX9010-0AA00**		1	1 unit	42C
			1 km drum		**3RX9012-0AA00**		1	1 unit	42C
		Black (24 V DC)	100 m roll		**3RX9020-0AA00**		1	1 unit	42C
			1 km drum		**3RX9022-0AA00**		1	1 unit	42C
	TPE	Yellow (AS-Interface)	100 m roll		**3RX9013-0AA00**		1	1 unit	42C
			1 km drum		**3RX9014-0AA00**		1	1 unit	42C
		Black (24 V DC)	100 m roll		**3RX9023-0AA00**		1	1 unit	42C
			1 km drum		**3RX9024-0AA00**		1	1 unit	42C
	TPE special version according to UL Class 2	Yellow (AS-Interface)	100 m roll		**3RX9017-0AA00**		1	1 unit	42C
		Black (24 V DC)	100 m roll		**3RX9027-0AA00**		1	1 unit	42C
	PUR	Yellow (AS-Interface)	100 m roll		**3RX9015-0AA00**		1	1 unit	42C
			1 km drum		**3RX9016-0AA00**		1	1 unit	42C
		Black (24 V DC)	100 m roll		**3RX9025-0AA00**		1	1 unit	42C
			1 km drum		**3RX9026-0AA00**		1	1 unit	42C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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For M200D motor starters for AS-Interface

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Further accessories						
3RK1904-2AB02	**AS-Interface addressing unit V3.0** • For AS-Interface modules and sensors and actuators with integrated AS-Interface according to AS-i specification V3.0 • For setting the AS-i address of standard slaves, and slaves with extended addressing mode (A/B slaves) • With input/output test function and many other commissioning functions • Battery operation with four type AA batteries (IEC LR6, NEDA 15) • Scope of supply: - Addressing unit with four batteries - Addressing cable, with M12 plug to addressing plug (hollow plug), length 1.5 m	**3RK1904-2AB02**		1	1 unit	42C
3RK1902-4PB15-3AA0	**M12 addressing cables to M12** • Standard M12 cable for addressing slaves with M12 connection,e.g. K60R modules • When using the current version of the 3RK1904-2AB01 addressing unit • 1.5 m	**3RK1902-4PB15-3AA0**		1	1 unit	42D
Equipment manuals						
	M200D AS-Interface Basic motor starters, see https://support.industry.siemens.com/cs/ww/en/view/35016496					
	M200D AS-Interface Standard motor starters, see https://support.industry.siemens.com/cs/ww/en/view/38722160					

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For M200D motor starters for PROFIBUS

Selection and ordering data

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Motor control with PROFIBUS						
3RK1902-1DA00	**M12 plugs, angled** For screw fixing, 5-pole screw terminal, max. 0.75 mm², B-coded, no terminating resistor					
	• ⑪ 5 female contacts	**3RK1902-1DA00**		1	1 unit	42D
3RK1902-1BA00	• ⑫ 5 male contacts	**3RK1902-1BA00**		1	1 unit	42D
3RK1902-1G.	**Control cables, assembled at one end** M12, screw fixing, angled, B-coded, no terminating resistor					
	• ⑪ 5 female contacts, 3 m	**3RK1902-1GB30**		1	1 unit	42D
	• ⑪ 5 female contacts, 5 m	**3RK1902-1GB50**		1	1 unit	42D
	• ⑪ 5 female contacts, 10 m	**3RK1902-1GC10**		1	1 unit	42D
3RK1902-1N.	⑪ ⑫ **Control cables, assembled at both ends** M12, screw fixing, angled, 5-pole plug/socket connectors, B-coded, no terminating resistor					
	• 3.0 m	**3RK1902-1NB30**		1	1 unit	42D
	• 5.0 m	**3RK1902-1NB50**		1	1 unit	42D
	• 10.0 m	**3RK1902-1NC10**		1	1 unit	42D
Further accessories						
	PROFIBUS trailing cables Max. acceleration 4 m/s², at least 3 000 000 bending cycles, bending radius at least 60 mm, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	**6XV1830-3EH10**		1	1 M	5K2
	PROFIBUS FC Food bus cables With PE outer sheath for operation in the food and beverage industry, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	**6XV1830-0GH10**		1	1 M	5K2
	PROFIBUS FC Robust bus cables With PUR outer sheath for operation in environments exposed to chemicals and mechanical loads, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	**6XV1830-0JH10**		1	1 M	5K2
	Power cables 5-core, 5 x 1.5 mm², trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	**6XV1830-8AH10**		1	1 M	5K2
Connection for 24 V power supply of the M200D PROFIBUS/PROFINET						
	See page 9/43					
Equipment manual						
	M200D PROFIBUS/PROFINET motor starters, see https://support.industry.siemens.com/cs/ww/en/view/38823402					

* You can order this quantity or a multiple thereof.
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Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Motor control with PROFINET					
3RK1902-2H.					
⑮ **M12 plugs, angled** For screw fixing, 4-pole screw terminal, max. 0.75 mm², angled, D-coded					
• 4 male contacts	**3RK1902-2DA00**		1	1 unit	42D
⑮ **Control cables, assembled at one end** M12 for screw fixing, angled, 4-pole, D-coded,					
• 4 male contacts, 3 m	**3RK1902-2HB30**		1	1 unit	42D
• 4 male contacts, 5 m	**3RK1902-2HB50**		1	1 unit	42D
• 4 male contacts, 10 m	**3RK1902-2HC10**		1	1 unit	42D
3RK1902-2N.					
⑮ **Control cables, assembled at both ends** M12 for screw fixing, angled at both ends, 4-pole, D-coded, male contacts at both ends					
• 3 m	**3RK1902-2NB30**		1	1 unit	42D
• 5 m	**3RK1902-2NB50**		1	1 unit	42D
• 10 m	**3RK1902-2NC10**		1	1 unit	42D
Further accessories					
PROFINET IE FC TP standard cable GP 2 x 2 Sold by the meter	**6XV1840-2AH10**		1	1 M	5K1
PROFINET IE FC TP trailing cable 2 x 2 Sold by the meter	**6XV1840-3AH10**		1	1 M	5K1
PROFINET IE FC TP trailing cable GP 2 x 2 Sold by the meter	**6XV1870-2D**		1	1 M	5K2
PROFINET IE FC TP torsion cable 2 x 2 Sold by the meter	**6XV1870-2F**		1	1 M	5K2
PROFINET IE FC TP marine cable, 4-core Sold by the meter	**6XV1840-4AH10**		1	1 M	5K1
Power cables 5-core, 5 x 1.5 mm², trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	**6XV1830-8AH10**		1	1 M	5K2

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Connection for 24 V power supply of the M200D PROFIBUS/PROFINET					
3RK1902-3DA00					
Plugs On M200D, 7/8" for screw fixing, angled, screw terminal, 1.5 mm²					
• ⑬ 5 female contacts	**3RK1902-3DA00**		1	1 unit	42D
3RK1902-3BA00					
• ⑭ 5 male contacts	**3RK1902-3BA00**		1	1 unit	42D
3RK1902-3G.					
⑬ **Supply lines, assembled at one end** 7/8" for screw fixing, angled, 1.5 mm²					
• 5 female contacts, 3 m	**3RK1902-3GB30**		1	1 unit	42D
• 5 female contacts, 5 m	**3RK1902-3GB50**		1	1 unit	42D
• 5 female contacts, 10 m	**3RK1902-3GC10**		1	1 unit	42D
3RK1902-3N.					
⑬ ⑭ **Supply lines, assembled at both ends** 7/8", for screw fixing, angled at both ends, 5-pole plug/socket connectors, 1.5 mm²					
• 3 m	**3RK1902-3NB30**		1	1 unit	42D
• 5 m	**3RK1902-3NB50**		1	1 unit	42D
• 10 m	**3RK1902-3NC10**		1	1 unit	42D
6ES7194-3JA00-0AA0					
7/8" sealing caps 1 pack = 10 units	**6ES7194-3JA00-0AA0**		1	10 units	250
Equipment manual					
M200D PROFIBUS/PROFINET motor starters, see https://support.industry.siemens.com/cs/ww/en/view/38823402					

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Notes

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Price groups
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Coupling relays and signal converters
5/1 Coupling relays
3/138 3TG10 power relays/miniature contactors
10/138 SIRIUS 3RS70 signal converters

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Introduction

Overview

Type	SIMOCODE pro C	SIMOCODE pro V PROFINET General Performance	SIMOCODE pro S General Performance	SIMOCODE pro V High Performance PROFIBUS/PROFINET Modbus RTU/EtherNet/IP	Page
SIMOCODE pro 3UF7 motor management and control devices					
Basic units	✓	✓	✓	✓	10/12
Current measuring modules	✓	✓	✓	✓	10/13
Current/voltage measuring modules	--	--	--	✓	10/13
Operator panels	✓	✓	✓	✓	10/14
Operator panels with display	--	--	--	✓	10/14
Expansion modules	--	✓	✓	✓	10/15
Fail-safe expansion modules	--	--	--	✓	10/17
Current transformers	✓	✓	✓	✓	10/21
SIMOCODE ES (TIA Portal)	✓	✓	✓	✓	14/12
SIMOCODE pro block library for SIMATIC PCS 7	✓	✓	✓	✓	14/15

✓ Available

-- Not available

Type	3RP25	3RP20	7PV15
Timing relays			
Enclosures:			
• 17.5 mm industry and household equipment installation	✓	--	✓
• 22.5 mm industry	✓	--	--
• 45 mm industry	--	✓	--
Monofunction	✓	✓	✓
Multifunction	✓	✓	✓
Combination voltage	✓	✓	✓
Wide voltage range	✓	✓	✓
Application:			
• Control systems and mechanical engineering	✓	✓	✓
• Infrastructure	--	--	✓
Page	10/24	10/36	10/42

✓ Corresponds to or available

-- Does not correspond to or not available

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Type	3UG546	3UG451., 3UG461.	3UG463.	3RR21, 3RR22, 3UG4621, 3UG4622	3UG4641	3UG4625 with 3UL23	3UG458.	3UG4501	3UG4651	Page
Monitoring relays										
DC load monitoring	✓	--	--	--	--	--	--	--	--	10/62
Line monitoring	--	✓	--	--	--	--	--	--	--	10/69
Voltage monitoring	--	--	✓	--	--	--	--	--	--	10/74
Current monitoring	--	--	--	✓	--	--	--	--	--	10/47, 10/77
Active current monitoring	--	--	--	3RR22 ✓	✓	--	--	--	--	10/47, 10/79
Power factor monitoring	--	--	--	--	✓	--	--	--	--	10/79
Residual-current monitoring	--	--	--	--	--	✓	--	--	--	10/82
Insulation monitoring	--	--	--	--	--	--	✓	--	--	10/85
Level monitoring	--	--	--	--	--	--	--	✓	--	10/89
Speed monitoring	--	--	--	--	--	--	--	--	✓	10/92

✓ Available
-- Not available

Type	3UG481.	3UG4832	3RR24	3UG4822	3UG4841	3UG4825 with 3UL23	3UG4851	Page
Monitoring relays for IO-Link								
Line monitoring	✓	--	--	--	--	--	--	10/99
Voltage monitoring	--	✓	--	--	--	--	--	10/102
Current monitoring	--	--	✓	✓	--	--	--	10/55, 10/105
Power factor and active current monitoring	--	--	✓	--	✓	--	--	10/55, 10/108
Residual-current monitoring	--	--	--	--	--	✓	--	10/112
Speed monitoring	--	--	--	--	--	--	✓	10/115

✓ Available
-- Not available

Type	3RS2	3RN2	3RS70	Page
Temperature monitoring relays				
Temperature monitoring	✓	--	--	10/119
Temperature monitoring relays for IO-Link				
Temperature monitoring for IO-Link	✓	--	--	10/119
Thermistor motor protection				
Thermistor motor protection	--	✓	--	10/129
Signal converters				
Single-range converters	--	--	✓	10/138
Multi-range converters	--	--	✓	10/138
Universal converters	--	--	✓	10/138

✓ Available
-- Not available

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Introduction

Connection methods

The monitoring and control devices are available with screw or spring-loaded terminals.

SIRIUS 3RP25 timing relays, 3UG458 insulation monitoring relays, SIRIUS 3RS2 temperature monitoring relays, SIRIUS 3RN2 thermistor motor protection and SIRIUS 3RS70 signal converters are available with screw terminals or spring-loaded terminals (push-in).

	Screw terminals
	Spring-loaded terminals, spring-loaded terminals (push-in)
	The connection method is indicated in the corresponding tables by the respective symbol shown on orange backgrounds.

"Increased safety" type of protection EEx e/d according to ATEX Directive 2014/34/EU

The communication-capable, modularly designed SIMOCODE pro motor management system (SIRIUS Motor Management and Control Devices) protects motors of types of protection EEx e and EEx d in hazardous areas.

The SIRIUS 3RN2 thermistor motor protection relay protects motors with types of protection EEx e and EEx d in hazardous areas.

ATEX approval for operation in hazardous areas

The SIRIUS SIMOCODE pro 3UF7 motor management system is certified for the protection of motors in hazardous areas according to

- ATEX Ex I (M2); equipment group I, category M2 (mining)
- ATEX Ex II (2) GD; equipment group II, category 2 in area GD

The SIRIUS 3RN2011, 3RN2012-...30, 3RN2013 and 3RN2023 thermistor motor protection relays for PTC sensors are certified according to ATEX Ex II (2) G and D for environments with explosive gas or dust loads.

Ordering notes for multi-unit packaging

SIMOCODE pro S, SIRIUS 3RP25 timing relays, SIRIUS 3RS2 temperature monitoring relays, and SIRIUS 3RN2 thermistor motor protection can be ordered in practical and environmentally multi-unit packaging on request.

Multi-unit packaging with order code X90

When ordering products in multi-unit packaging, the article number of the product concerned must be supplemented with **"-Z"** and, in addition, the order code **"X90"** must be specified.

Ordering examples:

- 3RP2505-1AB30-Z X90;
  Order quantity 16 items → Delivery of one pack containing 16 items
- 3RP2505-1BB30-Z X90;
  Order quantity 12 items → Delivery of one pack containing 12 items

For more information, see page 16/7.

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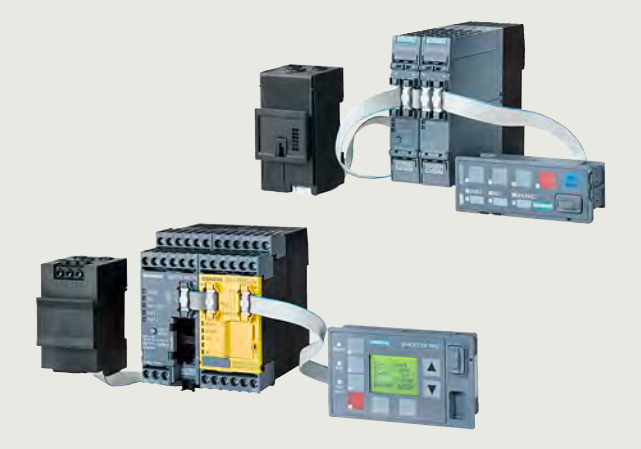
Overview



SIMOCODE pro S and SIMOCODE pro V

More information

Homepage, see www.siemens.com/sirius-simocode

Industry Mall, see www.siemens.com/product?3UF7

TIA Selection Tool Cloud (TST Cloud)
- For SIMOCODE pro S, see www.siemens.com/tstcloud/?node=SimocodeProS
- For SIMOCODE pro V, see www.siemens.com/tstcloud/?node=SimocodeProV

SIMOCODE pro is a flexible, modular motor management system for motors with constant speeds in the low-voltage performance range. It optimizes the connection between I&C and motor feeder, increases plant availability and allows significant savings to be made for installation, commissioning, operation and preventive maintenance of a system.

SIMOCODE pro offers, for example:
- Multifunctional, electronic full motor protection that is independent of the automation system
- Integrated control functions instead of hardware for the motor control
- Detailed operating, service and diagnostics data
- Open communication via PROFIBUS DP, PROFINET/OPC UA, Modbus RTU or EtherNet/IP
- Safety relay function for the fail-safe disconnection of motors up to SIL 3 according to IEC 61508, IEC 62061 or PL e according to ISO 13849-1
- SIMOCODE ES is the software package for SIMOCODE pro parameterization, startup and diagnostics, see page 14/12.

Device series

Basic Performance with SIMOCODE pro C

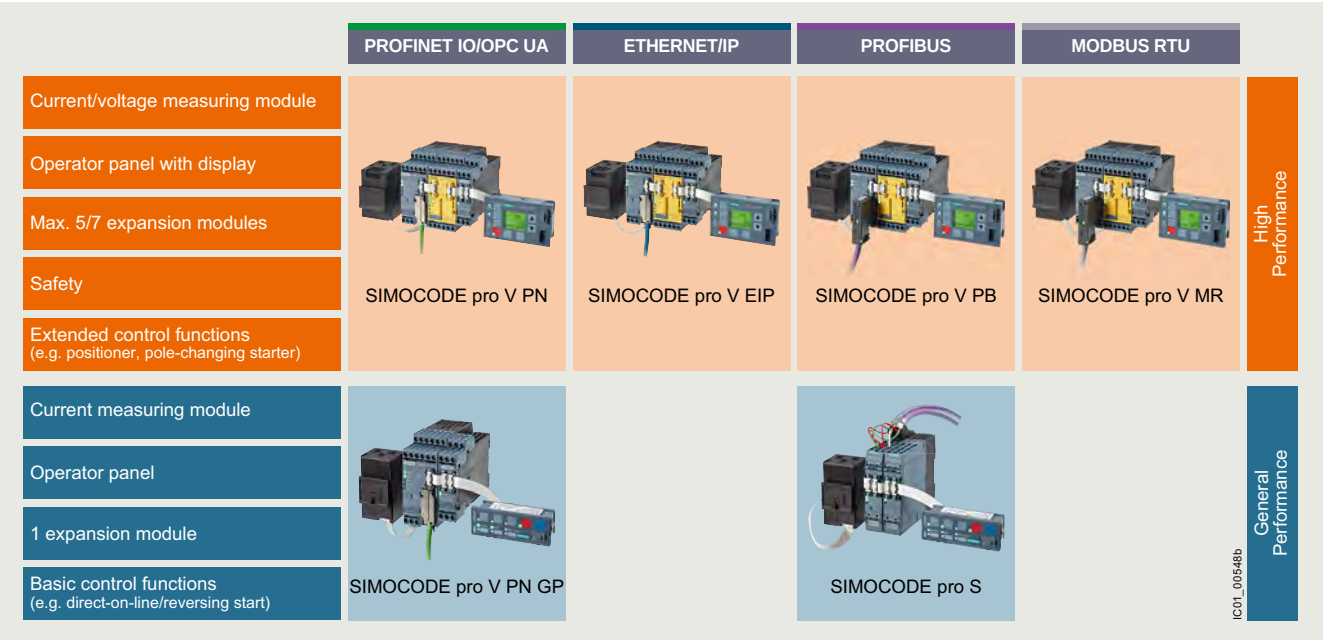
The compact system for direct-on-line starters and reversing starters or for controlling a motor starter protector.

General Performance with SIMOCODE pro S or SIMOCODE pro V PN GP

The smart system for direct-on-line, reversing, and star-delta (wye-delta) starters or for controlling a motor starter protector or soft starter. Its expandability with an expansion module/multi-function module provides comprehensive input/output project data volume, precise ground-fault detection via the 3UL23 residual-current transformers and temperature measurement.

High Performance with SIMOCODE pro V

The variable system with all control functions and with the possibility of expanding the inputs, outputs and functions of the system at will using expansion modules.



Device series

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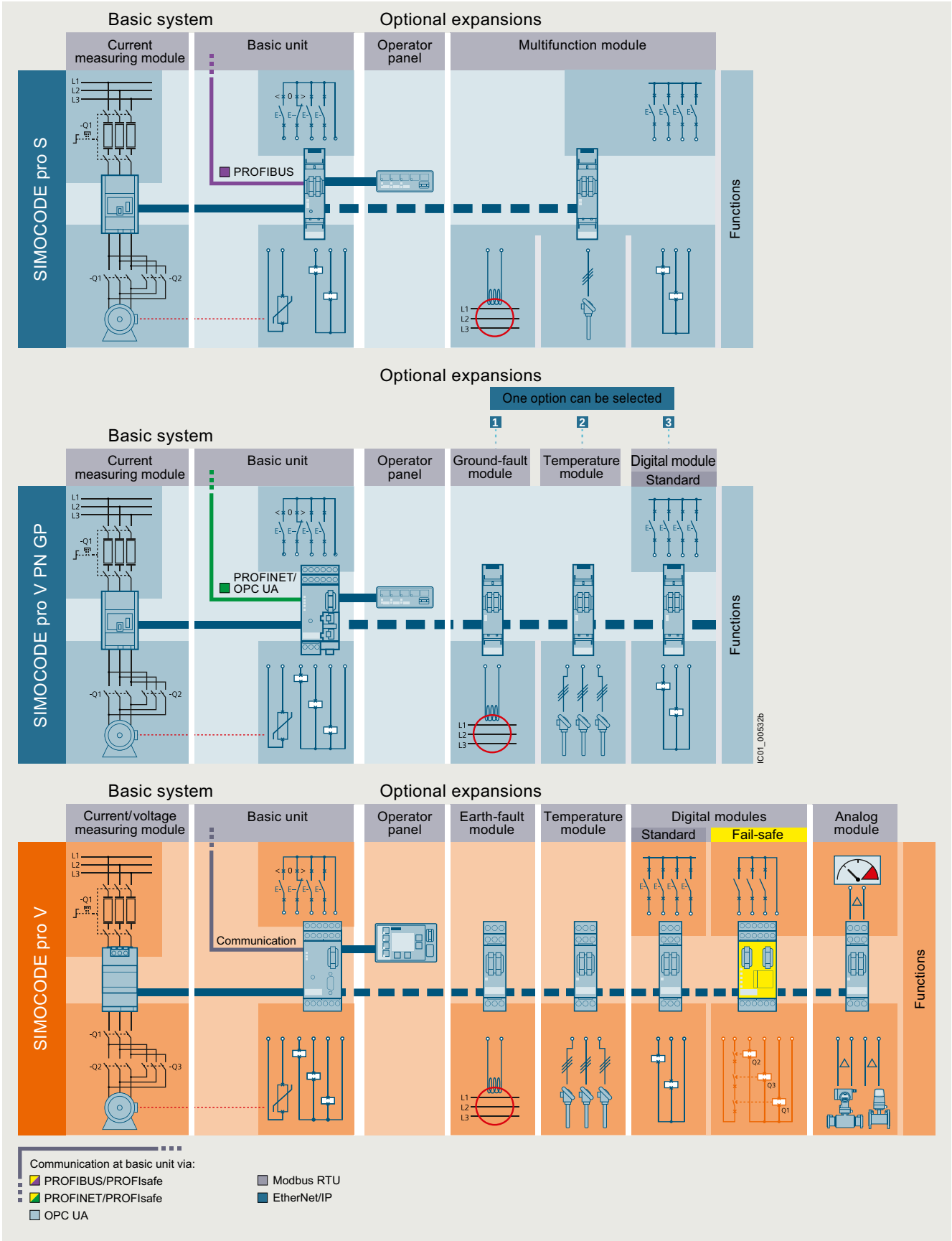

System structure

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Expansion possibilities	SIMOCODE pro C Basic Performance PROFIBUS	SIMOCODE pro S General Performance PROFIBUS	SIMOCODE pro V General Performance PROFINET GP	SIMOCODE pro V High Performance PROFIBUS/ Modbus RTU	SIMOCODE pro V High Performance PROFINET/ EtherNet/IP
Operator panels	✓	✓	✓	✓	✓
Operator panels with display	--	--	--	✓	✓
Current measuring modules	✓	✓	✓	✓	✓
Current/voltage measuring modules	--	--	--	✓	✓
Expansion modules:					
• Digital modules	--	--	1[2)]	2	2
• Fail-safe digital modules[1)]	--	--	--	1	1
• Analog modules	--	--	--	1	2
• Ground-fault modules	--	--	1	1	1
• Temperature modules	--	--	1	1	2
• Multifunction modules	--	1	--	--	--

✓ Available
-- Not available

1) The fail-safe digital module can be used instead of one of the two digital modules.
2) Only monostable version can be used.

Per feeder each system always comprises one basic unit and one separate current measuring module. The two modules are connected together electrically through the system interface with a connecting cable and can be mounted mechanically connected as a unit (one behind the other) or separately (side by side). The motor current to be monitored is decisive only for the choice of the current measuring module.

An operator panel for mounting in the control cabinet door is optionally connectable through a second system interface on the basic unit. Both the current measuring module and the operator panel are electrically supplied by the basic unit through the connecting cable. More inputs, outputs and functions can be added to the SIMOCODE pro V and SIMOCODE pro S by means of optional expansion modules, thus supplementing the inputs and outputs already existing on the basic unit. With the DM-F Local and DM-F PROFIsafe fail-safe digital modules it is also possible to integrate the fail-safe disconnection of motors in the SIMOCODE pro V motor management system.

All modules are connected by connecting cables.
The connecting cables are available in various lengths.
The maximum distance between the modules (e.g. between the basic unit and the current measuring module) must not exceed 2.5 m. The total length of all the connecting cables per system interface of the basic unit may be up to 3 m.

Article number scheme

Product versions		Article number
SIMOCODE pro motor management system		**3UF7 □ □ □ – 1 □ □ 0 □ – 0**
Type of unit/module	e.g. 0 = basic unit	□
Functional version of the module	e.g. 20 = SIMOCODE pro S	□ □
Connection type of the current transformer	e.g. A = through-hole technology	□
Voltage version	e.g. B = 24 V DC	□
Enclosure color	e.g. 1 = titanium gray	□
Example		**3UF7 0 2 0 – 1 A B 0 1 – 0**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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Benefits

General customer benefits

- Integrating the whole motor feeder into the process control by means of PROFIBUS DP, PROFINET/OPC UA, Modbus RTU or EtherNet/IP significantly reduces the wiring between the motor feeder and the PLC
- Decentralization of the automated processes by means of configurable control and monitoring functions in the feeder saves resources in the automation system and ensures full functionality and protection of the feeder even if the I&C or bus system fails
- The acquisition and monitoring of operating, service and diagnostics data in the feeder and process control system increases plant availability as well as preventive maintenance and service-friendliness
- The high degree of modularity allows users to perfectly implement their plant-specific requirements for each motor feeder
- The SIMOCODE pro system offers functionally graded and space-saving solutions for each customer application
- The replacement of the control circuit hardware with integrated control functions decreases the number of hardware components and wiring required and in this way limits stock keeping costs and potential wiring errors
- The use of electronic full motor protection permits better utilization of the motors and ensures long-term stability of the tripping characteristic and reliable tripping even after years of service
- Thanks to the precision of the current, voltage, power and energy measurements (especially those acquired by the 2nd-generation current/voltage measuring modules), costs can be internally allocated with a high degree of accuracy

Multifunctional, electronic full motor protection for rated motor currents up to 820 A

SIMOCODE pro offers comprehensive protection of the motor feeder by means of a combination of different, multi-step and delayable protection and monitoring functions:

- Inverse-time delayed electronic overload protection (CLASS 5E to 40E)
- Thermistor motor protection
- Phase failure/asymmetry protection
- Stall protection
- Monitoring of adjustable limit values for the motor current
- Voltage and power monitoring
- Monitoring of the power factor (motor idling/load shedding)
- Ground-fault monitoring
- Temperature monitoring, e.g. via Pt100/Pt1000
- Monitoring of operating hours, downtime and number of starts, etc.

Recording of measuring curves

SIMOCODE pro can record measuring curves and therefore is able, for example, to present the progression of motor current during motor startup.

Flexible motor control implemented with integrated control functions (instead of comprehensive hardware interlocks)

Many predefined motor control functions have already been integrated into SIMOCODE pro, including all necessary logic operations and interlocks:

- Overload relays
- Direct-on-line and reversing starters
- Star-delta (wye-delta) starters (also with direction reversal)
- Two speeds, motors with separate windings (pole-changing starter); also with direction reversal
- Two speeds, motors with separate Dahlander windings (also with direction reversal)
- Positioner actuation
- Solenoid valve actuation
- Actuation of a motor starter protector
- Soft starter actuation (also with direction reversal)

These control functions are predefined in SIMOCODE pro and can be freely assigned to the inputs and outputs of the device (including the PROFIBUS/PROFINET process image).

These predefined control functions can also be flexibly adapted to each customized configuration of a motor feeder by means of freely configurable logic modules (truth tables, counters, timers, edge evaluation, etc.) and with the help of standard functions (power failure monitoring, emergency start, external faults, etc.), without additional auxiliary relays being necessary in the control circuit.

SIMOCODE pro makes a lot of additional hardware and wiring in the control circuit unnecessary, which results in a high level of standardization of the motor feeder in terms of its design and circuit diagrams.

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Detailed operating, service and diagnostics data

SIMOCODE pro makes different operational, service and diagnostics data available and helps to detect potential faults in time and to prevent them by means of preventative measures. In the event of a malfunction, a fault can be diagnosed, localized and rectified very quickly – there are no or very short downtimes.

Operating data

- Motor switching state derived from the current flow in the main circuit
- All phase currents
- All phase voltages and phase-to-phase voltages
- Active power, apparent power and power factor
- Phase asymmetry and phase sequence
- Ground-fault current
- Frequency
- Time to trip
- Motor temperature
- Remaining cooling time etc.

Service data

- Motor operating hours
- Motor stop times
- Number of motor starts
- Number of overload trips
- Interval for compulsory testing of the enabling circuits
- Energy consumed
- Internal comments stored in the device etc.

Diagnostics data

- Numerous detailed early warning and fault messages
- Internal device fault logging with time stamp
- Time stamping of freely selectable status, alarm or fault messages etc.

Easy operation and diagnostics

Operator panel

The operator panel is used to control the motor feeder and can replace all conventional pushbuttons and indicator lights to save space. It makes SIMOCODE pro or the feeder directly operable in the control cabinet. It features all the status LEDs available on the basic unit and externalizes the system interface for simple parameterization or diagnostics on a PC/PG.

Operator panel with display

As an alternative to the 3UF720 standard operator panel for SIMOCODE pro V, a 3UF721 operator panel with display is also available. This can additionally indicate current measured values, operating and diagnostics data or status information of the motor feeder at the control cabinet. The pushbuttons of the operator panel can be used to control the motor. Furthermore, it is possible to set parameters such as rated motor current, limit values, etc. directly via the operator panel with display (with SIMOCODE pro V PROFIBUS as of E15, SIMOCODE pro V Modbus RTU as of E03 and with all SIMOCODE pro V PROFINET and EtherNet/IP).

Communication

SIMOCODE pro has either an integrated PROFIBUS DP or Modbus RTU interface (SUB-D or terminal connection) or a PROFINET or EtherNet/IP interface (2 x RJ45).

Fail-safe disconnection through PROFIBUS or PROFINET with the PROFIsafe profile is also possible in conjunction with a fail-safe controller (F-CPU) and the DM-F PROFIsafe fail-safe digital module.

SIMOCODE pro PROFIBUS

SIMOCODE pro PROFIBUS supports, for example:

- Cyclic services (DPV0) and acyclic services (DPV1)
- Extensive diagnostics and hardware interrupts
- Time stamp with high timing precision (SIMATIC S7) for SIMOCODE pro V
- DPV1 communication after the Y-Link

SIMOCODE pro PROFINET

SIMOCODE pro PROFINET supports, for example:

- Line and ring bus topology (for 2-port devices with an integrated switch)
- Media redundancy via MRP protocol (for 2-port devices with an integrated switch)
- Operating, service and diagnostics data via standard web browser
- OPC UA server for open communication with visualization and I&C system
- NTP-synchronized time
- Interval function and measured values for power management via PROFIenergy
- Module exchange without PC/memory module through proximity detection
- Extensive diagnostics and maintenance alarms

System redundancy with SIMOCODE pro PROFINET

All SIMOCODE PROFINET devices support the system redundancy mechanisms of PROFINET IO and therefore can be operated directly on fault-tolerant systems such as SIMATIC S7-400 H. As such, SIMOCODE pro can provide decisive added value also for the field level of plants in which plant availability and control system redundancy are priorities.

SIMOCODE pro Modbus RTU

SIMOCODE pro Modbus RTU supports, for example:

- Communication at 1 200/2 400/4 800/9 600/19 200 or 57 600 baud
- Access to freely parameterizable process image via Modbus RTU
- Access to all operating, service and diagnostics data via Modbus RTU

SIMOCODE pro EtherNet/IP

SIMOCODE pro EtherNet/IP supports, for example:

- Line and ring bus topology thanks to an integrated switch
- Ring structures via Device Level Ring (DLR) protocol
- Operating, service and diagnostics data via standard web browser
- NTP-synchronized time
- Parameter assignment via SIMOCODE ES V14 or higher – via local device interface and Ethernet

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General data

Notes on security

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Autonomous operation

An essential feature of SIMOCODE pro is the autonomous execution of all protection and control functions, even when communication to the I&C system is interrupted. This means that even in the event of bus system or automation system failure, full functionality of the feeder is ensured or a specific behavior can be parameterized in case of such a fault, e.g. targeted shutdown of the feeder or execution of particular parameterized control mechanisms (such as reversal of the direction of rotation).

Advantages from integrated energy management

As an integrated option for the TIA Portal, the SIMATIC Energy Suite couples energy management with automation efficiently, making energy consumption at your production facility transparent.

Thanks to the simplified configuration of energy-measuring components, e.g. SIMOCODE pro V, configuration effort is also clearly reduced.

Thanks to end-to-end connection with higher-level energy management systems or cloud-based services, you can seamlessly expand the recorded energy data to create a cross-site energy management system.

The advantages at a glance:

- Automatic generation of energy management data
- Integration into TIA Portal and into automation
- Simple configuration

For more information, see page 1/3 or www.siemens.com/energysuite.

Application

SIMOCODE pro is often used for automated processes where plant downtimes are very expensive (e.g. chemical, oil/gas, water/wastewater, steel or cement industries) and where it is important to prevent plant downtimes through detailed operational, service and diagnostics data or to localize faults very quickly when they occur.

SIMOCODE pro is modular and space-saving and suited especially for operation in motor control centers (MCCs) in the process industry and for power plant technology.

- Protection and control of motors in hazardous areas for types of protection EEx e/d according to ATEX Directive 2014/34/EU
  - With heavy starting (paper, cement, metal and water industries)
  - In high-availability plants (chemical, oil, raw material processing industries, power plants)
- Dry-running protection of centrifugal pumps based on active power monitoring for type of protection Ex b

Use of SIMOCODE pro 3UF7 with IE3 and IE4 motors

Note:

When using the SIMOCODE pro 3UF7 in conjunction with highly efficient IE3 and IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

For more information, see page 1/8.

Safety technology for SIMOCODE pro

The safe disconnection of motors in the process industry is becoming increasingly important as the result of new and revised standards and requirements in the safety technology field.

With the DM-F Local and DM-F PROFIsafe fail-safe expansion modules it is easy to integrate functions for fail-safe disconnection into the SIMOCODE pro V motor management system while retaining service-proven concepts. The strict separation of safety functions and operational functions proves particularly advantageous for planning, configuring and construction. Seamless integration into the motor management system leads to greater transparency for diagnostics and during operation of the system.

Suitable components for this purpose are the DM-F Local and DM-F PROFIsafe fail-safe expansion modules, depending on the requirements:

- The DM-F Local fail-safe digital module for when direct assignment between a fail-safe hardware shutdown signal and a motor feeder is required, or
- The DM-F PROFIsafe fail-safe digital module for when a fail-safe controller (F-CPU) creates the signal for disconnection and transmits it in a fail-safe manner through PROFIBUS/PROFIsafe or PROFINET/PROFIsafe to the motor management system

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Dry-running protection of centrifugal pumps with SIMOCODE pro in hazardous areas

Video: Dry-running protection redefined with SIMOCODE pro

With special versions of the current/voltage measuring modules, SIMOCODE pro enables dry-running protection of centrifugal pumps through active power monitoring and motor switch-off. This applies to centrifugal pumps with progressive flow characteristics, which are also suitable for pumping flammable media and are also installed in hazardous areas. If the active power, and thus the flow rate, falls below a minimum value, the motor – and thus the centrifugal pump – is switched off. When determining the limit values to be monitored, the user is supported by a menu-guided teach-in process in the engineering software.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16337/td	Application Manual for controls with IE3 and IE4 motors, see https://support.industry.siemens.com/cs/ww/en/view/94770820
Manual Collection "SIMOCODE pro", see https://support.industry.siemens.com/cs/ww/en/view/109743951	Configuration Manual for load feeders, see https://support.industry.siemens.com/cs/ww/en/view/39714188
Manual for SIMOCODE pro fail-safe digital modules, see https://support.industry.siemens.com/cs/ww/en/view/50564852	

More information

Configuration instructions

When using an operator panel with display, please note that the type and number of expansion modules that can be connected are limited for the use of a SIMOCODE pro V PROFIBUS basic unit (with product version lower than E15) or SIMOCODE pro V Modbus RTU (with product version lower than E03), see

- TIA Selection Tool
- SIMOCODE pro Manual Collection

Protective separation

All circuits in SIMOCODE pro are safely isolated from each other according to IEC 60947-1. That is, they are designed with doubled clearance and creepage distances. In the event of a fault, therefore, no parasitic voltages can be formed in neighboring circuits. The notes of the test report No. A0258 must be complied with.

Types of protection EEx e and EEx d

The overload protection and the thermistor motor protection of the SIMOCODE pro system comply with the requirements for overload protection of explosion-proof motors to the type of protection:

- EEx d "Flameproof enclosure" e.g. according to IEC 60079-1
- EEx e "Increased safety" e.g. according to IEC 60079-7

When using SIMOCODE pro devices with a 24 V DC control voltage, electrical separation must be ensured using a battery or a safety transformer according to IEC 61558-2-6.
EC type-examination certificate: BVS 06 ATEX F 001
Test report: BVS PP 05.2029 EC.

Type of protection Ex b

The function for dry-running protection of centrifugal pumps in hazardous areas complies with the requirements of the following type of protection:

- Ex b "Control of ignition source", ignition protection system b1, e.g. according to EN 80079-37

SIMOCODE pro is registered for the dry-running protection of centrifugal pumps by means of active power monitoring according to both ATEX and IEC Ex.

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Basic units *IE3/IE4* ready

Selection and ordering data

Multi-unit packaging for SIMOCODE pro S, see page 16/7.	Version	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SIMOCODE pro PROFIBUS						
 3UF7000-1AB00-0	**SIMOCODE pro C** PROFIBUS DP interface, 12 Mbps, RS 485 4 I/3 O freely configurable, input for thermistor connection, monostable relay outputs Rated control supply voltage U_S:					
	• 24 V DC	**3UF7000-1AB00-0**		1	1 unit	42J
	• 110 ... 240 V AC/DC	**3UF7000-1AU00-0**		1	1 unit	42J
 3UF7020-1AU01-0	**SIMOCODE pro S** PROFIBUS DP interface, 1.5 Mbps, RS 485 4 I/2 O freely configurable, input for thermistor connection, monostable relay outputs, can be expanded by a multifunction module Note: The connecting cable to the current measuring module must be at least 15 cm. Rated control supply voltage U_S:					
	• 24 V DC	**3UF7020-1AB01-0**		1	1 unit	42J
	• 110 ... 240 V AC/DC	**3UF7020-1AU01-0**		1	1 unit	42J
 3UF7010-1AB00-0	**SIMOCODE pro V** PROFIBUS DP interface, 12 Mbps, RS 485 4 I/3 O freely configurable, input for thermistor connection, monostable relay outputs, can be expanded by expansion modules Rated control supply voltage U_S:					
	• 24 V DC	**3UF7010-1AB00-0**		1	1 unit	42J
	• 110 ... 240 V AC/DC	**3UF7010-1AU00-0**		1	1 unit	42J
SIMOCODE pro PROFINET						
 3UF7011-1AB00-1	**SIMOCODE pro V PROFINET GP** ETHERNET/PROFINET IO, OPC UA server and web server, 100 Mbps, PROFINET system redundancy, 4 I/3 O freely configurable, input for thermistor connection, monostable relay outputs, can be expanded by expansion module, web server in German/English/Chinese/Russian 2 x connection to bus through RJ45 Media Redundancy Protocol Rated control supply voltage U_S:					
	• 24 V DC	**3UF7011-1AB00-1**		1	1 unit	42J
	• 110 ... 240 V AC/DC	**3UF7011-1AU00-1**		1	1 unit	42J
	1 x connection to bus through RJ45 Rated control supply voltage U_S:					
	• 24 V DC	**3UF7011-1AB00-2**		1	1 unit	42J
	• 110 ... 240 V AC/DC	**3UF7011-1AU00-2**		1	1 unit	42J
 3UF7011-1AB00-0	**SIMOCODE pro V PROFINET** ETHERNET/PROFINET IO, OPC UA server and web server, 100 Mbps, 2 x connection to bus through RJ45, PROFINET system redundancy, Media Redundancy Protocol, 4 I/3 O freely configurable, input for thermistor connection, monostable relay outputs, can be expanded by expansion modules, web server in German/English/Chinese/Russian Rated control supply voltage U_S:					
	• 24 V DC	**3UF7011-1AB00-0**		1	1 unit	42J
	• 110 ... 240 V AC/DC	**3UF7011-1AU00-0**		1	1 unit	42J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Version	Current setting	Width	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	mm					
SIMOCODE pro Modbus RTU							
 3UF7012-1A.00-0	**SIMOCODE pro V Modbus RTU** Modbus RTU interface, 57.6 Kbps, RS 485, 4 I/3 O freely configurable, input for thermistor connection, monostable relay outputs, can be expanded by expansion modules Rated control supply voltage U_S:						
	• 24 V DC		**3UF7012-1AB00-0**		1	1 unit	42J
	• 110 ... 240 V AC/DC		**3UF7012-1AU00-0**		1	1 unit	42J
SIMOCODE pro EtherNet/IP							
 3UF7013-1AB00-0	**SIMOCODE pro V EtherNet/IP** EtherNet/IP interface, web server, 100 Mbps, 2 x connection to bus through RJ45, DLR media redundancy, 4 I/3 O freely configurable, input for thermistor connection, monostable relay outputs, can be expanded by expansion modules, web server in German/English/Chinese/Russian Rated control supply voltage U_S:						
	• 24 V DC		**3UF7013-1AB00-0**		1	1 unit	42J
	• 110 ... 240 V AC/DC		**3UF7013-1AU00-0**		1	1 unit	42J
SIMOCODE pro current or current/voltage measuring modules							
 3UF7103-1AA00-0	**Current measuring modules**						
	• Straight-through transformers	0.3 ... 3	45	**3UF7100-1AA00-0**	1	1 unit	42J
		2.4 ... 25	45	**3UF7101-1AA00-0**	1	1 unit	42J
		10 ... 100	55	**3UF7102-1AA00-0**	1	1 unit	42J
		20 ... 200	120	**3UF7103-1AA00-0**	1	1 unit	42J
	• Busbar connection[1]	20 ... 200	120	**3UF7103-1BA00-0**	1	1 unit	42J
		63 ... 630	145	**3UF7104-1BA00-0**	1	1 unit	42J
 3UF7110-1AA01-0	**2nd-generation current/voltage measuring modules for SIMOCODE pro V[2]** Voltage measuring up to 690 V, measured values with increased accuracy, power, power factor and frequency monitoring						
	• Straight-through transformers	0.3 ... 4	45	**3UF7110-1AA01-0**	1	1 unit	42J
		3 ... 40	45	**3UF7111-1AA01-0**	1	1 unit	42J
		10 ... 115	55	**3UF7112-1AA01-0**	1	1 unit	42J
		20 ... 200	120	**3UF7113-1AA01-0**	1	1 unit	42J
	• Busbar connection[1]	20 ... 200	120	**3UF7113-1BA01-0**	1	1 unit	42J
		63 ... 630	145	**3UF7114-1BA01-0**	1	1 unit	42J
 3UF7123-1AA01-0	**Current/voltage measuring modules for dry-running protection of centrifugal pumps in hazardous areas[2)3)4)]**						
	• Straight-through transformers	0.3 ... 4	45	**3UF7120-1AA01-0**	1	1 unit	42J
		3 ... 40	45	**3UF7121-1AA01-0**	1	1 unit	42J
		10 ... 115	55	**3UF7122-1AA01-0**	1	1 unit	42J
		20 ... 200	120	**3UF7123-1AA01-0**	1	1 unit	42J
	• Busbar connection[1]	20 ... 200	120	**3UF7123-1BA01-0**	1	1 unit	42J
		63 ... 630	145	**3UF7124-1BA01-0**	1	1 unit	42J

1) One terminal parts kit 3RT1955-4PA00 or 3RT1966-4PA00 (see page 10/20) is included in the scope of supply for connection to a contactor.

2) When installing the basic unit on a current/voltage measuring module, the connecting cable must be at least 15 cm long.

3) The current/voltage measuring modules for dry-running protection require SIMOCODE pro V PROFIBUS basic units as of product version E16, SIMOCODE pro V PROFINET as of product version E13 or SIMOCODE pro V EtherNet/IP as of product version E04.

4) When using an operator panel with display with the current/voltage measuring modules for dry-running protection, an operator panel with display as of product version E03 is required.

Note:

SIMOCODE pro V basic unit in a hardened version via SIPLUS extreme upon request.

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Basic units *IE3/IE4* ready

	Version	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SIMOCODE pro operator panels						
 3UF7200-1AA01-0	**Operator panels** Installation in control cabinet door or front plate, for plugging into all SIMOCODE pro basic units, ten LEDs for status indication and freely assignable buttons for controlling the motor, titanium gray	**3UF7200-1AA01-0**		1	1 unit	42J
 3UF7210-1.A01-0	**Operator panels with display for SIMOCODE pro V** Installation in control cabinet door or front plate, for plugging into SIMOCODE pro V, seven LEDs for status indication and user-assignable buttons for controlling the motor, multilingual display, e.g. for indication of measured values, status information or fault messages, titanium gray					
	• English/German/French/Spanish/Portuguese/ Italian/Polish/Finnish	**3UF7210-1AA01-0**		1	1 unit	42J
	• English/Chinese/Russian/Korean	**3UF7210-1BA01-0**		1	1 unit	42J

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Version	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Expansion modules for SIMOCODE pro V					
With SIMOCODE pro V, it is possible to expand the type and number of inputs and outputs in steps. Each expansion module has two system interfaces on the front. Through the one system interface the expansion module is connected to the system interface of the SIMOCODE pro V using a connecting cable; through the second system interface, further expansion modules or the operator panel can be connected. The power supply for the expansion modules is provided by the connecting cable through the basic unit. Notes: The SIMOCODE pro V PN GP basic unit can be used with the 3UF7300-1A.00-0 monostable digital module, the 3UF7510-1AA00-0 ground-fault module, or the 3UF7700-1AA0-0 temperature module. Please order connecting cable separately, see page 10/18.					
Digital modules Up to two digital modules can be used to add additional binary inputs and relay outputs to the basic unit. The input circuits of the digital modules are supplied from an external power supply. Four binary inputs and two relay outputs, up to two digital modules can be connected					
Relay outputs / Input voltage					
Monostable / 24 V DC	**3UF7300-1AB00-0**		1	1 unit	42J
Monostable / 110 ... 240 V AC/DC	**3UF7300-1AU00-0**		1	1 unit	42J
Bistable / 24 V DC	**3UF7310-1AB00-0**		1	1 unit	42J
Bistable / 110 ... 240 V AC/DC	**3UF7310-1AU00-0**		1	1 unit	42J
Analog modules By means of the analog module, the basic unit can be optionally expanded by analog inputs and outputs (0/4 ... 20 mA). Two inputs (passive) for input and one output for output of 0/4 ... 20 mA signals, max. one analog module can be connected per pro V PB/MB RTU basic unit and max. two analog modules per pro V PN/EIP basic unit	**3UF7400-1AA00-0**		1	1 unit	42J
Ground-fault modules Ground-fault monitoring using 3UL23 residual-current transformers and ground-fault modules is used in cases where precise detection of the ground-fault current is required or power systems with high impedance are grounded. With the ground-fault module, it is possible to determine the precise fault current as a measured value, and to define freely selectable warning and trip limits in a wide range from 30 mA ... 40 A. One input for connecting a 3UL23 residual-current transformer, up to one ground-fault module can be connected Note: For corresponding residual-current transformers, see page 10/84.	**3UF7510-1AA00-0**		1	1 unit	42J
Temperature modules Irrespective of the thermistor motor protection of the basic units, up to an additional three analog temperature sensors can be evaluated using a temperature module. Sensor types: Pt100/Pt1000, KTY83/KTY84 or NTC Three inputs for connecting up to three analog temperature sensors, up to one temperature module can be connected per pro V PB/MB RTU basic unit and up to two temperature modules per pro V PN/EIP basic unit	**3UF7700-1AA00-0**		1	1 unit	42J

3UF7300-1AB00-0

3UF7400-1AA00-0

3UF7510-1AA00-0

3UF7700-1AA00-0

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Expansion modules

Multi-unit packaging, see page 16/7.	Version	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Expansion modules for SIMOCODE pro S						
	With SIMOCODE pro S, it is possible to expand the type and number of inputs and outputs. The expansion module has two system interfaces on the front. Through the one system interface the expansion module is connected to the system interface of the SIMOCODE pro S using a connecting cable; through the second system interface, the operator panel can be connected. The power supply for the expansion module is provided by the connecting cable through the basic unit. Note: Please order connecting cable separately, see page 10/18.					
 3UF7600-1AU01-0	**Multifunction modules** The multifunction module is the expansion module of the SIMOCODE pro S device series with the following functions: • Digital module function with four digital inputs and two monostable relay outputs • Ground-fault module function with an input for the connection of a 3UL23 residual-current transformer with freely selectable warning and trip limits in a wide zone of 30 mA ... 40 A • Temperature module function with an input for connecting an analog temperature sensor Pt100, Pt1000, KTY83, KTY84, or NTC Max. one multifunction module can be connected per pro S basic unit Input voltage of the digital inputs:					
	• 24 V DC	**3UF7600-1AB01-0**		1	1 unit	42J
	• 110 ... 240 V AC/DC	**3UF7600-1AU01-0**		1	1 unit	42J

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Selection and ordering data

Version	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Fail-safe expansion modules for SIMOCODE pro V					
Thanks to the fail-safe expansion modules, SIMOCODE pro V can be expanded with the function of a safety relay for the fail-safe disconnection of motors. A maximum of one fail-safe digital module can be connected; it can be used instead of a digital module. The fail-safe expansion modules are equipped likewise with two system interfaces at the front for making the connection to other system components. Unlike other expansion modules, power is supplied to the modules through a separate terminal connection. Note: Please order connecting cable separately, see page 10/18.					
DM-F Local fail-safe digital modules For fail-safe disconnection using a hardware signal Two relay enabling circuits, joint switching; two relay outputs, common potential disconnected fail-safe; inputs for sensor circuit, start signal, cascading and feedback circuit, safety function adjustable using DIP switches Rated control supply voltage U_s:					
• 24 V DC	**3UF7320-1AB00-0**		1	1 unit	42J
• 110 ... 240 V AC/DC	**3UF7320-1AU00-0**		1	1 unit	42J
DM-F PROFIsafe fail-safe digital modules[1] For fail-safe disconnection using PROFIBUS/PROFIsafe or PROFINET/PROFIsafe Two relay enabling circuits, joint switching; two relay outputs, common potential disconnected fail-safe; one input for feedback circuit; three binary standard inputs Rated control supply voltage U_s:					
• 24 V DC	**3UF7330-1AB00-0**		1	1 unit	42J
• 110 ... 240 V AC/DC	**3UF7330-1AU00-0**		1	1 unit	42J

3UF7320-1AB00-0

3UF7330-1AB00-0

[1] Cannot be used in conjunction with SIMOCODE pro V for Modbus RTU or EtherNet/IP communication.

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Accessories

Selection and ordering data

	Version		Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Connecting cables (essential accessory)							
3UF7932-0AA00-0	In different lengths for connecting basic unit, current measuring module, current/voltage measuring module, operator panel or expansion modules						
	Version	Length					
	Flat	0.025 m	**3UF7930-0AA00-0**		1	1 unit	42J
		0.1 m	**3UF7931-0AA00-0**		1	1 unit	42J
		0.15 m	**3UF7934-0AA00-0**		1	1 unit	42J
		0.3 m	**3UF7935-0AA00-0**		1	1 unit	42J
		0.5 m	**3UF7932-0AA00-0**		1	1 unit	42J
	Round	0.5 m	**3UF7932-0BA00-0**		1	1 unit	42J
		1.0 m	**3UF7937-0BA00-0**		1	1 unit	42J
		2.5 m	**3UF7933-0BA00-0**		1	1 unit	42J
PC cables and adapters							
3UF7941-0AA00-0	**USB PC cables** For connecting to the USB interface of a PC/PG, for communication with SIMOCODE pro through the system interface		**3UF7941-0AA00-0**		1	1 unit	42J
	USB/serial adapters For connecting an RS 232 PC cable to the USB interface of a PC		**3UF7946-0AA00-0**		1	1 unit	42J
Memory modules							
3UF7901-0AA01-0	Enable transmission to a new system, e.g. when a device is replaced, without the need for additional aids or detailed knowledge of the device.						
	Memory modules for SIMOCODE pro C For saving the complete parameterization of a SIMOCODE pro C system, titanium gray		**3UF7900-0AA01-0**		1	1 unit	42J
	Memory modules for SIMOCODE pro S and pro V For saving the complete parameterization of a SIMOCODE pro system, titanium gray		**3UF7901-0AA01-0**		1	1 unit	42J
Interface covers							
3RA6936-0B	For system interface, titanium gray		**3RA6936-0B**		1	5 units	42F
Addressing plugs							
3UF7910-0AA00-0	For assigning the PROFIBUS or Modbus RTU address without using a PC/PG to SIMOCODE pro through the system interface		**3UF7910-0AA00-0**		1	1 unit	42J

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Illustrations are approximate

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	Version		Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for motor control centers							
3UF7902-0AA00-0	With the draw-out technology often used in motor control centers it is possible to integrate a SIMOCODE pro initialization module in the switchboard on a permanent basis. Feeder-related parameter and address data can then be permanently assigned to this feeder.						
	Initialization modules For automatic parameterization of SIMOCODE pro S and SIMOCODE pro V basic units		**3UF7902-0AA00-0**		1	1 unit	42J
	Y connecting cables For use in conjunction with the initialization module; connects the basic unit, current measuring module or current/voltage measuring module, and initialization module						
	System interface length	Open cable end					
	0.1 m	1.0 m	**3UF7931-0CA00-0**		1	1 unit	42J
	0.5 m	1.0 m	**3UF7932-0CA00-0**		1	1 unit	42J
	1.0 m	1.0 m	**3UF7937-0CA00-0**		1	1 unit	42J
Bus connection terminals							
3UF7960-0AA00-0	For shield support and strain relief of the PROFIBUS cable on a SIMOCODE pro S		**3UF7960-0AA00-0**		1	1 unit	42J
Door adapters							
3UF7920-0AA00-0	For external connection of the system interface from a control cabinet, for example		**3UF7920-0AA00-0**		1	1 unit	42J
Adapters for operator panel							
3UF7922-0AA00-0	The adapter enables the smaller 3UF7200 operator panel from SIMOCODE pro to be used in a front panel cutout in which previously, e.g. after a change of system, a larger 3UF52 operator panel from SIMOCODE-DP had been used, degree of protection IP54		**3UF7922-0AA00-0**		1	1 unit	42J
Labeling strips							
3UF7925-0AA02-0	• For pushbuttons of the 3UF720 operator panel		**3UF7925-0AA00-0**		100	400 units	42J
	• For pushbuttons of the 3UF721 operator panel with display		**3UF7925-0AA01-0**		100	600 units	42J
	• For LEDs of the 3UF720 operator panel		**3UF7925-0AA02-0**		100	1200 units	42J
Push-in lugs							
3RV2928-0B	For screw fixing, e.g. on mounting plate, two units required per device						
	• Can be used for 3UF71.0, 3UF71.1 and 3UF71.2		**3RV2928-0B**		100	10 units	41E
	• Can be used for 3UF700, 3UF701, 3UF73, 3UF74, 3UF75 and 3UF77		**3RP1903**		1	10 units	41H
	• Can be used for 3UF7020, 3UF7600		**3ZY1311-0AA00**		1	10 units	41L

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Accessories

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal covers						
3RT1956-4EA1	**Covers for cable lug and busbar connections**					
	• Length 100 mm, can be used for 3UF71.3-1BA0.-0	**3RT1956-4EA1**		1	1 unit	41B
	• Length 120 mm, can be used for 3UF71.4-1BA0.-0	**3RT1966-4EA1**		1	1 unit	41B
	Covers for box terminals					
	• Length 25 mm, can be used for 3UF71.3-1BA0.-0	**3RT1956-4EA2**		1	1 unit	41B
	• Length 30 mm, can be used for 3UF71.4-1BA0.-0	**3RT1966-4EA2**		1	1 unit	41B
3RT1956-4EA2	**Covers for screw terminals**					
	Between contactor and current measuring module or current/voltage measuring module for direct mounting					
	• Can be used for 3UF71.3-1BA0.-0	**3RT1956-4EA3**		1	1 unit	41B
	• Can be used for 3UF71.4-1BA0.-0	**3RT1966-4EA3**		1	1 unit	41B
Terminal parts kit						
	Can be used for current and/or current/voltage measuring modules with DIN-rail connection, complete for one contactor					
	• M 8 x 25	**3RT1955-4PA00**		1	1 unit	41B
	• M 10 x 30	**3RT1966-4PA00**		1	1 unit	41B
Box terminal blocks						
3RT1956-4G	For round and ribbon cables					
	• Up to 70 mm^2, can be used for 3UF71.3-1BA0.-0	**3RT1955-4G**		1	1 unit	41B
	• Up to 120 mm^2, can be used for 3UF71.3-1BA0.-0	**3RT1956-4G**		1	1 unit	41B
	• Up to 240 mm^2, can be used for 3UF71.4-1BA0.-0	**3RT1966-4G**		1	1 unit	41B
Bus termination modules						
3UF1900-1KA00	With separate control supply voltage for bus termination following the last unit on the bus line					
	Supply voltage:					
	• 115/230 V AC	**3UF1900-1KA00**		1	1 unit	42J
	• 24 V DC	**3UF1900-1KB00**		1	1 unit	42J
Software						
3ZS1322...	**SIMOCODE ES (TIA Portal)**					
	Software for configuring, commissioning, operating and diagnosing SIMOCODE pro based on the TIA Portal, see page 14/12.					
3ZS1632-1XE04-0YA0	**SIMOCODE pro block library for SIMATIC PCS 7**					
	The PCS 7 block library can be used for simple and easy integration of SIMOCODE pro into the SIMATIC PCS 7 process control system, see page 14/15.					

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Illustrations are approximate

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Overview

More information
Homepage, see www.siemens.com/sirius
Industry Mall, see www.siemens.com/product?3UF18

The 3UF18 current transformers are protection transformers and are used for actuating overload relays. Protection transformers are designed to ensure proportional current transfer up to a multiple of the primary rated current. The 3UF18 current transformers convert the maximum current of the corresponding operating range into the standard value of 1 A secondary.

Selection and ordering data

	Type of mounting	Operating range A	Screw terminals ⊕ Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
For mounting on contactors and stand-alone installation							
3UF1868	Screw fixing	205 … 820	**3UF1868-3GA00**		1	1 unit	42J

Accessories

	For contactor type	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal covers						
	For transformer/contactor combinations and stand-alone installation for 3UF1868-3GA00 transformer Note: One cover required per connection side.	**3TX7696-0A**		1	1 unit	41B

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Illustrations are approximate

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LOGO! logic modules

Overview

LOGO! logic modules

More information

Homepage, see www.siemens.com/LOGO
Industry Mall, see www.siemens.com/product?logo
LOGO!, see Catalog ST 70

- The compact, user-friendly, and low-cost solution for simple control tasks
- Compact, user-friendly, can be used universally without accessories
- All in one: The display and operator panel are integrated
- 36 different functions can be linked at a press of a button or with PC software; up to 130 times in total
- LOGO! 8: 38/43 different functions can be linked at a press of a button or with PC software; up to 200/400 times in total
- Functions can be changed simply with the press of a button. No complicated rewiring

LOGO! basic modules with display

The space-saving basic versions

LOGO! basic modules without display

The cost-optimized basic versions

LOGO! expansion modules

Digital and analog inputs/outputs for connection to LOGO!

LOGO! CMK2000 communications modules

For integration of LOGO! 8 in KNX installations

LOGO! CSM unmanaged

For connecting to Industrial Ethernet in line, tree or star topologies

LOGO! CMR (wireless communication)

For configuring a low-cost remote signaling system

LOGO!Power

The flat power supply for distribution boards

LOGO!Contact switching modules

For switching resistive loads and motors directly

LOGO! software

The user-friendly software for switching program generation

Application

The LOGO! logic module is the user-friendly, low-cost solution for simple control tasks.

LOGO! is universally applicable, e.g.:

- Building installation and wiring (lighting, shutters, awnings, doors, access control, barriers, ventilation systems, etc.)
- Control cabinet installation
- Machine and device construction (pumps, small presses, compressors, hydraulic lifts, conveyors, etc.)
- Special controls for conservatories and greenhouses
- Signal preprocessing for other controllers

LOGO! Modular logic modules can be expanded easily for each application.

Marine approvals:
American Bureau of Shipping, Bureau Veritas, Det Norske Veritas, Germanischer Lloyd, Lloyd's Register of Shipping, Polski Rejestr Statków, etc.

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Overview

7PV15, SIRIUS 3RP25 and SIRIUS 3RP20 timing relays

More information

Homepage, see www.siemens.com/sirius-timing-relays
Industry Mall, see www.siemens.com/product?3RP

Electronic timing relays are used in control, starting, and protective circuits for all switching operations involving time delays.

Their fully developed concept and space-saving, compact design make the SIRIUS 3RP timing relays ideal timer modules for control cabinet, switchgear and control manufacturers in the industry.

With their narrow design, the 7PV15 timing relays are ideal in particular for use in heating, ventilation and air-conditioning systems and in compressors. All 7PV15 timing relays in this enclosure version are suitable for snap-on mounting on TH 35 DIN rails according to IEC 60175. The enclosure complies with DIN 43880.

The SIRIUS 3RA28 function modules enable the assembly of starters and contactor assemblies for direct-on-line and star-delta (wye-delta) starting. They include the key control functions required for the particular feeder, e.g. timing and electrical interlocking. The function modules that function as timing relays are mounted quickly and simply on SIRIUS contactors – without any great wiring effort.

The SIRIUS 3RA28 solid-state time-delay auxiliary switches which can be mounted on contactors are designed for contactor coil voltages in the range from 24 to 240 V AC/DC (wide voltage range). Auxiliary switches for control and alarm signals are used specially for switching the smallest signals for electronics applications. They are used, for example, for allowing a pump or fan to run on, or for the delayed activation of a gate drive.

Simply by being plugged in place, the SIRIUS 3RT19 timing relays enable different functionalities required for the assembly of starters to be realized in the feeder. At the same time the timing relays for mounting on contactors reduce the wiring work required within the feeder and save space in the control cabinet.

Device series

SIRIUS timing relays for DIN-rail mounting

- SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm, see page 10/24
- SIRIUS 3RP20 timing relays, 45 mm, see page 10/36
- 7PV15 timing relays, 17.5 mm, see page 10/42

SIRIUS timing relays for mounting on contactors

- SIRIUS 3RA28 solid-state time-delay auxiliary switches for mounting on 3RT2 contactors and 3RH2 contactor relays, see page 3/95
- SIRIUS 3RA28 function modules for mounting on 3RT2 contactors and 3RH2 contactor relays, see page 3/100
- SIRIUS 3RT19 solid-state time-delay auxiliary switches for mounting on 3RT1 contactors, see page 3/96

Benefits

- The right design for every application
- Clear-cut basic range with five basic units in the case of the 7PV15 timing relays, and up to seven basic units in the case of the 3RP timing relays
- Considerable logistical advantages thanks to versions with wide voltage and wide time setting range
- No tools required for assembly or disassembly on DIN rails
- Cadmium-free relay contacts
- Recyclable, halogen-free enclosure
- Optimum price/performance ratio
- Versions with logical separation
- Low variance: One design for distribution boards and for control cabinets
- Compliance with EMC requirements for buildings
- Environmentally friendly laser inscription instead of printing containing solvents
- Versions as snap-on modules for reducing wiring and saving space in the control cabinet
- Versions with coated printed circuit board
- Versions with screw terminals or alternatively with spring-loaded terminals

Application

Timing relays with ON-delay

- Interference pulse suppression (gating of interference pulses)
- Gradual startup of motors so as not to overload the power supply

Timing relays with OFF-delay

- Generation of overtravel functions following removal of voltage
- Gradual, delayed shutdown, e.g. of motors or fans, to allow a plant to be shut down selectively

Clock-pulse relay

- Flashing, asymmetrical

Star-delta (wye-delta) timing relays

- Switching over motors from wye to delta with a dead interval of 50 ms to prevent phase-to-phase short circuits

Multifunctional timing relays

- Maximum flexibility, with a device for every application
- Available with relay and semiconductor output
- Versions for railway applications for more exacting requirements (e.g. temperature range, vibration/shock resistance and EMC)

Watchdog function

- Monitoring of cyclic events

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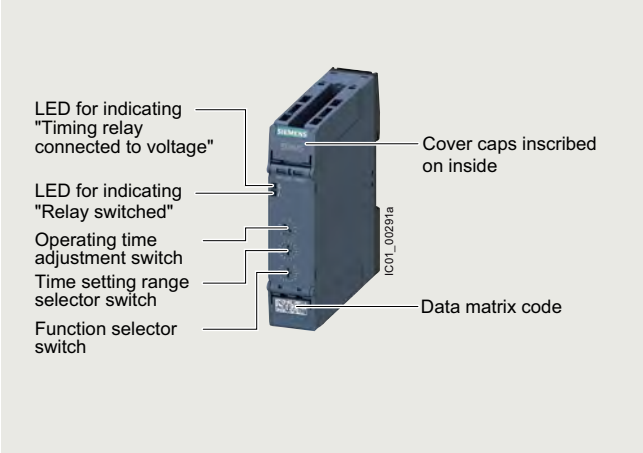
SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

Overview



SIRIUS 3RP25 timing relay

More information

Homepage, see www.siemens.com/sirius-timing-relays
Industry Mall, see www.siemens.com/product?3RP25
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=SIRIUSRelais
Conversion tool, see www.siemens.com/conversion-tool
Simulator, see https://support.industry.siemens.com/cs/ww/en/view/103556391

Video: What are the benefits of SIRIUS 3RP25 timing relays?

Electronic timing relays for general use in control systems and mechanical engineering with:

- 1 or 2 CO, 1 NO (semiconductor) or 3 NO
- Monofunction or multifunction
- Combination voltage or wide voltage range
- Single or selectable time setting ranges
- Switch position indication and voltage indication by LED
- Versions with coated printed circuit board

Article number scheme

Product versions		Article number													
Timing relays		**3RP25**	□	□	–	□	□	□	□	**0**	–	□	□	□	□
Product function/ time setting ranges	Multifunction		**0**	**5**											7 time ranges 0.05 s ... 100 h
	ON-delay		**1**	**1**											1 time range 0.5 ... 10 s
			1	**2**											1 time range 1 ... 3 s
			1	**3**											1 time range 5 ... 100 s
			2	**5**											7 time ranges 0.05 s ... 100 h
			2	**7**											4 time ranges 0.05 s ... 240 s
	OFF-delay with control signal		**3**	**5**											7 time ranges 0.05 s ... 100 h
	OFF-delay without control signal, non-volatile, passing make contact		**4**	**0**											7 time ranges 0.05 s ... 600 s
	Clock-pulse relay, flashing, asymmetrical		**5**	**5**											7 time ranges 0.05 s ... 100 h
	Star-delta (wye-delta) function with coasting function (idling)		**6**	**0**											Star-delta (wye-delta) 1 ... 20 s, coasting time (idling) 600 s
	Star-delta (wye-delta) function		**7**	**4**											1 time range 1 ... 20 s
			7	**6**											1 time range 3 ... 60 s
Connection type	Screw terminals				**1**										
	Spring-loaded terminals (push-in)				**2**										
Contacts	1 CO					**A**									
	2 CO					**B**									
	Semiconductors (transistor NPN)					**C**									
	Semiconductors (thyristor), two-wire					**E**									
	1 NO + 1 NO (SD)					**N**									
	2 CO force-guided					**R**									
	3 NO					**S**									
Control supply voltage	24 V AC/DC						**B**	**3**							
	200 … 240 V/380 … 440 V AC						**M**	**2**							
	400 ... 440 V AC						**T**	**2**							
	12 ... 240 V AC/DC or 24 ... 240 V AC/DC (3RP2505-.RW30)						**W**	**3**							
Special versions	With coated printed circuit board											**0**	**A**	**X**	**0**
Example		**3RP25**	**0**	**5**	**–**	**1**	**A**	**B**	**3**	**0**					

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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3RP2505 multifunctional timing relays

Two setting options for implementing the multifunctions (A-M):

(1) Determination of 13 functions by the setting A to M, with 1 CO, 1 NO, 2 CO that switch in parallel.

(2) Extended function variance by selecting the time range and determining, whether 2 CO switch in parallel or whether 1 CO switches with delay + 1 CO switches immediately (1 CO + 1 CO)

Setting the functions on the device

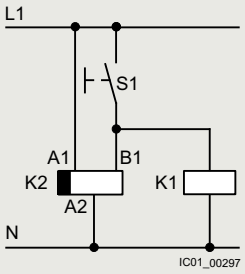
The functions of the 3RP2505 multifunctional timing relays can be set by means of the function selector switch. Whether both CO contacts are switched in parallel or one CO contact with a delay and one instantaneously and the choice of time setting range are set by means of the time setting range selector switch. The exact operating time can be adjusted with the operating time switch.

With a set of foil labels the timing relay can be legibly marked with the functions which can be selected on the timing relay. This is supplied together with the multifunctional timing relay.

The same potential must be applied to terminals A. and B.

Note:

The activation of loads parallel to the start input is permissible when using AC/DC control voltage.



Diagram

Overview of functions

Identification letter	**13 functions** 1 CO contact (1 CO), 1 NO contact (1 NO) semiconductor, 2 CO contacts switched in parallel (2 CO) or 2 CO contacts force-guided and switched in parallel with delay (2 CO)	**27 functions** 13 functions (A - M) 2 CO contacts switched in parallel (2 CO) + 13 functions (A - M) 1 delayed CO contact + 1 instantaneous CO contact (1 CO + 1 CO) and star-delta (wye-delta) function
A	ON-delay	ON-delay and instantaneous contact
B	OFF-delay with control signal	OFF-delay with control signal and instantaneous contact
C	ON-delay/OFF-delay with control signal	ON-delay/OFF-delay with control signal and instantaneous contact
D	Flashing, symmetrical, starting with interval	Flashing, symmetrical, starting with interval and instantaneous contact
E	Passing make contact, interval relay	Passing make contact, interval relay and instantaneous contact
F	Retriggerable interval relay with deactivated control signal (passing break contact with control signal)	Retriggerable interval relay with deactivated control signal (passing break contact with control signal) and instantaneous contact
G	Passing make contact, with control signal, not retriggerable (pulse-forming with control signal)	Passing make contact, with control signal, not retriggerable, (pulse-forming with control signal) and instantaneous contact
H	Additive ON-delay, instantaneous OFF with control signal	Additive ON-delay, instantaneous OFF with control signal and instantaneous contact
I	Additive ON-delay with control signal	Additive ON-delay with control signal and instantaneous contact
J	Flashing, symmetrical, starting with pulse	Flashing, symmetrical, starting with pulse and instantaneous contact
K	Pulse-delayed (fixed pulse (at 1 s) and settable pulse delay)	Pulse-delayed (fixed pulse (at 1 s) and settable pulse delay) and instantaneous contact
L	Pulse-delayed with control signal (fixed pulse (at 1 s) and settable pulse delay)	Pulse-delayed with control signal (fixed pulse (at 1 s) and settable pulse delay) and instantaneous contact
M	Retriggerable interval relay with activated control signal (watchdog)	Retriggerable interval relay with activated control signal and instantaneous contact (watchdog)
--	--	Star-delta (wye-delta) function

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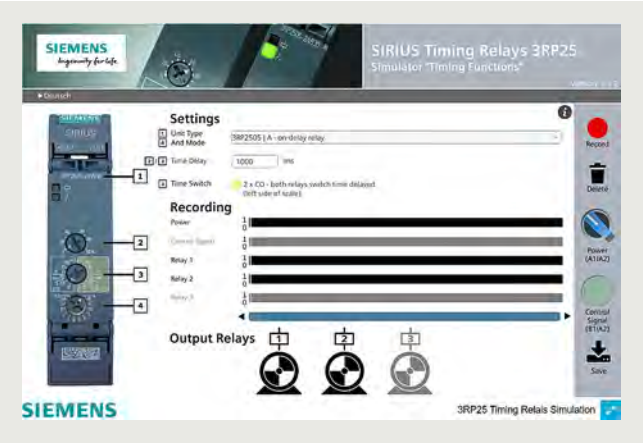
SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

Simulator



3RP25 simulator

The 3RP25 simulator visualizes different time functions in the 3RP25 timing relay. Any fault scenario can be simulated.

The tool is available free of charge, see https://support.industry.siemens.com/cs/ww/en/view/103556391.

Benefits

- Easy stock keeping and logistics thanks to low variance of devices
- Reduced space requirement in the control cabinet thanks to variants in width 17.5 mm and 22 mm
- Consistent for all functions thanks to wide voltage range from 12 to 240 V AC/DC
- Up to 27 functions according to IEC 61812 in the multifunctional timing relay with wide voltage range
- Multifunctional timing relay with semiconductor output for high switching frequencies, bounce-free and wear-free switching

Standards and approvals

- IEC 60721-3-3 "Classification of environmental conditions"
- IEC 61812-1/DIN VDE 0435 Part 2021 "Specified time relays for industrial use"
- IEC 61000-6-2, IEC 61000-6-3 and IEC 61000-6-4 "Electromagnetic compatibility"
- IEC 60947-5-1 "Low-voltage switchgear and controlgear – Electromechanical control circuit devices"

Application

Timing relays are used in control, starting, and protective circuits for all switching operations involving time delays. They guarantee a high level of functionality and a high repeat accuracy of timer settings.

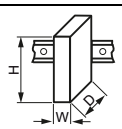
Use in environments exposed to dust, condensation, rapid temperature changes and corrosion is possible thanks to the standard coating of the printed circuit board according to IPC-610. Suitable for applications in rail, agriculture, mining, woodworking, etc.

Enclosure version

All timing relays are suitable for snap-on mounting on TH 35 DIN rails according to IEC 60715 or for screw fixing.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16354/td	Internal circuit diagrams, see CAx Download Manager https://support.industry.siemens.com/my/ww/en/CAxOnline#CAxOnline
Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/103532830	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16354/faq

Article number	**3RP2505-.A, 3RP2505-.C, 3RP251., 3RP2525-.A, 3RP2527, 3RP253., 3RP255.**	**3RP2505-.B, 3RP2505-.R, 3RP2525-.B, 3RP254., 3RP256., 3RP257.**
Dimensions (W x H x D) 	17.5 x 100 x 90	22.5 x 100 x 90

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SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

Article number		3RP25..-.AB30, 3RP25..-.AW30, 3RP25..-.AW30-0AX0, 3RP25..-.BB30, 3RP25..-.BW30, 3RP25..-.BW30-0AX0, 3RP25..-.NW30, 3RP25..-.RW30, 3RP25..-2RW30-0AX0, 3RP25..-.SW30	3RP25..-.BT20, 3RP25..-.NM20	3RP25..-.CW30	3RP25..-.EW30
General technical specifications					
Insulation voltage for overvoltage category III according to IEC 60664 for pollution degree 3, rated value	V	300	500	300	--
Ambient temperature					
• During operation	°C	-25 ... +60			
• During storage	°C	-40 ... +85			
Switching capacity current with inductive load	A	0.01 ... 3	0.01 ... 3	0.01 ... 1	0.01 ... 0.6
Operational current of the auxiliary contacts					
• At AC-15					
- At 24 V	A	3	3	1	--
- At 250 V	A	3	3	1	--
- At 400 V	A	--	3	--	--
• At DC-12					
- At 24 V	A	--	--	1	--
- At 125 V	A	--	--	1	--
- At 250 V	A	--	--	1	--
• At DC-13					
- At 24 V	A	1	1	--	--
- At 125 V	A	0.2	0.2	--	--
- At 250 V	A	0.1	0.1	--	--
Thermal current	A	5	5	1	0.6
Mechanical endurance (operating cycles)		10 000 000			
Electrical endurance (operating cycles) for AC-15 at 230 V typical		100 000		300 000	100 000

Article number		3RP25..-.AB30, 3RP2535-.AW30, 3RP2540-.AW30, 3RP25..-.BB30, 3RP2540-.BW30	3RP2505-.BT20, 3RP257.-.NM20	3RP2505-.AW30, 3RP2505-.AW30-0AX0, 3RP251.-.AW30, 3RP2525-.AW30, 3RP2555-.AW30, 3RP2505-.BW30, 3RP2525-.BW30, 3RP2505-.BW30-0AX0, 3RP2505-.CW30, 3RP2527-.EW30, 3RP257.-.NW30, 3RP2560-.SW30	3RP2505-.RW30, 3RP2505-.RW30-0AX0
General technical specifications					
Operating range factor of the control supply voltage, rated value					
• At AC					
- At 50 Hz		0.85 ... 1.1	0.85 ... 1.1	0.8 ... 1.1	0.7 ... 1.1
- At 60 Hz		0.85 ... 1.1	0.85 ... 1.1	0.8 ... 1.1	0.7 ... 1.1
• At DC		0.85 ... 1.1	--	0.8 ... 1.1	0.7 ... 1.1

Article number		3RP25..-1...0	3RP25..-2...0
Type of electrical connection for auxiliary and control circuits		**Screw terminals**	**Spring-loaded terminals (push-in)**
Design of thread of connection screw		M3	--
Tightening torque	Nm	0.6 … 0.8	--
Type of connectable conductor cross-sections			
• Solid		1 x (0.5 ... 4 mm²), 2 x (0.5 ... 2.5 mm²)	1 x (0.5 ... 4 mm²)
• Finely stranded with end sleeve		1 x (0.5 ... 4 mm²), 2 x (0.5 ... 1.5 mm²)	1 x (0.5 ... 2.5 mm²)
• For AWG cables			
- Solid		1 x (20 ... 12), 2 x (20 ... 14)	1 x (20 ... 12)
- Stranded		1 x (20 ... 12), 2 x (20 ... 14)	1 x (20 ... 12)

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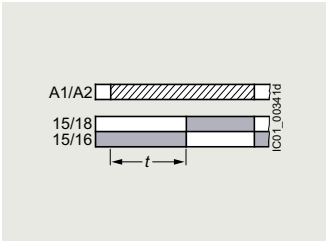
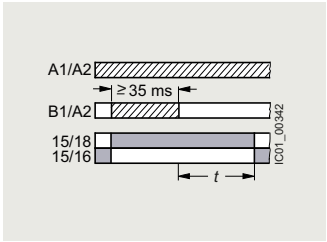
SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

3RP25 function diagrams

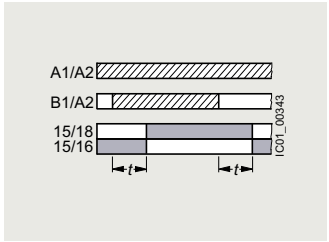
Multifunction 3RP2505-.A, 1 CO, 13 functions and 3RP2505-.C, 1 NO (semiconductor), 13 functions



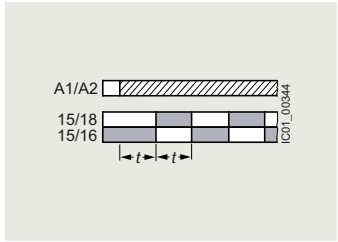
A
ON-delay



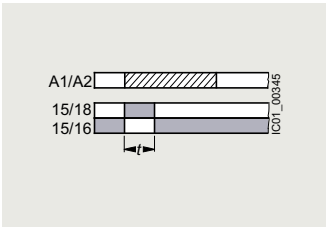
B
OFF-delay with control signal



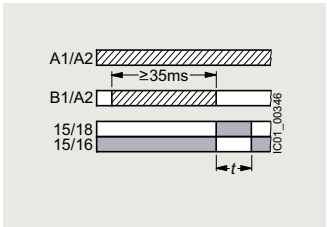
C
ON-delay/OFF-delay with control signal



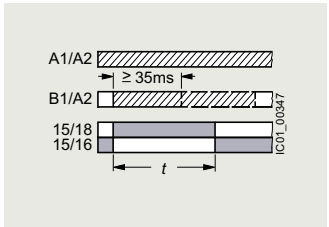
D
Flashing, symmetrical, starting with interval



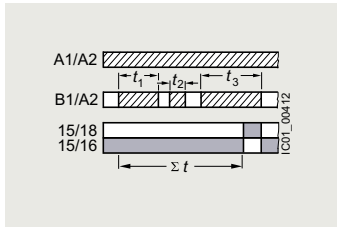
E
Passing make contact, interval relay



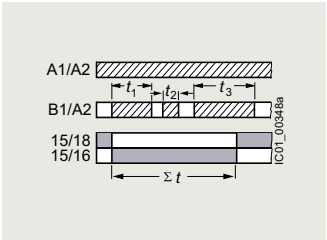
F
Retriggerable interval relay with deactivated control signal (passing break contact with control signal)



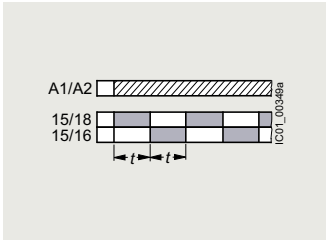
G
Passing make contact with control signal, not retriggerable (pulse-forming with control signal)



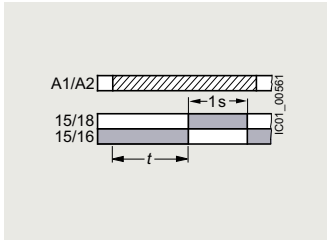
H
Additive ON-delay, instantaneous OFF with control signal



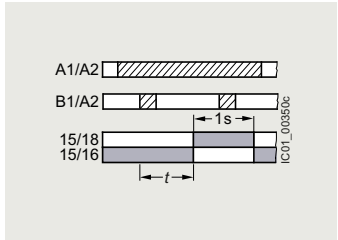
I
Additive ON-delay with control signal



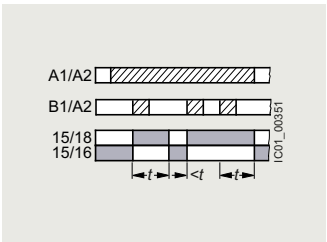
J
Flashing, symmetrical, starting with pulse



K
Pulse-delayed (fixed pulse (at 1 s) and settable pulse delay)



L
Pulse-delayed with control signal (fixed pulse (at 1 s) and settable pulse delay)



M
Retriggerable interval relay with activated control signal (watchdog)

Legend

A ... M Identification letters
Timing relay energized
Contact closed
Contact open

10

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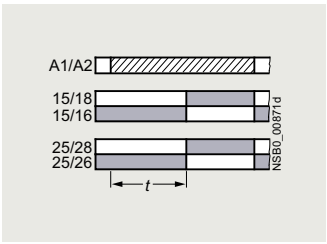
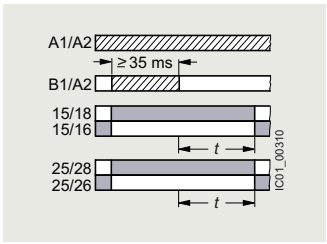
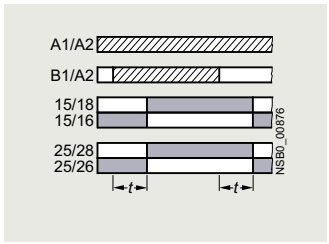
Multifunction 3RP2505-.R, 13 functions, 2 CO force-guided and switched in parallel with delay



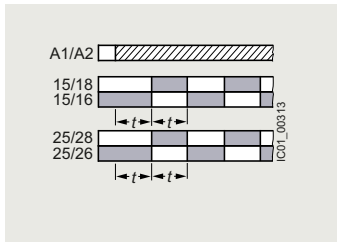
A
ON-delay



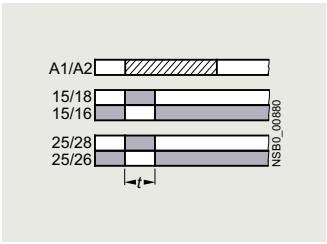
B
OFF-delay with control signal



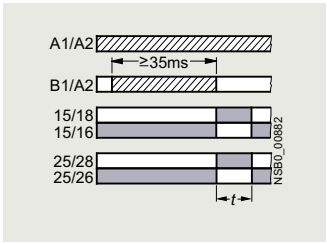
C
ON-delay/OFF-delay with control signal



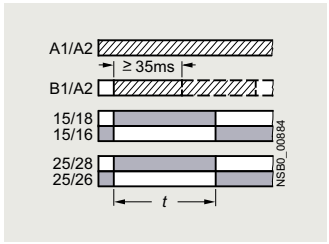
D
Flashing, symmetrical, starting with interval



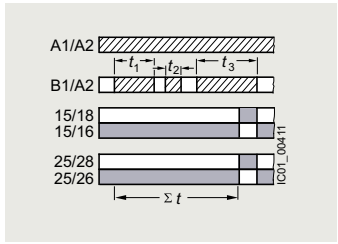
E
Passing make contact, interval relay



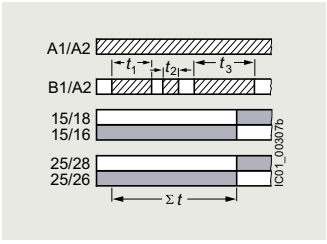
F
Retriggerable interval relay with deactivated control signal (passing break contact with control signal)



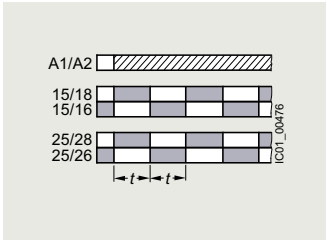
G
Passing make contact with control signal, not retriggerable (pulse-forming with control signal)



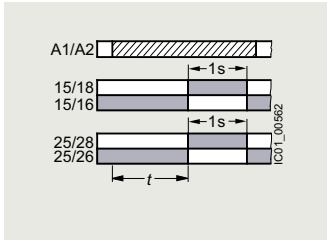
H
Additive ON-delay, instantaneous OFF with control signal



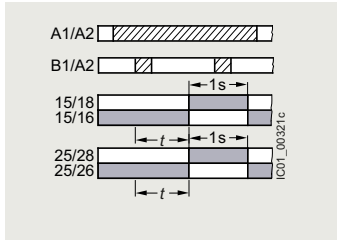
I
Additive ON-delay with control signal



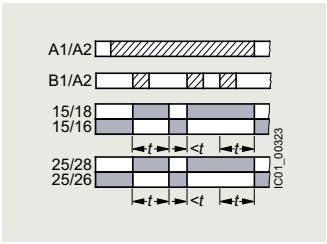
J
Flashing, symmetrical, starting with pulse



K
Pulse-delayed (fixed pulse at 1 s and settable pulse delay)



L
Pulse-delayed with control signal (fixed pulse at 1 s and settable pulse delay)



M
Retriggerable interval relay with activated control signal (watchdog)

Legend

A ... M Identification letters
Timing relay energized
Contact closed
Contact open

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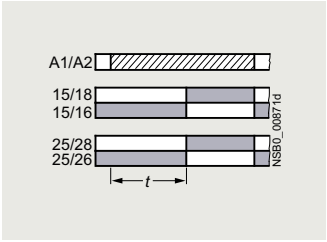
SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

Multifunction 3RP2505-.B, 27 functions, 2 CO

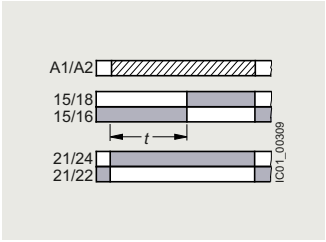
A

2 CO switched in parallel



ON-delay

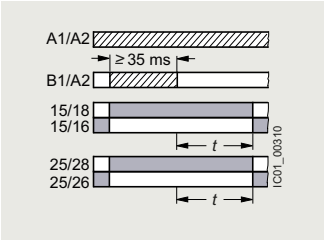
1 delayed CO contact + 1 instantaneous CO contact



ON-delay and instantaneous contact

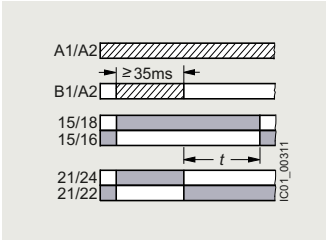
B

2 CO switched in parallel



OFF-delay with control signal

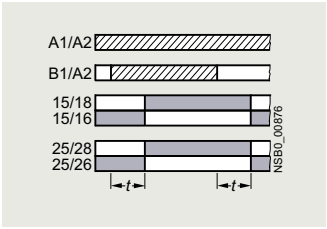
1 delayed CO contact + 1 instantaneous CO contact



OFF-delay with control signal and instantaneous contact

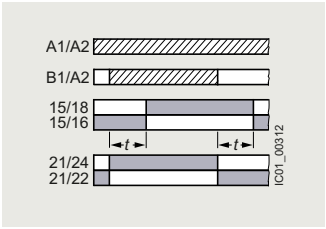
C

2 CO switched in parallel



ON-delay/OFF-delay with control signal

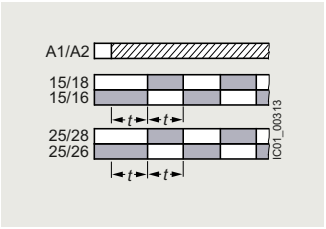
1 delayed CO contact + 1 instantaneous CO contact



ON-delay/OFF-delay with control signal and instantaneous contact

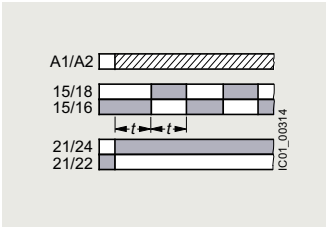
D

2 CO switched in parallel



Flashing, symmetrical, starting with interval

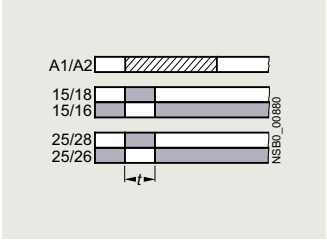
1 delayed CO contact + 1 instantaneous CO contact



Flashing, symmetrical, starting with interval and instantaneous contact

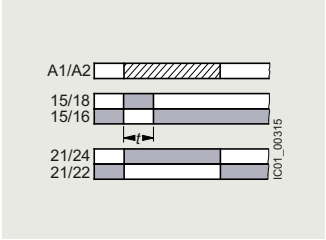
E

2 CO switched in parallel



Passing make contact, interval relay

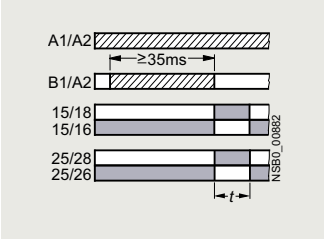
1 delayed CO contact + 1 instantaneous CO contact



Passing make contact, interval relay and instantaneous contact

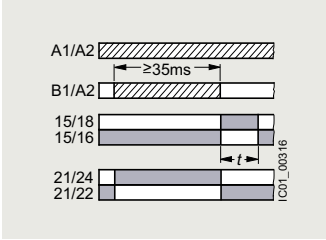
F

2 CO switched in parallel



Retriggerable interval relay with deactivated control signal (passing break contact with control signal)

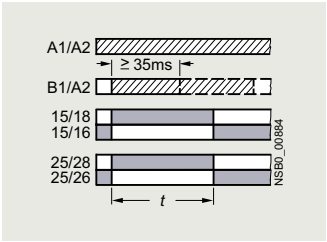
1 delayed CO contact + 1 instantaneous CO contact



Retriggerable interval relay with deactivated control signal (passing break contact with control signal) and instantaneous contact

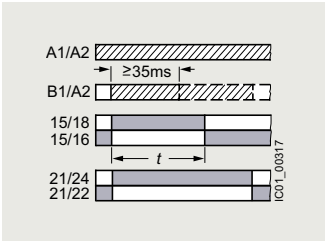
G

2 CO switched in parallel



Passing make contact with control signal, not retriggerable (pulse-forming with control signal)

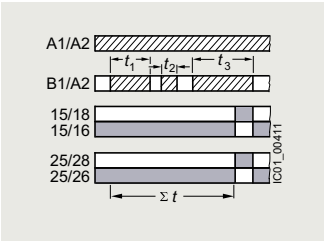
1 delayed CO contact + 1 instantaneous CO contact



Passing make contact with control signal, not retriggerable (pulse-forming with control signal) and instantaneous contact

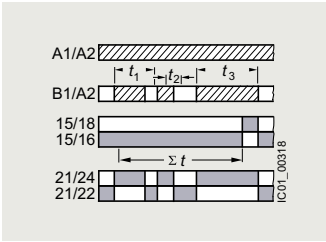
H

2 CO switched in parallel



Additive ON-delay, instantaneous OFF with control signal

1 delayed CO contact + 1 instantaneous CO contact



Additive ON-delay, instantaneous OFF with control signal and instantaneous contact

Legend

A ... H Identification letters
Timing relay energized
Contact closed
Contact open

10

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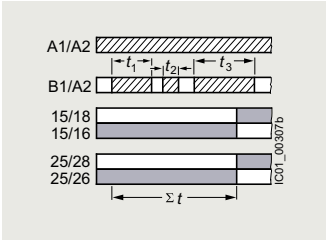
Multifunction 3RP2505-.B, 27 functions, 2 CO (continued)

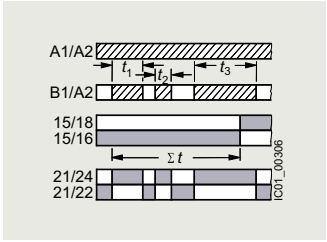
I

2 CO switched in parallel



Additive ON-delay with control signal

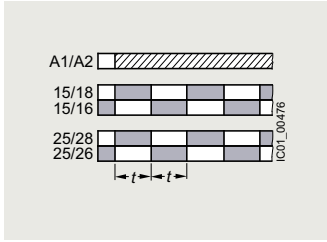
1 delayed CO contact +
1 instantaneous CO contact



Additive ON-delay with control signal and instantaneous contact

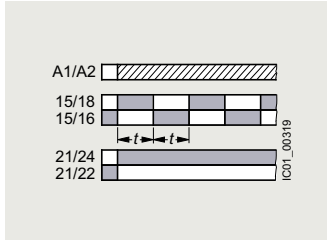
J

2 CO switched in parallel



Flashing, symmetrical, starting with pulse

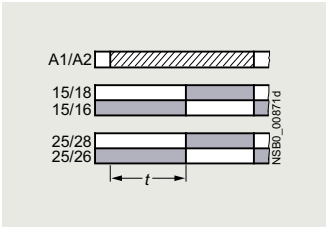
1 delayed CO contact +
1 instantaneous CO contact



Flashing, symmetrical, starting with pulse and instantaneous contact

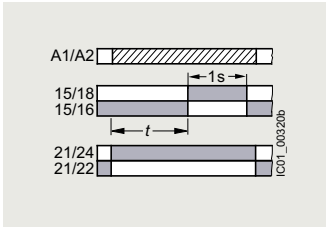
K

2 CO switched in parallel



Pulse-delayed (fixed pulse at 1 s and settable pulse delay)

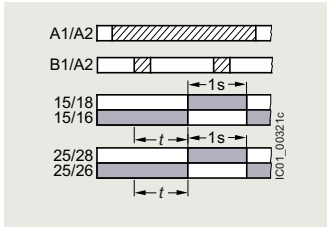
1 delayed CO contact +
1 instantaneous CO contact



Pulse-delayed (fixed pulse at 1 s and settable pulse delay) and instantaneous contact

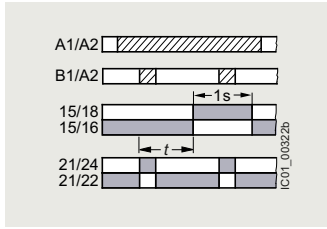
L

2 CO switched in parallel



Pulse-delayed with control signal (fixed pulse at 1 s and settable pulse delay)

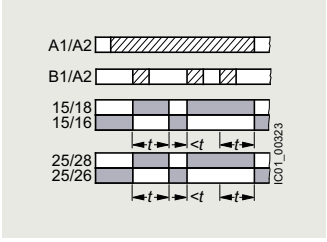
1 delayed CO contact +
1 instantaneous CO contact



Pulse-delayed with control signal (fixed pulse at 1 s and settable pulse delay) and instantaneous contact

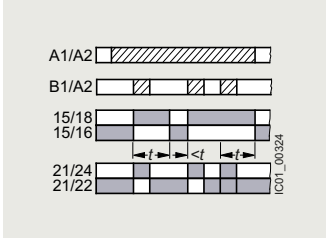
M

2 CO switched in parallel



Retriggerable interval relay with activated control signal (watchdog)

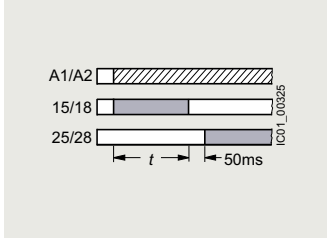
1 delayed CO contact +
1 instantaneous CO contact



Retriggerable interval relay with activated control signal and instantaneous contact (watchdog)

YΔ

2 CO contacts switched in parallel or
1 delayed CO contact +
1 instantaneous CO contact



Star-delta (wye-delta) function

Legend

I ... M Identification letters

Timing relay energized

Contact closed

Contact open

10

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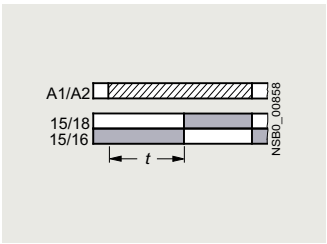
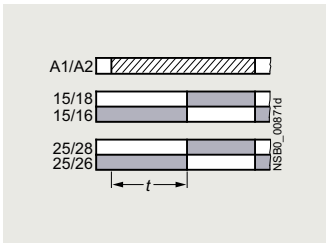
SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

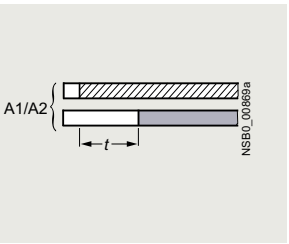
Monofunctions 3RP251. to 3RP257.[1)]



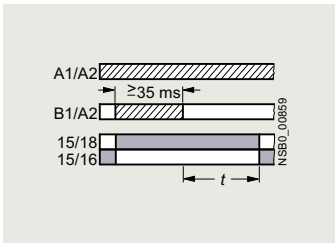
3RP251.-.AW30, 1 CO, ON-delay



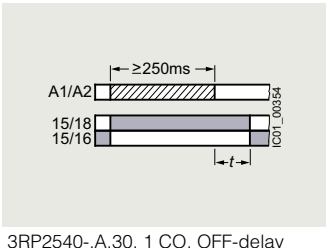
3RP2525-..W30, 2 CO, ON-delay



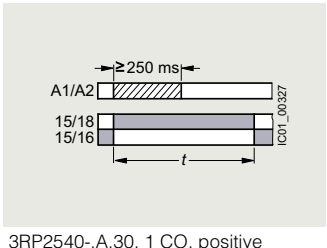
3RP2527-.EW30, 1 NO (semiconductor), ON-delay



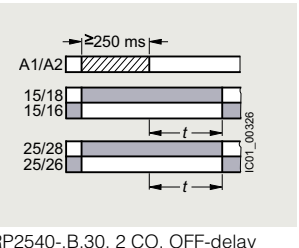
3RP2535-.AW30, 1 CO, OFF-delay with control signal



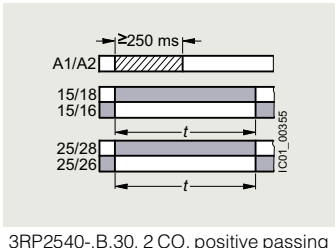
3RP2540-.A.30, 1 CO, OFF-delay (N)[1)]



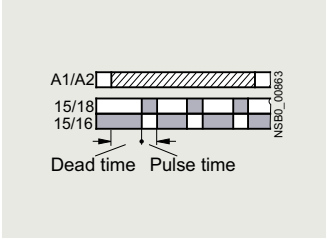
3RP2540-.A.30, 1 CO, positive passing make contact (O)[1)]



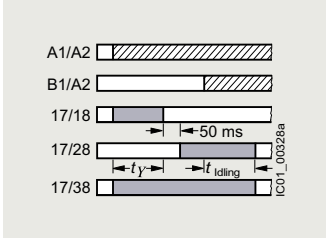
3RP2540-.B.30, 2 CO, OFF-delay (N)[1)]



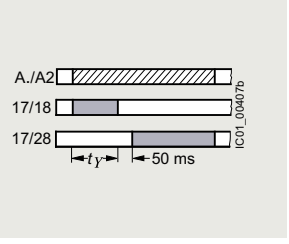
3RP2540-.B.30, 2 CO, positive passing make contact (O)[1)]



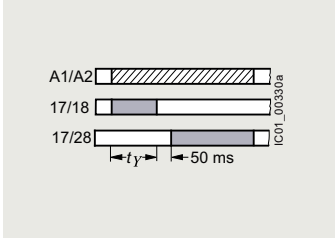
3RP2555-.AW30, 1 CO, flashing, asymmetrical, starting with interval (clock-pulse relay)



3RP2560-.SW30, 3 NO, star-delta (wye-delta) function with overtravel function (idling)



3RP257.-.NM20, 2 NO, star-delta (wye-delta) function



3RP257.-.NW30, 2 NO, star-delta (wye-delta) function

Legend
- Timing relay energized
- Contact closed
- Contact open

1) 3RP2540 has a double function:
Function N = OFF-delay
Function O = Positive passing make contact.

10

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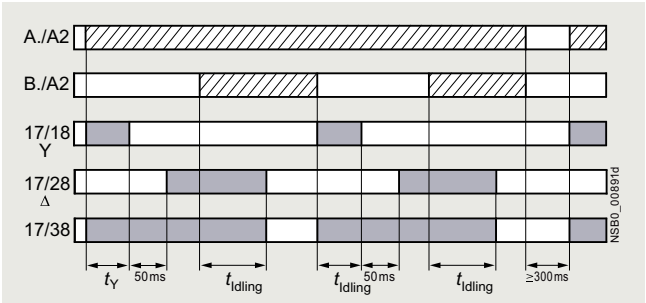
Possibilities of operation of the 3RP2560-.SW30 timing relay

Operation 1: Start contact B./A2 is open when control supply voltage A./A2 is applied

The control supply voltage is applied to A./A2 and there is no control signal on B./A2. This starts the Y/Δ timing. The idling time (coasting time) is started by applying a control signal to B./A2. When the set time t_{Idling} (30 to 600 s) has elapsed, the output relays (17/38 and 17/28) are reset. If the control signal on B./A2 is switched off (minimum OFF period 270 ms), a new timing is started.

Note:

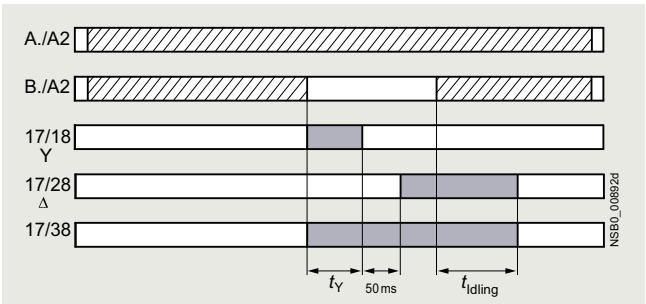
Observe response time (dead time) of 400 ms on energizing control supply voltage until contacts 17/18 and 17/38 close.



Operation 1

Operation 2: Start contact B./A2 is closed when control supply voltage A./A2 is applied.

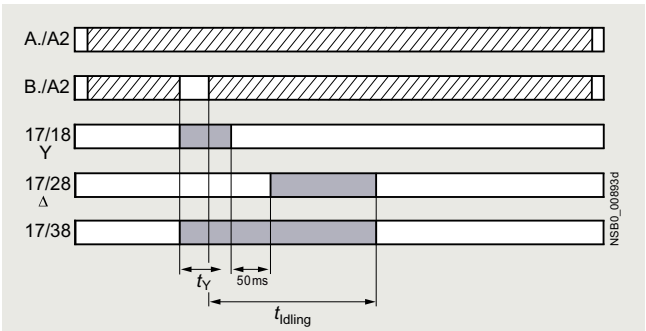
If the control signal B./A2 is already present when the control supply voltage A./A2 is applied, **no** timing is started. The timing is only started when the control signal B./A2 is switched off.



Operation 2

Operation 3: Start contact B./A2 closes while star time is running

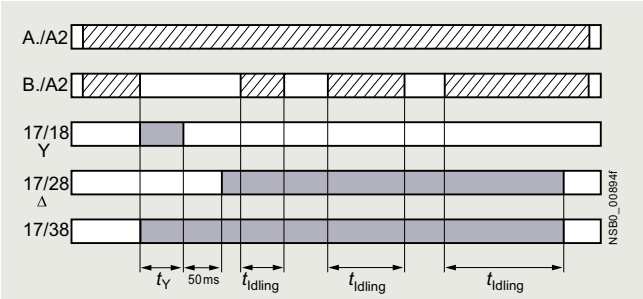
If the control signal B./A2 is applied again during the star time, the idling time starts and the timing is terminated normally.



Operation 3

Operation 4: Start contact B./A2 opens while delta time is running and is applied again

If the control signal on B./A2 is applied and switched off again during the delta time, although the idling time has not yet elapsed, the idling time (coasting time) is reset to zero. If the control signal is re-applied to B./A2, the idling time is restarted.



Operation 4

Legend

- Timing relay energized
- Contact closed
- Contact open

t_Y = Star time 1 to 20 s

t_{Idling} = Idling time (coasting time) 30 to 600 s

Note:

The following applies to all operations: The pressure switch controls the timing via B./A2.

Application example based on standard operation (operation 1): For example, use of 3RP2560 for compressor control

Frequent starting of compressors strains the network, the machine, and the increased costs for the operator. The new timing relay prevents frequent starting at times when there is high demand for compressed air. A special control circuit prevents the compressor from being switched off immediately when the required air pressure in the tank has been reached. Instead, the valve in the intake tube is closed and the compressor runs in "Idling" mode, i.e. in no-load operation for a specific time which can be set from 30 to 600 s.

If the pressure falls within this time, the motor does not have to be restarted again, but can return to rated load operation from no-load operation.

If the pressure does not fall within this idling time, the motor is switched off.

The pressure switch controls the timing via B./A2.

The control supply voltage is applied to A./A2 and the start contact B./A2 is open, i.e. there is no control signal on B./A2 when the control supply voltage is applied. The pressure switch signals "too little pressure in system" and starts the timing by way of terminal B./A2. The compressor is started, enters Y/Δ operation, and fills the pressure tank.

When the pressure switch signals "sufficient pressure", the control signal B./A2 is applied, the idling time (coasting time) is started, and the compressor enters no-load operation for the set period of time from 30 to 600 s. The compressor is then switched off. The compressor is only restarted if the pressure switch responds again (low pressure).

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SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

Selection and ordering data

Multi-unit packaging, see page 16/7.

3RP2505-2AB30

3RP2505-2BB30

3RP2525-2AW30

3RP2540-2AW30

3RP2555-2AW30

3RP2576-2NW30

Number of NO contacts: Instantaneous switching	Number of NO contacts: Delayed switching	Number of CO contacts: Instantaneous switching	Number of CO contacts: Delayed switching	Semiconductor output	Adjustable time	Control supply voltage: at 50/60 Hz AC	Control supply voltage: at DC	Standard coating IPC-610	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
						V	V						
13 functions													
0	0	0	1	No	0.05 s ... 100 h	24	24	No	**3RP2505-□AB30**		1	1 unit	41H
						12 ... 240	12 ... 240	No	**3RP2505-□AW30**		1	1 unit	41H
								Yes	**3RP2505-2AW30-0AX0**		1	1 unit	41H
0	1	0	0	Yes	0.05 s ... 100 h	12 ... 240	12 ... 240	No	**3RP2505-□CW30**		1	1 unit	41H
13 functions, suitable for railway applications													
0	0	0	2[1]	No	0.05 s ... 100 h	24 ... 240	24 ... 240	No	**3RP2505-□RW30**		1	1 unit	41H
								Yes	**3RP2505-2RW30-0AX0**		1	1 unit	41H
27 functions													
0	0	0	2[2]	No	0.05 s ... 100 h	24	24	No	**3RP2505-□BB30**		1	1 unit	41H
						400 ... 440	--	No	**3RP2505-□BT20**		1	1 unit	41H
						12 ... 240	12 ... 240	No	**3RP2505-□BW30**		1	1 unit	41H
								Yes	**3RP2505-2BW30-0AX0**		1	1 unit	41H
ON-delay													
0	0	0	1	No	0.5 ... 10 s	12 ... 240	12 ... 240	No	**3RP2511-□AW30**		1	1 unit	41H
					1 ... 30 s	12 ... 240	12 ... 240	No	**3RP2512-□AW30**		1	1 unit	41H
					5 ... 100 s	12 ... 240	12 ... 240	No	**3RP2513-□AW30**		1	1 unit	41H
					0.05 s ... 100 h	12 ... 240	12 ... 240	No	**3RP2525-□AW30**		1	1 unit	41H
0	0	0	2	No	0.05 s ... 100 h	24	24	No	**3RP2525-□BB30**		1	1 unit	41H
						12 ... 240	12 ... 240	No	**3RP2525-□BW30**		1	1 unit	41H
0	1	0	0	Yes	0.05 s ... 240 s	12 ... 240	12 ... 240	No	**3RP2527-□EW30**		1	1 unit	41H
OFF-delay with control signal													
0	0	0	1	No	0.05 s ... 100 h	12 ... 240	12 ... 240	No	**3RP2535-□AW30**		1	1 unit	41H
OFF-delay without control signal, non-volatile, passing make contact													
0	0	0	1[4]	No	0.05 s ... 600 s	24	24	No	**3RP2540-□AB30**		1	1 unit	41H
						12 ... 240	12 ... 240	No	**3RP2540-□AW30**		1	1 unit	41H
0	0	0	2[4]	No	0.05 s ... 600 s	24	24	No	**3RP2540-□BB30**		1	1 unit	41H
						12 ... 240	12 ... 240	No	**3RP2540-□BW30**		1	1 unit	41H
Clock-pulse relay, flashing, asymmetrical													
0	0	0	1	No	0.05 s ... 100 h	12 ... 240	12 ... 240	No	**3RP2555-□AW30**		1	1 unit	41H
Star-delta (wye-delta) function with coasting function (idling)													
1	2	0	0	No	1 ... 20 s	12 ... 240	12 ... 240	No	**3RP2560-□SW30**		1	1 unit	41H
Star-delta (wye-delta) function													
1	1	0	0	No	1 ... 20 s	380 ... 440[3]	--	No	**3RP2574-□NM20**		1	1 unit	41H
						12 ... 240	12 ... 240	No	**3RP2574-□NW30**		1	1 unit	41H
1	1	0	0	No	3 ... 60 s	380 ... 440[3]	--	No	**3RP2576-□NM20**		1	1 unit	41H
						12 ... 240	12 ... 240	No	**3RP2576-□NW30**		1	1 unit	41H

Type of electrical connection

- Screw terminals
- Spring-loaded terminals (push-in)

1
2

[1] Force-guided contacts.

[2] Optionally 1 CO delayed + 1 CO instantaneous.

[3] With 3RP2574-.NM20 and 3RP2576-.NM20, connection of 200 to 240 V AC, 50/60 Hz control voltage is also possible.

[4] Setting of output contacts in as-supplied state not defined (bistable relay). Application of the control supply voltage once results in contact changeover to the correct setting.

Notes:

Accessories, see page 10/35.

In the case of 3RP2505, the functions can be adjusted by means of function selector switches on the device. With a set of foil labels the timing relay can be legibly marked with the functions which can be selected on the timing relay. This is included in the scope of supply. The same potential must be applied to terminals A. and B.
For functions, see the overview of functions on page 10/25.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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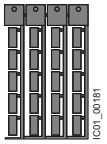
Accessories

More information

You can find information on configuring and dimensioning the accessories in the Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/103532830

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminals for SIRIUS devices in the industrial DIN-rail enclosure						
3ZY1122-1BA00	**Removable terminals**	**Screw terminals**				
	• 2-pole, up to 1 x 4 mm² or 2 x 2.5 mm²	**3ZY1122-1BA00**		1	6 units	41L
3ZY1122-2BA00		**Spring-loaded terminals (push-in)**				
	• 2-pole, up to 1 x 4 mm² or 2 x 1.5 mm² (in shared end sleeve)	**3ZY1122-2BA00**		1	6 units	41L
Accessories for enclosures						
3ZY1321-2AA00	**Sealing covers**					
	• 17.5 mm	**3ZY1321-1AA00**		1	5 units	41L
	• 22.5 mm	**3ZY1321-2AA00**		1	5 units	41L
3ZY1311-0AA00	**Push-in lugs** For wall mounting	**3ZY1311-0AA00**		1	10 units	41L
3ZY1440-1AA00	**Coding pins** For removable terminals of SIRIUS devices in the industrial DIN-rail enclosure; enable the mechanical coding of terminals	**3ZY1440-1AA00**		1	12 units	41L
3ZY1450-1AB00	**Hinged cover** Replacement cover, without terminal labeling, titanium gray					
	• 17.5 mm wide	**3ZY1450-1AA00**		1	5 units	41L
	• 22.5 mm wide	**3ZY1450-1AB00**		1	5 units	41L
Blank labels						
 3RT2900-1SB20	**Unit labeling plates**[1] For SIRIUS devices					
	• 10 mm x 7 mm, titanium gray	**3RT2900-1SB10**		100	816 units	41B
	• 20 mm x 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B
Tools for opening spring-loaded terminals						
3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-loaded terminals	**Spring-loaded terminals (push-in)**				
	Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**3RA2908-1A**		1	1 unit	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/18.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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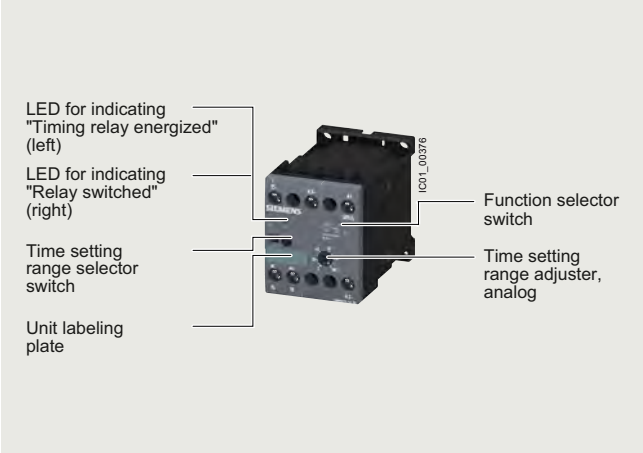
SIRIUS 3RP20 timing relays, 45 mm

Overview



SIRIUS 3RP20 timing relay

SIRIUS 3RP20 electronic timing relays for use in control systems and mechanical engineering with:

- 1 or 2 CO contacts
- Multifunction or monofunction
- Wide voltage range or combination voltage
- Single or selectable time setting ranges
- Switch position indication and voltage indication by LED

Standards

The timing relays comply with:

- IEC 60721-3-3 "Classification of environmental conditions"
- IEC 61812-1 "Specified time relays for industrial use"
- IEC 61000-6-2 and IEC 61000-6-4 "Electromagnetic compatibility"
- IEC 60947-5-1 "Low-voltage switchgear and controlgear – Electromechanical control circuit devices"
- IEC 60947-1, Annex N "Protective separation"

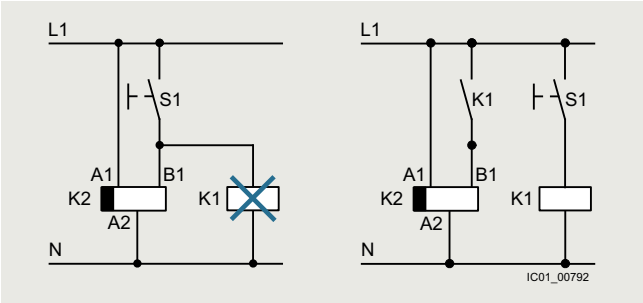
Multifunction

The functions of the 3RP2005 multifunctional timing relays can be set by means of the function selector switch. Insert labels can be used to adjust different functions of the timing relay clearly and unmistakably. The corresponding labels can be ordered as an accessory. The same potential must be applied to terminals A. and B.

For functions, see 3RP2901 label set, page 10/41.

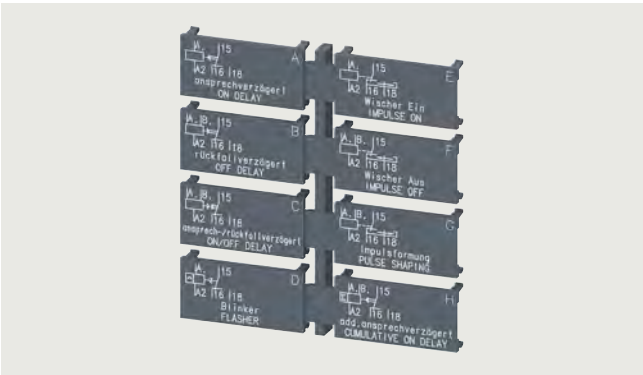
Note:

The activation of loads parallel to the start input is not permissible when using AC control voltage.



Diagrams

Accessories



Label set for marking the multifunctional relay

Article number scheme

Product versions		Article number									
SIRIUS timing relays, 45 mm enclosure		**3RP20**	□	□	–	□	□	□	**3**	**0**	
Product function/ time setting ranges	Multifunction		**0**	**5**							15 time ranges 0.05 s ... 100 h
	ON-delay		**2**	**5**							15 time ranges 0.05 s ... 100 h
Connection type	Screw terminals					**1**					
	Spring-loaded terminals					**2**					
Contacts	1 CO						**A**				
	2 CO						**B**				
Control supply voltage	24 V AC/DC/100 ... 127 V AC							**Q**			Combination voltage
	24 V AC/DC/200 ... 240 V AC							**P**			Combination voltage
	24 ... 240 V AC/DC							**W**			Wide voltage range
Example		**3RP20**	**0**	**5**	**–**	**1**	**A**	**P**	**3**	**0**	

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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Benefits

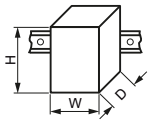
- Suitable for 3RT miniature contactors
- Uniform design
- Ideal for small distance between DIN rails and/or for low mounting depth, e.g. in control boxes
- Labels are used on the multifunctional timing relay to document the function that has been set

Application

Timing relays are used in control, starting, and protective circuits for all switching operations involving time delays. They guarantee a high level of functionality and a high repeat accuracy of timer settings.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16356/td	Internal circuit diagrams, see CAx Download Manager https://support.industry.siemens.com/my/ww/en/CAxOnline#CAxOnline
Operating Instructions, see https://support.industry.siemens.com/cs/ww/en/view/11647144	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16356/faq

Type		**3RP2005, 3RP2025**
Dimensions (W x H x D) 	mm	45 x 57 x 73
Rated insulation voltage Pollution degree 3 Overvoltage category III	V AC	300
Permissible ambient temperature		
• During operation	°C	-25 ... +60
• During storage	°C	-40 ... +85
Operating range of excitation[1]		0.85 ... 1.1 x U_s at AC; 0.8 ... 1.25 x U_s at DC; 0.95 ... 1.05 times the rated frequency
Mechanical endurance	Operating cycles	10 x 10^6
Electrical endurance at I_e	Operating cycles	1 x 10^5
Connection type		**Screw terminals**
• Terminal screw		M3 (for standard screwdriver, size 2 and Pozidriv 2)
• Solid	mm^2	2 x (0.5 ... 1.5)[2], 2 x (0.75 ... 2.5)[2]
• Finely stranded with end sleeve	mm^2	2 x (0.5 ... 1.5)[2], 2 x (0.75 ... 2.5)[2]
• Stranded	AWG	2 x (0.5 ... 1.5)[2], 2 x (0.75 ... 2.5)[2]
• AWG cables	AWG	2 x (18 ... 14)
• Tightening torque	Nm	0.8 ... 1.2
Connection type		**Spring-loaded terminals**
• Solid	mm^2	2 x (0.25 ... 2.5)
• Finely stranded with end sleeve	mm^2	2 x (0.25 ... 1.5)
• Finely stranded without end sleeve	mm^2	2 x (0.25 ... 2.5)
• AWG cables, solid or stranded	AWG	2 x (24 ... 14)
• Max. external diameter of the conductor insulation	mm	3.6

1) If nothing else is stated.

2) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

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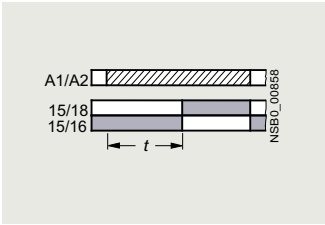
SIRIUS 3RP20 timing relays, 45 mm

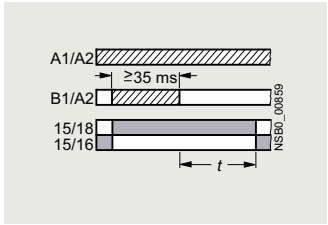
3RP20 function diagrams and 3RP2901 label set

1 CO contact



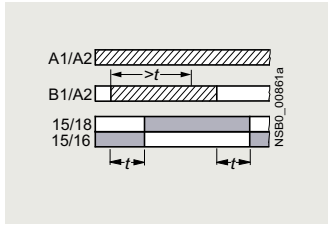
A

3RP2005-.A, 3RP2025
ON-delay



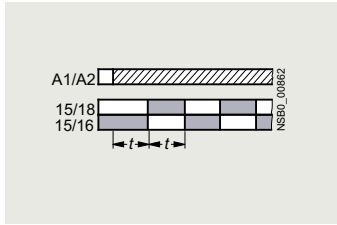
B[1)]

3RP2005-.A
OFF-delay with control signal



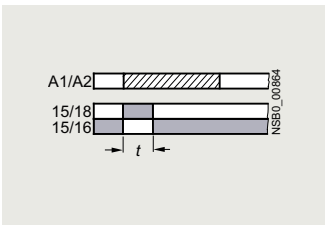
C

3RP2005-.A
ON-delay and OFF-delay
with control signal ($t = t_{on} = t_{off}$)



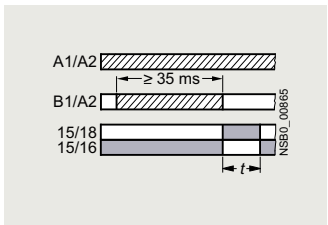
D

3RP2005-.A
Flashing, starting with interval
(pulse/interval 1:1)



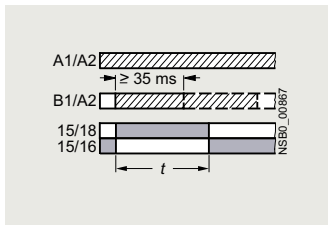
E

3RP2005-.A
Passing make contact



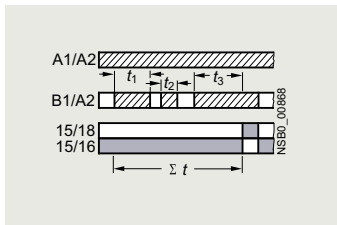
F[1)]

3RP2005-.A
Passing break contact with
control signal



G

3RP2005-.A
Pulse-forming with control signal
(pulse generation at the output does
not depend on duration of energizing)



H

3RP2005-.A
Additive ON-delay with control signal

Legend

A ... H Identification letters for 3RP2005

Timing relay energized

Contact closed

Contact open

1) A new control signal at terminal B, after the operating time has started, resets the operating time to zero (retriggerable).

10

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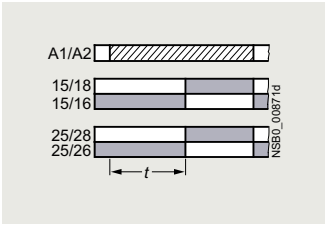
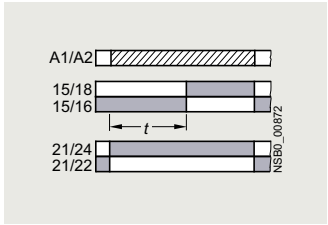
2 CO contacts



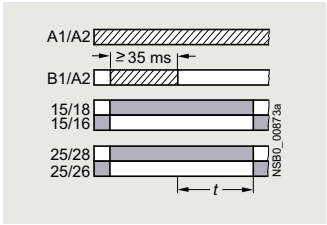
A

3RP2005-.B
ON-delay



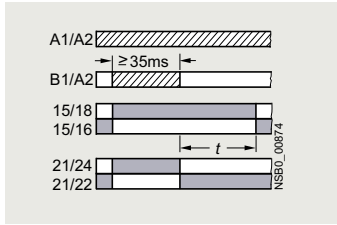
A●

3RP2005-.B
ON-delay and instantaneous contact



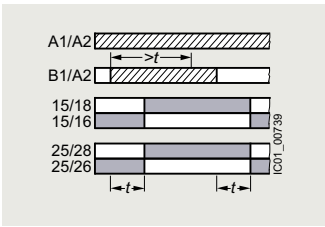
B[1)]

3RP2005-.B
OFF-delay with control signal



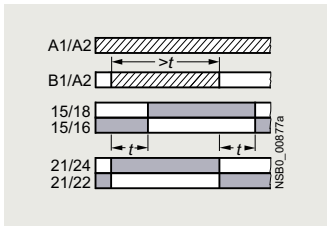
B●[1)]

3RP2005-.B
OFF-delay with control signal and instantaneous contact



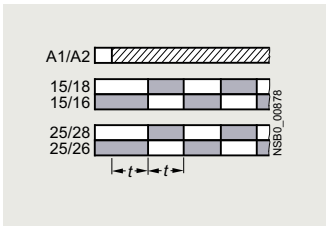
C

3RP2005-.B
ON-delay and OFF-delay
with control signal ($t = t_{on} = t_{off}$)



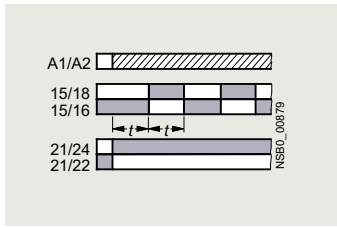
C●

3RP2005-.B
ON-delay and OFF-delay
with control signal and instantaneous contact ($t = t_{on} = t_{off}$)



D

3RP2005-.B
Flashing, starting with interval
(pulse/interval 1:1)

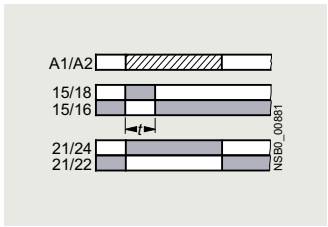


D●

3RP2005-.B
Flashing, starting with interval
(pulse/interval 1:1) and instantaneous contact

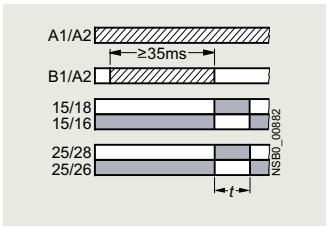
E

3RP2005-.B
Passing make contact



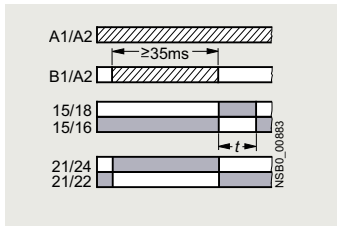
E●

3RP2005-.B
Passing make contact and instantaneous contact



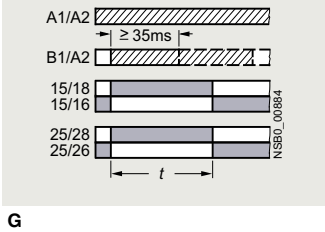
F[1)]

3RP2005-.B
Passing break contact with control signal



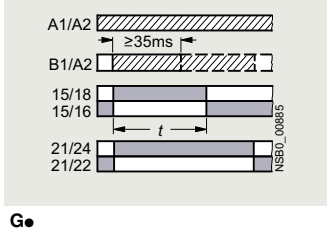
F●[1)]

3RP2005-.B
Passing break contact with control signal and instantaneous contact



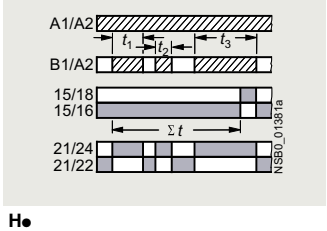
G

3RP2005-.B
Pulse-forming with control signal (pulse generation at the output does not depend on duration of energizing)



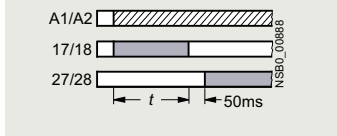
G●

3RP2005-.B
Pulse-forming with control signal and instantaneous contact (pulse generation at the output does not depend on duration of energizing)



H●

3RP2005-.B
Additive ON-delay with control signal and instantaneous contact



YΔ

3RP2005-.B
Star-delta (wye-delta) function

Legend

A ... H Identification letters for 3RP2005
● instantaneous contact
Timing relay energized
Contact closed
Contact open

[1)] A new control signal at terminal B, after the operating time has started, resets the operating time to zero (retriggerable).

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SIRIUS 3RP20 timing relays, 45 mm

Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H

3RP2005-1AP30

3RP2005-1BW30

3RP2005-2AP30

3RP2005-2BW30

Version	Time setting range *t*	Rated control supply voltage U_s 50/60 Hz AC V	Rated control supply voltage U_s DC V	Screw terminals Article No.	Screw terminals Price per PU	Spring-loaded terminals Article No.	Spring-loaded terminals Price per PU
3RP2005 timing relays, multifunction, 15 time setting ranges							
The functions can be adjusted by means of rotary switches. The 3RP2505 timing relay can be set clearly and unmistakably using insert labels for various functions. The corresponding labels can be ordered as an accessory. The same potential must be applied to terminals A. and B. For functions, see 3RP2901 label set, page 10/41.							
With LED and 1 CO contact[1], 8 functions	0.05 ... 1 s 0.15 ... 3 s 0.5 ... 10 s 1.5 ... 30 s 0.05 ... 1 min 5 ... 100 s 0.15 ... 3 min 0.5 ... 10 min 1.5 ... 30 min 0.05 ... 1 h 5 ... 100 min 0.15 ... 3 h 0.5 ... 10 h 1.5 ... 30 h 5 ... 100 h ∞ [2]	24/100 ... 127 24/200 ... 240	24 24	**3RP2005-1AQ30** **3RP2005-1AP30**		**3RP2005-2AQ30** **3RP2005-2AP30**	
With LED and 2 CO contacts, 16 functions		24 ... 240[3]	24 ... 240[4]	**3RP2005-1BW30**		**3RP2005-2BW30**	
3RP2025 timing relays, ON-delay, 15 time setting ranges							
With LED and 1 CO contact[1]	0.05 ... 1 s 0.15 ... 3 s 0.5 ... 10 s 1.5 ... 30 s 0.05 ... 1 min 5 ... 100 s 0.15 ... 3 min 0.5 ... 10 min 1.5 ... 30 min 0.05 ... 1 h 5 ... 100 min 0.15 ... 3 h 0.5 ... 10 h 1.5 ... 30 h 5 ... 100 h ∞ [2]	24/100 ... 127 24/200 ... 240	24 24	**3RP2025-1AQ30** **3RP2025-1AP30**		**3RP2025-2AQ30** **3RP2025-2AP30**	

Accessories, see page 10/41.

1) Units with protective separation.

2) With ∞ switch position no timing. For test purposes (ON/OFF function) on site. Relay is constantly on when activated, or relay remains constantly off when activated. Depending on which function is set.

3) Operating range 0.8 to 1.1 x U_s.

4) Operating range 0.7 to 1.1 x U_s.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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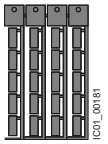
Accessories

Label sets for 3RP20

Accessories for 3RP20 (not included in the scope of supply).
The label set can be used to label timing relays with the set function in English and German.

Version	Function	Identification letter	Use	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RP2901-0A								
1 label set (1 unit) with 8 functions	• ON-delay	A	For devices with 1 CO	**3RP2901-0A**		1	5 units	41H
	• OFF-delay with control signal	B						
	• ON-delay and OFF-delay with control signal	C						
	• Flashing, starting with interval	D						
	• Passing make contact	E						
	• Passing break contact with control signal	F						
	• Pulse-forming with control signal	G						
	• Additive ON-delay with control signal	H						
3RP2901-0B								
1 label set (1 unit) with 16 functions	• ON-delay	A	For devices with 2 CO	**3RP2901-0B**		1	5 units	41H
	• OFF-delay with control signal	B						
	• ON-delay and OFF-delay with control signal	C						
	• Flashing, starting with interval	D						
	• Passing make contact	E						
	• Passing break contact with control signal	F						
	• Pulse-forming with control signal	G						
	• ON-delay and instantaneous contact	A•						
	• OFF-delay with control signal and instantaneous contact	B•						
	• ON-delay and OFF-delay with control signal and instantaneous contact	C•						
	• Flashing, starting with interval, and instantaneous contact	D•						
	• Passing make contact and instantaneous contact	E•						
	• Passing break contact with control signal and instantaneous contact	F•						
	• Pulse-forming with control signal and instantaneous contact	G•						
	• Additive ON-delay with control signal and instantaneous contact	H•						
	• Star-delta (wye-delta) function	Y Δ						

Blank labels



3RT2900-1SB20

Unit labeling plates[1)]
For SIRIUS devices

• 20 mm x 7 mm, titanium gray			For 3RP20	**3RT2900-1SB20**		100	340 units	41B

1) PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/18.

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7PV15 timing relays, 17.5 mm

Overview

7PV15 timing relay

Electronic timing relays for general use in control systems, mechanical engineering and infrastructure with:

- 1 or 2 CO contacts
- Multifunction or monofunction
- Wide voltage range or combination voltage
- Single or selectable time setting ranges
- Switch position indication and voltage indication by LED

Standards

The timing relays comply with:

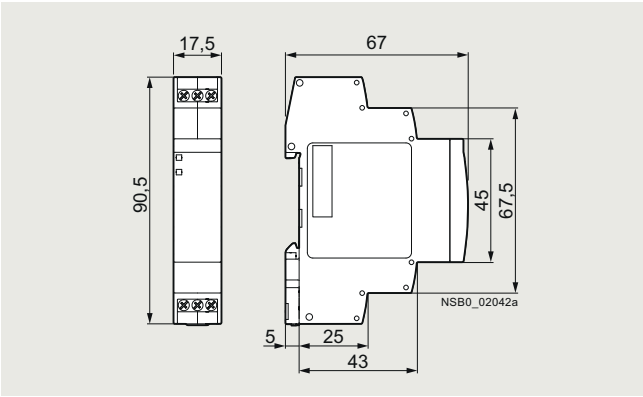
- IEC 60721-3-3 "Classification of environmental conditions"
- IEC 61812-1 "Specified time relays for industrial use"
- IEC 61000-6-2 and IEC 61000-6-4 "Electromagnetic compatibility"
- IEC 60947-5-1 "Low-voltage switchgear and controlgear – Electromechanical control circuit devices"
- DIN 43880 "Built-in equipment for electrical installations; overall dimensions and related mounting dimensions"

Multifunction

The functions of the 7PV1508-1A multifunctional timing relay can be set by means of rotary switches. The identification letters A to G are printed on the front alongside the rotary selector switch of the unit. The related function can be found in the form of a bar graph on the side of the device.

Enclosure version

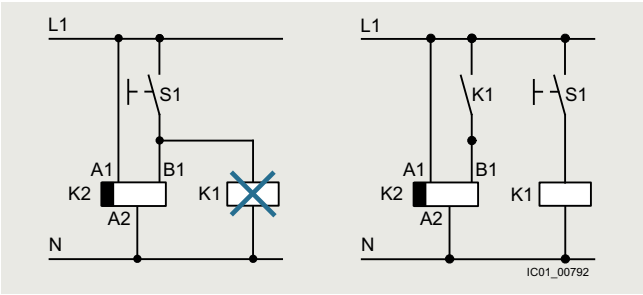
All timing relays are suitable for snap-on mounting on TH 35 DIN rails according to IEC 60715. The enclosure complies with DIN 43880, 1 MW.



Dimensions

Note:

The activation of loads parallel to the start input is not permissible when using AC control voltage.



Diagrams

10

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Article number scheme

Product versions		Article number								
Timing relays in industrial enclosure, 17.5 mm		**7PV15**	□	□	–	**1**	□	□	**3**	**0**	
Product function/ time setting ranges	Multifunction		**0**	**8**							7 time ranges 0.05 s ... 100 h
	ON-delay		**1**	**1**							1 time range 0.05 ... 1 s
			1	**2**							1 time range 0.5 ... 10 s
			1	**3**							1 time range 5 ... 100 s
			1	**8**							7 time ranges 0.05 s ... 100 h
	OFF-delay with control signal		**3**	**8**							7 time ranges 0.05 s ... 100 h
	OFF-delay without control signal		**4**	**0**							7 time ranges 0.05 s ... 100 s
	Clock-pulse relay		**5**	**8**							7 time ranges 0.05 s ... 100 h
	Star-delta (wye-delta) function		**7**	**8**							7 time ranges 0.05 s ... 100 h
Contacts	e.g. A = 1 CO						□				
Control supply voltage	e.g. W = 12 ... 240 V AC/DC							□			Combination voltage
Example		**7PV15**	**0**	**8**	–	**1**	**A**	**W**	**3**	**0**	

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Wide voltage range 12 to 240 V AC/DC
- High switching capacity, e.g. AC-15 at 230 V, 3 A
- Combination voltage, e.g. 24 V AC/DC and 200 to 240 V AC
- Changes to the time setting range during operation
- Changes to the function in the de-energized state
- High level of functionality and a high repeat accuracy of timer settings
- Integrated surge suppressor
- Function charts printed on the side of the device for reliable device adjustment

Application

Timing relays are used in control, starting and protective circuits for all switching operations involving time delays, e.g. in functional buildings, airports, building industry, etc.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16358/td TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=SIRIUSRelais	Operating Instructions and internal circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/view/35210295

Type		7PV15
Rated insulation voltage Pollution degree 2, overvoltage category III	V AC	300
Permissible ambient temperature		
• During operation	°C	-25 ... +55
• During storage	°C	-40 ... +70
Operating range of excitation[1]		0.85 ... 1.1 x U_s
Rated operational current I_e		
• AC-15 at 24 ... 240 V, 50 Hz	A	3
• DC-13 at		
- 24 V	A	1
- 125 V	A	0.2
Uninterrupted thermal current I_{th}	A	5
Mechanical endurance	Operating cycles	1 x 10^7
Electrical endurance at I_e	Operating cycles	1 x 10^5
Connection type		**Screw terminals**
• Terminal screw		M3 (for standard screwdriver, size 2 and Pozidriv 2)
• Solid	mm^2	1 x (0.2 ... 2.5)
• Finely stranded with end sleeve	mm^2	1 x (0.25 ... 1.5)
• Finely stranded without end sleeve	mm^2	1 x (0.2 ... 1.5)
• AWG cables, solid or stranded	AWG	1 x (24 ... 14)
• Tightening torque	Nm	0.4 ... 0.5

[1] If nothing else is stated.

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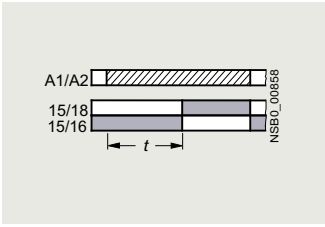
7PV15 timing relays, 17.5 mm

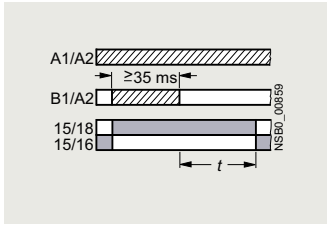
7PV15 function diagrams

1 CO contact



A

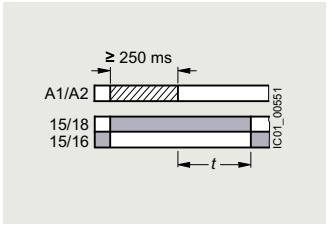
7PV1508-1A, 7PV1511, 7PV1512, 7PV1513, 7PV1518
ON-delay



B[1)]

7PV1508-1A, 7PV1538

OFF-delay with control signal



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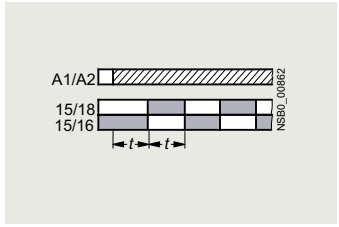
7PV1540

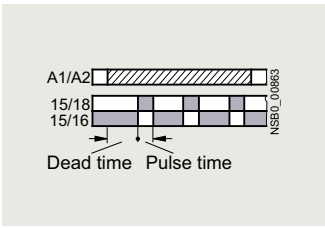
OFF-delay without control signal



C

7PV1508-1A

Flashing, starting with interval (pulse/interval 1:1)



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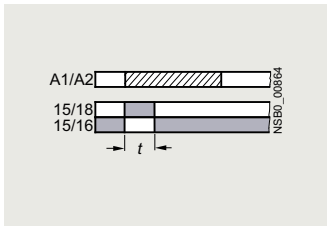
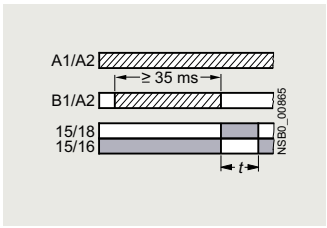
7PV1558
Clock-pulse, starting with interval (dead time, pulse time, and time setting ranges each separately adjustable)



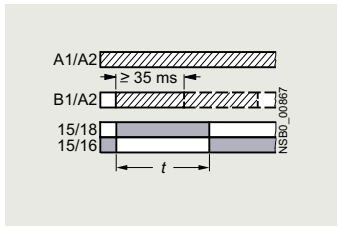
D

7PV1508-1A
Passing make contact



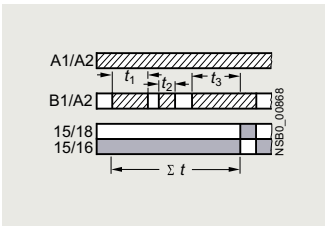
E[1)]

7PV1508-1A
Passing break contact with control signal



F

7PV1508-1A
Pulse-forming with control signal (pulse generation at the output does not depend on duration of energizing)



G

7PV1508-1A
Additive ON-delay with control signal

Legend

A ... G Identification letters for 7PV1508

Timing relay energized

Contact closed

Contact open

1) A new control signal at terminal B, after the operating time has started, resets the operating time to zero (retriggerable).

Note:

With the 7PV1508-1A multifunctional timing relay the identification letters A to G are printed on the front alongside the rotary selector switch of the unit. The related function can be found in the form of a bar graph on the side of the device.

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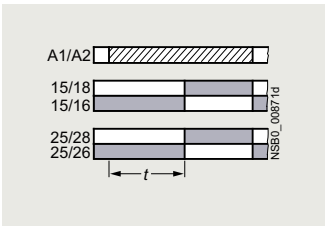
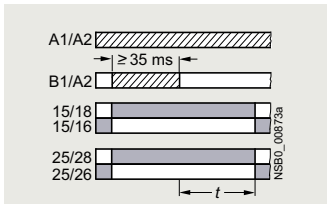
2 CO contacts



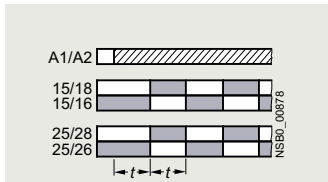
A

7PV1508-1B
ON-delay



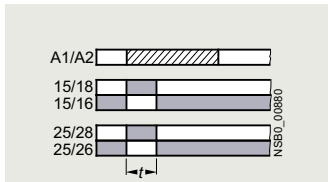
B[1)]

7PV1508-1B
OFF-delay with control signal



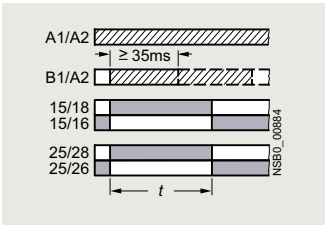
C

7PV1508-1B
Flashing, starting with interval (pulse/interval 1:1)



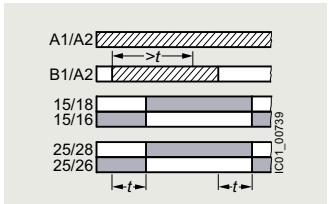
D

7PV1508-1B
Passing make contact



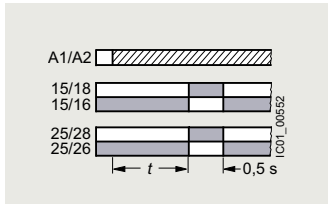
F

7PV1508-1B
Pulse-forming with control signal (pulse generation at the output does not depend on duration of energizing)



H

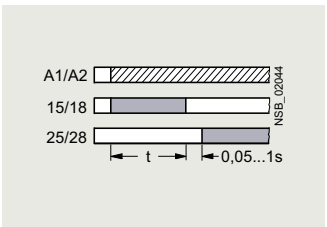
7PV1508-1B
ON-delay and OFF-delay with control signal



I

7PV1508-1B
Fixed pulse after ON-delay

2 NO contacts



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7PV1578
Star-delta (wye-delta) function[2)]

Legend

A ... D, F, H, I Identification letters for 7PV1508

Timing relay energized

Contact closed

Contact open

1) A new control signal at terminal B, after the operating time has started, resets the operating time to zero (retriggerable).

2) With 7PV1578 the contacts 16 and 26 are not needed for the star-delta (wye-delta) function.

Note:

With the 7PV1508-1B multifunctional timing relay the identification letters A to D, F, H, I are printed on the front alongside the rotary selector switch of the unit. The related function can be found in the form of a bar graph on the side of the device.

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7PV15 timing relays, 17.5 mm

Selection and ordering data

7PV1508-1AW30

7PV1512-1AP30

7PV1518-1AW30

7PV1538-1AW30

7PV1540-1AW30

7PV1558-1AW30

7PV1578-1BW30

Version	Time setting range t adjustable by rotary switch to	Rated control supply voltage U_s 50/60 Hz AC V	Rated control supply voltage U_s DC V	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
7PV1508 timing relays, multifunction, 7 time setting ranges								
The functions can be adjusted by means of rotary switches. The same potential must be applied to terminals A. and B.								
With LED and 1 CO contact, 7 functions	0.05 ... 1 s 0.5 ... 10 s 5 ... 100 s 30 s ... 10 min 3 min ... 1 h 30 min ... 10 h 5 ... 100 h	12 ... 240	12 ... 240	**7PV1508-1AW30**		1	1 unit	41H
With LED and 2 CO contacts, 7 functions		12 ... 240	12 ... 240	**7PV1508-1BW30**		1	1 unit	41H
7PV151. timing relays, ON-delay, 1 time setting range								
With LED and 1 CO contact	0.05 ... 1 s	24/200 ... 240	24	**7PV1511-1AP30**		1	1 unit	41H
	0.5 ... 10 s	24/100 ... 127	24	**7PV1512-1AQ30**		1	1 unit	41H
		24/200 ... 240	24	**7PV1512-1AP30**		1	1 unit	41H
	5 ... 100 s	24/100 ... 127	24	**7PV1513-1AQ30**		1	1 unit	41H
		24/200 ... 240	24	**7PV1513-1AP30**		1	1 unit	41H
7PV1518 timing relays, ON-delay, 7 time setting ranges								
With LED and 1 CO contact	0.05 ... 1 s 0.5 ... 10 s 5 ... 100 s 30 s ... 10 min 3 min ... 1 h 30 min ... 10 h 5 ... 100 h	12 ... 240	12 ... 240	**7PV1518-1AW30**		1	1 unit	41H
7PV1538 timing relays, OFF-delay, with control signal, 7 time setting ranges								
With LED and 1 CO contact	0.05 ... 1 s 0.5 ... 10 s 5 ... 100 s 30 s ... 10 min 3 min ... 1 h 30 min ... 10 h 5 ... 100 h	12 ... 240	12 ... 240	**7PV1538-1AW30**		1	1 unit	41H
7PV1540 timing relays, OFF-delay, without control signal, 7 time setting ranges								
With LED and 1 CO contact[1)]	0.05 ... 1 s 0.15 ... 3 s 0.3 ... 6 s 0.5 ... 10 s 1.5 ... 30 s 3 ... 60 s 5 ... 100 s	12 ... 240	12 ... 240	**7PV1540-1AW30**		1	1 unit	41H
7PV1558 timing relays, clock-pulse relay, 7 time setting ranges								
With LED and 1 CO contact	0.05 ... 1 s 0.5 ... 10 s 5 ... 100 s 30 s ... 10 min 3 min ... 1 h 30 min ... 10 h 5 ... 100 h	12 ... 240	12 ... 240	**7PV1558-1AW30**		1	1 unit	41H
7PV1578 timing relays, star-delta (wye-delta) function, 7 time setting ranges								
With LED and 2 NO contacts, dead interval 0.05 ... 1 s adjustable	0.05 ... 1 s 0.5 ... 10 s 5 ... 100 s 30 s ... 10 min 3 min ... 1 h 30 min ... 10 h 5 ... 100 h	12 ... 240	12 ... 240	**7PV1578-1BW30**		1	1 unit	41H

[1)] Setting of output contacts in as-supplied state not defined (bistable relay). Application of the control supply voltage once results in contact changeover to the correct setting.

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

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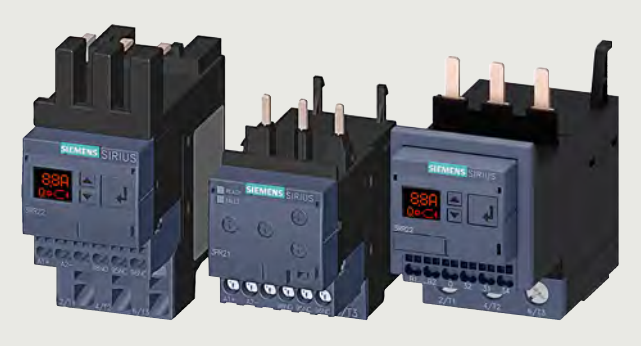
Overview



SIRIUS 3RR2242, 3RR2142, 3RR2243 current monitoring relays

More information

Homepage, see www.siemens.com/sirius-monitoring-relays
Industry Mall, see www.siemens.com/product?3RR21

Video: SIRIUS 3RR2 current monitoring relays

The SIRIUS 3RR2 current monitoring relays are suitable for load monitoring of motors or other loads. In 2 or 3 phases they monitor the rms value of AC currents for overshooting or undershooting of set threshold values.

Whereas apparent current monitoring is used above all in connection with the rated torque or in case of overload, the active current monitoring option can be used to observe and evaluate the load factor over a motor's entire torque range.

The 3RR2 current monitoring relays can be integrated directly in the feeder by mounting on the 3RT2 contactor; separate wiring of the main circuit is therefore superfluous. No separate transformers are required.

For a line-oriented configuration or simultaneous use of an overload relay, terminal supports for stand-alone installation are available for separate DIN-rail mounting.

Versions

Basic versions

The basic versions with 2-phase apparent current monitoring, a CO contact output and analog adjustability provide a high level of monitoring reliability especially in the rated and overload range.

Standard versions

The standard versions monitor the current in 3 phases with selectable active current monitoring. They have additional diagnostics options such as residual-current monitoring and phase sequence monitoring, and they are also suitable for monitoring motors below the rated torque. These devices have an additional independent semiconductor output, an actual value indicator, and are digitally adjustable.

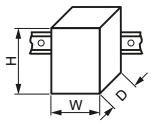
Both versions are available optionally with screw or spring-loaded terminals, in each case for sizes S00 and S0.
With variants of size S2 the main conducting paths always have screw terminals; the control current side can have screw or spring-loaded terminals.

Note:

In addition to the features of the standard versions, the 3RR24 monitoring relays for mounting on 3RT2 contactors for IO-Link also offer the possibility of transmitting the measured values and diagnostics data to a controller via an IO-Link. Furthermore, the devices can be parameterized on the devices themselves or via IO-Link.

For more information, see page 10/55 onwards.

3RR21 and 3RR22 overview table

Features		3RR21	3RR22	Benefits
General data				
Sizes		S00, S0, S2	S00, S0, S2	• Are coordinated with the dimensions, connections and technical characteristics of the other devices in the SIRIUS modular system (contactors, soft starters, etc.) • Permit the mounting of slim-line and compact load feeders in widths of 45 mm (S00 and S0) and 55 mm (S2) • Simplify configuration
Dimensions in mm (W x H x D)				
• Screw terminals		S00: 45 x 79 x 80, S0: 45 x 87 x 91, S2: 55 x 99 x 112	S00: 45 x 79 x 80, S0: 45 x 87 x 91, S2: 55 x 99 x 112	
• Spring-loaded terminals		S00: 45 x 90 x 80, S0: 45 x 109 x 92, S2: 55 x 99 x 112	S00: 45 x 90 x 80, S0: 45 x 109 x 92, S2: 55 x 99 x 112	
Current range		S00: 1.6 ... 16 A S0: 4 ... 40 A S2: 8 ... 80 A	S00: 1.6 ... 16 A S0: 4 ... 40 A S2: 8 ... 80 A	• Is adapted to the other devices in the SIRIUS modular system • Just a single version per size with a wide setting range enables easy configuration
Permissible ambient temperature				
During operation		-25 ... +60 °C	-25 ... +60 °C	• Suitable for applications in the control cabinet, worldwide

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Current and active current monitoring

Features	3RR21	3RR22	Benefits
Monitoring functions			
Current overshoot	✓ (2-phase)	✓ (3-phase)	• Provides optimum inverse-time delayed protection of loads against excessive temperature rises due to overload • Enables detection of filter blockages or pumping against closed gate valves • Enables drawing conclusions about wear, poor lubrication or other maintenance-relevant phenomena
Current undershoot	✓ (2-phase)	✓ (3-phase)	• Enables detection of underload due to a slipping or torn belt • Guarantees protection of pumps against dry running • Facilitates monitoring of the functions of resistive loads such as heaters • Permits energy savings through monitoring of no-load operation
Apparent current monitoring	✓	✓ (Selectable)	• Precision current monitoring especially in a motor's rated and upper torque range
Active current monitoring	--	✓ (Selectable)	• Optimum current monitoring over a motor's entire torque range through the patented combination of power factor and apparent current monitoring
Range monitoring	✓ (2-phase)	✓ (3-phase)	• Simultaneous monitoring of current overshoot and undershoot with a single device
Phase failure, open circuit	✓ (2-phase)	✓ (3-phase)	• Minimizes heating of three-phase motors during phase failure through immediate disconnection • Prevents operation of hoisting equipment with half the load carrying capacity
Phase sequence monitoring	--	✓ (Selectable)	• Prevents starting of motors, pumps or compressors in the wrong direction of rotation
Internal ground-fault detection (residual-current monitoring)	--	✓ (Selectable)	• Provides optimum protection of loads against high-resistance ground faults due to moisture, condensed water, damage to the insulation material, etc. • Eliminates the need for additional special equipment and thus space in the control cabinet • Reduces wiring overhead and costs
Blocking current monitoring	--	✓ (Selectable)	• Minimizes heating of three-phase motors when blocked during operation through immediate disconnection • Minimizes mechanical loading of the system by acting as an electronic shear pin
Features			
RESET function	✓	✓	• Allows manual or automatic resetting of the relay • Resetting directly on the device or by switching the control supply voltage off and on (Remote RESET)
ON-delay time	0 ... 60 s	0 ... 99 s	• Enables motor starting without evaluation of the starting current • Can be used for monitoring motors with lengthy startup
Tripping delay time	0 ... 30 s	0 ... 30 s	• Permits brief threshold value violations during operation • Prevents frequent warnings and disconnections with currents near the threshold values
Operating and indicating elements	LEDs and rotary potentiometers	Displays and buttons	• For setting the threshold values and delay times and for fast and targeted diagnostics • For selectable functions • Displays for permanent display of measured values
Integrated contacts	1 CO contact	1 CO contact, 1 semiconductor output	• Enable disconnection of the system or process when there is an irregularity • Can be used to output signals

✓ Available
-- Not available

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Features	3RR21	3RR22	Benefits
Design of load feeders			
Short-circuit strength up to 100 kA at 690 V (in conjunction with the corresponding fuses or the corresponding motor starter protector)	✓	✓	• Provides optimum protection of the loads and operating personnel in the event of short circuits due to insulation faults or faulty switching operations
Electrical and mechanical matching to 3RT2 contactors	✓	✓	• Simplifies configuration • Reduces wiring overhead and costs • Enables stand-alone installation as well as space-saving direct mounting
Spring-loaded terminals for main circuit (with S00, S0) and auxiliary circuits	✓ (Optional)	✓ (Optional)	• Enable fast connections • Permit vibration-resistant connections • Enable maintenance-free connections
Other features			
Suitable for 1-phase and 3-phase loads	✓	✓	• Enables the monitoring of 1-phase systems through parallel infeed at the contactor or looping the current through the three phase connections
Wide setting ranges	✓	✓	• Reduce the number of versions • Minimize the configuration overhead and costs • Minimize storage overhead, storage costs, tied-up capital
Wide-voltage supply range	✓ (Optional)	✓ (Optional)	• Reduces the number of versions • Minimizes the configuring overhead and costs • Minimizes storage overhead, storage costs, tied-up capital

✓ Available

Possible combinations of 3RR21/3RR22 monitoring relays with 3RT2 contactors

Monitoring relays	Current range	**Contactors** (type, size, operating power)		
		3RT201	**3RT202**	**3RT203**
		S00	S0	S2
Type	A	3/4/5.5/7.5 kW	5.5/7.5/11/15/18.5 kW	18.5/22/30/37 kW
3RR2.41				
3RR2141	1.6 ... 16	✓	With stand-alone installation support	With stand-alone installation support
3RR2241	1.6 ... 16	✓	With stand-alone installation support	With stand-alone installation support
3RR2.42				
3RR2142	4 ... 40	With stand-alone installation support	✓	With stand-alone installation support
3RR2242	4 ... 40	With stand-alone installation support	✓	With stand-alone installation support
3RR2.43				
3RR2143	8 ... 80	With stand-alone installation support	With stand-alone installation support	✓
3RR2243	8 ... 80	With stand-alone installation support	With stand-alone installation support	✓

✓ Available

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Current and active current monitoring

Article number scheme

Product versions		Article number									
Monitoring relays		**3RR2**	□	**4**	□	**–**	□	□	□	**3**	**0**
Type of setting	Analogically adjustable, 2-phase		**1**								
	Digitally adjustable, 3-phase		**2**								
Size	S00				**1**						
	S0				**2**						
	S2				**3**						
Connection type	Screw terminals						**1**				
	Spring-loaded terminals Size S00, S0						**2**				
	Size S2						**3**				
Number and type of outputs	1 CO contact							**A**			
	1 CO contact + 1 semiconductor							**F**			
Rated control supply voltage	24 V AC/DC								**A**		
	24 ... 240 V AC/DC								**W**		
Example		**3RR2**	**1**	**4**	**1**	**–**	**1**	**A**	**A**	**3**	**0**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Can be mounted directly on 3RT2 contactors and 3RA23 reversing contactor assemblies, in other words, there is no need for additional wiring in the main circuit
- Optimally coordinated with the technical characteristics of the 3RT2 contactors
- No separate current transformer required
- Versions with wide voltage supply range
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Display of actual value and status messages
- All versions with removable control current terminals
- All versions with screw terminals or spring-loaded terminals
- Simple determination of the threshold values through direct reference to actually measured values for setpoint loading
- Range monitoring and selectable active current measurement mean that only one device for monitoring a motor is required along the entire torque curve
- In addition to current monitoring it is also possible to monitor for broken cables, phase failure, phase sequence, residual current and motor blocking

Application

- Monitoring for current overshoot and undershoot
- Monitoring of broken conductors
- Monitoring of no-load operation and load shedding, e.g. in the event of a torn V-belt or no-load operation of a pump
- Monitoring of overload, e.g. on conveyor belts or cranes due to an excessive load
- Monitoring the functionality of electrical loads such as heaters
- Monitoring of wrong phase sequence on mobile equipment such as compressors or cranes
- Monitoring of high-resistance short circuits or ground faults, e.g. caused by damaged insulation or moisture

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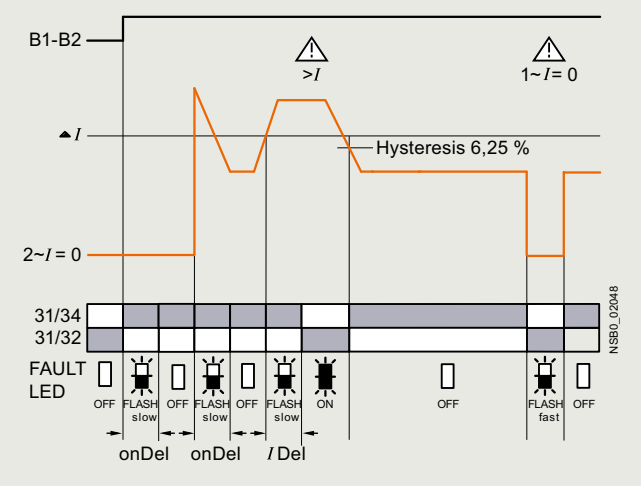
Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16205/td	System Manual for modular system, see https://support.industry.siemens.com/cs/ww/en/view/60311318
Configuration Manual for load feeders, see https://support.industry.siemens.com/cs/ww/en/view/39714188	Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/54397927
	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16205/faq

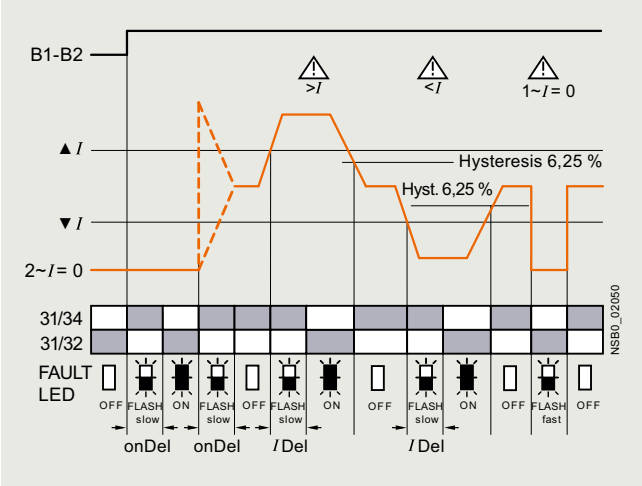
Function diagrams of 3RR214.-.A.30 basic versions, analogically adjustable

Closed-circuit principle upon application of the control supply voltage

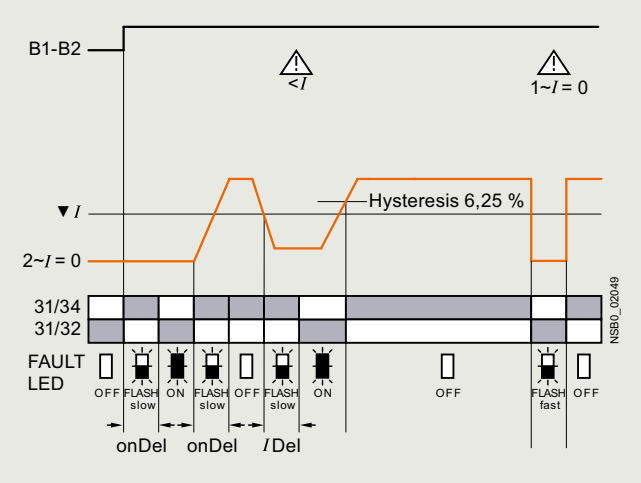
Current overshoot



Range monitoring



Current undershoot



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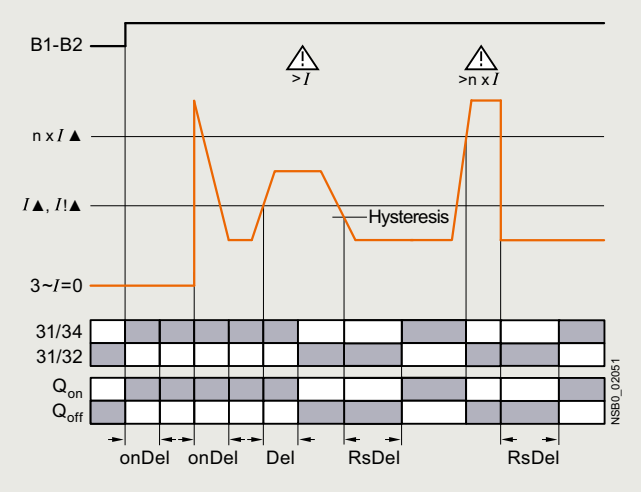
Current and active current monitoring

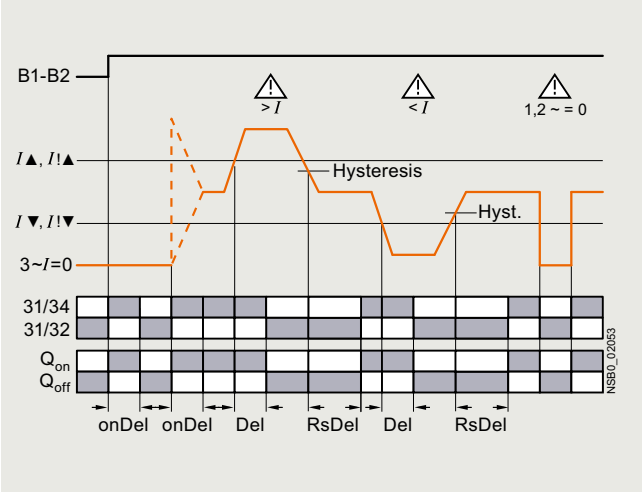
Function diagrams of 3RR224.-.F.30 standard versions, digitally adjustable

With the closed-circuit principle selected upon application of the control supply voltage

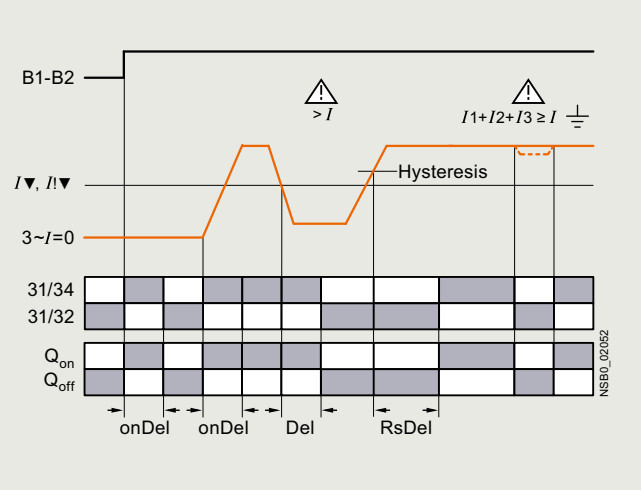
Current overshoot



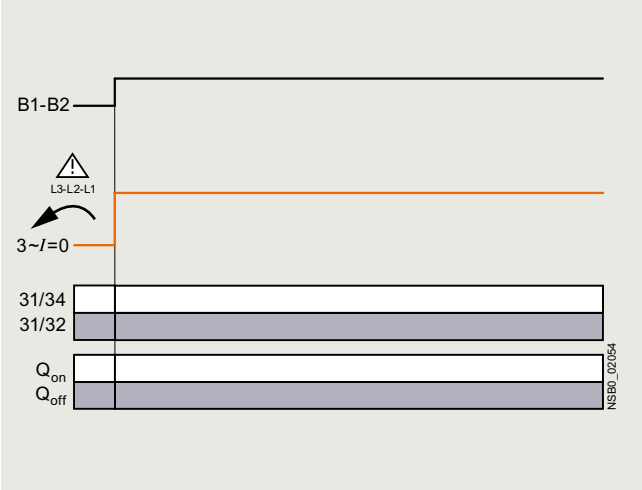
Range monitoring



Current undershoot with residual-current monitoring



Phase sequence monitoring



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Selection and ordering data

3RR2141-1AW30

3RR2142-1AW30

3RR2241-1FW30

3RR2242-2FW30

3RR2141-2AA30

3RR2243-3FW30

Size	Measuring range	Hysteresis	Supply voltage U_s	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	A	V					
Basic versions								
• Analogically adjustable • Closed-circuit principle • 1 CO contact • 2-phase current monitoring • Apparent current monitoring • ON-delay 0 ... 60 s • Tripping delay 0 ... 30 s								
S00	1.6 ... 16	6.25% of threshold value	24 AC/DC	**3RR2141-☐AA30**		1	1 unit	41H
			24 ... 240 AC/DC	**3RR2141-☐AW30**		1	1 unit	41H
S0	4 ... 40	6.25% of threshold value	24 AC/DC	**3RR2142-☐AA30**		1	1 unit	41H
			24 ... 240 AC/DC	**3RR2142-☐AW30**		1	1 unit	41H
S2	8 ... 80	6.25% of threshold value	24 AC/DC	**3RR2143-☐AA30**		1	1 unit	41H
			24 ... 240 AC/DC	**3RR2143-☐AW30**		1	1 unit	41H
Standard versions								
• Digitally adjustable • LC display • Open-circuit or closed-circuit principle • 1 CO, 1 semiconductor output • 3-phase current monitoring • Active current or apparent current monitoring • Phase sequence monitoring • Residual-current monitoring • Blocking current monitoring • Reclosing delay time 0 ... 300 min • ON-delay 0 ... 99 s • Separate settings for warning and alarm thresholds • Tripping delay 0 ... 30 s								
S00	1.6 ... 16	0.1 ... 3	24 AC/DC	**3RR2241-☐FA30**		1	1 unit	41H
			24 ... 240 AC/DC	**3RR2241-☐FW30**		1	1 unit	41H
S0	4 ... 40	0.1 ... 8	24 AC/DC	**3RR2242-☐FA30**		1	1 unit	41H
			24 ... 240 AC/DC	**3RR2242-☐FW30**		1	1 unit	41H
S2	8 ... 80	0.2 ... 16	24 AC/DC	**3RR2243-☐FA30**		1	1 unit	41H
			24 ... 240 AC/DC	**3RR2243-☐FW30**		1	1 unit	41H

Type of electrical connection

• Screw terminals	**1**
• Spring-loaded terminals size S00, S0	**2**
• Spring-loaded terminals size S2	**3**

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*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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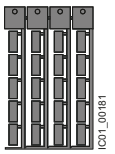
Current and active current monitoring

Accessories

Use	Version	Size	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal supports for stand-alone installation[1]							
3RU2916-3AA01	For 3RR21, 3RR22	For separate mounting of the overload relays or monitoring relays; screw fixing and snap-on mounting on TH 35 DIN-rail according to IEC 60715	**Screw terminals**				
	• Screw terminals	S00	**3RU2916-3AA01**		1	1 unit	41F
		S0	**3RU2926-3AA01**		1	1 unit	41F
		S2	**3RU2936-3AA01**		1	1 unit	41F
3RU2936-3AA01							
			Spring-loaded terminals				
3RU2926-3AC01	• Spring-loaded terminals	S00	**3RU2916-3AC01**		1	1 unit	41F
		S0	**3RU2926-3AC01**		1	1 unit	41F
Sealable covers							
3RR2940	For 3RR21, 3RR22	**Sealable covers** For securing against unintentional or unauthorized adjustment of settings	**3RR2940**		1	5 units	41H
Blank labels							
 3RT2900-1SB20	For 3RR21, 3RR22	**Unit labeling plates[2]** For SIRIUS devices					
	• 20 mm x 7 mm, titanium gray		**3RT2900-1SB20**		100	340 units	41B
Tools for opening spring-loaded terminals							
3RA2908-1A	For auxiliary circuit connections	**Screwdrivers** For all SIRIUS devices with spring-loaded terminals	**Spring-loaded terminals**				
		Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**3RA2908-1A**		1	1 unit	41B

1) The accessories are exactly the same as the accessories for the 3RU21 thermal overload relay and the 3RB3 electronic overload relay, see page 7/93 onwards.

2) PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/18.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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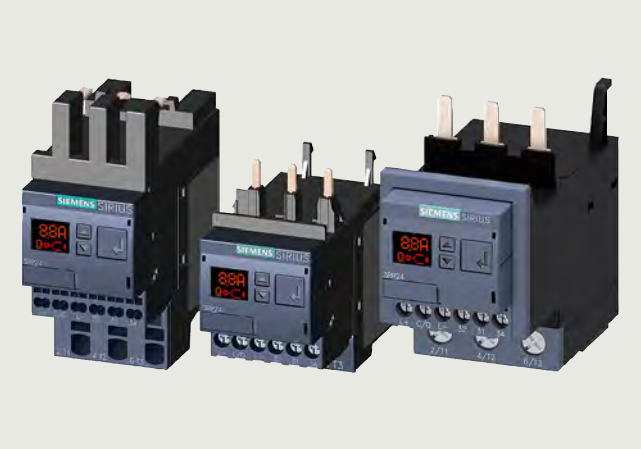
Overview



SIRIUS 3RR2441, 3RR2442 and 3RR2443 current monitoring relays

More information

Homepage, see www.siemens.com/sirius-monitoring-relays
Industry Mall, see www.siemens.com/product?3RR24

Video: SIRIUS 3RR2 current monitoring relays

The SIRIUS 3RR24 current monitoring relays for IO-Link are suitable for the load monitoring of motors or other loads. In 3 phases they monitor the rms value of AC currents for overshooting or undershooting of set threshold values.

Whereas apparent current monitoring is used above all in connection with the rated torque or in case of overload, the active current monitoring option, which is also selectable, can be used to observe and evaluate the load factor over a motor's entire torque range.

The 3RR24 current monitoring relays for IO-Link can be integrated directly in the feeder by mounting on the 3RT2 contactor; separate wiring of the main circuit is therefore superfluous. No separate transformers are required.

For a line-oriented configuration or simultaneous use of an overload relay, terminal supports for stand-alone installation are available for separate DIN-rail mounting.

The SIRIUS 3RR24 current monitoring relays for IO-Link also offer many other options based upon the monitoring functions of the conventional SIRIUS 3RR2 monitoring relays:

- Measured value transmission to a controller, including resolution and unit, may be parameterizable as to which value is cyclically transmitted
- Transmission of alarm flags to a controller
- Full diagnostics capability by inquiry as to the cause of the fault in the diagnostics data record
- Remote parameterization is also possible, in addition to or instead of local parameterization
- Rapid parameterization of the same devices by duplication of the parameterization in the controller
- Parameter transmission through upload to a controller by IO-Link call or by parameter server (if IO-Link master from IO-Link specification V1.1 and higher is used)
- Consistent central data storage in the event of parameter change locally or via a controller
- Automatic reparameterizing when devices are exchanged
- Blocking of local parameterization via IO-Link possible
- Faults are saved in parameterizable and non-volatile fashion to prevent an automatic startup after voltage failure and to make sure diagnostics data are not lost
- Integration into the automation level provides the option of parameterizing the monitoring relays at any time via a display unit, or displaying the measured values in a control room or locally at the machine/control cabinet.

Even without communication via IO-Link the devices continue to function fully autonomously:

- Parameterization can take place locally at the device, independently of a controller.
- In the event of failure or before the controller becomes available the monitoring relays work as long as the control supply voltage (24 V DC) is present.
- If the monitoring relays are operated without the controller, the 3RR24 monitoring relays for IO-Link have, thanks to the integrated SIO mode, an additional semiconductor output, which switches when the adjustable warning threshold is exceeded.

Thanks to the combination of autonomous monitoring relay function and integrated IO-Link communication, redundant sensors and/or analog signal converters – which previously took over the transmission of measured values to a controller, leading to considerable extra cost and wiring overhead – are no longer needed.

Because the output relays are still present, the monitoring relays increase the functional reliability of the system, since only the controller can fulfill the control tasks if the current measured values are available, whereas the output relays can also be used for the disconnection of the system if limit values that cannot be reached during operation are exceeded.

For more information on the IO-Link communications system, see page 2/88 onwards.

Notes on security

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

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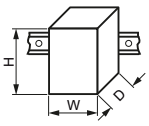
Current and active current monitoring

3RR24 overview table

Features		3RR24	Benefits
General data			
Sizes		S00, S0, S2	• Are coordinated with the dimensions, connections and technical characteristics of the other devices in the SIRIUS modular system (contactors, soft starters, etc.) • Permit the mounting of slim-line and compact load feeders in widths of 45 mm (S00 and S0) and 55 mm (S2) • Simplify configuration
Dimensions in mm (W x H x D)			
• Screw terminals		S00: 45 x 79 x 80, S0: 45 x 87 x 91, S2: 55 x 99 x 112	
• Spring-loaded terminals		S00: 45 x 90 x 80, S0: 45 x 109 x 92, S2: 55 x 99 x 112	
Current range		S00: 1.6 ... 16 A S0: 4 ... 40 A S2: 8 ... 80 A	• Is adapted to the other devices in the SIRIUS modular system • Just a single version per size with a wide setting range enables easy configuration
Permissible ambient temperature			
During operation		-25 ... +60 °C	• Suitable for applications in the control cabinet, worldwide
Monitoring functions			
Current overshoot		✓ (3-phase)	• Provides optimum inverse-time delayed protection of loads against excessive temperature rises due to overload • Enables detection of filter blockages or pumping against closed gate valves • Enables drawing conclusions about wear, poor lubrication or other maintenance-relevant phenomena
Current undershoot		✓ (3-phase)	• Enables detection of underload due to a slipping or torn belt • Guarantees protection of pumps against dry running • Facilitates monitoring of the functions of resistive loads such as heaters • Permits energy savings through monitoring of no-load operation
Apparent current monitoring		✓ (Selectable)	• Precision current monitoring especially in a motor's rated and upper torque range
Active current monitoring		✓ (Selectable)	• Optimum current monitoring over a motor's entire torque range through the patented combination of power factor and apparent current monitoring
Range monitoring		✓ (3-phase)	• Simultaneous monitoring of current overshoot and undershoot with a single device
Phase failure, open circuit		✓ (3-phase)	• Minimizes heating of three-phase motors during phase failure through immediate disconnection • Prevents operation of hoisting equipment with half the load carrying capacity
Phase sequence monitoring		✓ (Selectable)	• Prevents starting of motors, pumps or compressors in the wrong direction of rotation
Internal ground-fault detection (residual-current monitoring)		✓ (Selectable)	• Provides optimum protection of loads against high-resistance ground faults due to moisture, condensed water, damage to the insulation material, etc. • Eliminates the need for additional special equipment • Saves space in the control cabinet • Reduces wiring overhead and costs
Blocking current monitoring		✓ (Selectable)	• Minimizes heating of three-phase motors when blocked during operation through immediate disconnection • Minimizes mechanical loading of the system by acting as an electronic shear pin
Operating hours counter		✓	• Gives the time during which there was a measurable current in at least 2 conducting paths • As an indicator for upcoming preventive maintenance or replacement of machine and system components
Operating cycles counter		✓	• Is incremented by 1 each time a breaking operation is detected, in other words a transition from 3-phase current flow to no measurable current flow • As an indicator for upcoming preventive maintenance or replacement of contact blocks

✓ Available

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Features	3RR24	Benefits
Features		
RESET function	✓	• Allows manual or automatic resetting of the relay • Resetting directly on the device, by switching the control supply voltage off and on or via IO-Link (Remote RESET)
ON-delay time	0 … 999.9 s	• Enables motor starting without evaluation of the starting current • Can be used for monitoring motors with lengthy startup
Tripping delay time	0 ... 999.9 s	• Permits brief threshold value violations during operation • Prevents frequent warnings and disconnections with currents near the threshold values
Operating and indicating elements	Displays and buttons	• For setting the threshold values and delay times • For selectable functions • For quick and selective diagnostics • Displays for permanent display of measured values
Integrated contacts	1 CO contact, 1 semiconductor output (in SIO mode)	• Enable disconnection of the system or process when there is an irregularity • Can be used to output signals
Design of load feeders		
Short-circuit strength up to 100 kA at 690 V (in conjunction with the corresponding fuses or the corresponding motor starter protector)	✓	• Provides optimum protection of the loads and operating personnel in the event of short circuits due to insulation faults or faulty switching operations
Electrical and mechanical matching to 3RT2 contactors	✓	• Simplifies configuration • Reduces wiring overhead and costs • Enables stand-alone installation as well as space-saving direct mounting
Spring-loaded terminals for main circuit (with S00, S0) and auxiliary circuits	✓ (Optional)	• Enables fast connections • Permits vibration-resistant connections • Enables maintenance-free connections
Other features		
Suitable for 1-phase and 3-phase loads	✓	• Enables the monitoring of 1-phase systems through parallel infeed at the contactor or looping the current through the three phase connections
Wide setting ranges	✓	• Reduce the number of versions • Minimize the configuration overhead and costs • Minimize storage overhead, storage costs, tied-up capital
Power supply	24 V DC	• Direct via IO-Link master or via an external auxiliary voltage independent of the IO-Link • Minimizes the configuring overhead and costs

✓ Available

Possible ways of combining the 3RR24 monitoring relay with the 3RT2 contactor for IO-Link

Monitoring relays	Current range	**Contactors** (type, size, operating power)		
		3RT201	**3RT202**	**3RT203**
		S00	S0	S2
Type	A	3/4/5.5/7.5 kW	5.5/7.5/11/15/18.5 kW	18.5/22/30/37 kW
3RR2441	1.6 ... 16	✓	With stand-alone installation support	With stand-alone installation support
3RR2442	4 ... 40	With stand-alone installation support	✓	With stand-alone installation support
3RR2443	8 ... 80	With stand-alone installation support	With stand-alone installation support	✓

✓ Available

Notes:

Devices required for communication via IO-Link:
- Any controller that supports IO-Link (e.g. ET 200SP with CPU or S7-1200), see Catalog ST 70.
- IO-Link master (e.g. CM 4xIO-Link for SIMATIC ET 200SP, see page 2/99 or SM 1278 for S7-1200, see page 2/98).

Each monitoring relay requires an IO-Link channel.

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Current and active current monitoring

Article number scheme

Product versions		Article number
3RR24 monitoring relay, digitally adjustable with IO-Link		**3RR2 4 4 □ – □ A A 4 0**
Size	S00	**1**
	S0	**2**
	S2	**3**
Connection type	Screw terminals	**1**
	Spring-loaded terminals Size S00, S0	**2**
	Size S2	**3**
Example		**3RR2 4 4 1 – 1 A A 4 0**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Can be mounted directly on 3RT2 contactors and 3RA23 reversing contactor assemblies, in other words, there is no need for additional wiring in the main circuit
- Optimally coordinated with the technical characteristics of the 3RT2 contactors
- No separate current transformer required
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Display of actual value and status messages
- All versions with removable control current terminals
- All versions with screw or spring-loaded terminals
- Simple determination of the threshold values through direct reference to actually measured values for setpoint loading
- Range monitoring and selectable active current measurement mean that only one device for monitoring a motor is required along the entire torque curve
- In addition to current monitoring it is also possible to monitor for current asymmetry, broken cables, phase failure, phase sequence, residual current and motor blocking
- Integrated counter for operating cycles and operating hours to support requirements-based preventive maintenance of the monitored machine or application
- Simple cyclical transmission of the current measured values, relay switching states and events to a controller
- Remote parameterization
- Automatic reparameterizing when devices are exchanged
- Simple duplication of identical or similar parameterizations
- Reduction of control current wiring
- Elimination of testing costs and wiring errors
- Reduction of configuration work
- Integration in TIA means clear diagnostics if a fault occurs
- Cost saving and space saving in control cabinet due to the elimination of AI and IO modules as well as analog signal converters and duplicated sensors

Application

- Monitoring for current overshoot and undershoot
- Monitoring of broken conductors
- Monitoring of no-load operation and load shedding, e.g. in the event of a torn V-belt or no-load operation of a pump
- Monitoring of overload, e.g. on pumps due to a dirty filter system
- Monitoring the functionality of electrical loads such as heaters
- Monitoring of wrong phase sequence on mobile equipment such as compressors or cranes
- Monitoring of high-resistance short circuits or ground faults, e.g. caused by damaged insulation or moisture

The use of SIRIUS monitoring relays for IO-Link is particularly recommended for machines and plants in which these relays, in addition to their monitoring function, are to be connected to the automation level for the rapid, simple and fault-free provision of the current measured values and/or for remote parameterization.

The monitoring relays can either relieve the controller of monitoring tasks or, as a second monitoring entity in parallel to and independent of the controller, increase the reliability in the process or in the system. In addition, the elimination of AI and IO modules allows the width of the controller to be reduced despite significantly expanded functionality.

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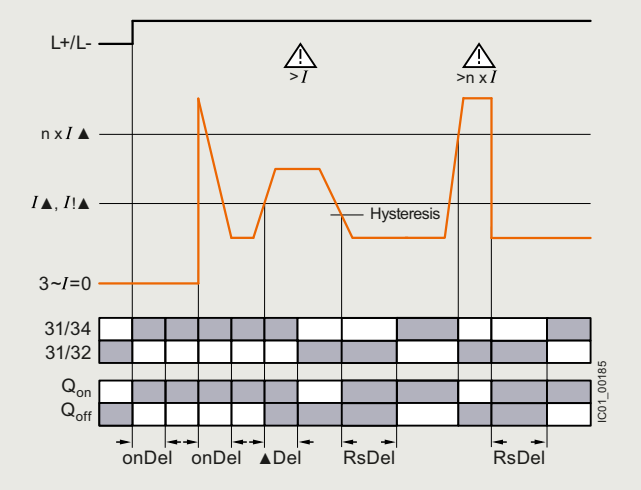
Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16206/td	System Manual for modular system, see https://support.industry.siemens.com/cs/ww/en/view/60311318
Configuration Manual for load feeders, see https://support.industry.siemens.com/cs/ww/en/view/39714188	Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/54375430
	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16206/faq

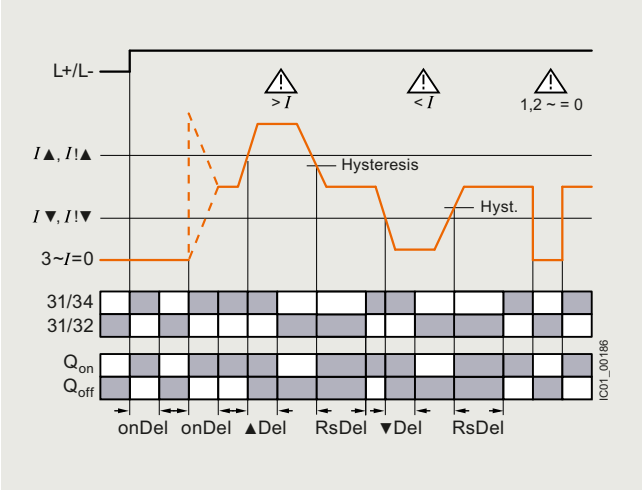
Function diagrams of 3RR24 for IO-Link, digitally adjustable

With the closed-circuit principle selected upon application of the control supply voltage

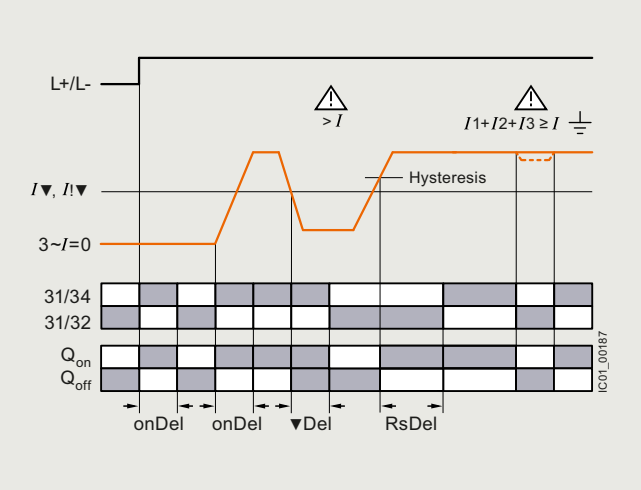
Current overshoot



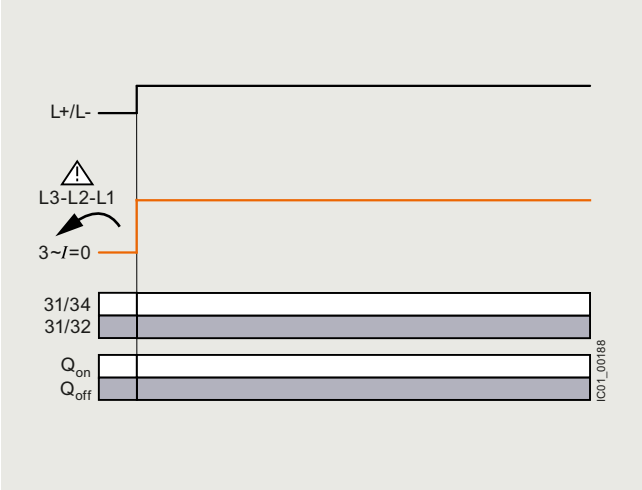
Range monitoring



Current undershoot with residual-current monitoring



Phase sequence monitoring



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Selection and ordering data

SIRIUS 3RR24 current monitoring relays for IO-Link

3RR2441-1AA40

3RR2442-1AA40

3RR2441-2AA40

3RR2442-2AA40

3RR2443-1AA40

3RR2443-2AA40

Size	Measuring range	Hysteresis	Supply voltage U_s	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	A	V					
• Digitally adjustable • LC display • Open-circuit or closed-circuit principle • 1 CO contact • 1 semiconductor output (in SIO mode) • 3-phase current monitoring • Active current or apparent current monitoring • Current asymmetry monitoring • Phase sequence monitoring • Residual-current monitoring • Blocking current monitoring • Operating hours counter • Operating cycles counter • Reclosing delay time 0 ... 300 min • ON-delay 0 ... 999.9 s • Tripping delay 0 ... 999.9 s • Separate settings for warning and alarm thresholds • Auto or Manual RESET								
S00	1.6 ... 16	0.1 ... 3	24 DC	**3RR2441-☐AA40**		1	1 unit	41H
S0	4 ... 40	0.1 ... 8	24 DC	**3RR2442-☐AA40**		1	1 unit	41H
S2	8 ... 80	0.2 ... 16	24 DC	**3RR2443-☐AA40**		1	1 unit	41H

Type of electrical connection

• Screw terminals	1
• Spring-loaded terminals size S00, S0	2
• Spring-loaded terminals size S2	3

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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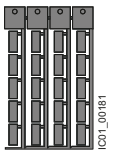
Accessories

	Use	Version	Size	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal supports for stand-alone installation[1]								
3RU2916-3AA01	For 3RR24	For separate mounting of the overload relays or monitoring relays; screw fixing and snap-on mounting on TH 35 DIN-rail according to IEC 60715		**Screw terminals**				
		• Screw terminals	S00	**3RU2916-3AA01**		1	1 unit	41F
			S0	**3RU2926-3AA01**		1	1 unit	41F
3RU2936-3AA01			S2	**3RU2936-3AA01**		1	1 unit	41F
				Spring-loaded terminals				
3RU2926-3AC01		• Spring-loaded terminals	S00	**3RU2916-3AC01**		1	1 unit	41F
			S0	**3RU2926-3AC01**		1	1 unit	41F
Sealable covers								
3RR2940	For 3RR24	**Sealable covers** For securing against unintentional or unauthorized adjustment of settings		**3RR2940**		1	5 units	41H
Blank labels								
 3RT2900-1SB20	For 3RR24	**Unit labeling plates[2]** For SIRIUS devices						
		• 20 mm x 7 mm, titanium gray		**3RT2900-1SB20**		100	340 units	41B
Tools for opening spring-loaded terminals								
3RA2908-1A	For auxiliary circuit connections	**Screwdrivers** For all SIRIUS devices with spring-loaded terminals		**Spring-loaded terminals**				
		Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated		**3RA2908-1A**		1	1 unit	41B

1) The accessories are exactly the same as the accessories for the 3RU21 thermal overload relay and the 3RB3 electronic overload relay, see page 7/93 onwards.

2) PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/18.

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DC load monitoring

Overview

SIRIUS 3UG546 DC load monitoring relays

More information

Homepage, see www.siemens.com/sirius-monitoring-relays
Industry Mall, see www.siemens.com/product?3UG5

The SIRIUS 3UG546 DC load monitoring relays are suitable for monitoring motors, batteries, and other DC equipment. They are also suitable for applications where batteries are used.
The devices monitor the DC current, voltage, and actual power for overshooting or undershooting of the set limit values in 1 or 2 channels. The relays have a CO contact output for alarms and operate on the closed-circuit principle (NC).

The devices are parameterized via PROFINET, and transfer the measured values and diagnostic messages to a controller. Besides providing detailed fault diagnostics, the integrated energy counters, operating hours counters, and operating cycle counters can also be read out and reset.

When metering energy consumption, the SIRIUS 3UG546 DC load monitoring relays distinguish the direction of current flow and can thus, for example, separately sense the quantities of energy stored in or drawn from a battery.

Features	3UG5461-1AA4., 3UG5462-1AA4.
DC monitoring	
Monitoring the DC current for undershoot	✓
Monitoring the DC current for overshoot	✓
Range monitoring	✓
Voltage monitoring	
Monitoring the voltage for undershoot	✓
Monitoring the voltage for overshoot	✓
Range monitoring	✓
Power monitoring	
Monitoring the power for undershoot	✓
Monitoring the power for overshoot	✓
Range monitoring	✓
Delay times	
ON-delay	✓
Tripping delay	✓
Operating hours counter	
Monitoring for overshoot	✓
Operating cycles counter	
Monitoring for overshoot	✓
Energy recovery counter	
Monitoring for overshoot	✓
Energy consumption counter	
Monitoring for overshoot	✓
PROFINET IO functions	
Ethernet services	✓
Port diagnostics	✓
Min. update time	2 ms
Resetting of communication parameters to factory settings	✓
PROFINET RT (real-time communication)	✓
Firmware update via PROFINET IO	✓
I&M identification data 0 to 3	✓

✓ Available

Article number scheme

Product versions		Article number								
Monitoring relays		**3UG546**	☐	–	1	A	A	4	☐
Current measuring range	2 x 8 A/1 x 16 A		**1**						
	1 x 63 A		**2**						
Voltage range	0 ... 800 V								**0**
	0 ... 60 V								**1**
Example		**3UG546**	**1**	–	1	A	A	4	**0**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Wide voltage measuring range of up to 800 V
- 60 V versions especially for applications where batteries are used
- Detection and monitoring of current, voltage and power in a single device
- Detailed fault diagnostics
- Energy metering with distinction of direction of current flow
- Communication and visualization via PROFINET and thus quick and easy integration for visualizing plant energy values
- Integration in the TIA Portal
- Customary screw terminals for quick and reliable wiring
- Device replacement without renewed wiring thanks to removable terminals

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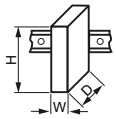
Application

- Exhaustive discharge protection on battery-operated vehicles
- Acquisition of energy flows, incl. energy recovery, e.g. for robots
- DC line monitoring
- DC heaters
- Lighting systems
- Energy management
- Condition monitoring

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/25412/td	Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/ps/25412/man FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/25412/faq

Article number		3UG5461-1AA40	3UG5461-1AA41	3UG5462-1AA40	3UG5462-1AA41
General technical specifications:					
Dimensions (W x H x D) 		22.5 x 100 x 141.6		45 x 100 x 141.6	
Type of electrical separation		Protective separation			
Electrical endurance (operating cycles) for relay outputs, maximum		100 000, 0.5 A, 125 V AC, for resistive load up to 40 °C			
Mechanical endurance (operating cycles), typical		10 000 000			
Power loss [W], maximum	W	3			
Adjustable response value current 1	A	-8 ... +8		-63 ... +63	
Adjustable response value current 2	A	-8 ... +8		--	
Adjustable ON-delay time					
• On starting	s	0 ... 999			
• On upper or lower limit violation	s	0 ... 999			
Adjustable voltage range	V	0 ... 800	0 ... 60	0 ... 800	0 ... 60
Minimum supply voltage failure buffering time	ms	10			
Reaction time, maximum	ms	100			
Degree of protection IP on the front according to IEC 60529		IP20			
Touch protection on the front according to IEC 60529		Finger-safe		Finger-safe for vertical touching from the front	
Type of mounting		Screw fixing and snap-on mounting on 35 mm DIN-rail			
• Mounting position		Any			
Installation altitude at height above sea level, maximum	m	2 000			
Ambient temperature					
• During operation	°C	-25 ... +60			
• During storage	°C	-40 ... +80			
Relative temperature-related measurement deviation	%	0.5			
Number of ports at the interface 1		1			
Product function					
• Operating cycles counter		Yes			
• Operating hours counter		Yes			
• Auto RESET		Yes			
• Manual RESET		Yes			
• Overvoltage detection DC		Yes			
• Overcurrent detection DC		Yes			
• Undervoltage detection DC		Yes			
• Undercurrent detection DC		Yes			
Product component					
• Removable terminal for main circuit		Yes		No	
• Removable terminal for auxiliary and control circuit		Yes			

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DC load monitoring

Article number		3UG5461-1AA40	3UG5461-1AA41	3UG5462-1AA40	3UG5462-1AA41
Measuring circuit:					
Relative measuring accuracy with reference to the full-scale value	%	2			
Number of CO contacts for auxiliary contacts		1			
Control circuit:					
Current-carrying capacity of the output relay at DC-13 at 24 V	A	1			
Thermal current of the non-solid-state contact blocks, maximum	A	1			
Type of voltage for monitoring		DC			
Type of current for monitoring		DC			
Supply voltage type		DC			
Supply voltage 1 at DC, rated value	V	24			
Supply voltage:					
Operating range factor of the supply voltage, rated value at DC		0.85 ... 1.15			

Article number		3UG5461-1AA40	3UG5461-1AA41	3UG5462-1AA40	3UG5462-1AA41
Type of electrical connection		**Screw terminals**			
Connectable conductor cross-section for auxiliary contacts					
• Solid	mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)			
• Finely stranded with end sleeve	mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 1.5)			
• For AWG cables		1 x (20 ... 12), 2 x (20 ... 14)			
Connectable conductor cross-section for main contacts					
• Solid	mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)		2 x (1 ... 16), 1 x (1 ... 16)	
• Finely stranded with end sleeve	mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)		2 x (1 ... 25), 1 x (1 ... 35)	
• Stranded	mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)		2 x (1 ... 16), 1 x (1 ... 16)	
• For AWG cables		1 x (20 ... 12), 2 x (20 ... 14)		1 x (18 ... 1), 2 x (18 ... 2)	

The SIRIUS 3UG546 DC load monitoring relays monitor a DC load current circuit for undershooting or overshooting of set limit values in 1 or 2 channels. Current, voltage, and power can be monitored separately. When the relays measure the current, they also detect the direction of current and have separate counters for measuring energy consumption and energy recovery.

The devices count the operating cycles and the operating hours of the connected loads as well as the operating cycles of the internal relay. All counters can be monitored for settable limit values and the counter statuses can be reset (with the exception of the operating cycle counter of the internal relay).

The SIRIUS 3UG546 DC load monitoring relays are parameterized exclusively via a PROFINET interface. All measured values and counter values as well as other diagnostics data are transmitted to a controller via PROFINET. The relays can also be operated without PROFINET. If communication fails, the monitoring function continues to be reliably executed. The internal relay, which is switched as a signaling output that responds when a set limit value is undershot or overshot, responds to detected system faults.

All monitored counter values and measured values can be additionally assigned a warning limit, which generates an alarm via PROFINET when the set value is undershot or overshot. Violations of the set limit values are also signaled as an alarm via PROFINET.

The devices are supplied via an external 24 V DC voltage source.

The integral counters for operating hours and operating cycles support operators in requirement-oriented preventive plant maintenance. The operating hours counter outputs the time during which a measurable current flows. The properties of the insulation material of the motor windings, for example, deteriorate during operation due to the thermal load. The operating hours serve as an indicator of upcoming preventive maintenance or replacement of machine parts and system components.

The operating cycles counter is incremented by one each time a breaking operation of the monitored load is detected (transition from current flow to no measurable current flow). The number of operating cycles serves as an indicator of upcoming preventive maintenance or replacement of contact blocks. Arcs in breaking operations cause high loads and wear in particular in DC current circuits.

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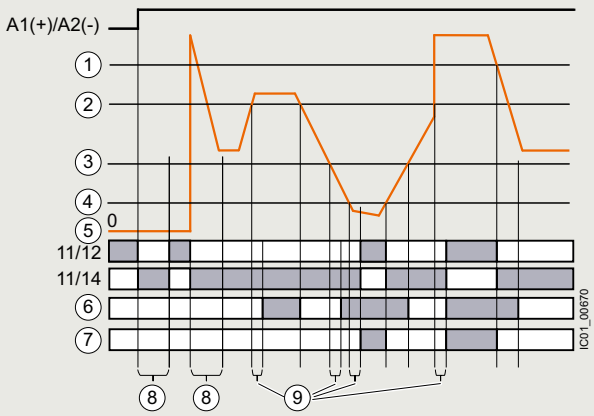
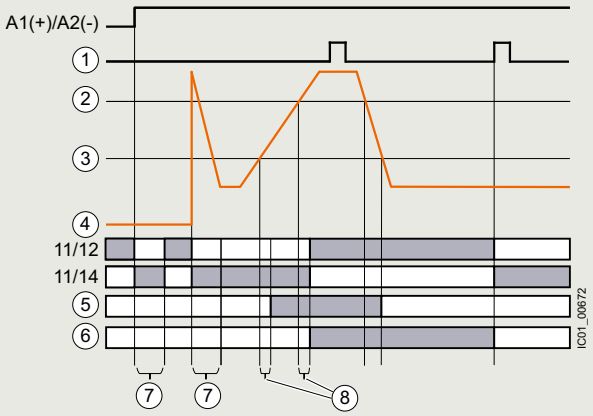
With the closed-circuit principle selected upon application of the control supply voltage

Monitoring for overshooting and undershooting of a measured value including parameterized warning limit/current flow in one direction only/automatic RESET



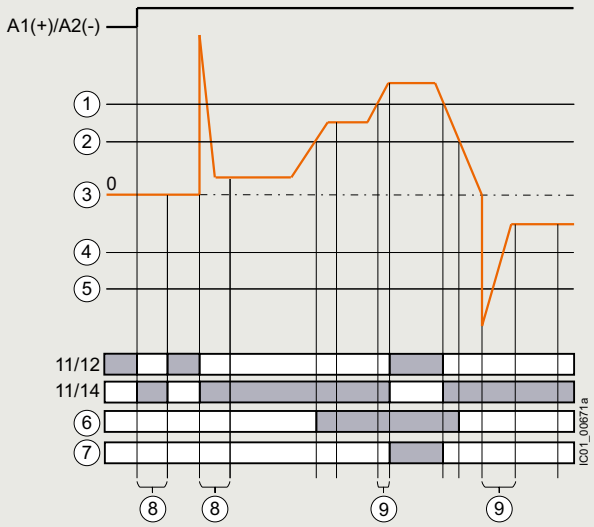
1 Threshold for overshoot
2 Warning threshold for overshoot
3 Warning threshold for undershoot
4 Threshold for undershoot
5 Measured value
6 PROFINET diagnostic interrupt (warning)
7 PROFINET diagnostic interrupt (fault)
8 ON-delay time
9 Tripping delay time

Monitoring for overshooting of a measured value including parameterized warning limit/manual RESET



1 RESET
2 Threshold for overshoot
3 Warning threshold for overshoot
4 Measured value
5 PROFINET diagnostic interrupt (warning)
6 PROFINET diagnostic interrupt (fault)
7 ON-delay time
8 Tripping delay time

Monitoring for overshooting and undershooting of a measured value including parameterized warning limit/current flow in both directions (energy consumption and energy recovery)/ automatic RESET



1 Threshold for overshoot
2 Warning threshold for overshoot
3 Measured value
4 Warning threshold for undershoot
5 Threshold for undershoot
6 PROFINET diagnostic interrupt (warning)
7 PROFINET diagnostic interrupt (fault)
8 ON-delay time
9 Tripping delay time

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DC load monitoring

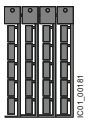
Selection and ordering data

3UG5461-1AA40

3UG5462-1AA40

Measurable voltage	Measurable current	Width	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
V	A	mm					
DC load monitoring relay							
0 ... 800	2 x 8/1 x 16	22.5	**3UG5461-1AA40**		1	1 unit	41H
	1 x 63	45	**3UG5462-1AA40**		1	1 unit	41H
0 ... 60	2 x 8/1 x 16	22.5	**3UG5461-1AA41**		1	1 unit	41H
	1 x 63	45	**3UG5462-1AA41**		1	1 unit	41H

Accessories

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminals for SIRIUS devices in the industrial DIN-rail enclosure						
 3ZY1122-1BA00	**Removable terminals** • 2-pole, up to 1 x 4 mm² or 2 x 2.5 mm²	**Screw terminals** **3ZY1122-1BA00**		1	6 units	41L
Accessories for enclosures						
 3ZY1311-0AA00	**Push-in lugs** For wall mounting	**3ZY1311-0AA00**		1	10 units	41L
 3ZY1440-1AA00	**Coding pins** For removable terminals of SIRIUS devices in the industrial DIN-rail enclosure; they enable the mechanical coding of terminals	**3ZY1440-1AA00**		1	12 units	41L
   3ZY1450-1AB00	**Hinged cover** Replacement cover, without terminal labeling, titanium gray • 22.5 mm wide	**3ZY1450-1AB00**		1	5 units	41L
Blank labels						
 3RT2900-1SB20	**Unit labeling plates**[1] For SIRIUS devices • 20 mm x 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B
Tools for opening spring-loaded terminals						
 3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-loaded terminals Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**Spring-loaded terminals (push-in)** **3RA2908-1A**		1	1 unit	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/18.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

SIRIUS 3UG4 monitoring relay

More information
Homepage, see www.siemens.com/sirius-monitoring-relays
Industry Mall, see www.siemens.com/product?3UG45
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=SIRIUSRelais
Conversion tool, see www.siemens.com/conversion-tool

The field-proven SIRIUS monitoring relays for electrical and mechanical variables enable constant monitoring of all important characteristic quantities that provide information about the functional capability of a plant. Both sudden disturbances and gradual changes, which may indicate the need for maintenance, are detected. Thanks to their relay outputs, the monitoring relays permit direct disconnection of the affected system components as well as alerting (e.g. by switching a warning lamp).

Thanks to adjustable delay times the monitoring relays can respond very flexibly to brief faults such as voltage dips or load changes. This avoids unnecessary alarms and disconnections while enhancing plant availability.

The individual 3UG4 monitoring relays offer the following functions in various combinations:

- Undershooting and/or overshooting of liquid levels
- Phase sequence
- Phase failure, neutral conductor failure
- Phase asymmetry
- Undershooting and/or overshooting of limit values for voltage
- Undershooting and/or overshooting of limit values for current
- Undershooting and/or overshooting of limit values for power factor
- Monitoring of the active current or the apparent current
- Monitoring of the residual current
- Monitoring of the insulation resistance
- Undershooting and/or overshooting of limit values for speed

Article number scheme

Product versions		Article number									
Monitoring relays		**3UG4**	□	□	□	–	□	□	□	□	**0**
Type of setting	e.g. 5 = analogically adjustable		□								
Functions	e.g. 11 = line monitoring			□	□						
Connection type	Screw terminals						**1**				
	Spring-loaded terminals						**2**				
Contacts	e.g. A = 1 CO contact							□			
Supply voltage	e.g. N2 = 160 ... 260 V AC								□	□	
Example		**3UG4**	**5**	**1**	**1**	**–**	**1**	**A**	**N**	**2**	**0**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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General data

Benefits

- Customary screw and spring-loaded terminals for quick and reliable wiring
- Fast commissioning thanks to menu-guided parameterization and actual value display for limit value determination
- Reduced space requirement in the control cabinet thanks to a consistent width of 22.5 mm
- Parameterizable monitoring functions, delay times, RESET response, etc.
- Reduced stockkeeping thanks to minimized variance and large measuring ranges
- Wide-voltage power supply units for global applicability
- Device replacement without renewed wiring thanks to removable terminals
- Reliable system diagnostics thanks to actual value display and connectable fault storage
- Rapid diagnostics thanks to unambiguous fault messages on the display

Application

The SIRIUS 3UG4 monitoring relays monitor the most diverse electrical and mechanical quantities in the feeder, and provide reliable protection against damage in the plant. For this purpose, they offer freely parameterizable limit values and diverse options for adapting to the respective task, and in the event of a fault, they provide clear diagnostics information.

The digitally adjustable products also display the current measured values direct on the device. This not only facilitates the display of valuable plant status information during operation, it also enables adjustment of the monitored limit values in accordance with the actual conditions.

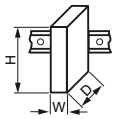
The positive result: More selective avoidance of production faults – sustained increases in availability and productivity.

The 3UG4 monitoring relays are available for the following applications:

- Line and 1-phase voltage monitoring
- 1-phase current monitoring or power factor and active current monitoring
- Residual-current monitoring
- Insulation monitoring
- Level monitoring
- Speed monitoring

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16367/td	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16367/faq
Equipment Manual and internal circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/view/54397927	

Type			3UG
General data			
Dimensions (W x H x D)			
• For 2 terminal blocks			
- Screw terminals		mm	22.5 x 83 x 91
- Spring-loaded terminals		mm	22.5 x 84 x 91
• For 3 terminal blocks			
- Screw terminals		mm	22.5 x 92 x 91
- Spring-loaded terminals		mm	22.5 x 94 x 91
• For 4 terminal blocks			
- Screw terminals		mm	22.5 x 103 x 91
- Spring-loaded terminals		mm	22.5 x 103 x 91
Permissible ambient temperature			
• During operation		°C	-25 ... +60
Connection type			**Screw terminals**
• Terminal screw			M3 (for standard screwdriver, size 2 and Pozidriv 2)
• Solid		mm^2	1 x (0.5 ... 4)/2 x (0.5 ... 2.5)
• Finely stranded with end sleeve		mm^2	1 x (0.5 ... 2.5)/2 x (0.5 ... 1.5)
• AWG cables, solid or stranded		AWG	2 x (20 ... 14)
Connection type			**Spring-loaded terminals**
• Solid		mm^2	2 x (0.25 ... 1.5)
• Finely stranded, with end sleeve according to DIN 46228		mm^2	2 x (0.25 ... 1.5)
• Finely stranded		mm^2	2 x (0.25 ... 1.5)
• AWG cables, solid or stranded		AWG	2 x (24 ... 16)

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Overview

SIRIUS 3UG4616 monitoring relay

Electronic line monitoring relays provide maximum protection for mobile machines and plants or for unstable networks. Network and voltage faults can thus be detected early and rectified before far greater damage ensues.

Depending on the version, the relays monitor phase sequence, phase failure with and without N conductor monitoring, phase asymmetry, undervoltage or overvoltage.

Phase asymmetry is evaluated as the difference between the greatest and the smallest phase voltage relative to the greatest phase voltage. Undervoltage or overvoltage exists when at least one phase voltage deviates by 20% from the set rated system voltage or the directly set limit values are overshot or undershot. The rms value of the voltage is measured.

With the 3UG4617 or 3UG4618 relay, a wrong direction of rotation can also be corrected automatically.

Benefits

- Can be used without auxiliary voltage in any network from 160 to 630 V AC worldwide thanks to wide voltage range
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Permanent display of actual value and line fault type on the digital versions
- Automatic correction of the direction of rotation by distinguishing between power system faults and wrong phase sequence
- All versions with removable terminals
- All versions with screw or spring-loaded terminals

Application

The relays are used above all for mobile equipment, e.g. air conditioning compressors, refrigerating containers, building site compressors and cranes.

Function	Application
Phase sequence	• Direction of rotation of the drive
Phase failure	• A fuse has tripped • Failure of the control supply voltage • Broken cable
Phase asymmetry	• Overheating of the motor due to asymmetrical voltage • Detection of asymmetrically loaded networks
Undervoltage	• Increased current on a motor with corresponding overheating • Unintentional resetting of a device • Network collapse, particularly with battery power
Overvoltage	• Protection of a plant against destruction due to overvoltage

Technical specifications

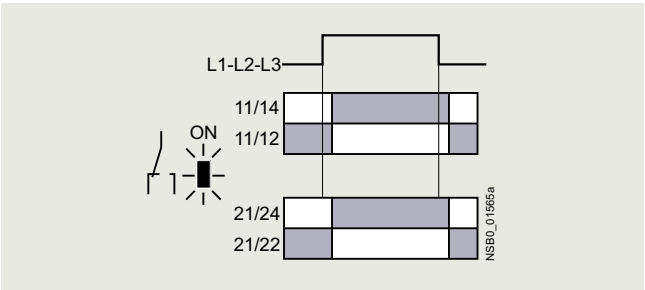
3UG4511 monitoring relays

The 3UG4511 phase sequenced relay monitors the phase sequence in a 3-phase network. No adjustments are required for operation. The device has an internal power supply and works using the closed-circuit principle. If the phase sequence at the terminals L1-L2-L3 is correct, the output relay picks up after the delay time has elapsed and the green LED is lit. If the phase sequence is wrong, the output relay remains in its rest position.

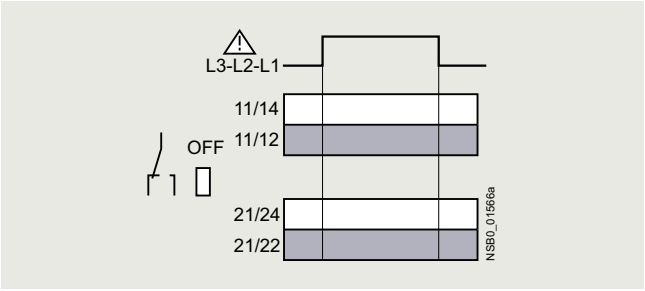
Note:

When one phase fails, connected loads (motor windings, lamps, transformers, coils, etc.) create a feedback voltage at the terminal of the failed phase due to the network coupling. Because the 3UG4511 relays are not resistant to voltage feedback, such a phase failure is not detected. Should this be required, then the 3UG4512 monitoring relay must be used.

Correct phase sequence



Wrong phase sequence



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Line monitoring

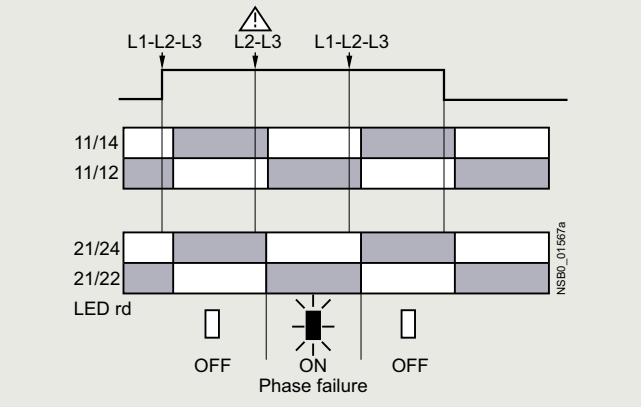
3UG4512 monitoring relays

The 3UG4512 line monitoring relay monitors 3-phase networks with regard to phase sequence, phase failure and phase asymmetry of 10%. Thanks to a special measuring method, a phase failure is reliably detected in spite of the wide voltage range from 160 to 690 V AC and feedback through the load of up to 90%. The device has an internal power supply and works using the closed-circuit principle. No adjustments are required. If the line voltage is switched on, the green LED will light up. If the phase sequence at the terminals L1-L2-L3 is correct, the output relay picks up. If the phase sequence is wrong, the red LED flashes and the output relay remains in its rest position. If a phase fails, the red LED is permanently lit and the output relay drops.

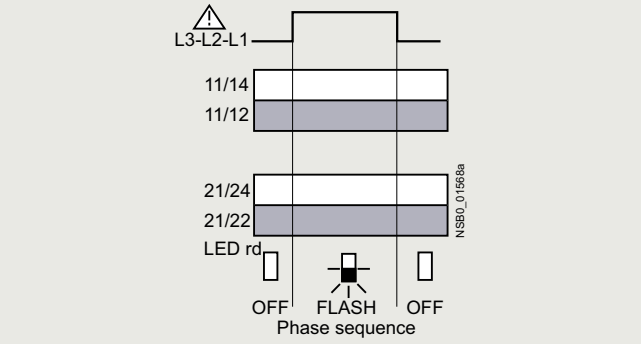
Note:

The red LED is a fault diagnostic indicator and does not show the current relay status. The 3UG4512 monitoring relay is suitable for line frequencies of 50/60 Hz.

Phase failure



Wrong phase sequence



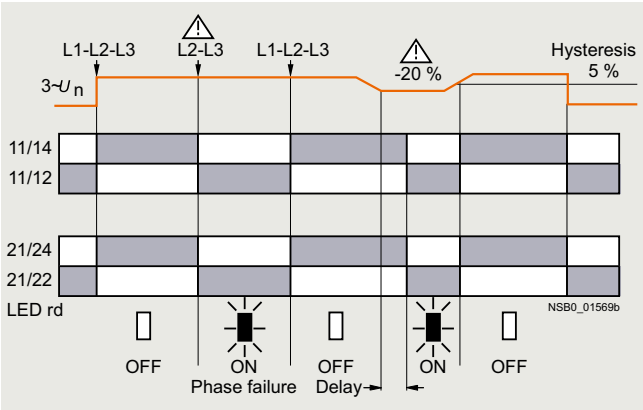
3UG4513 monitoring relays

The 3UG4513 line monitoring relay monitors 3-phase networks with regard to phase sequence, phase failure, phase asymmetry and undervoltage of 20%. The device has an internal power supply and works using the closed-circuit principle.
The hysteresis is 5%. The integrated response delay time T is adjustable from 0 to 20 s and responds to undervoltage. If the direction is incorrect, the device switches off immediately. Thanks to a special measuring method, a phase failure is reliably detected in spite of the wide voltage range from 160 to 690 V and feedback through the load of up to 80%. If the line voltage is switched on, the green LED will light up. If the phase sequence at the terminals L1-L2-L3 is correct, the output relay picks up. If the phase sequence is wrong, the red LED flashes and the output relay remains in its rest position. If a phase fails, the red LED is permanently lit and the output relay drops.

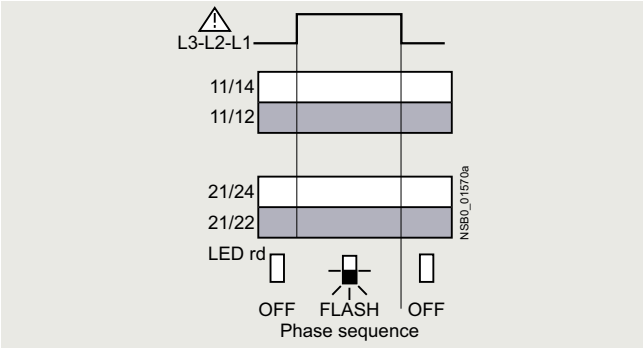
Note:

The red LED is a fault diagnostic indicator and does not show the current relay status. The 3UG4513 monitoring relay is suitable for line frequencies of 50/60 Hz.

Phase failure and undervoltage



Wrong phase sequence



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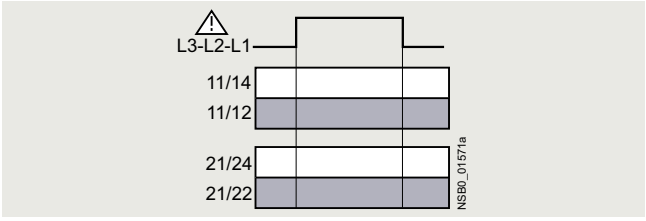
3UG4614 monitoring relays

The 3UG4614 line monitoring relay has a wide voltage range input and an internal power supply. The device is equipped with a display and is parameterized using three buttons. The unit monitors 3-phase networks with regard to phase asymmetry from 5 to 20%, phase failure, undervoltage and phase sequence. The hysteresis is adjustable from 1 to 20 V. In addition the device has a response delay and ON-delay from 0 to 20 s in each case. The response delay time responds to phase asymmetry and undervoltage. If the direction is incorrect, the device switches off immediately. Thanks to a special measuring method, a phase failure is reliably detected in spite of the wide voltage range from 160 to 690 V and feedback through the load of up to 80%.

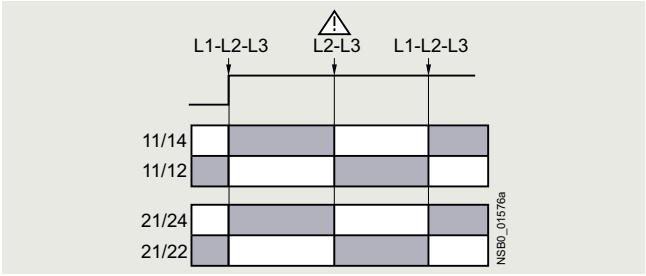
The 3UG4614 monitoring relay can be operated on the basis of either the open-circuit or closed-circuit principle and with Manual or Auto RESET.

With the closed-circuit principle selected

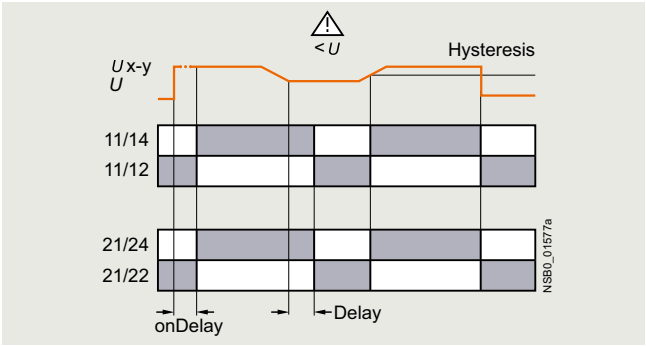
Wrong phase sequence



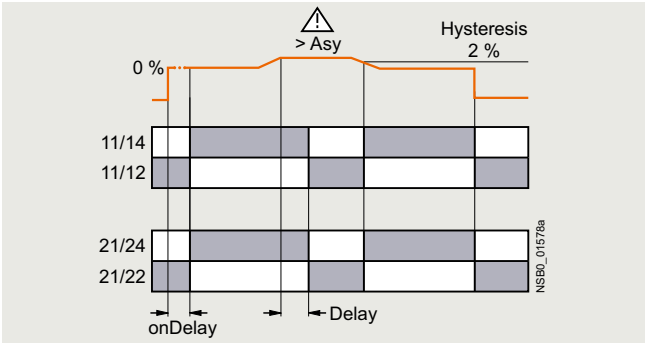
Phase failure



Undervoltage



Asymmetry



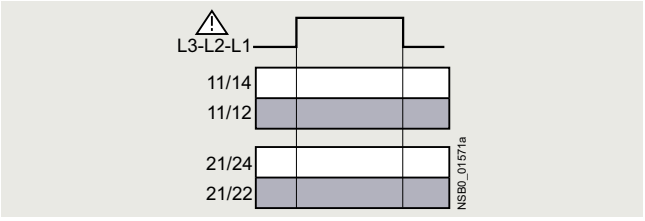
3UG4615/3UG4616 monitoring relays

The 3UG4615/3UG4616 line monitoring relay has a wide voltage range input and an internal power supply. The device is equipped with a display and is parameterized using three buttons. The 3UG4615 device monitors 3-phase networks with regard to phase failure, undervoltage, overvoltage and phase sequence. The 3UG4616 monitoring relay monitors the neutral conductor as well. The hysteresis is adjustable from 1 to 20 V. In addition the device has two separately adjustable delay times for overvoltage and undervoltage from 0 to 20 s in each case. If the direction of rotation is incorrect, the device switches off immediately. Thanks to a special measuring method, a phase failure is reliably detected in spite of the wide voltage range from 160 to 690 V and feedback through the load of up to 80%.

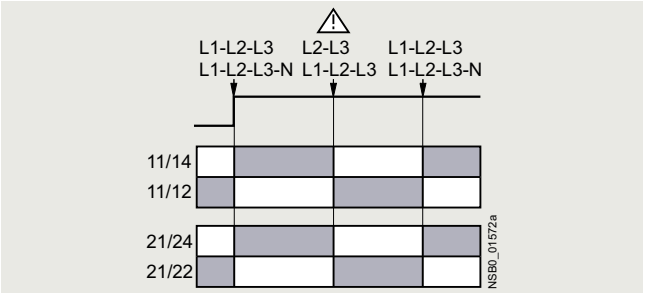
The 3UG4615/3UG4616 monitoring relay can be operated on the basis of either the open-circuit or closed-circuit principle and with Manual or Auto RESET.

With the closed-circuit principle selected

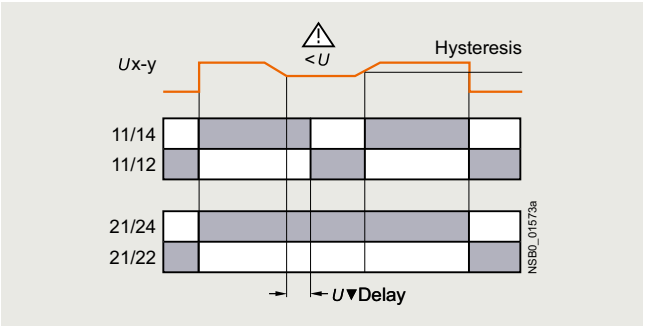
Wrong phase sequence



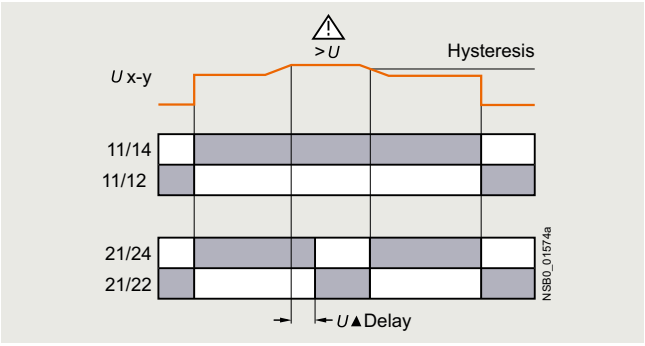
Phase failure



Undervoltage



Overvoltage



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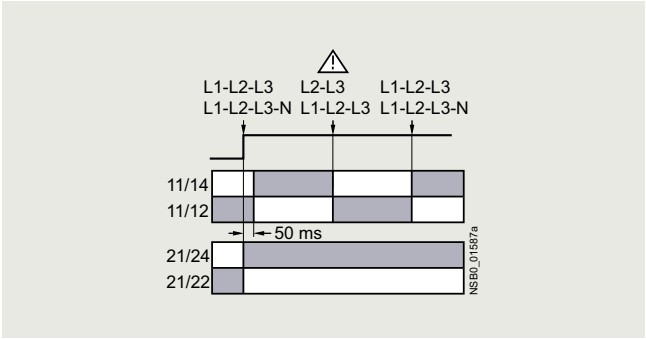
Line monitoring

3UG4617/3UG4618 monitoring relays

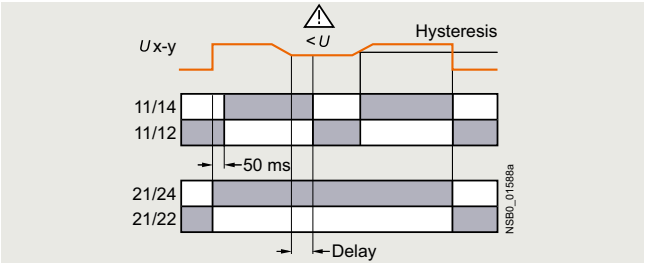
The 3UG4617/3UG4618 line monitoring relay has an internal power supply and can automatically correct a wrong direction of rotation. Thanks to a special measuring method, a phase failure is reliably detected in spite of the wide voltage range from 160 to 690 V AC and feedback through the load of up to 80%. The device is equipped with a display and is parameterized using three buttons. The 3UG4617 line monitoring relay unit monitors 3-phase networks with regard to phase sequence, phase failure, phase asymmetry, undervoltage and overvoltage. The 3UG4618 monitoring relay monitors the neutral conductor as well. The hysteresis is adjustable from 1 to 20 V. In addition the device has delay times from 0 to 20 s in each case for overvoltage, undervoltage, phase failure and phase asymmetry. The 3UG4617/3UG4618 monitoring relay can be operated on the basis of either the open-circuit or closed-circuit principle and with Manual or Auto RESET. The one changeover contact is used for warning or disconnection in the event of power system faults (voltage, asymmetry), the other responds only to a wrong phase sequence. In conjunction with a contactor reversing assembly it is thus possible to change the direction automatically.

With the closed-circuit principle selected

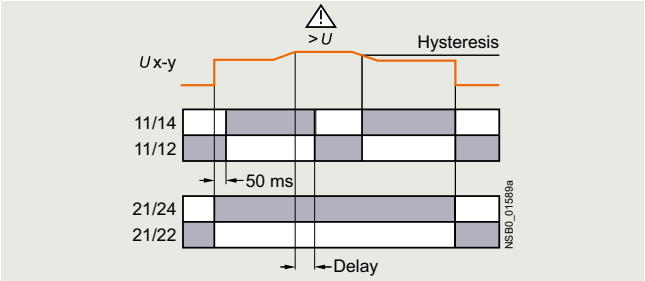
Phase failure



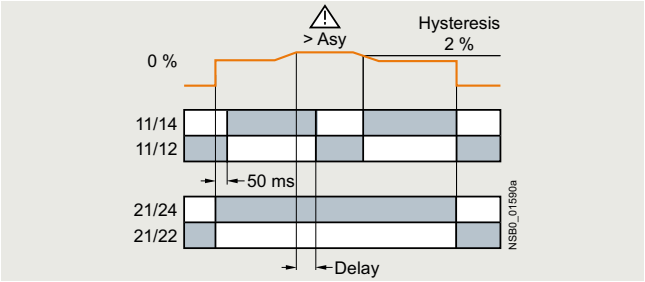
Undervoltage



Overvoltage



Asymmetry



Type		3UG4511 ... 3UG4513, 3UG4614 ... 3UG4618
General data		
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III according to VDE 0110	V	690
Rated impulse withstand voltage U_{imp}	kV	6
Control circuit		
Load capacity of the output relay • Thermal current I_{th}	A	5
Rated operational current I_e at • AC-15/24 ... 400 V • DC-13/24 V • DC-13/125 V • DC-13/250 V	 A A A A	 3 1 0.2 0.1
Minimum contact load at 17 V DC	mA	5
Electrical endurance AC-15	million operating cycles	0.1
Mechanical endurance	million operating cycles	10

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Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H

3UG4511-1AP20

3UG4615-1CR20

3UG4616-1CR20

3UG4617-1CR20

3UG4618-1CR20

3UG4511-2BP20

3UG4512-2BR20

Adjustable hysteresis	Under-voltage detec-tion	Over-voltage detec-tion	Stabiliza-tion time adjust-able stDEL	Tripping delay time adjustable Del	Version of auxil-iary con-tacts	Measurable line voltage[1]	**Screw terminals**		**Spring-loaded terminals**	
			s	s	CO contact	V	Article No.	Price per PU	Article No.	Price per PU
Monitoring of phase sequence										
Auto RESET										
--	--	--	--	--	1 2	160 … 260 AC	**3UG4511-1AN20** **3UG4511-1BN20**		**3UG4511-2AN20** **3UG4511-2BN20**	
					1 2	320 … 500 AC	**3UG4511-1AP20** **3UG4511-1BP20**		**3UG4511-2AP20** **3UG4511-2BP20**	
					1 2	420 … 690 AC	**3UG4511-1AQ20** **3UG4511-1BQ20**		**3UG4511-2AQ20** **3UG4511-2BQ20**	
Monitoring of phase sequence, phase failure and phase asymmetry										
Auto RESET, closed-circuit principle, asymmetry threshold permanently 10%										
--	--	--	--	--	1 2	160 … 690 AC	**3UG4512-1AR20** **3UG4512-1BR20**		**3UG4512-2AR20** **3UG4512-2BR20**	
Monitoring of phase sequence, phase failure, asymmetry and undervoltage										
Analogically adjustable, Auto RESET, closed-circuit principle, asymmetry and undervoltage threshold permanently 20%										
5% of set value	✓	--	--	0.1 … 20	2	160 … 690 AC	**3UG4513-1BR20**		**3UG4513-2BR20**	
Digitally adjustable, Auto RESET or Manual RESET, open-circuit or closed-circuit principle, asymmetry threshold 0 or 5 ... 20%										
Adjustable 1 ... 20 V	✓	--	0.1 ... 20	0.1 … 20	2	160 … 690 AC	**3UG4614-1BR20**		**3UG4614-2BR20**	
Monitoring of phase sequence, phase failure, overvoltage and undervoltage										
Digitally adjustable, Auto RESET or Manual RESET, open-circuit or closed-circuit principle										
Adjustable 1 ... 20 V	✓	✓	--	0.1 … 20[2]	2[2]	160 … 690 AC	**3UG4615-1CR20**		**3UG4615-2CR20**	
Monitoring of phase sequence, phase and N conductor failure, overvoltage and undervoltage										
Digitally adjustable, Auto RESET or Manual RESET, open-circuit or closed-circuit principle										
Adjustable 1 ... 20 V	✓	✓	--	0.1 … 20[2]	2[2]	90 … 400 AC to N	**3UG4616-1CR20**		**3UG4616-2CR20**	
Automatic correction of the direction of rotation in case of wrong phase sequence, phase failure, asymmetry, overvoltage and undervoltage										
Digitally adjustable, Auto RESET or Manual RESET, open-circuit or closed-circuit principle, asymmetry threshold 0 or 5 ... 20%										
Adjustable 1 ... 20 V	✓	✓	--	0.1 … 20	2[3]	160 … 690 AC	**3UG4617-1CR20**		**3UG4617-2CR20**	
Automatic correction of the direction of rotation in case of wrong phase sequence, phase and N conductor failure, phase asymmetry, overvoltage and undervoltage										
Digitally adjustable, Auto RESET or Manual RESET, open-circuit or closed-circuit principle, asymmetry threshold 0 or 5 ... 20%										
Adjustable 1 ... 20 V	✓	✓	--	0.1 … 20	2[3]	90 … 400 AC to N	**3UG4618-1CR20**		**3UG4618-2CR20**	

✓ Function available
-- Function not available

Accessories, see page 10/95.

1) Absolute limit values.
2) 1 CO contact each and one tripping delay time each for U_{min} and U_{max}.
3) 1 CO contact each for power system fault and phase sequence correction.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Voltage monitoring

Overview

SIRIUS 3UG4631 monitoring relay

The relays monitor 1-phase AC voltages (rms value) and DC voltages against the set threshold value for overshoot and undershoot. The devices differ with regard to their power supply (internal or external).

Benefits

- Versions with wide voltage supply range
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Display of actual value and status messages
- All versions with removable terminals
- All versions with screw or spring-loaded terminals

Application

- Protection of a plant against destruction due to overvoltage
- Switch-on of a plant at a defined voltage and higher
- Protection from undervoltage due to overloaded supply voltages, particularly with battery power
- Threshold switch for analog signals from 0.1 to 10 V

Technical specifications

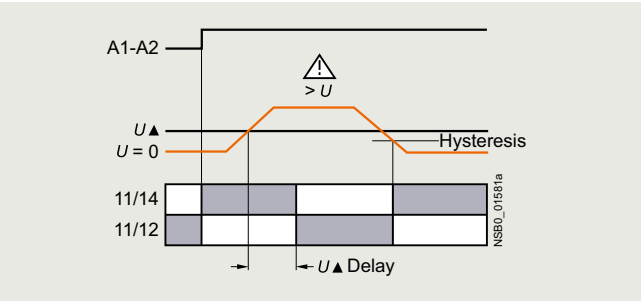
3UG4631/3UG4632 monitoring relays

The 3UG4631/3UG4632 voltage monitoring relay is supplied with an auxiliary voltage of 24 V AC/DC or 24 to 240 V AC/DC and performs overshoot, undershoot or range monitoring of the voltage depending on parameterization. The device is equipped with a display and is parameterized using three buttons.

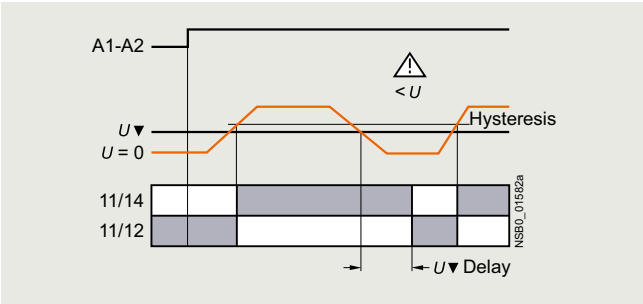
The measuring range extends from 0.1 to 60 V or 10 to 600 V AC/DC. The threshold values for overshoot or undershoot can be freely configured within this range. If one of these threshold values is reached, the output relay responds according to the set principle of operation as soon as the delay time has elapsed. This delay time U_{Del} can be set from 0.1 to 20 s.
The hysteresis can be set from 0.1 to 30 V or 0.1 to 300 V.
The device can be operated on the basis of either the open-circuit or closed-circuit principle and with Manual or Auto RESET.
One output changeover contact is available as signaling contact.

With the closed-circuit principle selected

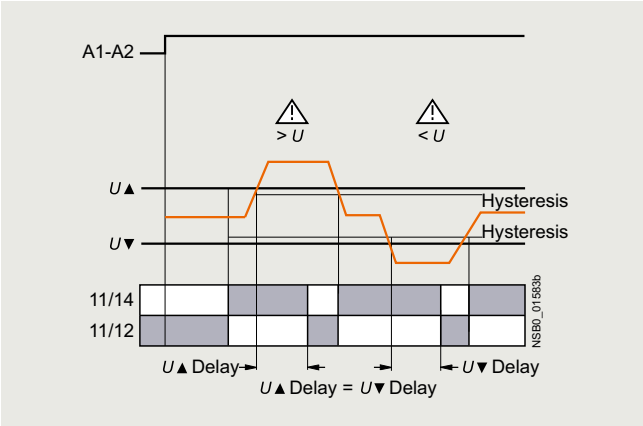
Overvoltage



Undervoltage



Range monitoring



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3UG4633 monitoring relay

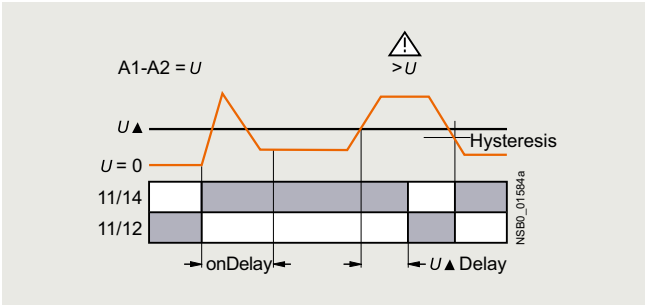
The 3UG4633 voltage monitoring relay has an internal power supply and performs overshoot, undershoot or range monitoring of the voltage depending on parameterization. The device is equipped with a display and is parameterized using three buttons.

The operating and measuring range extends from 17 to 275 V AC/DC. The threshold values for overshoot or undershoot can be freely configured within this range. If one of these threshold values is reached, the output relay responds according to the set principle of operation as soon as the tripping delay time has elapsed. This delay time U_{Del} can also be adjusted, just like the ON-delay time t_{onDel}, from 0.1 to 20 s.

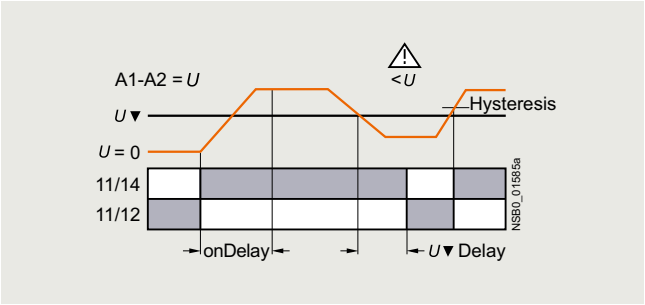
The hysteresis is adjustable from 0.1 to 150 V. The device can be operated on the basis of either the open-circuit or closed-circuit principle and with Manual or Auto RESET. One output changeover contact is available as signaling contact.

With the closed-circuit principle selected

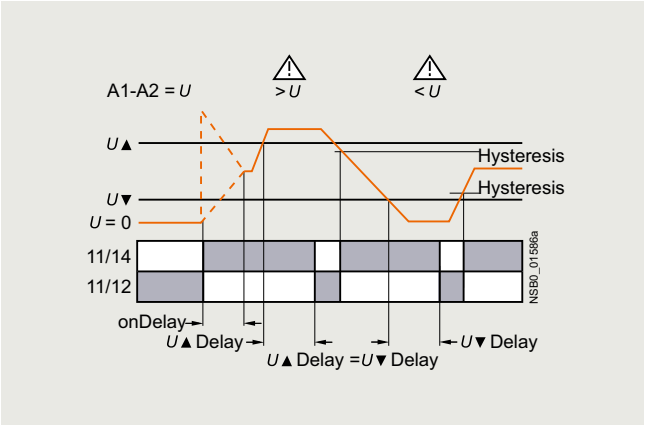
Overvoltage



Undervoltage



Range monitoring



Type		3UG4631	3UG4632	3UG4633
General data				
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III according to VDE 0110	V	690		
Rated impulse withstand voltage U_{imp}	kV	6		
Measuring circuit				
Permissible measuring range 1-phase AC/DC voltage	V	0.1 ... 60	10 ... 650	17 ... 275
Measuring frequency	Hz	40 ... 500		
Setting range 1-phase voltage	V	0.1 ... 60	10 ... 600	17 ... 275
Control circuit				
Load capacity of the output relay • Thermal current I_{th}	A	5		
Rated operational current I_e at • AC-15/24 ... 400 V • DC-13/24 V • DC-13/125 V • DC-13/250 V	 A A A A	 3 1 0.2 0.1		
Minimum contact load at 17 V DC	mA	5		

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Voltage monitoring

Selection and ordering data

- Digitally adjustable, with illuminated LCD
- Auto or Manual RESET
- Open-circuit or closed-circuit principle
- 1 CO contact

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H

3UG4631-1AA30

3UG4633-2AL30

Measuring range	Adjustable hysteresis	Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
			Article No.	Price per PU	Article No.	Price per PU
V	V	V				
Internal power supply without auxiliary voltage, separately adjustable ON-delay and tripping delay 0.1 ... 20 s						
17 ... 275 AC/DC	0.1 ... 150	17 ... 275 AC/DC[1]	**3UG4633-1AL30**		**3UG4633-2AL30**	
Externally supplied with auxiliary voltage, tripping delay adjustable 0.1 ... 20 s						
0.1 ... 60 AC/DC 10 ... 600 AC/DC	0.1 ... 30 0.1 ... 300	24 AC/DC	**3UG4631-1AA30** **3UG4632-1AA30**		**3UG4631-2AA30** **3UG4632-2AA30**	
0.1 ... 60 AC/DC 10 ... 600 AC/DC	0.1 ... 30 0.1 ... 300	24 ... 240 AC/DC	**3UG4631-1AW30** **3UG4632-1AW30**		**3UG4631-2AW30** **3UG4632-2AW30**	

[1] Absolute limit values.

Accessories, see page 10/95.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

SIRIUS 3UG4622 monitoring relay

The relays monitor 1-phase AC currents (rms value) and DC currents against the set threshold value for overshoot and undershoot. They differ with regard to their measuring ranges and control supply voltage types.

Benefits

- Versions with wide voltage supply range
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Display of actual value and status messages
- All versions with removable terminals
- All versions with screw or spring-loaded terminals

Application

- Overcurrent and undercurrent monitoring
- Monitoring the functionality of electrical loads
- Open-circuit monitoring
- Threshold switch for analog signals from 4 to 20 mA

Technical specifications

3UG4621/3UG4622 monitoring relays

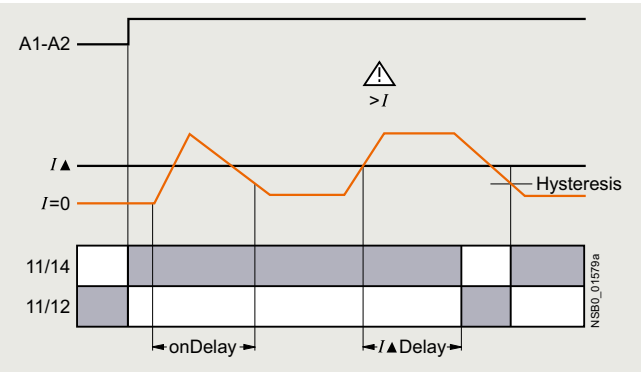
The 3UG4621 or 3UG4622 current monitoring relay is supplied with an auxiliary voltage of 24 V AC/DC or 24 to 240 V AC/DC and performs overshoot, undershoot or range monitoring of the current depending on parameterization. The device is equipped with a display and is parameterized using three buttons.

The measuring range extends from 3 to 500 mA or 0.05 to 10 A. The rms value of the current is measured. The threshold values for overshoot or undershoot can be freely configured within this range. If one of these threshold values is reached, the output relay responds according to the set principle of operation as soon as the tripping delay time I_{Del} has elapsed. This time and the ON-delay time t_{onDel} are adjustable from 0.1 to 20 s.

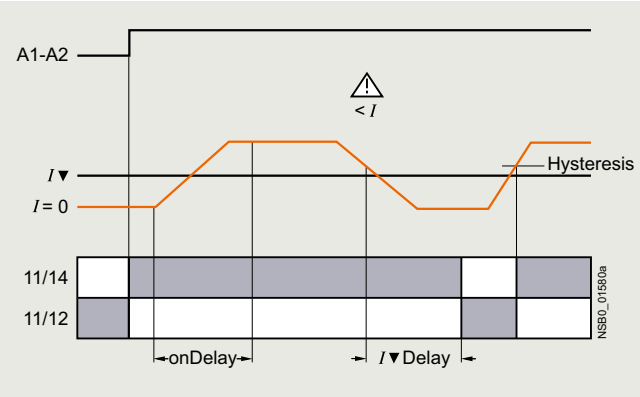
The hysteresis is adjustable from 0.1 to 250 mA or 0.01 to 5 A. The device can be operated with Manual or Auto RESET and on the basis of either the open-circuit or closed-circuit principle. You can decide here whether the output relay is to respond when the supply voltage U_S = ON is applied, or not until the lower measuring range limit of the measuring current (I > 3 mA/50 mA) is reached. One output changeover contact is available as signaling contact.

With the closed-circuit principle selected
upon application of the control supply voltage

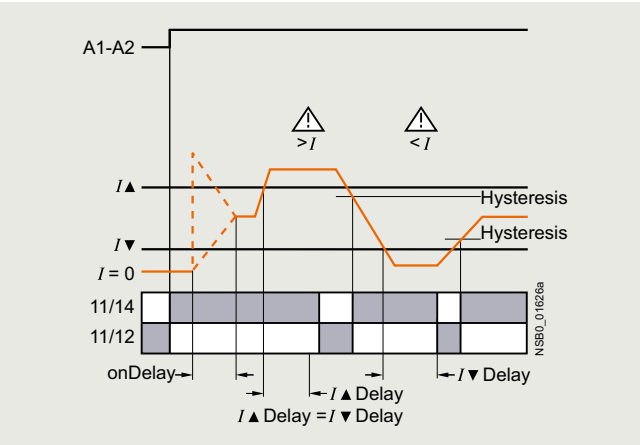
Current overshoot



Current undershoot



Range monitoring



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Current monitoring

Type		3UG4621-.AA	3UG4621-.AW	3UG4622-.AA	3UG4622-.AW
General data					
Rated insulation voltage U_i Pollution degree 3; overvoltage category III according to VDE 0110	V	690			
Rated impulse withstand voltage U_{imp}	kV	6			
Measuring circuit					
Measuring range for 1-phase AC/DC current	A	0.003 … 0.6		0.05 … 15	
Measuring frequency	Hz	40 ... 500			
Setting range for 1-phase current	A	0.003 ... 0.5		0.05 ... 10	
Load supply voltage	V	24	Max. 300[1] Max. 500[2]	24	Max. 300[1] Max. 500[2]
Control circuit					
Load capacity of the output relay • Thermal current I_{th}	A	5			
Rated operational current I_e at • AC-15/24 ... 400 V • DC-13/24 V • DC-13/125 V • DC-13/250 V	 A A A A	 3 1 0.2 0.1			
Minimum contact load at 17 V DC	mA	5			

1) With protective separation.

2) With simple separation.

Selection and ordering data

- Digitally adjustable, with illuminated LCD
- Auto or Manual RESET
- Open-circuit or closed-circuit principle
- 1 CO contact

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H

3UG4621-1AA30

3UG4622-2AW30

Measuring range	Adjustable hysteresis	Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
			Article No.	Price per PU	Article No.	Price per PU
		V				
Monitoring of undercurrent and overcurrent, startup delay and tripping delay times can be adjusted separately 0.1 ... 20 s						
3 … 500 mA AC/DC 0.05 … 10 A AC/DC	0.1 ... 250 mA 0.01 ... 5 A	24 AC/DC[1]	**3UG4621-1AA30** **3UG4622-1AA30**		**3UG4621-2AA30** **3UG4622-2AA30**	
3 … 500 mA AC/DC 0.05 … 10 A AC/DC	0.1 ... 250 mA 0.01 ... 5 A	24 ... 240 AC/DC[2]	**3UG4621-1AW30** **3UG4622-1AW30**		**3UG4621-2AW30** **3UG4622-2AW30**	

1) No electrical separation. Load supply voltage 24 V.

2) Electrical separation between control circuit and measuring circuit. Load supply voltage for protective separation max. 300 V, for simple separation max. 500 V.

Accessories, see page 10/95.

For AC currents I > 10 A it is possible to use 4NC current transformers as an accessory, see Catalog LV 10.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

SIRIUS 3UG4641 monitoring relay

The 3UG4641 power factor and active current monitoring device enables load monitoring of motors.

Whereas power factor (p.f.) monitoring is used above all for monitoring no-load operation, the active current monitoring option can be used to observe and evaluate the load factor over the entire torque range.

Benefits

- Can be used worldwide thanks to wide voltage range from 90 to 690 V (absolute limit values)
- Monitoring of even small 1-phase motors with a no-load supply current below 0.5 A
- Simple determination of threshold values by directly referencing measured variables to motor loading
- Range monitoring and active current measurement enable detection of cable breaks between control cabinets and motors, as well as phase failures
- Power factor (p.f.) or I_{res} (active current) can be selected as the measurement principle
- Width 22.5 mm
- All versions with removable terminals
- All versions with screw or spring-loaded terminals

Application

- No-load monitoring and load shedding, such as in the event of a V-belt tear
- Underload monitoring in the low-end performance range, e.g. in the event of pump no-load operation
- Monitoring of overload, e.g. due to a dirty filter system
- Simple power factor monitoring in power systems for control of compensation equipment
- Broken cable between control cabinet and motor

Technical specifications

3UG4641 monitoring relays

The 3UG4641 monitoring relay is self-powered and serves the 1-phase monitoring of the power factor or performs overshoot, undershoot or range monitoring of the active current depending on how it is parameterized. The load to be monitored is connected upstream of the IN terminal. The load current flows through the terminals IN and Ly/N. The setting range for the power factor is 0.1 to 0.99 and for the active current I_{res} it is 0.2 to 10 A. If the control supply voltage is switched on and no load current flows, the display will show I < 0.2 A and a symbol for overshoot, undershoot or range monitoring. If the motor is now switched on and the current exceeds 0.2 A, the set ON-delay time begins. During this time, if the set limit values are undershot or exceeded, this does not lead to a relay reaction of the changeover contact. If the operational flowing active current and/or the power factor value falls below or exceeds the respective set threshold value, the spike delay begins. When this time has expired, the relay changes its switch position. The relevant measured variables for overshooting and undershooting in the display flash. If monitoring for active current undershoot is switched off (I_{res}▼= OFF), and if the load current undershoots the lower measuring range threshold (0.2 A), the CO contacts remain unchanged.
If a threshold value is set for the monitoring of active current undershooting, then undershooting of the measuring range threshold (0.2 A) will result in a response of the CO contacts.

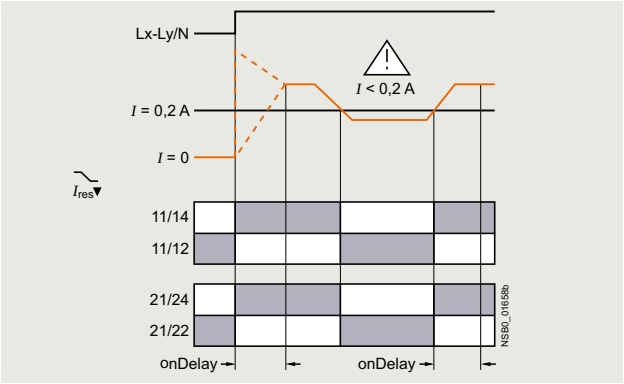
The relay operates either according to the open-circuit or closed-circuit principle. If the device is set to Auto RESET (Memory = No), depending on the set principle of operation, the switching relay returns to its initial state and the flashing ends when the hysteresis threshold is reached.

If Manual RESET is selected in the menu (Memory = Yes), the switching relay remains in its current switching state and the current measured value and the symbol for undershooting and overshooting continue to flash, even when the measured variable reaches a permissible value again. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ keys for 2 seconds, or by switching the supply voltage off and back on again.

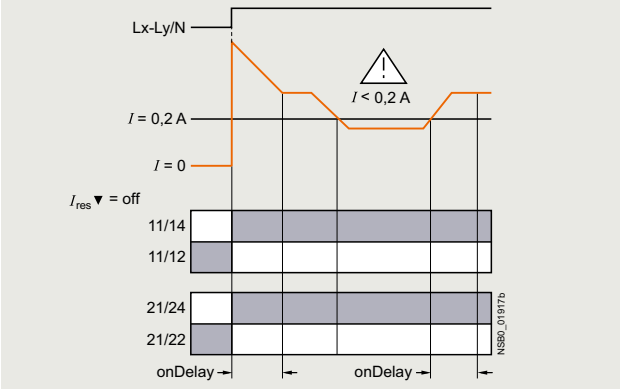
<u>With the closed-circuit principle selected</u>

Response in the event of undershooting the measuring range limit

- With activated monitoring of I_{res}▼



- With deactivated monitoring of active current undershooting



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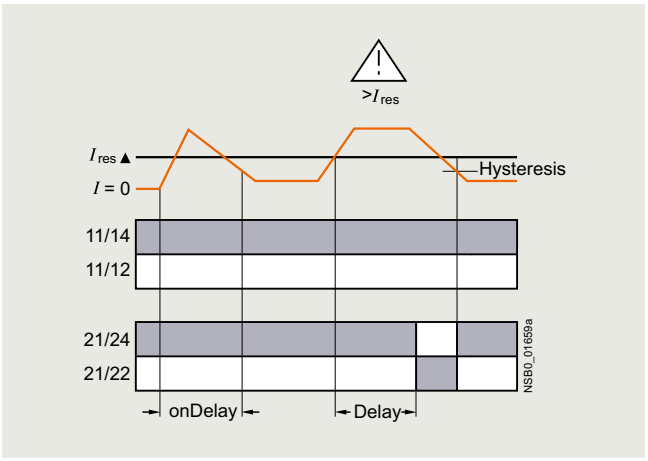
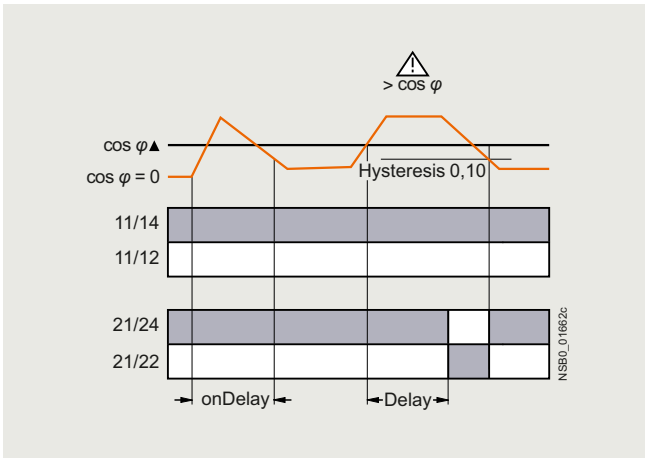
Power factor and active current monitoring

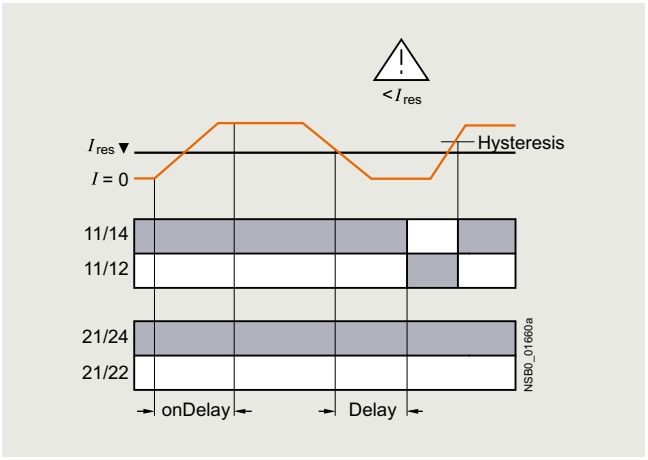
Overshooting of active current



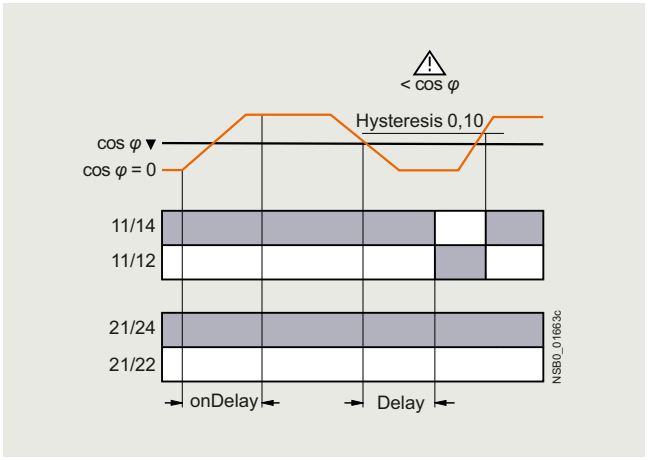
Overshooting of power factor



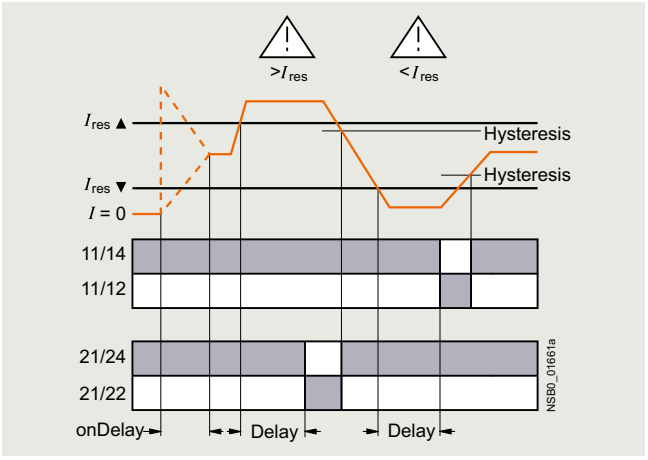
Undershooting of active current



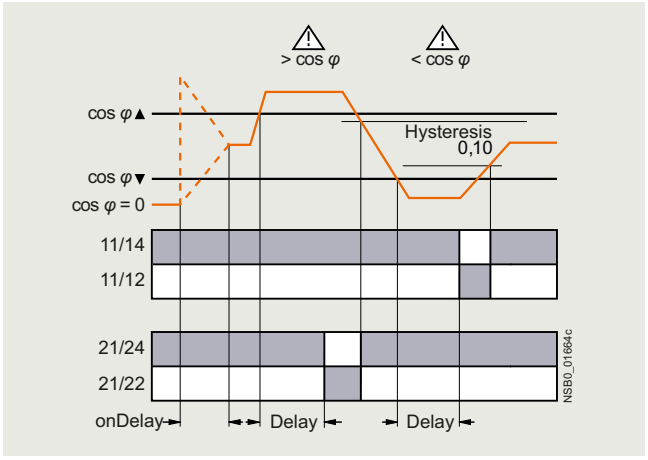
Undershooting of power factor



Range monitoring of active current



Range monitoring of power factor



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Type		3UG4641
General data		
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III according to VDE 0110	V	690
Rated impulse withstand voltage U_{imp}	kV	6
Control circuit		
Number of CO contacts for auxiliary contacts		2
Load capacity of the output relay • Thermal current I_{th}	A	5
Rated operational current I_e at • AC-15/24 ... 400 V • DC-13/24 V • DC-13/125 V • DC-13/250 V	 A A A A	 3 1 0.2 0.1
Minimum contact load at 17 V DC	mA	5

Selection and ordering data

- For monitoring the power factor and the active current I_{res} (p.f. x I)
- Suitable for 1-phase and 3-phase currents
- Digitally adjustable, with illuminated LCD
- Overshoot, undershoot or range monitoring adjustable
- Upper and lower threshold value can be adjusted separately
- Permanent display of actual value and tripping state
- 1 changeover contact each for undershoot/overshoot

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H

Measuring range		Adjustable hysteresis		ON-delay time adjustable onDel	Tripping delay time adjustable I▲Del/ I▼Del, φ▲Del/ φ▼Del	Rated control supply voltage U_s [1] 50/60 Hz AC	Screw terminals		Spring-loaded terminals	
for power factor	for active current I_{res}	for power factor	for active current I_{res}				Article No.	Price per PU	Article No.	Price per PU
P.f.	A	P.f.	A	s	s	V				
0.10 ... 0.99	0.2 ... 10.0	0.1	0.1 ... 2.0	0 ... 99	0.1 ... 20.0	90 ... 690	**3UG4641-1CS20**		**3UG4641-2CS20**	

[1] Absolute limit values.

Accessories, see page 10/95.

For AC active currents I_{res} > 10 A it is possible to use 4NC current transformers as an accessory, see Catalog LV 10.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

SIRIUS 3UG4625 monitoring relay

The 3UG4625 residual-current monitoring relays are used in conjunction with the 3UL23 residual-current transformers for monitoring plants in which higher residual currents are increasingly expected due to ambient conditions. Monitoring encompasses pure AC residual currents or AC residual currents with a pulsating DC fault current component (transformer, type A in accordance with DIN VDE 0100-530/IEC TR 60755).

Benefits

- Worldwide use thanks to wide voltage range from 24 to 240 V AC/DC
- High measuring accuracy of ±7.5%
- Permanent self-monitoring
- Variable threshold values for warning and disconnection
- Freely configurable delay times and RESET response
- Permanent display of the actual value and fault diagnostics via the display
- High level of flexibility and space saving through installation of the transformer inside or outside the control cabinet
- Width 22.5 mm
- All versions with removable terminals
- All versions with screw or spring-loaded terminals

Application

Monitoring of plants in which residual currents can occur, e.g. due to dust deposits or moisture, porous cables and leads, or capacitive residual currents.

Technical specifications

3UG4625 monitoring relays

The main conductor, and any neutral conductor to which a load is connected, are routed through the opening of the toroidal core of a residual-current transformer. A secondary winding is placed around this toroidal core to which the monitoring relay is connected.

If operation of a plant is fault-free, the sum of the inflowing and outward currents equals zero. No current is then induced in the secondary winding of the residual-current transformer.

However, if an insulation fault occurs, the sum of the inflowing currents is greater than that of the outward currents. The differential current – i.e. the residual current – induces a secondary current in the secondary winding of the transformer. This current is evaluated in the monitoring relay and is used on the one hand to display the actual residual current and on the other, to switch the relay if the set warning or tripping threshold is overshot.

If the measured residual current exceeds the set warning value, the associated changeover contact instantly changes the switching state and an indication appears on the display.

If the measured residual current exceeds the set tripping value, the set delay time begins and the associated relay symbol flashes. On expiry of this time, the associated changeover contact changes the switching state.

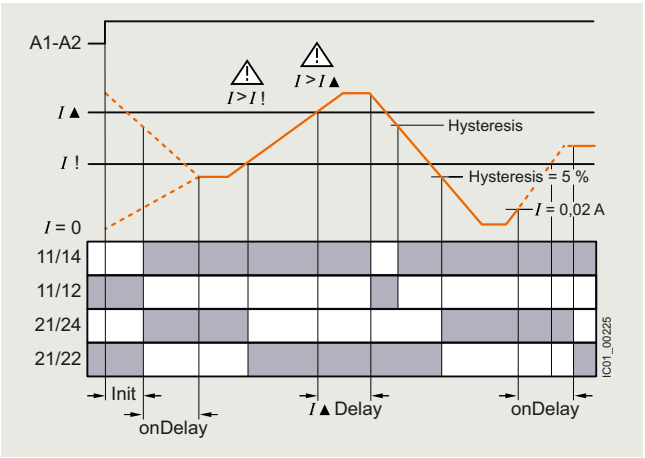
ON-delay time for motor start

To be able to start a drive when a residual current is detected, the output relays switch to the OK state for an adjustable ON-delay time depending on the selected open-circuit principle or closed-circuit principle.

The changeover contacts do not react if the set threshold values are overshot during this period.

With the closed-circuit principle selected

Residual-current monitoring with Auto RESET (Memory = no)



If the device is set to Auto RESET, the relay switches back to the OK state for the tripping value after tripping once the value falls below the set hysteresis threshold and the display stops flashing.

The associated relay changes its switching state if the value falls below the fixed hysteresis value of 5% of the set warning value.

Any overshoots are therefore not stored.

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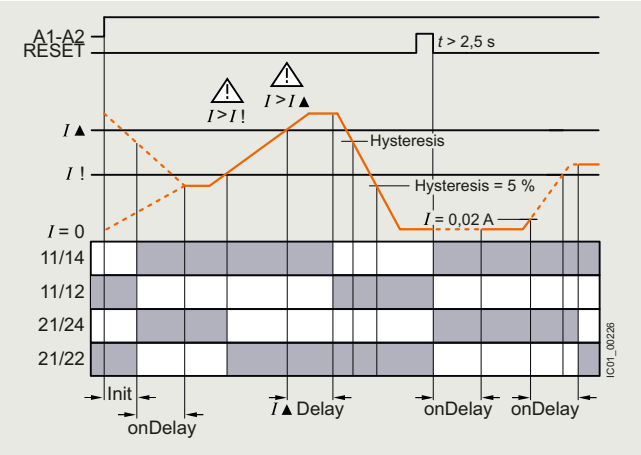
Residual-current monitoring with Manual RESET (Memory = yes)



If Manual RESET is selected in the menu, the output relays remain in their current switching state and the current measured value and the symbol for overshooting continue to flash, even when the measured residual current returns to a permissible value. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ keys for > 2 seconds, or by switching the supply voltage off and back on again.

Note:

Do not ground the neutral conductor downstream of the residual-current transformer as otherwise residual current monitoring functions can no longer be ensured.

Type		3UG4625-1CW30, 3UG4625-2CW30
General data		
Insulation voltage for overvoltage category III according to IEC 60664 for pollution degree 3, rated value	V	300
Impulse withstand voltage, rated value U_{imp}	kV	4
Control circuit		
Number of CO contacts for auxiliary contacts		2
Thermal current of the non-solid-state contact blocks, maximum	A	5
Current-carrying capacity of the output relay		
• At AC-15 at 250 V at 50/60 Hz	A	3
• At DC-13		
- At 24 V	A	1
- At 125 V	A	0.2
- At 250 V	A	0.1
Operational current at 17 V, minimum	mA	5

Selection and ordering data

- For monitoring residual currents from 0.03 to 40 A, from 16 to 400 Hz
- For 3UL23 residual-current transformers with feed-through opening from 35 to 210 mm
- Permanent self-monitoring
- Certified in accordance with IEC 60947, functionality corresponds to IEC 62020
- Digitally adjustable, with illuminated LCD
- Permanent display of actual value and tripping state
- Separately adjustable limit value and warning threshold
- 1 changeover contact each for warning threshold and tripping threshold

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H

3UG4625-1CW30

3UG4625-2CW30

Measurable current	Adjustable response value current	Switching hysteresis	Adjustable ON-delay time	Control supply voltage at AC at 50 Hz, rated value	at AC at 60 Hz, rated value	at DC, rated value	Screw terminals Article No.	Screw terminals Price per PU	Spring-loaded terminals Article No.	Spring-loaded terminals Price per PU
A	A	%	s	V	V	V				
0.01 ... 43	0.03 ... 40	0 ... 50	0 ... 20	24 ... 240	24 ... 240	24 ... 240	**3UG4625-1CW30**		**3UG4625-2CW30**	

Accessories, see page 10/95.

For the 3UL23 residual-current transformers, see page 10/84.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

SIRIUS 3UL23 residual-current transformer

The 3UL23 residual-current transformers detect residual currents in machines and plants. They are suitable for pure AC residual currents or AC residual currents with a pulsating DC fault current component (transformer, type A in accordance with DIN VDE 0100-530/IEC TR 60755).

Together with the 3UG4625, 3UG4825 residual-current monitoring relays for IO-Link or the SIMOCODE 3UF motor management and control device they enable residual-current and ground-fault monitoring.

The 3UL2302-1A and 3UL2303-1A residual-current transformers with a feed-through opening from 35 to 55 mm can be mounted in conjunction with the 3UL2900 accessories on a TH 35 DIN-rail according to IEC 60715.

Selection and ordering data

Diameter of the bushing opening	Connectable cross-section of the connecting terminal	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
mm	mm^2	Article No. / Price per PU			
Residual-current transformers (essential accessories for 3UG4625, 3UG4825)					
35	2.5	**3UL2302-1A**	1	1 unit	41H
55	2.5	**3UL2303-1A**	1	1 unit	41H
80	2.5	**3UL2304-1A**	1	1 unit	41H
110	2.5	**3UL2305-1A**	1	1 unit	41H
140	2.5	**3UL2306-1A**	1	1 unit	41H
210	4	**3UL2307-1A**	1	1 unit	41H

Accessories

	Version	Article No. / Price per PU	PU (UNIT, SET, M)	PS*	PG
Adapters					
3UL2900	**Adapters** For mounting on DIN-rail for 3UL23 to diameter 55 mm	**3UL2900**	1	2 units	41H

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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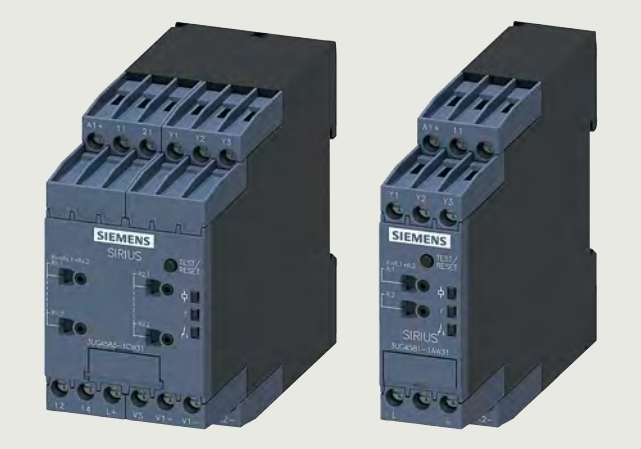
Overview



SIRIUS 3UG458 insulation monitor

Insulation monitoring relays are used for monitoring the insulation resistance between ungrounded 1-phase or 3-phase AC supplies and a protective conductor.

Ungrounded, i.e. isolated networks (IT networks) are always used where high demands are placed on the reliability of the power supply, e.g. emergency lighting systems. IT systems are supplied via an isolating transformer or by power supply sources such as batteries or a generator. While an initial insulation fault between a phase conductor and the ground effectively grounds the conductor, as a result no circuit has been closed, so it is possible to continue work in safety (single-fault safety). However, the fault must be rectified as quickly as possible before a second insulation fault occurs (e.g. according to DIN VDE 0100-410). For this purpose insulation monitoring relays are used, which constantly measure the resistance to ground of the phase conductor and the neutral conductor, reporting a fault immediately if insulation resistance falls below the set value so that either a controlled shutdown can be performed or the fault can be rectified without interrupting the power supply.

Two device series

- 3UG4581 insulation monitoring relays for ungrounded AC networks
- 3UG4582 and 3UG4583 insulation monitoring relays for ungrounded DC and AC networks

Insulation monitoring for ungrounded AC networks

The 3UG4581 insulation monitoring relays are used to monitor insulation resistance according to IEC 61557-8 in ungrounded AC networks with rated voltages of up to 400 V.

These devices can monitor control circuits (1-phase) and main circuits (3-phase).

They measure insulation resistances between system cables and system ground. If the value falls below the threshold value, the output relays are switched to fault status.

In the case of 3UG4581 a higher-level DC measuring signal is used. The higher-level DC measuring signal and the resulting current are used to determine the value of the insulation resistance of the network which is to be measured.

Insulation monitoring relay for ungrounded DC and AC networks

The 3UG4582 and 3UG4583 insulation monitoring relays are used to monitor insulation resistance in ungrounded IT AC or DC networks according to IEC 61557-8.

They measure insulation resistances between system cables and system ground. If the value falls below the threshold value, the output relays are switched to fault status. With these monitoring relays, which are suitable for both AC and DC networks, a pulsed test signal is fed into the network to be monitored and the insulation resistance is determined.

The pulsed test signal changes its form according to insulation resistance and network loss capacitance. The changed form is used to predict the changed insulation resistance.

If the predicted insulation resistance matches the insulation resistance calculated in the next measurement cycle, and is lower than the threshold value, the output relays are activated or deactivated, depending on the device configuration. This measurement principle is also suitable for identifying symmetrical insulation faults.

3UG4983 voltage reducer module

3UG4983 voltage reducer module

The 3UG4983-.AA01 voltage reducer module is available for the 3UG4583 insulation monitoring relay to extend the network voltage range to 690 V AC and 1000 V DC.

Connection methods

With the updated enclosure, future-proof push-in technology is available alongside the tried-and-trusted screw terminals.

Push-in is a form of spring-loaded connection system allowing wiring of terminals without tools. These terminals are self-adjusting, i.e. the regular tightening needed with screw terminals is not necessary.

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Insulation monitoring

Benefits

- Devices for AC and DC systems
- All devices have a wide control supply voltage range
- Direct connection to networks with mains voltages of up to 690 V AC and 1 000 V DC by means of a voltage reducer module
- For AC supply systems: Frequency range 15 to 400 Hz
- Monitoring of broken conductors
- Monitoring of setting errors
- Safety in use thanks to integrated system test after startup
- Option of resetting and testing (by means of button on front or using control contact)
- New predictive measurement principle allows very fast response times
- All versions with screw or spring-loaded terminals with push-in functionality

Application

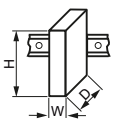
IT networks are used, for example:

- In emergency power supplies
- In safety lighting systems
- In industrial production facilities with high availability requirements (chemical industry, automobile manufacturing, printing plants)
- In shipping and railways
- For mobile generators (aircraft)
- For renewable energies, such as wind energy and photovoltaic power plants
- In the mining industry

Technical specifications

More information

For equipment manuals, see
- https://support.industry.siemens.com/cs/ww/en/view/54382552
- https://support.industry.siemens.com/cs/ww/en/view/54382528

Type		3UG4581-.AW31	3UG4582-.AW31	3UG4583-.CW31	3UG4983-.AA01
General data					
Dimensions (W x H x D) 	mm	22.5 x 78 x 100		45 x 78 x 100	
Degree of protection IP on the front according to IEC 60529		IP20			
Mounting position		Any			
Type of mounting		Snap-on mounting on 35 mm DIN-rail			
Ambient temperature during operation	°C	-25 ... +60			
Fault storage		✓	✓	✓	--
Measuring circuit					
Measurable voltage					
• At DC	V	--	0 ... 300	0 ... 600	0 ... 1 000
• At AC	V	0 ... 400	0 ... 250	0 ... 400	0 ... 690
Measurable line frequency	Hz	50 ... 60		15 ... 400	
Adjustable response value impedance					
• 1	kΩ	1 ... 100			--
• 2	kΩ	--		2 ... 200	--
System leakage capacitance	µF	10		20	
Control circuit					
Control supply voltage					
• At AC					
- At 50 Hz	V	24 ... 240			--
- At 60 Hz	V	24 ... 240			--
• At DC	V	24 ... 240			--
Operating frequency	Hz	15 ... 400			
Impulse withstand voltage	V	6 000		4 000	8 000
Number of CO contacts with delayed switching		1		2	0
Thermal current of the non-solid-state contact blocks, maximum	A	4			

✓ Available
-- Not available

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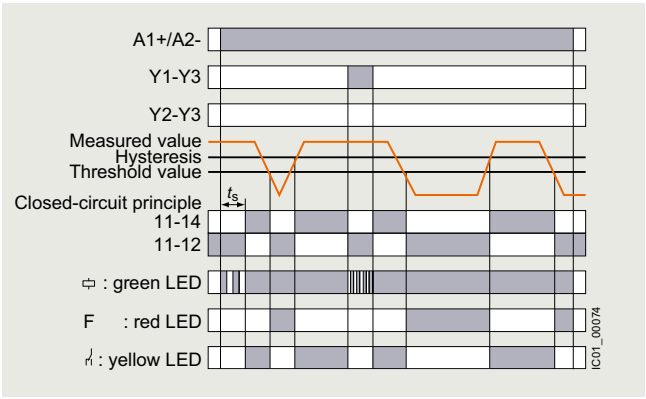
Type	**3UG4581-1AW31** **3UG4582-1AW31** **3UG4583-1CW31** **3UG4983-1AA01**	**3UG4581-2AW31** **3UG4582-2AW31** **3UG4583-2CW31** **3UG4983-2AA01**
Type of electrical connection	**Screw terminals**	**Spring-loaded terminals (push-in)**
Tightening torque	0.6 … 0.8 Nm	--
Type of connectable conductor cross-sections		
• Finely stranded	1 x (0.5 ... 4.0 mm^2), 2 x (0.5 ... 2.5 mm^2)	2 x (0.5 ... 1.5 mm^2)
• Finely stranded		
- Without end sleeves	1 x (0.5 ... 2.5 mm^2), 2 x (0.5 ... 1.5 mm^2)	2 x (0.5 ... 1.5 mm^2)
- With end sleeves	1 x (0.5 ... 2.5 mm^2), 2 x (0.5 ... 1.5 mm^2)	2 x (0.5 ... 1.5 mm^2)
• For AWG cables		
- Solid	1 x (20 ... 12), 2 x (20 ... 14)	2 x (20 ... 16)
- Stranded	1 x (18 ... 14), 2 x (18 ... 16)	2 x (18 ... 16)

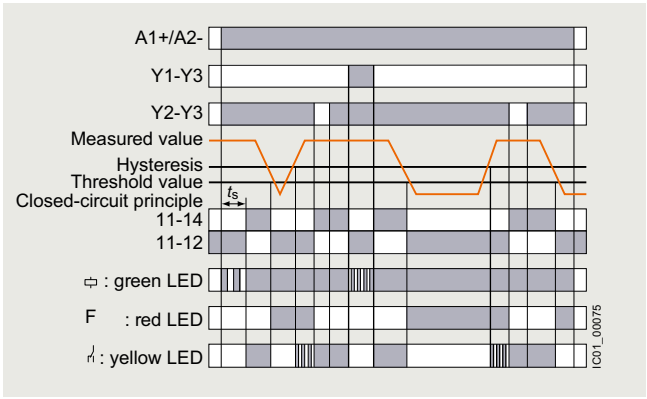
With the closed-circuit principle selected

- Insulation resistance monitoring without fault storage, with Auto RESET

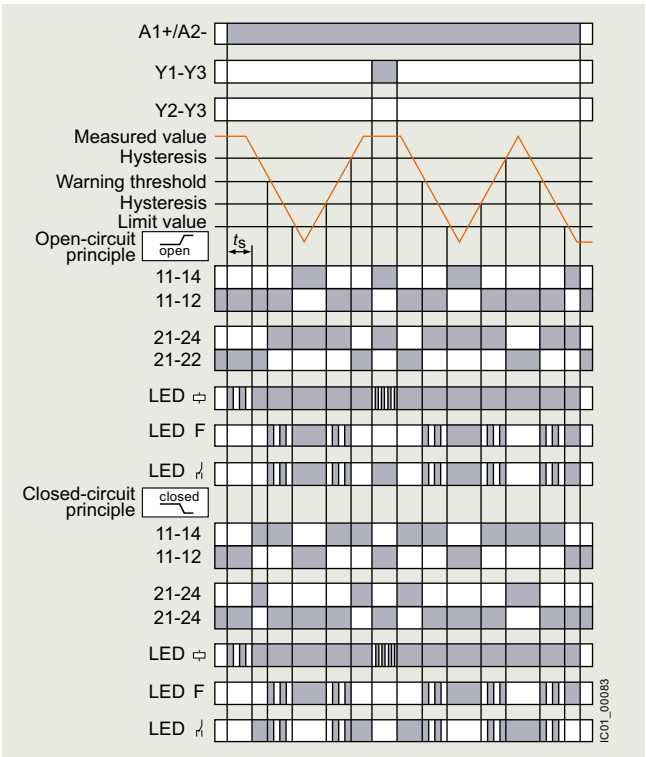


3UG4581, 3UG4582 monitoring relays

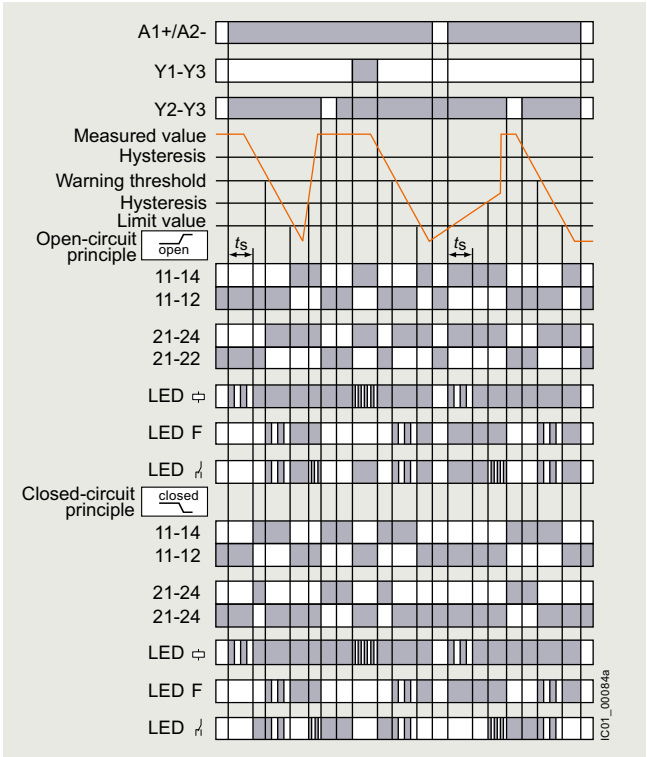
- Insulation resistance monitoring with fault storage and Manual RESET



3UG4581, 3UG4582 monitoring relays



3UG4583 monitoring relays



3UG4583 monitoring relays

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Insulation monitoring

Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H

3UG4581-1AW31

3UG4582-1AW31

3UG4583-1CW31

3UG4583-1AA01

Measurable voltage at AC	Measurable voltage at DC	Type of voltage of the control supply voltage, value range	System leakage capacitance	Number of CO contacts with delayed switching	Adjustable response value impedance 1	Adjustable response value impedance 2	Screw terminals Article No.	Screw terminals Price per PU	Spring-loaded terminals (push-in) Article No.	Spring-loaded terminals (push-in) Price per PU
V	V	V AC/DC	µF		kΩ	kΩ				
Insulation monitors										
0 ... 460	--	24 ... 240	10	1	1 ... 100	--	**3UG4581-1AW31**		**3UG4581-2AW31**	
0 ... 287.5	0 ... 345	24 ... 240	10	1	1 ... 100	--	**3UG4582-1AW31**		**3UG4582-2AW31**	
0 ... 460	0 ... 690	24 ... 240	20	2	1 ... 100	2 ... 200	**3UG4583-1CW31**		**3UG4583-2CW31**	
Voltage reducer modules										
For the 3UG4583 insulation monitoring relay for extending the network voltage range to 690 V AC and 1000 V DC										
0 ... 460	0 ... 690	--	20	0	--	--	**3UG4983-1AA01**		**3UG4983-2AA01**	

10

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

SIRIUS 3UG4501 monitoring relay

The 3UG4501 level monitoring relay is used in combination with 2- or 3-pole sensors to monitor the levels of conductive liquids.

Benefits

- Can be used worldwide thanks to wide voltage range from 24 to 240 V (absolute limit values)
- Individually shortenable 2- and 3-pole wire electrodes for easy mounting from above/below
- Bow electrodes for installation from the side, for larger filling levels and minimum space requirements
- Can be flexibly adapted to different conductive liquids through analog setting of the sensitivity from 2 to 200 kΩ
- Compensation for wave movements through tripping delay times from 0.1 to 10 s
- Upstream or downstream function selectable
- All versions with removable terminals
- All versions with screw or spring-loaded terminals

Application

- Single-point and two-point level monitoring
- Overflow protection
- Dry-running protection
- Leak monitoring

Technical specifications

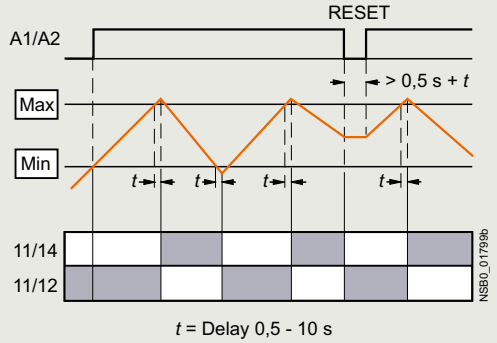
3UG4501 monitoring relays

The principle of operation of the 3UG4501 level monitoring relay is based on measuring the electrical resistance of the liquid between two immersion sensors and a reference terminal. If the measured value is lower than the sensitivity set at the front, the output relay changes its switching state. In order to preclude active current undershooting of the liquid, the sensors are supplied with alternating current.

Two-point control

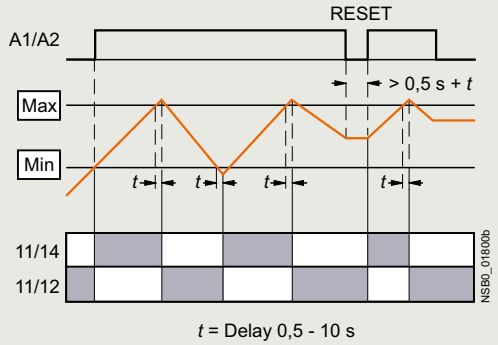
The output relay changes its switching state as soon as the liquid level reaches the maximum sensor, while the minimum sensor is submerged. The relay returns to its original switching state as soon as the minimum sensor no longer has contact with the liquid.

OVER, two-point control



t = Delay 0,5 - 10 s

UNDER, two-point control



t = Delay 0,5 - 10 s

Note:

It is also possible to connect other resistance sensors to the Min and Max terminals in the range 2 to 200 kΩ, e.g. photoresistors, temperature sensors, encoders based on resistance, etc. The monitoring relay can therefore also be used for other applications as well as for monitoring the levels of liquids.

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Level monitoring

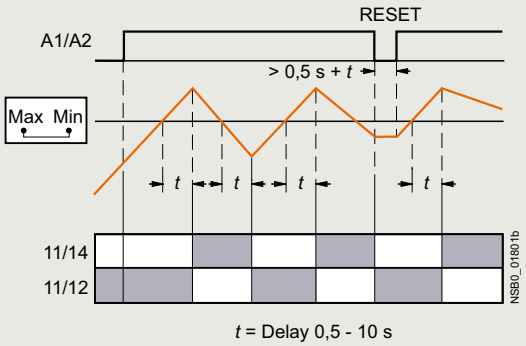
Single-point control

If only one level is being controlled, the terminals for Min and Max on the monitoring relay are bridged. The output relay changes its switching state as soon as the liquid level is reached and returns to its original switching state once the sensor no longer has contact with the liquid.

In order to prevent premature tripping of the switching function caused by wave motion or frothing, even though the set level has not been reached, it is possible to delay this function by 0.5 to 10 s.

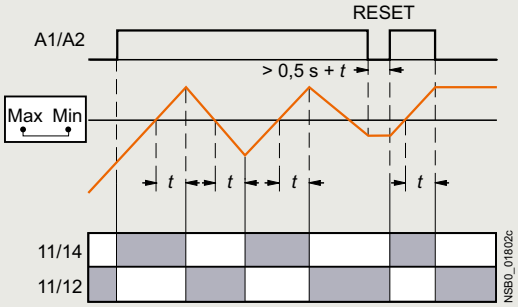
For safe resetting, the control supply voltage must be interrupted for at least the set delay time of +0.5 s.

OVER, single-point control



t = Delay 0,5 - 10 s

UNDER, single-point control



t = Delay 0,5 - 10 s

Type		3UG4501
General data		
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III according to VDE 0110	V	300
Rated impulse withstand voltage U_{imp}	kV	4
Measuring circuit		
Electrode current, max. (typ. 70 Hz)	mA	1
Electrode voltage, max. (typ. 70 Hz)	V	15
Sensor feeder cable	m	Max. 100
Conductor capacitance of sensor cable[1)]	nF	Max. 10
Control circuit		
Load capacity of the output relay Thermal current I_{th}	A	5
Rated operational current I_e at • AC-15/24 ... 400 V • DC-13/24 V • DC-13/125 V • DC-13/250 V	 A A A A	 3 1 0.2 0.1
Minimum contact load at 17 V DC	mA	5

1) The sensor cable does not necessarily have to be shielded, but we do not recommend installing this cable parallel to the power supply lines. It is also possible to use a shielded cable, whereby the shield has to be connected to the M terminal.

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Selection and ordering data

- For level monitoring of electrically conductive liquids
- Control principle: inlet or sequence control adjustable per rotary switch
- Single-point and two-point control possible
- Analogically adjustable sensitivity (specific resistance of the liquid)
- Analogically adjustable tripping delay time
- 1 yellow LED for displaying the relay state
- 1 green LED for displaying the applied control supply voltage
- 1 CO contact

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H

Sensitivity	Tripping delay time	Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
			Article No.	Price per PU	Article No.	Price per PU
kΩ	s	V AC/DC				
2 ... 200	0.5 … 10	24[1]	**3UG4501-1AA30**		**3UG4501-2AA30**	
		24 ... 240	**3UG4501-1AW30**		**3UG4501-2AW30**	

[1] The rated control supply voltage and the measuring circuit are not electrically separated.

Accessories, see page 10/95.

Note:

Level monitoring sensors are available from various providers. We recommend sensors made by Jacob GmbH (see "External partners", page 16/18). The previous 3UG3 level sensors are also available from here.

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Speed monitoring

Overview

SIRIUS 3UG4651 monitoring relay

The 3UG4651 monitoring relay is used in combination with a sensor to monitor motor drives for overspeed and/or underspeed.

Furthermore, this relay is ideal for all functions where a continuous pulse signal needs to be monitored (e.g. belt travel monitoring, completeness monitoring, passing monitoring, clock-time monitoring).

Benefits

- Can be used worldwide thanks to wide voltage range from 24 to 240 V (absolute limit values)
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Permanent display of actual value and fault type
- Use of up to 10 sensors per rotation for extremely slowly rotating motors
- Two-wire or three-wire sensors and sensors with a mechanical switching output or solid-state output can be connected
- Auxiliary voltage for sensor integrated
- All versions with removable terminals
- All versions with screw or spring-loaded terminals

Application

- Slip or tear of a belt drive
- Overload monitoring
- Transport monitoring for completeness

Technical specifications

3UG4651 monitoring relays

The speed monitoring relay operates according to the principle of period duration measurement.

In the monitoring relay, the time between two successive rising edges of the pulse encoder is measured and compared to the minimum and/or maximum permissible period duration calculated from the set limit values for the speed.

Thus, the period duration measurement recognizes any deviation in speed after just two pulses, even at very low speeds or in the case of extended pulse gaps.

By using up to ten pulse encoders evenly distributed around the circumference, it is possible to shorten the period duration, and in turn the response time. By taking into account the number of sensors in the monitoring relay, the speed continues to be indicated in rpm.

ON-delay time for motor start

To be able to start a motor drive, and depending on whether the open-circuit or closed-circuit principle is selected, the output relay switches to the OK state during the ON-delay time, even if the speed is still below the set value.

The ON-delay time is started by either switching on the auxiliary voltage or, if the auxiliary voltage is already applied, by actuating the respective NC contact (e.g. auxiliary contact).

Speed monitoring with Auto RESET (Memory = no)

If the device is set to Auto RESET, the output relay switches to the OK state, once the adjustable hysteresis threshold is reached in the range of 0.1 to 99.9 rpm and the flashing stops. Any overshoots or undershoots are therefore not stored.

Speed monitoring with Manual RESET (Memory = yes)

If Manual RESET is selected in the menu, the output relay remains in its current switching state and the current measured value and the symbol for overshooting/undershooting continue to flash, even when the speed returns to a permissible value. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ buttons for > 2 s, by connecting the RESET device terminal to 24 V DC or by switching the control supply voltage off and back on again.

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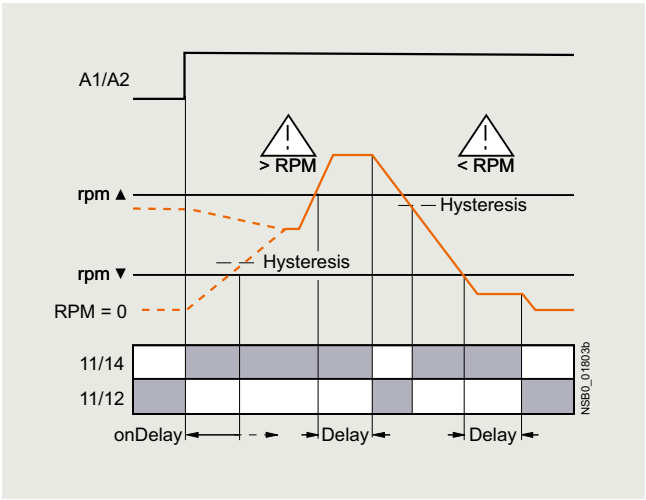
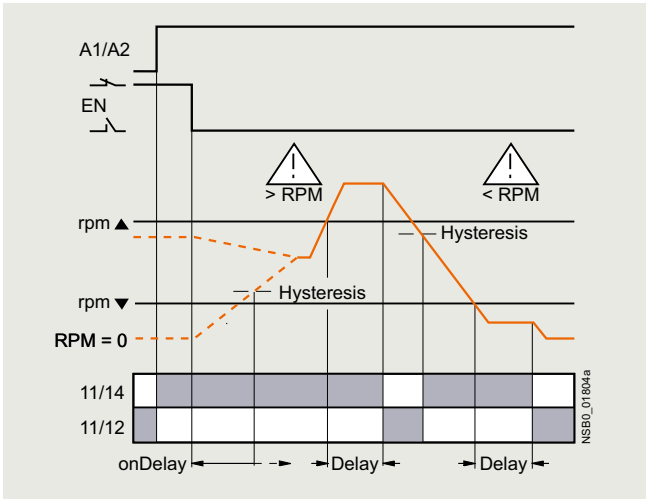
With the closed-circuit principle selected

Range monitoring without enable input



Range monitoring with enable input



Type		3UG4651
General data		
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III according to VDE 0110	V	300
Rated impulse withstand voltage U_{imp}	kV	4
Measuring circuit		
Sensor supply		
• For three-wire sensor (24 V/0 V)	mA	Max. 50
• For two-wire NAMUR sensor (8V2)	mA	Max. 8.2
Signal input		
• IN1	kΩ	16, three-wire sensor, pnp operation
• IN2	kΩ	1, floating contact, two-wire NAMUR sensor
Voltage level		
• For level 1 at IN1	V	4.5 ... 30
• For level 0 at IN1	V	0 ... 1
Current level		
• For level 1 at IN2	mA	> 2.1
• For level 0 at IN2	mA	< 1.2
Minimum pulse duration of signal	ms	5
Minimum interval between 2 pulses	ms	5
Control circuit		
Number of CO contacts for auxiliary contacts		1
Load capacity of the output relay Thermal current I_{th}	A	5
Rated operational current I_e at		
• AC-15/24 ... 400 V	A	3
• DC-13/24 V	A	1
• DC-13/125 V	A	0.2
• DC-13/250 V	A	0.1
Minimum contact load at 17 V DC	mA	5

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Speed monitoring

Selection and ordering data

- For speed monitoring in revolutions per minute (rpm)
- Two-wire or three-wire sensor with mechanical or solid-state switching output can be connected
- Two-wire NAMUR sensor can be connected
- Sensor supply 24 V DC/50 mA integrated
- Input frequency 0.1 to 2 200 pulses per minute (0.0017 to 36.7 Hz)
- With or without enable signal for the drive to be monitored
- Digitally adjustable, with illuminated LCD
- Overshoot, undershoot or range monitoring adjustable
- Number of pulses per revolution can be adjusted
- Upper and lower threshold value can be adjusted separately
- Auto, Manual or Remote RESET options after tripping
- Permanent display of actual value and tripping state
- 1 CO contact

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H

Measuring range	Hysteresis	ON-delay time	Tripping delay time	Pulses per revolution	Rated control supply voltage U_s	Screw terminals		Spring-loaded terminals	
						Article No.	Price per PU	Article No.	Price per PU
rpm	rpm	s	s		V AC/DC				
0.1 ... 2 200	OFF 0.1 ... 99.9	0 ... 900	0.1 ... 99.9	1 ... 10	24[1]	**3UG4651-1AA30**		**3UG4651-2AA30**	
					24 ... 240	**3UG4651-1AW30**		**3UG4651-2AW30**	

[1] The rated control supply voltage and the measuring circuit are not electrically separated.

Accessories, see page 10/95.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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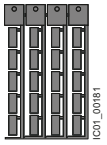
Selection and ordering data

	Use	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for enclosures							
3RP1902	For 3UG4	**Sealable covers** For securing against unauthorized adjustment of setting knobs	**3RP1902**		1	5 units	41H
3RP1903	For 3UG4	**Push-in lugs** For screw fixing, 2 units are required for each device	**3RP1903**		1	10 units	41H
Blank labels							
 3RT2900-1SB20	For 3UG4	**Unit labeling plates**[1] For SIRIUS devices • 20 mm x 7 mm, titanium gray[1]	**3RT2900-1SB20**		100	340 units	41B
Tools for opening spring-loaded terminals							
3RA2908-1A	For auxiliary circuit connections	**Screwdrivers** For all SIRIUS devices with spring-loaded terminals	**Spring-loaded terminals**				
		Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**3RA2908-1A**		1	1 unit	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/18.

Note:

For products for mechanical bearing monitoring, e.g. condition monitoring systems, see www.siemens.com/siplus-cms.

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General data

Overview

SIRIUS 3UG48 monitoring relays

More information

Homepage, see www.siemens.com/sirius-monitoring-relays
Industry Mall, see www.siemens.com/product?3UG48
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=SIRIUSRelais
Conversion tool, see www.siemens.com/conversion-tool

The SIRIUS 3UG4 monitoring relays for electrical and mechanical variables monitor all important characteristics that allow conclusions to be drawn about the functionality of a plant. Both sudden disturbances and gradual changes, which may indicate the need for maintenance, are detected.

Thanks to their relay outputs, the monitoring relays permit direct disconnection of the affected system components and alerting, e.g. by the triggering of a warning light. Thanks to adjustable delay times the 3UG4 monitoring relays can respond very flexibly to brief faults such as voltage dips or load changes and can thus avoid unnecessary alarms and disconnections and increase system availability.

3UG48 monitoring relays for IO-Link

The SIRIUS 3UG48 monitoring relays for IO-Link also offer many other options based upon the monitoring functions of the tried-and-tested SIRIUS 3UG4 monitoring relays:

- Measured value transmission to a controller, including resolution and unit, may be parameterizable as to which value is cyclically transmitted
- Transmission of alarm flags to a controller
- Full diagnostics capability by inquiry as to the cause of the fault in the diagnostics data record
- Remote parameterization is also possible, in addition to or instead of local parameterization
- Rapid parameterization of the same devices by duplication of the parameterization in the controller
- Parameter transmission through uploading to a controller by IO-Link call or by parameter server (if IO-Link master from IO-Link specification V1.1 and higher is used)
- Consistent central data storage in the event of parameter change locally or via a controller
- Automatic reparameterizing when devices are exchanged
- Blocking of local parameterization via IO-Link possible
- Faults are saved in parameterizable and non-volatile fashion to prevent an automatic startup after voltage failure and to make sure diagnostics data are not lost
- Integration into the automation level provides the option of parameterizing the monitoring relays at any time via a display unit, or displaying the measured values in a control room or locally at the machine/control cabinet.

Even without communication via IO-Link the devices continue to function fully autonomously:

- Parameterization can take place locally at the device, independently of a controller.
- In the event of failure or before the controller becomes available the monitoring relays work as long as the control supply voltage (24 V DC) is present.
- If the monitoring relays are operated without the controller, the 3UG48 monitoring relays have, thanks to the integrated SIO mode, an additional semiconductor output, which switches when the adjustable warning threshold is exceeded.

Thanks to the combination of autonomous monitoring relay function and integrated IO-Link communication, redundant sensors and/or analog signal converters – which previously took over the transmission of measured values to a controller, leading to considerable extra cost and wiring overhead – are no longer needed.

Because the output relays are still present, the monitoring relays increase the functional reliability of the system, since only the controller can fulfill the control tasks if the current measured values are available, whereas the output relays can also be used for the disconnection of the system if limit values that cannot be reached during operation are exceeded.

The individual 3UG48 monitoring relays for IO-Link offer the following functions in different combinations:

- Phase sequence
- Phase failure, neutral conductor failure
- Phase asymmetry
- Undershooting and/or overshooting of limit values for voltage
- Undershooting and/or overshooting of limit values for current
- Undershooting and/or overshooting of power factor limit values
- Monitoring of the active current or the apparent current
- Monitoring of the residual current
- Undershooting and/or overshooting of limit values for speed

Note:

For more information on the IO-Link bus system, see page 2/88 onwards.

Notes on security

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

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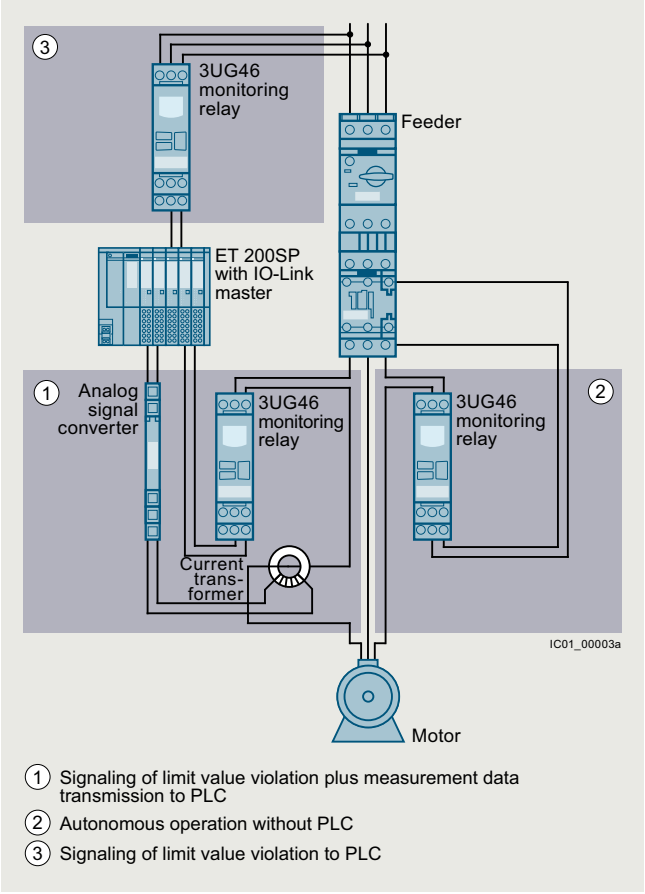
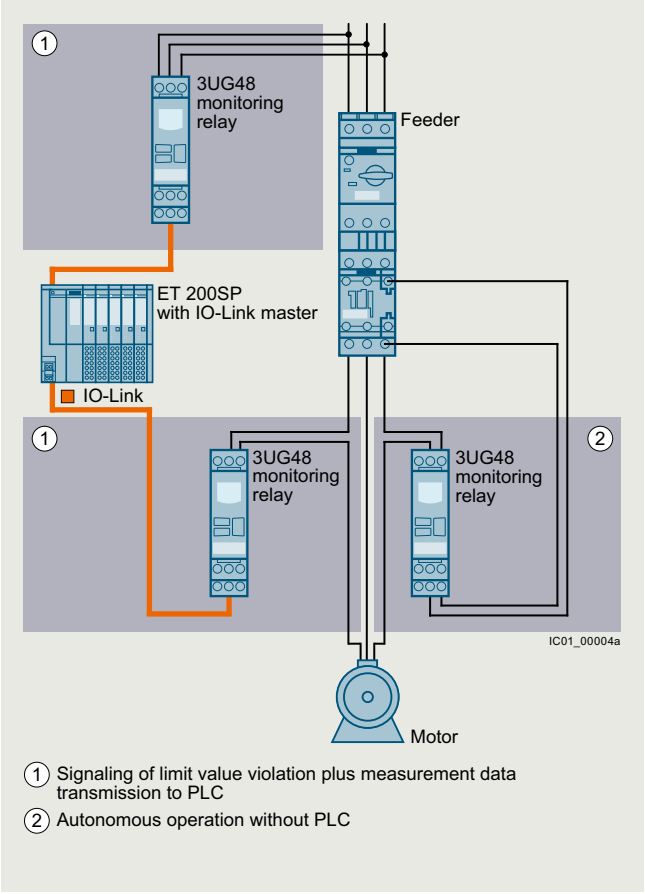


Use of conventional monitoring relays



Monitoring relays for IO-Link

Notes:

Devices required for communication via IO-Link:
- Any controller that supports IO-Link (e.g. ET 200SP with CPU or S7-1200), see Catalog ST 70.
- IO-Link master (e.g. CM 4xIO-Link for SIMATIC ET 200SP, see page 2/99 or SM 1278 for S7-1200, see page 2/98).

Each monitoring relay requires an IO-Link channel.

Article number scheme

Product versions		Article number
3UG4 monitoring relay with IO-Link		**3UG4** □ □ □ – □ □ □ □ **0**
Type of setting	e.g. 8 = analogically adjustable	□
Functions	e.g. 15 = line monitoring	□ □
Connection type	Screw terminals	**1**
	Spring-loaded terminals	**2**
Contacts	e.g. A = 1 CO contact	□
Supply voltage	e.g. A4 = 160 ... 690 V AC	□ □
Example		**3UG4 8 1 5 – 1 A A 4 0**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Simple cyclical transmission of the current measured values, relay switching states and events to a controller
- Remote parameterization
- Automatic reparameterizing when devices are exchanged
- Simple duplication of identical or similar parameterizations
- Reduction of control current wiring
- Elimination of testing costs and wiring errors
- Reduction of configuration work
- Integration in TIA means clear diagnostics if a fault occurs
- Cost saving and space saving in control cabinet due to the elimination of AI and IO modules as well as analog signal converters and duplicated sensors

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General data

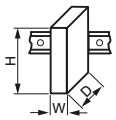
Application

The use of SIRIUS monitoring relays for IO-Link is particularly recommended for machines and plants in which these relays, in addition to their monitoring function, are to be connected to the automation level for the rapid, simple and fault-free provision of the current measured values and/or for remote parameterization.

The monitoring relays can either relieve the controller of monitoring tasks or, as a second monitoring entity in parallel to and independent of the controller, increase the reliability in the process or in the system. In addition, the elimination of AI and IO modules allows the width of the controller to be reduced despite significantly expanded functionality.

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16368/td Equipment Manual and internal circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/view/54375430	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16368/faq

Type			3UG48
General technical specifications			
Dimensions (W x H x D)			
• For 3 terminal blocks			
- Screw terminals		mm	22.5 x 92 x 91
- Spring-loaded terminals		mm	22.5 x 94 x 91
• For 4 terminal blocks			
- Screw terminals		mm	22.5 x 103 x 91
- Spring-loaded terminals		mm	22.5 x 103 x 91
Permissible ambient temperature			
• During operation		°C	-25 ... +60
Connection type			**Screw terminals**
• Terminal screw			M3 (for standard screwdriver, size 2 and Pozidriv 2)
• Solid		mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)
• Finely stranded with end sleeve		mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)
• AWG cables, solid or stranded		AWG	2 x (20 ... 14)
• Tightening torque		Nm	0.8 ... 1.2
Connection type			**Spring-loaded terminals**
• Solid		mm^2	2 x (0.25 ... 1.5)
• Finely stranded, with end sleeve according to DIN 46228		mm^2	2 x (0.25 ... 1.5)
• Finely stranded		mm^2	2 x (0.25 ... 1.5)
• AWG cables, solid or stranded		AWG	2 x (24 ... 16)

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Overview

SIRIUS 3UG4815 monitoring relay

Solid-state line monitoring relays provide maximum protection for mobile machines, plants and hoisting equipment or for unstable networks. Network and voltage faults can thus be detected early and rectified before far greater damage ensues.

The line monitoring relays with IO-Link monitor phase sequence, phase failure (with or without N conductor monitoring), phase asymmetry and undervoltage and/or overvoltage.

Phase asymmetry is evaluated as the difference between the greatest and the smallest phase voltage relative to the greatest phase voltage. Undervoltage or overvoltage exist if the set limit values for at least one phase voltage are overshot or undershot. The rms value of the voltage is measured.

Benefits

- Can be used in any network from 160 to 630 V AC worldwide thanks to wide voltage range
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Display and transmission of actual value and network fault type to controller
- All versions with removable terminals
- All versions with screw or spring-loaded terminals

Application

The relays are used above all for mobile equipment, e.g. air conditioning compressors, refrigerating containers, building site compressors and cranes.

Function	Application
Phase sequence	• Direction of rotation of the drive
Phase failure	• A fuse has tripped • Failure of the control supply voltage • Broken cable
Phase asymmetry	• Overheating of the motor due to asymmetrical voltage • Detection of asymmetrically loaded networks
Undervoltage	• Increased current on a motor with corresponding overheating • Unintentional resetting of a device • Network collapse, particularly with battery power
Overvoltage	• Protection of a plant against destruction due to overvoltage

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Technical specifications

3UG4815/3UG4816 monitoring relays

The 3UG4815 and 3UG4816 line monitoring relays have a wide voltage range input and are supplied with power through IO-Link or from an external 24 V DC source.

The device is equipped with a display and is parameterized using three buttons. The 3UG4815 monitoring relay monitors 3-phase networks with regard to phase sequence, phase failure, phase asymmetry, undervoltage and overvoltage. The 3UG4816 monitoring relay monitors the neutral conductor as well. The hysteresis is adjustable from 1 to 20 V.

The device has two separately adjustable delay times for overvoltage and undervoltage and for line stabilization. If the direction of rotation is incorrect or a phase fails, the device switches off immediately. Thanks to a special measuring method, a phase failure is reliably detected in spite of the wide voltage range from and potentially high feedback through the load.

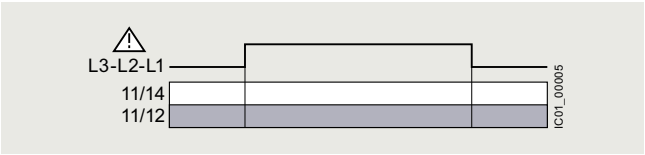
The 3UG4815 and 3UG4816 monitoring relays can be operated on the basis of either the open-circuit or closed-circuit principle and with Manual or Auto RESET.

If Manual RESET is selected in the menu (Memory = Yes), the switching relay remains in its current switching state and the current measured value and the symbol for undershooting and overshooting continue to flash, even when the measured variable reaches a permissible value again. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ keys for 2.5 s.

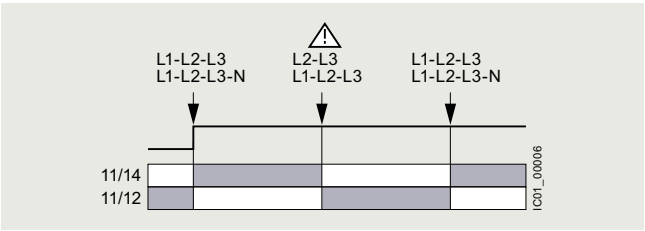
With Manual RESET through IO-Link it is possible in addition to set whether fault messages are to be deleted when the control supply voltage is switched off and on (as Remote RESET) or whether the signals are to be permanently saved even in a voltage failure, with confirmation possible only through local RESET or via IO-Link.

With the closed-circuit principle selected

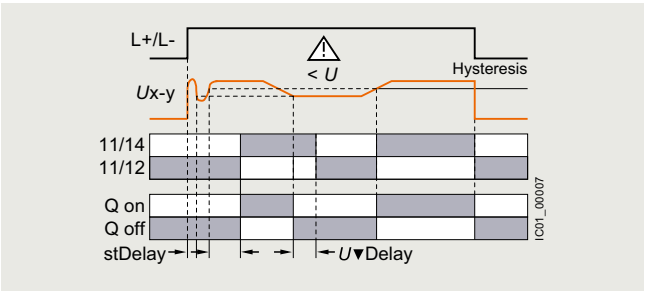
Wrong phase sequence



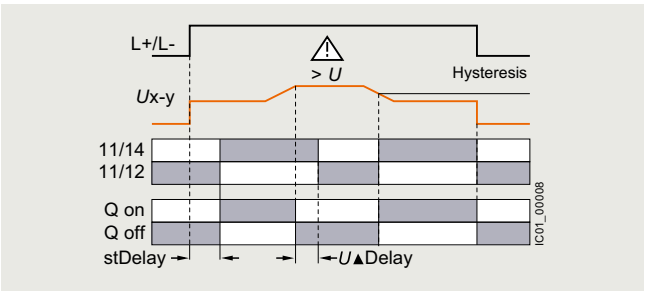
Phase failure



Undervoltage



Overvoltage



Type		3UG4815, 3UG4816
General technical specifications		
Rated insulation voltage U_i Pollution degree 2 Overvoltage category III according to VDE 0110	V	690
Rated impulse withstand voltage U_{imp}	kV	6
Control circuit		
Load capacity of the output relay • Thermal current I_{th}	A	5
Rated operational current I_e at • AC-15/24 ... 400 V • DC-13 at - 24 V - 125 V - 250 V	A A A A	3 1 0.2 0.1
Minimum contact load at 17 V DC	mA	5
Electrical endurance AC-15	million operating cycles	0.1
Mechanical endurance	million operating cycles	10

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Selection and ordering data

- Adjustable via IO-Link and locally, with illuminated LCD
- Power supply with 24 V DC via IO-Link or external auxiliary voltage
- Auto or Manual RESET
- Open-circuit or closed-circuit principle
- 1 CO contact, 1 semiconductor output (in SIO mode)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H

3UG4815-1AA40

3UG4816-1AA40

3UG4815-2AA40

3UG4816-2AA40

Adjustable hysteresis	Undervoltage detection	Overvoltage detection	Stabilization time adjustable stDEL	Tripping delay time adjustable Del	Version of auxiliary contacts	Measurable line voltage[1]	Screw terminals		Spring-loaded terminals	
							Article No.	Price per PU	Article No.	Price per PU
V			s	s		V AC				
Monitoring of phase sequence, phase failure, phase asymmetry, overvoltage and undervoltage										
1 ... 20	✓	✓	0.1 … 999.9	0.1 … 999.9	1 CO + 1 Q[2]	160 … 690	**3UG4815-1AA40**		**3UG4815-2AA40**	
Monitoring of phase sequence, phase and N conductor failure, phase asymmetry, overvoltage and undervoltage										
1 ... 20	✓	✓	0.1 … 999.9	0.1 … 999.9	1 CO + 1 Q[2]	90 … 400 to N	**3UG4816-1AA40**		**3UG4816-2AA40**	

✓ Function supported

[1] Absolute limit values.
[2] In SIO mode.

Accessories, see page 10/118.

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Voltage monitoring

Overview

SIRIUS 3UG4832 monitoring relay

The relays monitor 1-phase AC voltages (rms value) and DC voltages against the set limit value for overshoot and undershoot.

Benefits

- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Display and transmission of actual value and status messages to controller
- All versions with removable terminals
- All versions with screw or spring-loaded terminals

Application

- Protection of a plant against destruction due to overvoltage
- Switch-on of a plant at a defined voltage and higher
- Protection from undervoltage due to overloaded supply voltages, particularly with battery power

Technical specifications

3UG4832 monitoring relays

The 3UG4832 voltage monitoring relays are supplied with power through IO-Link or with an external auxiliary voltage of 24 V DC and perform overshoot, undershoot or range monitoring of the voltage depending on parameterization. The devices are equipped with a display and are parameterized by means of three buttons or through IO-Link.

The measuring range extends from 10 to 600 V AC/DC. The limit values for overshoot or undershoot can be freely configured within this range. If one of these limit values is reached, the output relay responds according to the set principle of operation as soon as the delay time has elapsed. This tripping delay time *U*▲Del/*U*▼Del can be set from 0 to 999.9 s, as can the ON-delay time onDel. The hysteresis is adjustable from 0.1 to 300 V.

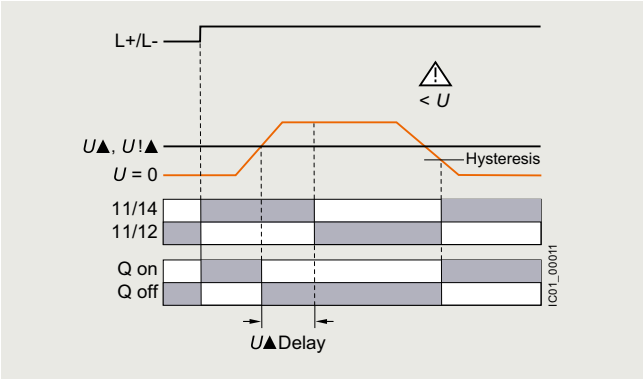
The device can be operated on the basis of either the open-circuit or closed-circuit principle and with Manual or Auto RESET. One output changeover contact is available as a signaling contact, and a semiconductor output is available in addition in SIO mode.

If Manual RESET is selected in the menu (Memory = Yes), the switching relay remains in its current switching state and the current measured value and the symbol for undershooting and overshooting continue to flash, even when the measured variable reaches a permissible value again. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ keys for 2.5 s.

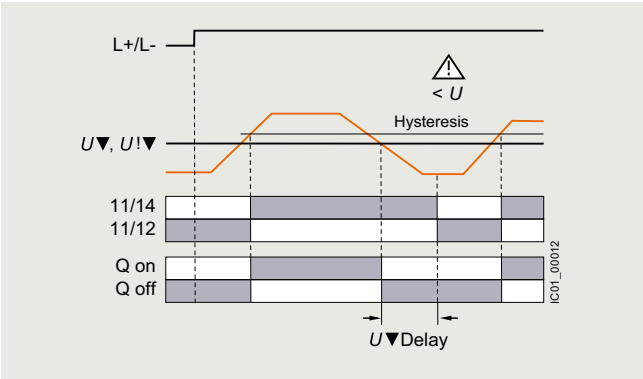
With Manual RESET through IO-Link it is possible in addition to set whether fault messages are to be deleted when the control supply voltage is switched off and on (as Remote RESET) or whether the signals are to be permanently saved even in a voltage failure, with confirmation possible only through local RESET or via IO-Link.

With the closed-circuit principle selected

Overvoltage



Undervoltage



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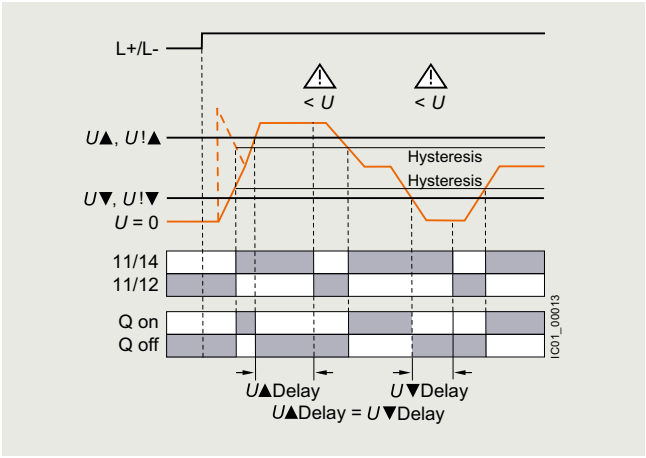
With the closed-circuit principle selected

Range monitoring



Type		3UG4832
General technical specifications		
Rated insulation voltage U_i Pollution degree 2 Overvoltage category III according to VDE 0110	V	690
Rated impulse withstand voltage U_{imp}	kV	6
Measuring circuit		
Permissible measuring range 1-phase AC/DC voltage	V	10 ... 690
Measuring frequency	Hz	40 ... 500
Setting range 1-phase voltage	V	10 ... 600
Control circuit		
Load capacity of the output relay • Thermal current I_{th}	A	5
Rated operational current I_e at • AC-15/24 ... 400 V • DC-13 at - 24 V - 125 V - 250 V	 A A A A	 3 1 0.2 0.1
Minimum contact load at 17 V DC	mA	5

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Voltage monitoring

Selection and ordering data

- Adjustable via IO-Link and locally, with illuminated LCD
- Power supply with 24 V DC via IO-Link or external auxiliary voltage
- Auto or Manual RESET
- Open-circuit or closed-circuit principle
- 1 CO contact, 1 semiconductor output (in SIO mode)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H

3UG4832-1AA40

3UG4832-2AA40

Measuring range	Adjustable hysteresis	ON-delay time adjustable onDel	Tripping delay time separately adjustable *U*▲Del/*U*▼Del	**Screw terminals**		**Spring-loaded terminals**	
				Article No.	Price per PU	Article No.	Price per PU
V AC/DC	V	s	s				
Monitoring of voltage for overshooting and undershooting							
10 ... 600	0.1 ... 300	0 … 999.9	0 … 999.9	**3UG4832-1AA40**		**3UG4832-2AA40**	

Accessories, see page 10/118.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

SIRIUS 3UG4822 monitoring relay

The relays monitor 1-phase AC currents (rms value) and DC currents against the set limit value for overshoot and undershoot.

Benefits

- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Display and transmission of actual value and status messages to controller
- All versions with removable terminals
- All versions with screw or spring-loaded terminals

Application

- Overcurrent and undercurrent monitoring
- Monitoring the functionality of electrical loads
- Monitoring for broken conductors

Technical specifications

3UG4822 monitoring relays

The 3UG4822 current monitoring relays are supplied with power through IO-Link or with an external voltage of 24 V DC and perform overshoot, undershoot or range monitoring of the current depending on the parameterization. The devices are equipped with a display and are parameterized using three buttons.

The measuring range extends from 0.05 to 10 A. For larger AC currents the measuring range can be extended by using commercially available current transformers. Using the adjustable transformer factor, the display of the measured primary currents up to 750 A instead of the secondary currents (max. 1 A or 5 A) is possible.

The rms value of the current is measured. The limit values for overshoot or undershoot can be freely configured within this range. If one of these limit values is reached, the output relay responds according to the set principle of operation as soon as the tripping delay time I▲Del/I▼Del has elapsed. This time and the ON-delay time onDel are adjustable from 0 to 999.9 s.

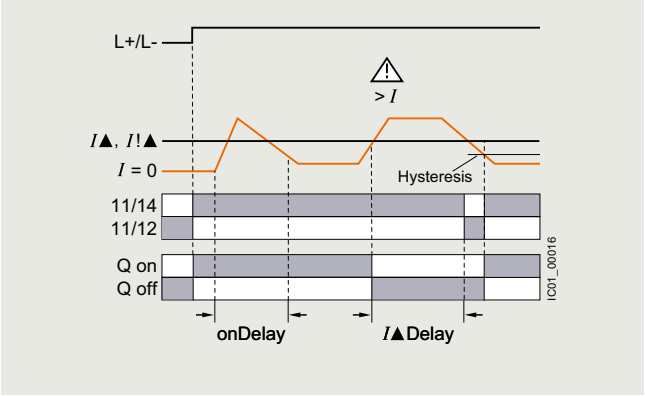
The hysteresis is adjustable from 0.01 to 5 A. The device can be operated with Manual or Auto RESET and on the basis of either the open-circuit or closed-circuit principle. You can decide here whether the output relay is to respond when the supply voltage U_S = ON is applied, or not until the lower measuring range limit of the measuring current (I > 50 mA) is reached. One output changeover contact is available as a signaling contact, and a semiconductor output is available in addition in SIO mode.

If Manual RESET is selected in the menu (Memory = Yes), the switching relay remains in its current switching state and the current measured value and the symbol for undershooting and overshooting continue to flash, even when the measured variable reaches a permissible value again. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ keys for 2.5 s.

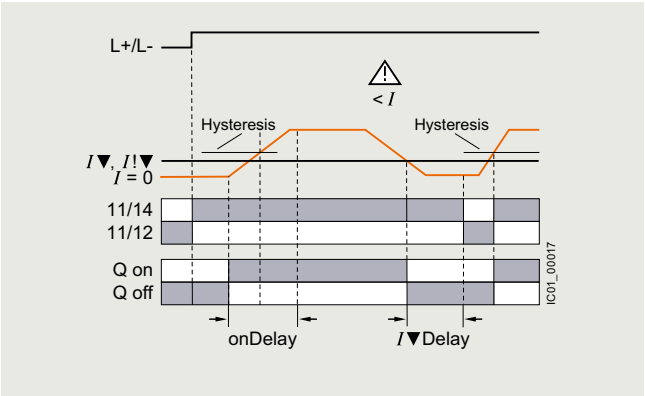
With Manual RESET through IO-Link it is possible in addition to set whether fault messages are to be deleted when the control supply voltage is switched off and on (as Remote RESET) or whether the signals are to be permanently saved even in a voltage failure, with confirmation possible only through local RESET or via IO-Link.

With the closed-circuit principle selected upon application of the control supply voltage

Current overshoot



Current undershoot



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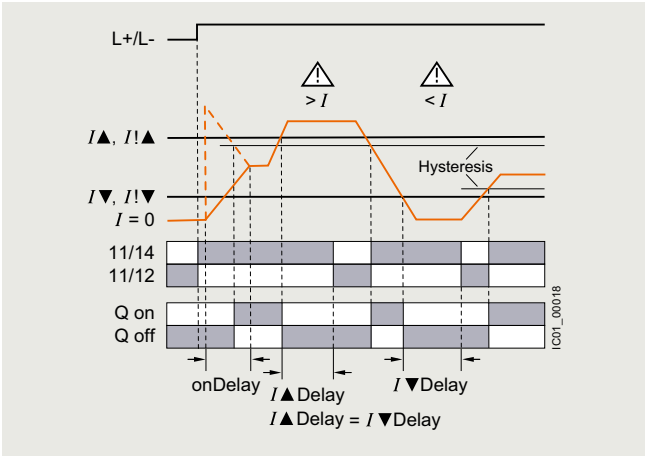
Current monitoring

With the closed-circuit principle selected upon application of the control supply voltage

Range monitoring



Type		3UG4822
General technical specifications		
Rated insulation voltage U_i Pollution degree 2 Overvoltage category III according to VDE 0110	V	690
Rated impulse withstand voltage U_{imp}	kV	6
Measuring circuit		
Measuring range for 1-phase AC/DC current	A	0.05 … 15
Measuring frequency	Hz	40 ... 500
Setting range for 1-phase current	A	0.05 ... 10
Load supply voltage	V	Max. 300 (with protective separation) Max. 500 (with simple separation)
Control circuit		
Load capacity of the output relay		
• Thermal current I_{th}	A	5
Rated operational current I_e at		
• AC-15/24 ... 400 V	A	3
• DC-13 at		
- 24 V	A	1
- 125 V	A	0.2
- 250 V	A	0.1
Minimum contact load at 17 V DC	mA	5

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Selection and ordering data

- Adjustable via IO-Link and locally, with illuminated LCD
- Power supply with 24 V DC via IO-Link or external auxiliary voltage
- Adjustable transformer factor to display the measured primary current when an external current transformer is used
- Auto or Manual RESET
- Open-circuit or closed-circuit principle
- 1 CO contact, 1 semiconductor output (in SIO mode)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H

3UG4822-1AA40

3UG4822-2AA40

Measuring range	Adjustable hysteresis	ON-delay time adjustable onDel	Tripping delay time separately adjustable I▲Del/I▼Del	Screw terminals		Spring-loaded terminals	
A AC/DC	A	s	s	Article No.	Price per PU	Article No.	Price per PU
Monitoring of current for overshooting and undershooting							
0.05 … 10	0.01 ... 5	0.1 … 999.9	0.1 … 999.9	**3UG4822-1AA40**		**3UG4822-2AA40**	

Accessories, see page 10/118.

For AC currents I > 10 A it is possible to use commercially available current transformers, e.g. the Siemens 4NC current transformers, as accessories, see Catalog LV 10.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Power factor and active current monitoring

Overview

SIRIUS 3UG4841 monitoring relay

The 3UG4841 power factor and active current monitoring devices enable the load monitoring of motors.

Whereas power factor (p.f.) monitoring is used above all for monitoring no-load operation, the active current monitoring option can be used to observe and evaluate the load factor over the entire torque range.

Benefits

- Monitoring of even small 1-phase motors with a no-load supply current below 0.5 A
- Simple determination of threshold values by directly referencing measured variables to motor loading
- Range monitoring and active current measurement enable detection of cable breaks between control cabinets and motors, as well as phase failures
- Power factor (p.f.) and/or I_{res} (active current) can be selected as the measurement principle
- Width 22.5 mm
- Display and transmission of actual value and status messages to controller
- All versions with removable terminals
- All versions with screw or spring-loaded terminals

Application

- No-load monitoring and load shedding, such as in the event of a V-belt tear
- Underload monitoring in the low-end performance range, e.g. in the event of pump no-load operation
- Monitoring of overload, e.g. due to a dirty filter system
- Power factor monitoring in networks for control of compensation equipment
- Broken cable between control cabinet and motor

Technical specifications

3UG4841 monitoring relays

3UG4841 monitoring relays are supplied with power through IO-Link or with an external auxiliary voltage of 24 V DC and are used for performing overshoot, undershoot or range monitoring of the power factor and/or the resulting active current, depending on parameterization. The load to be monitored is connected upstream of the IN terminal. The load current flows through the terminals IN and Ly/N. The setting range for the power factor is 0 to 0.99 and for the active current I_{res} it is 0.2 to 10 A. If the control supply voltage is switched on and no load current is flowing yet, the display will show I < 0.2 A and a symbol for overshoot, undershoot or range monitoring. If the motor is now switched on and the current exceeds 0.2 A, the set ON-delay time onDel begins. During this time, if the set limit values are undershot or exceeded, this does not lead to a relay reaction of the changeover contact. If the operational flowing active current and/or the p.f. value falls below or exceeds the respective set threshold value, the tripping delay time begins. When this time has expired, the relay changes its switch position. The relevant measured variables for overshooting and undershooting in the display flash. If monitoring for active current undershoot is switched off (I_{res}▼= OFF), and if the load current undershoots the lower measuring range threshold (0.2 A), the CO contacts remain unchanged. If a threshold value is set for the monitoring of active current undershooting, then undershooting of the measuring range threshold (0.2 A) will result in a response of the CO contacts.

The relay operates either according to the open-circuit or closed-circuit principle.

If the device is set to Auto RESET (Memory = No), depending on the set principle of operation, the switching relay returns to its initial state and the flashing ends when the hysteresis threshold is reached.

If Manual RESET is selected in the menu (Memory = Yes), the switching relay remains in its current switching state and the current measured value and the symbol for undershooting and overshooting continue to flash, even when the measured variable reaches a permissible value again. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ keys for 2.5 s.

With Manual RESET through IO-Link it is possible in addition to set whether fault messages are to be deleted when the control supply voltage is switched off and on (as Remote RESET) or whether the signals are to be permanently saved even in a voltage failure, with confirmation possible only through local RESET or via IO-Link.

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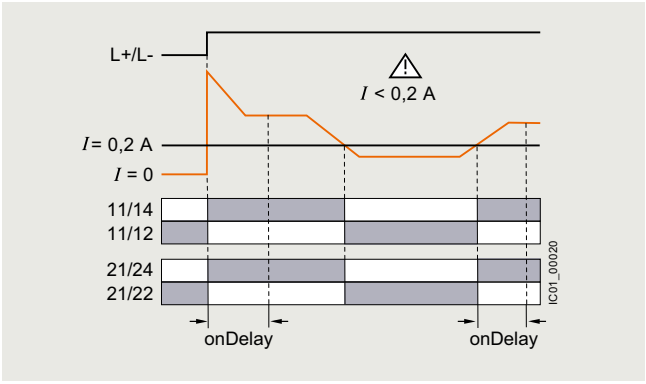
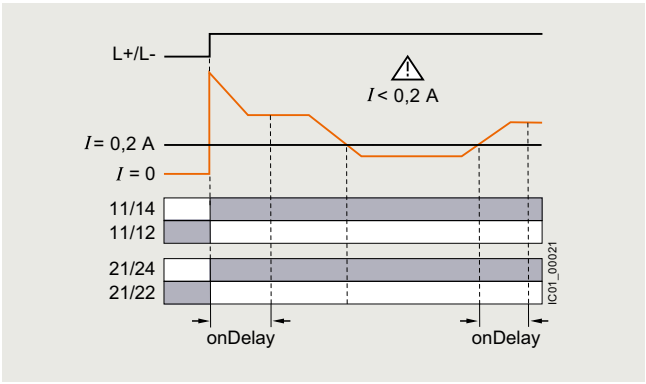
With the closed-circuit principle selected

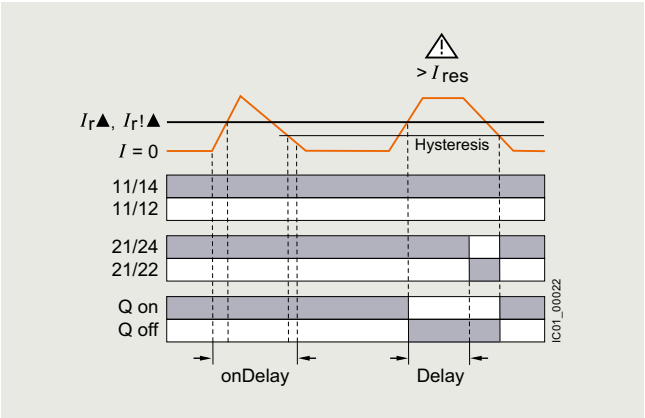
Response in the event of undershooting the measuring range limit with activated monitoring of I_{res}▼



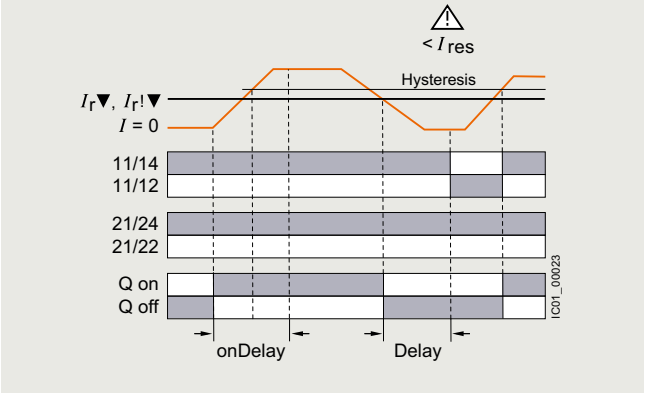
Response in the event of undershooting the measuring range limit with deactivated monitoring of active current undershooting



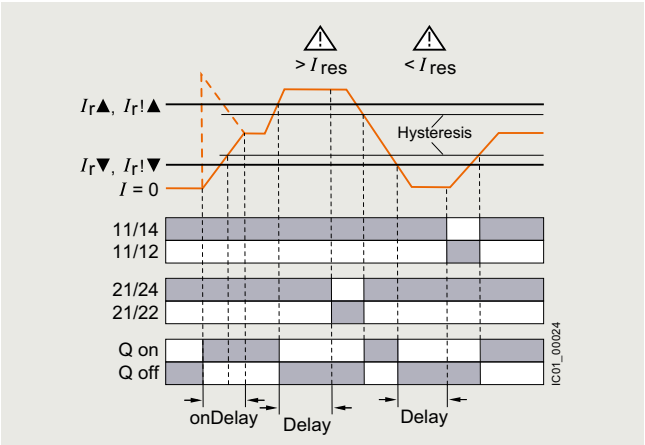
Overshooting of active current



Undershooting of active current



Range monitoring of active current



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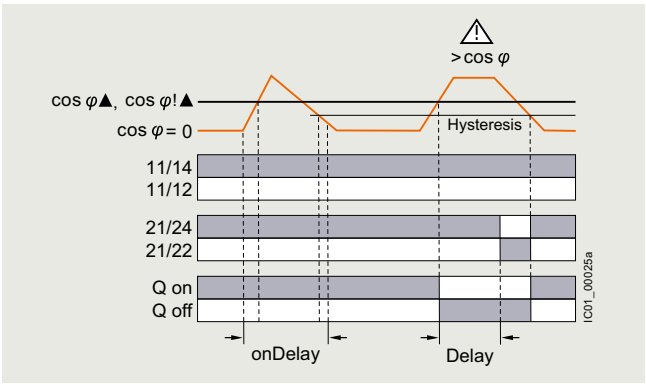
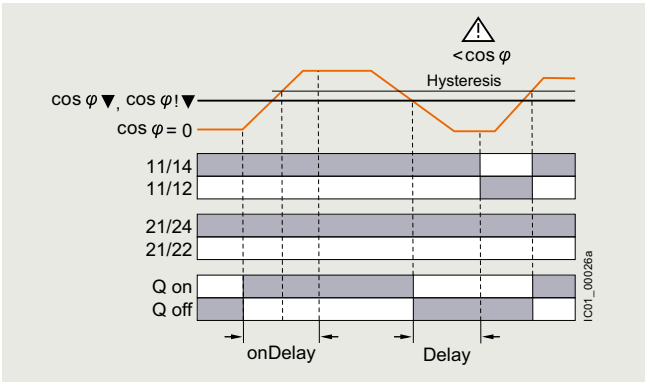
Power factor and active current monitoring

With the closed-circuit principle selected

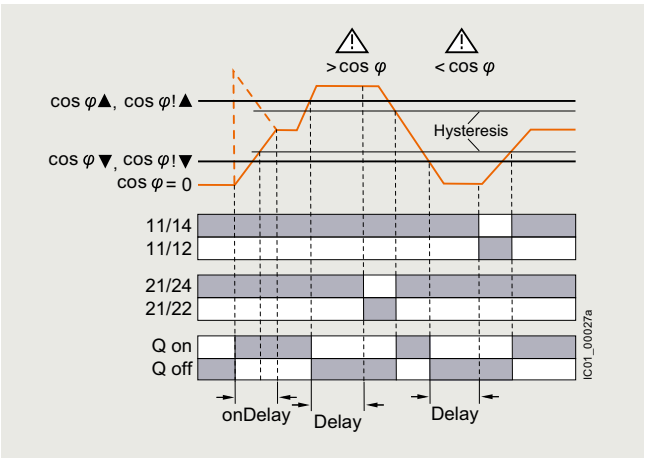
Overshooting of power factor



Undershooting of power factor



Range monitoring of power factor



Type		3UG4841
General technical specifications		
Rated insulation voltage U_i Pollution degree 2 Overvoltage category III according to IEC 60664-1	V	690
Rated impulse withstand voltage U_{imp}	kV	6
Control circuit		
Number of CO contacts for auxiliary contacts		2
Load capacity of the output relay • Thermal current I_{th}	A	5
Rated operational current I_e at • AC-15/24 ... 400 V • DC-13 at - 24 V - 125 V - 250 V	A A A A	3 1 0.2 0.1
Minimum contact load at 17 V DC	mA	5

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Selection and ordering data

- For monitoring the power factor and the active current I_{res} (p.f. x I)
- Suitable for 1-phase and 3-phase currents
- Adjustable via IO-Link and locally, with illuminated LCD
- Power supply with 24 V DC via IO-Link or external auxiliary voltage
- Overshoot, undershoot or range monitoring adjustable
- Upper and lower limit values can be adjusted separately
- Permanent display of actual value and tripping state
- 1 CO contact each for undershoot and overshoot, 1 semiconductor output (in SIO mode)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H

3UG4841-1CA40

3UG4841-2CA40

Measuring range		Voltage range of the measuring voltage[1]	Hysteresis		ON-delay time adjustable onDel	Tripping delay time separately adjustable U▲Del/ U▼Del, φ▲Del/ φ▼Del	**Screw terminals**		**Spring-loaded terminals**	
for power factor	for active current I_{res}	50/60 Hz AC	adjust-able for power factor	adjust-able for active current I_{res}			Article No.	Price per PU	Article No.	Price per PU
P.f.	A	V	P.f.	A	s	s				
Monitoring of power factor and active current for overshooting or undershooting										
0.1 ... 0.99	0.2 ... 10	90 ... 690	0.1 ... 0.2	0.1 ... 3	0 ... 999.9	0 ... 999.9	**3UG4841-1CA40**		**3UG4841-2CA40**	

[1] Absolute limit values.

Accessories, see page 10/118.

For AC active currents I_{res} > 10 A it is possible to use commercially available current transformers, e.g. Siemens 4NC current transformers, as accessories, see Catalog LV 10.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

SIRIUS 3UG4825 monitoring relay

The 3UG4825 residual-current monitoring relays are used in conjunction with the 3UL23 residual-current transformers for monitoring plants in which higher residual currents are increasingly expected due to ambient conditions. Monitoring encompasses pure AC residual currents or AC residual currents with a pulsating DC fault current component (transformer, type A in accordance with DIN VDE 0100-530/IEC TR 60755).

Benefits

- High measuring accuracy of ±7.5%
- Permanent self-monitoring
- Parameterization of the devices locally or via IO-Link possible
- Variable threshold values for warning and disconnection
- Freely configurable delay times and RESET response
- Display and transmission of actual value and status messages to controller
- High level of flexibility and space saving through installation of the transformer inside or outside the control cabinet
- Width 22.5 m
- All versions with removable terminals
- All versions with screw or spring-loaded terminals

Application

Monitoring of plants in which residual currents can occur, e.g. due to dust deposits or moisture, porous cables and leads, or capacitive residual currents.

Technical specifications

3UG4825 monitoring relays

The main conductor, and any neutral conductor to which a load is connected, are routed through the opening of the toroidal core of a residual-current transformer. A secondary winding is placed around this toroidal core to which the monitoring relay is connected.

If operation of a plant is fault-free, the sum of the inflowing and outward currents equals zero. No current is then induced in the secondary winding of the residual-current transformer.

However, if an insulation fault occurs, the sum of the inflowing currents is greater than that of the outward currents. The differential current – i.e. the residual current – induces a secondary current in the secondary winding of the transformer. This current is evaluated in the monitoring relay and is used on the one hand to display the actual residual current and on the other, to switch the relay if the set warning or tripping threshold is overshot.

If the measured residual current exceeds the set warning value, the associated changeover contact instantly changes the switching state and an indication appears on the display.

If the measured residual current exceeds the set tripping value, the set delay time begins and the associated relay symbol flashes. On expiry of this time, the associated changeover contact changes the switching state.

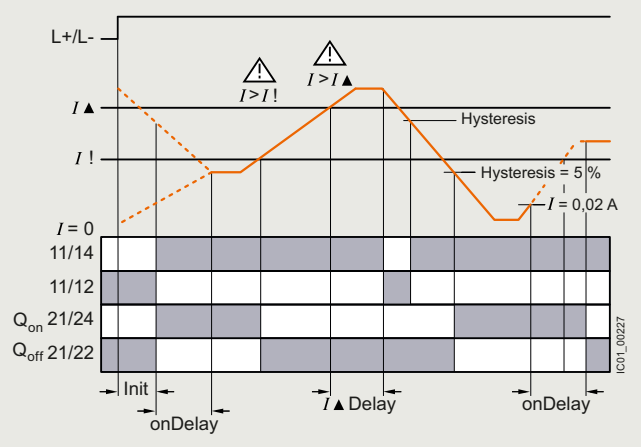
ON-delay time for motor start

To be able to start a drive when a residual current is detected, the output relays switch to the OK state for an adjustable ON-delay time depending on the selected open-circuit principle or closed-circuit principle.

The changeover contacts do not react if the set threshold values are overshot during this period.

With the closed-circuit principle selected

Residual-current monitoring with Auto RESET (Memory = no)



If the device is set to Auto RESET, the relay switches back to the OK state for the tripping value after tripping once the value falls below the set hysteresis threshold and the display stops flashing.

The associated relay changes its switching state if the value falls below the fixed hysteresis value of 5% of the warning value.

Any overshoots are therefore not stored.

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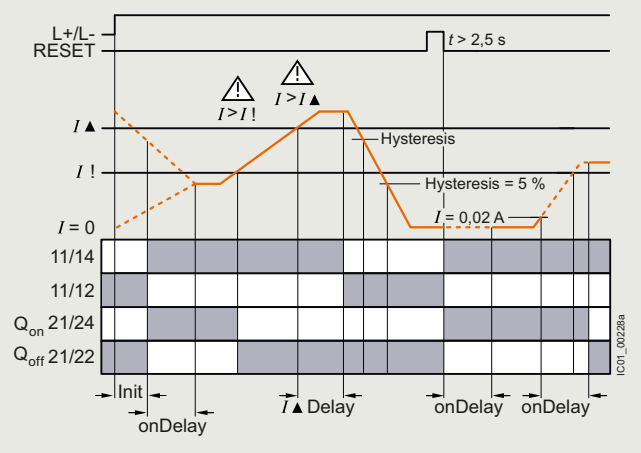
Residual-current monitoring with Manual RESET (Memory = yes)



If Manual RESET is selected in the menu, the output relays remain in their current switching state and the current measured value and the symbol for overshooting continue to flash, even when the measured residual current returns to a permissible value. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ keys for > 2 seconds, or by switching the supply voltage off and back on again.

Note:

The neutral conductor must not be grounded downstream of the summation current transformer as this may impair the function of the residual-current monitoring device.

Type		**3UG4825-1CA40, 3UG4825-2CA40**
General data		
Insulation voltage for overvoltage category III according to IEC 60664 for pollution degree 3, rated value	V	300
Impulse withstand voltage, rated value U_{imp}	kV	4
Control circuit		
Number of CO contacts for auxiliary contacts		2
Thermal current of the non-solid-state contact blocks, maximum	A	5
Current-carrying capacity of the output relay		
• At AC-15 at 250 V at 50/60 Hz	A	3
• At DC-13		
- At 24 V	A	1
- At 125 V	A	0.2
- At 250 V	A	0.1
Operational current at 17 V, minimum	mA	5

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Selection and ordering data

- For monitoring residual currents from 0.03 to 40 A, from 16 to 400 Hz
- For 3UL23 residual-current transformers with feed-through opening from 35 to 210 mm
- Permanent self-monitoring
- Certified in accordance with IEC 60947, functionality corresponds to IEC 62020
- Digitally adjustable, with illuminated LCD
- Permanent display of actual value and tripping state
- Separately adjustable limit value and warning threshold
- 1 changeover contact each for warning threshold and tripping threshold

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H

3UG4825-1CA40

3UG4825-2CA40

Measurable current	Adjustable response value current	Switching hysteresis	Adjustable ON-delay time	Control supply voltage at DC, rated value	Screw terminals Article No.	Screw terminals Price per PU	Spring-loaded terminals Article No.	Spring-loaded terminals Price per PU
A	A	%	s	V				
0.01 ... 43	0.03 ... 40	0 ... 50	0 ... 999.9	24	**3UG4825-1CA40**		**3UG4825-2CA40**	

Accessories, see page 10/118.

For 3UL23 residual-current transformers and accessories for 3UL23, see page 10/84.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

SIRIUS 3UG4851 monitoring relay

3UG4851 monitoring relays are used in combination with a sensor to monitor drives for overspeed and/or underspeed.

Furthermore, the monitoring relays are ideal for all functions where a continuous pulse signal needs to be monitored (e.g. belt travel monitoring, completeness monitoring, passing monitoring, clock-time monitoring).

Benefits

- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Display and transmission of actual value and fault type to controller
- Use of up to 10 sensors per rotation for extremely slowly rotating motors
- Two-wire or three-wire sensors and sensors with a mechanical switching output or solid-state output can be connected
- Auxiliary voltage for sensor integrated
- All versions with removable terminals
- All versions with screw or spring-loaded terminals

Application

- Slip or tear of a belt drive
- Overload monitoring
- Transport monitoring for completeness

Technical specifications

3UG4851 monitoring relays

The speed monitoring relay operates according to the principle of period duration measurement.

In the monitoring relay, the time between two successive rising edges of the pulse encoder is measured and compared to the minimum and/or maximum permissible period duration calculated from the set limit values for the speed.

Thus, the period duration measurement recognizes any deviation in speed after just two pulses, even at very low speeds or in the case of extended pulse gaps.

By using up to ten pulse encoders evenly distributed around the circumference, it is possible to shorten the period duration, and in turn the response time. By taking into account the number of sensors in the monitoring relay, the speed continues to be indicated in rpm.

ON-delay time for motor start

To be able to start a motor drive, and depending on whether the open-circuit or closed-circuit principle is selected, the output relay switches to the OK state during the ON-delay time, even if the speed is still below the set value.

The ON-delay time is started by either switching on the auxiliary voltage or, if the auxiliary voltage is already applied, by actuating the respective NC contact (e.g. auxiliary contact).

Speed monitoring with Auto RESET (Memory = no)

If the device is set to Auto RESET, the output relay switches to the OK state, once the adjustable hysteresis threshold is reached in the range of 1 to 99.9 rpm and the flashing stops. Any overshoots or undershoots are therefore not stored.

Speed monitoring with Manual RESET (Memory = yes)

If Manual RESET is selected in the menu, the output relay remains in its current switching state and the current measured value and the symbol for overshooting/undershooting continue to flash, even when the speed returns to a permissible value. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ buttons for > 2.5 s or by connecting the RESET device terminal to 24 V DC.

With Manual RESET through IO-Link it is possible in addition to set whether fault messages are to be deleted when the control supply voltage is switched off and on (as Remote RESET) or whether the signals are to be permanently saved even in a voltage failure, with confirmation possible only through local RESET, the Remote RESET contact, or via IO-Link.

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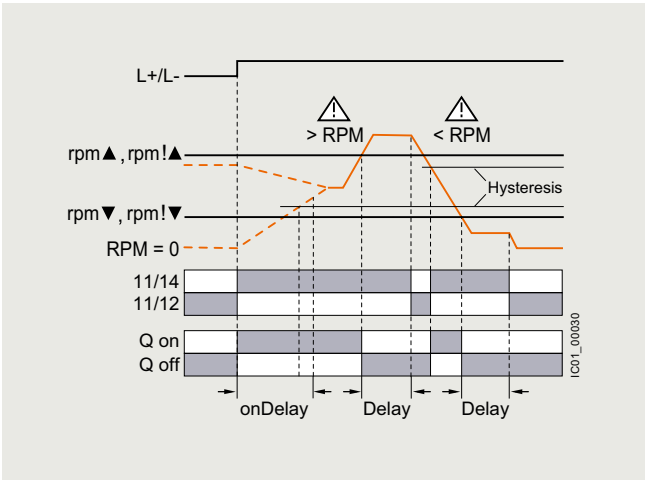
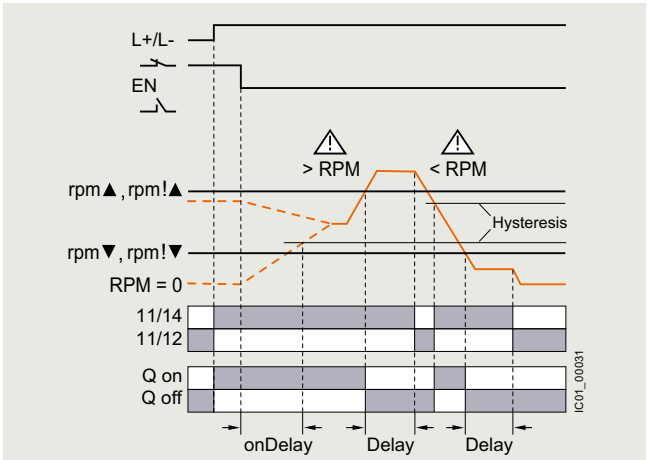
Speed monitoring

With the closed-circuit principle selected

Range monitoring without enable input



Range monitoring with enable input



Type		3UG4851
General technical specifications		
Rated insulation voltage U_i Pollution degree 2 Overvoltage category III according to VDE 0110	V	300
Rated impulse withstand voltage U_{imp}	kV	4
Measuring circuit		
Sensor supply		
• For three-wire sensor (24 V/0 V)	mA	Max. 50
• For two-wire NAMUR sensor (8V2)	mA	Max. 8.2
Signal input		
• IN1	kΩ	16, three-wire sensor, pnp operation
• IN2	kΩ	1, floating contact, two-wire NAMUR sensor
Voltage level		
• For level 1 at IN1	V	4.5 ... 30
• For level 0 at IN1	V	0 ... 1
Current level		
• For level 1 at IN2	mA	> 2.1
• For level 0 at IN2	mA	< 1.2
Minimum pulse duration of signal	ms	5
Minimum interval between 2 pulses	ms	5
Control circuit		
Number of CO contacts for auxiliary contacts		1
Load capacity of the output relay Thermal current I_{th}	A	5
Rated operational current I_e at		
• AC-15/24 ... 250 V	A	3
• DC-13 at		
- 24 V	A	1
- 125 V	A	0.2
- 250 V	A	0.1
Minimum contact load at 17 V DC	mA	5

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Selection and ordering data

- For speed monitoring in revolutions per minute (rpm)
- Two-wire or three-wire sensor with mechanical or solid-state switching output can be connected
- Two-wire NAMUR sensor can be connected
- Sensor supply 24 V DC/50 mA integrated
- Input frequency 0.1 to 2 200 pulses per minute (0.0017 to 36.7 Hz)
- With or without enable signal for the drive to be monitored
- Adjustable via IO-Link and locally, with illuminated LCD
- Power supply with 24 V DC via IO-Link or external auxiliary voltage
- Overshoot, undershoot or range monitoring adjustable
- Number of pulses per revolution can be adjusted
- Upper and lower limit values can be adjusted separately
- Auto, Manual or Remote RESET options after tripping
- Permanent display of actual value and tripping state
- 1 CO contact, 1 semiconductor output (in SIO mode)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H

3UG4851-1AA40

3UG4851-2AA40

Measuring range	Adjustable hysteresis	ON-delay time adjustable onDel	Tripping delay time separately adjustable rpm▲Del/ rpm▼Del	Pulses per revolution	Screw terminals		Spring-loaded terminals	
					Article No.	Price per PU	Article No.	Price per PU
rpm	rpm	s	s					
Speed monitoring for overshooting and undershooting								
0.1 ... 2200	OFF 1 ... 99.9	0 ... 999.9	0 ... 999.9	1 ... 10	**3UG4851-1AA40**		**3UG4851-2AA40**	

Accessories, see page 10/118.

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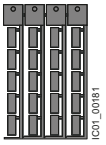
Accessories

Selection and ordering data

	Use	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for enclosures							
3RP1902	For 3UG48	**Sealable covers** For securing against unauthorized adjustment of setting knobs	**3RP1902**		1	5 units	41H
3RP1903	For 3UG48	**Push-in lugs** For screw fixing, 2 units are required for each device	**3RP1903**		1	10 units	41H
Blank labels							
 3RT2900-1SB20	For 3UG48	**Unit labeling plates** [1] For SIRIUS devices					
		• 20 mm x 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B
	For 3UG48	**Adhesive labels** For SIRIUS devices, 19 mm x 6 mm, titanium gray	**3RT2900-1SB60**		100	3060 units	41B
Tools for opening spring-loaded terminals							
3RA2908-1A	For auxiliary circuit connections	**Screwdrivers** For all SIRIUS devices with spring-loaded terminals	**Spring-loaded terminals**				
		Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**3RA2908-1A**		1	1 unit	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/18.

* You can order this quantity or a multiple thereof.
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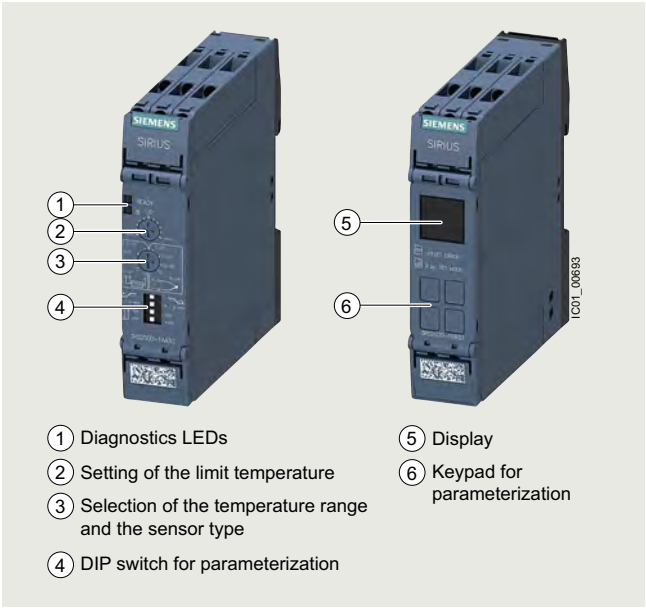
Overview



SIRIUS 3RS2 temperature monitoring relays

More information

Homepage, see www.siemens.com/sirius-monitoring-relays
Industry Mall, see www.siemens.com/product?3RS2
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=SIRIUSRelais
Conversion tool, see www.siemens.com/conversion-tool

The 3RS2 temperature monitoring relays can be used to measure temperatures in solid, liquid and gas media. The temperature is acquired by means of sensors in the medium, evaluated by the device and monitored for overshoot, undershoot or location within a specified range (window function).

The family comprises an analog multi-function device which can be set using DIP switches and potentiometers, and digital devices which can be parameterized via an intuitive LC display. The digital device is also available as a version with IO-Link.

All 3RS26 digital devices, including the 3RS28 versions with IO-Link, have safety certification according to IEC 61508/62061 or ISO 13849 up to SIL 1/PL c as well as EN 14597 for heat generating systems and EN 50156 for burners.

Furthermore, the functionality of the 3RS26/3RS28 digital devices can be expanded using a 3RS29 sensor expansion module with two additional resistance sensors, e.g. for monitoring 3-phase motors or transformers.

The 3RS29 sensor expansion module also features an additional relay for outputting the sensor status, and an additional analog input 4 to 20 mA. This analog input allows ATEX applications to be implemented when using an intrinsically safe temperature sensor or other appropriate type of protection. The 3RS29 is connected wirelessly via a SIL 1-certified infrared communications interface.

Notes:

The SIRIUS 3RS2 temperature monitoring relays fully replace the 3RS1 predecessor. The large number of 3RS1 analog devices can simply be replaced with the new 3RS25 analog multi-function device. The reduced variety of order numbers means the successors can be selected quickly and easily.

The 3RS2 digital devices fully supersede the functionality of the 3RS1 predecessor in a single device type that is now able to use resistance sensors and thermocouples – all at half the width of 22.5 mm instead of 45 mm.

Analog multi-function devices

SIRIUS 3RS25 analog multi-function device

The analog multi-function device is parameterized using DIP switches and potentiometers. The device can be used to monitor a sensor with a limit value for overshoot or undershoot. The most common temperature ranges with Pt100 resistance sensors or type J or K thermocouples can be used for this purpose. This device can therefore also be used as a compact, easy-to-adjust two-point controller. The relay CO contact output enables loads to be switched directly. The NC contact can optionally be used as a signaling contact.

Digital devices (1 sensor)

SIRIUS 3RS26 digital device (1 sensor) with 3RS29 sensor expansion module

The SIRIUS 3RS26 digital device with display enables sensors with two limit values to be monitored using all common resistance sensors and thermocouples.

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General data

The additional limit value means that, in addition to overshoot and undershoot, an additional warning value can be output to the relay outputs. Alternatively, the second monitoring value can also be used to implement range monitoring. The digital devices can thus also be used as compact two-step or three-step controllers, with Manual RESET or Remote RESET.

Thanks to safety certification, this device can be used in a wide range of applications.

The functionality of the SIRUS 3RS26 and 3RS28 digital devices can be expanded wirelessly with the sensor expansion module via a SIL 1-certified infrared communications interface.
This combination then features three sensors and is designed for monitoring large 3-phase motors and transformers. It goes without saying that the additional sensors can also be used for other applications.

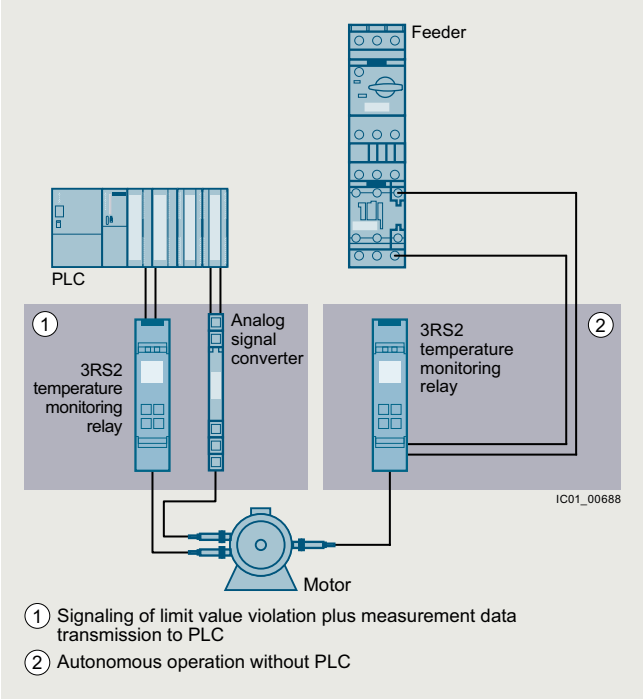
Digital devices (1 sensor) for IO-Link

SIRIUS 3RS28 digital device (1 sensor) for IO-Link with 3RS29 sensor expansion module

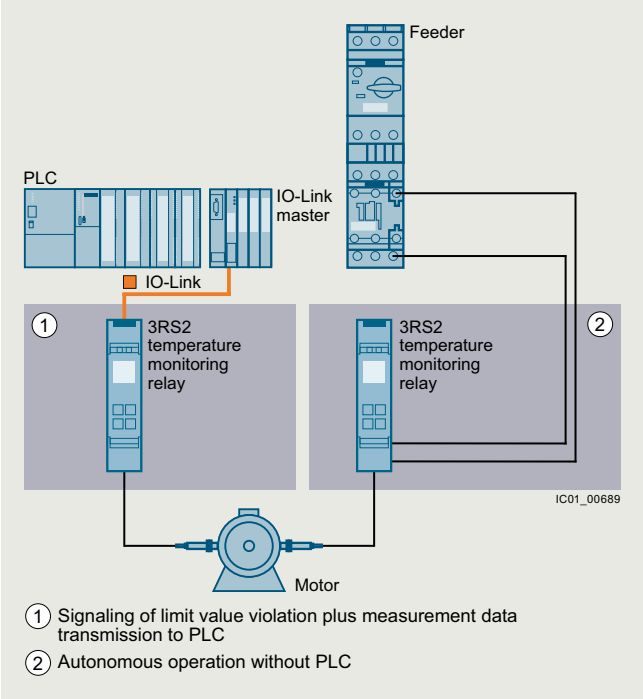
The 3RS28 digital temperature monitoring relays for IO-Link feature an IO-Link communications interface in addition to a display. They include all functions of the 3RS26 digital device and can also be operated on L+/L- as a stand-alone installation with 24 V DC.

Note:

The IO-Link devices can be reset on the display or via IO-Link.



Conventional temperature monitoring relays



Temperature monitoring relays for IO-Link

Notes:

Devices required for communication via IO-Link:

- Any controller that supports IO-Link (e.g. ET 200SP with CPU or S7-1200), see Catalog ST 70.
- IO-Link master (e.g. CM 4xIO-Link for SIMATIC ET 200SP, see page 2/99 or SM 1278 for S7-1200, see page 2/98).

Each monitoring relay requires an IO-Link channel.

Notes on security

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

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Article number scheme

Product versions		Article number
Temperature monitoring relays		**3RS2** □ **0 0 –** □ □ □ □ **0**
Device type	e.g. 5 = analogically adjustable	□
Connection type	Screw terminals	**1**
	Spring-loaded terminals (push-in)	**2**
Number of CO contacts	e.g. A = 1 CO contact, B = 2 CO contacts	□
Rated control supply voltage	A = 24 V AC/DC, W = 24 ... 240 V AC/DC	□
Type of rated control supply voltage	3 = AC/DC, 4 = DC	□
Example		**3RS2 5 0 0 – 1 A A 3 0**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers. For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Customary screw and spring-loaded terminals for quick and reliable wiring
- Reduced space requirement in the control cabinet thanks to a consistent width of 22.5 mm
- Easy parameterization thanks to new display and intuitive operating concept
- Reduced stock keeping and logistics thanks to heavily reduced device variance
- Cost savings thanks to additional scalable functionality with integrated infrared interface
- Communication via IO-Link for 3RS28
- Global applicability and exportability thanks to compliance with international standards and certifications
- Problem-free use in a wide range of applications thanks to Safety bundle with certification according to SIL 1/PL c, ATEX, EN 14597 for heat generating systems and EN 50156 for burners
- All versions with removable terminals
- All versions with screw or spring-loaded terminals with push-in functionality

Application

The SIRIUS 3RS2 temperature monitoring relays can be used in almost any application in which temperature overshoot or undershoot is not permitted, e.g. in the monitoring of set temperature limits and the output of alarm messages for:

- Simple and compact two-point control
- Motor and system protection
- Control cabinet temperature monitoring
- Freeze monitoring
- Temperature limits for process variables e.g. in the packaging industry or electroplating
- Controlling equipment and machines such as heating, climate and ventilation systems, solar collectors, heat pumps or warm water supplies
- Motor, bearing and gear oil monitoring
- Monitoring of coolants

Additionally for digital devices

- Simple and compact two-point or three-point control
- Burner according to EN 50156
- Temperature monitors or temperature limiters[1)] according to EN 14597
- ATEX explosion protection according to EN 50495

[1)] A 3RS29 sensor expansion module with an additional sensor is required for the function as a temperature limiter.

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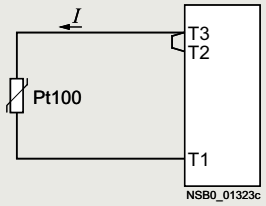
Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/25719/td Equipment Manual and internal circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/ps/25719/man	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/25719/faq

Connection of resistance-type thermometers

Two-wire measurement

When two-wire temperature sensors are used, the resistances of the sensor and wiring are added. The resulting systematic error must be taken into account when the evaluation unit is calibrated. A jumper must be clamped between terminals T2 and T3 for this purpose.



Wiring errors

The errors that are generated by the wiring comprise approximately 2.5 K/Ω. If the resistance of the cable is not known and cannot be measured, the wiring errors can also be estimated using the following table.

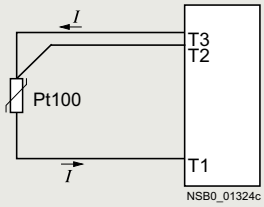
Temperature drift dependent on the length and cross-section of the cable with Pt100 sensors and an ambient temperature of 20 °C, in K:

Cable length in m	Cross-section mm²			
	0.5	0.75	1	1.5
	Temperature drift in K:			
0	0	0	0	0
10	1.8	1.2	0.9	0.6
25	4.5	3.0	2.3	1.5
50	9.0	6.0	4.5	3.0
75	13.6	9.0	6.8	4.5
100	18.1	12.1	9.0	6.0
200	36.3	24.2	18.1	12.1
500	91.6	60.8	45.5	30.2

Example: On a Pt100 sensor with a cable length of 10 m and a conductor cross-section of 1 mm^2 the temperature drift equals 0.9 K.

Three-wire measurement

To minimize the effects of the line resistances, a three-wire circuit is often used. Using the additional cable, two measuring circuits can be formed of which one is used as a reference. The evaluation unit can then automatically calculate the line resistance and take it into account.



Connection of thermocouples

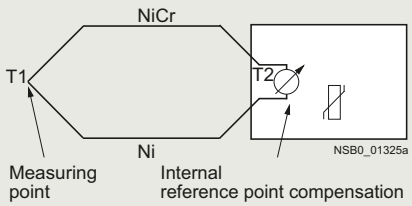
Based on the thermo-electrical effect, a differential temperature measurement will be performed between the measuring point and the evaluation unit.

This principle assumes that the evaluation unit knows the temperature at the clamping point (T2). For this reason, the 3RS2 temperature monitoring relays have an integral reference point compensation that determines this comparison temperature and builds it into the result of the measurement. The thermal sensors and cables must therefore be insulated.

The absolute temperature is therefore calculated from the ambient temperature of the evaluation unit and the temperature difference measured by the thermocouple.

Temperature detection is therefore possible (T1) without needing to know the precise ambient temperature of the clamping point at the evaluation unit (T2).

The connecting cable is only permitted to be extended using compensating lines that are made from the same material as the thermocouple. If a different type of conductor is used, an error will result in the measurement.



For more information, see https://www.ephy-mess.de/en.

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Principle of operation

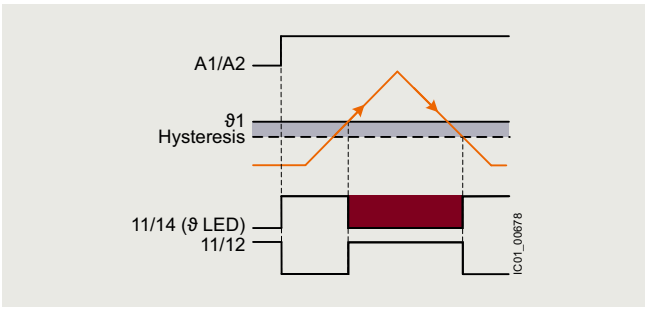
Once the temperature has reached the set threshold value ϑ1, the K1 output relay changes its switching state as soon as the set time *t* has elapsed (K2 responds in the same manner to ϑ2). The delay time can only be adjusted with digital units (on analog units *t* = 0).

When Auto RESET (AUTO RST) is set, the relays return to their original state as soon as the temperature reaches the set hysteresis value.

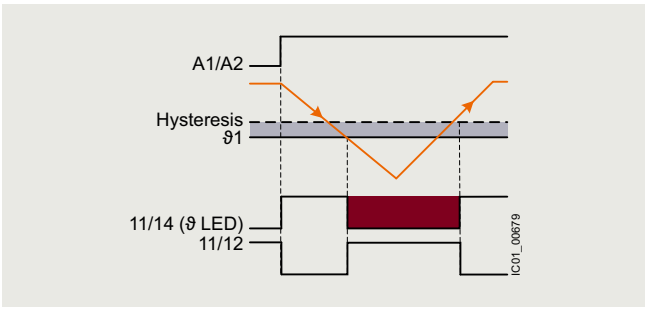
The memory function (MEMORY) allows the status to be saved even in the event of a voltage failure.

3RS25 analog multi-function devices

Temperature overshoot



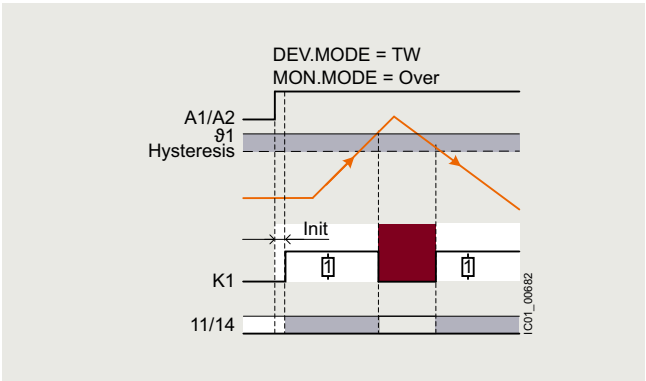
Temperature undershoot



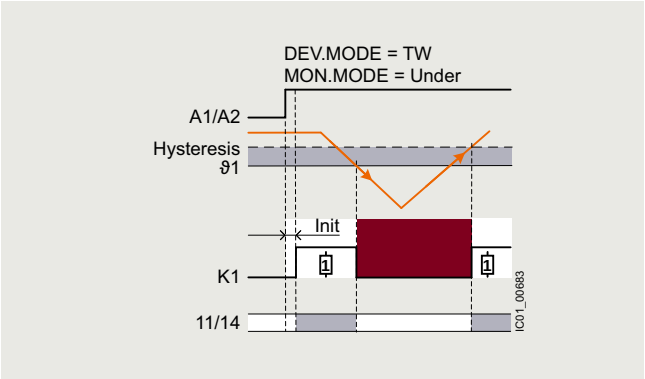
3RS26, 3RS28 digital devices (1 sensor) with Safety function

Temperature monitors according to EN 14597

Temperature overshoot

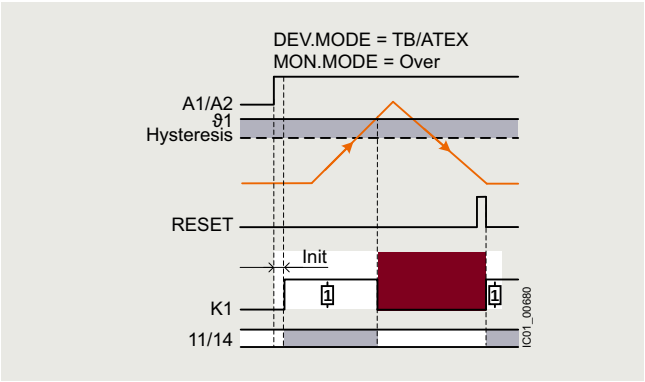


Temperature undershoot

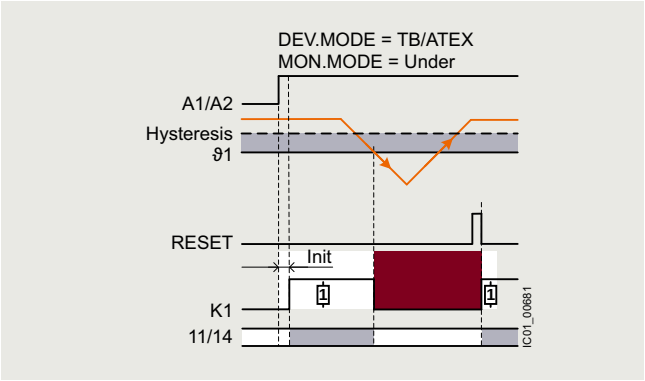


Temperature limiters according to EN 14597/ATEX

Temperature overshoot



Temperature undershoot



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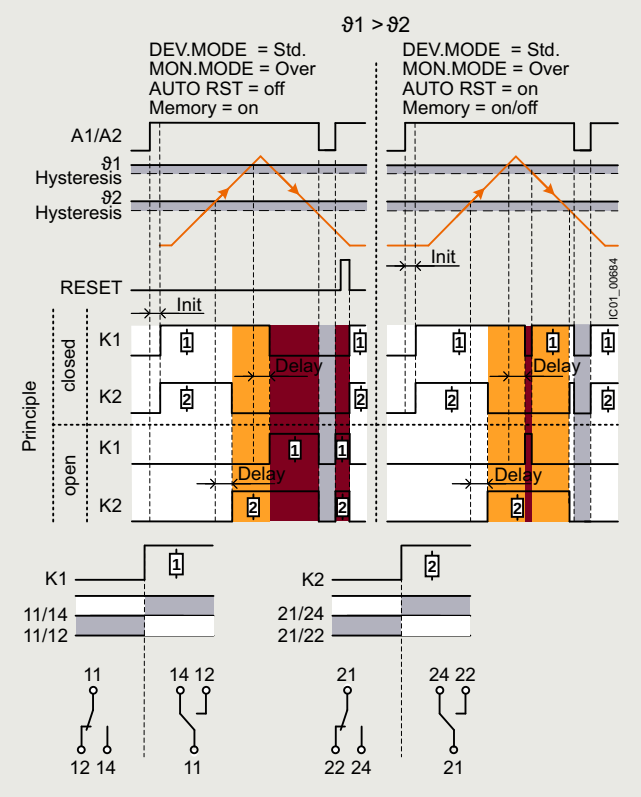
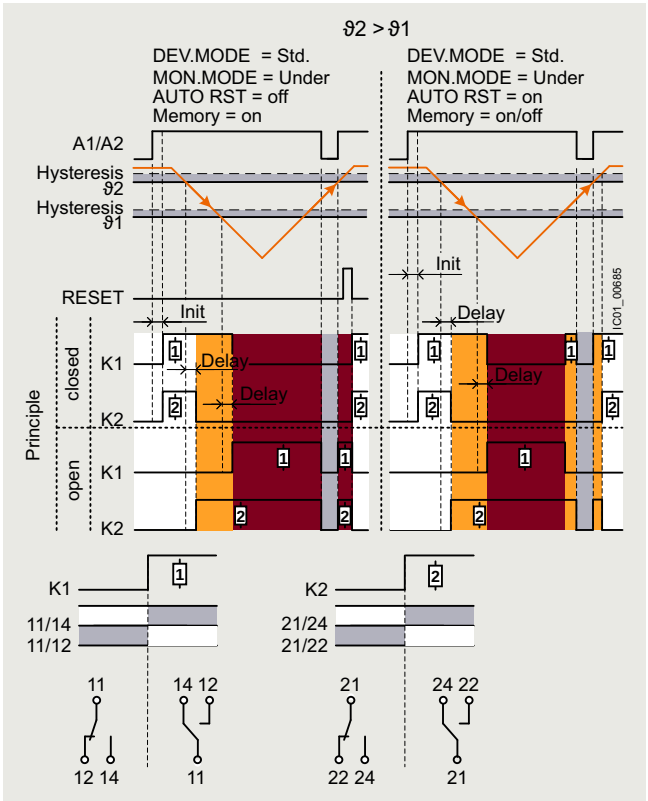
General data

3RS26, 3RS28 digital devices (1 sensor)

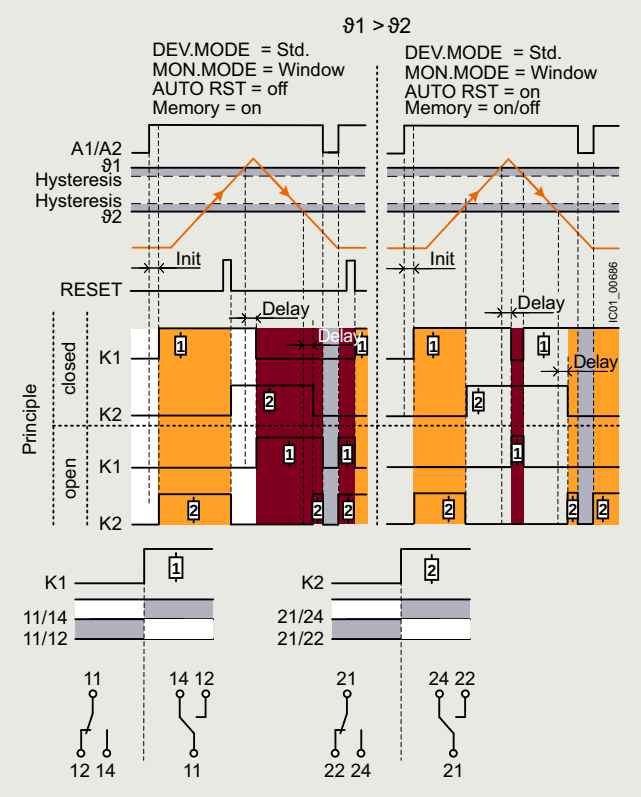
Temperature overshoot



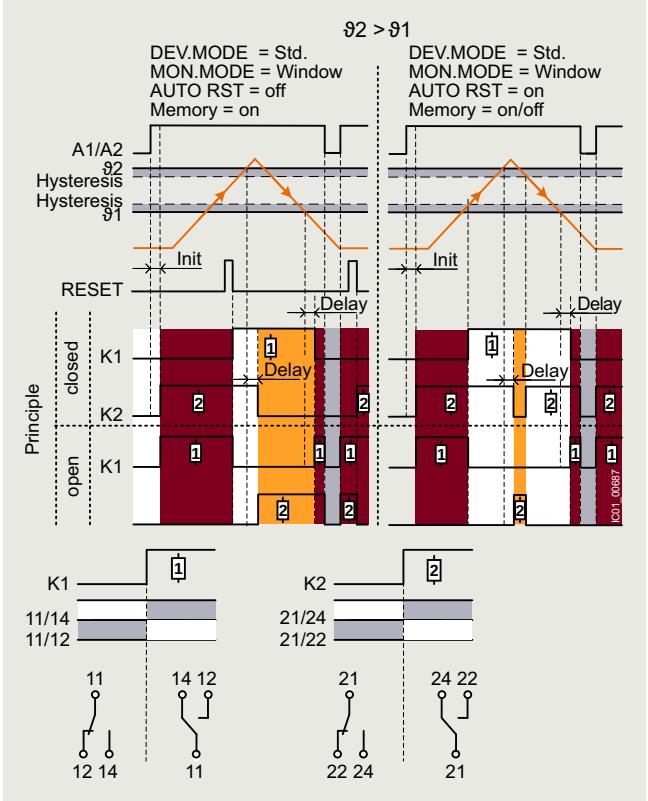
Temperature undershoot



Range monitoring



Range monitoring



10

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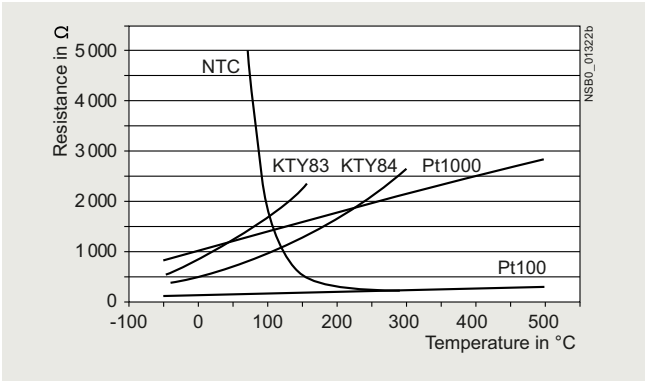
Characteristic curves

For resistance sensors



Characteristic curves for resistance sensors

The short-circuit and open-circuit detection as well as the measuring range is limited, depending on the sensor type.

Measuring ranges and switch position for analog devices in °C for Pt100 resistance sensor

Measuring range in °C	Switch position in °C										
	min.					1/2					max.
0 ... +100	0	10	20	30	40	50	60	70	80	90	100
0 ... +200	0	20	40	60	80	100	120	140	160	180	200
-50 ... +50	-50	-40	-30	-20	-10	0	10	20	30	40	50

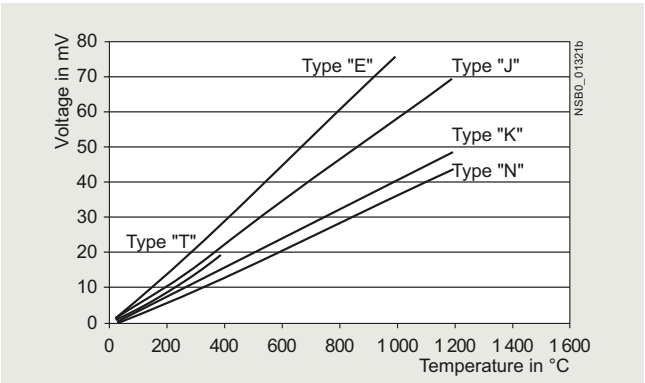
Measuring ranges for digital devices in °C for resistance sensor

Sensor type	Short circuit	Open circuit	3RS26, 3RS28 Measuring range in °C	3RS26, 3RS28 Measuring range in °F
Pt100	✓	✓	-50 ... +750	-58 ... +1 382
Pt1000	✓	✓	-50 ... +500	-58 ... +932
KTY83-110	✓	✓	-50 ... +175	-58 ... +347
KTY84	✓	✓	-40 ... +300	-40 ... +572
NTC[1)]	✓	--	+80 ... +160	+176 ... +320

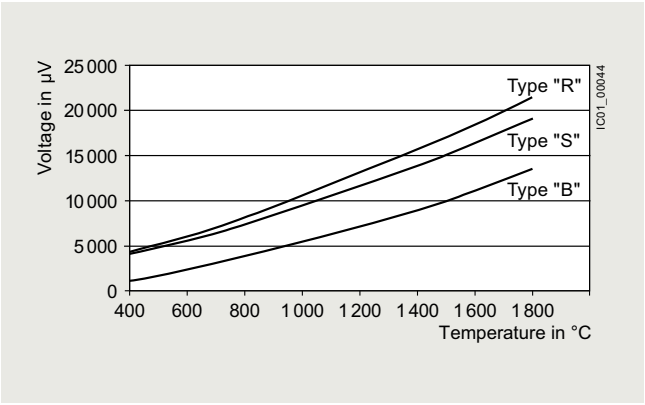
✓ Detection possible
-- Detection not possible

[1)] NTC type: B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

For thermocouples



Characteristic curves for thermocouples J, K, T, E, N



Characteristic curves for thermocouples S, R and B

Measuring ranges and switch position for analog devices in °C for thermocouple types J, K

Measuring range in °C	Switch position in °C										
	min.					1/2					max.
0 ... +200	0	20	40	60	80	100	120	140	160	180	200
0 ... +600	0	60	120	180	240	300	360	420	480	540	600
+500 ... +1 000	500	550	600	650	700	750	800	850	900	950	1 000

Measuring ranges for digital devices in °C/°F for thermocouples

Sensor type	Short circuit	Open circuit	3RS26, 3RS28 Measuring range in °C	3RS26, 3RS28 Measuring range in °F
J	--	✓	-99 ... +1 200	-146.2 ... +2 192
K	--	✓	-99 ... +1 350	-146.2 ... +2 462
T	--	✓	-99 ... +400	-146.2 ... +752
E	--	✓	-99 ... +999	-146.2 ... +1 830.2
N	--	✓	-99 ... +1 300	-146.2 ... +2 372
S	--	✓	0 ... +1 750	+32 ... +3 182
R	--	✓	0 ... +1 750	+32 ... +3 182
B	--	✓	+400 ... +1 800	+752 ... +3 272

✓ Detection possible
-- Detection not possible

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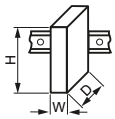
General data

Type		3RS25-....0	3RS26-....0	3RS28-....0	3RS29-....0
General technical specifications					
Dimensions (W x H x D) 	mm	22.5 x 100 x 90			
Permissible ambient temperature					
• During operation	°C	-25 ... +60			
• During transport	°C	-40 ... +85			
• During storage	°C	-40 ... +85			
Degree of protection IP		IP20			
Mounting position		Any			
Type of mounting		Screw fixing and snap-on mounting on 35 mm DIN-rail			
Auxiliary circuit					
Type of voltage		AC/DC		DC	AC/DC
Operating range factor of the control supply voltage, rated value					
• At AC at 50 Hz		0.85 ... 1.1		--	0.85 ... 1.1
• At AC at 60 Hz		0.85 ... 1.1		--	0.85 ... 1.1
• At DC		0.85 ... 1.1		0.7 ... 1.25	0.85 ... 1.1
Operating frequency, rated value	Hz	50 ... 60			
Number of measuring circuits		1			3
Number of CO contacts for auxiliary contacts		1	2		0
Product function					
• Removable terminal for auxiliary and control circuit		Yes			
• Auto RESET		Yes			--
• Fault storage		No	Yes		
• External RESET		No	Yes		
ATEX					
Certificate of suitability					
• Relative to ATEX		No	Yes, with 3RS29 sensor expansion module		Yes, with 3RS26/3RS28 digital device
Safety Integrity Level (SIL) according to IEC 61508		--	1		
Performance Level (PL) according to ISO 13849-1		--	c		

Type		3RS2500-1....0 3RS2600-1....0 3RS2800-1....0 3RS2900-1....0	3RS2500-2....0 3RS2600-2....0 3RS2800-2....0 3RS2900-2....0
Type of electrical connection		**Screw terminals**	**Spring-loaded terminals (push-in)**
Tightening torque	Nm	0.6 ... 0.8	--
Type of connectable conductor cross-sections			
• Solid	mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)	1 x (0.5 ... 4)
• Finely stranded	mm^2		
- Without end sleeves		--	1 x (0.5 ... 4)
- With end sleeves		1 x (0.5 ... 4), 2 x (0.5 ... 2.5)	1 x (0.5 ... 2.5)
• For AWG cables	AWG		
- Solid		1 x (20 ... 12), 2 x (20 ... 14)	1 x (20 ... 12)
- Stranded		--	1 x (20 ... 12)

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Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H

Multi-unit packaging, see page 16/7.	Number of measuring circuits	Type of sensor/ connectable	Rated control supply voltage U_s 50/60 Hz AC	Suitability for use	Screw terminals		Spring-loaded terminals (push-in)	
			V		Article No.	Price per PU	Article No.	Price per PU
Temperature monitoring relays								
Analog multi-function device, 1 sensor, 1 threshold value								
3RS2500-1AA30	1	Resistance sensors: Pt100 Thermocouples: Type J, K	24 AC/DC 24 ... 240 AC/DC	-- --	**3RS2500-1AA30** **3RS2500-1AW30**		**3RS2500-2AA30** **3RS2500-2AW30**	
Digital device, 1 sensor, 2 threshold values								
3RS2600-1BA30	1	Resistance sensors: Pt100, Pt1000, KTY83-110, KTY84, NTC Thermocouples: Type J, K, T, E, N, S, R, B	24 AC/DC 24 ... 240 AC/DC	-- --	**3RS2600-1BA30** **3RS2600-1BW30**		**3RS2600-2BA30** **3RS2600-2BW30**	
Digital device for IO-Link, 1 sensor, 2 threshold values								
3RS2800-1BA40	1	Resistance sensors: Pt100, Pt1000, KTY83-110, KTY84, NTC Thermocouples: Type J, K, T, E, N, S, R, B	24 DC	--	**3RS2800-1BA40**		**3RS2800-2BA40**	
Sensor expansion modules								
2 additional resistance sensors, analog input 4 ... 20 mA, ATEX via analog input, status relay								
3RS2900-1AA30	3	Resistance sensors: Pt100, Pt1000, KTY83-110, KTY84, NTC	24 AC/DC 24 ... 240 AC/DC	For 3RS26/ 3RS28 digital devices	**3RS2900-1AA30** **3RS2900-1AW30**		**3RS2900-2AA30** **3RS2900-2AW30**	

Accessories, see page 10/128.

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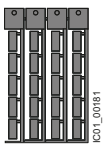
Accessories

Selection and ordering data

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminals for SIRIUS devices in the industrial DIN-rail enclosure						
3ZY1122-1BA00	**Removable terminals**	**Screw terminals**				
	• 2-pole, up to 1 x 4 mm² or 2 x 2.5 mm²	**3ZY1122-1BA00**		1	6 units	41L
		Spring-loaded terminals (push-in)				
	• 2-pole, up to 1 x 4 mm² or 2 x 1.5 mm² (in shared end sleeve)	**3ZY1122-2BA00**		1	6 units	41L
Accessories for enclosures						
3ZY1321-2AA00	**Sealing covers**					
	• 22.5 mm	**3ZY1321-2AA00**		1	5 units	41L
3ZY1311-0AA00	**Push-in lugs** For wall mounting	**3ZY1311-0AA00**		1	10 units	41L
3ZY1440-1AA00	**Coding pins** For removable terminals of SIRIUS devices in the industrial DIN-rail enclosure; they enable the mechanical coding of terminals	**3ZY1440-1AA00**		1	12 units	41L
3ZY1450-1AB00	**Hinged cover** Replacement cover, without terminal labeling, titanium gray					
	• 22.5 mm wide	**3ZY1450-1AB00**		1	5 units	41L
Blank labels						
 3RT2900-1SB20	**Unit labeling plates**[1] For SIRIUS devices					
	• 20 mm x 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B
Tools for opening spring-loaded terminals						
3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-loaded terminals	**Spring-loaded terminals (push-in)**				
	Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**3RA2908-1A**		1	1 unit	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/18.

For suitable sensors, see www.siemens.com/temperature.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

SIRIUS 3RN2 thermistor motor protection

More information

Homepage, see www.siemens.com/sirius-monitoring-relays
Industry Mall, see www.siemens.com/product?3RN2
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=SIRIUSRelais
Conversion tool, see www.siemens.com/conversion-tool

Video: SIRIUS 3RN2 thermistor motor protection relays

Thermistor motor protection devices are used for direct monitoring of the motor winding temperature. For this purpose, the motors are equipped with temperature-dependent resistors (PTC) that are directly installed in the motor winding and abruptly change their resistance at their temperature limit.

Versions

SIRIUS 3RN2 thermistor motor protection relays are available in the following versions:

- 3RN2000 compact evaluation unit
- 3RN2010 compact/standard evaluation unit
- 3RN2012-.BW31 bistable evaluation unit
- 3RN2011, 3RN2012-...30, 3RN2013 standard evaluation unit with ATEX approval
- 3RN2023 evaluation unit with ATEX approval and 2 sensor circuits for warning and disconnection

They comply with

- IEC 60947-8 Low-voltage switchgear and controlgear - Part 8: "Control units for built-in thermal protection (PTC) for rotating electrical machines"
- IEC 61000-6-2, IEC 61000-6-4. "Electromagnetic compatibility for industrial-process measurement and control equipment"

The 3RN2 thermistor motor protection relays with ATEX approval fulfill SIL 1 in compliance with EN 50495.

The terminals of the auxiliary contacts are designated in accordance with EN 60947-1.

3RN2 evaluation units are suitable for snap-on mounting on TH 35 DIN rails according to IEC 60715 or for screw fixing using an adapter (accessory).

Article number scheme

Product versions		Article number									
Thermistor motor protection relay with PTC sensor, type A		**3RN20**	□	□	–	□	□	□	□	□	
Number and version of the sensor circuits	1 sensor circuit, supply voltage = root voltage		**0**								
	1 sensor circuit		**1**								
	2 sensor circuits for warning and disconnection		**2**								
RESET	Auto RESET			**0**							
	Manual RESET, with open-circuit and short-circuit detection			**1**							
	Manual/Auto/Remote RESET, non-volatile, with open-circuit and short-circuit detection			**2**							
	Manual/Auto/Remote RESET, non-volatile, with open-circuit and short-circuit detection, with protective separation			**3**							
Connection method	Screw terminals					**1**					
	Spring-loaded terminals (push-in)					**2**					
Auxiliary switches	1 CO						**A**				
	2 CO						**B**				
	1 NO + 1 NC						**C**				
	1 NO + 1 CO						**D**				
	2 CO, hard gold-plated						**G**				
Rated control supply voltage	24 V AC/DC							**A**	**3**		
	24 ... 240 V AC/DC							**W**	**3**		
Response to failure	Monostable									**0**	
	Bistable									**1**	
Example		**3RN20**	**0**	**0**	**–**	**1**	**A**	**A**	**3**	**0**	

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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General data

Benefits

- Thanks to direct motor protection, overdimensioning of the motors is not necessary
- No settings on the device are necessary
- Solid-state compatible output thanks to versions with hard gold-plated contacts
- Rapid error diagnostics thanks to versions that indicate open and short circuits in the sensor circuit
- All versions with removable terminals
- All versions with screw or spring-loaded terminals with push-in functionality

Application

Direct motor protection through temperature monitoring of the motor winding offers 100% motor protection even under the most difficult ambient conditions, without the need to make adjustments on the device. Versions with hard gold-plated contacts additionally ensure a switching reliability that is higher than that of an electronic control.

Direct motor protection

- At increased ambient temperatures
- When switching frequency is too high
- When startup and braking procedures are too long

ATEX approval for operation in hazardous areas

The SIRIUS 3RN2011, 3RN2012-...30, 3RN2013 and 3RN2023 thermistor motor protection relays for PTC sensors are certified according to ATEX Ex II (2) G and D for environments with explosive gas or dust loads.

Motor protection using current- and temperature-dependent protective devices

IEC 60204 stipulates that motors must be protected from overheating at a rating of 0.5 kW and higher. The protection can take the form of overload protection, overtemperature protection or current limiting.

For motors with frequent starting and braking and in environments where cooling may be impaired (e.g. by dust), it is recommended to use the overtemperature protection option in the form of a protective device coordinated with this mode of operation. A good choice in this case is the use of 3RN2 thermistor motor protection devices.

On rotor-critical motors, overtemperature detection in the stator windings can lead to delayed and hence inadequate protection. In this case the standards stipulate additional protection, e.g. by means of an overload relay.

This combination of thermistor motor protection and overload relay is recommended for full motor protection in case of frequent starting and braking of motors, irregular intermittent duty or excessive switching frequency. To prevent premature tripping of the overload relay in such operating conditions, a higher setting than that normally required for the operational current is chosen. The overload relay then performs stall protection, and the 3RN2 thermistor motor protection relay monitors the temperature of the motor windings.

Application	**Motor protection**		
	Current-dependent only, e.g. with overload relay	Temperature-dependent only, e.g. with thermistor motor protection relay	Current- and temperature-dependent
Motor protection in case of			
Overloading in uninterrupted duty	✓	✓	✓
Long startup and braking operations	❍	✓	✓
Irregular intermittent duty	❍	✓	✓
When switching frequency is too high	❍	✓	✓
Single-phase operation and current asymmetry	✓	✓	✓
Voltage and frequency fluctuations	✓	✓	✓
Stalling of the rotor	✓	✓	✓
Switching on a stalled rotor of a stator-critical motor	✓	✓	✓
Switching on a stalled rotor of a rotor-critical motor	✓	❍	✓
Elevated ambient temperature	--	✓	✓
Impeded cooling	--	✓	✓

✓ Full protection
❍ Conditional protection
-- No protection

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Technical specifications

More information

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/24302/td

Operating Instructions and internal circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/ps/24302/man

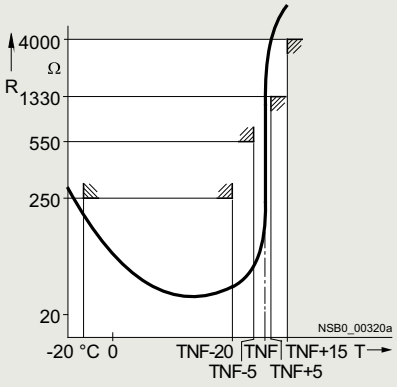
FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/24302/faq

For more information on explosion protection (ATEX), see www.siemens.com/sirius/atex

Type A PTC temperature sensor

If a Type A temperature sensor is connected to a Type A evaluation unit, compliance with the operating temperatures is assured (on pick-up and reset) according to IEC 60947-8.

The characteristic curves of the Type A temperature sensors are described in IEC 60947-8, DIN 44081 and DIN 44082 standards.



Characteristic curve of the 3RN2 evaluation unit

Bimetallic switch

In some applications, bimetallic switches (e.g. Klixon, Thermoclick) are used as sensors instead of PTC temperature sensors. Bimetallic switches are temperature- and current-dependent NC contacts and are available for different temperature ranges. Because bimetallic switches have practically no resistance below their opening temperature, short-circuit detection is not possible when using bimetallic switches. A bimetallic switch can be used for versions 3RN2000 and 3RN2010 on the SIRIUS thermistor motor protection relay.

Note:

Never use bimetallic switches in applications subject to an explosion hazard! Because of their non-standardized tripping characteristic, bimetallic switches must not be used in hazardous applications. Use Type A PTC sensors instead!

Use in hazardous areas

Increased danger in hazardous areas means it is necessary to observe the following notes and standards carefully:

- EN 60079-14/VDE 0165-1 for electrical apparatus for hazardous areas
- EN 60079-17 Explosive atmospheres - Electrical installations inspection and maintenance
- EN 50495 Safety devices required for the safe functioning of equipment with respect to explosion risks

The following SIRIUS 3RN2 thermistor motor protection relays with short-circuit detection are approved for Equipment Group II, Category (2) in Area "G" (areas in which potentially explosive gas, vapor, mist, or air mixtures are present) and are additionally approved for Area "D" (areas containing combustible dust):

- 3RN2011
- 3RN2012-…30
- 3RN2013
- 3RN2023

PTB 15 ATEX 3011 ex II (2) G (Ex e) (EX d) (Ex px)
PTB 15 ATEX 3011 ex II (2) D (Ex t) (Ex p)

For 3RN2 thermistor motor protection relays, the EC type-examination certificate is available for Group II, Category (2) G [Ex e] [Ex d] [Ex px] and D [Ex t] [Ex p]. The number is PTB 15 ATEX 3011.

SIRIUS 3RN2 thermistor motor protection relays are not intended for installation in hazardous areas. If they are installed in a hazardous area, the SIRIUS 3RN2 thermistor motor protection relays must be adapted to the applicable type of protection.

The machine or plant must shut down immediately if the SIRIUS 3RN2 thermistor motor protection relay is tripped, even if connected through a frequency converter. This must be implemented with circuitry.

SIRIUS 3RN2 thermistor motor protection relays with functional safety in accordance with EN 50495 are suitable for protecting explosion-proof motors/machines.

On evaluation units with a supply voltage of 24 V AC/DC, you must ensure electrical separation with a battery network or a power supply unit with electrical separation (e.g. isolating transformer) (does not apply to 3RN2013-.BA30).

A SIRIUS 3RN2 thermistor motor protection relay set to "Automatic RESET" mode will be reset automatically after the recovery time has elapsed, without the RESET button being pressed. An additional ON button has to be used to ensure that the motor does not start up automatically following tripping. "Automatic RESET" mode must not be used in applications where there is a risk of personal injury or damage to property if the motor restarts unexpectedly.

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General data

⚠ NOTICE!

When used in a hazardous area, the thermistor motor protection relay must not be operated with Auto RESET (terminals Y1 and Y2 permanently jumpered).

A risk analysis must be performed for the complete plant or machine. If this analysis yields a lower hazard potential (category 1), all SIRIUS 3RN2 thermistor motor protection relays can be used, provided the safety regulations are observed.

⚠ WARNING!

All work involved in connecting, commissioning and maintenance must be carried out by qualified, responsible personnel. Improper handling may result in serious personal injury and considerable damage to property.

Cable routing

The measuring circuit leads must be routed as separate control cables. It is not permitted to use cores from the supply line of the motor or any other main supply cables. If extreme inductive or capacitive interference is expected as a result of power lines routed in parallel, shielded control cables must be used.

Maximum length of sensor circuit cables for evaluation units without short-circuit detection in the sensor circuit:

Cable cross-section	3RN2000, 3RN2010
2.5 mm²	2 x 2 800 m
1.5 mm²	2 x 1 500 m
0.5 mm²	2 x 500 m

Maximum length of sensor circuit cables for evaluation units with short-circuit detection[1]:

Cable cross-section	3RN2011, 3RN2012, 3RN2013, 3RN2023
2.5 mm²	2 x 250 m
1.5 mm²	2 x 150 m
0.5 mm²	2 x 50 m

[1] A short circuit in the sensor circuit will be detected up to this maximum cable length.

Principle of operation

SIRIUS 3RN2 thermistor motor protection relays are thermal protection devices that are suitable, in combination with Type A PTC thermistors, for monitoring temperatures of electrical drives, transformer windings, oils, bearings, air, etc.

The most frequent application is monitoring of three-phase motors in which the motor manufacturer has fitted a PTC sensor into every winding overhang and in which these PTC sensors are connected in series.

The SIRIUS 3RN2 thermistor motor protection relays operate in accordance with the closed-circuit principle and therefore monitor themselves for loss of supply voltage. The exceptions are the warning output on 3RN2023, which always works on the open-circuit principle and the bistable relays of the 3RN2012-.BW31, which always retain the last switching state.

A micro-interruption in the power supply of less than 30 ms does not change the status of the output relays.

For devices with the "Manual RESET" function, the test function can be activated and a trip simulated by pressing the blue Test/RESET button for > 2 seconds.

The 3RN2011, 3RN2012, 3RN2013 and 3RN2023 devices are additionally equipped with open-circuit and short-circuit detection in the sensor circuit. The unit will trip in the event of a short circuit (resistance in sensor circuit < 10 Ω) or open circuit in the sensor circuit (dynamic open-circuit detection). Tripping as the result of a short circuit in the sensor circuit is indicated by a flickering red LED (TRIPPED). In the event of a short circuit in the sensor circuit for warning on the 3RN2023, the yellow warning LED (WARNING) flickers. The devices with dynamic open-circuit detection evaluate the rise time of the sensor circuit resistance. If the sensor circuit resistance rises from 3 300 Ω to 12 kΩ within 200 ms, the unit will not only trip, but also indicate the open circuit via a flashing red LED (TRIPPED) (in the event of an open circuit in a sensor circuit, the yellow warning LED (WARNING) flashes for the 3RN2023).

All evaluation units (except for the 3RN2000 compact evaluation unit) feature electrical separation between the control circuit and the sensor circuit. The relay outputs are also electrically separated from all other circuits. The 3RN2013 and 3RN2023 evaluation units incorporate protective electrical separation between all circuits up to U_i = 300 V.

3RN2000 compact evaluation unit

The compact unit, which is only 17.5 mm wide, is equipped with a red LED (TRIPPED) for the tripped indicator and a changeover contact. After the unit has tripped, it is automatically reset once the thermistors have cooled down. The root of the changeover contact is connected to the control voltage (terminal 11 is connected to terminal A1). This unit is particularly suitable in circuits in which the control circuit and signaling circuit have the same potential, e.g. in local control boxes.

3RN2010, 3RN2011, 3RN2012, 3RN2013 compact/standard evaluation units

The units are equipped with two LEDs (READY and TRIPPED) for an operating and tripped display and are available with either 1 NO + 1 NC contacts (3RN2010, overall width 17.5 mm) or with 2 CO contacts. Depending on the version, they are available with Auto RESET (3RN2010), Manual/Remote RESET (3RN2011) or Manual/Auto and Remote RESET (3RN2012 and 3RN2013). Remote RESET can be achieved by connecting an external pushbutton with a normally-open function to terminals Y1 and Y2. If terminals Y1 and Y2 are jumpered, the unit is automatically reset once the thermistors have cooled down (Auto RESET). 3RN2012 and 3RN2013 are non-volatile. This means a previous trip remains stored in the event of a control supply voltage failure – the thermistor motor protection relay remains in the safe state with an opened output relay until it is intentionally reset by pressing the TEST/RESET button of the unit or an external pushbutton.

3RN2023 "warning and disconnection" evaluation units

Two sensor circuits can be connected to one 3RN2023 evaluation unit that act on two separate output relays with 1 NO contact for warning and 1 CO contact for disconnection. Thermistors with different rated response temperatures TNF are used to implement the "Warning" and "Disconnection" functions. When sensor circuit 2 for "Warning" responds, a yellow LED is lit and when the "Disconnection" circuit responds, a red LED is lit. The sensor circuits have a different reset response and operating behavior: The "Warning" thermistor sensor circuit 2 (terminals 2T1, T2) works only with Auto RESET and according to the open-circuit principle (output relay K2, NO contact). The "Disconnection" thermistor sensor circuit 1 (terminals 1T1, T2) can be changed from Manual RESET to Auto RESET by jumpering terminals Y1 and Y2. Remote RESET is implemented by connecting an external pushbutton with a normally-open function to these terminals.

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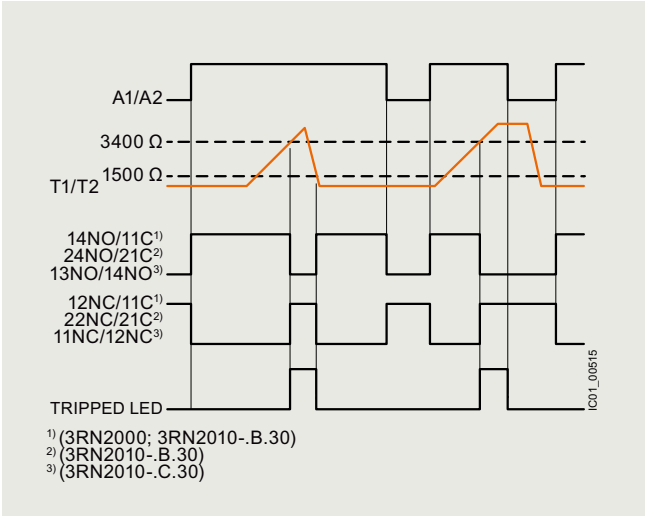
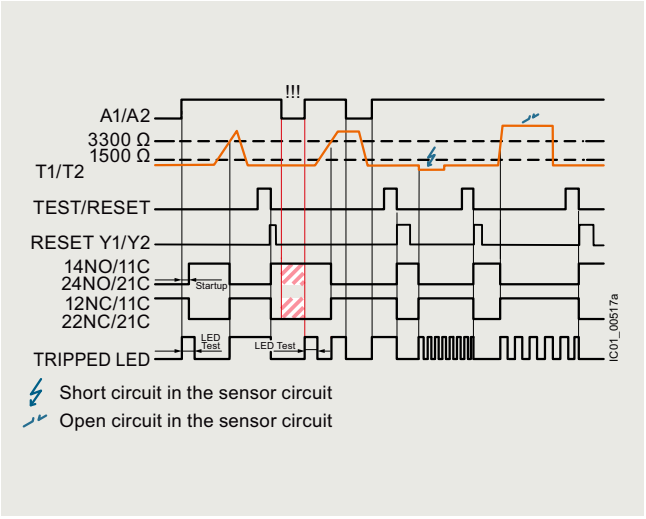
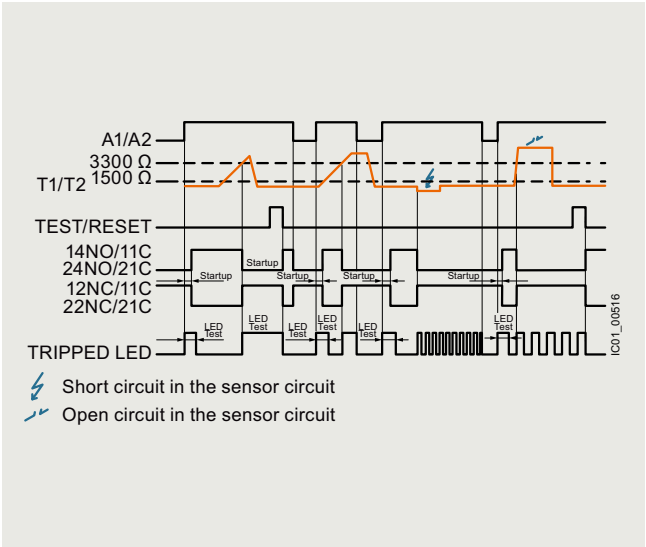
Function diagrams



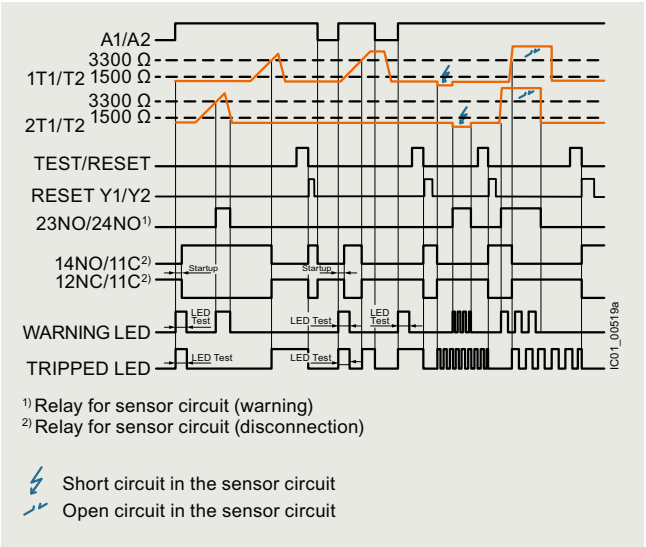
3RN2000, 3RN2010



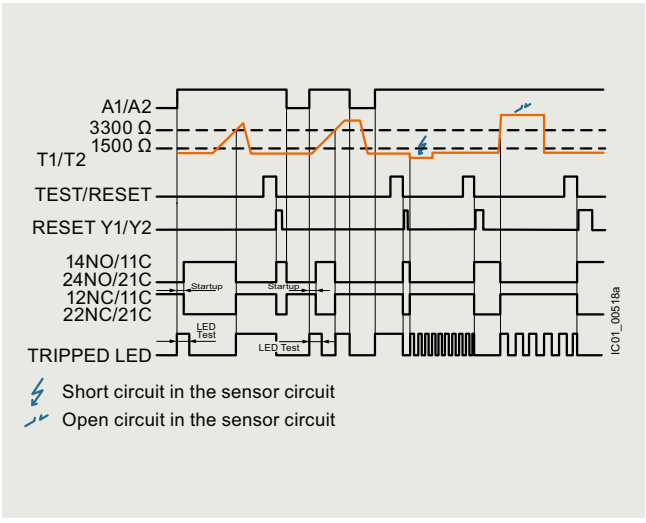
3RN2012-.BW31: resetting via the TEST/RESET button or external pushbutton



3RN2011: resetting via external pushbutton or interruption of the supply voltage



3RN2023: resetting via the TEST/RESET button or external pushbutton



3RN2012-.B.30, 3RN2013: resetting via the TEST/RESET button or external pushbutton

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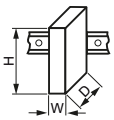
General data

Article number		3RN2000-.A, 3RN2010-.C	3RN201.-.B, 3RN2013-.G, 3RN2023-.D
Dimensions (W x H x D) 		17.5 x 100 x 90	22.5 x 100 x 90

Article number		3RN2000-.AA30	3RN2000-.AW30, 3RN2010-.BW30, 3RN2010-.CW30	3RN2010-.BA30, 3RN2010-.CA30	3RN2011-.BA30, 3RN2012-.BA30	3RN2011-.BW30, 3RN2012-.BW30	3RN2012-.BW31	3RN2013-.BA30	3RN2013-.BW30, 3RN2013-.GW30	3RN2023-.DW30
General technical specifications:										
Type of electrical separation		Without electrical separation	Electrical separation					Protective separation		
Electrical endurance (operating cycles) for AC-15 at 230 V		100 000								
Mechanical endurance (operating cycles)		10 000 000								
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3 rated value	V	300								
Impulse withstand voltage, rated value	kV	4						6		
Minimum mains failure buffering time	ms	40								30
Pollution degree		3								
Degree of protection IP		IP20								
Shock resistance according to IEC 60068-2-27		11*g*/15 ms								
Vibration resistance according to IEC 60068-2-6		10 ... 55 Hz: 0.35 mm								
Type of mounting • Mounting position • Installation altitude at height above sea level, maximum	 m	Screw fixing and snap-on mounting on 35 mm DIN-rail Any 2 000								
Ambient temperature during operation	°C	-25 ... +60								
Relative humidity during operation, maximum	%	70								
ATEX										
Ex device group and Ex category according to ATEX Product Directive 2014/34/EU		--			II 2G, II 2D		--	II 2G, II 2D		
Safety device type according to IEC 61508-2		--			Type B		--	Type B		
Safety Integrity Level (SIL) according to IEC 61508		--			SIL 1		--	SIL 1		
Performance Level (PL) according to ISO 13849-1		--			c		--	c		
T1 value for proof test interval or service duration according to IEC 61508	y	--			3		--	3		
Measuring circuit:										
Number of measuring circuits		1								2
Relative measuring accuracy	%	9			2					
Maximum number of sensors in series		6								
Cable length of sensor, maximum	m	2 800			250					
Thermistor resistance response value	Ω	1 500 ... 1 650			1 500 ... 1 550					
Thermistor resistance return value	Ω	3 400 ... 3 600			3 300 ... 3 350					

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General data

Article number		3RN2000-.AA30	3RN2000-.AW30, 3RN2010-.BW30, 3RN2010-.CW30	3RN2010-.BA30, 3RN2010-.CA30	3RN2011-.BA30, 3RN2012-.BA30	3RN2011-.BW30, 3RN2012-.BW30	3RN2012-.BW31	3RN2013-.BA30	3RN2013-.BW30, 3RN2013-.GW30	3RN2023-.DW30
Control circuit:										
Current-carrying capacity of the output relay										
• At AC-15 at 250 V at 50/60 Hz	A	3								
• At DC-13 at 24 V	A	1								
• At DC-13 at 125 V	A	0.2								
• At DC-13 at 250 V	A	0.1								
Thermal current of the non-solid-state contact blocks, maximum	A	5								
Uninterrupted current of the output relay's DIAZED fuse link	A	6								
Supply voltage:										
Control supply voltage										
• At AC										
- At 50 Hz rated value	V	24 ... 24	24 ... 240	24 ... 24		24 ... 240		24 ... 24	24 ... 240	
- At 60 Hz rated value	V	24 ... 24	24 ... 240	24 ... 24		24 ... 240		24 ... 24	24 ... 240	
• At DC, rated value	V	24 ... 24	24 ... 240	24 ... 24		24 ... 240		24 ... 24	24 ... 240	
Operating range factor of the control supply voltage, rated value										
• At AC at 50 Hz		0.85 ... 1.1								
• At AC at 60 Hz		0.85 ... 1.1								
• At DC		0.85 ... 1.1								

Article number		3RN20..-1	3RN20..-2
Type of electrical connection		**Screw terminals**	**Spring-loaded terminals (push-in)**
Tightening torque	Nm	0.6 ... 0.8	--
Type of connectable conductor cross-sections			
• Solid		1 x (0.5 ... 4 mm²), 2 x (0.5 ... 2.5 mm²)	1 x (0.5 ... 4 mm²)
• Finely stranded/with end sleeve		1 x (0.5 ... 4 mm²), 2 x (0.5 ... 1.5 mm²)	1 x (0.5 ... 2.5 mm²)
• For AWG cables			
- Solid		1 x (20 ... 12), 2 x (20 ... 14)	1 x (20 ... 12)
- Stranded		--	1 x (20 ... 12)

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Basic units

Selection and ordering data

Multi-unit packaging, see page 16/7.

3RN2000-1AA30

3RN2010-1BA30

3RN2011-1BA30

3RN2012-1BW30

3RN2023-1DW30

Product function	Number of CO contacts for auxiliary contacts	Number of NO contacts for auxiliary contacts	Number of NC contacts for auxiliary contacts	Material of switching contacts	Control supply voltage at AC at 50 Hz, rated value	Control supply voltage at DC rated value	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
					V	V					
Compact evaluation unit, suitable for bimetallic switch											
Terminal A1 jumpered with root of changeover contact											
Auto RESET	1	0	0	AgSnO2	24 ... 24	24 ... 24	**3RN2000-□AA30**		1	1 unit	41H
					24 ... 240	24 ... 240	**3RN2000-□AW30**		1	1 unit	41H
	0	1	1	AgSnO2	24 ... 24	24 ... 24	**3RN2010-□CA30**		1	1 unit	41H
					24 ... 240	24 ... 240	**3RN2010-□CW30**		1	1 unit	41H
Standard evaluation unit, suitable for bimetallic switch											
Auto RESET	2	0	0	AgSnO2	24 ... 24	24 ... 24	**3RN2010-□BA30**		1	1 unit	41H
					24 ... 240	24 ... 240	**3RN2010-□BW30**		1	1 unit	41H
Bistable evaluation unit, open-circuit and short-circuit detection in the sensor circuit											
Does not trigger in the event of control supply voltage failure											
Auto RESET, Manual RESET, External RESET, Fault storage	2	0	0	AgSnO2	24 ... 240	24 ... 240	**3RN2012-□BW31**		1	1 unit	41H
Standard evaluation unit with ATEX approval, open-circuit and short-circuit detection in the sensor circuit[1)]											
Manual RESET, External RESET	2	0	0	AgSnO2	24 ... 24	24 ... 24	**3RN2011-□BA30**		1	1 unit	41H
					24 ... 240	24 ... 240	**3RN2011-□BW30**		1	1 unit	41H
Non-volatile[3)]											
Auto RESET, Manual RESET, External RESET, Fault storage	2[4)]	0	0	AgSnO2	24 ... 24	24 ... 24	**3RN2012-□BA30**		1	1 unit	41H
					24 ... 240	24 ... 240	**3RN2012-□BW30**		1	1 unit	41H
Protective separation, non-volatile [2)3)]											
Auto RESET, Manual RESET, External RESET, Fault storage	2	0	0	AgSnO2	24 ... 24	24 ... 24	**3RN2013-□BA30**		1	1 unit	41H
					24 ... 240	24 ... 240	**3RN2013-□BW30**		1	1 unit	41H
				AgSnO2 Hard gold-plated	24 ... 240	24 ... 240	**3RN2013-□GW30**		1	1 unit	41H
Evaluation unit with ATEX approval and 2 sensor circuits for warning and disconnection, open-circuit and short-circuit detection in both sensor circuits											
Protective separation, non-volatile [2)3)]											
Auto RESET, Manual RESET, External RESET, Fault storage	1	1	0	AgSnO2	24 ... 240	24 ... 240	**3RN2023-□DW30**		1	1 unit	41H

Type of electrical connection

- Screw terminals → 1
- Spring-loaded terminals (push-in) → 2

1) For 3RN2011: The unit can be reset with the RESET button or by disconnecting the control supply voltage.

2) Protective separation up to 300 V according to DIN/VDE 0160, IEC 60947-1.

3) Protection against voltage failure or non-volatile fault storage means that previous tripping due to a fault remains stored even if the control supply voltage fails. The monitoring device is not reset if the voltage fails. With an active fault, meaning a fault which has not been manually confirmed, an automatic restart of the plant upon recovery of the power is prevented therefore and plant safety increased as the result.

4) Setting of output contacts in as-supplied state not defined (bistable relay). Application of the control supply voltage once results in contact changeover to the correct setting.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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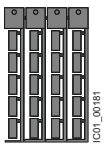
Selection and ordering data

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminals for SIRIUS devices in the industrial DIN-rail enclosure						
3ZY1122-1BA00	**Removable terminals**	**Screw terminals**				
	• 2-pole, up to 1 x 4 mm² or 2 x 2.5 mm²	**3ZY1122-1BA00**		1	6 units	41L
		Spring-loaded terminals (push-in)				
	• 2-pole, up to 1 x 4 mm² or 2 x 1.5 mm² (in shared end sleeve)	**3ZY1122-2BA00**		1	6 units	41L
Accessories for enclosures						
3ZY1311-0AA00	**Push-in lugs** For wall mounting	**3ZY1311-0AA00**		1	10 units	41L
3ZY1440-1AA00	**Coding pins** For removable terminals of SIRIUS devices in the industrial DIN-rail enclosure; enable the mechanical coding of terminals	**3ZY1440-1AA00**		1	12 units	41L
3ZY1450-1AB00	**Hinged cover** Replacement cover, without terminal labeling, titanium gray					
	• 17.5 mm wide	**3ZY1450-1AA00**		1	5 units	41L
	• 22.5 mm wide	**3ZY1450-1AB00**		1	5 units	41L
Blank labels						
 3RT2900-1SB20	**Unit labeling plates**[1] For SIRIUS devices					
	• 10 mm x 7 mm, titanium gray	**3RT2900-1SB10**		100	816 units	41B
	• 20 mm x 7 mm, titanium gray	**3RT2900-1SB20**		100	340 units	41B
Tools for opening spring-loaded terminals						
3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-loaded terminals	**Spring-loaded terminals (push-in)**				
	Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**3RA2908-1A**		1	1 unit	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/18.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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SIRIUS 3RS70 signal converters

Overview

SIRIUS 3RS70 signal converters

More information

Homepage, see www.siemens.com/sirius-coupling-relays
Industry Mall, see www.siemens.com/product?3RS70
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=SIRIUSRelais
Conversion tool, see www.siemens.com/conversion-tool

Signal converters perform the coupling function for analog signals on both the input side and the output side. They are indispensable when processing analog values with electronic controls. Under harsh industrial conditions in particular, it is often necessary to transmit analog signals over long distances. Electrical separation is then needed as a result of the different power supplies. The resistance of the wiring causes potential differences and losses which must be prevented.

Electromagnetic disturbance and overvoltages can affect the signals on the input side in particular or even destroy the analog modules. All terminals of the 3RS70 signal converters are safe up to a voltage of 30 V DC and protected against switching poles. Short-circuit protection is an especially important function for the outputs.

The devices are EMC-tested according to

- IEC 61000-6-4 (generic standard for emitted interference)
- IEC 61000-6-2 (generic standard for interference immunity)

The analog signals comply with

- IEC 60381-1/2

Article number scheme

Product versions		Article number									
Signal converters		**3RS70**	□	□	–	□	□	□	**0**	**0**	
Product function/ type of input signal	Single-range converters, active		**0**	**0**							3-way separation, input 0 ... 10 V
			0	**2**							3-way separation, input 0 ... 20 mA
			0	**3**							3-way separation, input 4 ... 20 mA
	Multi-range converters, active, switchable		**0**	**5**							3-way separation, 3 standard signals can be switched 0 ... 10 V, 0/4 ... 20 mA
	Universal converters, active, switchable		**0**	**6**							3-way separation, 16 signals can be switched
	Single-range converters, passive		**2**	**0**							2-way separation, 4 ... 20 mA
	Multi-range converters, active, switchable		**2**	**5**							3-way separation, with manual/automatic switch and setting potentiometer
Connection type	Screw terminals					**1**					
	Spring-loaded terminals (push-in)					**2**					
Type of output signal	0 ... 10 V						**A**				
	0 ... 20 mA						**C**				
	4 ... 20 mA						**D**				
	Loop power isolator 4 ... 20 mA						**E**				
	3 standard signals can be switched						**F**				
	4 frequencies can be switched						**K**				
Supply voltage	24 V AC/DC							**E**			
	None							**T**			
	24 ... 240 V AC/DC							**W**			
Example		**3RS70**	**0**	**0**	**–**	**1**	**A**	**E**	**0**	**0**	

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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Benefits

- Narrow width
- Easy-to-set universal converters
- Converters with frequency output
- All ranges are fully calibrated
- Universal family of devices – the perfect solution for every application
- Integrated manual/automatic switch with a setpoint generator
- Outputs are short-circuit proof
- Up to 30 V – protected against damage caused by wiring errors

Application

Signal converters are used in analog signal processing for

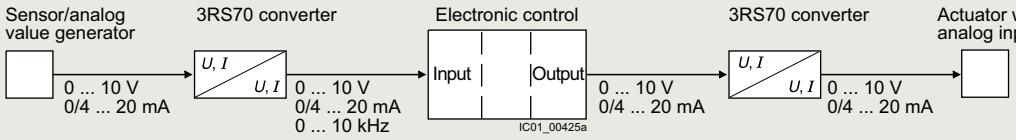
- Electrical separation
- Conversion of normalized and non-normalized signals
- Amplification and impedance adaptation
- Conversion to a frequency for processing by a digital input
- Overvoltage and EMC protection
- Short-circuit protection of the outputs

3RS7025 manual/automatic converter

For special applications in which analog signals have to be simulated, or during plant commissioning when the actual process value is not yet available, the 3RS7025 devices feature a setting potentiometer for manual setpoint selection and a manual/automatic switch.

The potentiometer for the 3RS7025 devices is used to simulate analog output signals when the changeover switch is set to "Manual" and the control supply voltage is applied, without the need for an analog input signal. The scale ranges from 0 to 100%.

Example: When it is set for an output of 4 to 20 mA, the left stop on the potentiometer represents an output current of 4 mA and the right stop represents an output current of 20 mA. In the "Auto" switch position, the output signal follows the input signal proportionally regardless of the potentiometer setting.



Application example of analog signal processing

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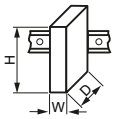
Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16691/td Operating Instructions, see https://support.industry.siemens.com/cs/ww/en/view/109475738	Internal circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/view/109475738

Article number		3RS7000-.AE00	3RS7002-.AE00, 3RS7003-.AE00	3RS7000-.CE00, 3RS7000-.DE00	3RS7002-.CE00, 3RS7002-.DE00, 3RS7003-.CE00, 3RS7003-.DE00	3RS7020-.ET00
Product designation Product version		Single-range converters, active				Single-range converters, passive
General data:						
Dimensions (W x H x D) 		6.2 x 93 x 72.5				6.2 x 93 x 71
Ambient temperature • During operation • During storage	 °C °C	 -25 ... +60 -40 ... +80				
Relative humidity during operation	%	10 ... 95				
Insulation voltage for overvoltage category III according to IEC 60664 for pollution degree 3, rated value	V	50				
Active power input	W	0.29				--
Degree of protection		IP20				
Input:						
Input voltage • Max.	 V	 30				
Input impedance • Of current input, maximum • Of voltage input, minimum	 Ω kΩ	 -- 330	 100 --	 -- 330	 100 --	
Output:						
Load • Maximum at current output • Minimum at voltage output	 Ω kΩ	 -- 2		 500 --		 1000 --
Relative measuring accuracy	%	0.1				
Short-circuit-proof		Yes				No

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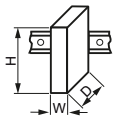
Article number		3RS7005-.FE00	3RS7005-.KE00	3RS7005-.FW00	3RS7005-.KW00	3RS7025-.FE00	3RS7025-.FW00
Product designation Product version		Multi-range converters, active, switchable				Multi-range converters, active, switchable, with manual/automatic switch and setting potentiometer	
General data:							
Dimensions (W x H x D) 		6.2 x 93 x 72.5		17.5 x 93 x 72.5		17.5 x 93 x 75	
Ambient temperature							
• During operation	°C	-25 ... +60					
• During storage	°C	-40 ... +80					
Relative humidity during operation	%	10 ... 95					
Insulation voltage for overvoltage category III according to IEC 60664 for pollution degree 3, rated value	V	50		300		50	300
Active power input	W	0.29		0.5	0.34	0.5	
Degree of protection		IP20					
Input:							
Input voltage							
• Max.	V	30					
Input impedance							
• Of current input, maximum	Ω	100					
• Of voltage input, minimum	kΩ	330					
Output:							
Load							
• Maximum at current output	Ω	500	--	500	--	500	
• Minimum at voltage output	kΩ	2	--	2	--	2	
Relative measuring accuracy	%	0.1					
Short-circuit-proof		Yes					

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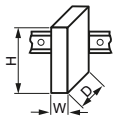
SIRIUS 3RS70 signal converters

Article number		3RS7006-.FE00	3RS7006-.FW00
Product designation Product version		Universal converters, active, switchable	
General data:			
Dimensions (W x H x D) 		17.5 x 93 x 72.5	
Ambient temperature • During operation • During storage	 °C °C	 -25 ... +60 -40 ... +80	
Relative humidity during operation	%	10 ... 95	
Insulation voltage for overvoltage category III according to IEC 60664 for pollution degree 3, rated value	V	50	300
Active power input	W	0.5	
Degree of protection		IP20	
Input:			
Input voltage • Max.	 V	 30	
Input impedance • Of current input, maximum • Of voltage input, minimum	 Ω kΩ	 100 330	
Output:			
Load • Maximum at current output • Minimum at voltage output	 Ω kΩ	 500 2	
Relative measuring accuracy	%	0.1	
Short-circuit-proof		Yes	

Article number	3RS70..-1....	3RS70..-2....
Type of electrical connection	**Screw terminals**	**Spring-loaded terminals (push-in)**
Type of connectable conductor cross-sections • Solid • Finely stranded - Without end sleeves - With end sleeves • Solid for AWG cables	 1 x (0.25 ... 2.5 mm²) -- 1 x (0.25 ... 1.5 mm²) 1 x (20 ... 14)	 1 x (0.25 ... 2.5 mm²) 1 x (0.25 ... 2.5 mm²) 1 x (0.25 ... 1.5 mm²) 1 x (20 ... 14)

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Selection and ordering data

Signal type at the input	Signal type at the output	Supply voltage	Width mm	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Single-range converters								
Passive								
Type of electrical separation, 2-way								
4 ... 20 mA	4 ... 20 mA	--	6.2	**3RS7020-☐ET00**		1	1 unit	41H
Active								
Type of electrical separation, 3-way								
0 ... 10 V	0 ... 10 V	24 V AC/DC	6.2	**3RS7000-☐AE00**		1	1 unit	41H
0 ... 20 mA	0 ... 10 V	24 V AC/DC	6.2	**3RS7002-☐AE00**		1	1 unit	41H
4 ... 20 mA	0 ... 10 V	24 V AC/DC	6.2	**3RS7003-☐AE00**		1	1 unit	41H
0 ... 10 V	0 ... 20 mA	24 V AC/DC	6.2	**3RS7000-☐CE00**		1	1 unit	41H
0 ... 20 mA	0 ... 20 mA	24 V AC/DC	6.2	**3RS7002-☐CE00**		1	1 unit	41H
4 ... 20 mA	0 ... 20 mA	24 V AC/DC	6.2	**3RS7003-☐CE00**		1	1 unit	41H
0 ... 10 V	4 ... 20 mA	24 V AC/DC	6.2	**3RS7000-☐DE00**		1	1 unit	41H
0 ... 20 mA	4 ... 20 mA	24 V AC/DC	6.2	**3RS7002-☐DE00**		1	1 unit	41H
4 ... 20 mA	4 ... 20 mA	24 V AC/DC	6.2	**3RS7003-☐DE00**		1	1 unit	41H
Multi-range converters								
Active, switchable								
Type of electrical separation, 3-way								
0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA	0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA	24 V AC/DC	6.2	**3RS7005-☐FE00**		1	1 unit	41H
		24 ... 240 V AC/DC	17.5	**3RS7005-☐FW00**		1	1 unit	41H
	0 ... 50 Hz 0 ... 100 Hz 0 ... 1 kHz 0 ... 10 kHz	24 V AC/DC	6.2	**3RS7005-☐KE00**		1	1 unit	41H
		24 ... 240 V AC/DC	17.5	**3RS7005-☐KW00**		1	1 unit	41H
Active, switchable, with manual/automatic switch and setting potentiometer								
Type of electrical separation, 3-way								
0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA	0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA	24 V AC/DC	17.5	**3RS7025-☐FE00**		1	1 unit	41H
		24 ... 240 V AC/DC	17.5	**3RS7025-☐FW00**		1	1 unit	41H
Universal converters								
Active, switchable								
Type of electrical separation, 3-way								
0 ... 60 mV, 0 ... 100 mV, 0 ... 300 mV, 0 ... 500 mV, 0 ... 1 V, 0 ... 2 V, 0 ... 5 V, 0 ... 10 V, 0 ... 20 V, 2 ... 10 V, 0 ... 5 mA, 0 ... 10 mA, 0 ... 20 mA, 4 ... 20 mA, -5 ... +5 mA, -20 ... +20 mA	0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA	24 V AC/DC	17.5	**3RS7006-☐FE00**		1	1 unit	41H
		24 ... 240 V AC/DC	17.5	**3RS7006-☐FW00**		1	1 unit	41H

3RS7000-1AE00

3RS7000-2AE00

3RS7005-1FW00

3RS7006-1FE00

Type of electrical connection

- Screw terminals
- Spring-loaded terminals (push-in)

1
2

10

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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SIRIUS 3RS70 signal converters

Accessories

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Galvanic isolation plates						
3RQ3900-0A	**Galvanic isolation plates** For electrical separation of different potentials when devices of different types are installed side by side	**3RQ3900-0A**		1	10 units	41H
Connecting combs						
3RQ3901-0B	**Connecting combs** For linking the same potentials, current-carrying capacity for infeed of max. 6 A					
	• 2-pole	**3RQ3901-0A**		1	10 units	41H
	• 4-pole	**3RQ3901-0B**		1	10 units	41H
	• 8-pole	**3RQ3901-0C**		1	10 units	41H
	• 16-pole	**3RQ3901-0D**		1	10 units	41H
Clip-on labels						
	Clip-on labels For terminal and equipment labeling, white • 5 x 5 mm[1)]	**3RQ3902-0A**		100	2000 units	41H
Tools for opening spring-loaded terminals						
3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-loaded terminals Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**Spring-loaded terminals (push-in)** **3RA2908-1A**		1	1 unit	41B

1) PC labeling system for individual inscription of unit labeling plates available from: Conta-Clip Verbindungstechnik GmbH, see page 16/18.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Price groups
PG 41B, 41H, 41L, 42B, 42C, 42F, 42J

11/2 **Introduction**

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11/23 - SIRIUS 3SK1 Advanced basic units
11/24 - SIRIUS 3SK2 basic units
Expansion units
11/26 - Output expansions
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SIRIUS 3TK28 safety relays
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Overview

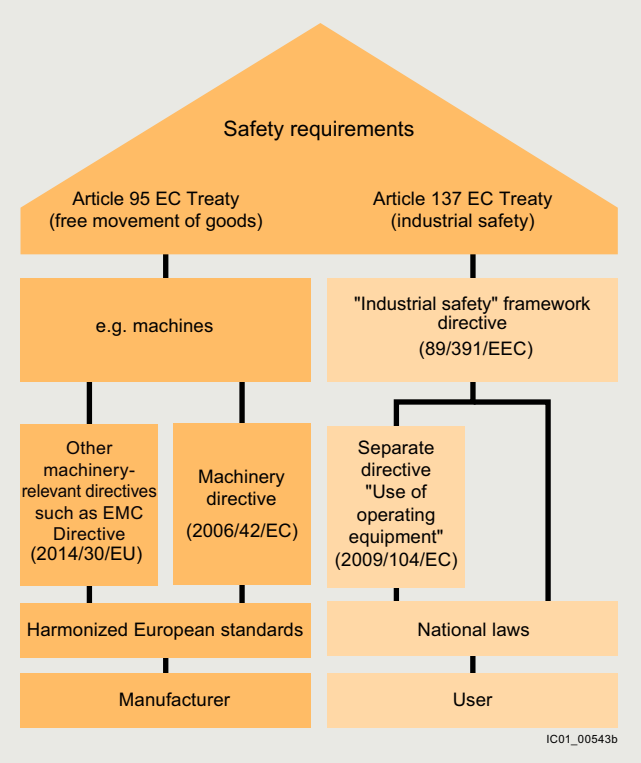
Functional safety of machines and plants – Basic safety requirements in the manufacturing industry

In order to protect people and the environment in many industrial applications in the manufacturing and process industries, machines and plants must meet the fundamental safety requirements of the EU Directives, particularly the Machinery Directive. In addition to design solutions, automation systems and components are also expected to perform safety-related tasks. This means that the life and health of people and the physical integrity of capital goods and the environment depend on the proper operation of these systems and components, on "functional safety".

With the introduction of the uniform European Single Market, national standards and regulations affecting the technical realization of machines were consistently harmonized. This involved defining basic safety requirements which address, on the one hand, machine manufacturers in terms of the free movement of goods (Article 95) and, on the other hand, users in terms of industrial safety (Article 137).

The EU directives:

- Define requirements which must be met by plants and their operating companies in order to protect the health of people and the quality of the environment
- Include standards for health & safety at work (minimum requirements)
- Define product requirements (e.g. for machines) to protect the health and safety of consumers
- Differentiate between the requirements which must be met for the implementation of products in order to ensure the free movement of goods and the requirements which must be met for the use of products



Safety requirements imposed on machines and plants

Objective of the standards

It is the objective of safety technology to minimize as far as possible the hazards from technical facilities for people and the environment while restricting no more than absolutely necessary the scope of industrial production, the use of machines or the production of chemical products.

Production automation is governed in particular by the following standards:

- IEC 62061 and
- ISO 13849-1

The IEC 62061 standard

The IEC 62061 standard "Safety of machines – Functional safety of electrical, electronic and programmable electronic control systems" defines comprehensive requirements. It includes recommendations for the design, integration and validation of safety-related electrical, electronic and programmable electronic control systems (SRECS) for machines. For the first time, one standard covers the entire safety chain, from the sensor to the actuator. The Safety Integrity Level, or SIL for short, is defined as the application parameter for this standard.

Requirements placed on the capacity of non-electrical – e.g. hydraulic, pneumatic, or electromechanical – safety-related control elements for machines are not specified by the standard.

Safety of machines and systems

The ISO 13849-1 standard

ISO 13849-1 "Safety of machinery - Safety-related parts of controls – Part 1: General principles" replaced EN 954-1 at the end of 2011. It considers the complete range of safety functions with all the devices which are involved in their performance. ISO 13849-1 also makes a quantitative analysis of the safety functions. The standard describes how to determine the Performance Level (PL) for safety-relevant parts of control systems on the basis of architectures specified for the intended service life.

When combining several safety-related parts to form a complete system, the standard explains how to determine the resulting PL. It can be applied to safety-related parts of control systems (SRP/CS) and all types of machines, regardless of the technology and energy used, e.g. electrical, hydraulic, pneumatic or mechanical.

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Safety Integrated – Integrated safety technology from a single source

Safety Integrated

The following applies equally for machine manufacturers and the companies which operate their machines: Maximum possible safety for personnel and machines. The solution: our Safety Integrated concept based on Totally Integrated Automation. Whether for simple safety functions or highly complex tasks – our portfolio offers you maximum safety.

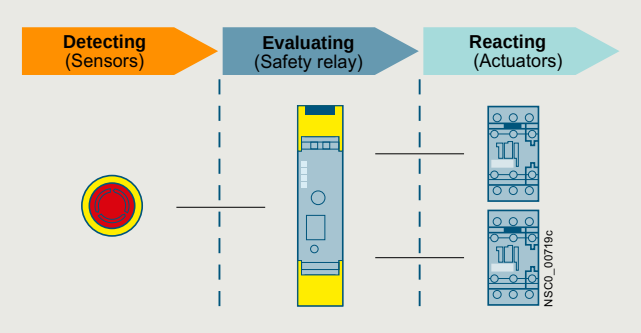
Safety Integrated is a unique, complete and consistent range of safety products covering all safety-related tasks – from detecting, evaluating and reacting, from switches and control systems to operating mechanisms (see graphic on page 11/4). Our products meet the safety requirements in force in industry, including IEC, ISO, NFPA and UL, and are certified in accordance with the latest safety standards.

All Safety Integrated products or systems can be seamlessly integrated in the standard automation environment. They are therefore particularly flexible and economical, reduce engineering time, increase plant availability and enable practice-related machine operation.

Designing a safety function

A safety chain normally comprises the following functions: detect, evaluate and react. In detail this means:

- Detect = the detection of a safety requirement with corresponding sensors, such as EMERGENCY STOP or position switches
- Evaluate = the detection of a safety requirement and the reliable initiation of a reaction, e.g. shutting down the enabling circuits
- React = shutting down the hazard using suitable motor switching devices such as contactors, fail-safe motor starters, or fail-safe soft starters



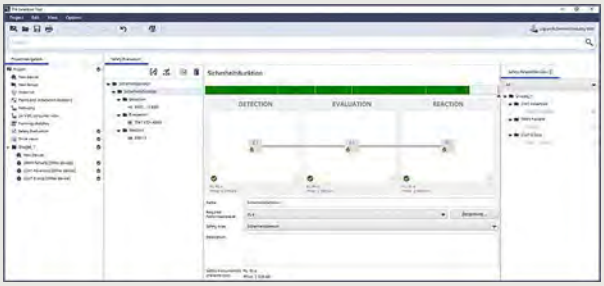
Possible configuration of a safety function

As a partner for all safety requirements, we not only support you with the respective safety-related products and systems, but also consistently provide you with the most current know-how on international standards and regulations. Machine manufacturers and plant managers are offered a comprehensive training portfolio as well as services for the entire lifecycle of safety-related systems and machines.

- A uniform, certified product range
- Courses on CE marking, risk assessment and standards, see www.siemens.com/sitrain
- For a collection of frequently required documents, see Safety Integrated - Safety in Factory Automation
- For application examples, see www.siemens.com/safety-selector
- Worldwide service and support, see https://support.industry.siemens.com

For more information, see www.siemens.com/safety-integrated.

Safety Evaluation in the TIA Selection Tool



Safety Evaluation

The safety evaluation for the standards IEC 62061 and ISO 13849-1 is performed quickly and easily, directly in the TIA Selection Tool. In addition to the fast and safe calculation of machine safety functions – from the definition of the system structure to the selection of components – this enables shared data management during all project phases. Take the next step in the digital design of machinery and equipment with Safety Evaluation in the TIA Selection Tool.

In addition, the functionalities of the proven Safety Evaluation Tool are still available. It determines the achieved safety integrity (SIL/PL) step-by-step. You receive the results as a standards-compliant report that can be integrated in the documentation as proof of safety.

Your advantages at a glance:

- Automatic calculation in accordance with current standards
- Fast results: Standards-compliant report
- Less time needed to evaluate the safety functions
- Fast access to the latest product data
- User-friendly archiving: Projects can be saved and called up again as required
- Selection menus for determining diagnostic coverage (DC) and common cause failures (CCF).
- Different operating cycles can be input when used in a 2-channel configuration
- Failure rate calculation

For more information, see www.siemens.com/safety-evaluation.

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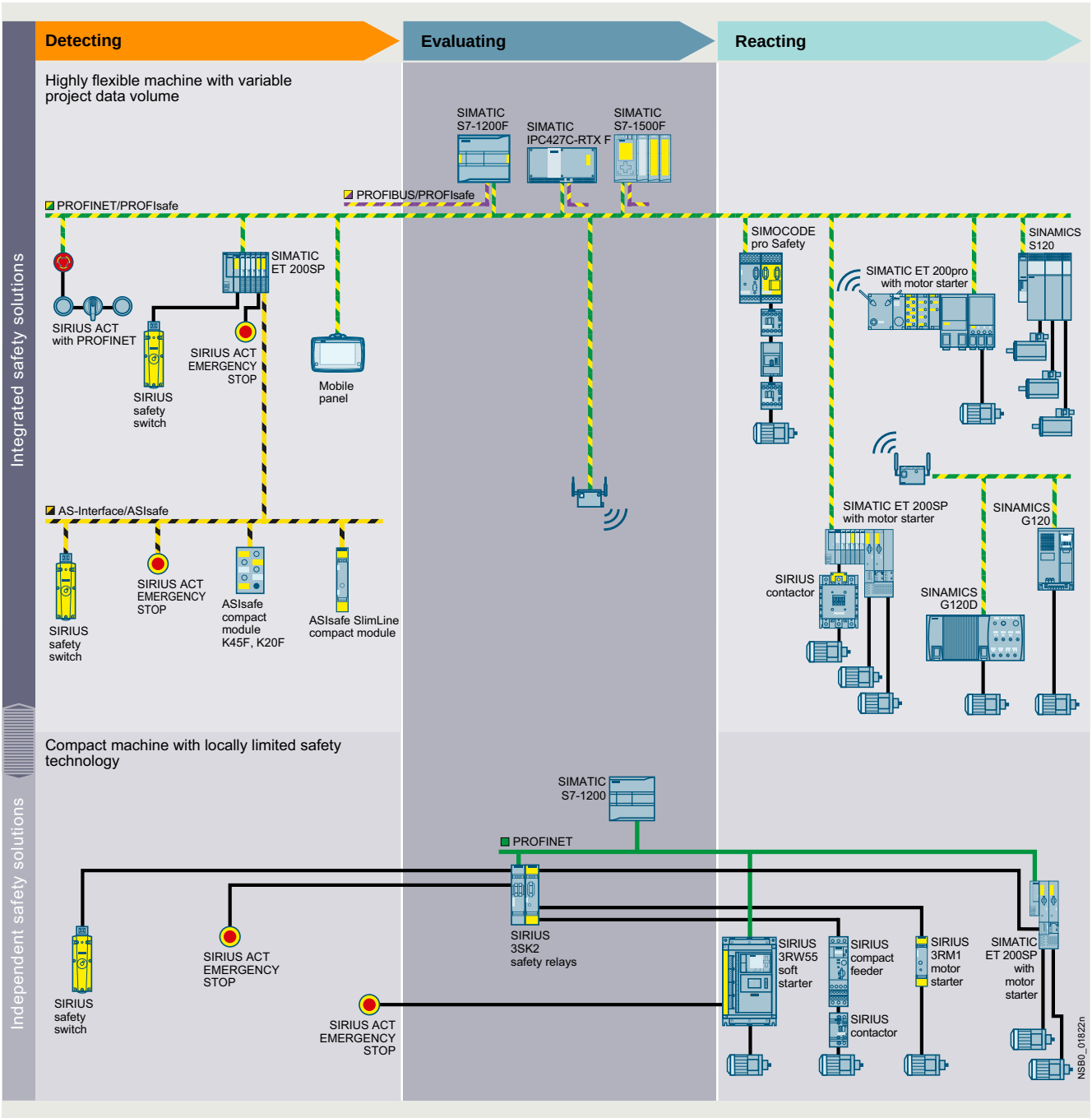

Safety Integrated

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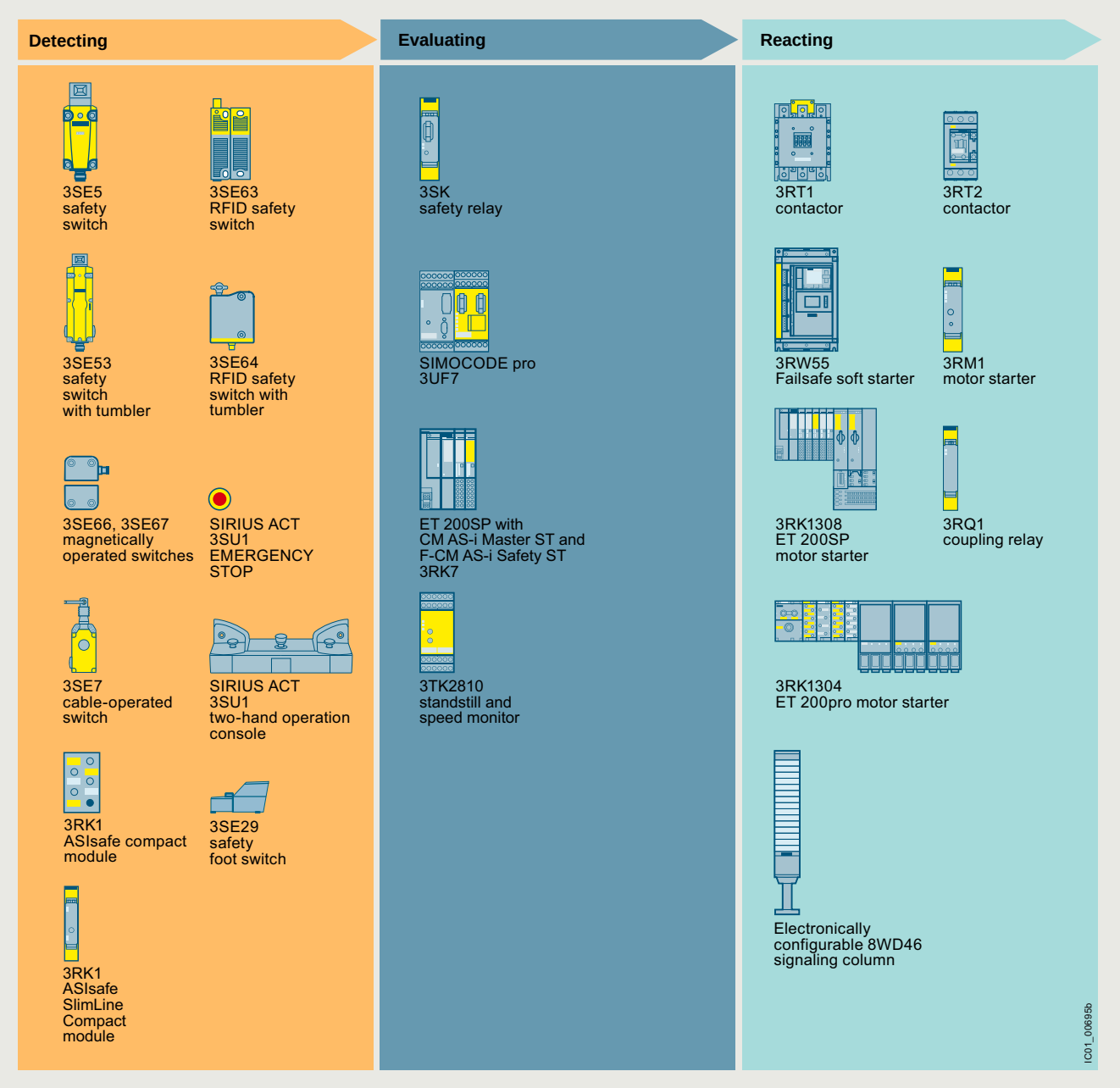
SIRIUS Safety Integrated

Our SIRIUS Safety Integrated controls are a central element of the Siemens Safety Integrated concept. Whether for fail-safe detecting, commanding and signaling, monitoring and evaluating or starting and reliable shutting down – our SIRIUS Safety Integrated controls are experts at performing safety tasks in your plant.

SIRIUS Safety Integrated uses fail-safe communication via standard fieldbus systems, such as ASIsafe via AS-Interface and PROFIsafe via PROFIBUS and PROFINET, to solve even networked safety tasks of greater complexity. This opens the door for flexible safety solutions for compact machines or large-scale plants.

Implementation of many typical safety applications, see Application Manual for SIRIUS Safety Integrated.



SIRIUS Safety Integrated

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Introduction

Monitoring with safe evaluation devices from the 3SK series

The safe evaluation devices of the 3SK device series are perfectly suited for evaluating safety switches of the 3SE product family. These are not only suitable for simple position switches, but can also be used easily and without problems with non-contact position switches and switches with tumblers. The highest safety levels, SIL 3 according to IEC 62061 and PL e according to ISO 13849-1, can be achieved.

Monitoring with fail-safe evaluation units

Notes:

For more information, see FAQ article.
For information on safety switches, see page 12/1 onwards.

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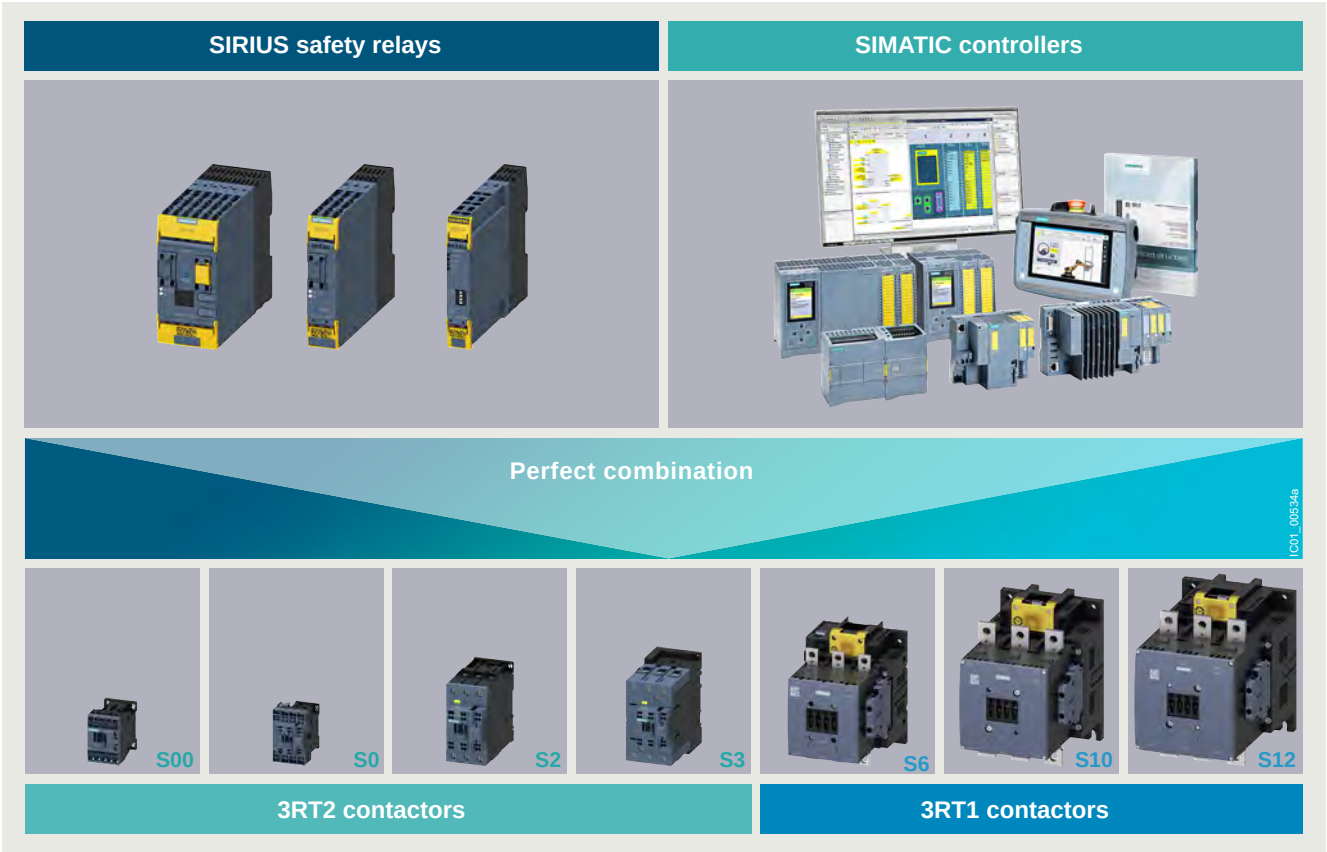
Using SIRIUS 3RT contactors with fail-safe controllers and safety relays

Safety relays and fail-safe controllers work perfectly with SIRIUS contactors optimized for safety application regardless of their size:

- In the low performance range with 3RT201 or 3RT202 contactors with DC operating mechanism
- In the medium performance range with 3RT203 or 3RT204 contactors with solid-state operating mechanism and fail-safe control input
- In the high performance range with 3RT105, 3RT106 or 3RT107 contactors with solid-state operating mechanism and fail-safe control input

They offer the following advantages:

- Reduced current load on the controller outputs
- Minimization of wear for mechanical relays on controllers or safety relays
- Coupling links between controllers and contactors are no longer required



Combination of SIRIUS 3RT contactors with fail-safe controllers and safety relays

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		Type	Page
SIRIUS Safety Integrated			
3SK111	**3SK safety relays** • Key modules of a consistent and cost-effective safety chain • Can be used for all safety applications thanks to compliance with the highest safety requirements (SIL 3 according to IEC 62061 and PL e according to ISO 13849-1) • Suitable for use all over the world through compliance with all globally established certifications SIRIUS 3SK1 Standard basic units • Simple, compact devices for all important requirements for monitoring safety sensors and actuators	**3SK111**	11/22
3SK112	SIRIUS 3SK1 Advanced basic units • Multifunctional series of safety relays with safe relay outputs, semiconductor outputs or time-delayed outputs for: - EMERGENCY STOP monitoring - Protective door monitoring - Monitoring of non-floating sensors such as light arrays, laser scanners, etc. - Monitoring of two-hand operation consoles - Monitoring of equivalent (NC/NC) and antivalent (NO/NC) sensors • Setting by means of DIP switch	**3SK112**	11/23
3SK2	SIRIUS 3SK2 basic units • Series of safety relays that can be parameterized by software, with semiconductor outputs and independent output functions for: - EMERGENCY STOP monitoring - Protective door monitoring - Protective door monitoring with tumbler - Monitoring of non-floating sensors such as light arrays, laser scanners, etc. - Monitoring of two-hand operation consoles - Monitoring of equivalent (NC/NC) and antivalent (NO/NC) sensors - Muting - Communication via PROFINET (optional)	**3SK2**	11/24
3SK121	Expansion units • 3RO and 4RO output expansions for SIRIUS 3SK1 Standard basic units, SIRIUS 3SK1 Advanced basic units and SIRIUS 3SK2 basic units • 3RQ1 output expansions up to SIL 2/PL c for SIRIUS 3SK1 Standard basic units, SIRIUS 3SK1 Advanced basic units and SIRIUS 3SK2 basic units • Input expansion for SIRIUS 3SK1 Advanced basic units • Power supply for SIRIUS 3SK1 Advanced basic units • Integration of 3RM1 motor starters possible and, therefore, simple integration of a main circuit component in a system configuration of the safety relays. There is no need for complex wiring between the safety evaluation unit and the actuator. • Expansion of the Standard device series by means of wiring • Expansion of the SIRIUS 3SK1 Advanced and SIRIUS 3SK2 device series by means of wiring or without wiring outlay by means of 3ZY12 device connectors	**3SK121, 3SK122, 3SK123**	11/26, 11/28
3TK2810-1BA41	**3TK2810 safety relays** • Further modules of a consistent and cost-effective safety chain • Can be used for all safety applications thanks to compliance with the highest safety requirements (SIL 3 according to IEC 62061/IEC 61508 and PL e according to ISO 13849-1) • Suitable for use all over the world through compliance with all globally established certifications Safe standstill monitoring with 3TK2810-0 • Monitoring without external sensors • Universal use in applications possible Safe speed monitoring with 3TK2810-1 • Monitoring of speed with encoders and proximity switches possible • Easy diagnostics options via display • Integrated monitoring of a spring-loaded locking protective door	**3TK2810**	11/33

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	Type	Page
SIRIUS Safety Integrated (continued)		
K45F SC17.5F	**3RK1**	From 2/27
AS-Interface safety modules • Complete portfolio of ASIsafe modules • For connection of safety switches with contacts (e.g. position switches) • Degree of protection IP65/IP67 or IP20 • Especially compact dimensions, with widths from 17.5 mm • Up to four safe inputs per module • Standard outputs are available on the module in addition • Up to SIL 3/PL e Advantage: Easy integration of safe signals both in the control cabinet or in the field		
CM AS-i Master ST and F-CM AS-i Safety ST	**6ES7, 3RK7**	2/32, 2/36
CM AS-i Master ST and F-CM AS-i Safety ST for ET 200SP The CM AS-i Master ST and F-CM AS-i Safety ST modules are plugged into an ET 200SP configuration and connect an AS-i network, including safety-related inputs and outputs, with the controller. • Single, double and multiple masters possible • Per CM AS-i Master ST up to 496 DI/496 DQ/124 AI/124 AQ possible • Per F-CM AS-i Safety ST up to 31 safe input signals (2-channel)/16 safe output channels possible • Configuration in the TIA Portal/STEP 7 • Plant-wide safety programming of the F-CPU via SIMATIC Distributed Safety/Safety Advanced • Integrated diagnostics • No other programming tools required Advantage: Modular connection of fail-safe AS-i networks with system-wide programming in SIMATIC and SINUMERIK controllers.		
3RT203.-1S.30 3RT204.-1S.30		
SIRIUS 3RT contactors, 3-pole 18.5 to 55 kW • Solid-state operating mechanism with fail-safe control input for safety-related applications up to SIL 2/PL c with one contactor or SIL 3/PL e with two contactors • 3RT20 only for motor loads • Version with auxiliary switch can be extended either on the front or on the side	**3RT20**	3/62
3RT1...-.S.36		
55 to 250 kW or 690 A • Solid-state operating mechanism with fail-safe control input for safety-related applications up to SIL 2/PL c with one contactor or SIL 3/PL e with two contactors • 3RT10 for motor loads or 3RT14 for weak or non-inductive loads • Version with removable lateral auxiliary switches or permanently mounted auxiliary switches	**3RT10, 3RT14**	3/65, 4/18
3RQ1		
SIRIUS 3RQ1 force-guided coupling relays, fail-safe up to SIL 3/PL e • They are used for safe coupling up to SIL 3/PL e of control signals from and to a control system or as an output expansion for the SIRIUS 3SK safety relays. • Wide voltage ranges from 24 to 240 V AC/DC • All versions with real load contacts, also in the NC circuit • International standards and certifications including CE, UL/CSA, EAC, railway approvals, and more	**3RQ1**	5/21
3RW55		
3RW55 Failsafe soft starters • 3RW55 soft starters for safety-oriented tripping • SIL 1/PL c without additional safety evaluation unit or contactor with direct wiring of an EMERGENCY STOP to F-DI • SIL 3/PL e with an additional contactor and safety evaluation unit or F-PLC • For motors up to 315 kW (at 400 V) in the inline circuit or 560 kW (at 400 V) in the inside-delta circuit	**3RW55**	6/39

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		Type	Page
SIRIUS Safety Integrated (continued)			
3RM1	**3RM1 Failsafe motor starters** • Motor starters for safety-oriented tripping as 3RM11 direct-on-line starters or 3RM13 reversing starters • Compact devices with 22.5 mm width comprising combinations of relay contacts and power semiconductors (hybrid technology) and an electronic overload relay • For switching three-phase motors up to 3 kW (at 400 V) and resistive loads up to max. 10 A at AC voltages up to 500 V under normal operating conditions • Safety-oriented tripping according to SIL 3 or PL e by shutting down the control supply voltage or control inputs possible without additional devices in the main circuit • Combination with 3SK safety relay through conventional wiring or 3ZY12 device connectors • Simple wiring and collective shutdown with device connectors in assemblies; there is no further need for complex looping of the connecting cables	**3RM1**	8/90
3RK1308-0CB00-0CP0	**ET 200SP fail-safe motor starters** • Fully integrated into the ET 200SP I/O system (including TIA Selection Tool and TIA Portal) • Fully pre-wired motor starters for switching and protecting any AC loads up to 5.5 kW from 48 V AC to 500 V AC • Less space required in the control cabinet (20 to 80%) as a result of greater functional density (direct- on-line and reversing starters in same width) • Longer service life and reduced heat losses thanks to hybrid technology • Self-assembling 32 A power bus, i.e. the load voltage is only fed in once for a group of motor starters • High degree of flexibility when it comes to safety applications via SIMATIC F-CPU or 3SK safety relays up to SIL 3 and PL e • Diagnostics capability for active monitoring of the switching and protection functions • Digital inputs can optionally be used via a 3DI/LC module	**3RK1**	8/100
ET 200pro Safety	**ET 200pro safety motor starters Solution** Safety motor starters Solution PROFIsafe are often found in safety applications of the more complex type that are interlinked. In this case, a safe control system is used with the PROFINET or PROFIBUS bus systems with the PROFIsafe profile. It comprises: • PROFIsafe modules • Disconnecting modules • Standard motor starters • High Feature motor starters	**3RK1**	9/11
SIMOCODE pro V SIMOCODE pro S	**SIMOCODE pro motor management and control devices** • Flexible, modular motor management system for motors with constant speeds in the low-voltage range • Provides an intelligent interface between the higher-level automation system and the motor feeder • Multi-functional, electronic full motor protection which is independent of the automation system • Integrated control functions for the motor control • Detailed operating, service and diagnostics data • Open communication via PROFIBUS DP, PROFINET/OPC UA, Modbus RTU or EtherNet/IP • Safety relay function for the fail-safe disconnection of motors up to SIL 3 according to IEC 62061/IEC 61508 or PL e according to ISO 13849-1 Fail-safe digital modules • DM-F Local for direct assignment between a fail-safe hardware shutdown signal and a motor feeder • DM-F PROFIsafe for when a fail-safe controller (F-CPU) creates the fail-safe signal for the disconnection	**3UF7**	10/5

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		Type	Page
SIRIUS Safety Integrated (continued)			
3SE51	**Mechanical position switches** • Easy assembly thanks to modular design • Solid, rugged design • Special versions are easily generated and quickly available, also in combination with standard modules • With a 3SE51/3SE52 position switch, it is possible to achieve SIL 1 according to IEC 62061/IEC 61508 or PL c according to ISO 13849-1. • SIL 2/PL d and SIL 3/PL e can be achieved by using a second 3SE51/3SE53 position switch.	**3SE51, 3SE52**	12/5
3SE53	**Mechanical safety switches** • With separate actuator, hinge switch, or separate actuator and tumbler • With a position switch, it is possible to achieve SIL 2 according to IEC 62061/IEC 61508 or PL d according to ISO 13849-1. • SIL 3 according to IEC 62061/IEC 61508 or PL e according to ISO 13849-1 can be achieved by using a second 3SE51 or 3SE52 position switch. • Version in various sizes made of metal or plastic • In the case of safety switches with tumbler, versions in the high degree of protection IP69 • Version with integrated ASIsafe electronics available for all enclosure designs	**3SE51, 3SE52, 3SE53** **3SF1**	12/50 12/93
3SE66, 3SE67	**Non-contact magnetically operated safety switches** Magnetically operated switch • Small, compact, safe • Simple installation even in restricted spaces thanks to connector versions • Two safety contacts and one signaling contact enable simple diagnostics at the maximum safety level	**3SE66, 3SE67**	12/113
3SE63	RFID safety switches • Long service life due to non-contact switching • Only one switch required for the maximum safety level SIL 3 according to IEC 62061/IEC 61508 or PL e according to ISO 13849-1 • Tamper protection better than with mechanical safety switches thanks to switches and actuators with individual coding • LED status display including threshold indication for door displacement • Degree of protection up to IP69 and resistance to cleaning products • Larger switching displacement than with mechanical switches; offers better mounting tolerance and sagging tolerance of the protective door	**3SE63**	12/119
3SE64	Also for RFID safety switches with tumbler • 1 150 N locking force • Suitable for protection of persons and/or processes (quiescent current or open-circuit principle) • 25 N/50 N latching force adjustment by rotating the star handle 180° • Guard locking possible from three sides (three directions of actuation) by means of a star handle • Assisted or escape release of guard locking • Actuator can be used for door stop (using damper)	**3SE64**	12/122
3SU14 3SU1 with PROFINET 3SU1	**Command devices** SIRIUS ACT pushbuttons and indicator lights • Using a special F adapter, EMERGENCY STOP control devices according to ISO 13850 can be directly connected through the standard AS-Interface or PROFIsafe with safety-related communication. This F adapter/fail-safe interface module is snapped from the rear onto the EMERGENCY STOP control device, enabling the achievement of SIL 3 according to IEC 62061 or PL e according to ISO 13849-1. • Thanks to SIRIUS ACT with PROFINET, commanding and signaling devices can be connected directly via PROFINET to the controller and HMI devices – including with safety functions. Engineering and commissioning are simplified by the TIA Portal. • EMERGENCY STOP devices for disconnecting plants in an emergency situation • With positive latching function according to ISO 13850 and SIL 3 according to IEC 62061 or PL e according to ISO 13849-1 • Various mushroom diameters (also illuminated), with lock, in plastic/metal, as individual or complete units, and in combination with 3SU1 enclosure or two-hand operation console. The 3SU1 enclosures are also optionally available with ASIsafe interface	**3SU1**	13/6

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		Type	Page
SIRIUS Safety Integrated (continued)			
8WD46	**Electronically configurable 8WD46 signaling columns** • Compact and electronically modular design for flexible and versatile use • Flexible segment configuration using individually definable colors (multicolor LED), intensity and function (flashing, single-flash, continuous or rotating light element) • Adjustable tones and volume • Conventional signaling columns with configuration of the signaling columns via USB interface, with fast linking to the application through 8-pole M12 plug • Signaling columns for IO-Link configured via IO-Link interface (IODD) and fast linking to the application through 4-pole M12 plug.	**8WD46**	13/163
3SE7	**Cable-operated switches** • Control functions and EMERGENCY STOP always within reach • More safety over long distances of up to 2 x 100 m length • Easy release • Fail-safe applications with SIRIUS Safety Integrated • Status display directly on the switch • Signal display for long distances in innovative LED technology with visibility over 50 m • Cable-operated switches with latching according to ISO 13850 (EN 418) and full EMERGENCY STOP function with positive-opening contacts • Quick and safe mounting using uniform mounting accessories • Versions with 1 NO/2 NC with yellow lid	**3SE7**	13/156
3SE2924-3AA20	**Safety foot switches** • Are used wherever manual operation is not possible • With hood, IP65 metal enclosure • With interlock function according to ISO 13850, manual release by pushbutton switch • With 2 NO + 2 NC, NO contacts close by momentary contact, positive-opening NC contacts with independent latching (safety function)	**3SE2924-3AA20**	13/161

Connection methods

The 3SK safety relays are available with screw or spring-loaded terminals (push-in).

The 3TK2810 safety relays are available with screw or spring-loaded terminals.

	Screw terminals
	Spring-loaded terminals, spring-loaded terminals (push-in)
	The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

3SK safety relays: Spring-loaded terminals (push-in) with TOP wiring

Push-in terminals are a form of spring-loaded terminals allowing fast wiring without tools for rigid conductors or conductors equipped with end sleeves.

As with other spring-type terminals, a screwdriver (with 3.0 x 0.5 mm blade) is required to disconnect the conductor. The same tool can also be used to wire finely stranded or stranded conductors with no end finishing.

The advantages of the push-in terminals are found, as with all spring-loaded terminals, in speed of assembly and disassembly and vibration-proof connection. There is no need for the checking and tightening required with screw terminals.

With the TOP wiring method, the wire inlet and terminals can be reached from the front. This helps to speed up the wiring process and eliminate wiring errors.

Video: SIRIUS spring-loaded terminals - Strong, flexible, safe, fast

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Overview

SIRIUS 3SK safety relays

SIRIUS 3SK safety relays are the key elements of a consistent, cost-effective safety chain. Whether you need EMERGENCY STOP functionality, protective door monitoring, light arrays, laser scanners or the protection of presses or punches – slimline SIRIUS safety relays enable all safety applications to be implemented in the best possible way in terms of engineering and price.

The following safety-related functions are available:

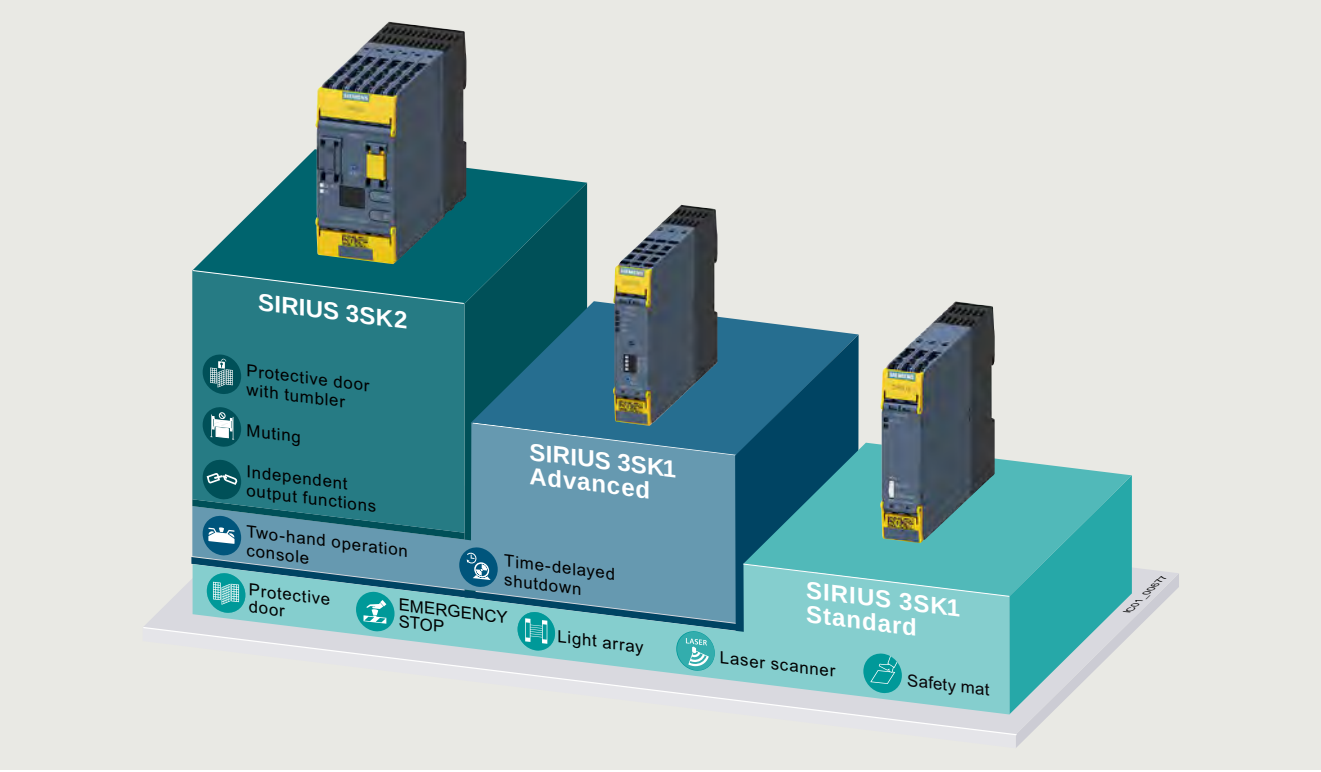
- Monitoring the safety functions of sensors
- Monitoring the sensor leads
- Monitoring the correct device function of the safety relays
- Monitoring the actuators in the shutdown circuit
- Safety-related disconnection when dangers arise

SIRIUS 3SK safety relays are approved for applications up to SIL 3 according to IEC 62061 or PL e according to ISO 13849-1.

Video: 3SK safety relays - Select the optimum device - precisely for your application

More information
Homepage, see www.siemens.com/sirius-safety-relays
Industry Mall, see www.siemens.com/product?3SK
Conversion tool, see www.siemens.com/conversion-tool
SIRIUS Sim 3SK2 simulation tool, see https://support.industry.siemens.com/cs/ww/en/view/109763750

Device series



SIRIUS 3SK device series

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General data

SIRIUS 3SK safety relays stand out due to their flexibility for both parameterization and system designs with several evaluation units. This reduces device variance, thus bringing advantages in terms of device selection and spare parts management. Optimized solutions when selecting components and reduced spare part inventory requirements are facilitated by a clearly structured component range. Device connectors are simply used for connecting most components. This considerably reduces the wiring effort and avoids possible errors.

3SK1 Standard basic units

The 3SK1 Standard basic units are characterized by the following features:

- Compact design
- Simple operation
- Relay and semiconductor outputs
- Economical solution

3SK1 Advanced basic units

The 3SK1 Advanced basic units also offer:

- Universal application possibilities thanks to multifunctionality
- Time-delayed outputs
- Expansion of inputs and outputs

3SK2 basic units

The 3SK2 basic units also offer:

- Up to six fail-safe, independent shutdown functions
- Flexible in use thanks to software parameterization
- Powerful semiconductor outputs
- Convenient diagnostics using diagnostics display and configuration software
- Communication via PROFINET/PROFIBUS by means of communications module

All three basic device series can be supplemented with output expansions. These provide further fail-safe, potential-free relay contacts for controlling actuators. In addition, the 3RM1 Failsafe motor starters can also be integrated into the 3SK system (see page 11/17).

In the 3SK1 Advanced and 3SK2 device series, the output expansions are connected by means of device connectors, in the 3SK1 Standard series by means of wiring.

For the 3SK1 Advanced device series, there is also the possibility of supplementing the basic units with input expansions. Here too, the connection is made via device connectors. This means that no individual basic units need to be interconnected if more than one sensor is required in the safety application.

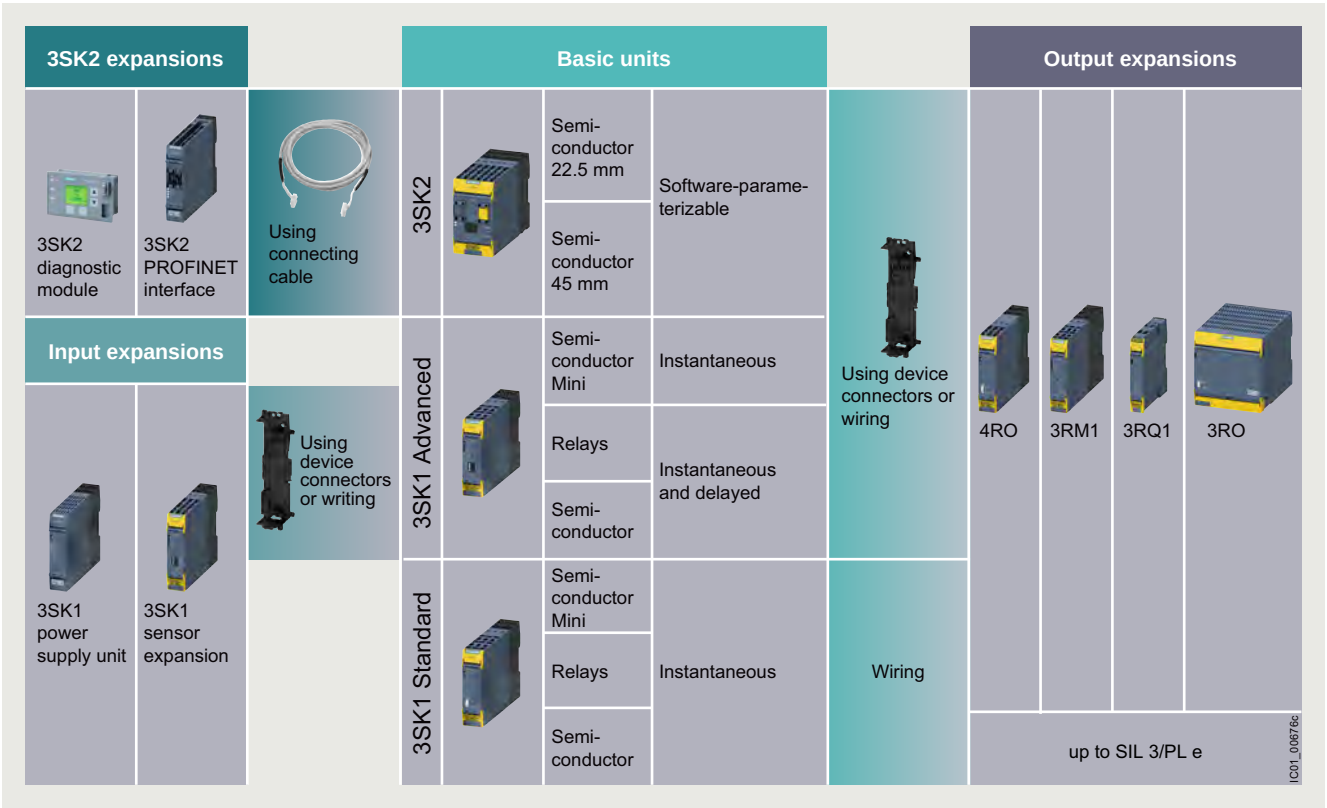
Since the 3SK1 Advanced device series comprises devices with 24 V DC operating voltage, a power supply is also available.

The 3SK2 device series can optionally be connected with a communications module via PROFINET to a control system, e.g. for diagnostics.

It is also possible to connect a diagnostics module to the 3SK2 system. This can be mounted in the control cabinet door, for example, and displays errors and diagnostics as well as configuration data quickly and clearly.

The 3SK1 Standard and Advanced and 3SK2 series are a high-quality replacement for the 3TK28 safety relays. In their narrower design, and equipped with greater functionality, they can replace every 3TK28 device. The only exception to this are the 3TK2810 devices.

The 3RQ1 force-guided coupling relays can be used as an output expansion for 3SK up to SIL 2/PL c. Connection is also possible with device connectors.



System overview

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Overview of functions of the 3SK device series

Type	3SK1 Standard basic units		3SK1 Advanced basic units		3SK2 basic units	
					22.5 mm	45 mm
	Safe relay outputs	Safe semiconductor outputs	Safe relay outputs	Safe semiconductor outputs	Safe semiconductor outputs	Safe semiconductor outputs
Sensors						
• Mechanical	✓	✓	✓	✓	✓	✓
• Non-floating	✓[1]	✓	✓	✓	✓	✓
• Antivalent	--	--	✓	✓	✓	✓
• Expandable	--	✓ by means of cascading	✓	✓	--	--
Inputs	2 x 1-channel, 1 x 2-channel	2 x 1-channel, 1 x 2-channel	2 x 1-channel, 1 x 2-channel	2 x 1-channel, 1 x 2-channel	Freely configurable: 10 x 1-channel, 5 x 2-channel	Freely configurable: 20 x 1-channel, 10 x 2-channel
Parameters						
• Start (auto/monitored)	✓	✓	✓	✓	A variety of functions can be set for each input/output by means of software parameterization.	
• Sensor connection, 2 x 1-channel/ 1 x 2-channel	✓ by means of wiring	✓	✓	✓		
• Cross-circuit detection	✓ by means of wiring	✓	✓	✓		
• Start-up test ON/OFF	--	✓	✓	✓		
• Monitoring of two-hand operator panels according to EN 574/ISO 13851	--	--	✓	✓		
• Safety mat	--	--	✓	✓		
Safe outputs						
• Instantaneous	✓	✓	✓	✓	Configurable	Configurable
• Time-delayed	--	--	✓	✓	Configurable	Configurable
• Expandable with safe relay outputs	✓ by means of wiring	✓ by means of wiring	✓	✓	✓	✓
• Independent	--	--	--	--	✓[2]	✓[3]
• Device connectors	--	--	✓	✓	✓	✓
Options						
• External memory module	--	--	--	--	--	✓
• Display on the device	--	--	--	--	--	✓
• External diagnostics module can be connected	--	--	--	--	✓	✓
Control supply voltage						
• 24 V DC	✓[4]	✓	✓	✓	✓	✓
• 110 ... 240 V AC/DC	✓	✓[5]	✓[6]	✓[6]	--	--

✓ Available
-- Not available

1) 24 V basic units only.
2) Up to four independent safe outputs, two of which via device connectors.
3) Up to six independent safe outputs, two of which via device connectors.
4) 24 V AC/DC.
5) Possible using 3SK1230 power supply by means of wiring.
6) Possible using 3SK1230 power supply via device connector.

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General data

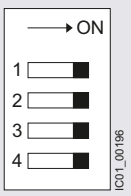
Enclosure concept

Innovative enclosure concept for SIRIUS 3SK safety relays

Parameter assignment

3SK112 and 3SK1112 with DIP switch

The 3SK112 and 3SK1112 safety relays are configurable safety relays. They are used as evaluation units for typical safety chains (detect, evaluate, react). A number of functions can be set using the DIP switches on the front. 3SK112 and 3SK1112 are therefore universally applicable.

DIP switch No.	OFF	ON	Schematic
1	Sensor input Autostart	Sensor input Monitored start	
2	Without cross-circuit detection	With cross-circuit detection	
3	2 x single-channel sensor connection	1 x 2-channel sensor connection	
4	With start-up test	Without start-up test	

3SK2 with software

The SIRIUS Safety ES (TIA Portal) software permits quick and easy parameterization, commissioning and diagnostics of SIRIUS 3SK2 safety relays.
Device configuration and device functionality can easily be created graphically directly on the PC and transferred to the switching device through a USB cable or an optional PROFIBUS/PROFINET interface.

Note:

SIRIUS Safety ES (TIA Portal), see page 14/22.

Communication

	3SK2112, 22.5 mm	3SK2122, 45 mm
PROFINET	✓	✓
PROFIBUS	✓	✓

✓ Available

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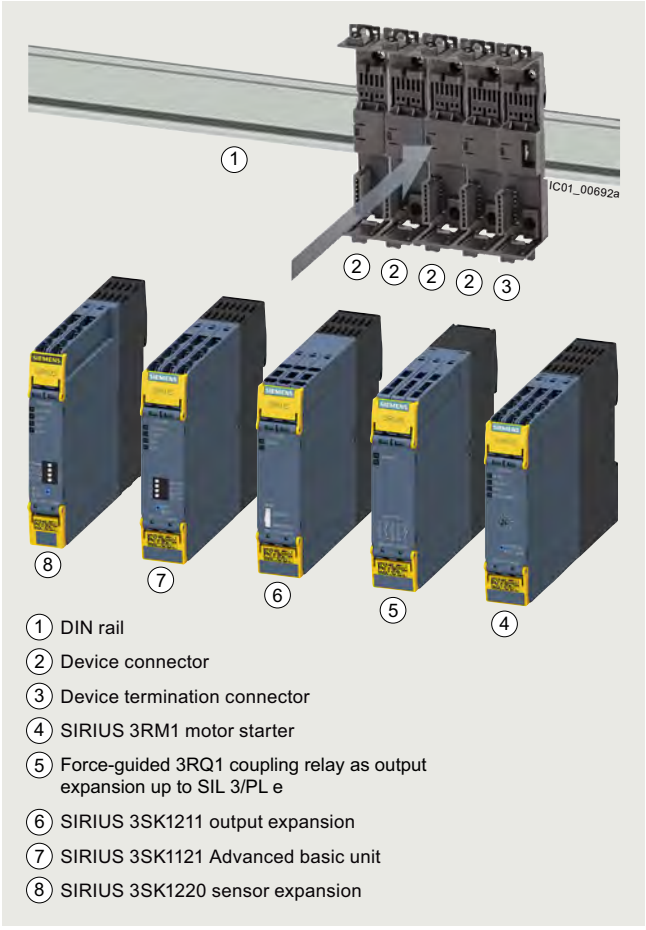
Optimum connection with device connectors



3RQ1 with 3SK1

In the case of 3SK1 Advanced basic units or 3SK2 basic units, the 3ZY12 device connectors allow safety functions involving several sensors and actuators to be constructed very quickly.

3RQ1 coupling relays as output expansion for 3SK

The SIRIUS 3RQ1 force-guided coupling relays in a modern titanium gray industrial enclosure are available in widths of 17.5 mm and 22.5 mm and can be used as an output expansion for SIRIUS 3SK safety relays.

They have safety certification up to SIL 3 according to IEC 62061/IEC 61508 or PL e according to ISO 13849-1.

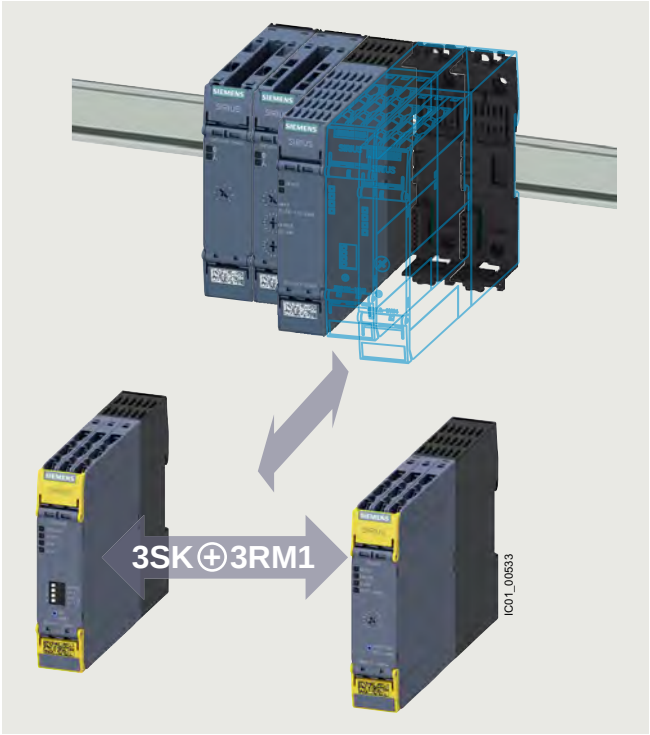
Versions with a wide-range voltage input of 24 ... 240 V AC/DC and an installation depth of 90 mm, and versions with 24 V DC and an installation depth of 120 mm for use with 3SK device connectors are available.

The series consists of devices with up to five outputs and can be supplied with screw or spring-loaded (push-in) terminals.

Note:

SIRIUS 3RQ1 coupling relays, see page 5/21.

Seamlessly integrated safety right through to the main circuit



Problem-free integration of functional safety into the main circuit through the simple combination of 3RM1 and 3SK1 devices

Functional safety in the main circuit needs to be both simple and flexible

The unique compatibility of hybrid 3RM1 fail-safe motor starters and 3SK safety relays means that integrated functional safety right through to the main circuit is no longer a problem.

Their compact design allows the motor starters to be installed to the right of the safety relay in a simple manner, just like an output expansion. The wiring of the safety-related signals to the relay can be performed simply, quickly and in an error-free manner using the device connector.

The ergonomically designed enclosure with removable terminals and terminal labeling in the hinged cover allows for the cables to be conveniently diagonally mounted from the front. Either screw or spring-loaded terminals with push-in technology are available.

Highlights

- Fail-safe disconnection of motors up to 3 kW
- Problem-free combination of fail-safe motor starters and safety relays
- End-to-end system, simple setup using device connectors
- Ergonomic enclosure

Note:

SIRIUS 3RM1 motor starters, see page 8/83.

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General data

Ordering notes for multi-unit packaging

SIRIUS 3SK safety relays can also be ordered in practical and environmentally friendly multi-unit packaging on request.

Multi-unit packaging with order code X90

When ordering products in multi-unit packaging, the article number of the product concerned must be supplemented with **"-Z"** and, in addition, the order code **"X90"** must be specified.

Ordering example:
3SK1111-2AB30-Z X90;
Order quantity 12 items → Packed number of items 12

For more information, see page 16/7.

Article number schemes

Product versions		Article number
3SK1 safety relays		**3SK1 □ □ □ – □ □ □ □ □**
Device version	Basic unit	**1**
	Expansion unit	**2**
Device variants	3SK11: Standard; 3SK12: Output expansion	**1**
	3SK11: Advanced; 3SK12: Input expansion	**2**
Type of outputs	Relay outputs	**1**
	Semiconductor outputs	**2**
	Power outputs	**3**
Connection type	Screw terminals	**1**
	Spring-loaded terminals (push-in)	**2**
Control circuit/actuation	3SK11: 3 enabling circuits	**A**
	3SK11: 2 enabling circuits	**B**
	3SK11: 4 enabling circuits	**C**
Type of control supply voltage	3SK1213: 24 V AC, 50/60 Hz	**B 0**
	3SK1: 24 V AC/DC, 50/60 Hz	**B 3**
	3SK1: 24 V DC	**B 4**
	3SK1213: 115 V AC, 50/60 Hz	**J 2**
	3SK1213: 230 V AC, 50/60 Hz	**L 2**
	3SK1: 110 ... 240 V AC/DC; 50/60 Hz	**W 2**
Time delay	None	**0**
	0.05 ... 3 s	**1**
	0.5 ... 30 s	**2**
	5 ... 300 s	**4**
Example		**3SK1 1 1 1 – 1 A B 3 0**

Product versions		Article number
3SK2 safety relays		**3SK2 1 □ 2 – □ A A 1 0**
Device variants	10 F-DI, 2 F-DQ, width 22.5 mm	**1**
	20 F-DI, 4 F-DQ, width 45 mm	**2**
Connection type	Screw terminals	**1**
	Spring-loaded terminals (push-in)	**2**
Example		**3SK2 1 1 2 – 1 A A 1 0**

Product versions		Article number
3SK2 interface modules		**3SK2 5 1 1 – □ F A 1 0**
Connection type	Screw terminals	**1**
	Spring-loaded terminals (push-in)	**2**
Example		**3SK2 5 1 1 – 1 F A 1 0**

Product versions		Article number
3RK3 interface modules		**3RK3 5 1 1 – □ B A 1 0**
Connection type	Screw terminals	**1**
	Spring-loaded terminals	**2**
Example		**3RK3 5 1 1 – 1 B A 1 0**

Note:

The article number schemes shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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Benefits

General

- Approved for all safety applications because of its compliance with the highest safety requirements (SIL 3/PL e)
- Universally usable thanks to adjustable parameters
- Usable worldwide thanks to globally valid certificates
- Compact SIRIUS design
- Device connectors with DIN-rail mounting for flexible connectability and expandability
- Removable terminals for greater plant availability
- Yellow terminal covers clearly identify the device as a safety component
- Sensor cable with a length of up to 2 000 m allows it to be used in extensive plants
- Can be used for installation altitudes up to 4 000 m

Relay outputs

- Different voltages can be switched through the floating contacts
- The relay contacts allow currents of up to 5 A at AC-15/DC-13 to be connected

Semiconductor outputs

- Wear-free
- Suitable for operation in frequently switching applications
- Insensitive to vibrations and dirt
- High electrical endurance

Power outputs (3SK1213 output expansion)

- Different voltages can be switched through the floating contacts
- With the power relay contacts currents up to 10 A AC-15/6 A DC-13 can be switched
- High mechanical and electrical endurance
- Protective separation between safe outputs and electronics

Expansion option by adding the 3RM1 motor starter

SIRIUS 3SK safety relays are ideal for combining with the SIRIUS 3RM1 motor starters (see page 11/17).

Combinations are made by means of SIRIUS 3ZY12 device connectors (in combination with 3SK1 Advanced/3SK2) or conventional wiring (for all 3SK1 and 3SK2 basic units).

This makes collective shutdown very easy in assemblies. The wiring, and ultimately the shutting down of the control supply voltage for the expansion components in EMERGENCY STOP situations, is performed via the device connector. There is no further need for complex looping of the connecting cables between the safety relay and the motor starters.

The 3RM1 motor starter combines the benefits of semiconductor technology and relay technology. This combination is also known as hybrid technology. The hybrid technology in the motor starter is characterized by the following features:

- The inrush current in the case of motorized loads is conducted briefly via the semiconductors. Advantages include protection of the relay contacts and a long service life due to low wear.
- The uninterrupted current is conducted via relay contacts. Advantages include lower heat losses compared with the semiconductor.
- Shutdown is implemented again via the semiconductor. The contacts are only slightly exposed to arcs, and this results in a longer service life.
- Integrated overload protection

Expansion option with 3RQ1 coupling relay

SIRIUS 3SK safety relays are ideal for combining with the SIRIUS 3RQ1 coupling relays (see page 11/17). Combinations are made by means of SIRIUS 3ZY12 device connectors or wiring.

3ZY12 device connectors

Using 3ZY12 device connectors to combine devices reduces the time required to configure and wire the components. At the same time errors are avoided during wiring, and this considerably reduces the testing required for the fully-assembled application.

Configuration and stock-keeping

Variable setting options by means of DIP switches or software, a wide voltage range (3SK1111) and a special power supply unit (3SK1 only) reduce the cost of keeping stocks, along with the configuration considerations of which evaluation unit should be selected.

Communication

The 3SK2 safety relays can be easily integrated in the overall application via PROFINET or PROFIBUS using optionally available interface modules.

This provides the following advantages:

- Exchange of signals and information with the plant controller
- Read-out and visualization of diagnostics information of the safety relay via the controller supports troubleshooting and reduces plant downtimes
- Access with the Safety ES engineering software via the fieldbus for parameterization, commissioning and diagnostics

Simulation

The SIRIUS Sim simulation tool for 3SK2 (see page 11/24) can be used to quickly and easily test configurations that have been created without real devices. The configurations thus created can then be loaded directly into the real devices. Time and costs for engineering are thus reduced.

Application

3SK1 safety relays

SIRIUS 3SK1 safety relays are used mainly in autonomous safety applications which are not connected to a safety-related bus system. Their function here is to evaluate the sensors and the safety-oriented tripping in the event of hazards. Also they check and monitor the sensors, actuators and safety-related functions of the safety relay.

3SK2 safety relays

SIRIUS 3SK2 safety relays are used primarily in autonomous, more complex safety applications for which the functional scope of the 3SK1 devices is no longer sufficient, such as in the implementation of independent shutdown functions or integration into higher-level control systems for diagnostics via fieldbus. Their function here is to evaluate the sensors and the safety-oriented tripping in the event of hazards. Also they check and monitor the sensors, actuators and safety-related functions of the safety relay.

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General data

Technical specifications

More information

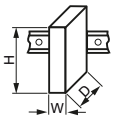
Equipment Manual 3SK1, see https://support.industry.siemens.com/cs/ww/en/view/67585885

Technical specifications
- 3SK1230, see https://support.industry.siemens.com/cs/ww/en/ps/16389/td
- 3RK3511-.BA10, see https://support.industry.siemens.com/cs/ww/en/ps/16398/td

Equipment Manual for 3SK2, see https://support.industry.siemens.com/cs/ww/en/view/109444336

FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16382/faq

SIRIUS 3SK1 safety relays

Article number		3SK1111-.AB30, 3SK1211-.BB00, 3SK1211-.BB40	3SK1111-.AW20, 3SK1121, 3SK1211-.BW20	3SK1112	3SK1120, 3SK1220	3SK1122	3SK1213
General data:							
Width x height x depth 	mm	22.5 x 100 x 121.6		22.5 x 100 x 91.6	17.5 x 100 x 121.6	22.5 x 100 x 121.6	90 x 100 x 121.6
Ambient temperature							
• During operation	°C	-25 … +60					
• During storage	°C	-40 … +80					
Installation altitude at height above sea level, maximum	m	4 000, Derating, see Product announcement					
Air pressure according to SN 31205	kPa	90 … 106					
Shock resistance		10 *g*/11 ms					5 *g*/10 ms
Vibration resistance according to IEC 60068-2-6		5 ... 500 Hz: 0.75 mm					
Degree of protection IP of the enclosure		IP20					
Touch protection against electric shock		Finger-safe					
Insulation voltage, rated value	V	300		50			300
Impulse withstand voltage, rated value	V	4000		800			4000
Safety Integrity Level (SIL) according to IEC 62061		3					
Performance Level (PL) according to ISO 13849-1		e					
T1 value for proof test interval or service duration according to IEC 61508	y	20					
EMC emitted interference		IEC 60947-5-1, class B	IEC 60947-5-1, class A				IEC 60947-5-1, class B
Certificate of suitability							
• UL approval		Yes					
• TÜV approval		Yes					

Article number		3SK1111, 3SK1121-.AB40, 3SK1211	3SK1112, 3SK1122	3SK1120	3SK1121-.CB4.	3SK1213
Switching capacity current of the NO contacts of the relay outputs						
• At AC-15 at 230 V	A	5	--		3	10
• At DC-13 at 24 V	A	5	--		3	6
Switching capacity current of the semiconductor outputs at DC-13 at 24 V	A	--	2	0.5	--	

Article number		3SK1111-.AB30, 3SK1211	3SK1111-.AW20	3SK1112, 3SK1220	3SK1120, 3SK1122-.AB40	3SK1121-.AB40	3SK1121-.CB4.	3SK1122-.CB4.	3SK1213
PFHD at high demand rate according to EN 62061	1/h	1.7×10^{-9}	1.5×10^{-9}	1.0×10^{-9}	1.3×10^{-9}	2.5×10^{-9}	3.7×10^{-9}	1.5×10^{-9}	1.0×10^{-9}
PFDavg at low demand rate according to IEC 61508		1.0×10^{-6}		7.0×10^{-6}					1.0×10^{-6}

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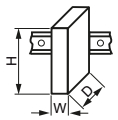
SIRIUS 3SK2 safety relays

Article number		3SK2112-.AA10	3SK2122-.AA10	3SK2511-.FA10
General data:				
Width x height x depth 	mm	22.5 x 100 x 124.5	45 x 100 x 124.5	22.5 x 100 x 124.5
Ambient temperature				
• During operation	°C	-25 ... +60		
• During storage	°C	-40 ... +80		-40 ... +85
Installation altitude at height above sea level, maximum	m	2000		
Air pressure according to SN 31205	kPa	90 ... 106		
Shock resistance		15 *g*/11 ms		
Vibration resistance according to IEC 60068-2-6		5 ... 500 Hz: 0.75 mm		
Degree of protection IP of the enclosure		IP20		
Touch protection against electric shock		Finger-safe		
Insulation voltage, rated value	V	50		
Impulse withstand voltage, rated value	V	800		
EMC emitted interference according to IEC 60947-1		Class A		
Certificate of suitability				
• UL approval		Yes		
• TÜV approval		Yes		

Article number		3SK2112-.AA10	3SK2122-.AA10
Safety Integrity Level (SIL) according to IEC 62061		3	
Performance Level (PL) according to ISO 13849-1		e	
T1 value for proof test interval or service duration according to IEC 61508	y	20	
Switching capacity current of the semiconductor outputs at DC-13 at 24 V	A	4	
PFHD at high demand rate according to EN 62061	1/h	1.0×10^{-8}	1.2×10^{-8}
PFDavg at low demand rate according to IEC 61508		1.5×10^{-5}	1.8×10^{-5}

Article number		3SK2511-.FA10
Transmission type for Industrial Ethernet		PROFINET with 100 Mbps full duplex (100BASE-TX)
Number of interfaces according to PROFINET		1
Type of interface Ethernet interface		Yes
Type of interface 1 RJ45 (Ethernet) interface		Yes
PROFINET Conformance Class		B
Network load class according to PROFINET		1
Volume of cyclic user data for PROFINET IO		
• For outputs	bit	64
• For inputs	bit	64

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Overview

3SK111 Standard basic units

The 3SK111 Standard basic units are characterized by simple, variable functionality. These devices are recommended for safety functions requiring only a few sensors and a small number of outputs on the safety relay.

Note:

Use of device connectors not possible.

Selection and ordering data

Multi-unit packaging, see page 16/7.

3SK1111-1AB30

3SK1111-1AW20

3SK1112-1BB40

Control supply voltage		Number of outputs						Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
at AC at 50 Hz	at DC	as contacting contact block			as contactless semiconductor contact block							
		as NO contact, instantaneous switching	as NO contact, delayed switching	for signaling function, instantaneous switching	instantaneous switching	delayed switching	for signaling function, instantaneous switching					
V	V											
Standard basic units												
24	24	3	0	1	0	0	0	**3SK1111-□AB30**		1	1 unit	41L
110 … 240	110 … 240	3	0	1	0	0	0	**3SK1111-□AW20**		1	1 unit	41L
--	24	0	0	0	2	0	1	**3SK1112-□BB40**		1	1 unit	41L

Type of electrical connection

- Screw terminals
- Spring-loaded terminals (push-in)

1
2

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

3SK112 Advanced basic units

The 3SK112 Advanced basic units form an innovative system landscape that allows even complex safety functions with large numbers of sensors and outputs to be built up using the device connectors. It is possible to increase both the number of inputs for sensors and the number of safe outputs of the basic unit without the need for wiring outlay between the devices.

Note:

Use of device connectors possible.

Selection and ordering data

Multi-unit packaging, see page 16/7.

3SK1121-1AB40

3SK1120-1AB40

3SK1122-1AB40

3SK1122-1CB41

Control supply voltage at DC	Number of outputs as contacting contact block: as NO contact, instantaneous switching	as NO contact, delayed switching	as NC contact for signaling function, instantaneous switching	as contactless semiconductor contact block: instantaneous switching	delayed switching	for signaling function, instantaneous switching	Adjustable OFF-delay time	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
V							s					
Advanced basic units												
24	3	0	1	0	0	0	--	**3SK1121-□AB40**		1	1 unit	41L
	2	2	0	0	0	0	0.05 ... 3	**3SK1121-□CB41**		1	1 unit	41L
							0.5 … 30	**3SK1121-□CB42**		1	1 unit	41L
							5 … 300	**3SK1121-□CB44**		1	1 unit	41L
24	0	0	0	1	0	0	--	**3SK1120-□AB40**		1	1 unit	41L
				3	0	1	--	**3SK1122-□AB40**		1	1 unit	41L
				2	2	0	0.05 ... 3	**3SK1122-□CB41**		1	1 unit	41L
							0.5 … 30	**3SK1122-□CB42**		1	1 unit	41L
							5 … 300	**3SK1122-□CB44**		1	1 unit	41L

Type of electrical connection

- Screw terminals
- Spring-loaded terminals (push-in)

1
2

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

3SK2 basic units

The 3SK2 basic units have a large number of inputs and outputs within a narrow width. In addition, demanding safety applications can be implemented simply with several independent safety functions. Flexible application options are enabled by powerful semiconductor outputs, as well as by expandability with additional 3SK output expansions and 3RM1 Failsafe motor starters. Flexible time functions and diagnostics options are available.

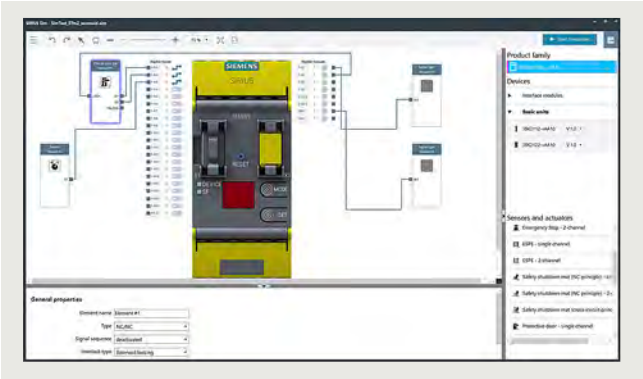
The 3SK2 basic units can be easily integrated in control systems by means of optional communications modules for the purpose of diagnostics or access via software, for example. Furthermore, system states and fault diagnostics can be displayed easily and more rapidly on site using the diagnostics module for installation in the control cabinet front.

The 22.5-mm-wide version of the 3SK2 basic units has 10 x 1-channel (5 x 2-channel) inputs, while the 45-mm-wide 3SK2 version comes with 20 x 1-channel (10 x 2-channel) inputs.

Note:

For series applications, pre-programmed memory modules with customer-specific configurations can also be created. Please contact your responsible sales partner for this purpose.

SIRIUS Sim 3SK2



SIRIUS Sim 3SK2

The SIRIUS 3SK2 simulation tool can be used to quickly and easily test functions and configurations in an office environment. These configurations can then be loaded directly into real devices. Time and costs for engineering are reduced.

SIRIUS Sim 3SK2 is available free of charge as a download, see https://support.industry.siemens.com/cs/ww/en/view/109763750.

Note:

For more information, see page 14/25.

Starter kits

3SK2941 starter kit

Starter kits are cost-effective complete packages for the simple creation of complex safety applications.

The 3SK2941-2AA11 basic starter kit includes:

- 3SK2112-2AA10 basic unit, 22.5 mm wide, with spring-loaded terminals (push-in)
- SIRIUS Safety ES (TIA Portal) Basic software for configuring, commissioning, operating and diagnosing available as a free download
- USB PC cable for easy transmission of the configuration to the device by means of USB

The 3SK2942-2AA11 PROFINET starter kit includes:

- 3SK2122-2AA10 basic unit, 45 mm wide, with spring-loaded terminals (push-in)
- PROFINET 3SK2511-2FA10 interface module, 22.5 mm wide, with spring-loaded terminals (push-in)
- SIRIUS Safety ES (TIA Portal) Professional
- Required cables

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Selection and ordering data

Multi-unit packaging, see page 16/7.

3SK2112

3SK2122

Control supply voltage at DC	Number of outputs as contactless semiconductor contact block		Number of outputs to the device connector, safety-related	Width	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	safety-related 2-channel	non-safety-related							
V				mm					
Basic units									
24	2	1	2	22.5	**3SK2112-□AA10**		1	1 unit	41L
	4	2	2	45	**3SK2122-□AA10**		1	1 unit	41L

Type of electrical connection

- Screw terminals
- Spring-loaded terminals (push-in)

1
2

3SK2 multi-unit packaging, see page 16/7.

3SK2511-1FA10

3RK3511-1BA10

Application	Width	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm					
Interface modules						
For connecting 3SK2 safety relays via PROFINET	22.5	**3SK2511-□FA10**		1	1 unit	41L
For connecting 3SK2 safety relays via PROFIBUS	45	**3RK3511-□BA10**		1	1 unit	42B

Type of electrical connection

- Screw terminals
- Spring-loaded terminals: 3RK3 or spring-loaded terminals (push-in): 3SK2

1
2

Note:

The 3UF7930-0AA00-0 connecting cable is not included in the scope of supply and must be ordered separately, see page 11/30.

Product version	**Spring-loaded terminals (push-in)** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Basic starter kit					
Comprises 3SK2112-2AA10 basic unit, SIRIUS Safety ES (TIA Portal) as a free download and 3UF7941-0AA00-0 USB PC cable	**3SK2941-2AA11**		1	1 unit	4N1
PROFINET starter kit					
Comprises 3SK2122-2AA10 basic unit, PROFINET 3SK2511-2FA10 interface module, SIRIUS Safety ES (TIA Portal) Professional and required cables	**3SK2942-2AA11**		1	1 unit	4N1

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Illustrations are approximate

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Overview

3SK121 output expansion

The 3SK121 and 3RQ1 output expansions can be used for expanding all 3SK basic units.

3SK1211 output expansion (up to SIL 3/PL e)

The 3SK1211 output expansion is used to expand the safe outputs of a basic unit by adding another four safe outputs. These outputs have a switching capacity of AC-15 5 A at a switching voltage of 230 V. The devices can be connected to any 3SK basic unit by means of wiring. In addition, the devices with a 24 V DC control supply voltage can also be connected to 3SK1 Advanced basic units and 3SK2 basic units by means of the 3ZY12 device connectors.

3SK1213 output expansion (up to SIL 3/PL e)

The 3SK1213 output expansion is used to expand the safe outputs of a basic unit by adding three safe outputs with high switching capacity. These outputs have a switching capacity of AC-15 10 A at a switching voltage of 230 V. The devices can be connected to any 3SK basic unit by means of wiring. As with the 3SK1211, the devices with a 24 V DC control supply voltage can also be connected to 3SK1 Advanced and 3SK2 basic units by means of the 3ZY12 device connectors.

3RQ1 output expansion (up to SIL 2/PL c or SIL 3/PL e)

The 3RQ1 force-guided coupling relays serve as an output expansion up to SIL 2/PL c or SIL 3/PL e (depending on the version) and can be connected to all 3SK basic units by wiring and to all 3SK1 Advanced and 3SK2 basic units by using the 3ZY12 device connector. They have a switching capacity of AC-15 5 A (like the 3SK1211) at a switching voltage of 230 V and are available in widths of 17.5 mm and 22.5 mm. Furthermore, they have NC contacts with a switching capacity of AC-15 for direct switching of loads, e.g. for anti-parallel switching or signaling, see page 5/21.

Note:

It is only possible to expand the Standard basic units by means of wiring. Advanced basic units and 3SK2 basic units can be expanded using the 3ZY12 device connector.

Benefits

- Perfect adaptation of the number of outputs
- Simple expansion of instantaneous and time-delayed safe outputs of the Advanced basic units using device connectors
- When using the device connector, the outputs on the terminals of the basic device can still be used
- Two further freely configurable shutdown functions on 3SK2 basic units when using device connectors
- Cost-effective multiplication of outputs up to SIL 2/PL c or SIL 3/PL e with 3RQ1
- Expansion with power contacts for high AC-15/DC-13 currents in the control circuit
- No wiring of the feedback circuit to the basic units is required when using device connectors
- Shorter installation times
- Less configuring and testing required

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Selection and ordering data

3SK1211 multi-unit packaging, see page 16/7.

3SK1211-1BB40

3SK1213-1AB40

Control supply voltage		Number of outputs as contacting contact block			Suitable for use with 3ZY12 device connector	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
at AC at 50 Hz	at DC	as NO contact, instantaneous switching	as NO contact, delayed switching	as NC contact instantaneous switching for feedback circuit						
V	V									
Output expansions										
24	--	4	0	1	No	**3SK1211-□BB00**		1	1 unit	41L
--	24	4	0	1	Yes	**3SK1211-□BB40**		1	1 unit	41L
110 ... 240	110 ... 240	4	0	1	No	**3SK1211-□BW20**		1	1 unit	41L
--	24	3	0	1	Yes	**3SK1213-□AB40**		1	1 unit	41L
115	--	3	0	1	No	**3SK1213-□AJ20**		1	1 unit	41L
230	--	3	0	1	No	**3SK1213-□AL20**		1	1 unit	41L

Type of electrical connection

- Screw terminals
- Spring-loaded terminals (push-in)

1
2

Note:

The 3RQ1 force-guided coupling relays can also be used as an output expansion for 3SK and have safety levels up to SIL 2/PL c or SIL 3/PL e, see page 5/21.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

3SK1220 sensor expansion

With the input expansions

- 3SK1220 sensor expansion
- 3SK1230 power supply

the 3SK1 Advanced basic units can be made more flexible.

3SK1220 sensor expansion

The 3SK1220 input expansion allows additional sensors to be integrated easily and flexibly. The device monitors two 1-channel sensors or one 2-channel sensor, whatever their output technology (floating/single-ended).

Note:

The 3SK1220 sensor expansion can only be connected to the 3SK1 Advanced basic units by means of the 3ZY12 device connector, see page 11/29.

3SK1230 power supply

The 3SK1230 power supply makes the 3SK1 devices universally usable, whatever control supply voltage is to be used.

Note:

Alongside the 3ZY12 device connector, the 3SK1230 power supply can also be wired to act as a power supply for 3SK1 devices.

Benefits

- A wide voltage range of 110 to 240 V AC/DC allows the devices to be used worldwide
- Low stock-keeping due to little variance
- Flexible expansion of the number of sensors without the need for additional wiring between the devices
- Perfect adaptation of the number of inputs to suit the application
- Universal use thanks to the wide range of adjustable parameters for sensor expansion (parameters as for 3SK1 Advanced basic units)

Selection and ordering data

Multi-unit packaging, see page 16/7.

3SK1220-1AB40

3SK1230-1AW20

Product version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Sensor expansions					
For safety-related expansion of the 3SK1 Advanced basic units by an additional 2-channel sensor or two 1-channel sensors	**3SK1220-□AB40**		1	1 unit	41L
Power supply					
For supplying 3SK1 Advanced basic units via 3ZY12 device connectors at voltages of 110 ... 240 V AC/DC	**3SK1230-□AW20**		1	1 unit	41L
Type of electrical connection					
• Screw terminals	1				
• Spring-loaded terminals (push-in)	2				

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

Numerous accessories are available for 3SK, such as device connectors, terminals, cables, adapters, covers, memory and diagnostics modules or software.

Note:

The last device in a system setup, i.e. the device on the far right, requires a device termination connector.

Device connectors for 3SK112., 3SK12.. and 3SK2

With the device connector, several devices of the 3SK/3RM1/3RQ1 system can be connected together.
Use of device connectors not possible with 3SK1 standard.

Device connectors are available in various versions specifically for the 3SK safety relays:

For type	**Device connectors**				**Device termination connectors**		
	3ZY1212-1BA00 (for 3SK1/3RQ1, width 17.5 mm)	**3ZY1212-2BA00** (for 3SK1/ 3RQ1, width 22.5 mm)	**3ZY1212-2GA00** (for 3SK2, width 22.5 mm)	**3ZY1212-4GA01** (for 3SK2, width 45 mm)	**3ZY1212-1DA00** (for 3RQ1, width 17.5 mm)	**3ZY1212-2DA00** (for 3SK1/3RQ1, width 22.5 mm)	**3ZY1212-0FA01** (for 3SK1, set for enclosures ≧ 45 mm)
3SK1 Advanced basic units							
3SK1120	✓	--	--	--	--	--	--
3SK1121	--	✓	--	--	--	✓	--
3SK1122	--	✓	--	--	--	✓	--
3SK2 basic units							
3SK2112	--	--	✓	--	--	--	--
3SK2122	--	--	--	✓	--	--	--
Output expansions							
3SK1211	--	✓	--	--	--	✓	--
3SK1213	--	--	--	--	--	--	✓
3RQ1, 17.5 mm	✓	--	--	--	✓	--	--
3RQ1, 22.5 mm	--	✓	--	--	--	✓	--
Input expansions							
3SK1220	✓	--	--	--	--	--	--
3SK1230	--	✓	--	--	--	--	--

✓ Available
-- Not available

Removable terminals for 3SK

The following removable terminals are available for the 3SK safety relays for pre-wiring of the terminals in the control cabinet, or for replacing terminals:

For type	**Removable terminals**			
	Screw terminals		**Spring-loaded terminals (push-in)**	
	2-pole 3ZY1121-1BA00	**3-pole 3ZY1131-1BA00**	**2-pole 3ZY1121-2BA00**	**3-pole 3ZY1131-2BA00**
3SK1 basic units				
3SK1111	--	✓	--	✓
3SK1112	✓	--	✓	--
3SK1120	--	✓	--	✓
3SK1121	--	✓	--	✓
3SK1122	✓ bottom	✓ top	✓ bottom	✓ top
3SK2 basic units				
3SK2112	--	✓	--	✓
3SK2122	--	✓[1)]	--	✓[1)]
Output expansions				
3SK1211	✓	--	✓	--
3SK1213	--	--	--	--
Input expansions				
3SK1220	--	✓ top	--	✓ top
3SK1230	✓ bottom	--	✓ bottom	--

✓ Available
-- Not available
[1)] Two sets of terminals are required for 3SK2122.

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Accessories

Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Device connectors for the electrical connection of SIRIUS devices in the industrial DIN-rail enclosure					
3ZY1212 -1BA00 3ZY1212 -2DA00	**Device connectors for 3SK1/3RQ1**				
	• Width 17.5 mm	**3ZY1212-1BA00**	1	1 unit	41L
	• Width 22.5 mm	**3ZY1212-2BA00**	1	1 unit	41L
	Device connectors for 3SK2				
	• Width 22.5 mm	**3ZY1212-2GA00**	1	1 unit	41L
	• Width 45 mm	**3ZY1212-4GA01**	1	1 unit	41L
	Device connectors for 3RM1				
	• Width 22.5 mm	**3ZY1212-2EA00**	1	1 unit	41L
	Device termination connectors				
	• for 3SK1/3RQ1, width 22.5 mm	**3ZY1212-2DA00**	1	1 unit	41L
	• for 3RQ1, width 17.5 mm	**3ZY1212-1DA00**	1	1 unit	41L
	• for 3RM1, width 22.5 mm	**3ZY1212-2FA00**	1	1 unit	41L
	Note: Positions of the slide switch, see Equipment Manual for 3SK1.				
	Device daisy chain connectors For 3SK/3RQ1/3RM1, 24 V DC, 22.5 mm, for implementation of distances between devices according to the installation guidelines	**3ZY1212-2AB00**	1	1 unit	41L
	Device connectors For height adjustment for devices without electrical connection via device connector, with a width of 22.5 mm or greater	**3ZY1210-2AA00**	1	1 unit	41L
	Device termination connector set For 3SK1213, width > 45 mm, comprising 3ZY1212-2FA00 and 3ZY1210-2AA00	**3ZY1212-0FA01**	1	1 unit	41L
Terminals for SIRIUS devices in the industrial DIN-rail enclosure					
3ZY1121-2BA00	**Removable terminals**	**Screw terminals**			
	• Screw terminals up to 2 x 1.5 mm^2 or 1 x 2.5 mm^2				
	- 2-pole	**3ZY1121-1BA00**	1	6 units	41L
	- 3-pole[1]	**3ZY1131-1BA00**	1	6 units	41L
	- 4-pole	**3ZY1141-1BA00**	1	6 units	41L
		Spring-loaded terminals (push-in)			
	• Push-in terminals up to 2 x 1.5 mm^2				
	- 2-pole	**3ZY1121-2BA00**	1	6 units	41L
	- 3-pole[1]	**3ZY1131-2BA00**	1	6 units	41L
	- 4-pole	**3ZY1141-2BA00**	1	6 units	41L
PC cables for 3SK2 (essential accessory)					
3UF7941-0AA00-0	**USB PC cables** For connecting to the USB interface of a PC/PG, for communication with 3SK2 through the system interface, recommended for use in connection with 3SK2	**3UF7941-0AA00-0**	1	1 unit	42J
Connecting cables for 3SK2 (essential accessory for diagnostics/interface modules)					
3UF7932-0AA00-0	For connecting diagnostics/interface modules to 3SK2 basic unit				
	Central unit with interface module / Diagnostics module with central unit or interface module / Length				
	✓ / -- / • 0.025 m (flat)	**3UF7930-0AA00-0**	1	1 unit	42J
	-- / ✓ / • 0.1 m (flat)	**3UF7931-0AA00-0**	1	1 unit	42J
	-- / ✓ / • 0.15 m (flat)	**3UF7934-0AA00-0**	1	1 unit	42J
	-- / ✓ / • 0.3 m (flat)	**3UF7935-0AA00-0**	1	1 unit	42J
	-- / ✓ / • 0.5 m (flat)	**3UF7932-0AA00-0**	1	1 unit	42J
	-- / ✓ / • 0.5 m (round)	**3UF7932-0BA00-0**	1	1 unit	42J
	-- / ✓ / • 1.0 m (round)	**3UF7937-0BA00-0**	1	1 unit	42J
	-- / ✓ / • 2.5 m (round)	**3UF7933-0BA00-0**	1	1 unit	42J

[1] For 3SK2122 two terminal sets are required.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operating and monitoring modules for 3SK2						
3SK2611-3AA00	**Diagnostics modules** For direct display of errors, e.g. of cross-circuits Note: The 3RK3611-3AA00 MSS diagnostics module cannot be operated on the 3SK2 devices.	**3SK2611-3AA00**		1	1 unit	41L
Door adapters for 3SK2						
3UF7920-0AA00-0	For external connection of the system interface, e.g. outside a control cabinet	**3UF7920-0AA00-0**		1	1 unit	42J
Interface covers for 3SK2						
3RA6936-0B	For system interface, titanium gray	**3RA6936-0B**		1	5 units	42F
Memory modules for 3SK2						
3RK3931-0AA00	For backing up the complete parameterization of the 3SK2 safety system without a PC/PG through the system interface	**3RK3931-0AA00**		1	1 unit	42C
Software for 3SK2						
3ZS1326-2C.10-0Y.5	**SIRIUS Safety ES (TIA Portal)** Software for configuring, commissioning, operating and diagnosing of 3SK2, see page 14/22 or www.siemens.com/product?3ZS1.					
	SIRIUS Sim 3SK2 Available free of charge as a download for simulating configurations, see page 14/25 or https://support.industry.siemens.com/cs/ww/en/view/109763750					
Accessories for enclosures						
3ZY1321-2AA00	**Sealing covers** • 17.5 mm (for 3SK1120 and 3SK1220) • 22.5 mm (for all 3SK1 devices except 3SK1120 and 3SK1220)	**3ZY1321-1AA00** **3ZY1321-2AA00**		1 1	5 units 5 units	41L 41L
3ZY1311-0AA00	**Push-in lugs** For wall mounting	**3ZY1311-0AA00**		1	10 units	41L
3ZY1440-1AA00	**Coding pins** For removable terminals of SIRIUS devices in the industrial DIN-rail enclosure; enable the mechanical coding of terminals	**3ZY1440-1AA00**		1	12 units	41L

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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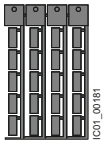
Accessories

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for enclosures (continued)					
3ZY1450-1AB00 3ZY1450-1BB00	**Hinged covers** Replacement covers, without terminal labeling				
	• Titanium gray				
	- 22.5 mm wide (for 3SK1230, 3SK2511)	**3ZY1450-1AB00**	1	5 units	41L
	• Yellow				
	- 17.5 mm wide (for 3SK1220, 3SK1120)	**3ZY1450-1BA00**	1	5 units	41L
	- 22.5 mm wide (for 3SK11 except 3SK1120, 3SK1211, 3SK2112)	**3ZY1450-1BB00**	1	5 units	41L
	- 45 mm wide (for 3SK2122)	**3ZY1450-1BC00**	1	5 units	41L
Blank labels					
 3RT2900-1SB20	**Unit labeling plates**[1] For SIRIUS devices				
	• 10 mm x 7 mm, titanium gray	**3RT2900-1SB10**	100	816 units	41B
	• 20 mm x 7 mm, titanium gray	**3RT2900-1SB20**	100	340 units	41B
Tools for opening spring-loaded terminals					
3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-loaded terminals	**Spring-loaded terminals (push-in)**			
	Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**3RA2908-1A**	1	1 unit	41B

[1] PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/18.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

SIRIUS 3TK2810 safety relays

More information

Homepage, see www.siemens.com/sirius-monitor
Industry Mall, see www.siemens.com/product?3TK28

3TK2810-0 standstill monitors

The standstill monitor increases safety in hazardous areas. Without a sensor, it detects motor stoppage from the residual magnetization of the rotating motor. When an adjustable threshold value is undershot, it uses its outputs to allow access to hazardous areas, for example by unlocking a protective door.

3TK2810-1 speed monitors

The speed monitor combines two safety functions in one unit by continuously monitoring machines and plants for standstill and speed.

Through simple parameterization and permanent diagnostics on the display, faults can be quickly remedied at any time – often before they cause plant downtimes.

In addition to standstill and speed monitoring, the unit also features an integrated monitoring function of a protective door with spring-loaded interlocking. Therefore, an additional evaluation unit is not needed. In addition, it can be protected against unwanted changes by the optionally activatable parameterization lock.

Article number scheme

Product versions		Article number									
Safety relays with special functions		**3TK2810**	**–**	**□**	**□**	**A**	**□**	**□**			
Device version	Standstill monitor			**0**							
	Speed monitor for NPN/PNP proximity switches and encoders			**1**							
Type of control supply voltage	24 V DC				**B**						
	230 V AC, 50/60 Hz				**G**						
	400 V AC, 50/60 Hz				**J**						
	120 ... 240 V AC/DC; 50/60 Hz				**K**						
Time delay	0.2 ... 6 s (standstill)						**0**				
	0 … 999 s (release delay)						**4**				
Connection type	Screw terminals							**1**			
	Spring-loaded terminals							**2**			
Version	Speed monitor for NAMUR proximity switches and encoders								**–**	**0**	**A A 0**
Example		**3TK2810**	**–**	**0**	**B**	**A**	**0**	**1**			

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

3TK2810-0 standstill monitors

- No additional sensors required
- Signaling of faults with diagnostics display
- Standstill time can be set
- Unit can be used with frequency converters

3TK2810-1 speed monitors

- Menu-prompted, easy parameterization
- Direct diagnostics on the display means shorter downtimes thanks to early fault detection
- Integrated protective door monitoring means greater safety because access to the plant is allowed only in the safe state
- Suitable for all standard sensors, i.e. high flexibility

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With special functions

Technical specifications

More information

Operating Instructions 3TK2810-0, see
https://support.industry.siemens.com/cs/ww/en/view/25437254
Equipment Manual for 3TK2810-1, see
https://support.industry.siemens.com/cs/ww/en/view/43707376
Technical specifications, see
https://support.industry.siemens.com/cs/ww/en/ps/16391/td
FAQs, see
https://support.industry.siemens.com/cs/ww/en/ps/16391/faq

Type	3TK2810-0 standstill monitors	3TK2810-1 speed monitors
Sensors		
• Inputs	3	4
• Electronic	--	3
• With contacts	--	1
• Without sensors (measuring inputs)	3	--
• Magnetically operated switch (Reed contacts)	--	--
Safety mats	--	--
Start		
• Auto	✓	✓
• Monitored	--	✓
Cascading input 24 V DC	--	--
Key-operated switch	--	--
Enabling circuit, floating		
• Stop category 0	3 NO + 1 NC	2
• Stop category 1	--	--
Enabling circuit, electronic		
• Stop category 0	--	--
• Stop category 1	--	--

Type	3TK2810-0 standstill monitors	3TK2810-1 speed monitors
Signaling outputs		
• Floating	1 CO	--
• Electronic	2	2
Standards	IEC 60204-1, ISO 12100, ISO 13849-1, IEC 62061/IEC 61508	IEC 60947-5-1, ISO 13849-1, IEC 60204-1, IEC 62061/IEC 61508
Test certificates	TÜV, UL, CSA	TÜV, UL, CSA
SIL level max. according to IEC 62061/IEC 61508	3	3
Performance Level (PL) according to ISO 13849-1	e	e
Probability of a dangerous failure per hour (PFH_d)	1.5×10^{-8} 1/h	3.38×10^{-9} 1/h
Rated control supply voltage		
• 24 V DC	✓	✓
• 230 V AC	✓	--
• 400 V AC	✓	--
• 120 ... 240 V AC/DC	--	✓

✓ Available
-- Not available

Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41L

3TK2810-0BA01

3TK2810-1BA41

Rated control supply voltage U_s	Times	Screw terminals		Spring-loaded terminals	
		Article No.	Price per PU	Article No.	Price per PU
V	s				
Standstill monitors					
3TK2810-0					
• 24 DC	0.2 ... 6 (standstill)	**3TK2810-0BA01**		**3TK2810-0BA02**	
• 230 AC	0.2 ... 6 (standstill)	**3TK2810-0GA01**		**3TK2810-0GA02**	
• 400 AC	0.2 ... 6 (standstill)	**3TK2810-0JA01**		**3TK2810-0JA02**	
Speed monitors					
3TK2810-1 for NPN/PNP proximity switches and encoders					
• 24 DC	0 … 999 (release delay)	**3TK2810-1BA41**		**3TK2810-1BA42**	
• 120 ... 240 AC/DC	0 … 999 (release delay)	**3TK2810-1KA41**		**3TK2810-1KA42**	
3TK2810-1 for NAMUR proximity switches and encoders					
• 24 DC	0 … 999 (release delay)	**3TK2810-1BA41-0AA0**		**3TK2810-1BA42-0AA0**	
• 120 ... 240 AC/DC	0 … 999 (release delay)	**3TK2810-1KA41-0AA0**		**3TK2810-1KA42-0AA0**	

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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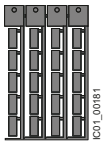
Selection and ordering data

	Use	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Push-in lugs							
3RP1903	For 3TK28	**Push-in lugs** For screw fixing, 2 units are required for each device	**3RP1903**		1	10 units	41H
Adapters and connecting cables for speed monitors							
	For 3TK2810-1	**Adapters** For connecting encoders of type Siemens/Heidenhain					
3TK2810-1A		• 15-pole	**3TK2810-1A**		1	1 unit	41L
3TK2810-1B		• 25-pole	**3TK2810-1B**		1	1 unit	41L
3TK2810-0A	For 3TK2810-1	**Connecting cables** For connecting the speed monitor to the 3TK2810-1A or 3TK2810-1B adapter	**3TK2810-0A**		1	1 unit	41L
Blank labels							
 3RT2900-1SB20	For SIRIUS devices	**Unit labeling plates** 20 mm x 7 mm, titanium gray[1)]	**3RT2900-1SB20**		100	340 units	41B
Tools for opening spring-loaded terminals							
3RA2908-1A	For auxiliary circuit connections	**Screwdrivers** For all SIRIUS devices with spring-loaded terminals	**Spring-loaded terminals**				
		Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	**3RA2908-1A**		1	1 unit	41B

1) PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/18.

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Notes

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Price groups
PG 41K, 41L, 42A, 42D, 250, 572

12/2 **Introduction**

SIRIUS 3SE5 mechanical position switches
12/5 General data
3SE5, plastic enclosures
12/14 - Enclosure width 31 mm according to EN 50047
12/20 - Enclosure width 40 mm according to EN 50041
12/24 - Enclosure width 50 mm
3SE5, metal enclosures
12/27 - Enclosure width 31 mm according to EN 50047
12/31 - Enclosure width 40 mm according to EN 50041
12/36 - Enclosure width 56 mm
12/40 - Enclosure width 56 mm, XL
12/43 - Compact design
3SE5, open-type design
12/45 - Enclosure width 30 mm
Accessories and spare parts
12/46 - Accessories NEW
12/48 - Optional accessories and spare parts

SIRIUS 3SE5, 3SE2 mechanical safety switches
With separate actuator
12/50 General data
12/53 3SE5, plastic enclosures
12/56 3SE5, metal enclosures
12/58 Accessories
12/60 3SE2, plastic enclosures
With tumbler
12/61 General data
12/65 3SE5, plastic enclosures with locking force greater than 1 200 N
12/67 3SE5, metal enclosures with locking force greater than 2 000 N
12/68 Accessories NEW

SIRIUS 3SE5, 3SE2 mechanical safety hinge switches
12/70 General data
12/71 3SE5, plastic enclosures
12/73 3SE5, metal enclosures
3SE2, plastic enclosures
12/74 - With integrated hinge

SIRIUS 3SE5 mechanical position switches for ambient temperatures down to -40 °C
Shock and vibration test
SIRIUS 3SE5 mechanical position switches
12/75 - 3SE5, plastic enclosures
SIRIUS 3SE5 mechanical safety switches with tumbler
12/76 - 3SE5, plastic enclosures
SIRIUS 3SE5 mechanical safety hinge switches
12/77 - 3SE5, plastic enclosures
Shock and vibration test according to railway standard
SIRIUS 3SE5 mechanical position switches
12/78 - 3SE5, plastic enclosures
12/81 - 3SE5, metal enclosures
SIRIUS 3SE5 mechanical safety switches with separate actuator
12/86 - 3SE5, plastic enclosures/metal enclosures
SIRIUS 3SE5 mechanical safety switches with tumbler
12/87 - 3SE5, plastic enclosures

SIRIUS 3SE safety switches and 3SU1 EMERGENCY STOP enclosures for PROFIsafe connection
12/88 Safety cabling in the field with IP67

SIRIUS 3SF1 mechanical safety switches for AS-Interface
12/93 General data
12/96 3SF1, plastic enclosures
12/98 3SF1, metal enclosures
With separate actuator
12/102 General data
12/104 3SF1, plastic enclosures
12/105 3SF1, metal enclosures
12/106 Accessories
With tumbler
12/107 General data
12/109 3SF1, plastic enclosures with locking force greater than 1 200 N
12/110 3SF1, metal enclosures with locking force greater than 2 000 N
Safety hinge switches
12/111 3SF1, plastic enclosures
12/112 3SF1, metal enclosures

SIRIUS 3SE6 non-contact safety switches
12/113 3SE66, 3SE67 magnetically operated switches
12/119 3SE63 RFID safety switches
12/122 3SE64 RFID safety switches with tumbler NEW

13/156 **SIRIUS 3SE7 cable-operated switches**

13/161 **SIRIUS 3SE2, 3SE3 foot switches**

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Overview

	3SE523., 3SE521., 3SF12.4	3SE524., 3SF1244	3SE513., 3SE511., 3SF1114	3SE512., 3SF1124	3SE516.	3SE5413, 3SE5423	3SE5250
	Position switches						
	Standard					**Compact design**	**Open-type**
Enclosure							
Plastic	✓			--		--	✓
Metal	✓	--	✓			✓	--
Dimensions (W x H x D) in mm	31 x 68 x 33	50 x 53 x 33	40 x 78 x 38	56 x 78 x 38	56 x 100 x 38	30 x 50 x 16 40 x 50 x 16	30 x 48.5 x 20
Degree of protection	IP65, IP66/IP67	IP66/IP67				IP66/IP67	IP10 or IP20
Standards IEC 60947-5-1	Mounting and operating points according to EN 50047	Operating points according to EN 50047	Mounting and operating points according to EN 50041	Operating points according to EN 50041		--	Mounting and operating points according to EN 50047
Approvals	CE, TÜV, UL, CSA, CCC					CE, UL, CSA, CCC	CE, TÜV, UL, CSA, CCC
Contact blocks							
2 slow-action contacts	1 NO + 1 NC; 2 NC				2 × (1 NO + 1 NC)	--	1 NO + 1 NC
2 snap-action contacts	1 NO + 1 NC				2 × (1 NO + 1 NC)	1 NO + 1 NC	1 NO + 1 NC
• Short stroke	1 NO + 1 NC		✓		--	--	✓
• Contact distance 2 x 2 mm	1 NO + 1 NC		✓		--	--	✓
3 slow-action contacts	1 NO + 2 NC; 2 NO + 1 NC				--	--	1 NO + 2 NC; 2 NO + 1 NC
• With make-before-break	1 NO + 2 NC				2 x (1 NO + 2 NC)	--	1 NO + 2 NC
3 snap-action contacts	1 NO + 2 NC				--	--	1 NO + 2 NC
Special features							
LED status display	✓				--	--	--
Increased corrosion protection	✓					--	--
ASIsafe integrated	✓				--	--	--
Electrical specifications							
Insulation voltage U_i	400 V					400 V	400 V
Conventional thermal current I_{th}	6 A/10 A (3-/2-pole)					10 A	6 A
Connections							
Cable entry	1 x (M20 x 1.5)	2 x (M20 x 1.5)	1 x (M20 x 1.5)	3 x (M20 x 1.5)		--	--
M12 plug, 4-, 5- or 8-pole	✓					✓	--
Plug, 6-pole + PE	--		✓		--	--	--
Molded cables	--					✓	--
Actuators							
Rounded plungers and roller plungers	✓					--	--
Roller levers and angular roller levers	✓					--	--
Spring rod	✓				--	--	--
Twist levers and rod levers	✓					--	--
Fork lever	--		✓		--	--	--
Hinge switches	--					--	--
Plungers, twist levers	--				✓	✓	✓
Page							
Complete units	12/14, 12/27	12/24	12/20, 12/31	12/36	12/40	12/44	12/45
Modular system	12/18, 12/29	12/25	12/22, 12/34	12/38	12/41	--	--
Ambient temperature -40 °C	12/75, 12/80	12/80	12/80	12/83	12/84	--	--
ASIsafe	12/96, 12/98	12/96	12/100	12/100	--	--	--

✓ Available

-- Not available

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	3SE5232, 3SE5212, 3SF12.4	3SE5132, 3SE5112, 3SF11.4	3SE5232, 3SE5242, 3SF12.4	3SE5112, 3SE5122, 3SF11.4	3SE5322, 3SE5312, 3SF13.4
	Safety hinge switches		**Safety switches with separate actuator**		**Safety switches with tumbler**
Enclosure					
Plastic	✓		✓		✓
Metal	✓		✓		✓
Dimensions (W x H x D) in mm	31 x 68 x 33	40 x 78 x 38	31 x 68 x 33, 50 x 53 x 33	40 x 78 x 38, 56 x 78 x 38	54 x 185 x 44
Degree of protection	IP65, IP66/IP67	IP66/IP67	IP65, IP66/IP67	IP66/IP67	IP66/IP67, IP69
Standards IEC 60947-5-1	Mounting and operating points according to EN 50047	Mounting and operating points according to EN 50041	Mounting and operating points according to EN 50047	Mounting according to EN 50041	ISO 14119, IEC 62061/IEC 61508, ISO 13849-1
Approvals	CE, TÜV, UL, CSA, CCC		CE, TÜV, UL, CSA, CCC		CE, TÜV, UL, CSA, CCC
Contact blocks/outputs					
2 slow-action contacts	--		1 NO + 1 NC; 1 NO + 2 NC		--
2 snap-action contacts	1 NO + 1 NC		--		--
• Short stroke	--		--		--
• Contact distance 2 x 2 mm	--		--		--
3 slow-action contacts	--		1 NO + 2 NC		2 x (1 NO + 2 NC)
• With make-before-break	--		--		--
3 snap-action contacts	1 NO + 2 NC		--		--
Electronic safety outputs	--		--		--
Special features					
LED status display	✓		✓		✓
Increased corrosion protection	✓		✓		✓
ASIsafe integrated	✓		✓		✓
Electrical specifications					
Insulation voltage U_i	400 V		400 V		400 V
Conventional thermal current I_{th}	6 A/10 A (3-/2-pole)		6 A		6 A
Connections					
Cable entry	1 x (M20 x 1.5)		1 x (M20 x 1.5), 2 x (M20 x 1.5)	1 x (M20 x 1.5), 3 x (M20 x 1.5)	3 x (M20 x 1.5)
M12 plug, 4-, 5- or 8-pole	✓		✓		✓
Molded cables	--		--		--
AS-Interface	--		✓		✓
Actuators					
Plungers, twist levers	--		--		--
Separate actuators	--		✓		✓
Hinge switches	✓		--		--
Page					
Complete units	12/71	12/71, 12/73	12/53, 12/56	12/54, 12/57	12/65 ... 12/67
Modular system	--	--	--	--	--
Ambient temperature -40 °C	12/77	--	12/86	--	12/87
ASIsafe	12/111	12/112	12/104	12/105	12/109, 12/110

✓ Available

-- Not available

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Introduction

	3SE66, 3SE67	3SE66, 3SE67	3SE63	3SE64
	Non-contact safety switches Magnetically operated switches		RFID safety switches[1]	
		Supplementary range[1]	Standard	With tumbler
Enclosure				
Plastic	✓		✓	
Metal	--		--	
Dimensions (W x H x D) in mm	M30; 25 x 88; 25 x 33	25 x 88; 26 x 36	25 x 91 x 22	87 x 120 x 34
Degree of protection	IP67		IP69	
Standards	IEC 60947-5-3		ISO 14119, IEC 60947-5-3, SIL 3 according to IEC 62061/IEC 61508, PL e according to ISO 13849-1	
Approvals	CE, TÜV, UL, CSA, CCC	CE, TÜV, UL, CSA	CE, TÜV, UL, CSA	
Contact blocks/outputs				
Reed contacts	1 NO + 1 NC 2 NC 1 NO + 1 NC (+ 1 NC signaling contact)	1 NO + 1 NC (+ 1 NC signaling contact) 2 NC 2 NC (+ 1 NC signaling contact)	--	
Special features				
LED status display	--	✓	✓	
Increased corrosion protection	--		✓	
ASIsafe integrated	--		--	
Electrical specifications				
Insulation voltage U_i	100 V AC/DC 24 V DC	75 V DC 50 V AC	--	
Conventional thermal current I_{th}	250 mA 400 mA	250 mA	--	
Connections				
M8 plug, 4-pole	✓		--	
∅ 8 mm, latching connection, plug, 6-pole	--	✓	--	
M12 plug, 4-pole	✓	--	--	
M12 plug, 8-pole	--		✓	
Molded cables	✓		--	
AS-Interface	--		--	
Actuators				
RFID	--		✓	
Switching solenoid	✓		--	
Page	12/113		12/119	12/122

✓ Available

-- Not available

[1] CCC approval not required for voltages < 36 V.

Note:

Safety characteristics, see page 16/9.

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Overview

More information	
Homepage, see www.siemens.com/sirius-position-switches	Configuration Manual, see https://support.industry.siemens.com/cs/ww/en/view/43920150
Industry Mall, see www.siemens.com/product?3SE	For brochure, see https://support.industry.siemens.com/cs/ww/en/view/109811407
Configurator, see www.siemens.com/sirius/configurators	
Conversion tool, see www.siemens.com/conversion-tool	

Our SIRIUS 3SE5 position switches are modern, compact and modular in design and simple to connect. They save time and increase flexibility during installation of a whole range of switch variants. In principle it is possible to combine any enclosure with any operating mechanism, paying due consideration to the EN 50041 and EN 50047 standards where necessary.

Complete units

Popular versions of the position switches in standard enclosures are available as complete units.

3SE5 position switches with plastic and metal enclosures

Modular system

The 3SE5 series is the modular system comprising different sizes of the basic switch and an actuator which must be ordered separately. Thanks to the modular design of the switch the user can select the right solution for his application from numerous versions and install it himself in a very short time.

Simple plug-in mounting enables fast replacement of the actuator heads.

Examples of selection options in the modular system

Service box for SIRIUS 3SE5 position switches

Service box with basic switches, actuator heads and accessories

For the most common applications for quick replacement as part of maintenance or for many first applications, a service box 3SX5110-0BK can be ordered for the SIRIUS 3SE5 position switches in the modular system.

This contains a selection of basic switches, actuator heads and accessories for various possible combinations.

213 tested combinations of 22 individual products are possible. The standard interface enables simple replacement of the actuator heads by plug-in mounting. The actuator heads can be rotated in steps of 16 x 22.5°.

For more information, see page 12/46.

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General data

Design

All enclosure variants have an integrated chlorinated rubber diaphragm for high functional safety in cold and aggressive environments.

Enclosure sizes

The 3SE5 switches are available in five different enclosure sizes with 2 or 3 contacts and with the XL enclosure:

- Open-type position switch IP20 or IP10
- Plastic enclosures according to EN 50047, 31 mm wide, IP65, 1 cable entry
- Metal enclosures according to EN 50047, 31 mm wide, IP66/IP67, 1 cable entry
- Plastic and metal enclosures according to EN 50041, 40 mm wide, IP66/IP67, 1 cable entry
- Plastic enclosures, 50 mm wide, IP66/IP67, 2 cable entries
- Metal enclosures, 56 mm wide, IP66/IP67, 3 cable entries
- XL metal enclosures with 4 to 6 contacts, 56 mm wide, IP66/IP67, 3 cable entries

Enclosure versions

Various basic switches can be selected for the enclosures of the 3SE5 series:

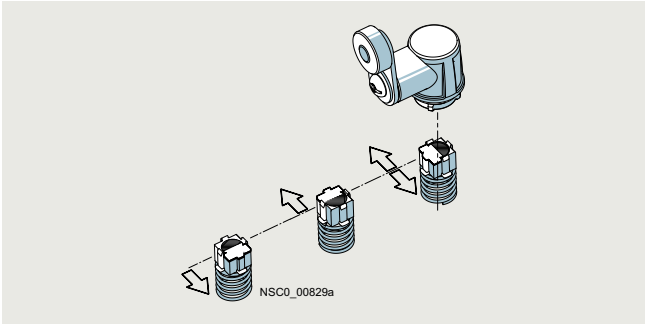
- With contact blocks with two or three contact elements (screw terminals) designed as slow-action or snap-action contacts; the slow-action contacts also with make-before-break
- Optional LED status display
- With assembled M12 device plug, 4- or 5-pole (available as an accessory for self-assembly for the wide enclosure)
- With 6-pole device plug + PE on the metal enclosures
- Versions with increased corrosion protection
- Versions for operating temperatures down to -40 °C
- AS-Interface version with integrated ASIsafe electronics for all enclosure designs (see page 12/93)

Actuator variants

All actuators can be rotated around the axis in increments of 16 x 22.5°. The following actuator variants are available:

- Plain, rounded and roller plungers
- Roller levers and angular roller levers
- Spring rod
- Twist levers and rod levers with twist actuator
- Fork levers with twist actuator

The actuator rollers are available with various materials and diameters.



Twist actuator for twist levers and rod actuators, with setting of switching direction to right, left or right/left (standard for all twist actuators except fork levers)

Cover design

The mechanical position switches have a turquoise cover and the mechanical safety switches have a yellow cover.

Cover colors: position switches turquoise, safety switch yellow

On request the switches can be delivered ex works with a yellow cover. The cover has no effect on the mode of operation. Both versions can be used in safety applications (see also page 12/16).

Diverse contact types

Exchangeable 2-pole and 3-pole contact blocks for all enclosure sizes.

Contact block for position switches, 3 contacts

The 3-pole contact block with snap-action or slow-action contacts is regularly available for all enclosure forms. The same installation space is required as for a 2-pole block. The version with 1 NO + 2 NC offers, for example, more safety through redundant shutdowns (2 NC contacts) with simultaneous signaling (NO contact). The 3-pole blocks are also available with make-before-break and with 2 NO + 1 NC.

Contact reliability

The contact blocks ensure an extremely high contact stability. This applies even when the devices are switching low voltages and currents.

Positive opening ⊖

The NC contacts of the switch are forced open mechanically, positively driven and reliably by the plunger. This is referred to as "positive opening".

Optional LED displays

LED displays are available for all enclosure sizes except for XL. The enclosures are supplied with an LED signaling indicator (1 x green + 1 x yellow). This is the first time that optical signaling equipment is also available for small standard enclosures according to EN 50047. The LEDs are implemented in 24 V DC and 230 V AC.

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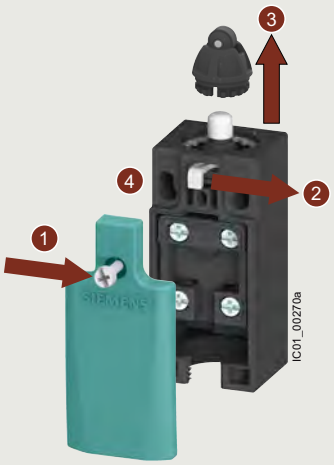
Mounting

Easy plug-in method for fast replacement of the actuator heads



1. Open the cover
2. Actuate the locking lever
3. Replace the actuator head (rotatable in 16 x 22,5° increments)
4. Lock and close the cover

Replacement of the position switch actuator head in only four steps

Video: What makes the SIRIUS position switches so flexible?

Quick-connect technology

For plastic enclosure with a width of 31 mm

Quick-connect technology for plastic enclosures

These position switches can be wired quickly and easily as an added customer benefit. The connecting cable is first connected to the terminals of the contact block and then guided through a slit into the cable gland opening. The time saved through this new connection method is approx. 20 to 25%.

A cable gland with seal must be used with the quick-connect method.

Video: How easy is it to install the 3SE5232 position switch?

Article number scheme

Product versions		Article number
SIRIUS position and safety switches		**3SE** □ □ □ □ – □ □ □ □ □
Series		**5**
Standard	EN 50041 EN 50047 With tumbler	**1** **2** **3**
Enclosure material and width	e.g. 1 = metal, narrow	□
Connection	Cable entry Device plug	**2** **4/5**
LEDs	None 24 V DC 115 V AC 230 V AC	**0** **1** **2** **3**
Version of contacts	e.g. C = snap-action 1 NO + 1 NC	□
Version of operating mechanism	e.g. C02 = rounded plunger	□ □ □
Example		**3SE 5 1 1 2 – 0 C C 0 2**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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General data

Benefits

The 3SE5 position switches differ from the previous series through the following new characteristics:

- The modular design of the product range allows a number of versions with a smaller number of bearing types for enclosures and operating mechanisms.
- All operating mechanisms can be rotated around the axis in increments of 22.5° (see Mounting, page 12/7).
- Rounded and roller plungers according to EN 50041 with 3 mm overtravel (total travel 9 mm) for greater tolerance when switching.
- All enclosure sizes – now also including the small enclosure 31 mm wide – are optionally available with an LED signaling indicator (see page 12/6).
- All enclosure variants have an integrated chlorinated rubber diaphragm for high functional safety in cold and aggressive environments.
- All contact blocks are replaceable (see page 12/48).
- The 3-pole contact blocks are available for all enclosure sizes (see Diverse contact types, page 12/6).
- Elements with 1 NO + 2 NC slow-action contacts with make-before-break and 2 NO + 1 NC
- The short-stroke contact block 1 NO + 1 NC improves the precision of the switching operation through a reduced actuation path.
- The contact block with 1 NO + 1 NC snap-action contacts with a contact distance of 2 x 2 mm is suitable for simultaneous shutdown and signaling, particularly in the elevator industry.
- XL metal enclosures for accommodating two 2- or 3-pole contact blocks
- Versions with plugs for safe and fast connection, e.g. to fail-safe field modules of the SIMATIC ET 200eco PN or SIMATIC ET 200AL
- The plastic enclosure with width 31 mm has simple and fast wiring equipment which makes it possible to save approx. 20 to 25% of the time when connecting (see Quick-connect technology, page 12/7).
- The ASIsafe electronics are integrated in the enclosure for the versions with AS-Interface connection (see page 12/93); an additional adapter is not required.

Application

With the standard position switches, mechanical positions of moving machine parts are converted into electrical signals. Through their modular and uniform design and large number of variants, the devices can comply with practically all requirements in industry.

Devices are available with enclosure versions to suit the particular ambient conditions. Different control tasks can be performed with the contact blocks best suited for the particular purpose. And many different actuator variants are available to match the mechanical configuration of the moving machine parts. Dimensions, fixing points and characteristics are largely in accordance with the EN 50041 or EN 50047 standards.

The devices are suitable for use in any climate.

Standards

The switches comply with IEC 60947-5-1 (electromechanical control circuit devices).

The protective measure of "total insulation" by the plastic enclosure is ensured by the use of plastic screw glands.

Safety position switches

For controls according to IEC 60204-1 the devices can be used as a safety position switch. They comply with ISO 14119. A TÜV Certificate is available. To secure position switches against changes in their position, positively-driven techniques must be employed on installation.

Safety circuits

Standard IEC 60947-5-1 requires positive opening of the NC contacts. In other words, for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked according to the standard IEC 60947-5-1 with the symbol ➔.

SIL 1 according to IEC 62061/IEC 61508 or PL c according to ISO 13849-1 can be attained with the 3SE5 position switch with ➔ if the corresponding fail-safe evaluation units are selected and correctly installed (e.g. the 3SK safety relays or matching devices from the ASIsafe, SIMATIC or SINUMERIK product ranges).

If a second position switch with ➔ is used, SIL 3/PL e can be attained.

In addition to positive opening, the operating mechanisms (actuators) must also have a positively driven connection to the enclosure. The corresponding operating mechanisms are marked in the catalog with ➔.

Evaluation of safety functions

Safety Evaluation in the TIA Selection Tool

The safety evaluation for the standards IEC 62061 and ISO 13849-1 is performed quickly and easily, directly in the TIA Selection Tool. In addition to the fast and safe calculation of machine safety functions – from the definition of the system structure to the selection of components – this enables shared data management during all project phases. Take the next step in the digital design of machinery and equipment with Safety Evaluation in the TIA Selection Tool.

In addition, the functionalities of the proven Safety Evaluation Tool are still available. It determines the achieved safety integrity (SIL/PL) step-by-step. You receive the results as a standards-compliant report that can be integrated in the documentation as proof of safety.

For more information, see www.siemens.com/safety-evaluation.

Contacts for every application

- Snap-action contacts: NC and NO contacts switch simultaneously – regardless of the actuating speed (v_{min} = 0.01 m/s) and contact erosion.
- Slow-action contacts: Difference in travel between "NC contact opens" and "NO contact closes"; the switching speed is the same as or proportional to the actuating speed (v_{min} = 0.4 m/s).
- Slow-action contacts with make-before-break: e.g. suitable for adding a second function to a sequence control.

Operating mechanisms for every application

Plain, rounded and roller plungers

- Operation in direction of the plunger axis or in case of roller plunger with bar at right angles to the plunger axis.
- The roller plunger is recommended for lateral actuation and relatively long overtravel.

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Roller levers and angular roller levers

- For actuators made of finely ground steel in the form of cams, bars (approach angle 30°) or cam disks.

Spring rod

- Can be used for undefined actuations and changing approach conditions
- Approach from any direction is possible

Twist levers and rod levers

- For high approach velocities (v = 1.5 m/s)
- Variety of approach options
- Insensitive to oil, grinding dust, dirt and coarse-grained material
- Adjustment of the lever in increments of 10°
- Can be adjusted with left or right switching

Fork lever

- Switchable in two directions
- Latching actuator
- For reciprocating movements

Monitoring with safe evaluation units from the 3SK series

Safe evaluation units		**Maximum achievable safety level according to type of switch**				
		Compact	Standard	Hinge	Separate actuator	Tumbler
3SK		3SE54 ➔	3SE51/3SE52 ➔	3SE51/3SE52 ➔	3SE51/3SE52 ➔	3SE53 ➔
Use of only one position/safety switch						
Monitoring with 1 contact: 1 x NC contact		**SIL 1/PL c**				
Monitoring with 2 contacts: 2 x NC contact or 1 x NC contact + 1 x NO contact		**SIL 1/PL c**		**SIL 2/PL d**		
Use of a second position/safety switch						
Standard switch	3SE51/3SE52/3SE54	**SIL 3/PL e**				
Safety switch/hinge switch	3SE51/3SE52					
Safety switch with separate actuator	3SE51/3SE52					
Safety switch with tumbler	3SE53					

Note:

Taking account of certain fault exclusions (e.g. actuator breakage), use of just one hinge switch or a switch with separate actuator with or without tumbler up to SIL 2/PL d is possible as described in the table.

Since the machine manufacturer must provide proof of fault exclusion, the component manufacturer is unable to carry out a definitive assessment of the measures taken.

For more information, see https://support.industry.siemens.com/cs/ww/en/view/35443942.

The maximum achievable SIL or PL level always depends on other assumptions as well. Factors to be taken into account include the DC (declaration), the CCF, and the number of actuations.

For information on the safe evaluation units and an introduction to safety systems, see page 11/1 onwards.

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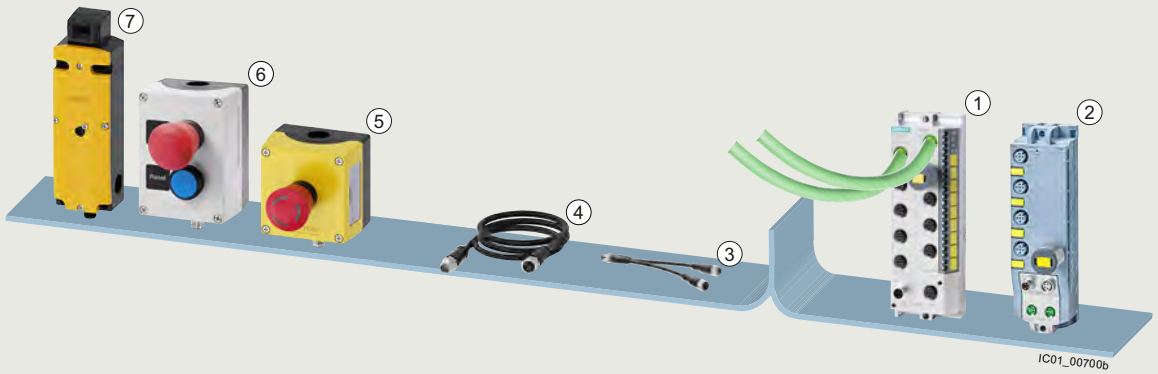
General data

Safety cabling in the field with IP67

More information
Fail-safe I/O device for • SIMATIC ET 200eco PN, see https://mall.industry.siemens.com/mall/en/ww/Catalog/Products/10370455?tree=CatalogTree • SIMATIC ET 200AL, see https://mall.industry.siemens.com/mall/en/ww/Catalog/Products/10414335?tree=CatalogTree Configurator, see www.siemens.com/SIMATIC-ET200-safety-sensor-configurator



① SIMATIC ET 200eco PN field module, fail-safe, 6ES7146-6FF00-0BA0
② SIMATIC ET 200AL field module, fail-safe, 6ES7146-5FF00-0BA0
③ Y-cable, 8-pole to 2 x 5-pole, 6ES7194-6KC00-0XA0
④ Connecting cable, 8-pole, 3SX5601-3SV18
⑤ SIRIUS ACT enclosure, EMERGENCY STOP, illuminated, with M12 plug, 8-pole, 3SU1801-0NV00-4SA2
⑥ SIRIUS ACT enclosure, EMERGENCY STOP and pushbutton, with M12 plug, 8-pole, 3SU1802-0NE00-4SB1
⑦ Safety switch with tumbler, with M12 plug, 8-pole, 3SE5324

Excerpt from the Safety field system composed of SIRIUS sensors and SIMATIC ET 200 with the M12 connection method

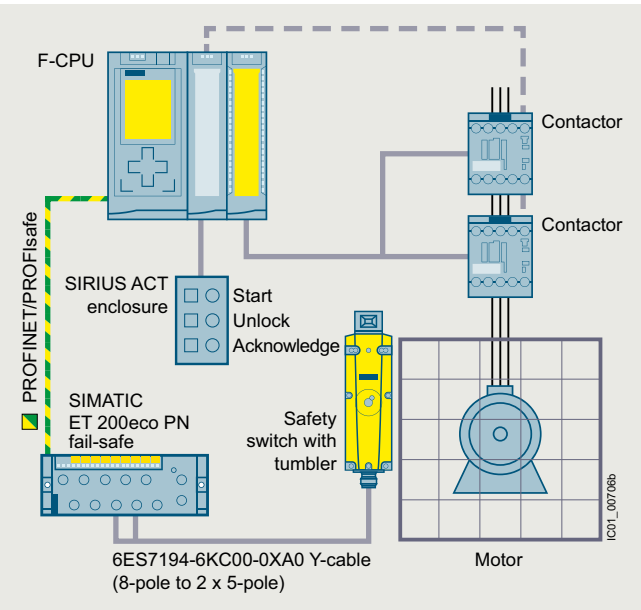
The new system comprising SIRIUS sensors and fail-safe SIMATIC ET 200 provides a safe M12 connection method for industry.

The SIRIUS sensors can be connected in the field via the fail-safe field modules of the SIMATIC ET 200eco PN and SIMATIC ET 200AL.

The signals are forwarded to the higher-level controller via PROFINET/PROFIsafe either by means of a direct connection of the SIMATIC ET 200eco PN or, in the case of SIMATIC ET 200AL, via an interface module.

For more information and examples, see page 12/88 onwards.

Application example



Protective door monitoring with 3SE53 safety switch with tumbler on the fail-safe field module of the SIMATIC ET 200eco PN with inverted Y-cable 6ES7194-6KC00-0XA0 (8-pole to 2 x 5-pole)

For a detailed description of this example of how safety switches with tumblers can achieve different SIL/PL levels, see https://support.industry.siemens.com/cs/ww/en/view/109778289.

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Technical specifications

Type		3SE51..[1], 3SE52..[1]	3SE541.	3SE542.
General data				
Standards		IEC 60947-5-1, ISO 14119		
Rated insulation voltage U_i	V	400[2]	400	
Pollution degree according to IEC 60664-1		Class 3	Class 3	
Rated impulse withstand voltage U_{imp}	kV	6	4	
Rated operational voltage U_e	V	400 AC; over 300 V AC same potential only[3]	300 AC	
Conventional thermal current I_{th}	A	10	10	
Rated operational current I_e				
• For alternating current 50/60 Hz		I_e/AC-15	I_e/AC-15	
- At 24 V	A	6	6	
- At 120 V	A	6	6	
- At 240 V	A	6	3	
- At 400 V	A	4	--	
• For direct current		I_e/DC-13	I_e/DC-13	
- At 24 V	A	3	3	
- At 125 V	A	0.55	0.55	
- At 250 V	A	0.27	0.27	
- At 400 V	A	0.12	--	
Short-circuit protection[4]				
• With DIAZED fuse links, operational class gG	A	6	10	
• With miniature circuit breaker, C characteristic ($I_{K< 400\ A}$)	A	1	3	
Mechanical endurance				
• Basic switch		15 x 10^6 operating cycles	10 x 10^6 operating cycles	10 x 10^6 operating cycles
• With spring rod, 3SE5...-..R..		10 x 10^6 operating cycles	--	--
• With fork lever, 3SE51..-..T..		1 x 10^6 operating cycles	--	--
Electrical endurance				
• With 3RH21 contactors size S00 and 3RT contactors sizes S00, S0		10 x 10^6 operating cycles	500 000 operating cycles	500 000 operating cycles
• For utilization category AC-15 when switching off I_e/AC-15 at 240 V		100 000 operating cycles	100 000 operating cycles	100 000 operating cycles
• With utilization category DC-12/DC-13		For direct current depending on the loading of the switch		
Frequency of operation With contactors 3RH21 size S00 and 3RT contactors sizes S00, S0		6 000 operating cycles/h	1 800 operating cycles/h	
Switching accuracy				
• For repeated switching, measured at the plunger of the contact block	mm	0.05	0.05	
• With twist actuators		1°	1°	
Rated data according to cULus and CSA				
• Rated voltage	V	300	300	
• Uninterrupted current	A	6	10	
• Switching capacity		Heavy duty, A 300/B 300/Q 300	A 300/Q 300	

1) Special versions, see the respective data sheet.
2) For slow-action contacts 1 NO + 2 NC with make-before-break ("M") and 2 NO + 1 NC ("P") the following applies: 250 V.
3) For slow-action contacts 1 NO + 2 NC with make-before-break ("M") and 2 NO + 1 NC ("P") the following applies: over 250 V AC same potential only.
4) Without any welds according to IEC 60947-5-1.

Type		3SE523.	3SE513.	3SE524.	3SE521.	3SE511.	3SE512., 3SE516.	3SE54..	3SE525.
Enclosure									
Enclosure									
• Material		Plastic P66			Zinc die-casting			Zn/Al	--
• Width	mm	31	40	50	31	40	56	30/40	30
Degree of protection on the front according to IEC 60529		IP65	IP66/IP67; IP65/IP67 for actuator heads with spring rod and rod actuators					IP67	IP20[1], IP10
Ambient temperature									
• During operation	°C	-25 ... +85; -40 ... +85 for 3SE51..-1AJ0 and 3SE52..-1AJ0, -1AY0						-25 ... +85	
• In operation, switch with LEDs	°C	-25 ... +60						--	
• Storage, transport	°C	-40 ... +90						-40 ... +90	
Mounting position		Any							
Connection									
Cable entry		1 x (M20 x 1.5)		2 x (M20 x 1.5)	1 x (M20 x 1.5)		3 x (M20 x 1.5)	--	--
Conductor cross-sections									
• Solid	mm^2	1 x (0.5 ... 1.5), 2 x (0.5 ... 0.75)							
• Finely stranded with end sleeve	mm^2	1 x (0.5 ... 1.5), 2 x (0.5 ... 0.75)							
• AWG cables, solid or stranded	AWG	1 x (AWG 20 ... 16), 2 x (AWG 20 ... 18)							
Tightening torque, contact block	Nm	0.8 ... 1.0							
Protective conductor connection Inside enclosure		--			M3.5			--	--

1) With the conductor connected and the clamping screw tightened.

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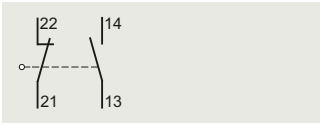
General data

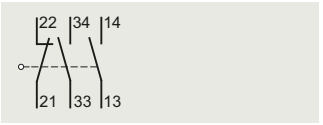
Circuit diagrams

Enclosure widths 31, 40, 50 and 56 mm

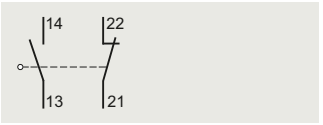
Slow-action contacts
1 NO + 1 NC
3SE5...-.B..., -.R...



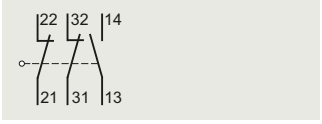
Slow-action contacts
2 NO + 1 NC
3SE5...-.P...



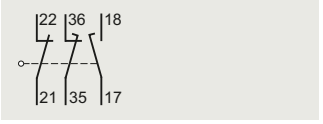
Snap-action contacts
1 NO + 1 NC
3SE5...-.C..., -.F..., -.G..., -.H..., -.N...



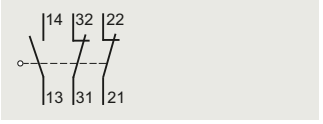
Slow-action contacts
1 NO + 2 NC
3SE5...-.K..., -.Q...



Slow-action contacts
1 NO + 2 NC with
make-before-break, 3SE5...-.M...

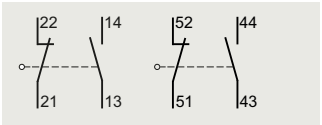


Snap-action contacts
1 NO + 2 NC
3SE5...-.L...

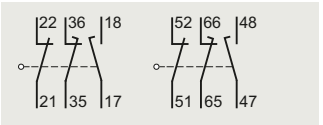


XL enclosures, width 56 mm

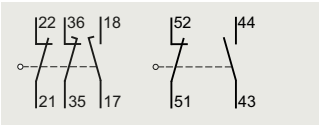
Slow-action contacts
2 x (1 NO + 1 NC)
3SE5162-0B...



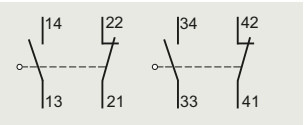
Slow-action contacts
2 x (1 NO + 2 NC) with
make-before-break, 3SE5162-0D...



Slow-action contacts
1 NO + 2 NC with make-before-break,
1 NO + 1 NC
3SE5162-0E...

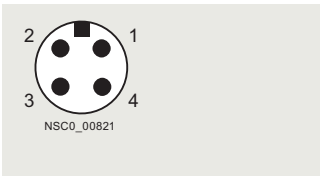


Snap-action contacts
2 x (1 NO + 1 NC)
3SE5162-0C...

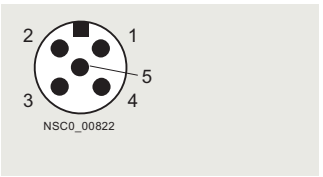


3SE5 pin assignment

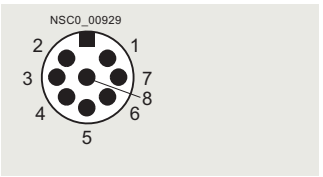
M12 device plugs, 4-pole
3SY3127



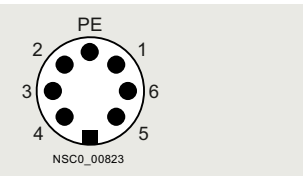
M12 device plugs, 5-pole
3SY3128, 3SX5100-1SS51,
PE on pin 3, 3SX5100-1SS05
without PE



M12 device plugs, 8-pole
3SX5100-1SS08



Device plugs, 6-pole + PE
3SY3131



Type	Device plugs	Contacts	LEDs	Connections								
	Type	Version	Version	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	PE
M12 device plugs, 4-, 5- or 8-pole												
3SE5..4-0....-1AC4, 3SE5..4-0....-1AJ1[1]	3SY3127	1 NO + 1 NC	--	21	22	13	14	--	--	--	--	--
3SE5..4-0....-1AL0, 3SE5..4-0....-1AJ2[1]	3SY3128	1 NO + 1 NC	--	21	22	13	14	PE	--	--	--	--
3SE5..4-0....-1AE0	3SY3127	2 NC	--	21	22	31	32	--	--	--	--	--
3SE5..4-0....-1AE1, 3SE5..4-0....-1AJ4[1]	3SY3128	2 NC	--	21	22	31	32	PE	--	--	--	--
3SE5..4-0....-1AE2	3SX5100-1SS51	2 NC	--	21	31	--	22	32	--	--	--	--
3SE5..4-0....-1AE3	3SX5100-1SS51	2 NC	--	21	31	PE	22	32	--	--	--	--
3SE5..4-1B...-1AF3	3SX5100-1SS05	1 NO + 1 NC slow-action	2 LEDs	21	22	14/ LED gn	13/ LED ye	Ground LED	--	--	--	--
3SE5..4-1C...-1AF3	3SX5100-1SS05	1 NO + 1 NC snap-action	2 LEDs	21	22	13/ LED gn	14/ LED ye	Ground LED	--	--	--	--
3SE5..4-1C...-1AF5	3SX5100-1SS05	1 NO + 1 NC snap-action	2 LEDs	21 21/13 jumper	22	13/ Ground LED	14/ LED ye	PE	--	--	--	--
3SE5..4-1L...-1AD4	--	1 NO + 2 NC snap-action	2 LEDs	21	22	13/ LED gn	14/ LED ye	31	32	Ground LED	PE	--
Device plugs, 6-pole + PE												
3SE5..5-0....-1AD0	3SY3131	1 NO + 1 NC	--	21	22	13	14	--	--	--	--	✓
3SE5..5-0....-1AD1	3SY3131	1 NO + 2 NC	--	21	22	13	14	31	32	--	--	✓

Legend:
gn = green, ye = yellow
✓ Connected
-- Not available

[1] Version for ambient temperatures down to -40 °C.

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Options

On the following pages you will find selection tables for complete units as well as components of the modular system.

☐ Complete units

⧄ Modular system

The differences between the units are indicated in the selection and ordering data by the symbols shown on orange backgrounds.

Using the modular system you can assemble switch variants which are not available as complete units. Each complete unit can also be supplied as a module.

A basic switch for the modular system comprises an enclosure with a contact block and a cover. Among the basic switches the following versions, for example, can be selected:

- Basic enclosure with rounded plunger
- Version with increased corrosion protection
- Version with M12 device plug and/or with 2 LEDs
- Version with M12 device plug or 6-pole + PE

Support functions

The 3SE5/3SF1 position and safety switches can also be ordered using an online configurator.

This also enables a complete documentation to be prepared:

- Product data sheets
- Dimensional drawings
- Operating travel diagrams
- CAD data in 2D and 3D model images
- Ordering data
- Product photos

For online configurator, see www.siemens.com/sirius/configurators.

Complete units

Ordering example

Required:
- Position switch according to EN 50047 in a plastic enclosure
- Contact block with slow-action contacts 1 NO + 1 NC
- Angular roller lever, metal lever and plastic roller

To be ordered:

Version	**Complete units** ☐
	Article No.
Complete units · Enclosure width 31 mm	
Angular roller levers	
With metal lever and plastic roller 13 mm	
• Slow-action contacts 1 NO + 1 NC	**3SE5232-0BF10**

Modular system

Ordering example 1

Required:
- Position switch according to EN 50047 in a plastic enclosure
- Contact block with slow-action contacts 1 NO + 1 NC
- Angular roller lever, metal lever and plastic roller

To be ordered separately:

Version	**Modular system** ⧄
	Article No.
Basic switches · Enclosure width 31 mm	
Rounded plungers	
• Slow-action contacts 1 NO + 1 NC	**3SE5232-0BC05**
	+
Operating mechanisms	
Angular roller levers	
• Metal levers Plastic rollers	**3SE5000-0AF10**

Ordering example 2

Required:
- Position switch according to EN 50047 in a plastic enclosure
- Contact block with slow-action contacts 1 NO + 1 NC
- Twist levers, high-grade steel lever and plastic roller

To be ordered separately:

Version	**Modular system** ⧄
	Article No.
Basic switches · Enclosure width 31 mm	
Rounded plungers	
• Slow-action contacts 1 NO + 1 NC	**3SE5232-0BC05**
	+
Twist actuators	
Twist actuators	**3SE5000-0AK00**
Twist levers	
• High-grade steel levers plastic rollers	**3SE5000-0AA31**

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Enclosure width 31 mm according to EN 50047

Selection and ordering data

Complete units for installation in control cabinets

2 contacts · Degree of protection IP40 · Cable entry by means of a locking plug with ∅ 6 mm

	Version	Contacts	LEDs		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[1] · Enclosure width 31 mm according to EN 50047									
3SE5232-0HC05-1AB1	***Control cabinet type, rounded plungers, type B, according to EN 50047*** **With flat cover** • Snap-action contacts, integrated[2]	1 NO + 1 NC	--	➔	**3SE5232-0HC05-1AB1**		1	1 unit	41K
3SE5232-0HC05-1AB2	With mounting plate and screws for attachment profile • Snap-action contacts, integrated[2]	1 NO + 1 NC	--	➔	**3SE5232-0HC05-1AB2**		1	1 unit	41K
3SE5232-0HC05-1AB3	**With standard cover** • Snap-action contacts, integrated[2]	1 NO + 1 NC	--	➔	**3SE5232-0HC05-1AB3**		1	1 unit	41K
3SE5232-0HC05-1AB4	With mounting plate and screws for attachment profile • Snap-action contacts, integrated[2]	1 NO + 1 NC	--	➔	**3SE5232-0HC05-1AB4**		1	1 unit	41K
Accessories									
3SX5100-1A	**Mounting plate** Suitable for 3SE523.and 3SE521. position switches with a width of 31 mm	--	--		**3SX5100-1A**		1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) The control cabinet types are not basic switches for the modular system.

2) Subsequent replacement of contact blocks is not possible.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Complete units

2 or 3 contacts · Degree of protection IP65 · Cable entry 1 x (M20 x 1.5)[1)]

Version	Contacts	LEDs		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[2)] · Enclosure width 31 mm								
Rounded plungers, type B, according to EN 50047								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5232-0BC05**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5232-0KC05**		1	1 unit	41K
	2 NO + 1 NC	--	⊖	**3SE5232-0PC05**		1	1 unit	41K
- With make-before-break	1 NO + 2 NC	--	⊖	**3SE5232-0MC05**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5232-0CC05**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5232-0LC05**		1	1 unit	41K
- Integrated[3)]	1 NO + 1 NC	--	⊖	**3SE5232-0HC05**		1	1 unit	41K
- Short stroke, integrated[3)]	1 NO + 1 NC	--	⊖	**3SE5232-0FC05**		1	1 unit	41K
- Contact distance 2 x 2 mm	1 NO + 1 NC	--	⊖	**3SE5232-0GC05**		1	1 unit	41K
With 2 LEDs, yellow/green								
• Slow-action contacts	1 NO + 2 NC	24 V DC	⊖	**3SE5232-1KC05**		1	1 unit	41K
	1 NO + 2 NC	230 V AC	⊖	**3SE5232-3KC05**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	24 V DC	⊖	**3SE5232-1LC05**		1	1 unit	41K
	1 NO + 2 NC	230 V AC	⊖	**3SE5232-3LC05**		1	1 unit	41K
With increased corrosion protection[4)]								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5232-0BC05-1CA0**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5232-0KC05-1CA0**		1	1 unit	41K
	2 NO + 1 NC	--	⊖	**3SE5232-0PC05-1CA0**		1	1 unit	41K
- With make-before-break	1 NO + 2 NC	--	⊖	**3SE5232-0MC05-1CA0**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5232-0CC05-1CA0**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5232-0LC05-1CA0**		1	1 unit	41K
With M12 device plug, 4-pole (250 V, 4 A)[5)]								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5234-0BC05-1AC4**		1	1 unit	41K
	2 NC	--	⊖	**3SE5234-0KC05-1AE0**		1	1 unit	41K
• Snap-action contacts	2 NC	--	⊖	**3SE5234-0LC05-1AE0**		1	1 unit	41K
- Integrated[3)]	1 NO + 1 NC	--	⊖	**3SE5234-0HC05-1AC4**		1	1 unit	41K
With M12 device plug, 5-pole (125 V, 4 A)[5)]								
With 2 LEDs, yellow/green								
• Slow-action contacts	1 NO + 1 NC	24 V DC	⊖	**3SE5234-1BC05-1AF3**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	24 V DC	⊖	**3SE5234-1CC05-1AF3**		1	1 unit	41K
With pin assignment as for SIMATIC ET 200[6)]								
• Snap-action contacts	2 NC	--	⊖	**3SE5234-0LC05-1AE2**		1	1 unit	41K

3SE5232-0HC05

3SE5232-1KC05

3SE5232-0BC05-1CA0

3SE5234-1BC05-1AF3

3SE5234-0LC05-1AE2

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) A cable gland with seal must be used with the quick-connect method.

2) Popular versions.

3) Subsequent replacement of contact blocks is not possible.

4) Use corresponding high-grade steel lever.

5) For pin assignments, see page 12/12.

6) The 3SE5234-.....-1AE2 position switches, prewired with an M12 plug, 5-pole, have the same pin assignment as all fail-safe block I/O modules with a PROFINET connection in the SIMATIC ET 200eco PN and ET 200AL series with degree of protection IP65/IP67 for cabinet-free installation directly at the machine.
For more information, see page 12/88 onwards.

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Enclosure width 31 mm according to EN 50047

2 or 3 contacts · Degree of protection IP65 · Cable entry 1 x (M20 x 1.5)[1)]

Version	Contacts	LEDs		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[2)] · Enclosure width 31 mm								
Roller plungers, type C, according to EN 50047								
With plastic roller 10 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5232-0BD03**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5232-0KD03**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	--	⊖	**3SE5232-0LD03**		1	1 unit	41K
- Integrated[3)]	1 NO + 1 NC	--	⊖	**3SE5232-0HD03**		1	1 unit	41K
- Short stroke, integrated[3)]	1 NO + 1 NC	--	⊖	**3SE5232-0FD03**		1	1 unit	41K
- Actuator head rotated 90°	1 NO + 2 NC	--	⊖	**3SE5232-0LD03-1AH0**		1	1 unit	41K
- With yellow cover	1 NO + 2 NC	--	⊖	**3SE5232-0LD03-1AG0**		1	1 unit	41K
With M12 device plug, 4-pole (250 V, 4 A)[4)]								
• Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	⊖	**3SE5234-0HD03-1AC4**		1	1 unit	41K
With M12 device plug, 5-pole (125 V, 4 A)[4)]								
With pin assignment as for SIMATIC ET 200[5)]								
• Snap-action contacts	2 NC	--	⊖	**3SE5234-0LD03-1AE2**		1	1 unit	41K
Roller plungers with central fixing according to EN 50047								
With plastic roller 10 mm								
• Slow-action contacts	1 NO + 2 NC	--	⊖	**3SE5232-0KD10**		1	1 unit	41K
• Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	⊖	**3SE5232-0HD10**		1	1 unit	41K
Roller levers, type E, according to EN 50047								
With metal lever and plastic roller 13 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5232-0BE10**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5232-0KE10**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	--	⊖	**3SE5232-0LE10**		1	1 unit	41K
- Integrated[3)]	1 NO + 1 NC	--	⊖	**3SE5232-0HE10**		1	1 unit	41K
With M12 device plug, 4-pole (250 V, 4 A)[4)]								
• Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	⊖	**3SE5234-0HE10-1AC4**		1	1 unit	41K
With metal lever and high-grade steel roller 13 mm								
With M12 device plug, 5-pole (125 V, 4 A)[4)]								
With pin assignment as for SIMATIC ET 200[5)]								
• Snap-action contacts	2 NC	--	⊖	**3SE5234-0LE11-1AE2**		1	1 unit	41K
With high-grade steel lever and plastic roller 13 mm								
• Snap-action contacts	1 NO + 2 NC	--	⊖	**3SE5232-0LE12**		1	1 unit	41K
With increased corrosion protection[6)]								
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5232-0CE12-1CA0**		1	1 unit	41K
Angular roller levers, according to EN 50047								
With metal lever and plastic roller 13 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5232-0BF10**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5232-0KF10**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	--	⊖	**3SE5232-0LF10**		1	1 unit	41K
- Integrated[3)]	1 NO + 1 NC	--	⊖	**3SE5232-0HF10**		1	1 unit	41K

3SE5232-0BD03

3SE5232-0LD03-1AG0

3SE5232-0HD10

3SE5232-0HE10

3SE5232-0BF10

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) A cable gland with seal must be used with the quick-connect method.

2) Popular versions.

3) Subsequent replacement of contact blocks is not possible.

4) For pin assignments, see page 12/12.

5) The 3SE5234-.....-1AE2 position switches, prewired with an M12 plug, 5-pole, have the same pin assignment as all fail-safe block I/O modules with a PROFINET connection in the SIMATIC ET 200eco PN and ET 200AL series with degree of protection IP65/IP67 for cabinet-free installation directly at the machine.
For more information, see page 12/88 onwards.

6) Use corresponding high-grade steel lever.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Enclosure width 31 mm according to EN 50047

2 or 3 contacts · Degree of protection IP65 · Cable entry 1 x (M20 x 1.5)[1)]

Version	Contacts	LEDs		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[2)] · Enclosure width 31 mm								
Spring rods, according to EN 50047								
Length 142.5 mm, with plastic plunger 50 mm								
• Snap-action contacts, integrated[3)]	1 NO + 1 NC	--		**3SE5232-0HR01**		1	1 unit	41K
With M12 device plug, 4-pole (250 V, 4 A)[4)]								
• Snap-action contacts, integrated[3)]	1 NO + 1 NC	--		**3SE5234-0HR01-1AC4**		1	1 unit	41K
Twist levers, type A, according to EN 50047								
With metal lever 21 mm and plastic roller 19 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊕	**3SE5232-0BK21**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5232-0KK21**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	--	⊕	**3SE5232-0LK21**		1	1 unit	41K
- Integrated[3)]	1 NO + 1 NC	--	⊕	**3SE5232-0HK21**		1	1 unit	41K
With M12 device plug, 4-pole (250 V, 4 A)[4)]								
• Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	⊕	**3SE5234-0HK21-1AC4**		1	1 unit	41K
With metal lever 35 mm and plastic roller 19 mm								
• Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	⊕	**3SE5232-0HK15**		1	1 unit	41K
Twist levers, adjustable length, according to EN 50047								
With metal lever 100 mm, with grid holes and plastic roller 19 mm								
• Snap-action contacts, integrated[3)]	1 NO + 1 NC	--	⊕	**3SE5232-0HK60**		1	1 unit	41K
With metal lever 100 mm and plastic roller 19 mm								
• Slow-action contacts	1 NO + 1 NC	--		**3SE5232-0BK50**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	--		**3SE5232-0LK50**		1	1 unit	41K
- Integrated[3)]	1 NO + 1 NC	--		**3SE5232-0HK50**		1	1 unit	41K
With M12 device plug, 4-pole (250 V, 4 A)[4)]								
• Snap-action contacts, integrated[3)]	1 NO + 1 NC	--		**3SE5234-0HK50-1AC4**		1	1 unit	41K
Rod levers, according to EN 50047								
With aluminum rod 200 mm								
• Snap-action contacts, integrated[3)]	1 NO + 1 NC	--		**3SE5232-0HK80**		1	1 unit	41K
With plastic rod, length 200 mm								
• Snap-action contacts, integrated[3)]	1 NO + 1 NC	--		**3SE5232-0HK82**		1	1 unit	41K
With M12 device plug, 4-pole (250 V, 4 A)[4)]								
• Snap-action contacts, integrated[3)]	1 NO + 1 NC	--		**3SE5234-0HK82-1AC4**		1	1 unit	41K

3SE5232-0HR01

3SE5232-0BK21

3SE5232-0HK60

3SE5232-0BK50

3SE5232-0HK80

⊕ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) A cable gland with seal must be used with the quick-connect method.
2) Popular versions.
3) Subsequent replacement of contact blocks is not possible.
4) For pin assignments, see page 12/12.

Note:

If the device you require is not available as a complete unit, see "Modular system", page 12/18.

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Enclosure width 31 mm according to EN 50047

Modular system

2 or 3 contacts · Degree of protection IP65 · Cable entry 1 x (M20 x 1.5)[1)]

Basic switches[2)] · Enclosure width 31 mm

Rounded plungers, type B, according to EN 50047

Version	Contacts	LEDs		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
• Slow-action contacts	1 NO + 1 NC	--	⊕	**3SE5232-0BC05**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5232-0KC05**		1	1 unit	41K
	2 NO + 1 NC	--	⊕	**3SE5232-0PC05**		1	1 unit	41K
- With make-before-break	1 NO + 2 NC	--	⊕	**3SE5232-0MC05**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊕	**3SE5232-0CC05**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5232-0LC05**		1	1 unit	41K
- Integrated[3)]	1 NO + 1 NC	--	⊕	**3SE5232-0HC05**		1	1 unit	41K
- Short stroke, integrated[3)]	1 NO + 1 NC	--	⊕	**3SE5232-0FC05**		1	1 unit	41K
- Contact distance 2 x 2 mm	1 NO + 1 NC	--	⊕	**3SE5232-0GC05**		1	1 unit	41K

3SE5232-0BC05

With increased corrosion protection[4)]

• Slow-action contacts	1 NO + 1 NC	--	⊕	**3SE5232-0BC05-1CA0**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5232-0KC05-1CA0**		1	1 unit	41K
	2 NO + 1 NC	--	⊕	**3SE5232-0PC05-1CA0**		1	1 unit	41K
- With make-before-break	1 NO + 2 NC	--	⊕	**3SE5232-0MC05-1CA0**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊕	**3SE5232-0CC05-1CA0**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5232-0LC05-1CA0**		1	1 unit	41K

3SE5232-0BC05-1CA0

With 2 LEDs, yellow/green

• Slow-action contacts	1 NO + 2 NC	24 V DC	⊕	**3SE5232-1KC05**		1	1 unit	41K
	1 NO + 2 NC	230 V AC	⊕	**3SE5232-3KC05**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	24 V DC	⊕	**3SE5232-1LC05**		1	1 unit	41K
	1 NO + 2 NC	230 V AC	⊕	**3SE5232-3LC05**		1	1 unit	41K

3SE5232-1KC05

With M12 device plug, 4-pole (250 V, 4 A)[5)]

• Slow-action contacts	1 NO + 1 NC	--	⊕	**3SE5234-0BC05-1AC4**		1	1 unit	41K
	2 NC	--	⊕	**3SE5234-0KC05-1AE0**		1	1 unit	41K
• Snap-action contacts	2 NC	--	⊕	**3SE5234-0LC05-1AE0**		1	1 unit	41K
- Integrated[3)]	1 NO + 1 NC	--	⊕	**3SE5234-0HC05-1AC4**		1	1 unit	41K

3SE5234-0HC05-1AC4

With M12 device plug, 5-pole (125 V, 4 A)[5)]

With 2 LEDs, yellow/green

• Slow-action contacts	1 NO + 1 NC	24 V DC	⊕	**3SE5234-1BC05-1AF3**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	24 V DC	⊕	**3SE5234-1CC05-1AF3**		1	1 unit	41K

3SE5234-1BC05-1AF3

With pin assignment as for SIMATIC ET 200[6)]

• Snap-action contacts	2 NC	--	⊕	**3SE5234-0LC05-1AE2**		1	1 unit	41K

⊕ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) A cable gland with seal must be used with the quick-connect method.

2) For enclosures with widths of 31 mm, the basic switch is a complete unit with rounded plungers.

3) Subsequent replacement of contact blocks is not possible.

4) Use corresponding high-grade steel lever.

5) For pin assignments, see page 12/12.

6) The 3SE5234-.....-1AE2 position switches, prewired with an M12 plug, 5-pole, have the same pin assignment as all fail-safe block I/O modules with a PROFINET connection in the SIMATIC ET 200eco PN and ET 200AL series with degree of protection IP65/IP67 for cabinet-free installation directly at the machine.
For more information, see page 12/88 onwards.

Note:

For the selection aid, see page 12/13.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Enclosure width 31 mm according to EN 50047

Version	Diameter mm		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operating mechanisms							
3SE5000-0AB01							
Plain plungers							
• High-grade steel plungers	8.5	⊕	**3SE5000-0AB01**		1	1 unit	41K
3SE5000-0AD03 3SE5000-0AD10							
Roller plungers, type C, according to EN 50047							
• Plastic roller	10	⊕	**3SE5000-0AD03**		1	1 unit	41K
• High-grade steel roller	10	⊕	**3SE5000-0AD04**		1	1 unit	41K
Roller plungers with central fixing							
• Plastic roller	10	⊕	**3SE5000-0AD10**		1	1 unit	41K
• High-grade steel roller	10	⊕	**3SE5000-0AD11**		1	1 unit	41K
3SE5000-0AE10 3SE5000-0AF10							
Roller levers, type E, according to EN 50047							
• Metal lever Plastic roller	13	⊕	**3SE5000-0AE10**		1	1 unit	41K
High-grade steel roller	13	⊕	**3SE5000-0AE11**		1	1 unit	41K
• High-grade steel lever Plastic roller	13	⊕	**3SE5000-0AE12**		1	1 unit	41K
High-grade steel roller	13	⊕	**3SE5000-0AE13**		1	1 unit	41K
Angular roller levers							
• Metal lever Plastic roller	13	⊕	**3SE5000-0AF10**		1	1 unit	41K
High-grade steel roller	13	⊕	**3SE5000-0AF11**		1	1 unit	41K
• High-grade steel lever Plastic roller	13	⊕	**3SE5000-0AF12**		1	1 unit	41K
High-grade steel roller	13	⊕	**3SE5000-0AF13**		1	1 unit	41K
3SE5000-0AR01 3SE5000-0AR03							
Spring rods (for switches with snap-action contacts only)							
• Plunger made of plastic, spring of high-grade steel:	7						
- Length 142.5 mm (spring 50 mm, plunger 50 mm)			**3SE5000-0AR01**		1	1 unit	41K
- Length 76 mm (spring 23.5 mm, plunger 10 mm)			**3SE5000-0AR03**		1	1 unit	41K
- Length 242.5 mm (spring 150 mm, plunger 50 mm)			**3SE5000-0AR04**		1	1 unit	41K
• Plunger and spring made of high-grade steel:	7						
- Length 142.5 mm (spring 50 mm, plunger 50 mm)			**3SE5000-0AR02**		1	1 unit	41K
Twist actuators							
3SE5000-0AK00 3SE5000-0AA21							
Twist actuators, for 31/50 mm, EN 50047							
• For twist levers and rod actuators, switching right and/or left, adjustable	--	⊕	**3SE5000-0AK00**		1	1 unit	41K
Levers							
Twist levers 21 mm, straight, type A, according to EN 50047							
3SE5000-0AA60 3SE5000-0AA50							
• Metal lever Plastic roller	19	⊕	**3SE5000-0AA21**		1	1 unit	41K
	30	⊕	**3SE5000-0AA25**		1	1 unit	41K
High-grade steel roller	19	⊕	**3SE5000-0AA22**		1	1 unit	41K
- With ball bearing	19	⊕	**3SE5000-0AA23**		1	1 unit	41K
• High-grade steel lever Plastic roller	19	⊕	**3SE5000-0AA31**		1	1 unit	41K
High-grade steel roller	19	⊕	**3SE5000-0AA32**		1	1 unit	41K
Twist levers 30 mm, straight[1)]							
• Metal lever Plastic roller	19	⊕	**3SE5000-0AA24**		1	1 unit	41K
	30	⊕	**3SE5000-0AA26**		1	1 unit	41K
Twist levers 100 mm, adjustable length, with grid hole							
• Metal lever Plastic roller	19	⊕	**3SE5000-0AA60**		1	1 unit	41K
	50	⊕	**3SE5000-0AA67**		1	1 unit	41K
High-grade steel roller	19	⊕	**3SE5000-0AA61**		1	1 unit	41K
Rubber roller	50	⊕	**3SE5000-0AA68**		1	1 unit	41K
• High-grade steel lever Plastic roller	19	⊕	**3SE5000-0AA62**		1	1 unit	41K
High-grade steel roller	19	⊕	**3SE5000-0AA63**		1	1 unit	41K
Twist levers 100 mm, adjustable length							
• Metal lever Plastic roller	19		**3SE5000-0AA50**		1	1 unit	41K
	30		**3SE5000-0AA55**		1	1 unit	41K
	50		**3SE5000-0AA57**		1	1 unit	41K
High-grade steel roller	19		**3SE5000-0AA51**		1	1 unit	41K
Rubber roller	50		**3SE5000-0AA58**		1	1 unit	41K
• High-grade steel lever Plastic roller	19		**3SE5000-0AA52**		1	1 unit	41K
High-grade steel roller	19		**3SE5000-0AA53**		1	1 unit	41K
3SE5000-0AA80							
Rod levers 200 mm							
• Aluminum rod	6		**3SE5000-0AA80**		1	1 unit	41K
• Spring rod	6		**3SE5000-0AA81**		1	1 unit	41K
• Plastic rod	6		**3SE5000-0AA82**		1	1 unit	41K

⊕ Positively driven actuator, necessary in safety circuits.

1) Can be clinch mounted (rotated 180°, rear of lever).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Enclosure width 40 mm according to EN 50041

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 1 x (M20 x 1.5)

Version	Contacts	LEDs		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[1] · Enclosure width 40 mm								
Plain plungers, according to EN 50041								
With high-grade steel plunger 8.5 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5132-0BB01**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5132-0KB01**		1	1 unit	41K
	2 NO + 1 NC	--	⊖	**3SE5132-0PB01**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5132-0CB01**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5132-0LB01**		1	1 unit	41K
Rounded plungers, type B, according to EN 50041								
With plastic plunger 10 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5132-0BC03**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5132-0KC03**		1	1 unit	41K
	2 NO + 1 NC	--	⊖	**3SE5132-0PC03**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5132-0CC03**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5132-0LC03**		1	1 unit	41K
Roller plungers, type C, according to EN 50041								
With plastic roller 13 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5132-0BD05**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5132-0KD05**		1	1 unit	41K
	2 NO + 1 NC	--	⊖	**3SE5132-0PD05**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5132-0CD05**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5132-0LD05**		1	1 unit	41K
Roller levers, according to EN 50041								
With metal lever and plastic roller 22 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5132-0BE05**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5132-0KE05**		1	1 unit	41K
	2 NO + 1 NC	--	⊖	**3SE5132-0PE05**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5132-0CE05**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5132-0LE05**		1	1 unit	41K
Angular roller levers, according to EN 50041								
With metal lever and plastic roller 22 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5132-0BF05**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5132-0CF05**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5132-0LF05**		1	1 unit	41K
Spring rods[2], according to EN 50041								
Length 142.5 mm, with plastic plunger 50 mm								
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5132-0CR01**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5132-0LR01**		1	1 unit	41K

3SE5132-0BB01

3SE5132-0BC03

3SE5132-0BD05

3SE5132-0BE05

3SE5132-0BF05

3SE5132-0CR01

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Popular versions.

2) Degree of protection IP65/IP67.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Enclosure width 40 mm according to EN 50041

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 1 x (M20 x 1.5)

Version	Contacts	LEDs		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[1] · Enclosure width 40 mm								
Twist levers, type A, according to EN 50041								
With metal lever 27 mm and plastic roller 19 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5132-0BJ01**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5132-0KJ01**		1	1 unit	41K
	2 NO + 1 NC	--	⊖	**3SE5132-0PJ01**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5132-0CJ01**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5132-0LJ01**		1	1 unit	41K
Twist levers, adjustable length, according to EN 50041								
With metal lever 100 mm, with grid holes and plastic roller 19 mm								
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5132-0CJ60**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5132-0LJ60**		1	1 unit	41K
With metal lever 100 mm and plastic roller 19 mm								
• Snap-action contacts	1 NO + 1 NC	--		**3SE5132-0CJ50**		1	1 unit	41K
	1 NO + 2 NC	--		**3SE5132-0LJ50**		1	1 unit	41K
Rod levers[2], type D, according to EN 50041								
With aluminum rod 200 mm								
• Snap-action contacts	1 NO + 1 NC	--		**3SE5132-0CJ80**		1	1 unit	41K
With plastic rod 200 mm								
• Snap-action contacts	1 NO + 1 NC	--		**3SE5132-0CJ82**		1	1 unit	41K

3SE5132-0BJ01

3SE5132-0CJ60

3SE5132-0CJ50

3SE5132-0CJ80

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Popular versions.

2) Degree of protection IP65/IP67.

Note:

If the device you require is not available as a complete unit, see "Modular system", page 12/22.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Enclosure width 40 mm according to EN 50041

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 1 x (M20 x 1.5)

Basic switches · Enclosure width 40 mm

Rounded plungers, according to EN 50041

Version	Contacts	LEDs		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
• Slow-action contacts	1 NO + 1 NC	--	➔	**3SE5132-0BA00**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5132-0KA00**		1	1 unit	41K
	2 NO + 1 NC	--	➔	**3SE5132-0PA00**		1	1 unit	41K
- With make-before-break	1 NO + 2 NC	--	➔	**3SE5132-0MA00**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	➔	**3SE5132-0CA00**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5132-0LA00**		1	1 unit	41K
- Gold-plated contacts	1 NO + 1 NC	--	➔	**3SE5132-0CA00-1AC1**		1	1 unit	41K
With increased corrosion protection[1]								
• Slow-action contacts	1 NO + 1 NC	--	➔	**3SE5132-0BA00-1CA0**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5132-0KA00-1CA0**		1	1 unit	41K
	2 NO + 1 NC	--	➔	**3SE5132-0PA00-1CA0**		1	1 unit	41K
- With make-before-break	1 NO + 2 NC	--	➔	**3SE5132-0MA00-1CA0**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	➔	**3SE5132-0CA00-1CA0**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5132-0LA00-1CA0**		1	1 unit	41K
With 2 LEDs, yellow/green								
• Slow-action contacts	1 NO + 2 NC	24 V DC	➔	**3SE5132-1KA00**		1	1 unit	41K
	1 NO + 2 NC	230 V AC	➔	**3SE5132-3KA00**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	24 V DC	➔	**3SE5132-1LA00**		1	1 unit	41K
	1 NO + 2 NC	230 V AC	➔	**3SE5132-3LA00**		1	1 unit	41K
With M12 device plug, 4-pole (250 V, 4 A)[2]								
• Slow-action contacts	1 NO + 1 NC	--	➔	**3SE5134-0BA00-1AC4**		1	1 unit	41K
	2 NC	--	➔	**3SE5134-0KA00-1AE0**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	➔	**3SE5134-0CA00-1AC4**		1	1 unit	41K
	2 NC	--	➔	**3SE5134-0LA00-1AE0**		1	1 unit	41K

3SE5132-0BA00

3SE5132-0BA00-1CA0

3SE5132-1KA00

3SE5134-0BA00-1AC4

➔ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Use corresponding high-grade steel lever.

2) For pin assignments, see page 12/12.

Note:

For the selection aid, see page 12/13.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Enclosure width 40 mm according to EN 50041

Version	Diameter		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm						
Operating mechanisms							
3SE5000-0AB01							
Plain plungers							
• High-grade steel plunger	8.5	⊕	**3SE5000-0AB01**		1	1 unit	41K
Rounded plungers, type B, according to EN 50041							
3SE5000-0AC03 3SE5000-0AD05							
• Plastic plungers	10	⊕	**3SE5000-0AC03**		1	1 unit	41K
Roller plungers, type C, according to EN 50041							
• Plastic plungers, Plastic roller	13	⊕	**3SE5000-0AD05**		1	1 unit	41K
• Plastic plungers, High-grade steel roller	13	⊕	**3SE5000-0AD06**		1	1 unit	41K
3SE5000-0AE05 3SE5000-0AF05							
Roller levers							
• Metal lever, Plastic roller	22	⊕	**3SE5000-0AE05**		1	1 unit	41K
Angular roller levers							
3SE5000-0AR01							
• Metal lever, Plastic roller	22	⊕	**3SE5000-0AF05**		1	1 unit	41K
Spring rods							
(for switches with snap-action contacts only)							
• Plunger made of plastic, spring of high-grade steel:	7						
- Length 142.5 mm (spring 50 mm, plunger 50 mm)			**3SE5000-0AR01**		1	1 unit	41K
- Length 76 mm (spring 23.5 mm, plunger 10 mm)			**3SE5000-0AR03**		1	1 unit	41K
- Length 242.5 mm (spring 150 mm, plunger 50 mm)			**3SE5000-0AR04**		1	1 unit	41K
• Plunger and spring made of high-grade steel:	7						
- Length 142.5 mm (spring 50 mm, plunger 50 mm)			**3SE5000-0AR02**		1	1 unit	41K
Twist actuators							
3SE5000-0AH00							
Twist actuators, for 40 mm, according to EN 50041							
• For twist levers and rod actuators, switching right and/or left, adjustable	--	⊕	**3SE5000-0AH00**		1	1 unit	41K
Levers							
Twist levers 27 mm, offset, type A, according to EN 50041							
3SE5000-0AA01							
• Metal lever, Plastic roller	19	⊕	**3SE5000-0AA01**		1	1 unit	41K
	30	⊕	**3SE5000-0AA05**		1	1 unit	41K
	50	⊕	**3SE5000-0AA07**		1	1 unit	41K
2 plastic rollers	19	⊕	**3SE5000-0AA04**		1	1 unit	41K
High-grade steel roller	19	⊕	**3SE5000-0AA02**		1	1 unit	41K
- With ball bearing	19	⊕	**3SE5000-0AA03**		1	1 unit	41K
Rubber roller	50	⊕	**3SE5000-0AA08**		1	1 unit	41K
• High-grade steel lever, Plastic roller	19	⊕	**3SE5000-0AA11**		1	1 unit	41K
High-grade steel roller	19	⊕	**3SE5000-0AA12**		1	1 unit	41K
Twist levers 35 mm, offset, type A, according to EN 50041							
• Metal lever, Plastic roller	19	⊕	**3SE5000-0AA15**		1	1 unit	41K
• High-grade steel lever, Plastic roller	19	⊕	**3SE5000-0AA16**		1	1 unit	41K
Twist levers 30 mm, straight[1], type A, according to EN 50041							
3SE5000-0AA60 3SE5000-0AA50							
• Metal lever, Plastic roller	19	⊕	**3SE5000-0AA24**		1	1 unit	41K
	30	⊕	**3SE5000-0AA26**		1	1 unit	41K
Twist levers 100 mm, adjustable length, with grid hole							
• Metal lever, Plastic roller	19	⊕	**3SE5000-0AA60**		1	1 unit	41K
High-grade steel roller	19	⊕	**3SE5000-0AA61**		1	1 unit	41K
Rubber roller	50	⊕	**3SE5000-0AA68**		1	1 unit	41K
• High-grade steel lever, Plastic roller	19	⊕	**3SE5000-0AA62**		1	1 unit	41K
High-grade steel roller	19	⊕	**3SE5000-0AA63**		1	1 unit	41K
Twist levers 100 mm, adjustable length							
• Metal lever, Plastic roller	19		**3SE5000-0AA50**		1	1 unit	41K
	30		**3SE5000-0AA55**		1	1 unit	41K
High-grade steel roller	19		**3SE5000-0AA51**		1	1 unit	41K
Rubber roller	50		**3SE5000-0AA58**		1	1 unit	41K
• High-grade steel lever, Plastic roller	19		**3SE5000-0AA52**		1	1 unit	41K
High-grade steel roller	19		**3SE5000-0AA53**		1	1 unit	41K
Rod levers 200 mm, type D, according to EN 50041							
3SE5000-0AA80							
• Aluminum rod	6		**3SE5000-0AA80**		1	1 unit	41K
• Spring rod	6		**3SE5000-0AA81**		1	1 unit	41K
• Plastic rod	6		**3SE5000-0AA82**		1	1 unit	41K

⊕ Positively driven actuator, necessary in safety circuits.

[1] Can be clinch mounted (rotated 180°, rear of lever).

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Enclosure width 50 mm

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 2 x (M20 x 1.5) · Operating points according to EN 50047

Version	Contacts	LEDs		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[1] · Enclosure width 50 mm								
Rounded plungers								
• Slow-action contacts	1 NO + 1 NC	--	⊕	**3SE5242-0BC05**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5242-0KC05**		1	1 unit	41K
	2 NO + 1 NC	--	⊕	**3SE5242-0PC05**		1	1 unit	41K
- With make-before-break	1 NO + 2 NC	--	⊕	**3SE5242-0MC05**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊕	**3SE5242-0CC05**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5242-0LC05**		1	1 unit	41K
- Integrated[2]	1 NO + 1 NC	--	⊕	**3SE5242-0HC05**		1	1 unit	41K
- Short stroke, integrated[2]	1 NO + 1 NC	--	⊕	**3SE5242-0FC05**		1	1 unit	41K
- Contact distance 2 x 2 mm	1 NO + 1 NC	--	⊕	**3SE5242-0GC05**		1	1 unit	41K
With increased corrosion protection[3]								
• Slow-action contacts	1 NO + 1 NC	--	⊕	**3SE5242-0BC05-1CA0**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5242-0KC05-1CA0**		1	1 unit	41K
	2 NO + 1 NC	--	⊕	**3SE5242-0PC05-1CA0**		1	1 unit	41K
- With make-before-break	1 NO + 2 NC	--	⊕	**3SE5242-0MC05-1CA0**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	--	⊕	**3SE5242-0LC05-1CA0**		1	1 unit	41K
- Integrated[2]	1 NO + 1 NC	--	⊕	**3SE5242-0HC05-1CA0**		1	1 unit	41K
With 2 LEDs, yellow/green								
• Slow-action contacts	1 NO + 2 NC	24 V DC	⊕	**3SE5242-1KC05**		1	1 unit	41K
	1 NO + 2 NC	230 V AC	⊕	**3SE5242-3KC05**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	24 V DC	⊕	**3SE5242-1LC05**		1	1 unit	41K
	1 NO + 2 NC	230 V AC	⊕	**3SE5242-3LC05**		1	1 unit	41K
Roller plungers								
With plastic roller 10 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊕	**3SE5242-0BD03**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	--	⊕	**3SE5242-0LD03**		1	1 unit	41K
- Integrated[2]	1 NO + 1 NC	--	⊕	**3SE5242-0HD03**		1	1 unit	41K
Roller levers								
With metal lever and plastic roller 13 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊕	**3SE5242-0BE10**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	--	⊕	**3SE5242-0LE10**		1	1 unit	41K
- Integrated[2]	1 NO + 1 NC	--	⊕	**3SE5242-0HE10**		1	1 unit	41K
With M12 device plug, 4-pole right (250 V, 4 A)[4]								
• Snap-action contacts	2 NC	--	⊕	**3SE5244-0LE10-1AE0**		1	1 unit	41K
Twist levers								
With metal lever 21 mm and plastic roller 19 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊕	**3SE5242-0BK21**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	--	⊕	**3SE5242-0LK21**		1	1 unit	41K
- Integrated[2]	1 NO + 1 NC	--	⊕	**3SE5242-0HK21**		1	1 unit	41K
Twist levers, adjustable length								
With metal lever 100 mm and plastic roller 19 mm								
• Snap-action contacts, integrated[2]	1 NO + 1 NC	--		**3SE5242-0HK50**		1	1 unit	41K

3SE5242-0BC05

3SE5242-0BC05-1CA0

3SE5242-1KC05

3SE5242-0BD03

3SE5242-0BE10

3SE5242-0BK21

3SE5242-0HK50

⊕ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Popular versions.
2) Subsequent replacement of contact blocks is not possible.
3) Use corresponding high-grade steel lever.
4) For pin assignments, see page 12/12.

Note:

If the device you require is not available as a complete unit, see "Modular system", page 12/25.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 2 x (M20 x 1.5) · Operating points according to EN 50047

Version	Contacts	LEDs		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Basic switches · Enclosure width 50 mm								
Rounded plungers[1]								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5242-0BC05**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5242-0KC05**		1	1 unit	41K
	2 NO + 1 NC	--	⊖	**3SE5242-0PC05**		1	1 unit	41K
- With make-before-break	1 NO + 2 NC	--	⊖	**3SE5242-0MC05**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5242-0CC05**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5242-0LC05**		1	1 unit	41K
- Integrated[2]	1 NO + 1 NC	--	⊖	**3SE5242-0HC05**		1	1 unit	41K
- Short stroke, integrated[2]	1 NO + 1 NC	--	⊖	**3SE5242-0FC05**		1	1 unit	41K
- Contact distance 2 x 2 mm	1 NO + 1 NC	--	⊖	**3SE5242-0GC05**		1	1 unit	41K
With increased corrosion protection[3]								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5242-0BC05-1CA0**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5242-0KC05-1CA0**		1	1 unit	41K
	2 NO + 1 NC	--	⊖	**3SE5242-0PC05-1CA0**		1	1 unit	41K
- With make-before-break	1 NO + 2 NC	--	⊖	**3SE5242-0MC05-1CA0**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	--	⊖	**3SE5242-0LC05-1CA0**		1	1 unit	41K
- Integrated[2]	1 NO + 1 NC	--	⊖	**3SE5242-0HC05-1CA0**		1	1 unit	41K
With 2 LEDs, yellow/green								
• Slow-action contacts	1 NO + 2 NC	24 V DC	⊖	**3SE5242-1KC05**		1	1 unit	41K
	1 NO + 2 NC	230 V AC	⊖	**3SE5242-3KC05**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	24 V DC	⊖	**3SE5242-1LC05**		1	1 unit	41K
	1 NO + 2 NC	230 V AC	⊖	**3SE5242-3LC05**		1	1 unit	41K

3SE5242-0BC05

3SE5242-0BC05-1CA0

3SE5242-1KC05

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) For enclosures with widths of 50 mm, the basic switch is a complete unit with rounded plungers.

2) Subsequent replacement of contact blocks is not possible.

3) Use corresponding high-grade steel lever.

Note:

For the selection aid, see page 12/13.

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Enclosure width 50 mm

Version	Diameter mm		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operating mechanisms							
3SE5000-0AB01							
Plain plungers							
• High-grade steel plungers	8.5	⊖	**3SE5000-0AB01**		1	1 unit	41K
3SE5000-0AD03 3SE5000-0AD10							
Roller plungers, type C, according to EN 50047							
• Plastic rollers	10	⊖	**3SE5000-0AD03**		1	1 unit	41K
• High-grade steel rollers	10	⊖	**3SE5000-0AD04**		1	1 unit	41K
Roller plungers with central fixing							
• Plastic rollers	10	⊖	**3SE5000-0AD10**		1	1 unit	41K
• High-grade steel rollers	10	⊖	**3SE5000-0AD11**		1	1 unit	41K
3SE5000-0AE10 3SE5000-0AF10							
Roller levers, type E, according to EN 50047							
• Metal lever Plastic roller	13	⊖	**3SE5000-0AE10**		1	1 unit	41K
High-grade steel roller	13	⊖	**3SE5000-0AE11**		1	1 unit	41K
• High-grade steel lever Plastic roller	13	⊖	**3SE5000-0AE12**		1	1 unit	41K
High-grade steel roller	13	⊖	**3SE5000-0AE13**		1	1 unit	41K
3SE5000-0AR01 3SE5000-0AR03							
Angular roller levers							
• Metal lever Plastic roller	13	⊖	**3SE5000-0AF10**		1	1 unit	41K
High-grade steel roller	13	⊖	**3SE5000-0AF11**		1	1 unit	41K
• High-grade steel lever Plastic roller	13	⊖	**3SE5000-0AF12**		1	1 unit	41K
High-grade steel roller	13	⊖	**3SE5000-0AF13**		1	1 unit	41K
Spring rods (for switches with snap-action contacts only)							
• Plunger made of plastic, spring of high-grade steel:	7						
- Length 142.5 mm (spring 50 mm, plunger 50 mm)			**3SE5000-0AR01**		1	1 unit	41K
- Length 76 mm (spring 23.5 mm, plunger 10 mm)			**3SE5000-0AR03**		1	1 unit	41K
- Length 242.5 mm (spring 150 mm, plunger 50 mm)			**3SE5000-0AR04**		1	1 unit	41K
• Plunger and spring made of high-grade steel:	7						
- Length 142.5 mm (spring 50 mm, plunger 50 mm)			**3SE5000-0AR02**		1	1 unit	41K
Twist actuators							
3SE5000-0AK00							
Twist actuators, for 31/50 mm, according to EN 50047							
• For twist levers and rod actuators, switching right and/or left, adjustable	--	⊖	**3SE5000-0AK00**		1	1 unit	41K
3SE5000-0AA21							
Levers							
Twist levers 21 mm, straight, type A, according to EN 50047							
• Metal lever Plastic roller	19	⊖	**3SE5000-0AA21**		1	1 unit	41K
	30	⊖	**3SE5000-0AA25**		1	1 unit	41K
High-grade steel roller	19	⊖	**3SE5000-0AA22**		1	1 unit	41K
- With ball bearing	19	⊖	**3SE5000-0AA23**		1	1 unit	41K
• High-grade steel lever Plastic roller	19	⊖	**3SE5000-0AA31**		1	1 unit	41K
High-grade steel roller	19	⊖	**3SE5000-0AA32**		1	1 unit	41K
3SE5000-0AA60 3SE5000-0AA50							
Twist levers 30 mm, straight[1)]							
• Metal lever Plastic roller	19	⊖	**3SE5000-0AA24**		1	1 unit	41K
	30	⊖	**3SE5000-0AA26**		1	1 unit	41K
Twist levers 100 mm, adjustable length, with grid hole							
• Metal lever Plastic roller	19	⊖	**3SE5000-0AA60**		1	1 unit	41K
	50	⊖	**3SE5000-0AA67**		1	1 unit	41K
High-grade steel roller	19	⊖	**3SE5000-0AA61**		1	1 unit	41K
Rubber roller	50	⊖	**3SE5000-0AA68**		1	1 unit	41K
• High-grade steel lever Plastic roller	19	⊖	**3SE5000-0AA62**		1	1 unit	41K
High-grade steel roller	19	⊖	**3SE5000-0AA63**		1	1 unit	41K
3SE5000-0AA80							
Twist levers 100 mm, adjustable length							
• Metal lever Plastic roller	19		**3SE5000-0AA50**		1	1 unit	41K
	30		**3SE5000-0AA55**		1	1 unit	41K
	50		**3SE5000-0AA57**		1	1 unit	41K
High-grade steel roller	19		**3SE5000-0AA51**		1	1 unit	41K
Rubber roller	50		**3SE5000-0AA58**		1	1 unit	41K
• High-grade steel lever Plastic roller	19		**3SE5000-0AA52**		1	1 unit	41K
High-grade steel roller	19		**3SE5000-0AA53**		1	1 unit	41K
Rod levers 200 mm							
• Aluminum rod	6		**3SE5000-0AA80**		1	1 unit	41K
• Spring rod	6		**3SE5000-0AA81**		1	1 unit	41K
• Plastic rod	6		**3SE5000-0AA82**		1	1 unit	41K

⊖ Positively driven actuator, necessary in safety circuits.

[1)] Can be clinch mounted (rotated 180°, rear of lever).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 1 x (M20 x 1.5)

Version	Contacts	LEDs		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[1] · Enclosure width 31 mm								
Rounded plungers, type B, according to EN 50047								
• Slow-action contacts	1 NO + 1 NC	--	⊕	**3SE5212-0BC05**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5212-0KC05**		1	1 unit	41K
	2 NO + 1 NC	--	⊕	**3SE5212-0PC05**		1	1 unit	41K
- With make-before-break	1 NO + 2 NC	--	⊕	**3SE5212-0MC05**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊕	**3SE5212-0CC05**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5212-0LC05**		1	1 unit	41K
With increased corrosion protection[2]								
• Slow-action contacts	1 NO + 1 NC	--	⊕	**3SE5212-0BC05-1CA0**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5212-0KC05-1CA0**		1	1 unit	41K
	2 NO + 1 NC	--	⊕	**3SE5212-0PC05-1CA0**		1	1 unit	41K
- With make-before-break	1 NO + 2 NC	--	⊕	**3SE5212-0MC05-1CA0**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊕	**3SE5212-0CC05-1CA0**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5212-0LC05-1CA0**		1	1 unit	41K
With 2 LEDs, yellow/green								
• Slow-action contacts	1 NO + 2 NC	24 V DC	⊕	**3SE5212-1KC05**		1	1 unit	41K
	1 NO + 2 NC	230 V AC	⊕	**3SE5212-3KC05**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	24 V DC	⊕	**3SE5212-1LC05**		1	1 unit	41K
	1 NO + 2 NC	230 V AC	⊕	**3SE5212-3LC05**		1	1 unit	41K
With M12 device plug, 5-pole (125 V, 4 A)[3]								
• Slow-action contacts	1 NO + 1 NC	--	⊕	**3SE5214-0BC05-1AC5**		1	1 unit	41K
	2 NC	--	⊕	**3SE5214-0KC05-1AE1**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊕	**3SE5214-0CC05-1AC5**		1	1 unit	41K
	2 NC	--	⊕	**3SE5214-0LC05-1AE1**		1	1 unit	41K
With 2 LEDs, yellow/green								
• Slow-action contacts	1 NO + 1 NC	24 V DC	⊕	**3SE5214-1BC05-1AF3**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	24 V DC	⊕	**3SE5214-1CC05-1AF3**		1	1 unit	41K
Plain plungers, according to EN 50047								
With high-grade steel plunger 8.5 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊕	**3SE5212-0BB01**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5212-0KB01**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊕	**3SE5212-0CB01**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5212-0LB01**		1	1 unit	41K
Roller plungers, type C, according to EN 50047								
With plastic roller 10 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊕	**3SE5212-0BD03**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5212-0KD03**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊕	**3SE5212-0CD03**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5212-0LD03**		1	1 unit	41K

3SE5212-0BC05

3SE5212-0BC05-1CA0

3SE5212-1KC05

3SE5212-0BB01

3SE5212-0BD03

⊕ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Popular versions.

2) Use corresponding high-grade steel lever.

3) For pin assignments, see page 12/12.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Enclosure width 31 mm according to EN 50047

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 1 x (M20 x 1.5)

Version	Contacts	LEDs		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[1] · Enclosure width 31 mm								
Roller plungers with central fixing, according to EN 50047								
With plastic roller 10 mm								
• Slow-action contacts	1 NO + 2 NC	--	⊖	**3SE5212-0KD10**		1	1 unit	41K
Roller levers, type E, according to EN 50047								
With metal lever and plastic roller 13 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5212-0BE10**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5212-0KE10**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5212-0CE10**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5212-0LE10**		1	1 unit	41K
Angular roller levers, according to EN 50047								
With metal lever and plastic roller 13 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5212-0BF10**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5212-0KF10**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5212-0CF10**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5212-0LF10**		1	1 unit	41K
Twist levers, type A, according to EN 50047								
With metal lever 21 mm and plastic roller 19 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5212-0BK21**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5212-0KK21**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5212-0CK21**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5212-0LK21**		1	1 unit	41K
Twist levers, adjustable length, according to EN 50047								
With metal lever 100 mm, with grid holes and plastic roller 19 mm								
• Slow-action contacts	1 NO + 2 NC	--	⊖	**3SE5212-0KK60**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5212-0CK60**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5212-0LK60**		1	1 unit	41K
With metal lever 100 mm and plastic roller 19 mm								
• Slow-action contacts	1 NO + 1 NC	--		**3SE5212-0BK50**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--		**3SE5212-0CK50**		1	1 unit	41K
	1 NO + 2 NC	--		**3SE5212-0LK50**		1	1 unit	41K

3SE5212-0KD10

3SE5212-0BE10

3SE5212-0BF10

3SE5212-0BK21

3SE5212-0CK60

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

[1] Popular versions.

Note:

If the device you require is not available as a complete unit, see "Modular system", page 12/29.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 1 x (M20 x 1.5)

Version	Contacts	LEDs		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Basic switches · Enclosure width 31 mm								
Rounded plungers[1], type B, according to EN 50047								
• Slow-action contacts	1 NO + 1 NC	--	➔	**3SE5212-0BC05**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5212-0KC05**		1	1 unit	41K
	2 NO + 1 NC	--	➔	**3SE5212-0PC05**		1	1 unit	41K
- With make-before-break	1 NO + 2 NC	--	➔	**3SE5212-0MC05**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	➔	**3SE5212-0CC05**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5212-0LC05**		1	1 unit	41K
With increased corrosion protection[2]								
• Slow-action contacts	1 NO + 1 NC	--	➔	**3SE5212-0BC05-1CA0**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5212-0KC05-1CA0**		1	1 unit	41K
	2 NO + 1 NC	--	➔	**3SE5212-0PC05-1CA0**		1	1 unit	41K
- With make-before-break	1 NO + 2 NC	--	➔	**3SE5212-0MC05-1CA0**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	➔	**3SE5212-0CC05-1CA0**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5212-0LC05-1CA0**		1	1 unit	41K
With 2 LEDs, yellow/green								
• Slow-action contacts	1 NO + 2 NC	24 V DC	➔	**3SE5212-1KC05**		1	1 unit	41K
	1 NO + 2 NC	230 V AC	➔	**3SE5212-3KC05**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	24 V DC	➔	**3SE5212-1LC05**		1	1 unit	41K
	1 NO + 2 NC	230 V AC	➔	**3SE5212-3LC05**		1	1 unit	41K
With M12 device plug, 5-pole (125 V, 4 A)[3]								
• Slow-action contacts	1 NO + 1 NC	--	➔	**3SE5214-0BC05-1AC5**		1	1 unit	41K
	2 NC	--	➔	**3SE5214-0KC05-1AE1**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	➔	**3SE5214-0CC05-1AC5**		1	1 unit	41K
	2 NC	--	➔	**3SE5214-0LC05-1AE1**		1	1 unit	41K
With 2 LEDs, yellow/green								
• Slow-action contacts	1 NO + 1 NC	24 V DC	➔	**3SE5214-1BC05-1AF3**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	24 V DC	➔	**3SE5214-1CC05-1AF3**		1	1 unit	41K

3SE5212-0BC05

3SE5212-0BC05-1CA0

3SE5212-1KC05

3SE5214-0BC05-1AC5

3SE5214-1BC05-1AF3

➔ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) For enclosures with widths of 31 mm, the basic switch is a complete unit with rounded plungers.

2) Use corresponding high-grade steel lever.

3) For pin assignments, see page 12/12.

Note:

For the selection aid, see page 12/13.

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Enclosure width 31 mm according to EN 50047

Version		Diameter mm		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operating mechanisms								
3SE5000-0AB01 3SE5000-0AD03	**Plain plungers**							
	• High-grade steel plunger	8.5	➔	**3SE5000-0AB01**		1	1 unit	41K
	Roller plungers, type C, according to EN 50047							
	• Plastic rollers	10	➔	**3SE5000-0AD03**		1	1 unit	41K
	• High-grade steel rollers	10	➔	**3SE5000-0AD04**		1	1 unit	41K
3SE5000-0AE10 3SE5000-0AF10	**Roller plungers with central fixing**							
	• Plastic rollers	10	➔	**3SE5000-0AD10**		1	1 unit	41K
	• High-grade steel rollers	10	➔	**3SE5000-0AD11**		1	1 unit	41K
	Roller levers, type E, according to EN 50047							
	• Metal lever, Plastic roller	13	➔	**3SE5000-0AE10**		1	1 unit	41K
	• Metal lever, High-grade steel roller	13	➔	**3SE5000-0AE11**		1	1 unit	41K
	• High-grade steel lever, Plastic roller	13	➔	**3SE5000-0AE12**		1	1 unit	41K
	• High-grade steel lever, High-grade steel roller	13	➔	**3SE5000-0AE13**		1	1 unit	41K
3SE5000-0AR01 3SE5000-0AR03	**Angular roller levers**							
	• Metal lever, Plastic roller	13	➔	**3SE5000-0AF10**		1	1 unit	41K
	• Metal lever, High-grade steel roller	13	➔	**3SE5000-0AF11**		1	1 unit	41K
	• High-grade steel lever, Plastic roller	13	➔	**3SE5000-0AF12**		1	1 unit	41K
	• High-grade steel lever, High-grade steel roller	13	➔	**3SE5000-0AF13**		1	1 unit	41K
	Spring rods (for switches with snap-action contacts only)							
	• Plunger made of plastic, spring of high-grade steel:	7						
	- Length 142.5 mm (spring 50 mm, plunger 50 mm)			**3SE5000-0AR01**		1	1 unit	41K
	- Length 76 mm (spring 23.5 mm, plunger 10 mm)			**3SE5000-0AR03**		1	1 unit	41K
	- Length 242.5 mm (spring 150 mm, plunger 50 mm)			**3SE5000-0AR04**		1	1 unit	41K
	• Plunger and spring made of high-grade steel:	7						
	- Length 142.5 mm (spring 50 mm, plunger 50 mm)			**3SE5000-0AR02**		1	1 unit	41K
Twist actuators								
3SE5000-0AK00 3SE5000-0AA21	**Twist actuators, for 31/50 mm, according to EN 50047**							
	• For twist levers and rod actuators, switching right and/or left, adjustable	--	➔	**3SE5000-0AK00**		1	1 unit	41K
	Levers							
	Twist levers 21 mm, straight, type A, according to EN 50047							
	• Metal lever, Plastic roller	19	➔	**3SE5000-0AA21**		1	1 unit	41K
		30	➔	**3SE5000-0AA25**		1	1 unit	41K
	• Metal lever, High-grade steel roller	19	➔	**3SE5000-0AA22**		1	1 unit	41K
	• Metal lever, High-grade steel roller - With ball bearing	19	➔	**3SE5000-0AA23**		1	1 unit	41K
	• High-grade steel lever, Plastic roller	19	➔	**3SE5000-0AA31**		1	1 unit	41K
	• High-grade steel lever, High-grade steel roller	19	➔	**3SE5000-0AA32**		1	1 unit	41K
3SE5000-0AA60 3SE5000-0AA50	**Twist levers 30 mm, straight**[1)]							
	• Metal lever, Plastic roller	19	➔	**3SE5000-0AA24**		1	1 unit	41K
		30	➔	**3SE5000-0AA26**		1	1 unit	41K
	Twist levers 100 mm, adjustable length, with grid hole							
	• Metal lever, Plastic roller	19	➔	**3SE5000-0AA60**		1	1 unit	41K
		50	➔	**3SE5000-0AA67**		1	1 unit	41K
	• Metal lever, High-grade steel roller	19	➔	**3SE5000-0AA61**		1	1 unit	41K
	• Metal lever, Rubber roller	50	➔	**3SE5000-0AA68**		1	1 unit	41K
	• High-grade steel lever, Plastic roller	19	➔	**3SE5000-0AA62**		1	1 unit	41K
	• High-grade steel lever, High-grade steel roller	19	➔	**3SE5000-0AA63**		1	1 unit	41K
3SE5000-0AA80	**Twist levers 100 mm, adjustable length**							
	• Metal lever, Plastic roller	19		**3SE5000-0AA50**		1	1 unit	41K
		30		**3SE5000-0AA55**		1	1 unit	41K
		50		**3SE5000-0AA57**		1	1 unit	41K
	• Metal lever, High-grade steel roller	19		**3SE5000-0AA51**		1	1 unit	41K
	• Metal lever, Rubber roller	50		**3SE5000-0AA58**		1	1 unit	41K
	• High-grade steel lever, Plastic roller	19		**3SE5000-0AA52**		1	1 unit	41K
	• High-grade steel lever, High-grade steel roller	19		**3SE5000-0AA53**		1	1 unit	41K
	Rod levers							
	• Aluminum rod, Length 200 mm	6		**3SE5000-0AA80**		1	1 unit	41K
	• Spring rod, Length 200 mm	6		**3SE5000-0AA81**		1	1 unit	41K
	• Plastic rod, Length 200 mm	6		**3SE5000-0AA82**		1	1 unit	41K
	• Plastic rod, Length 330 mm	6		**3SE5000-0AA83**		1	1 unit	41K

➔ Positively driven actuator, necessary in safety circuits.

1) Can be clinch mounted (rotated 180°, rear of lever).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 1 x (M20 x 1.5)

Version	Contacts	LEDs		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[1] · Enclosure width 40 mm								
Plain plungers, according to EN 50041								
With high-grade steel plunger 8.5 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5112-0BB01**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5112-0KB01**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5112-0CB01**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5112-0LB01**		1	1 unit	41K
With M12 device plug, 5-pole (125 V, 4 A)[2]								
With pin assignment as for SIMATIC ET 200[3]								
• Snap-action contacts	2 NC	--	⊖	**3SE5114-0LB01-1AE3**		1	1 unit	41K
Rounded plungers, type B, according to EN 50041								
With high-grade steel plunger 10 mm, with 3 mm overtravel								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5112-0BC02**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5112-0KC02**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5112-0CC02**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5112-0LC02**		1	1 unit	41K
- Increased operation/restoring force[4]	1 NO + 1 NC	--	⊖	**3SE5112-0CC02-1AA7**		1	1 unit	41K
With M12 device plug, 4-pole (125 V, 4 A)[2]								
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5114-0CC02-1AC4**		1	1 unit	41K
Roller plungers, type C, according to EN 50041								
With high-grade steel roller 13 mm, with 3 mm overtravel								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5112-0BD02**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5112-0KD02**		1	1 unit	41K
- Increased operation/restoring force[4]	2 NO + 1 NC	--	⊖	**3SE5112-0PD02-1AA7**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5112-0CD02**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5112-0LD02**		1	1 unit	41K
- Increased operation/restoring force[4]	1 NO + 1 NC	--	⊖	**3SE5112-0CD02-1AA7**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5112-0LD02-1AA7**		1	1 unit	41K
With M12 device plug, 5-pole (125 V, 4 A)[2]								
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5114-0CD02-1AC5**		1	1 unit	41K
- Increased operation/restoring force[4]	1 NO + 1 NC	--	⊖	**3SE5114-0CD02-1AL0**		1	1 unit	41K
With 2 LEDs, yellow/green								
• Snap-action contacts	1 NO + 1 NC	24 V DC	⊖	**3SE5114-1CD02-1AF3**		1	1 unit	41K
	1 NO + 1 NC	24 V DC	⊖	**3SE5114-1CD02-1AF5**		1	1 unit	41K
With pin assignment as for SIMATIC ET 200[3]								
• Snap-action contacts	2 NC	--	⊖	**3SE5114-0LD02-1AE3**		1	1 unit	41K

3SE5112-0BB01

3SE5112-0BC02

3SE5112-0BD02

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Popular versions.

2) For pin assignments, see page 12/12.

3) The 3SE5114-.....-1AE3 position switches, prewired with an M12 plug, 5-pole, have the same pin assignment as all fail-safe block I/O modules with a PROFINET connection in the SIMATIC ET 200eco PN and ET 200AL series with degree of protection IP65/IP67 for cabinet-free installation directly at the machine.
For more information, see page 12/88 onwards.

4) Increased operation or restoring force 30 N; only available as complete unit, no modular design

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Enclosure width 40 mm according to EN 50041

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 1 x (M20 x 1.5)

Version	Contacts	LEDs		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[1] · Enclosure width 40 mm								
3SE5112-0BE01								
Roller levers, according to EN 50041								
With metal lever and plastic roller 22 mm								
• Slow-action contacts	1 NO + 1 NC	--	➔	**3SE5112-0BE01**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5112-0KE01**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	➔	**3SE5112-0CE01**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5112-0LE01**		1	1 unit	41K
3SE5112-0BF01								
Angular roller levers, according to EN 50041								
With metal lever and plastic roller 22 mm								
• Slow-action contacts	1 NO + 1 NC	--	➔	**3SE5112-0BF01**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	➔	**3SE5112-0CF01**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5112-0LF01**		1	1 unit	41K
3SE5112-0CR01								
Spring rods[2], according to EN 50041								
Length 142.5 mm, with plastic plunger 50 mm								
• Snap-action contacts	1 NO + 1 NC	--		**3SE5112-0CR01**		1	1 unit	41K
3SE5112-0BH01								
Twist levers, type A, according to EN 50041								
With metal lever 27 mm and plastic roller 19 mm								
• Slow-action contacts	1 NO + 1 NC	--	➔	**3SE5112-0BH01**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5112-0KH01**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	➔	**3SE5112-0CH01**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5112-0LH01**		1	1 unit	41K
With M12 device plug, 5-pole (125 V, 4 A)[3]								
• Snap-action contacts	1 NO + 1 NC	--	➔	**3SE5114-0CH01-1AC5**		1	1 unit	41K
With 2 LEDs, yellow/green								
• Snap-action contacts	1 NO + 1 NC	24 V DC	➔	**3SE5114-1CH01-1AF3**		1	1 unit	41K
With pin assignment as for SIMATIC ET 200[4]								
• Snap-action contacts	2 NC	--	➔	**3SE5114-0LH01-1AE3**		1	1 unit	41K
With metal lever 27 mm and high-grade steel roller 19 mm								
• Slow-action contacts	1 NO + 1 NC	--	➔	**3SE5112-0BH02**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	➔	**3SE5112-0CH02**		1	1 unit	41K
With M12 device plug, 5-pole (125 V, 4 A)[3]								
With 2 LEDs, yellow/green								
• Snap-action contacts	1 NO + 1 NC	24 V DC	➔	**3SE5114-1CH02-1AF3**		1	1 unit	41K
With metal lever 30 mm and plastic roller 19 mm								
• Snap-action contacts	1 NO + 1 NC	--	➔	**3SE5112-0CH24**		1	1 unit	41K
3SE5114-1CH02-1AF3								

➔ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Popular versions.

2) Degree of protection IP65/IP67.

3) For pin assignments, see page 12/12.

4) The 3SE5114-.....-1AE3 position switches, prewired with an M12 plug, 5-pole, have the same pin assignment as all fail-safe block I/O modules with a PROFINET connection in the SIMATIC ET 200eco PN and ET 200AL series with degree of protection IP65/IP67 for cabinet-free installation directly at the machine.
For more information, see page 12/88 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Enclosure width 40 mm according to EN 50041

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 1 x (M20 x 1.5)

Version	Contacts	LEDs		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[1] · Enclosure width 40 mm								
Twist levers, adjustable length, according to EN 50041								
With metal lever 100 mm, with grid holes and plastic roller 19 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5112-0BH60**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5112-0CH60**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5112-0LH60**		1	1 unit	41K
With M12 device plug, 5-pole (125 V, 4 A)[2]								
With 2 LEDs, yellow/green								
• Snap-action contacts	1 NO + 1 NC	24 V DC	⊖	**3SE5114-1CH60-1AF3**		1	1 unit	41K
With metal lever 100 mm, with grid hole and high-grade steel roller 19 mm								
With M12 device plug, 5-pole (125 V, 4 A)[2]								
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5114-0CH61-1AC5**		1	1 unit	41K
With metal lever 100 mm and plastic roller 19 mm								
• Slow-action contacts	1 NO + 1 NC	--		**3SE5112-0BH50**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--		**3SE5112-0CH50**		1	1 unit	41K
	1 NO + 2 NC	--		**3SE5112-0LH50**		1	1 unit	41K
With M12 device plug, 8-pole (30 V, 2 A)[2]								
With 2 LEDs, yellow/green								
• Snap-action contacts	1 NO + 2 NC	24 V DC		**3SE5114-1LH50-1AD4**		1	1 unit	41K
With metal lever 100 mm and high-grade steel roller 19 mm								
• Snap-action contacts	1 NO + 1 NC	--		**3SE5112-0CH51**		1	1 unit	41K
Fork levers, latching, according to EN 50041								
With metal lever and 2 plastic rollers 19 mm								
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5112-0CT11**		1	1 unit	41K
Rod levers[3], type D according to EN 50041								
With aluminum rod 200 mm								
• Snap-action contacts	1 NO + 1 NC	--		**3SE5112-0CH80**		1	1 unit	41K
Nagara switch with M12 device plug, 5-pole (125 V, 4 A)[2][4]								
• Snap-action contacts, short-stroke	1 NO + 1 NC	--		**3SE5114-0NH82-1AM2**		1	1 unit	41K
With plastic rod, length 200 mm								
• Snap-action contacts	1 NO + 1 NC	--		**3SE5112-0CH82**		1	1 unit	41K

3SE5112-0BH60

3SE5112-0BH50

3SE5112-0CT11

3SE5112-0CH80

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Popular versions.

2) For pin assignments, see page 12/12.

3) Degree of protection IP65/IP67.

4) Start switch triggerable via one-hand operation (during operation).

Note:

If the device you require is not available as a complete unit, see "Modular system", page 12/34.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Enclosure width 40 mm according to EN 50041

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 1 x (M20 x 1.5)

Basic switches · Enclosure width 40 mm

Rounded plungers, according to EN 50041

Version	Contacts	LEDs		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
• Slow-action contacts	1 NO + 1 NC	--	➔	**3SE5112-0BA00**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5112-0KA00**		1	1 unit	41K
	2 NO + 1 NC	--	➔	**3SE5112-0PA00**		1	1 unit	41K
- With make-before-break	1 NO + 2 NC	--	➔	**3SE5112-0MA00**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	➔	**3SE5112-0CA00**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5112-0LA00**		1	1 unit	41K
- Gold-plated contacts			➔	**3SE5112-0CA00-1AC1**		1	1 unit	41K
With increased corrosion protection[1]								
• Slow-action contacts	1 NO + 1 NC	--	➔	**3SE5112-0BA00-1CA0**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5112-0KA00-1CA0**		1	1 unit	41K
	2 NO + 1 NC	--	➔	**3SE5112-0PA00-1CA0**		1	1 unit	41K
- With make-before-break	1 NO + 2 NC	--	➔	**3SE5112-0MA00-1CA0**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	➔	**3SE5112-0CA00-1CA0**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5112-0LA00-1CA0**		1	1 unit	41K
With 2 LEDs, yellow/green								
• Slow-action contacts	1 NO + 2 NC	24 V DC	➔	**3SE5112-1KA00**		1	1 unit	41K
	1 NO + 2 NC	230 V AC	➔	**3SE5112-3KA00**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	24 V DC	➔	**3SE5112-1LA00**		1	1 unit	41K
	1 NO + 2 NC	230 V AC	➔	**3SE5112-3LA00**		1	1 unit	41K
With M12 device plug, 5-pole (125 V, 4 A)[2]								
• Slow-action contacts	1 NO + 1 NC	--	➔	**3SE5114-0BA00-1AC5**		1	1 unit	41K
	2 NC	--	➔	**3SE5114-0KA00-1AE1**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	➔	**3SE5114-0CA00-1AC5**		1	1 unit	41K
	2 NC	--	➔	**3SE5114-0LA00-1AE1**		1	1 unit	41K
With 2 LEDs, yellow/green								
• Slow-action contacts	1 NO + 1 NC	24 V DC	➔	**3SE5114-1BA00-1AF3**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	24 V DC	➔	**3SE5114-1CA00-1AF3**		1	1 unit	41K
With pin assignment as for SIMATIC ET 200[3]								
• Snap-action contacts	1 NO + 2 NC	--	➔	**3SE5114-0LA00-1AE3**		1	1 unit	41K
With device plug, 6-pole + PE (250 V, 10 A)[2]								
• Slow-action contacts	1 NO + 2 NC	--	➔	**3SE5115-0KA00-1AD1**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	--	➔	**3SE5115-0LA00-1AD1**		1	1 unit	41K
With quick-release device								
• Snap-action contacts	1 NO + 1 NC	--	➔	**3SE5115-0CA00-1AD0**		1	1 unit	41K
With M12 device plug, 8-pole (30 V, 2 A)[2]								
With 2 LEDs, yellow/green								
• Snap-action contacts	1 NO + 2 NC	24 V DC	➔	**3SE5114-1LA00-1AD4**		1	1 unit	41K

3SE5112-0BA00

3SE5112-0BA00-1CA0

3SE5112-1KA00

3SE5114-0BA00-1AC5

3SE5115-0KA00-1AD1

➔ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Use corresponding high-grade steel lever.

2) For pin assignments, see page 12/12.

3) The 3SE5114-.....-1AE3 position switches, prewired with an M12 plug, 5-pole, have the same pin assignment as all fail-safe block I/O modules with a PROFINET connection in the SIMATIC ET 200eco PN and ET 200AL series with degree of protection IP65/IP67 for cabinet-free installation directly at the machine.
For more information, see page 12/88 onwards.

Note:

For the selection aid, see page 12/13.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Enclosure width 40 mm according to EN 50041

Version		Diameter mm		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operating mechanisms								
3SE5000-0AC02 3SE5000-0AD02								
Plain plungers								
• High-grade steel plunger		8.5	➔	3SE5000-0AB01		1	1 unit	41K
Rounded plungers, type B, according to EN 50041								
• High-grade steel plunger, with 3 mm overtravel		10	➔	3SE5000-0AC02		1	1 unit	41K
Roller plungers, type C, according to EN 50041								
• High-grade steel roller, with 3 mm overtravel		13	➔	3SE5000-0AD02		1	1 unit	41K
3SE5000-0AE01 3SE5000-0AF01								
Roller levers								
• Metal lever	Plastic roller	22	➔	3SE5000-0AE01		1	1 unit	41K
	High-grade steel roller	22	➔	3SE5000-0AE02		1	1 unit	41K
• High-grade steel lever	Plastic roller	22	➔	3SE5000-0AE03		1	1 unit	41K
	High-grade steel roller	22	➔	3SE5000-0AE04		1	1 unit	41K
3SE5000-0AR01								
Angular roller levers								
• Metal lever	Plastic roller	22	➔	3SE5000-0AF01		1	1 unit	41K
	High-grade steel roller	22	➔	3SE5000-0AF02		1	1 unit	41K
• High-grade steel lever	Plastic roller	22	➔	3SE5000-0AF03		1	1 unit	41K
	High-grade steel roller	22	➔	3SE5000-0AF04		1	1 unit	41K
Spring rods (for switches with snap-action contacts only)								
• Plunger made of plastic, spring of high-grade steel:		7						
- Length 142.5 mm (spring 50 mm, plunger 50 mm)				3SE5000-0AR01		1	1 unit	41K
- Length 76 mm (spring 23.5 mm, plunger 10 mm)				3SE5000-0AR03		1	1 unit	41K
- Length 242.5 mm (spring 150 mm, plunger 50 mm)				3SE5000-0AR04		1	1 unit	41K
• Plunger and spring made of high-grade steel:		7						
- Length 142.5 mm (spring 50 mm, plunger 50 mm)				3SE5000-0AR02		1	1 unit	41K
Twist actuators								
3SE5000-0AH00 3SE5000-0AA01								
Twist actuators, for 40/56/56 mm, XL, according to EN 50041								
• For twist levers and rod actuators, switching right and/or left, adjustable		--	➔	3SE5000-0AH00		1	1 unit	41K
• For fork levers, latching		--	➔	3SE5000-0AT10		1	1 unit	41K
Levers								
Twist levers 27 mm, offset, type A, according to EN 50041								
• Metal lever	Plastic roller	19	➔	3SE5000-0AA01		1	1 unit	41K
		30	➔	3SE5000-0AA05		1	1 unit	41K
		50	➔	3SE5000-0AA07		1	1 unit	41K
	2 plastic rollers	19	➔	3SE5000-0AA04		1	1 unit	41K
	High-grade steel roller	19	➔	3SE5000-0AA02		1	1 unit	41K
	- With ball bearing	19	➔	3SE5000-0AA03		1	1 unit	41K
	Rubber roller	50	➔	3SE5000-0AA08		1	1 unit	41K
• High-grade steel lever	Plastic roller	19	➔	3SE5000-0AA11		1	1 unit	41K
	High-grade steel roller	19	➔	3SE5000-0AA12		1	1 unit	41K
3SE5000-0AA60 3SE5000-0AA50								
Twist levers 35 mm, offset, type A, according to EN 50041								
• Metal lever	Plastic roller	19	➔	3SE5000-0AA15		1	1 unit	41K
• High-grade steel lever	Plastic roller	19	➔	3SE5000-0AA16		1	1 unit	41K
Twist levers 30 mm, straight[1], type A, according to EN 50041								
• Metal lever	Plastic roller	19	➔	3SE5000-0AA24		1	1 unit	41K
		30	➔	3SE5000-0AA26		1	1 unit	41K
3SE5000-0AT01								
Twist levers 100 mm, adjustable length, with grid hole								
• Metal lever	Plastic roller	19	➔	3SE5000-0AA60		1	1 unit	41K
		50	➔	3SE5000-0AA67		1	1 unit	41K
	High-grade steel roller	19	➔	3SE5000-0AA61		1	1 unit	41K
	Rubber roller	50	➔	3SE5000-0AA68		1	1 unit	41K
• High-grade steel lever	Plastic roller	19	➔	3SE5000-0AA62		1	1 unit	41K
	High-grade steel roller	19	➔	3SE5000-0AA63		1	1 unit	41K
Twist levers 100 mm, adjustable length								
• Metal lever	Plastic roller	19		3SE5000-0AA50		1	1 unit	41K
		30		3SE5000-0AA55		1	1 unit	41K
	High-grade steel roller	19		3SE5000-0AA51		1	1 unit	41K
	Rubber roller	50		3SE5000-0AA58		1	1 unit	41K
• High-grade steel lever	Plastic roller	19		3SE5000-0AA52		1	1 unit	41K
	High-grade steel roller	19		3SE5000-0AA53		1	1 unit	41K
Fork levers (for switches with snap-action contacts only)								
• 2 metal levers	2 plastic rollers	19	➔	3SE5000-0AT01		1	1 unit	41K
	2 high-grade steel rollers	19	➔	3SE5000-0AT02		1	1 unit	41K
• 2 high-grade steel levers	2 plastic rollers	19	➔	3SE5000-0AT03		1	1 unit	41K
Rod levers 200 mm, type D, according to EN 50041								
• Aluminum rod		6		3SE5000-0AA80		1	1 unit	41K
• Spring rod		6		3SE5000-0AA81		1	1 unit	41K
• Plastic rod		6		3SE5000-0AA82		1	1 unit	41K
3SE5000-0AA80								

➔ Positively driven actuator, necessary in safety circuits.

[1] Can be clinch mounted (rotated 180°, rear of lever).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Enclosure width 56 mm

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 3 x (M20 x 1.5) · Operating points according to EN 50041

Version	Contacts	LEDs		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[1] · Enclosure width 56 mm								
Plain plungers								
With high-grade steel plunger 8.5 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5122-0BB01**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5122-0KB01**		1	1 unit	41K
	2 NO + 1 NC	--	⊖	**3SE5122-0PB01**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5122-0CB01**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5122-0LB01**		1	1 unit	41K
Rounded plungers								
With high-grade steel plunger 10 mm, with 3 mm overtravel								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5122-0BC02**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5122-0KC02**		1	1 unit	41K
	2 NO + 1 NC	--	⊖	**3SE5122-0PC02**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5122-0CC02**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5122-0LC02**		1	1 unit	41K
- Increased operation/restoring force[2]	1 NO + 1 NC	--	⊖	**3SE5122-0CC02-1AA7**		1	1 unit	41K
Roller plungers								
With high-grade steel roller 13 mm, with 3 mm overtravel								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5122-0BD02**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5122-0KD02**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5122-0CD02**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5122-0LD02**		1	1 unit	41K
- Increased operation/restoring force[2]	1 NO + 1 NC	--	⊖	**3SE5122-0CD02-1AA7**		1	1 unit	41K
Roller levers								
With metal lever and plastic roller 22 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5122-0BE01**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5122-0KE01**		1	1 unit	41K
	2 NO + 1 NC	--	⊖	**3SE5122-0PE01**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5122-0CE01**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5122-0LE01**		1	1 unit	41K
With metal lever and high-grade steel roller 22 mm								
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5122-0CE02**		1	1 unit	41K
Angular roller levers								
With metal lever and plastic roller 22 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5122-0BF01**		1	1 unit	41K
	2 NO + 1 NC	--	⊖	**3SE5122-0PF01**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊖	**3SE5122-0CF01**		1	1 unit	41K

3SE5122-0BB01

3SE5122-0BC02

3SE5122-0BD02

3SE5122-0BE01

3SE5122-0BF01

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Popular versions.

2) Increased operation or restoring force 30 N; only available as complete unit, no modular design.

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

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2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 3 x (M20 x 1.5) · Operating points according to EN 50041

Version	Contacts	LEDs		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[1] · Enclosure width 56 mm								
Spring rods[2]								
Length 142.5 mm, with plastic plunger 50 mm								
• Snap-action contacts	1 NO + 1 NC	--		**3SE5122-0CR01**		1	1 unit	41K
Twist levers								
With metal lever 27 mm and plastic roller 19 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊕	**3SE5122-0BH01**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5122-0KH01**		1	1 unit	41K
	2 NO + 1 NC	--	⊕	**3SE5122-0PH01**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊕	**3SE5122-0CH01**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5122-0LH01**		1	1 unit	41K
With metal lever 27 mm and high-grade steel roller 19 mm								
• Snap-action contacts	1 NO + 1 NC	--	⊕	**3SE5122-0CH02**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5122-0LH02**		1	1 unit	41K
Twist levers, adjustable length								
With metal lever 100 mm, with grid holes and plastic roller 19 mm								
• Slow-action contacts	1 NO + 1 NC	--	⊕	**3SE5122-0BH60**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	⊕	**3SE5122-0CH60**		1	1 unit	41K
	1 NO + 2 NC	--	⊕	**3SE5122-0LH60**		1	1 unit	41K
With metal lever 100 mm and plastic roller 19 mm								
• Slow-action contacts	1 NO + 1 NC	--		**3SE5122-0BH50**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--		**3SE5122-0CH50**		1	1 unit	41K
	1 NO + 2 NC	--		**3SE5122-0LH50**		1	1 unit	41K
Fork levers, latching								
With metal lever and 2 plastic rollers 19 mm								
• Snap-action contacts	1 NO + 1 NC	--	⊕	**3SE5122-0CT11**		1	1 unit	41K
Rod levers[2]								
With aluminum rod 200 mm								
• Snap-action contacts	1 NO + 1 NC	--		**3SE5122-0CH80**		1	1 unit	41K
With plastic rod 200 mm								
• Snap-action contacts	1 NO + 1 NC	--		**3SE5122-0CH82**		1	1 unit	41K

3SE5122-0CR01

3SE5122-0BH01

3SE5122-0BH60

3SE5122-0CT11

3SE5122-0CH80

⊕ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.
1) Popular versions.
2) Degree of protection IP65/IP67.

Note:
If the device you require is not available as a complete unit, see "Modular system", page 12/38.

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Enclosure width 56 mm

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 3 x (M20 x 1.5) · Operating points according to EN 50041

Version	Contacts	LEDs		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Basic switches · Enclosure width 56 mm								
Rounded plungers								
• Slow-action contacts	1 NO + 1 NC	--	➔	**3SE5122-0BA00**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5122-0KA00**		1	1 unit	41K
	2 NO + 1 NC	--	➔	**3SE5122-0PA00**		1	1 unit	41K
- With make-before-break	1 NO + 2 NC	--	➔	**3SE5122-0MA00**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	➔	**3SE5122-0CA00**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5122-0LA00**		1	1 unit	41K
With increased corrosion protection[1]								
• Slow-action contacts	1 NO + 1 NC	--	➔	**3SE5122-0BA00-1CA0**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5122-0KA00-1CA0**		1	1 unit	41K
	2 NO + 1 NC	--	➔	**3SE5122-0PA00-1CA0**		1	1 unit	41K
- With make-before-break	1 NO + 2 NC	--	➔	**3SE5122-0MA00-1CA0**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	--	➔	**3SE5122-0CA00-1CA0**		1	1 unit	41K
	1 NO + 2 NC	--	➔	**3SE5122-0LA00-1CA0**		1	1 unit	41K
With 2 LEDs, yellow/green								
• Slow-action contacts	1 NO + 2 NC	24 V DC	➔	**3SE5122-1KA00**		1	1 unit	41K
	1 NO + 2 NC	230 V AC	➔	**3SE5122-3KA00**		1	1 unit	41K
• Snap-action contacts	1 NO + 2 NC	24 V DC	➔	**3SE5122-1LA00**		1	1 unit	41K
	1 NO + 2 NC	230 V AC	➔	**3SE5122-3LA00**		1	1 unit	41K

3SE5122-0BA00

3SE5122-0BA00-1CA0

3SE5122-1KA00

➔ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Use corresponding high-grade steel lever.

Note:
For the selection aid, see page 12/13.

Version		Diameter mm		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operating mechanisms								
Plain plungers								
• High-grade steel plungers		8.5	➔	**3SE5000-0AB01**		1	1 unit	41K
Rounded plungers, type B, according to EN 50041								
• High-grade steel plunger, with 3 mm overtravel		10	➔	**3SE5000-0AC02**		1	1 unit	41K
Roller plungers, type C, according to EN 50041								
• High-grade steel roller, with 3 mm overtravel		13	➔	**3SE5000-0AD02**		1	1 unit	41K
Roller levers								
• Metal lever	Plastic roller	22	➔	**3SE5000-0AE01**		1	1 unit	41K
	High-grade steel roller	22	➔	**3SE5000-0AE02**		1	1 unit	41K
• High-grade steel lever	Plastic roller	22	➔	**3SE5000-0AE03**		1	1 unit	41K
	High-grade steel roller	22	➔	**3SE5000-0AE04**		1	1 unit	41K
Angular roller levers								
• Metal lever	Plastic roller	22	➔	**3SE5000-0AF01**		1	1 unit	41K
	High-grade steel roller	22	➔	**3SE5000-0AF02**		1	1 unit	41K
• High-grade steel lever	Plastic roller	22	➔	**3SE5000-0AF03**		1	1 unit	41K
	High-grade steel roller	22	➔	**3SE5000-0AF04**		1	1 unit	41K
Spring rods								
(for switches with snap-action contacts only)								
• Plunger made of plastic, spring of high-grade steel:		7						
- Length 142.5 mm (spring 50 mm, plunger 50 mm)				**3SE5000-0AR01**		1	1 unit	41K
- Length 76 mm (spring 23.5 mm, plunger 10 mm)				**3SE5000-0AR03**		1	1 unit	41K
- Length 242.5 mm (spring 150 mm, plunger 50 mm)				**3SE5000-0AR04**		1	1 unit	41K
• Plunger and spring made of high-grade steel:		7						
- Length 142.5 mm (spring 50 mm, plunger 50 mm)				**3SE5000-0AR02**		1	1 unit	41K

3SE5000-0AB01

3SE5000-0AC02

3SE5000-0AD02

3SE5000-0AE01

3SE5000-0AF01

3SE5000-0AR01

➔ Positively driven actuator, necessary in safety circuits.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Version		Diameter		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm						
Twist actuators								
Twist actuators, for 40/56/56 mm, XL, according to EN 50041								
• For twist levers and rod actuators, switching right and/or left, adjustable		--	➔	**3SE5000-0AH00**		1	1 unit	41K
• For fork levers, latching		--	➔	**3SE5000-0AT10**		1	1 unit	41K
Levers								
Twist levers 27 mm, offset, type A, according to EN 50041								
• Metal lever	Plastic roller	19	➔	**3SE5000-0AA01**		1	1 unit	41K
		30	➔	**3SE5000-0AA05**		1	1 unit	41K
		50	➔	**3SE5000-0AA07**		1	1 unit	41K
	2 plastic rollers	19	➔	**3SE5000-0AA04**		1	1 unit	41K
	High-grade steel roller	19	➔	**3SE5000-0AA02**		1	1 unit	41K
	- With ball bearing	19	➔	**3SE5000-0AA03**		1	1 unit	41K
	Rubber roller	50	➔	**3SE5000-0AA08**		1	1 unit	41K
• High-grade steel lever	Plastic roller	19	➔	**3SE5000-0AA11**		1	1 unit	41K
	High-grade steel roller	19	➔	**3SE5000-0AA12**		1	1 unit	41K
Twist levers 35 mm, offset, type A, according to EN 50041								
• Metal lever	Plastic roller	19	➔	**3SE5000-0AA15**		1	1 unit	41K
• High-grade steel lever	Plastic roller	19	➔	**3SE5000-0AA16**		1	1 unit	41K
Twist levers 30 mm, straight[1], type A, according to EN 50041								
• Metal lever	Plastic roller	19	➔	**3SE5000-0AA24**		1	1 unit	41K
		30	➔	**3SE5000-0AA26**		1	1 unit	41K
Twist levers 100 mm, adjustable length, with grid hole								
• Metal lever	Plastic roller	19	➔	**3SE5000-0AA60**		1	1 unit	41K
		50	➔	**3SE5000-0AA67**		1	1 unit	41K
	High-grade steel roller	19	➔	**3SE5000-0AA61**		1	1 unit	41K
	Rubber roller	50	➔	**3SE5000-0AA68**		1	1 unit	41K
• High-grade steel lever	Plastic roller	19	➔	**3SE5000-0AA62**		1	1 unit	41K
	High-grade steel roller	19	➔	**3SE5000-0AA63**		1	1 unit	41K
Twist levers 100 mm, adjustable length								
• Metal lever	Plastic roller	19		**3SE5000-0AA50**		1	1 unit	41K
	High-grade steel roller	19		**3SE5000-0AA51**		1	1 unit	41K
	Plastic roller	30		**3SE5000-0AA55**		1	1 unit	41K
		50		**3SE5000-0AA57**		1	1 unit	41K
	Rubber roller	50		**3SE5000-0AA58**		1	1 unit	41K
• High-grade steel lever	Plastic roller	19		**3SE5000-0AA52**		1	1 unit	41K
	High-grade steel roller	19		**3SE5000-0AA53**		1	1 unit	41K
Fork levers (for switches with snap-action contacts only)								
• 2 metal levers	2 plastic rollers	19	➔	**3SE5000-0AT01**		1	1 unit	41K
	2 high-grade steel rollers	19	➔	**3SE5000-0AT02**		1	1 unit	41K
• 2 high-grade steel levers	2 plastic rollers	19	➔	**3SE5000-0AT03**		1	1 unit	41K
	2 high-grade steel rollers	19	➔	**3SE5000-0AT04**		1	1 unit	41K
Rod levers 200 mm								
• Aluminum rod		6		**3SE5000-0AA80**		1	1 unit	41K
• Spring rod		6		**3SE5000-0AA81**		1	1 unit	41K
• Plastic rod		6		**3SE5000-0AA82**		1	1 unit	41K

3SE5000-0AH00

3SE5000-0AA01

3SE5000-0AA24

3SE5000-0AA60

3SE5000-0AA50

3SE5000-0AT01

3SE5000-0AA80

➔ Positively driven actuator, necessary in safety circuits.

[1] Can be clinch mounted (rotated 180°, rear of lever).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Enclosure width 56 mm, XL

Selection and ordering data

Complete units

4 or 5 contacts · Degree of protection IP66/IP67 · Cable entry 3 x (M20 x 1.5) · Operating points according to EN 50041

Version	Contacts	LEDs		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[1] · Enclosure width 56 mm, XL								
Plain plungers								
With high-grade steel plunger 8.5 mm								
• Snap-action contacts	2 × (1 NO + 1 NC)	--	⊕	**3SE5162-0CB01**		1	1 unit	41K
Rounded plungers								
With high-grade steel plunger 10 mm, with 3 mm overtravel								
• Slow-action contacts and Slow-action contacts with make-before-break, 2 mm travel difference	1 NO + 1 NC 1 NO + 2 NC	--	⊕	**3SE5162-0EC02**		1	1 unit	41K
Roller plungers								
With high-grade steel roller 13 mm, with 3 mm overtravel								
• Slow-action contacts	2 × (1 NO + 1 NC)	--	⊕	**3SE5162-0BD02**		1	1 unit	41K
• Snap-action contacts	2 × (1 NO + 1 NC)	--	⊕	**3SE5162-0CD02**		1	1 unit	41K
Roller levers								
With metal lever and plastic roller 22 mm								
• Slow-action contacts	2 × (1 NO + 1 NC)	--	⊕	**3SE5162-0BE01**		1	1 unit	41K
• Snap-action contacts	2 × (1 NO + 1 NC)	--	⊕	**3SE5162-0CE01**		1	1 unit	41K
With metal lever and high-grade steel roller 22 mm								
• Snap-action contacts	2 × (1 NO + 1 NC)	--	⊕	**3SE5162-0CE02**		1	1 unit	41K
Angular roller levers								
With metal lever and plastic roller 22 mm								
• Snap-action contacts	2 × (1 NO + 1 NC)	--	⊕	**3SE5162-0CF01**		1	1 unit	41K
Twist levers								
With metal lever 27 mm and plastic roller 19 mm								
• Snap-action contacts	2 x (1 NO + 1 NC)	--	⊕	**3SE5162-0CH01**		1	1 unit	41K
With high-grade steel lever 27 mm and high-grade steel roller 19 mm								
With increased corrosion protection[2]								
• Snap-action contacts (gold contacts)	2 x (1 NO + 1 NC)	--	⊕	**3SE5162-0CH12-1CC1**		1	1 unit	41K
Twist levers, adjustable length								
With high-grade steel lever 100 mm, with grid hole and high-grade steel roller 19 mm								
With increased corrosion protection[2], 3SX5100-3B adapter included								
• Snap-action contacts (gold contacts)	2 x (1 NO + 1 NC)	--	⊕	**3SE5162-0CH63-1AN4**		1	1 unit	41K

3SE5162-0CB01

3SE5162-0EC02

3SE5162-0BD02

3SE5162-0BE01

3SE5162-0CF01

3SE5162-0CH01

⊕ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Popular versions.

2) Use corresponding high-grade steel lever.

Note:

If the device you require is not available as a complete unit, see "Modular system", page 12/41.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Modular system

4 or 6 contacts · Degree of protection IP66/IP67 · Cable entry 3 x (M20 x 1.5) · Operating points according to EN 50041

Version	Contacts	LEDs		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Basic switches · Enclosure width 56 mm, XL								
3SE5162-0BA00								
Rounded plungers								
• Slow-action contacts	2 × (1 NO + 1 NC)	--	➔	**3SE5162-0BA00**		1	1 unit	41K
- With make-before-break	2 x (1 NO + 2 NC)	--	➔	**3SE5162-0DA00**		1	1 unit	41K
• Snap-action contacts	2 × (1 NO + 1 NC)	--	➔	**3SE5162-0CA00**		1	1 unit	41K
With increased corrosion protection[1)]								
• Slow-action contacts	2 × (1 NO + 1 NC)	--	➔	**3SE5162-0BA00-1CA0**		1	1 unit	41K
- With make-before-break	2 x (1 NO + 2 NC)	--	➔	**3SE5162-0DA00-1CA0**		1	1 unit	41K
• Snap-action contacts	2 × (1 NO + 1 NC)	--	➔	**3SE5162-0CA00-1CA0**		1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Use corresponding high-grade steel lever.

Note:

For the selection aid, see page 12/13.

Version		Diameter mm		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operating mechanisms								
3SE5000-0AB01								
Plain plungers								
• High-grade steel plunger		8.5	➔	**3SE5000-0AB01**		1	1 unit	41K
3SE5000-0AC02								
Rounded plungers, type B, according to EN 50041								
• High-grade steel plunger, with 3 mm overtravel		10	➔	**3SE5000-0AC02**		1	1 unit	41K
3SE5000-0AD02								
Roller plungers, type C, according to EN 50041								
• High-grade steel roller, with 3 mm overtravel		13	➔	**3SE5000-0AD02**		1	1 unit	41K
3SE5000-0AE01								
Roller levers								
• Metal lever	Plastic roller	22	➔	**3SE5000-0AE01**		1	1 unit	41K
	High-grade steel roller	22	➔	**3SE5000-0AE02**		1	1 unit	41K
• High-grade steel lever	Plastic roller	22	➔	**3SE5000-0AE03**		1	1 unit	41K
	High-grade steel roller	22	➔	**3SE5000-0AE04**		1	1 unit	41K
3SE5000-0AF01								
Angular roller levers								
• Metal lever	Plastic roller	22	➔	**3SE5000-0AF01**		1	1 unit	41K
	High-grade steel roller	22	➔	**3SE5000-0AF02**		1	1 unit	41K
• High-grade steel lever	Plastic roller	22	➔	**3SE5000-0AF03**		1	1 unit	41K
	High-grade steel roller	22	➔	**3SE5000-0AF04**		1	1 unit	41K
3SE5000-0AR01								
Spring rods (for switches with snap-action contacts only)								
• Plunger made of plastic, spring of high-grade steel:		7						
- Length 142.5 mm (spring 50 mm, plunger 50 mm)				**3SE5000-0AR01**		1	1 unit	41K
- Length 76 mm (spring 23.5 mm, plunger 10 mm)				**3SE5000-0AR03**		1	1 unit	41K
- Length 242.5 mm (spring 150 mm, plunger 50 mm)				**3SE5000-0AR04**		1	1 unit	41K
• Plunger and spring made of high-grade steel:		7						
- Length 142.5 mm (spring 50 mm, plunger 50 mm)				**3SE5000-0AR02**		1	1 unit	41K

➔ Positively driven actuator, necessary in safety circuits.

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Enclosure width 56 mm, XL

Version		Diameter mm		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Twist actuators								
3SE5000-0AH00	**Twist actuators, for 40/56/56 mm, XL, according to EN 50041**							
	• For twist levers and rod actuators, switching right and/or left, adjustable	--	➔	**3SE5000-0AH00**		1	1 unit	41K
	• For fork levers, latching	--	➔	**3SE5000-0AT10**		1	1 unit	41K
	Levers							
3SE5000-0AA01	**Twist levers 27 mm, offset, type A, according to EN 50041**							
	• Metal lever, Plastic roller	19	➔	**3SE5000-0AA01**		1	1 unit	41K
		30	➔	**3SE5000-0AA05**		1	1 unit	41K
		50	➔	**3SE5000-0AA07**		1	1 unit	41K
	2 plastic rollers	19	➔	**3SE5000-0AA04**		1	1 unit	41K
	High-grade steel roller	19	➔	**3SE5000-0AA02**		1	1 unit	41K
	- With ball bearing	19	➔	**3SE5000-0AA03**		1	1 unit	41K
	Rubber roller	50	➔	**3SE5000-0AA08**		1	1 unit	41K
	• High-grade steel lever, Plastic roller	19	➔	**3SE5000-0AA11**		1	1 unit	41K
	High-grade steel roller	19	➔	**3SE5000-0AA12**		1	1 unit	41K
	Twist levers 35 mm, offset, type A, according to EN 50041							
	• Metal lever, Plastic roller	19	➔	**3SE5000-0AA15**		1	1 unit	41K
	• High-grade steel lever, Plastic roller	19	➔	**3SE5000-0AA16**		1	1 unit	41K
3SE5000-0AA24	**Twist levers 30 mm, straight[1], type A, according to EN 50041**							
	• Metal lever, Plastic roller	19	➔	**3SE5000-0AA24**		1	1 unit	41K
		30	➔	**3SE5000-0AA26**		1	1 unit	41K
3SE5000-0AA60	**Twist levers 100 mm, adjustable length, with grid hole**							
	• Metal lever, Plastic roller	19	➔	**3SE5000-0AA60**		1	1 unit	41K
		50	➔	**3SE5000-0AA67**		1	1 unit	41K
	High-grade steel roller	19	➔	**3SE5000-0AA61**		1	1 unit	41K
	Rubber roller	50	➔	**3SE5000-0AA68**		1	1 unit	41K
	• High-grade steel lever, Plastic roller	19	➔	**3SE5000-0AA62**		1	1 unit	41K
	High-grade steel roller	19	➔	**3SE5000-0AA63**		1	1 unit	41K
3SE5000-0AA50	**Twist levers 100 mm, adjustable length**							
	• Metal lever, Plastic roller	19		**3SE5000-0AA50**		1	1 unit	41K
	High-grade steel roller	19		**3SE5000-0AA51**		1	1 unit	41K
	Plastic roller	30		**3SE5000-0AA55**		1	1 unit	41K
		50		**3SE5000-0AA57**		1	1 unit	41K
	Rubber roller	50		**3SE5000-0AA58**		1	1 unit	41K
	• High-grade steel lever, Plastic roller	19		**3SE5000-0AA52**		1	1 unit	41K
	High-grade steel roller	19		**3SE5000-0AA53**		1	1 unit	41K
3SE5000-0AT01	**Fork levers** (for switches with snap-action contacts only)							
	• 2 metal levers, 2 plastic rollers	19	➔	**3SE5000-0AT01**		1	1 unit	41K
	2 high-grade steel rollers	19	➔	**3SE5000-0AT02**		1	1 unit	41K
	• 2 high-grade steel levers, 2 plastic rollers	19	➔	**3SE5000-0AT03**		1	1 unit	41K
	2 high-grade steel rollers	19	➔	**3SE5000-0AT04**		1	1 unit	41K
3SE5000-0AA80	**Rod levers, type D, according to EN 50041**							
	• Aluminum rod, Length 200 mm	6		**3SE5000-0AA80**		1	1 unit	41K
	• Spring rod, Length 200 mm	6		**3SE5000-0AA81**		1	1 unit	41K
	• Plastic rod, Length 200 mm	6		**3SE5000-0AA82**		1	1 unit	41K
	• Plastic rod, Length 330 mm	6		**3SE5000-0AA83**		1	1 unit	41K

➔ Positively driven actuator, necessary in safety circuits.

[1] Can be clinch mounted (rotated 180°, rear of lever).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

Compact design in width 30 mm

Particularly in harsh environments or on equipment with limited space, the small 3SE54 position switches in compact design with a depth of 16 mm and a weight of only 80 g (without cable) are ideal. Above all the versions with molded cable can be mounted in the most confined spaces.

3SE54 compact position switches are available in two different widths as complete units:

- The 3SE5413 series complies with the EU standard and features a 30 mm wide enclosure with drilled holes at a spacing of 20 mm.
- The 3SE5423 series meets the requirements of the US market and features a 40 mm wide enclosure with drilled holes at a spacing of 25 mm.

Both the enclosure and the actuator head are made of metal and comply with the high degree of protection IP67.

The following actuators are available:

- Rounded plungers
- Rounded plungers with central fixing
- Rounded plungers with external seal
- Roller plungers
- Roller plungers with central fixing
- Twist levers
- Twist lever with a smaller mounting depth and lower height
- Twist levers, adjustable length

The contact block is designed with snap-action contacts 1 NO + 1 NC. The NC contact complies with the requirements for positive opening according to IEC 60947-5-1.

Connection:

- With molded cable, length 2 m or 5 m
- With M12 device plug and connecting cable, M12 socket, 5-pole, with open end, length 5 m

Safety circuits

Standard IEC 60947-5-1 requires positive opening of the NC contacts. In other words, for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked according to the standard IEC 60947-5-1 with the symbol ⊖.

SIL 1 according to IEC 62061/IEC 61508 or PL c according to ISO 13849-1 can be attained with the 3SE5 position switch with ⊖ if the corresponding fail-safe evaluation units are selected and correctly installed (e.g. the 3SK safety relays or matching devices from the ASIsafe, SIMATIC or SINUMERIK product ranges).

If a second 3SE5 position switch with ⊖ is used, SIL 3/PL e can be attained.

Benefits

- Very compact yet with the same rating as the 3SE51 standard switches, for notable space savings in confined installation conditions
- Various actuator versions available
- Roller plungers can be rotated 90°
- Twist levers can be rotated 180°; twist levers can be adjusted in 15° increments
- Time is saved when mounting the fully assembled unit
- With metal enclosure of degree of protection IP67, ideal for use in rough industrial environments
- Insensitive to electromagnetic interference

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Compact design

Selection and ordering data

2 snap-action contacts 1 NO + 1 NC · Degree of protection IP67 · With connecting cable or M12 device plug

	Operating mechanism	Enclosure width mm		Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units · Enclosure width 30 or 40 mm								
3SE5413-0CC20-1EA2	***Rounded plungers***							
	Standard mounting							
	• With connecting cable, 2 m	30	➔	**3SE5413-0CC20-1EA2**		1	1 unit	41K
		40	➔	**3SE5423-0CC20-1EA2**		1	1 unit	41K
	• With connecting cable, 5 m	30	➔	**3SE5413-0CC20-1EA5**		1	1 unit	41K
	• With M12 device plug, 5-pole	30	➔	**3SE5413-0CC20-1EB1**		1	1 unit	41K
		40	➔	**3SE5423-0CC20-1EB1**		1	1 unit	41K
3SE5413-0CC21-1EA2	**With central fixing M12 x 1**							
	• With connecting cable, 2 m	30	➔	**3SE5413-0CC21-1EA2**		1	1 unit	41K
		40	➔	**3SE5423-0CC21-1EA2**		1	1 unit	41K
3SE5413-0CC22-1EA2	**With external seal**							
	• With connecting cable, 2 m	30	➔	**3SE5413-0CC22-1EA2**		1	1 unit	41K
		40	➔	**3SE5423-0CC22-1EA2**		1	1 unit	41K
3SE5413-0CD20-1EA2	***Roller plungers***							
	Standard mounting							
	• With connecting cable, 2 m	30	➔	**3SE5413-0CD20-1EA2**		1	1 unit	41K
		40	➔	**3SE5423-0CD20-1EA2**		1	1 unit	41K
	- Actuator head rotated 90°	30	➔	**3SE5413-0CD23-1EA2**		1	1 unit	41K
	• With connecting cable, 5 m	30	➔	**3SE5413-0CD20-1EA5**		1	1 unit	41K
	• With M12 device plug, 5-pole	30	➔	**3SE5413-0CD20-1EB1**		1	1 unit	41K
		40	➔	**3SE5423-0CD20-1EB1**		1	1 unit	41K
3SE5413-0CD23-1EA2	**With central fixing M12 x 1**							
	• With connecting cable, 2 m	30	➔	**3SE5413-0CD21-1EA2**		1	1 unit	41K
		40	➔	**3SE5423-0CD21-1EA2**		1	1 unit	41K
3SE5413-0CN20-1EA2	***Twist levers***							
	Standard mounting							
	• With connecting cable, 2 m	30	➔	**3SE5413-0CN20-1EA2**		1	1 unit	41K
		40	➔	**3SE5423-0CN20-1EA2**		1	1 unit	41K
	• With connecting cable, 5 m	30	➔	**3SE5413-0CN20-1EA5**		1	1 unit	41K
	• With M12 device plug, 5-pole	30	➔	**3SE5413-0CN20-1EB1**		1	1 unit	41K
		40	➔	**3SE5423-0CN20-1EB1**		1	1 unit	41K
	Twist lever with a smaller mounting depth and lower height							
	• With connecting cable, 2 m	30	➔	**3SE5413-0CP20-1EA2**		1	1 unit	41K
	Twist levers, adjustable length							
	• With connecting cable, 2 m	30	➔	**3SE5413-0CQ20-1EA2**		1	1 unit	41K
Connecting cable								
3SX5601-3SB55	**Connecting cable** With M12 socket, 5-pole, open end, length 5 m	--		**3SX5601-3SB55**		1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

Open-type design

Their compact design makes these switches particularly suitable for use in confined conditions. The mountings and operating points comply with EN 50047.

The switches are equipped with two or three contacts in snap-action, slow-action or slow-action with make-before-break versions. The stroke is 6 mm.

The empty enclosure can be equipped with all contact block versions (see page 12/48).

Improved version

The switches have a robust metal plunger with increased abrasion resistance (instead of the rounded plunger).
This enables the switch to be approached from a 30° angle.

Selection and ordering data

2 or 3 contacts · Degree of protection IP20[1] (2 contacts), IP10 (3 contacts) · Mounting and operating points according to EN 50047

	Version	Contacts		Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Plastic enclosures · Enclosure width 30 mm								
3SE5250-0BC05	**With metal plunger**							
	• Slow-action contacts	1 NO + 1 NC	⊕	**3SE5250-0BC05**		1	1 unit	41K
		1 NO + 2 NC	⊕	**3SE5250-0KC05**		1	1 unit	41K
		2 NO + 1 NC	⊕	**3SE5250-0PC05**		1	1 unit	41K
	- With make-before-break	1 NO + 2 NC	⊕	**3SE5250-0MC05**		1	1 unit	41K
3SE5250-0KC05	• Snap-action contacts	1 NO + 1 NC	⊕	**3SE5250-0CC05**		1	1 unit	41K
		1 NO + 2 NC	⊕	**3SE5250-0LC05**		1	1 unit	41K
3SE5250-0AC05	• Empty enclosures without contact block	--	⊕	**3SE5250-0AC05**		1	1 unit	41K
3SE5050-0BA00	**Contact blocks with 2 contacts** For open-type design[2]							
	• Slow-action contacts	1 NO + 1 NC	⊕	**3SE5050-0BA00**		1	1 unit	41K
	• Snap-action contacts	1 NO + 1 NC						
	- Standard		⊕	**3SE5050-0CA00**		1	1 unit	41K
	- Contact distance 2 x 2 mm		⊕	**3SE5050-0GA00**		1	1 unit	41K
	- Short stroke		⊕	**3SE5050-0NA00**		1	1 unit	41K

⊕ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) With the conductor connected and the clamping screw tightened.

2) Contact blocks with 3 contacts, see page 12/48.

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Accessories

Selection and ordering data

The quick-release devices and plug-in connections are used for fast installation and replacement of position switches.

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Service box for position switches						
3SX5110-0BK	Contents: • Three basic switches with rounded plunger in plastic version in enclosure widths 31, 40, 50 mm • Various actuator heads: - Plain plunger - Roller plunger - Roller lever - Angular roller lever - Spring rod - Twist actuator with various lever versions • Accessories: M12 device plug, cover yellow, protective cap, two contact blocks • SIRIUS 3SE brochure in German and English For more information, see flyer.	**3SX5110-0BK**		1	1 unit	41K
Quick-release devices for enclosure width 40 mm						
3SY3110	**Adapter plates with screws**	**3SY3110**		1	1 unit	41K
3SY3027	**Base plate with locking lever**	**3SY3027**		1	1 unit	41K
Plug-in connections for M20 x 1.5 connection threads						
3SY3131 3SX5100-1SS05	**Device plugs (6-pole + PE), for M20 x 1.5** For max. 250 V, 10 A, With connecting cable 0.75 mm^2, plastic, degree of protection IP65, ambient temperature -40 to +90 °C	**3SY3131**		1	1 unit	41K
3SX5100-1SS51 3SX5100-1SS08	**M12 device plugs, plastic, for M20 x 1.5**					
	• 4-pole, for max. 250 V, 4 A, U_{imp} = 2 500 V	**3SY3127**		1	1 unit	41K
	• 5-pole, for max. 125 V, 4 A, U_{imp} = 1 500 V					
	- Yellow/green cable for PE on pin 5	**3SY3128**		1	1 unit	41K
	- Gray cable on pin 5, without PE	**3SX5100-1SS05**		1	1 unit	41K
	• 5-pole[1], for max. 60 V, 1.5 A, U_{imp} = 800 V	**3SX5100-1SS51**		1	1 unit	41K
	• 8-pole, for max. 30 V, 1.5 A, U_{imp} = 800 V	**3SX5100-1SS08**		1	1 unit	41K
3SX5601-2GA03	**Connecting cables** • With M12 socket, 8-pole, straight, open end, rated voltage 30 V, rated current 2 A					
	- Length 3 m	**3SX5601-2GA03**		1	1 unit	41K
	- Length 5 m	**3SX5601-2GA05**		1	1 unit	41K
	- Length 10 m	**3SX5601-2GA10**		1	1 unit	41K
	- Length 15 m NEW	**3SX5601-2GA15**		1	1 unit	41K
3SX5601-3SB54	• With M12 socket, open end, length 5 m					
	- 4-pole	**3SX5601-3SB54**		1	1 unit	41K
	- 5-pole	**3SX5601-3SB55**		1	1 unit	41K
3SX5601-3SV15	**Connecting cable** With M12 socket, 5-pole and M12 plug, 5-pole, length 1 m	**3SX5601-3SV15**		1	1 unit	41K
6ES7194-6KB00-0XA0	**ET 200 Y-cable[1] for connecting 2 x 1-channel sensors** With M12 plug, 5-pole on 2 x M12 sockets, 5-pole, length 200 mm	**6ES7194-6KB00-0XA0**		1	1 unit	250

[1] Suitable for wiring sensors that are connected to all fail-safe block I/O modules in the SIMATIC ET 200eco PN and ET 200AL series.
For more information, see page 12/88 onwards.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Plug-in connections for M20 x 1.5 connection threads						
3RK1902-4CA00-4AA0	**Cable box M12** Angled, 4-pole, max. 4 A with cable connection space, max. 0.75 mm^2	**3RK1902-4CA00-4AA0**		1	1 unit	42D
3RK1902-4BA00-5AA0	**M12 plugs, 5-pole**					
	• Straight, separate item	**3RK1902-4BA00-5AA0**		1	1 unit	42D
	• Angled, separate item	**3RK1902-4DA00-5AA0**		1	1 unit	42D
Adapters and cable glands for M20 x 1.5 connection threads						
	Adapters according to CSA, UL and TÜV For cable entry from M20 x 1.5 to NPT 1/2					
3SX9917	• Metal	**3SX9917**		1	1 unit	41K
3SX9918	• Plastic	**3SX9918**		1	1 unit	41K
	Cable glands M20 x 1.5 Plastic					
3SX9926	• Degree of protection IP67	**3SX9926**		1	1 unit	41K
3SX5601-1A	• High degree of protection IP69, IEC 60529	**3SX5601-1A**		1	1 unit	41K

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Optional accessories and spare parts

Selection and ordering data

	Version	Color/ contacts		Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Optional accessories for 3SE51, 3SE52								
3SE5000-0AC30	**Protective caps** For rounded plungers according to EN 50047, 3SE5...-..C05	Black		**3SE5000-0AC30**		1	1 unit	41K
3SX5100-3B	**Adapters with screws**[1] For an increase in the mounting depth on the 3SE5000-0AH00 twist actuator, in combination with twist lever with adjustable length or rod lever	--		**3SX5100-3B**		1	1 unit	41K
3SX5100-1A	**Mounting plate** Suitable for 3SE523. and 3SE521. position switches with a width of 31 mm (in particular for control cabinet types)	--		**3SX5100-1A**		1	1 unit	41K
Spare parts for 3SE51, 3SE52								
3SE5232-0AC05	**Empty enclosures, plastic**	Turquoise						
	• Enclosure width 31 mm			**3SE5232-0AC05**		1	1 unit	41K
	- With increased corrosion protection[2]			**3SE5232-0AC05-1CA0**		1	1 unit	41K
	• Enclosure width 40 mm			**3SE5132-0AA00**		1	1 unit	41K
	• Enclosure width 50 mm			**3SE5242-0AC05**		1	1 unit	41K
	- With increased corrosion protection[2]			**3SE5242-0AC05-1CA0**		1	1 unit	41K
3SE5212-0AC05	**Empty enclosures, metal**	Turquoise						
	• Enclosure width 31 mm			**3SE5212-0AC05**		1	1 unit	41K
	- With increased corrosion protection[2]			**3SE5212-0AC05-1CA0**		1	1 unit	41K
	• Enclosure width 40 mm			**3SE5112-0AA00**		1	1 unit	41K
	- With increased corrosion protection[2]			**3SE5112-0AA00-1CA0**		1	1 unit	41K
	• Enclosure width 56 mm			**3SE5122-0AA00**		1	1 unit	41K
	- With increased corrosion protection[2]			**3SE5122-0AA00-1CA0**		1	1 unit	41K
	• Enclosure width 56 mm, XL[3]			**3SE5162-0AA00**		1	1 unit	41K
3SE5000-0BA00	**Contact blocks with 2 contacts**[4]							
	• Slow-action contacts	1 NO + 1 NC	⊖	**3SE5000-0BA00**		1	1 unit	41K
	• Snap-action contacts	1 NO + 1 NC						
	- Standard		⊖	**3SE5000-0CA00**		1	1 unit	41K
	- Gold-plated contacts		⊖	**3SE5000-0CA00-1AC1**		1	1 unit	41K
	- Contact distance 2 x 2 mm		⊖	**3SE5000-0GA00**		1	1 unit	41K
	- Short stroke		⊖	**3SE5000-0NA00**		1	1 unit	41K
3SE5000-0KA00	**Contact blocks with 3 contacts**							
	• Slow-action contacts	1 NO + 2 NC	⊖	**3SE5000-0KA00**		1	1 unit	41K
		2 NO + 1 NC	⊖	**3SE5000-0PA00**		1	1 unit	41K
	- With make-before-break	1 NO + 2 NC	⊖	**3SE5000-0MA00**		1	1 unit	41K
	• Snap-action contacts	1 NO + 2 NC	⊖	**3SE5000-0LA00**		1	1 unit	41K
3SE5060-0BA00	**Contact blocks for XL enclosure**[3]							
	• Slow-action contacts	1 NO + 1 NC	⊖	**3SE5060-0BA00**		1	1 unit	41K
	- With make-before-break	1 NO + 2 NC	⊖	**3SE5060-0MA00**		1	1 unit	41K
	• Snap-action contacts	1 NO + 1 NC	⊖	**3SE5060-0CA00**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Annex K.

1) Possibly required for the conversion from 3SE21 to 3SE51.

2) Use corresponding high-grade steel lever.

3) XL enclosures may only be equipped with combinations of contact elements, see pages 12/12, 12/40 and 12/41.

4) Unsuitable for open-type position switches, see page 12/45.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Version	Rated voltage LEDs	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V					
Spare parts for 3SE51, 3SE52							
3SE5230-1AA00	**Covers for plastic enclosures, width 31 mm**						
	• Turquoise with LED	24 DC	**3SE5230-1AA00**		1	1 unit	41K
		230 AC	**3SE5230-3AA00**		1	1 unit	41K
	• Yellow	--	**3SE5230-0AA00-1AG0**		1	1 unit	41K
	- With LED	24 DC	**3SE5230-1AA00-1AG0**		1	1 unit	41K
		230 AC	**3SE5230-3AA00-1AG0**		1	1 unit	41K
3SE5130-1AA00-1AG0	**Covers for plastic enclosures, width 40 mm**						
	• Turquoise with LED	24 DC	**3SE5130-1AA00**		1	1 unit	41K
		230 AC	**3SE5130-3AA00**		1	1 unit	41K
	• Yellow	--	**3SE5130-0AA00-1AG0**		1	1 unit	41K
	- With LED	24 DC	**3SE5130-1AA00-1AG0**		1	1 unit	41K
		230 AC	**3SE5130-3AA00-1AG0**		1	1 unit	41K
3SE5240-1AA00	**Covers for plastic enclosures, width 50 mm**						
	• Turquoise with LED	24 DC	**3SE5240-1AA00**		1	1 unit	41K
		230 AC	**3SE5240-3AA00**		1	1 unit	41K
	• Yellow	--	**3SE5240-0AA00-1AG0**		1	1 unit	41K
	- With LED	24 DC	**3SE5240-1AA00-1AG0**		1	1 unit	41K
		230 AC	**3SE5240-3AA00-1AG0**		1	1 unit	41K
3SE5210-1AA00	**Covers for metal enclosures, width 31 mm**						
	• Turquoise with LED	24 DC	**3SE5210-1AA00**		1	1 unit	41K
		230 AC	**3SE5210-3AA00**		1	1 unit	41K
	• Yellow	--	**3SE5210-0AA00-1AG0**		1	1 unit	41K
	- With LED	24 DC	**3SE5210-1AA00-1AG0**		1	1 unit	41K
		230 AC	**3SE5210-3AA00-1AG0**		1	1 unit	41K
3SE5110-1AA00	**Covers for metal enclosures, width 40 mm**						
	• Turquoise with LED	24 DC	**3SE5110-1AA00**		1	1 unit	41K
		230 AC	**3SE5110-3AA00**		1	1 unit	41K
	• Yellow	--	**3SE5110-0AA00-1AG0**		1	1 unit	41K
	- With LED	24 DC	**3SE5110-1AA00-1AG0**		1	1 unit	41K
		230 AC	**3SE5110-3AA00-1AG0**		1	1 unit	41K
3SE5120-0AA00-1AG0	**Covers for metal enclosures, width 56 mm**						
	• Turquoise with LED	24 DC	**3SE5120-1AA00**		1	1 unit	41K
		230 AC	**3SE5120-3AA00**		1	1 unit	41K
	• Yellow	--	**3SE5120-0AA00-1AG0**		1	1 unit	41K
	- With LED	24 DC	**3SE5120-1AA00-1AG0**		1	1 unit	41K
		230 AC	**3SE5120-3AA00-1AG0**		1	1 unit	41K
3SE5160-0AA00-1AG0	**Covers for XL metal enclosures, width 56 mm**						
	• Yellow	--	**3SE5160-0AA00-1AG0**		1	1 unit	41K

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General data

Overview

More information	
Homepage, see www.siemens.com/sirius-position-switches Industry Mall, see www.siemens.com/product?3SE Configurator, see www.siemens.com/sirius/configurators	Configuration Manual, see https://support.industry.siemens.com/cs/ww/en/view/43920150

Safety switches with separate actuator are used where the position of doors, covers or protective grilles must be monitored for safety reasons.

3SE5 safety switches with separate actuator have the same enclosures as the 3SE5 position switches (modular system).

3SE5 safety switches with head for separate actuator

Design

Enclosure sizes

The 3SE5 safety switches are available in four different enclosure sizes:

- Plastic enclosures according to EN 50047, 31 mm wide, IP65, 1 cable entry
- Metal enclosures according to EN 50047, 31 mm wide, IP66/IP67, 1 cable entry
- Plastic and metal enclosures according to EN 50041, 40 mm wide, IP66/IP67, 1 cable entry
- Plastic enclosures, 50 mm wide, IP66/IP67, 2 cable entries
- Metal enclosures, 56 mm wide, IP66/IP67, 3 cable entries

Also available are safety switches in the 3SE2 series which have been developed in this form according to general market requirements:

- Molded-plastic enclosures outside of the standards, enclosure width 52 mm, IP67

Enclosure versions

Various basic versions can be selected for the enclosures of the 3SE5 series:

- Available with 2- or 3-pole contact blocks designed as slow-action contacts
- Optional LED status display
- With mounted 4- or 5-pole M12 device plug, also for connection to field modules, such as SIMATIC ET 200 (available for the wide enclosures as an accessory for self-assembly)
- With 6-pole device plug + PE on the metal enclosures
- Similarly with a combination of plug and LED displays
- AS-Interface version with integrated ASIsafe electronics for all enclosure designs (see page 12/102)

For a description of the basic switches, see page 12/5.

Operation

The actuator head is included in the scope of supply.
For actuation from four directions it can be adjusted through 4 × 90°. The switches can also be approached from above.

The actuator heads of the 3SE2243 and 3SE2257 switches with special enclosures cannot be changed. The switches can be approached from the two broad sides and from above.

The actuator is not included in the scope of supply of the safety switches and must be ordered separately from a choice of different versions to suit the application (see page 12/58).

The actuator is encoded. Simple overruling by hand or auxiliary devices is impossible.

Radius actuators

The safety switches with radius actuators are particularly suitable for rotary protective devices. The movable actuation key allows even small radii to be approached. Damage to the switch and the actuator due to inaccurate approach is prevented.

Locking devices

A high-grade steel blocking insert for attaching up to eight padlocks is available for even more security (see page 12/69).

Blocking inserts with padlock

Dust protection

For use in dusty environments, a protective cap made of rubber is offered that protects the actuator entries of the actuator head from contamination (see page 12/69).

Contact reliability

The contact blocks ensure an extremely high contact stability. This applies even when the devices are switching low voltages and currents.

Positive opening ⊖

The NC contacts of the switch are forced open mechanically, positively driven and reliably by the plunger. This is referred to as "positive opening".

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Benefits

The 3SE5 safety switches with separate actuator differ from the previous series through the following new properties:

- All enclosure sizes with increased corrosion protection are optionally available with an LED signaling indicator.
- The 3-pole contact block 1 NO + 2 NC is available for all enclosure sizes.
- The plastic enclosure has simple and fast wiring equipment which makes it possible to save approx. 20 to 25% of the time when connecting.
- The ASIsafe electronics are integrated in the enclosure for the versions with AS-Interface connection (see page 12/102); an additional adapter is not required.

Application

Safety switches with separate actuator are used where the position of doors, covers or protective grilles must be monitored for safety reasons.For more information about protective door monitoring applications, see Flyer.

The safety switch can only be operated with the matching coded actuator. Simple overruling by hand or auxiliary devices is impossible.

Devices are available with enclosure versions to suit the particular ambient conditions. The high-grade steel actuator is suitable for extreme ambient conditions down to -40 °C. Different control tasks can be performed with the contact blocks best suited for the particular purpose. Dimensions and fixing points of the enclosure are according to EN 50041 or EN 50047 standards. The devices are suitable for use in any climate.

Standards

The switches comply with IEC 60947-5-1 (Electromechanical Control Circuit Devices).

The protective measure of "total insulation" by the plastic enclosure is ensured by the use of plastic screw glands.

Safety position switches

For controls according to IEC 60204-1 the devices can be used as a safety position switch. They comply with ISO 14119. A TÜV Certificate is available. To secure position switches against changes in their position, positively-driven techniques must be employed on installation.

Safety circuits

Standard IEC 60947-5-1 requires positive opening of the NC contacts. In other words, for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked according to the standard IEC 60947-5-1 with the symbol ⊖.

SIL 2 according to IEC 62061/IEC 61508 or PL d according to ISO 13849-1 can be attained with a safety switch with a separate actuator with ⊖ if the corresponding fail-safe evaluation units are selected and correctly installed (e.g. the 3SK safety relays or matching devices from the ASIsafe, SIMATIC or SINUMERIK product ranges).

If a second 3SE5 safety switch with ⊖ is used, SIL 3/PL e can be attained.

Evaluation of safety functions

Safety Evaluation in the TIA Selection Tool

The safety evaluation for the standards IEC 62061 and ISO 13849-1 is performed quickly and easily, directly in the TIA Selection Tool. In addition to the fast and safe calculation of machine safety functions – from the definition of the system structure to the selection of components – this enables shared data management during all project phases. Take the next step in the digital design of machinery and equipment with Safety Evaluation in the TIA Selection Tool.

In addition, the functionalities of the proven Safety Evaluation Tool are still available. It determines the achieved safety integrity (SIL/PL) step-by-step. You receive the results as a standards-compliant report that can be integrated in the documentation as proof of safety.

For more information, see www.siemens.com/safety-evaluation.

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General data

Technical specifications

Type		3SE51..-..V.., 3SE52..-..V..	3SE2257-.XX..		3SE2243-.XX..	
General data						
Standards		IEC 60947-5-1, ISO 14119				
Rated insulation voltage U_i	V	400	500			
Pollution degree according to IEC 60664-1		Class 3	Class 3			
Rated impulse withstand voltage U_{imp}	kV	6				
Rated operational voltage U_e	V	400 AC; over 300 V AC same potential only	500 AC; over 380 V AC same potential only			
Conventional thermal current I_{th}	A	6	10			
Rated operational current I_e			1-pole		3-pole	
• With alternating current 50/60 Hz		I_e/AC-15	I_e/AC-12	I_e/AC-15	I_e/AC-12	I_e/AC-15
- At 24 V	A	6	10	10	10	10
- At 120 V	A	6	10	10	10	10
- At 240 V	A	4	10	6	10	4
- At 400 V	A	4	10	4	10	4
- At 500 V	A	--	10	3	10	3
• For direct current		I_e/DC-13	I_e/DC-12	I_e/DC-13	I_e/DC-12	I_e/DC-13
- At 24 V	A	3	10	10	10	10
- At 125 V	A	0.55	--	--	--	--
- At 250 V	A	0.27	--	--	--	--
- At 110 V	A	--	4	1	4	1
- At 220 V	A	--	1	0.4	1	0.4
- At 400 V	A	0.12	--	--	--	--
- At 440 V	A	--	0.5	0.2	0.5	0.2
Short-circuit protection						
• With DIAZED fuse links, operational class gG	A	6	6			
• With fuse links, quick	A	--	10			
• With miniature circuit breaker, C characteristic ($I_{K< 400 A}$)	A	1	--			
Mechanical endurance		1 x 10^6 operating cycles				
Electrical endurance						
• With 3RH21 contactors size S00 and 3RT contactors sizes S00, S0		1 x 10^6 operating cycles	> 1 x 10^6 operating cycles			
• For utilization category AC-15 when switching off I_e/AC-15 at 240 V		100 000 operating cycles	500 000 operating cycles			
Frequency of operation with contactors 3RH21 size S00 and 3RT contactors sizes S00, S0		6 000 operating cycles/h				
Minimum pull-out force for positive opening	N	20	10		30	

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Selection and ordering data

2 or 3 contacts · 5 directions of approach · Degree of protection IP65 · Cable entry 1 × (M20 × 1.5) · With increased corrosion protection

Version[1]	Contacts	LEDs		Complete units Article No.	PU (UNIT, SET, M) Price per PU	PS*	PG
Enclosure width 31 mm according to EN 50047							
 3SE5232-0RV40							
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5232-0RV40**	1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5232-0QV40**	1	1 unit	41K
With 2 LEDs, yellow/green							
 3SE5232-1RV40							
• Slow-action contacts	1 NO + 1 NC	24 V DC	⊖	**3SE5232-1RV40**	1	1 unit	41K
	1 NO + 1 NC	230 V AC	⊖	**3SE5232-3RV40**	1	1 unit	41K
With increased minimum pull-out force 30 N							
• Slow-action contacts	1 NO + 2 NC	--	⊖	**3SE5232-0QV40-1AA1**	1	1 unit	41K
With M12 device plug, 4-pole (250 V, 4 A)[2]							
 3SE5234-0RV40-1AC4							
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5234-0RV40-1AC4**	1	1 unit	41K
	2 NC	--	⊖	**3SE5234-0QV40-1AE0**	1	1 unit	41K
With M12 device plug, 5-pole (125 V, 4 A)[2]							
With pin assignment as for SIMATIC ET 200[3]							
• Slow-action contacts	2 NC	--	⊖	**3SE5234-0QV40-1AE2**	1	1 unit	41K
With 2 LEDs, yellow/green							
• Slow-action contacts	1 NO + 1 NC	24 V DC	⊖	**3SE5234-1RV40-1AF3**	1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Supplied without actuator. Please order separately (see page 12/58).

2) For pin assignments, see page 12/12.

3) The 3SE5234-.....-1AE2 position switches, prewired with an M12 plug, 5-pole, have the same pin assignment as all fail-safe block I/O modules with a PROFINET connection in the SIMATIC ET 200eco PN and ET 200AL series with degree of protection IP65/IP67 for cabinet-free installation directly at the machine.
For more information, see page 12/88 onwards.

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Selection and ordering data

2 or 3 contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry 1 × (M20 × 1.5) · With increased corrosion protection

Version[1]	Contacts	LEDs		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosure width 40 mm according to EN 50041								
 3SE5132-0QV20								
• Slow-action contacts	1 NO + 2 NC	--	➔	**3SE5132-0QV20**		1	1 unit	41K
With 2 LEDs, yellow/green								
 3SE5132-1QV20								
• Slow-action contacts	1 NO + 2 NC	24 V DC	➔	**3SE5132-1QV20**		1	1 unit	41K
	1 NO + 2 NC	230 V AC	➔	**3SE5132-3QV20**		1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Supplied without actuator. Please order separately (see page 12/58).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

2 or 3 contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry 2 × (M20 × 1.5) · With increased corrosion protection

	Version[1]	Contacts	LEDs		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosure width 50 mm									
3SE5242-0QV40	• Slow-action contacts	1 NO + 2 NC	--	⊕	**3SE5242-0QV40**		1	1 unit	41K
	With increased minimum pull-out force 30 N								
	• Slow-action contacts	1 NO + 1 NC	--	⊕	**3SE5242-0RV40-1AA1**		1	1 unit	41K
	With 2 LEDs, yellow/green								
3SE5242-1QV40	• Slow-action contacts	1 NO + 2 NC	24 V DC	⊕	**3SE5242-1QV40**		1	1 unit	41K
		1 NO + 2 NC	230 V AC	⊕	**3SE5242-3QV40**		1	1 unit	41K

⊕ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

[1] Supplied without actuator. Please order separately (see page 12/58).

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Selection and ordering data

2 or 3 contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry 1 × (M20 × 1.5) · With increased corrosion protection

Version[1]	Contacts	LEDs		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosure width 31 mm according to EN 50047								
 3SE5212-1RV40								
• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5212-0RV40**		1	1 unit	41K
	1 NO + 2 NC	--	⊖	**3SE5212-0QV40**		1	1 unit	41K
With 2 LEDs, yellow/green								
• Slow-action contacts	1 NO + 1 NC	24 V DC	⊖	**3SE5212-1RV40**		1	1 unit	41K
	1 NO + 1 NC	230 V AC	⊖	**3SE5212-3RV40**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Supplied without actuator. Please order separately (see page 12/58).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

2 or 3 contacts · 5 directions of approach · Degree of protection IP66/IP67 · With increased corrosion protection

	Version[1]	Contacts	LEDs		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosure width 40 mm according to EN 50041 · Cable entry 1 x (M20 x 1.5)									
3SE5112-0QV10	• Slow-action contacts	1 NO + 2 NC	--	⊖	**3SE5112-0QV10**		1	1 unit	41K
	With increased minimum pull-out force 30 N								
	• Slow-action contacts	1 NO + 2 NC	--	⊖	**3SE5112-0QV10-1AA7**		1	1 unit	41K
3SE5112-1QV10	With 2 LEDs, yellow/green								
	• Slow-action contacts	1 NO + 2 NC	24 V DC	⊖	**3SE5112-1QV10**		1	1 unit	41K
		1 NO + 2 NC	230 V AC	⊖	**3SE5112-3QV10**		1	1 unit	41K
3SE5114-0RV10-1AC5	**With M12 device plug, 5-pole (125 V, 4 A)[2]**								
	• Slow-action contacts	1 NO + 1 NC	--	⊖	**3SE5114-0RV10-1AC5**		1	1 unit	41K
		2 NC	--	⊖	**3SE5114-0QV10-1AE1**		1	1 unit	41K
	With 2 LEDs, yellow/green								
	• Slow-action contacts	1 NO + 1 NC	24 V DC	⊖	**3SE5114-1RV10-1AF3**		1	1 unit	41K
	With pin assignment as for SIMATIC ET 200[3]								
	• Slow-action contacts	2 NC	--	⊖	**3SE5114-0QV10-1AE3**		1	1 unit	41K
	With device plug, 6-pole + PE (250 V, 10 A)[2]								
	• Slow-action contacts	1 NO + 2 NC	--	⊖	**3SE5115-0QV10-1AD1**		1	1 unit	41K
Enclosure width 56 mm · Cable entry 3 x (M20 x 1.5)									
3SE5122-0QV10	• Slow-action contacts	1 NO + 2 NC	--	⊖	**3SE5122-0QV10**		1	1 unit	41K
	With increased minimum pull-out force 30 N								
	• Slow-action contacts	1 NO + 2 NC	--	⊖	**3SE5122-0QV10-1AA7**		1	1 unit	41K
3SE5122-1QV10	With 2 LEDs, yellow/green								
	• Slow-action contacts	1 NO + 2 NC	24 V DC	⊖	**3SE5122-1QV10**		1	1 unit	41K
		1 NO + 2 NC	230 V AC	⊖	**3SE5122-3QV10**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Supplied without actuator. Please order separately (see page 12/58).

2) For pin assignments, see page 12/12.

3) The 3SE5114-.....-1AE3 position switches, prewired with an M12 plug, 5-pole, have the same pin assignment as all fail-safe block I/O modules with a PROFINET connection in the SIMATIC ET 200eco PN and ET 200AL series with degree of protection IP65/IP67 for cabinet-free installation directly at the machine.
For more information, see page 12/88 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Accessories

Selection and ordering data

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Actuators with degree of protection IP66/IP67 for 3SE5						
	Standard actuators					
3SE5000-0AV01	• Length 75.6 mm	**3SE5000-0AV01**		1	1 unit	41K
3SE5000-0AV02	• With vertical fixing, length 53 mm	**3SE5000-0AV02**		1	1 unit	41K
	• With transverse fixing					
3SE5000-0AV03	- Length 47 mm	**3SE5000-0AV03**		1	1 unit	41K
3SE5000-0AW11	- Length 40 mm, plastic[1]	**3SE5000-0AW11**		1	1 unit	41K
	High-grade steel actuators[2]					
3SE5000-0AW51	• Length 75.6 mm	**3SE5000-0AW51**		1	1 unit	41K
3SE5000-0AW52	• With vertical fixing, length 53 mm	**3SE5000-0AW52**		1	1 unit	41K
3SE5000-0AW53	• With transverse fixing, length 47 mm	**3SE5000-0AW53**		1	1 unit	41K
	Radius actuators					
3SE5000-0AV06	• Length 51 mm					
	- Direction of approach from the left	**3SE5000-0AV04**		1	1 unit	41K
	- Direction of approach from the right	**3SE5000-0AV06**		1	1 unit	41K
	Universal radius actuators					
3SE5000-0AV05-1AA6	• Length 77 mm	**3SE5000-0AV05**		1	1 unit	41K
	- Tab rotated 90°	**3SE5000-0AV05-1AA6**		1	1 unit	41K
	Universal radius actuators, heavy duty					
3SE5000-0AV07-1AK2	• Length 67 mm	**3SE5000-0AV07-1AK2**		1	1 unit	41K
3SE5000-0AV07	• Length 77 mm	**3SE5000-0AV07**		1	1 unit	41K
3SE5000-0AW57	- High-grade steel actuators[2]	**3SE5000-0AW57**		1	1 unit	41K

[1] Not suitable for safety switches with tumbler.
[2] Suitable for extreme environmental conditions such as -40 °C.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Optional accessories for 3SE5						
3SE5000-0AV08-1AA2	**Protective caps** Made of black rubber, for actuator head, to protect the actuator openings from contamination (Only for enclosure width 40 mm or 56 mm)	**3SE5000-0AV08-1AA2**		1	1 unit	41K
3SE5000-0AV08-1AA3	**Blocking inserts** Made of high-grade steel, for actuator head for up to eight padlocks	**3SE5000-0AV08-1AA3**		1	1 unit	41K
Connections for 3SE5, 3SE2						
3SY3127	**Device plugs, M12, fixed**, **for M20 × 1.5** With connecting cable 0.25 mm^2, plastic, degree of protection IP67					
	• 4-pole, for max. 250 V, 4 A	**3SY3127**		1	1 unit	41K
	• 5-pole, for max. 125 V, 4 A	**3SY3128**		1	1 unit	41K
	• 5-pole[1], for max. 60 V, 4 A	**3SX5100-1SS51**		1	1 unit	41K
3SX9926	**Connecting cable** With M12 socket, 5-pole and M12 plug, 5-pole	**3SX5601-3SV15**		1	1 unit	41K
	Cable glands M20 x 1.5 Plastic	**3SX9926**		1	1 unit	41K

[1] Suitable for wiring sensors that are connected to all fail-safe block I/O modules in the SIMATIC ET 200eco PN and ET 200AL series. For more information, see page 12/88 onwards.

For more accessories, see page 12/69.

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Selection and ordering data

1 or 3 contacts · 3 directions of approach · Degree of protection IP67

	Version	Operation		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Plastic enclosures in special width of 52 mm								
3SE2243	**Lateral and front-end actuation[1)]**	6 mm stroke						
	• Cable entry 3 x (M20 x 1.5)							
	- Slow-action contacts 1 NO + 2 NC	Holding force 5 N	➔	**3SE2243-0XX40**		1	1 unit	41K
		Holding force 30 N	➔	**3SE2243-0XX**		1	1 unit	41K
		With automatic ejection	➔	**3SE2243-0XX30**		1	1 unit	41K
	- Slow-action contacts 1 NC	Holding force 5 N	➔	**3SE2257-6XX40**		1	1 unit	41K
		Holding force 30 N	➔	**3SE2257-6XX**		1	1 unit	41K
	• Cable entry 3 x (M16 x 1.5)							
	- Slow-action contacts 1 NO + 2 NC	Holding force 30 N	➔	**3SE2243-0XX18**		1	1 unit	41K
Accessories								
	Actuators							
3SX3218	• Standard actuators (r_{min} = 150 mm), length 28 mm			**3SX3218**		1	1 unit	41K
3SX3228	• Universal radius actuator (r_{min} = 45 mm), length 34 mm			**3SX3228**		1	1 unit	41K
3SX3256	• Radius actuator, adjustable radius, length 34 mm			**3SX3256**		1	1 unit	41K
3SX3217	• Ball locating, force adjustable up to max. 100 N by two adjustable screws, length 28 mm			**3SX3217**		1	1 unit	41K
3SX3234	• Actuator, length 34 mm, with dust protection and slit cover			**3SX3234**		1	1 unit	41K
3SX3233	**Slit cover (spare part)** (1 set = 3 units) for sealing unused operating slots for 3SE22 devices			**3SX3233**		1	3 units	41K

➔ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Supplied without actuator.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

The safety switches with tumbler are exceptional safety-related devices which prevent an unforeseen or intentional opening of protective doors, protective grilles or other covers as long as a dangerous situation is present (i.e. follow-on motion of the switched-off machine).

3SE5 safety switch with tumbler

The safety switches with tumbler are comprised of a switch part with electromechanical tumbler and a mechanical actuator which has to be ordered separately.

They are rugged protective devices that enable the greatest possible safety for man and machine.

The safety switches with tumbler are offered in plastic or metal enclosures.

Dimensions (W x H x D) 54 mm x 185 mm x 43.5 mm

Operation

The actuator head is included in the scope of supply.
For actuation from four directions it can be adjusted through 4 × 90°. The switches can also be approached from above.

The actuator is not included in the scope of supply of the safety switches and must be ordered separately from a choice of different versions to suit the application (see page 12/68).

Actuation data:

- Maximum actuating speed v_{max} = 1.5 m/s
- Minimum actuating speed v_{min} = 0.4 mm/s
- Minimum force in the direction of actuation F_{min} = 30 N

The actuator is encoded. Simple overruling by hand or auxiliary devices is impossible.

Radius actuators

The safety switches with radius actuators are particularly suitable for rotary protective devices. The movable actuation key allows even small radii to be approached. Damage to the switch and the actuator due to inaccurate approach is prevented.

Locking devices

A high-grade steel blocking insert for attaching up to eight padlocks is available for even more security (see page 12/69).

Dust protection

For use in dusty environments, a protective cap made of rubber is offered that protects the actuator entries of the actuator head from contamination (see page 12/69).

Tumbler

There are two versions for interlocking the actuator:

- Spring-actuated lock (closed-circuit principle) with various release mechanisms
- Solenoid-locked (open-circuit principle)

The spring-actuated lock switch is equipped with an auxiliary release for emergency situations or setup mode. Available as options:

- Escape release or
- Emergency release

Contact blocks

The safety switches with tumbler have one switching block each for:

- Monitoring the actuator or the position of the protective door
- Monitoring the position of the solenoid

The mechanical design of the switch corresponds to the requirements of the fail-safe principle according to ISO 14119.

Optical signaling equipment

The safety switches with tumbler are available with an optional optical signaling device.

The signaling device indicates the switch position of the interlock and the protective device optically by means of two LEDs on the front.

Protective device	Tumbler	Display	Meaning
Closed	Released		Actuator able to be pulled
Closed	Locked		Actuator locked
Open	Released		Actuator pulled

Internal wiring:

- The yellow LED is pre-wired to the solenoid monitoring NO contact.
- The green LED is pre-wired to the actuator monitoring NC contact.
- LED ground is pre-wired to the ground of the solenoid.

Notes:

- The operational voltage must be connected to the corresponding contacts by the customer.
- This voltage for the LEDs must match the operational voltage of the solenoid (same potential).

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General data

Benefits

The 3SE53 safety switches provide:

- More safety through higher locking forces:
  - 1 300 N with plastic enclosure
  - 2 600 N with metal enclosure
- Various release mechanisms: lock release, escape release and emergency release
- Two contact blocks each with three contacts as standard equipment, hence fewer versions needed
- Same dimensions for all enclosure versions: plastic, metal or with integrated ASIsafe
- An extensive range of actuators
- An optional LED status display 24 V DC, 115 V or 230 V AC for all switch versions
- Devices with ASIsafe electronics integrated in the enclosure/ wired to 8-pole M12 device plug (see page 12/107)
- 3SE5322-1S.21-1AG4 series with high degree of protection IP69 according to IEC 60529, cover with foamed seal

Application

The safety switches with tumbler are exceptional safety-related devices which prevent an unforeseen or intentional opening of protective doors, protective grilles or other covers as long as a dangerous situation is present (i.e. follow-on motion of the switched-off machine).

The safety switches with tumbler have the following functions:

- Enabling the machine or process with closed and locked protective device
- Locking the machine or process with opened protective device
- Position monitoring of the protective device and tumbler

Standards

The switches comply with IEC 60947-1 (Low-Voltage Switchgear and Controlgear, General) and IEC 60947-5-1 (Electromechanical Control Circuit Devices).

The mechanical design of the switch corresponds to the requirements of the fail-safe principle according to ISO 14119.

Approvals

The switches are approved for use with locking devices according to ISO 14119 and EN 292, Parts 1 and 2.

These switches are approved according to UL 508, UL 50 and UL 746-C.

Safety circuits

Standard IEC 60947-5-1 requires positive opening of the NC contacts. In other words, for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked according to the standard IEC 60947-5-1 with the symbol ➔.

SIL 2 according to IEC 62061/IEC 61508 or PL d according to ISO 13849-1 can be attained with a safety switch with a tumbler with ➔ if the corresponding fail-safe evaluation units are selected and correctly installed (e.g. the 3SK safety relays or matching devices from the ASIsafe, SIMATIC or SINUMERIK product ranges).

If a second 3SE5 safety switch with ➔ is used, SIL 3/PL e can be attained.

Evaluation of safety functions

Safety Evaluation in the TIA Selection Tool

The safety evaluation for the standards IEC 62061 and ISO 13849-1 is performed quickly and easily, directly in the TIA Selection Tool. In addition to the fast and safe calculation of machine safety functions – from the definition of the system structure to the selection of components – this enables shared data management during all project phases. Take the next step in the digital design of machinery and equipment with Safety Evaluation in the TIA Selection Tool.

In addition, the functionalities of the proven Safety Evaluation Tool are still available. It determines the achieved safety integrity (SIL/PL) step-by-step. You receive the results as a standards-compliant report that can be integrated in the documentation as proof of safety.

For more information, see www.siemens.com/safety-evaluation.

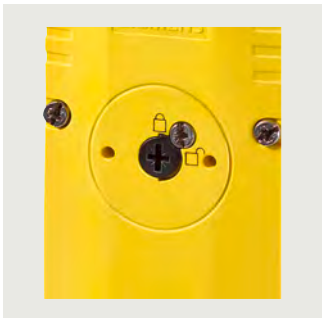
Tumbler

The separate actuator works like a key using coding and protects against manipulation. It transmits the locking force to the protective device and helps to monitor its position.

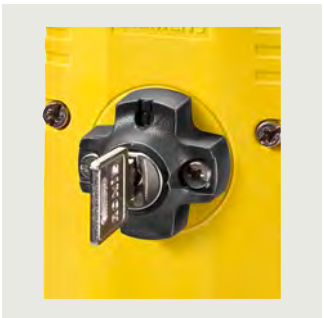
There are two versions of locking:

Spring-actuated lock (closed-circuit principle)

- In the standard version, the safety switch locks by means of spring force and releases by means of electromagnetic force. In the case of power failure, it reliably prevents the protective device from opening when machine parts are still moving.
- The switch is equipped with an auxiliary release for emergency situations or setup mode.
- An auxiliary release which can be secured with a lock to prevent misuse is available as a version.



Auxiliary release



Auxiliary release with lock

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The 3SE53 safety switches are also available with an escape release or emergency release.

- Personnel working inside the hazard zone can use the escape release feature to manually release the tumbler without tools from the escape side (hazardous area side) so that they can exit the hazard area. An intentional act (in this case pulling the gray actuator) is required to release the locking mechanism and restore the normal operating state.
- The emergency release enables someone in an emergency situation to manually release the tumbler without tools from the access side (outside the hazardous area). Releasing the lock and restoring the normal operating state must require effort which is comparable to repair activity: in this case disassembly of the red actuator and resetting of the mechanical lock.

Escape release from the front

Emergency release from the back

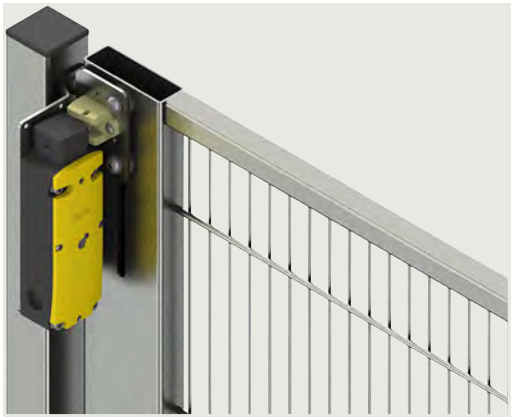
Solenoid-locked (open-circuit principle)

- The second version offers locking by means of electro-magnetic force and release by means of spring force. This version has an advantage when it is necessary to quickly access the machine after a power failure occurs, or in the case of very short coasting times.

Examples of door interlocking

X-Lock door interlocking from Axelent

For the addresses of the door interlock manufacturers, see page 16/18.



Door interlocking from Brühl

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General data

Technical specifications

Type		3SE5322	3SE5312
General data			
Standards		IEC 60947-5-1, ISO 14119, IEC 62061/IEC 61508	
Rated insulation voltage U_i	V	250	
Pollution degree according to IEC 60664-1		Class 3	
Rated impulse withstand voltage U_{imp}	kV	4	
Rated operational voltage U_e			
• DC	V	24	
• 50/60 Hz AC	V	230	
Conventional thermal current I_{th}	A	6	
Rated operational current I_e			
• With alternating current 50/60 Hz		I_e/AC-15 or B300	
- At 24 V	A	6	
- At 120 V	A	6	
- At 240 V	A	3	
• For direct current		I_e/DC-13 or Q300	
- At 24 V	A	3	
- At 125 V	A	0.55	
- At 250 V	A	0.27	
Solenoid			
• Locking force, max.	N	1 300	2 600
• Locking force according to ISO 14119	N	1 000	2 000
• Power consumption at U_c	W	3.5	
Short-circuit protection[1]			
• With DIAZED fuse links, operational class gG	A	6	
• With miniature circuit breaker, characteristic C	A	0.5	
Mechanical endurance	Operating cycles	1×10^6	
Electrical endurance			
• With 3RH21 contactors size S00 and 3RT contactors sizes S00, S0	Operating cycles	1×10^6	
• For utilization category AC-15 when switching off I_e/AC-15 at 230 V	Operating cycles	100 000	
• With utilization category DC-12/DC-13		For direct current depending on the loading of the switch	
Frequency of operation with contactors 3RH21 size S00 and 3RT contactors sizes S00, S0	Operating cycles/h	6 000	
Shock resistance according to IEC 60068-2-27	g/ms	30/11	

[1] Without any welds according to IEC 60947-5-1.

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Selection and ordering data

6 slow-action contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry 3 x (M20 x 1.5) · ISO 14119

Tumbler[1]	LEDs	Solenoid, rated operational voltage		Complete units Position monitoring: Actuators: 1 NO + 2 NC Solenoid: 1 NO + 2 NC Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V						
1 300 N locking force · Enclosure width 54 mm								
Spring-actuated locks								
3SE5322-0SD21								
• With auxiliary release	--	24 DC	⊕	**3SE5322-0SD21**		1	1 unit	41K
	--	115 AC	⊕	**3SE5322-0SD22**		1	1 unit	41K
	--	230 AC	⊕	**3SE5322-0SD23**		1	1 unit	41K
	Yellow/green	24 DC	⊕	**3SE5322-1SD21**		1	1 unit	41K
	Yellow/green	115 AC	⊕	**3SE5322-2SD22**		1	1 unit	41K
	Yellow/green	230 AC	⊕	**3SE5322-3SD23**		1	1 unit	41K
- With M12 plug, 8-pole[2], monitoring: 1 x door, 1 x interlocking	--	24 DC	⊕	**3SE5324-0SD21-1AE4**		1	1 unit	41K
2 x door	--	24 DC	⊕	**3SE5324-0SD21-1AE5**		1	1 unit	41K
3SE5322-0SE21								
• With auxiliary release with lock	--	24 DC	⊕	**3SE5322-0SE21**		1	1 unit	41K
	--	115 AC	⊕	**3SE5322-0SE22**		1	1 unit	41K
	--	230 AC	⊕	**3SE5322-0SE23**		1	1 unit	41K
	Yellow/green	24 DC	⊕	**3SE5322-1SE21**		1	1 unit	41K
	Yellow/green	115 AC	⊕	**3SE5322-2SE22**		1	1 unit	41K
	Yellow/green	230 AC	⊕	**3SE5322-3SE23**		1	1 unit	41K
3SE5322-0SF21								
• With escape release from the front	--	24 DC	⊕	**3SE5322-0SF21**		1	1 unit	41K
	--	115 AC	⊕	**3SE5322-0SF22**		1	1 unit	41K
	--	230 AC	⊕	**3SE5322-0SF23**		1	1 unit	41K
	Yellow/green	24 DC	⊕	**3SE5322-1SF21**		1	1 unit	41K
	Yellow/green	115 AC	⊕	**3SE5322-2SF22**		1	1 unit	41K
	Yellow/green	230 AC	⊕	**3SE5322-3SF23**		1	1 unit	41K
• With escape release from the front and emergency release from the back	--	24 DC	⊕	**3SE5322-0SL21**		1	1 unit	41K
3SE5322-0SG21								
• With escape release from the back and auxiliary release from the front	--	24 DC	⊕	**3SE5322-0SG21**		1	1 unit	41K
	--	115 AC	⊕	**3SE5322-0SG22**		1	1 unit	41K
	--	230 AC	⊕	**3SE5322-0SG23**		1	1 unit	41K
	Yellow/green	24 DC	⊕	**3SE5322-1SG21**		1	1 unit	41K
	Yellow/green	115 AC	⊕	**3SE5322-2SG22**		1	1 unit	41K
	Yellow/green	230 AC	⊕	**3SE5322-3SG23**		1	1 unit	41K
• With escape release from the back and auxiliary release with lock from the front	--	24 DC	⊕	**3SE5322-0SH21**		1	1 unit	41K
- With M12 plug, 8-pole[2], monitoring: 1 x door, 1 x interlocking	--	24 DC	⊕	**3SE5324-0SH21-1AE4**		1	1 unit	41K
3SE5324-0SH21-1AE4								
• With emergency release from the back and auxiliary release from the front	--	24 DC	⊕	**3SE5322-0SJ21**		1	1 unit	41K
	--	115 AC	⊕	**3SE5322-0SJ22**		1	1 unit	41K
	--	230 AC	⊕	**3SE5322-0SJ23**		1	1 unit	41K
	Yellow/green	24 DC	⊕	**3SE5322-1SJ21**		1	1 unit	41K
	Yellow/green	115 AC	⊕	**3SE5322-2SJ22**		1	1 unit	41K
	Yellow/green	230 AC	⊕	**3SE5322-3SJ23**		1	1 unit	41K
Solenoid-locked								
3SE5322-1SB21								
	--	24 DC	⊕	**3SE5322-0SB21**		1	1 unit	41K
	--	115 AC	⊕	**3SE5322-0SB22**		1	1 unit	41K
	--	230 AC	⊕	**3SE5322-0SB23**		1	1 unit	41K
	Yellow/green	24 DC	⊕	**3SE5322-1SB21**		1	1 unit	41K
	Yellow/green	115 AC	⊕	**3SE5322-2SB22**		1	1 unit	41K
	Yellow/green	230 AC	⊕	**3SE5322-3SB23**		1	1 unit	41K
• With M12 plug, 8-pole - Head rotated clockwise by 90°	-- --	24 DC 24 DC	⊕ ⊕	**3SE5324-0SB21-1AC8** **3SE5324-0SB21-1AP0**		1 1	1 unit 1 unit	41K 41K

⊕ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Supplied without actuator. Please order separately (see page 12/68).

2) Suitable for connection, e.g. to fail-safe field modules of the SIMATIC ET 200eco PN and the SIMATIC ET 200AL with connection accessories 3SX5601-3SV18 and Y-cable 6ES7194-6KC00-0XA0, see page 12/69. For more information, see page 12/88 onwards.

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3SE5, plastic enclosures with locking force greater than 1 200 N

6 slow-action contacts · 5 directions of approach · Degree of protection IP69 · Cable entry 3 x (M20 x 1.5) · With foamed seal and special cover

	Tumbler[1]	LEDs	Solenoid, rated operational voltage		Complete units Position monitoring: Actuators: 1 NO + 2 NC Solenoid: 1 NO + 2 NC Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			V						
1 300 N locking force · Enclosure width 54 mm · Degree of protection IP69									
	Spring-actuated locks								
3SE5322-1SD21-1AG4	• With auxiliary release	Yellow/green	24 DC	➔	**3SE5322-1SD21-1AG4**		1	1 unit	41K
3SE5322-1SE21-1AG4	• With auxiliary release with lock	Yellow/green	24 DC	➔	**3SE5322-1SE21-1AG4**		1	1 unit	41K
3SE5322-1SF21-1AG4	• With escape release from the front	Yellow/green	24 DC	➔	**3SE5322-1SF21-1AG4**		1	1 unit	41K
3SE5322-1SG21-1AG4	• With escape release from the back and auxiliary release from the front	Yellow/green	24 DC	➔	**3SE5322-1SG21-1AG4**		1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

[1] Supplied without actuator. Please order separately (see page 12/68).

For cable gland for degree of protection IP69 and more accessories, see page 12/69.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

6 slow-action contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry 3 x (M20 x 1.5) · ISO 14119

	Tumbler[1]	LEDs	Solenoid, rated operational voltage V		Complete units Position monitoring: Actuators: 1 NO + 2 NC Solenoid: 1 NO + 2 NC Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
2 600 N locking force · Enclosure width 54 mm									
	Spring-actuated locks								
3SE5312-0SD11	• With auxiliary release	--	24 DC	⊖	**3SE5312-0SD11**		1	1 unit	41K
		--	115 AC	⊖	**3SE5312-0SD12**		1	1 unit	41K
		--	230 AC	⊖	**3SE5312-0SD13**		1	1 unit	41K
		Yellow/green	24 DC	⊖	**3SE5312-1SD11**		1	1 unit	41K
		Yellow/green	115 AC	⊖	**3SE5312-2SD12**		1	1 unit	41K
		Yellow/green	230 AC	⊖	**3SE5312-3SD13**		1	1 unit	41K
3SE5312-0SE11	• With auxiliary release with lock	--	24 DC	⊖	**3SE5312-0SE11**		1	1 unit	41K
		--	115 AC	⊖	**3SE5312-0SE12**		1	1 unit	41K
		--	230 AC	⊖	**3SE5312-0SE13**		1	1 unit	41K
		Yellow/green	24 DC	⊖	**3SE5312-1SE11**		1	1 unit	41K
		Yellow/green	115 AC	⊖	**3SE5312-2SE12**		1	1 unit	41K
		Yellow/green	230 AC	⊖	**3SE5312-3SE13**		1	1 unit	41K
3SE5312-0SF11	• With escape release from the front	--	24 DC	⊖	**3SE5312-0SF11**		1	1 unit	41K
		--	115 AC	⊖	**3SE5312-0SF12**		1	1 unit	41K
		--	230 AC	⊖	**3SE5312-0SF13**		1	1 unit	41K
		Yellow/green	24 DC	⊖	**3SE5312-1SF11**		1	1 unit	41K
		Yellow/green	115 AC	⊖	**3SE5312-2SF12**		1	1 unit	41K
		Yellow/green	230 AC	⊖	**3SE5312-3SF13**		1	1 unit	41K
3SE5312-0SG11	• With escape release from the back and auxiliary release from the front	--	24 DC	⊖	**3SE5312-0SG11**		1	1 unit	41K
		--	115 AC	⊖	**3SE5312-0SG12**		1	1 unit	41K
		--	230 AC	⊖	**3SE5312-0SG13**		1	1 unit	41K
		Yellow/green	24 DC	⊖	**3SE5312-1SG11**		1	1 unit	41K
		Yellow/green	115 AC	⊖	**3SE5312-2SG12**		1	1 unit	41K
		Yellow/green	230 AC	⊖	**3SE5312-3SG13**		1	1 unit	41K
3SE5312-0SJ11	• With escape release from the back and auxiliary release with lock from the front	--	24 DC	⊖	**3SE5312-0SH11**		1	1 unit	41K
	• With emergency release from the back and auxiliary release from the front	--	24 DC	⊖	**3SE5312-0SJ11**		1	1 unit	41K
		--	115 AC	⊖	**3SE5312-0SJ12**		1	1 unit	41K
		--	230 AC	⊖	**3SE5312-0SJ13**		1	1 unit	41K
		Yellow/green	24 DC	⊖	**3SE5312-1SJ11**		1	1 unit	41K
		Yellow/green	115 AC	⊖	**3SE5312-2SJ12**		1	1 unit	41K
		Yellow/green	230 AC	⊖	**3SE5312-3SJ13**		1	1 unit	41K
	Solenoid-locked								
3SE5312-0SB11		--	24 DC	⊖	**3SE5312-0SB11**		1	1 unit	41K
		--	115 AC	⊖	**3SE5312-0SB12**		1	1 unit	41K
		--	230 AC	⊖	**3SE5312-0SB13**		1	1 unit	41K
		Yellow/green	24 DC	⊖	**3SE5312-1SB11**		1	1 unit	41K
		Yellow/green	115 AC	⊖	**3SE5312-2SB12**		1	1 unit	41K
		Yellow/green	230 AC	⊖	**3SE5312-3SB13**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Supplied without actuator. Please order separately (see page 12/68).

2) Suitable for connection, e.g. to fail-safe field modules of the SIMATIC ET 200eco PN and the SIMATIC ET 200AL with connection accessories 3SX5601-3SV18 and Y-cable 6ES7194-6KC00-0XA0, see page 12/69. For more information, see page 12/88 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Accessories

Selection and ordering data

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Actuators with degree of protection IP66/IP67 for 3SE5						
	Standard actuators					
3SE5000-0AV01	• Length 75.6 mm	**3SE5000-0AV01**		1	1 unit	41K
3SE5000-0AV02	• With vertical fixing, length 53 mm	**3SE5000-0AV02**		1	1 unit	41K
3SE5000-0AV03	• With transverse fixing, length 47 mm	**3SE5000-0AV03**		1	1 unit	41K
	High-grade steel actuators					
3SE5000-0AW51	• Length 75.6 mm	**3SE5000-0AW51**		1	1 unit	41K
3SE5000-0AW52	• With vertical fixing, length 53 mm	**3SE5000-0AW52**		1	1 unit	41K
3SE5000-0AW53	• With transverse fixing, length 47 mm	**3SE5000-0AW53**		1	1 unit	41K
	Radius actuators					
3SE5000-0AV06	• Length 51 mm					
	- Direction of approach from the left	**3SE5000-0AV04**		1	1 unit	41K
	- Direction of approach from the right	**3SE5000-0AV06**		1	1 unit	41K
	Universal radius actuators					
3SE5000-0AV05-1AA6	• Length 77 mm	**3SE5000-0AV05**		1	1 unit	41K
	- Tab rotated 90°	**3SE5000-0AV05-1AA6**		1	1 unit	41K
	Universal radius actuators, heavy duty					
3SE5000-0AV07-1AK2	• Length 67 mm	**3SE5000-0AV07-1AK2**		1	1 unit	41K
3SE5000-0AV07	• Length 77 mm	**3SE5000-0AV07**		1	1 unit	41K
3SE5000-0AW57	- High-grade steel actuators[1)]	**3SE5000-0AW57**		1	1 unit	41K

[1)] Suitable for extreme environmental conditions such as -40 °C.

For further plug versions, see page 12/46.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Optional accessories for 3SE5						
3SE5000-0AV08-1AA2	**Protective caps** Made of black rubber, for actuator head, to protect the actuator openings from contamination	**3SE5000-0AV08-1AA2**		1	1 unit	41K
3SE5000-0AV08-1AA3	**Blocking inserts** Made of high-grade steel, for actuator head for up to eight padlocks	**3SE5000-0AV08-1AA3**		1	1 unit	41K
Spare parts for 3SE5						
	Spare keys for key type RONIS SH115	**3SX5100-1F**		1	1 unit	41K
Connection accessories for 3SE5						
3SX5100-1SS51	**M12 device plugs, plastic, for M20 x 1.5**					
	• 4-pole, for max. 250 V, 4 A, U_{imp} = 2 500 V	**3SY3127**		1	1 unit	41K
	• 5-pole, for max. 125 V, 4 A, U_{imp} = 1 500 V	**3SY3128**		1	1 unit	41K
	• 5-pole[1], for max. 60 V, 4 A, U_{imp} = 800 V	**3SX5100-1SS51**		1	1 unit	41K
	• 8-pole[1], for max. 30 V, 1.5 A, U_{imp} = 800 V	**3SX5100-1SS08**		1	1 unit	41K
3SX9926	**Cable glands M20 x 1.5** Plastic • Degree of protection IP67	**3SX9926**		1	1 unit	41K
3SX5601-1A	• High degree of protection IP69, IEC 60529	**3SX5601-1A**		1	1 unit	41K
3SX5601-3SB55	**Connecting cables** With M12 socket, open end, length 5 m					
	• 4-pole	**3SX5601-3SB54**		1	1 unit	41K
	• 5-pole	**3SX5601-3SB55**		1	1 unit	41K
3SX5601-3SV18	**Connecting cable** With M12 socket, 8-pole and M12 plug, 8-pole, length 1 m	**3SX5601-3SV18**		1	1 unit	41K
3SX5601-2GA03	**Connecting cables** With M12 socket, 8-pole, straight, open end rated voltage 30 V, rated current 2 A					
	• Length 3 m	**3SX5601-2GA03**		1	1 unit	41K
	• Length 5 m	**3SX5601-2GA05**		1	1 unit	41K
	• Length 10 m	**3SX5601-2GA10**		1	1 unit	41K
	• Length 15 m NEW	**3SX5601-2GA15**		1	1 unit	41K
6GT2090-0BE00	**M12 plug** Straight, 8-pole	**6GT2090-0BE00**		1	5 units	572
6ES7194-6KC00-0XA0	**ET 200 Y-cable[1]** **For connecting 1 x 2-channel sensor** With M12 socket, 8-pole on 2 x M12 plugs, 5-pole, length 200 mm	**6ES7194-6KC00-0XA0**		1	1 unit	250

[1] Suitable for wiring sensors that are connected to all fail-safe block I/O modules in the SIMATIC ET 200eco PN and ET 200AL series. For more information, see page 12/88 onwards.

For further plug versions, see page 12/46.

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General data

Overview

3SE5 hinge switches have the same enclosures as the 3SE5 position switches (modular system).

Hinge switches

Design

Enclosure sizes

The 3SE5 switches are available as complete units in two enclosure sizes:

- Plastic enclosures according to EN 50047, 31 mm wide, IP65, 1 cable entry
- Metal enclosures according to EN 50047, 31 mm wide, IP66/IP67, 1 cable entry
- Plastic and metal enclosures according to EN 50041, 40 mm wide, IP66/IP67, 1 cable entry

Enclosure versions

Various basic versions can be selected for the enclosures:

- With 2- or 3-pole contact blocks, designed as snap-action contacts
- AS-Interface version with integrated ASIsafe electronics for all enclosure designs (see page 12/111)

For a description of the basic switches, see page 12/5.

Operating mechanism

The hinge switches are provided for mounting on hinges. The actuator head is included in the scope of supply. There are two versions:

- Operating mechanism with hollow shaft, inner diameter 8 mm, outer 12 mm
- Operating mechanism with solid shaft, diameter 10 mm

3SE2283 hinge switches

The 3SE2283 hinge switches with integrated hinge are available in a special design. They are particularly suitable for use in machine doors and flaps.

Benefits

The 3SE5 hinge switches differ from the previous series through the following new characteristics:

- All actuators can be rotated around the axis in increments of 22.5° (see figure, page 12/6).
- The new 3-pole contact block 1 NO + 2 NC is available for all enclosure sizes (see figure, page 12/6).
- The plastic enclosure with a width of 31 mm has simple and fast wiring equipment which makes it possible to save approx. 20 to 25% of the time when connecting (see figure, page 12/6).
- The ASIsafe electronics are integrated in the enclosure for the versions with AS-Interface connection (see page 12/93); an additional adapter is not required.

Application

The hinge switches are used in those areas where the position of swiveling protective devices such as doors or flaps must be monitored. With these switches, the position of the doors and flaps is converted into electric signals. The switches allow shutdown and signaling without delay in the event of a small opening angle through the snap-action contacts with an actuating angle of 10°.

Devices are available with enclosure versions to suit the particular ambient conditions. Different control tasks can be performed with the contact blocks best suited for the particular purpose. Dimensions and fixing points of the enclosures are in accordance with EN 50041 or EN 50047 standards.

The devices are suitable for use in any climate.

Standards

The switches comply with IEC 60947-5-1 (Electromechanical Control Circuit Devices).

The protective measure of "total insulation" by the plastic enclosure is ensured by the use of plastic screw glands.

Safety position switches

For controls according to IEC 60204-1 the devices can be used as a safety position switch. To secure position switches against changes in their position, positively-driven techniques must be employed on installation.

Safety circuits

Standard IEC 60947-5-1 requires positive opening of the NC contacts. In other words, for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked according to IEC 60947-5-1 with the symbol ⊖.

SIL 2 according to IEC 62061/IEC 61508 or PL d according to ISO 13849-1 can be attained with a 3SE5 safety hinge switch with ⊖ if the corresponding fail-safe evaluation units are selected and correctly installed (e.g. the 3SK safety relays or matching devices from the ASIsafe, SIMATIC or SINUMERIK product ranges).

If a second 3SE5 position switch with ⊖ is used, SIL 3/PL e can be attained.

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Evaluation of safety functions

Safety Evaluation in the TIA Selection Tool

The safety evaluation for the standards IEC 62061 and ISO 13849-1 is performed quickly and easily, directly in the TIA Selection Tool. In addition to the fast and safe calculation of machine safety functions – from the definition of the system structure to the selection of components – this enables shared data management during all project phases. Take the next step in the digital design of machinery and equipment with Safety Evaluation in the TIA Selection Tool.

In addition, the functionalities of the proven Safety Evaluation Tool are still available. It determines the achieved safety integrity (SIL/PL) step-by-step. You receive the results as a standards-compliant report that can be integrated in the documentation as proof of safety.

For more information, see www.siemens.com/safety-evaluation.

Technical specifications

The technical specifications are the same as for the standard switches (see page 12/11).

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP65 (31 mm) or IP66/IP67 (40 mm) · Cable entry 1 x (M20 × 1.5)

	Version	Snap-action contacts	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosure width 31 mm according to EN 50047							
3SE5232-0HU21	**With hollow shaft**						
	• Actuating angle 10°	1 NO + 1 NC[1] ⊖ 1 NO + 2 NC ⊖	**3SE5232-0HU21** **3SE5232-0LU21**		1 1	1 unit 1 unit	41K 41K
3SE5232-0HU22	**With solid shaft**						
	• Actuating angle 10°	1 NO + 1 NC[1] ⊖ 1 NO + 2 NC ⊖	**3SE5232-0HU22** **3SE5232-0LU22**		1 1	1 unit 1 unit	41K 41K
Enclosure width 40 mm according to EN 50041							
3SE5132-0LU21	**With hollow shaft**						
	• Actuating angle 10°	1 NO + 2 NC ⊖	**3SE5132-0LU21**		1	1 unit	41K
3SE5132-0LU22	**With solid shaft**						
	• Actuating angle 10°	1 NO + 2 NC ⊖	**3SE5132-0LU22**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

[1] Contact blocks permanently integrated, replacement not available.

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3SE5, plastic enclosures > Enclosure width 31 mm according to EN 50047/40 mm according to EN 50041

Spare parts

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Actuator heads						
3SE5000-0AU21	**With hollow shaft** • Actuating angle 10°	**3SE5000-0AU21**		1	1 unit	41K
3SE5000-0AU22	**With solid shaft** • Actuating angle 10°	**3SE5000-0AU22**		1	1 unit	41K

Note:
The respective actuators are included in the scope of supply for the complete units.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Complete units

3 contacts · Degree of protection IP66/IP67 · Cable entry 1 x (M20 x 1.5)

	Version	Snap-action contacts		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosure width 31 mm according to EN 50047								
3SE5212-0LU21	**With hollow shaft** • Actuating angle 10°	1 NO + 2 NC	⊖	**3SE5212-0LU21**		1	1 unit	41K
3SE5212-0LU22	**With solid shaft** • Actuating angle 10°	1 NO + 2 NC	⊖	**3SE5212-0LU22**		1	1 unit	41K
Enclosure width 40 mm according to EN 50041								
3SE5112-0LU21	**With hollow shaft** • Actuating angle 10°	1 NO + 2 NC	⊖	**3SE5112-0LU21**		1	1 unit	41K
3SE5112-0LU22	**With solid shaft** • Actuating angle 10°	1 NO + 2 NC	⊖	**3SE5112-0LU22**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

Spare parts

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Actuator heads						
3SE5000-0AU21	**With hollow shaft** • Actuating angle 10°	**3SE5000-0AU21**		1	1 unit	41K
3SE5000-0AU22	**With solid shaft** • Actuating angle 10°	**3SE5000-0AU22**		1	1 unit	41K

Note:
The respective actuators are included in the scope of supply for the complete units.

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Overview

The 3SE2283 hinge switches with integrated hinge are particularly suitable for use in doors and flaps of machines that must be closed to ensure the safety of operating personnel. Their thin profile and the compact design allow them to be directly mounted on a hinged protective cover and the stable frame.

Benefits

- Easy mounting through use of versions with integrated hinge
- Versions with small actuating angle of 4° or 8°
- Protection against personal injury provided by positively driven NC contacts according to IEC 60947-5-1
- Simultaneous shutdown and signaling by 1 NO + 2 NC contacts

Technical specifications

Type		3SE2283
Rated insulation voltage U_i	V	250
Conventional thermal current I_{th}	A	2.5
Rated operational current I_e		
• At AC-15, 120 V	A	4.2
• At AC-15, 250 V	A	2
• At DC-13, 24 V	A	1
Min. make-break capacity		> 5 V/1 mA
Short-circuit protection		
• Operational class gG	A	2
Mechanical endurance		> 1 x 10^6 operating cycles
Frequency of operation		1 200 operating cycles/h
Positive opening		2 mm after opening point
Enclosure material		Plastic
Degree of protection		IP65
Ambient temperature	°C	-25 ... +65
Shock resistance		30 *g*/8 ms
Resistance to vibrations		20 *g*/0 ... 200 Hz
Cable entry		2 x (M20 x 1.5)
Screw terminals		0.5 ... 1.5 mm^2/AWG 15

Selection and ordering data

3 contacts · Degree of protection IP65 · Cable entry 2 x (M20 x 1.5)

Version	Slow-action contacts		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
With integrated hinge							
3SE2283	Scope of supply includes additional hinge and fixing accessories						
• Aluminum hinge							
- 4° actuating angle	1 NO + 2 NC	➔	**3SE2283-0GA43**		1	1 unit	41K
	3 NC	➔	**3SE2283-6GA43**		1	1 unit	41K
- 8° actuating angle	1 NO + 2 NC	➔	**3SE2283-0GA53**		1	1 unit	41K
	3 NC	➔	**3SE2283-6GA53**		1	1 unit	41K
• High-grade steel hinge							
- 4° actuating angle	1 NO + 2 NC	➔	**3SE2283-0GA44**		1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories					
3SX3225	**Additional hinge** (Scope of supply includes fixing accessories)				
• Made of aluminum	**3SX3225**		1	1 unit	41K

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Enclosure width 31 mm according to EN 50047

Complete units

2 or 3 contacts · Degree of protection IP65 · Cable entry 1 × (M20 × 1.5) · With increased corrosion protection

Version	Contacts		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[1] · Enclosure width 31 mm							
 3SE5232-0LK21-1AY0	***Twist levers, 21 mm long, type A, according to EN 50047*** **With plastic roller 19 mm** • Snap-action contacts	1 NO + 2 NC	➔	**3SE5232-0LK21-1AY0**	1	1 unit	41K
 3SE5232-0LE10-1AY0	***Roller levers, type E, according to EN 50047*** **With plastic roller 13 mm** • Snap-action contacts	1 NO + 2 NC	➔	**3SE5232-0LE10-1AY0**	1	1 unit	41K
 3SE5232-0HK82-1AY0	***Rod actuators, according to EN 50047*** **With plastic rod, length 200 mm** • Snap-action contacts	1 NO + 1 NC		**3SE5232-0HK82-1AY0**	1	1 unit	41K
 3SE5232-0HR01-1AY0	***Spring rods[2], according to EN 50047*** **Length 142.5 mm, with plastic plunger 50 mm** • Snap-action contacts	1 NO + 1 NC		**3SE5232-0HR01-1AY0**	1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Popular versions.

2) Degree of protection IP65/IP67.

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Selection and ordering data

Enclosure width 54 mm

6 slow-action contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry 3 x (M20 x 1.5) · ISO 14119

	Tumbler[1]	Solenoid, rated operational voltage		Complete units Position monitoring: Actuators: 1 NO + 2 NC Solenoid: 1 NO + 2 NC Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V						
1 300 N locking force · Enclosure width 54 mm								
3SE5322-0SD21-1AY0	***Spring-actuated locks***							
	• With front auxiliary release	24 DC	⊖	**3SE5322-0SD21-1AY0**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Supplied without actuator. Please order separately.

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories						
3SE5000-0AV01	**Standard actuators** • Length 75.6 mm	**3SE5000-0AV01**		1	1 unit	41K
	High-grade steel actuators, standard[1]					
3SE5000-0AW51	• Length 75.6 mm	**3SE5000-0AW51**		1	1 unit	41K
3SE5000-0AW52	• With vertical fixing, length 53 mm	**3SE5000-0AW52**		1	1 unit	41K
3SE5000-0AW53	• With transverse fixing, length 47 mm	**3SE5000-0AW53**		1	1 unit	41K
	Universal radius actuators, heavy duty					
3SE5000-0AW57	• High-grade steel actuators[1], length 77 mm	**3SE5000-0AW57**		1	1 unit	41K

1) Suitable for extreme environmental conditions such as -40 °C.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Enclosure width 31 mm according to EN 50047

2 contacts · Degree of protection IP65 · Cable entry 1 × (M20 × 1.5) · With increased corrosion protection

Version	Contacts		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units · Enclosure width 31 mm							
 3SE5232-0HU21-1AY0							
Hinge switches, according to EN 50047							
With hollow shaft D = 8 mm, actuating angle 10°							
• Snap-action contacts	1 NO + 1 NC	➔	**3SE5232-0HU21-1AY0**		1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Annex K.

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Selection and ordering data

Enclosure width 31 mm according to EN 50047/50 mm

Complete units

2 or 3 contacts · Degree of protection IP65 (31 mm) or IP66/IP67 (50 mm) · With increased corrosion protection

Version	Contacts		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units[1] · Enclosure width 31 mm · Cable entry 1 x (M20 x 1.5)							
3SE5234-0CD03-1AJ1							
Roller plungers, type C, according to EN 50047							
With plastic roller 10 mm							
With M12 device plug, 4-pole (250 V, 4 A)[2]							
• Snap-action contacts	1 NO + 1 NC	⊖	**3SE5234-0CD03-1AJ1**		1	1 unit	41K
3SE5232-0CD10-1AJ0							
Roller plungers with central fixing, according to EN 50047							
• Snap-action contacts	1 NO + 1 NC	⊖	**3SE5232-0CD10-1AJ0**		1	1 unit	41K
3SE5232-0CK31-1AJ0							
Twist levers, type A, according to EN 50047							
With high-grade steel lever 21 mm and plastic roller 19 mm							
• Snap-action contacts	1 NO + 1 NC	⊖	**3SE5232-0CK31-1AJ0**		1	1 unit	41K
3SE5232-0CK62-1AJ0							
Twist levers, adjustable length, according to EN 50047							
With high-grade steel lever 100 mm, with grid hole and plastic roller 19 mm							
• Snap-action contacts	1 NO + 1 NC	⊖	**3SE5232-0CK62-1AJ0**		1	1 unit	41K
	1 NO + 2 NC	⊖	**3SE5232-0LK62-1AJ0**		1	1 unit	41K
Complete units[1] · Enclosure width 50 mm · Cable entry 2 x (M20 x 1.5) · Operating points according to EN 50047							
3SE5242-0HK21-1AJ0							
Twist levers							
With metal lever 21 mm and plastic roller 19 mm							
• Snap-action contacts, integrated[3]	1 NO + 1 NC	⊖	**3SE5242-0HK21-1AJ0**		1	1 unit	41K
3SE5242-0HK62-1AJ0							
Twist levers, adjustable length							
With high-grade steel lever 100 mm, with grid hole and plastic roller 19 mm							
• Snap-action contacts, integrated[3]	1 NO + 1 NC	⊖	**3SE5242-0HK62-1AJ0**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Popular versions.

2) For pin assignments, see page 12/12.

3) Subsequent replacement of contact blocks is not possible.

Note:

If the device you require is not available as a complete unit, see "Modular system", page 12/79.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Modular system

2 or 3 contacts · Degree of protection IP65 (31 mm) or IP66/IP67 (50 mm) · With increased corrosion protection

Version	Contacts		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Basic switches · Enclosure width 31 mm · Cable entry 1 x (M20 x 1.5)							
Rounded plungers[1], type B, according to EN 50047							
3SE5232-0CC05-1AJ0							
• Slow-action contacts	1 NO + 2 NC	⊖	**3SE5232-0KC05-1AJ0**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	⊖	**3SE5232-0CC05-1AJ0**		1	1 unit	41K
	1 NO + 2 NC	⊖	**3SE5232-0LC05-1AJ0**		1	1 unit	41K
Basic switches · Enclosure width 50 mm · Cable entry 2 x (M20 x 1.5)							
Rounded plungers[1], according to EN 50047							
3SE5242-0BC05-1AJ0							
• Slow-action contacts	1 NO + 1 NC	⊖	**3SE5242-0BC05-1AJ0**		1	1 unit	41K
• Snap-action contacts, integrated[2]	1 NO + 1 NC	⊖	**3SE5242-0HC05-1AJ0**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) For enclosures with widths of 31 and 50 mm, the basic switch is a complete unit with rounded plungers.

2) Subsequent replacement of contact blocks is not possible.

Note:

For the selection aid, see page 12/13.

Version	Diameter mm		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operating mechanisms							
Roller plungers, type C, according to EN 50047							
3SE5000-0AD03-1AJ0							
• Plastic roller	10	⊖	**3SE5000-0AD03-1AJ0**		1	1 unit	41K
Roller levers, type E, according to EN 50047							
• Metal lever, Plastic roller	13	⊖	**3SE5000-0AE10-1AJ0**		1	1 unit	41K
• High-grade steel lever, Plastic roller	13	⊖	**3SE5000-0AE12-1AJ0**		1	1 unit	41K
High-grade steel roller	13	⊖	**3SE5000-0AE13-1AJ0**		1	1 unit	41K
Angular roller levers							
3SE5000-0AF10-1AJ0							
• Metal lever, Plastic roller	13	⊖	**3SE5000-0AF10-1AJ0**		1	1 unit	41K
• High-grade steel lever, Plastic roller	13	⊖	**3SE5000-0AF12-1AJ0**		1	1 unit	41K
Twist actuators							
Twist actuators, for 31/50 mm, according to EN 50047							
3SE5000-0AK00-1AJ0							
• Switching right and/or left, adjustable	--	⊖	**3SE5000-0AK00-1AJ0**		1	1 unit	41K
Levers							
Twist levers 21 mm, straight, type A, according to EN 50047							
3SE5000-0AA21-1AJ0							
• Metal lever, Plastic roller	19	⊖	**3SE5000-0AA21-1AJ0**		1	1 unit	41K
• High-grade steel lever, Plastic roller	19	⊖	**3SE5000-0AA31-1AJ0**		1	1 unit	41K
High-grade steel roller	19	⊖	**3SE5000-0AA32-1AJ0**		1	1 unit	41K
Twist levers 100 mm, adjustable length, with grid hole							
3SE5000-0AA60-1AJ0							
• Metal lever, Plastic roller	19	⊖	**3SE5000-0AA60-1AJ0**		1	1 unit	41K
• High-grade steel lever, Plastic roller	19	⊖	**3SE5000-0AA62-1AJ0**		1	1 unit	41K

⊖ Positively driven actuator, necessary in safety circuits.

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Enclosure width 40 mm according to EN 50041

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 1 × (M20 × 1.5) · With increased corrosion protection

Version	Contacts		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Basic switches · Enclosure width 40 mm							
 3SE5132-0CA00-1AJ0							
Rounded plungers, according to EN 50041							
• Slow-action contacts	1 NO + 2 NC	➔	**3SE5132-0KA00-1AJ0**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	➔	**3SE5132-0CA00-1AJ0**		1	1 unit	41K
	1 NO + 2 NC	➔	**3SE5132-0LA00-1AJ0**		1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

Note:
For the selection aid, see page 12/13.

Version		Diameter mm		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operating mechanisms								
 3SE5000-0AC03-1AJ0								
Rounded plungers, type B, according to EN 50041								
• Plastic plunger, with 3 mm overtravel		10	➔	**3SE5000-0AC03-1AJ0**		1	1 unit	41K
 3SE5000-0AD05-1AJ0								
Roller plungers, type C, according to EN 50041								
• Plastic plungers	Plastic roller	13	➔	**3SE5000-0AD05-1AJ0**		1	1 unit	41K
 3SE5000-0AE05-1AJ0								
Roller levers								
• Metal levers with plastic base	Plastic roller	22	➔	**3SE5000-0AE05-1AJ0**		1	1 unit	41K
Twist actuators								
 3SE5000-0AH00-1AJ0								
Twist actuators, for 40/56/56 mm, XL, according to EN 50041								
• Switching right and/or left, adjustable		--	➔	**3SE5000-0AH00-1AJ0**		1	1 unit	41K
 3SE5000-0AA01-1AJ0								
Levers								
Twist levers 27 mm, offset, type A, according to EN 50041								
• Metal lever	Plastic roller	19	➔	**3SE5000-0AA01-1AJ0**		1	1 unit	41K
• High-grade steel lever	Plastic roller	19	➔	**3SE5000-0AA11-1AJ0**		1	1 unit	41K
 3SE5000-0AA60-1AJ0								
Twist levers 100 mm, adjustable length, with grid hole								
• Metal lever	Plastic roller	19	➔	**3SE5000-0AA60-1AJ0**		1	1 unit	41K
• High-grade steel lever	Plastic roller	19	➔	**3SE5000-0AA62-1AJ0**		1	1 unit	41K

➔ Positively driven actuator, necessary in safety circuits.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Selection and ordering data

Enclosure width 31 mm according to EN 50047

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 1 × (M20 × 1.5) · With increased corrosion protection

Version	Contacts		Modular system ◇ Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units · Enclosure width 31 mm							
Rounded plungers, type B, according to EN 50047							
• Slow-action contacts	1 NO + 2 NC	⊖	**3SE5212-0KC05-1AJ0**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	⊖	**3SE5212-0CC05-1AJ0**		1	1 unit	41K
	1 NO + 2 NC	⊖	**3SE5212-0LC05-1AJ0**		1	1 unit	41K
With M12 device plug, 5-pole (250 V, 4 A)[1)]							
• Snap-action contacts	1 NO + 1 NC	⊖	**3SE5214-0CC05-1AJ2**		1	1 unit	41K
Twist levers, type A, according to EN 50047							
With metal lever 21 mm and high-grade steel roller 19 mm, with twist lever operating mechanism with enclosure width 40 mm							
• Snap-action contacts	1 NO + 1 NC	⊖	**3SE5212-0CH22-1AJ0**		1	1 unit	41K

3SE5212-0CC05-1AJ0

3SE5214-0CC05-1AJ2

3SE5212-0CH22-1AJ0

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) For pin assignments, see page 12/12.

Note:

If the device you require is not available as a complete unit, see "Modular system", page 12/82.

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Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 1 × (M20 × 1.5) · With increased corrosion protection

Version	Contacts		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Basic switches · Enclosure width 31 mm							
Rounded plungers[1], according to EN 50047							
• Slow-action contacts	1 NO + 2 NC	⊖	**3SE5212-0KC05-1AJ0**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	⊖	**3SE5212-0CC05-1AJ0**		1	1 unit	41K
	1 NO + 2 NC	⊖	**3SE5212-0LC05-1AJ0**		1	1 unit	41K

3SE5212-0CC05-1AJ0

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) For enclosures with widths of 31 mm, the basic switch is a complete unit with rounded plungers.

Note:

For the selection aid, see page 12/13.

Version	Diameter		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm						
Operating mechanisms							
Roller plungers, type C, according to EN 50047							
• Plastic roller	10	⊖	**3SE5000-0AD03-1AJ0**		1	1 unit	41K
Roller levers, type E, according to EN 50047							
• Metal lever, Plastic roller	13	⊖	**3SE5000-0AE10-1AJ0**		1	1 unit	41K
• High-grade steel lever, Plastic roller	13	⊖	**3SE5000-0AE12-1AJ0**		1	1 unit	41K
• High-grade steel lever, High-grade steel roller	13	⊖	**3SE5000-0AE13-1AJ0**		1	1 unit	41K
Angular roller levers							
• Metal lever, Plastic roller	13	⊖	**3SE5000-0AF10-1AJ0**		1	1 unit	41K
• High-grade steel lever, Plastic roller	13	⊖	**3SE5000-0AF12-1AJ0**		1	1 unit	41K
Twist actuators							
Twist actuators, for 31/50 mm, according to EN 50047							
• Switching right and/or left, adjustable	--	⊖	**3SE5000-0AK00-1AJ0**		1	1 unit	41K
Levers							
Twist levers 21 mm, straight, type A, according to EN 50047							
• Metal lever, Plastic roller	19	⊖	**3SE5000-0AA21-1AJ0**		1	1 unit	41K
• High-grade steel lever, Plastic roller	19	⊖	**3SE5000-0AA31-1AJ0**		1	1 unit	41K
Twist levers 100 mm, adjustable length, with grid hole							
• Metal lever, Plastic roller	19	⊖	**3SE5000-0AA60-1AJ0**		1	1 unit	41K
• High-grade steel lever, Plastic roller	19	⊖	**3SE5000-0AA62-1AJ0**		1	1 unit	41K

3SE5000-0AD03-1AJ0

3SE5000-0AE10-1AJ0

3SE5000-0AF10-1AJ0

3SE5000-0AK00-1AJ0

3SE5000-0AA21-1AJ0

3SE5000-0AA60-1AJ0

⊖ Positively driven actuator, necessary in safety circuits.

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Enclosure width 40 mm according to EN 50041/56 mm, XL

Complete units

2, 3 or 4 contacts · Degree of protection IP66/IP67 · With increased corrosion protection

Version	Contacts	Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Complete units · Enclosure width 40 mm · Cable entry 1 x (M20 x 1.5)						
3SE5112-0CC02-1AJ0						
Rounded plungers, type B, according to EN 50041						
With high-grade steel plunger 10 mm, with 3 mm overtravel						
• Snap-action contacts	1 NO + 1 NC ➔	**3SE5112-0CC02-1AJ0**		1	1 unit	41K
3SE5112-0LD02-1AJ0						
Roller plungers, type C, according to EN 50041						
With high-grade steel plunger 13 mm, with 3 mm overtravel						
• Snap-action contacts	1 NO + 2 NC ➔	**3SE5112-0LD02-1AJ0**		1	1 unit	41K
3SE5112-0LH11-1AJ0						
Twist levers, type A, according to EN 50041						
With high-grade steel lever 27 mm and plastic roller 19 mm						
• Snap-action contacts	1 NO + 2 NC ➔	**3SE5112-0LH11-1AJ0**		1	1 unit	41K
3SE5112-0CH62-1AJ0						
Twist levers, adjustable length, according to EN 50041						
With high-grade steel lever 100 mm, with grid hole and plastic roller 19 mm						
• Snap-action contacts	1 NO + 1 NC ➔	**3SE5112-0CH62-1AJ0**		1	1 unit	41K
Complete units · Enclosure width 56 mm, XL · Cable entry 3 x (M20 x 1.5) · Operating points according to EN 50041						
3SE5162-0CH12-1AN5						
Twist levers						
With high-grade steel lever 27 mm and high-grade steel roller 19 mm						
• Snap-action contacts	2 × (1 NO + 1 NC) ➔	**3SE5162-0CH12-1AN5**		1	1 unit	41K
3SE5162-0CH60-1AJ0						
Twist levers, adjustable length						
With metal lever 100 mm, with grid holes and plastic roller 19 mm						
• Snap-action contacts	2 × (1 NO + 1 NC) ➔	**3SE5162-0CH60-1AJ0**		1	1 unit	41K
With high-grade steel lever 100 mm and high-grade steel roller 19 mm						
• Snap-action contacts	2 × (1 NO + 1 NC) ➔	**3SE5162-0CH63-1AN6**		1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Annex K or positively driven actuator, necessary in safety circuits.

Note:

If the device you require is not available as a complete unit, see "Modular system", page 12/84.

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Enclosure width 40 mm according to EN 50041/56 mm/56 mm, XL

Modular system

2, 3 or 4 contacts · Degree of protection IP66/IP67 · With increased corrosion protection

Version	Contacts		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Basic switches · Enclosure width 40 mm · Cable entry 1 x (M20 x 1.5)							
Rounded plungers, according to EN 50041							
• Slow-action contacts	1 NO + 2 NC	➔	**3SE5112-0KA00-1AJ0**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	➔	**3SE5112-0CA00-1AJ0**		1	1 unit	41K
	1 NO + 2 NC	➔	**3SE5112-0LA00-1AJ0**		1	1 unit	41K
Basic switches · Enclosure width 56 mm · Cable entry 3 x (M20 x 1.5)							
Rounded plungers, operating points according to EN 50041							
• Slow-action contacts	1 NO + 2 NC	➔	**3SE5122-0KA00-1AJ0**		1	1 unit	41K
• Snap-action contacts	1 NO + 1 NC	➔	**3SE5122-0CA00-1AJ0**		1	1 unit	41K
	1 NO + 2 NC	➔	**3SE5122-0LA00-1AJ0**		1	1 unit	41K
Basic switches · Enclosure width 56 mm, XL · Cable entry 3 x (M20 x 1.5)							
Rounded plungers, operating points according to EN 50041							
• Slow-action contacts	2 × (1 NO + 1 NC)	➔	**3SE5162-0BA00-1AJ0**		1	1 unit	41K
• Snap-action contacts	2 × (1 NO + 1 NC)	➔	**3SE5162-0CA00-1AJ0**		1	1 unit	41K

3SE5112-0CA00-1AJ0

3SE5122-0CA00-1AJ0

3SE5162-0BA00-1AJ0

➔ Positive opening according to IEC 60947-5-1, Annex K or positively driven actuator, necessary in safety circuits.

Note:

For the selection aid, see page 12/13.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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	Version		Diameter mm		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operating mechanisms									
3SE5000-0AC02-1AJ0	**Rounded plungers, type B, according to EN 50041**								
	• High-grade steel plunger, with 3 mm overtravel		10	➔	**3SE5000-0AC02-1AJ0**		1	1 unit	41K
3SE5000-0AD02-1AJ0	**Roller plungers, type C, according to EN 50041**								
	• High-grade steel roller, with 3 mm overtravel		10	➔	**3SE5000-0AD02-1AJ0**		1	1 unit	41K
3SE5000-0AE01-1AJ0	**Roller levers**								
	• Metal lever	Plastic roller	13	➔	**3SE5000-0AE01-1AJ0**		1	1 unit	41K
	• High-grade steel lever	Plastic roller	13	➔	**3SE5000-0AE03-1AJ0**		1	1 unit	41K
3SE5000-0AF01-1AJ0	**Angular roller levers**								
	• Metal lever	Plastic roller	13	➔	**3SE5000-0AF01-1AJ0**		1	1 unit	41K
	• High-grade steel lever	Plastic roller	13	➔	**3SE5000-0AF03-1AJ0**		1	1 unit	41K
Twist actuators									
3SE5000-0AH00-1AJ0	**Twist actuators, for 40/56/56 mm, XL, according to EN 50041**								
	• Switching right and/or left, adjustable		--	➔	**3SE5000-0AH00-1AJ0**		1	1 unit	41K
	Levers								
3SE5000-0AA01-1AJ0	**Twist levers 27 mm, offset, type A, according to EN 50041**								
	• Metal lever	Plastic roller	19	➔	**3SE5000-0AA01-1AJ0**		1	1 unit	41K
	• High-grade steel lever	Plastic roller	19	➔	**3SE5000-0AA11-1AJ0**		1	1 unit	41K
3SE5000-0AA60-1AJ0	**Twist levers 100 mm, adjustable length, with grid hole**								
	• Metal lever	Plastic roller	19	➔	**3SE5000-0AA60-1AJ0**		1	1 unit	41K
	• High-grade steel lever	Plastic roller	19	➔	**3SE5000-0AA62-1AJ0**		1	1 unit	41K

➔ Positively driven actuator, necessary in safety circuits.

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Selection and ordering data

Enclosure width 31 mm according to EN 50047

Complete units

2 contacts · 5 directions of approach · Degree of protection IP65 · Cable entry 1 × (M20 × 1.5) · With increased corrosion protection

Version	Contacts		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Plastic enclosures · Enclosure width 31 mm according to EN 50047							
 3SE5232-0RV40-1AJ0							
• Slow-action contacts	1 NO + 1 NC	⊕	**3SE5232-0RV40-1AJ0**		1	1 unit	41K
Metal enclosures · Enclosure width 40 mm according to EN 50041							
 3SE5114-0QV40-1AJ4							
With M12 device plug, 5-pole (125 V, 4 A)[1)]							
• Slow-action contacts	2 NC	⊕	**3SE5114-0QV10-1AJ4**		1	1 unit	41K

⊕ Positive opening according to IEC 60947-5-1, Annex K.

1) For pin assignments, see page 12/12.

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories					
 3SE5000-0AW11					
Standard actuators					
• With transverse fixing, plastic, length 40 mm	**3SE5000-0AW11**		1	1 unit	41K
High-grade steel actuators[1)]					
 3SE5000-0AW51					
• Length 75.6 mm	**3SE5000-0AW51**		1	1 unit	41K
 3SE5000-0AW52					
• With vertical fixing, length 53 mm	**3SE5000-0AW52**		1	1 unit	41K
 3SE5000-0AW53					
• With transverse fixing, length 47 mm	**3SE5000-0AW53**		1	1 unit	41K
Universal radius actuators, heavy duty					
 3SE5000-0AW57					
• High-grade steel actuators[1)], length 77 mm	**3SE5000-0AW57**		1	1 unit	41K

1) Suitable for extreme environmental conditions such as -40 °C.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Enclosure width 54 mm

6 slow-action contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry 3 x (M20 x 1.5)

	Tumbler[1]	Solenoid, rated operational voltage		Complete units Position monitoring: Actuators: 1 NO + 2 NC Solenoid: 1 NO + 2 NC Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V						
1 300 N locking force · Enclosure width 54 mm according to ISO 14119								
3SE5322-0SL21-1AJ0	**Spring-actuated locks**							
	• With escape release from the front and emergency release from the back	24 DC	⊖	**3SE5322-0SL21-1AJ0**		1	1 unit	41K
	• With auxiliary release			**3SE5322-0SD21-1AJ0**		1	1 unit	41K
	• With escape release from the back and auxiliary release from the front, head rotated 180°			**3SE5322-0SG21-1AM5**		1	1 unit	41K

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Supplied without actuator. Please order separately.

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories						
3SE5000-0AV01	**Standard actuators**					
	• Length 75.6 mm	**3SE5000-0AV01**		1	1 unit	41K
	High-grade steel actuators[1]					
3SE5000-0AW51	• Length 75.6 mm	**3SE5000-0AW51**		1	1 unit	41K
3SE5000-0AW52	• With vertical fixing, length 53 mm	**3SE5000-0AW52**		1	1 unit	41K
3SE5000-0AW53	• With transverse fixing, length 47 mm	**3SE5000-0AW53**		1	1 unit	41K
3SE5000-0AW57	**Universal radius actuators, heavy duty**					
	• High-grade steel actuators[1], length 77 mm	**3SE5000-0AW57**		1	1 unit	41K

1) Suitable for extreme environmental conditions such as -40 °C.

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Safety cabling in the field with IP67

Overview

SIRIUS sensors and SIMATIC ET 200

The new system comprising SIRIUS sensors and fail-safe SIMATIC ET 200 provides a safe M12 connection method for industry.

The SIRIUS sensors can be connected in the field via the fail-safe field modules of the SIMATIC ET 200eco PN and SIMATIC ET 200AL.

The signals are forwarded to the higher-level controller via PROFINET/PROFIsafe either by means of a direct connection of the SIMATIC ET 200eco PN or, in the case of SIMATIC ET 200AL, via an interface module.

Configurator, see www.siemens.com/SIMATIC-ET200-safety-sensor-configurator.

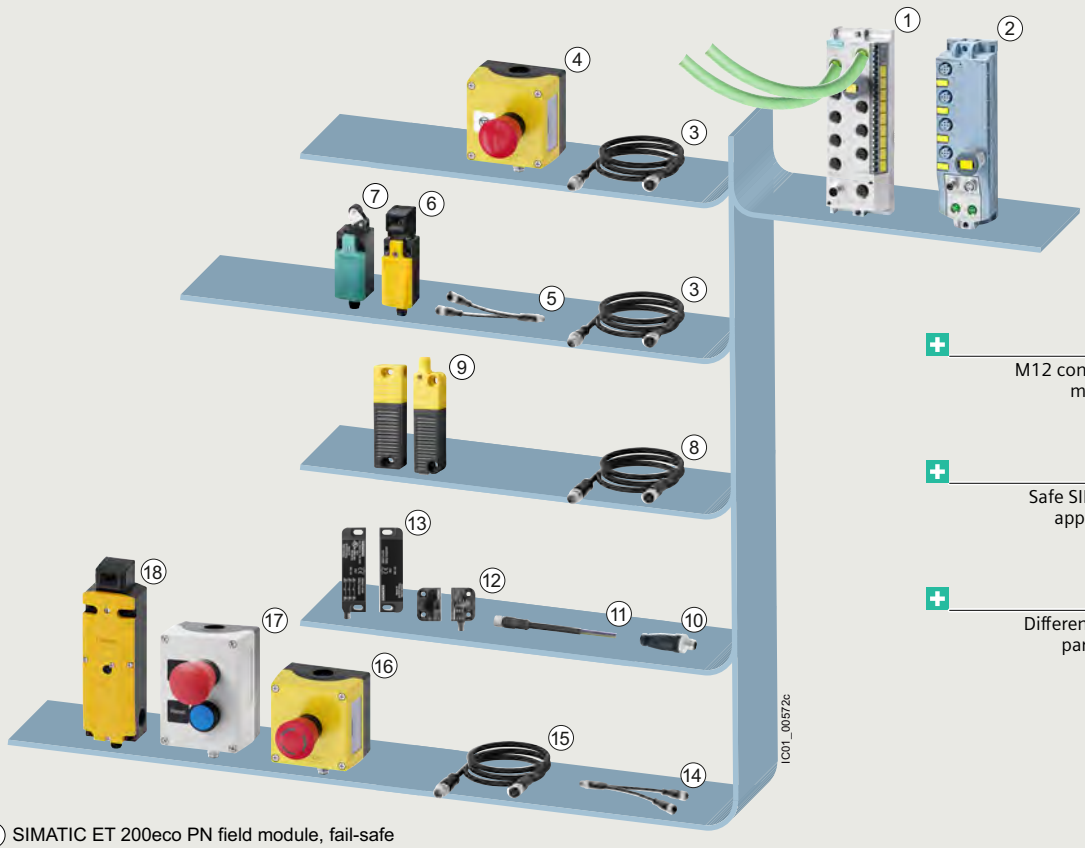
For more information, see also page 12/10.

Examples

- SIRIUS ACT enclosure, EMERGENCY STOP, with M12 plug, 5-pole and 8-pole
- Position switch, with M12 plug, 5-pole
- RFID safety switch, with M12 plug, 8-pole, and magnetically operated switch, 4-pole or 6-pole
- Safety switch with tumbler, with M12 plug, 8-pole

Advantages

- Identical pin assignment on the modules, connecting cables and sensors enables simple and fast connection and prevents connection errors and their consequences.
- Safe system technology in the field from the sensor to the field module



M12 connecting cables with market-compliant pin assignment

Safe SIRIUS sensors for the appropriate connection

Different cable lengths also partially preassembled

(1) SIMATIC ET 200eco PN field module, fail-safe 6ES7146-6FF00-0AB0

(2) SIMATIC ET 200AL field module, fail-safe 6ES7146-5FF00-0AB0

(3) Connecting cables, 5-pole, 3SX5601-3SV15

(4) SIRIUS ACT enclosure, EMERGENCY STOP, with M12 plug, 5-pole, 3SU1801-0NH00-4NB2

(5) Y-cable, 5-pole to 2 x 5-pole, 6ES7194-6KB00-0XA0

(6) Safety switch with separate actuator, without tumbler, with M12 plug, 5-pole, 3SE5114/3SE5234

(7) Position switch, with M12 plug, 5-pole, 3SE5114/3SE5234

(8) Adapter cable, with M12 socket, 8-pole and M12 plug, 5-pole, 3SX5601-3SV00-1AK3

(9) Non-contact RFID safety switches, 8-pole, 3SE63

(10) M12 plug, 5-pole, 3RK1902-4BA00-5AA0

(11) Connecting cable with open end, 6-pole or 4-pole, 3SX5601-.GA05

(12) Magnetically operated switches, 6-pole, 3SE66/3SE67

(13) Magnetically operated switches, 4-pole, 3SE66/3SE67

(14) Y-cable, 8-pole to 2 x 5-pole, 6ES7194-6KC00-0XA0

(15) Connecting cable, 8-pole, 3SX5601-3SV18

(16) SIRIUS ACT enclosure, EMERGENCY STOP, illuminated, with M12 plug, 8-pole, 3SU1801-0NV00-4SA2

(17) SIRIUS ACT enclosure, EMERGENCY STOP and pushbutton, with M12 plug, 8-pole, 3SU1802-0NE00-4SB1

(18) Safety switch with tumbler, with M12 plug, 8-pole, 3SE5324

Safety field system composed of SIRIUS sensors and SIMATIC ET 200 with the M12 connection method

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Sensors with M12 plugs	Type	SIL	Connection accessories M12 method, A-coded	Type	Cable length
SIRIUS ACT enclosure, EMERGENCY STOP					
Enclosure plastic, yellow, with 1 command point, A = EMERGENCY STOP mushroom pushbutton, red, M12 plug (5-pole)	3SU1801-0NH00-4NB2 (see page 13/105)	3	**Connecting cable** with M12 socket, 5-pole and M12 plug, 5-pole	3SX5601-3SV15 (see page 12/46)	1 m
			or		
			Connecting cable with M12 socket, 5-pole, open end	3SX5601-3SB55 (see page 12/46)	5 m
			and		
			M12 plug 5-pole, straight, separate item	3RK1902-4BA00-5AA0 (see page 12/47)	--
Mechanical safety switches					
Plastic 31 mm					
Basic switch with rounded plunger for modular design with M12 plug, 5-pole + **actuator head** (order separately), e.g. roller lever 3SE5000-0AE10	3SE5234-0LC05-1AE2 (basic switches, see page 12/18, actuator heads, see page 12/19)	1			
Position switch, roller plunger with M12 plug, 5-pole	3SE5234-0LD03-1AE2 (see page 12/16)	1			
Position switch, roller lever with M12 plug, 5-pole	3SE5234-0LE11-1AE2 (see page 12/16)	2			
Safety switch with separate actuator without tumbler with M12 plug, 5-pole + **actuator** (order separately), e.g. standard 3SE5000-0AV01	3SE5234-0QV40-1AE2 (see page 12/53) Actuator (see page 12/58)	2	**Connecting cable** with M12 socket, 5-pole and M12 plug, 5-pole	3SX5601-3SV15 (see page 12/46)	1 m
			or		
Metal, 40 mm			**Connecting cable** with M12 socket, 5-pole, open end	3SX5601-3SB55 (see page 12/46)	5 m
			and		
			M12 plug 5-pole, straight, separate item	3RK1902-4BA00-5AA0 (see page 12/47)	--
Basic switch for modular design with M12 plug, 5-pole + **actuator head** (order separately), e.g. roller plunger 3SE5000-0AD02	3SE5114-0LA00-1AE3 (basic switches, see page 12/34, actuator heads, see page 12/35)	1			
Position switch, roller plunger with M12 plug, 5-pole	3SE5114-0LD02-1AE3 (see page 12/31)	1			
Position switch, twist lever with M12 plug, 5-pole	3SE5114-0LH01-1AE3 (see page 12/32)	1			
Position switch, plain plunger with M12 plug, 5-pole	3SE5114-0LB01-1AE3 (see page 12/31)	1			
Safety switch with separate actuator without tumbler with M12 plug, 5-pole + **actuator** (order separately), e.g. standard 3SE5000-0AV01	3SE5114-0QV10-1AE3 (see page 12/57) Actuator (see page 12/58)	2			
Combinations (examples)					
Position switch + safety switch with separate actuator, without tumbler **Actuator** (order separately), e.g. standard 3SE5000-0AV01	3SE5114-0LH01-1AE3 (see page 12/32)+ 3SE5234-0QV40-1AE2 (see page 12/53) Actuator (see page 12/58)	3	**ET 200 Y-cable for connecting 2 x 1-channel sensors** with M12 plug, 5-pole on 2 x M12 sockets, 5-pole	6ES7194-6KB00-0XA0 (see page 12/46)	0.2 m
			Extend if necessary with		
2 x safety switches with separate actuator, without tumbler **Actuator** (order separately), e.g. standard 3SE5000-0AV01	3SE5234-0QV40-1AE2, 3SE5234-0QV40-1AE2 (see page 12/53) Actuator (see page 12/58)	3	**Connecting cable** with M12 socket, 5-pole and M12 plug, 5-pole	3SX5601-3SV15 (see page 12/46)	1 m
			or		
			Connecting cable with M12 socket, 5-pole, open end	3SX5601-3SB55 (see page 12/46)	5 m
			and		
2 x position switches	3SE5114-0LH01-1AE3 (see page 12/32) 3SE5234-0LE11-1AE2 (see page 12/16)	3	**M12 plug** 5-pole, straight, separate item	3RK1902-4BA00-5AA0 (see page 12/47)	--

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Safety cabling in the field with IP67

Sensors with M12 plugs		Type	SIL	Connection accessories M12 method, A-coded		Type	Cable length
Non-contact safety switches (examples)							
	RFID safety switch family-coded	3SE6315-0BB01 (see page 12/121)	3				
	+ actuator	3SE6310-0BC01 (see page 12/121)					
	RFID safety switch, individually coded, programmable several times	3SE6315-0BB02 (see page 12/121)	3		**Adapter cable** with M12 socket, 8-pole on M12 plug, 5-pole	3SX5601-3SV00-1AK3 (see page 12/121)	0.5 m
	+ actuator	3SE6310-0BC01 (see page 12/121)			**Extend if necessary with**		
	RFID safety switch, individually coded, programmable once	3SE6315-0BB03 (see page 12/121)	3		**Connecting cable** with M12 socket, 5-pole and M12 plug, 5-pole	3SX5601-3SV15 (see page 12/46)	1 m
	+ actuator	3SE6310-0BC01 (see page 12/121)					
	Magnetically operated switch (cable 3 m)	3SE6605-2BA (see page 12/116)	3		**M12 plug** 5-pole, straight, separate item	3RK1902-4BA00-5AA0 (see page 12/47)	--
	+ switching solenoid (25 x 88 mm), coded	3SE6704-2BA (see page 12/116)			**or**		
					M12 plug 5-pole, angled, separate item	3RK1902-4DA00-5AA0 (see page 12/47)	--
	Magnetically operated switch (25 x 88 mm), M8 plug, 4-pole + LED, door hinge **left**, 2 NC	3SE6614-4CA01 (see page 12/116)	3		**Connecting cable** with M8 socket, 4-pole, open end	3SX5601-3GA05 (see page 12/46)	5 m
	+ switching solenoid (25 x 88 mm), coded	3SE6714-2CA (see page 12/116)			**and**		
	Magnetically operated switch (25 x 88 mm), M8 plug, 4-pole + LED, door hinge **right**, 2 NC	3SE6624-4CA01 (see page 12/117)	3		**M12 plug** 5-pole, straight, separate item	3RK1902-4BA00-5AA0 (see page 12/47)	--
	+ switching solenoid (25 x 88 mm), coded	3SE6714-2CA (see page 12/116)			**or**		
					M12 plug 5-pole, angled, separate item	3RK1902-4DA00-5AA0 (see page 12/47)	--
	Magnetically operated switch (25 x 88 mm), 8 mm Ø latching connection, plug, 6-pole, door hinge **left**, 2 NC + 1 NC signaling contact	3SE6617-2CA01 (see page 12/116)	3				
	+ switching solenoid (25 x 88 mm), coded	3SE6714-2CA (see page 12/116)					
	Magnetically operated switch (25 x 88 mm), 8 mm Ø latching connection, plug, 6-pole, door hinge **right**, 2 NC + 1 NC signaling contact	3SE6627-2CA01 (see page 12/117)	3		**Connecting cable** with socket 8 mm, latching connection, 6-pole, open end	3SX5601-4GA05 (see page 12/46)	5 m
	+ switching solenoid (25 x 88 mm), coded	3SE6714-2CA (see page 12/116)			**and**		
					M12 plug 5-pole, straight, separate item	3RK1902-4BA00-5AA0 (see page 12/47)	--
	Magnetically operated switch (26 x 36 mm), 8 mm Ø latching connection, plug, 6-pole, door hinge **left**, 2 NC + 1 NC signaling contact	3SE6617-3CA01 (see page 12/116)	3		**or**		
	+ switching solenoid (26 x 36 mm), coded	3SE6714-3CA (see page 12/116)			**M12 plug** 5-pole, angled, separate item	3RK1902-4DA00-5AA0 (see page 12/47)	--
	Magnetically operated switch (26 x 36 mm), 8 mm Ø latching connection, plug, 6-pole, door hinge **right**, 2 NC + 1 NC signaling contact	3SE6627-3CA01 (see page 12/117)	3				
	+ switching solenoid (26 x 36 mm), coded	3SE6714-3CA (see page 12/116)					

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Sensors with M12 plugs		Type	SIL	Connection accessories M12 method, A-coded		Type	Cable length
Mechanical safety switches with tumbler							
	Safety switch with tumbler, with solenoid monitoring, with auxiliary release M12 plug, 8-pole, monitoring 1 x door + 1 x interlocking, connection to an F-DI input and an F-DQ output via a Y-cable	3SE5324-0SD21-1AE4 (see page 12/65)	2		**Connecting cable** with M12 socket, 8-pole and M12 plug, 8-pole	3SX5601-3SV18 (see page 12/69)	1 m
					and		
					ET 200 Y-cable for connecting 1 x 2-channel sensor with M12 socket, 8-pole on 2 x M12 plugs, 5-pole	6ES7194-6KC00-0XA0 (see page 12/69)	0.2 m
	+ actuator (order separately), e.g. standard 3SE5000-0AV01, high-grade steel 3SE5000-0AW51	Actuators (see page 12/58)			**or**		
					Connecting cables with M12 socket, 8-pole, straight, open end	3SX5601-2GA03 (see page 12/69)	3 m
						3SX5601-2GA05 (see page 12/69)	5 m
						3SX5601-2GA10 (see page 12/69)	10 m
						3SX5601-2GA15 (see page 12/69)	15 m
					and		
					M12 plug 8-pole, straight	6GT2090-0BE00 (see page 12/69)	--
					and		
	Safety switch with tumbler, with solenoid monitoring, with escape release from the back and auxiliary release with lock from the front M12 plug, 8-pole, monitoring 1 x door + 1 x interlocking, connection to an F-DI input and an F-DQ output via a Y-cable	3SE5324-0SH21-1AE4 (see page 12/65)	2		**ET 200 Y-cable for connecting 1 x 2-channel sensor** with M12 socket, 8-pole on 2 x M12 plugs, 5-pole	6ES7194-6KC00-0XA0 (see page 12/69)	0.2 m
					or		
	+ actuator (order separately), e.g. standard 3SE5000-0AV01, high-grade steel 3SE5000-0AW51	Actuators (see page 12/58)			**Connecting cables** with M12 socket, 8-pole, straight, open end	3SX5601-2GA03 (see page 12/69)	3 m
						3SX5601-2GA05 (see page 12/69)	5 m
						3SX5601-2GA10 (see page 12/69)	10 m
						3SX5601-2GA15 (see page 12/69)	15 m
					and		
	Safety switch with tumbler, without solenoid monitoring, with auxiliary release M12 plug, 8-pole, monitoring 2 x door + 0 x interlocking, connection to an F-DI input and an F-DQ output via a Y-cable	3SE5324-0SD21-1AE5 (see page 12/65)	2		**2 x M12 plugs** 5-pole, straight, separate item	3RK1902-4BA00-5AA0 (see page 12/47)	--
					or		
	+ actuator (order separately), e.g. standard 3SE5000-0AV01, high-grade steel 3SE5000-0AW51	Actuators (see page 12/58)			**2 x M12 plugs** 5-pole, angled, separate item	3RK1902-4DA00-5AA0 (see page 12/47)	--

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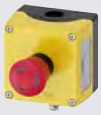
Safety cabling in the field with IP67

Sensors with M12 plugs		Type	SIL	Connection accessories M12 method, A-coded		Type	Cable length
Non-contact RFID safety switches with tumbler							
	RFID safety switch with tumbler, for process protection (see Notes on page 12/125), M12 plug 8-pole, open-circuit principle, family-coded, connection to an F-DI input and an F-DQ output via a Y-cable	3SE6415-1AB01 (see page 12/127)	2		**Connecting cables** with M12 socket, 8-pole, straight, open end	3SX5601-2GA03 (see page 12/128)	3 m
						3SX5601-2GA05 (see page 12/128)	5 m
						3SX5601-2GA10 (see page 12/128)	10 m
						3SX5601-2GA15 (see page 12/128)	15 m
					and		
	+ RFID actuator (separate ordering), 3SE6410-1AC01	Actuator (see page 12/127)			**2 x M12 plugs** 5-pole, straight, separate item	3RK1902-4BA00-5AA0 (see page 12/128)	--
					or		
					2 x M12 plugs 5-pole, angled, separate item	3RK1902-4DA00-5AA0 (see page 12/128)	--
SIRIUS ACT enclosures							
	**Enclosure** plastic, yellow, with 1 command point, A = EMERGENCY STOP mushroom pushbutton, red, M12 plug (8-pole), connection to an F-DI input and an F-DQ output via a Y-cable	3SU1801-0NV00-4SA2 (see page 13/105)	3		**Connecting cable** with M12 socket, 8-pole and M12 plug, 8-pole	3SX5601-3SV18 (see page 12/69)	1 m
					and		
					ET 200 Y-cable for connecting 1 x 2-channel sensor with M12 socket, 8-pole on 2 x M12 plugs, 5-pole	6ES7194-6KC00-0XA0 (see page 12/69)	0.2 m
					or		
					Connecting cables with M12 socket, 8-pole, straight, open end	3SX5601-2GA03 (see page 12/69)	3 m
						3SX5601-2GA05 (see page 12/69)	5 m
						3SX5601-2GA10 (see page 12/69)	10 m
						3SX5601-2GA15 (see page 12/69)	15 m
					and		
	Enclosure plastic, gray, with 2 command points, B = EMERGENCY STOP mushroom pushbutton, red, A = pushbutton, blue, M12 plug (8-pole), two connections to two F-DI inputs via a Y-cable	3SU1802-0NE00-4SB1 (see page 13/105)	3		**M12 plug** 8-pole, straight	6GT2090-0BE00 (see page 12/69)	--
					and		
					ET 200 Y-cable for connecting 1 x 2-channel sensor with M12 socket, 8-pole on 2 x M12 plugs, 5-pole	6ES7194-6KC00-0XA0 (see page 12/69)	0.2 m

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Overview

More information
Homepage, see www.siemens.com/sirius-position-switches
Industry Mall, see www.siemens.com/product?3SF
Configurator, see www.siemens.com/sirius/configurators
Configuration Manual, see https://support.industry.siemens.com/cs/ww/en/view/43920150

The 3SF1 position switches with safety-related communication can be directly connected using the AS-Interface bus system. The safety functions no longer have to be wired up conventionally.

With the 3SF1 position switches the ASIsafe electronics are integrated in the switch enclosure.

Examples of selection options in the modular system

Modular system

The position switches of the 3SF11.4 and 3SF12.4 series are designed as a modular system comprising different versions of the basic switch and an actuator which must be ordered separately. Thanks to the modular design of the switch the end users can select the right solution for their application from numerous versions and install it themselves in a very short time.

Design

The 3SF1 switches are available in four different enclosure sizes:

- Plastic and metal enclosures according to EN 50047, 31 mm wide, with M12 device plug
- Metal enclosures according to EN 50041, 40 mm wide, with M12 device plug
- Plastic enclosures, 50 mm wide, with M12 device plug and M12 socket
- Metal enclosures, 56 mm wide, with M12 device plug and M12 socket

Display

The switches have a status display with three LEDs:

- LED 1 (yellow): F-IN1
- LED 2 (yellow): F-IN2
- LED 3 (green/red): AS-i/FAULT

Connection

Connection to the AS-Interface is by means of a 4-pole M12 device plug (plastic version) connected to the yellow AS-Interface bus cable.

The wide enclosures (50 or 56 mm) also have an M12 socket for connecting a second position switch. In this way, SIL 3 according to IEC 62061/IEC 61508 or PL e according to ISO 13849-1 is reached.

Benefits

The 3SF1 safety switches provide:

- ASIsafe electronics integrated in the enclosure, with low power consumption < 60 mA
- An extensive range of actuators
- Status display with three LEDs
- Can be integrated easily via TIA Portal

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Application

With the standard position switches, mechanical positions of moving machine parts are converted into electrical signals. Through their modular and uniform design and large number of variants, the devices can comply with practically all requirements in industry.

Devices are available with enclosure versions to suit the particular ambient conditions. Different control tasks can be performed with the contact blocks best suited for the particular purpose. And many different actuator variants are available to match the mechanical configuration of the moving machine parts. Dimensions, fixing points and characteristics are largely in accordance with the EN 50041 or EN 50047 standards.

The devices are suitable for use in any climate.

Standards

The switches comply with IEC 60947-1 (Low-Voltage Switchgear and Controlgear, General) and IEC 60947-5-1 (Electromechanical Control Circuit Devices).

The mechanical design of the switches corresponds to the requirements of the fail-safe principle according to ISO 14119.

Approvals

AS-Interface according to IEC 62026-2

The 3SF1 position switches are approved according to UL 508, UL 50 and UL 746-C.

Safety circuits

Standard IEC 60947-5-1 requires positive opening of the NC contacts. In other words, for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked according to the standard IEC 60947-5-1 with the symbol ➔.

With a 3SF1 safety switch with ➔, SIL 2 according to IEC 62061/IEC 61508 or PL c according to ISO 13849-1 can be attained if the corresponding fail-safe evaluation units are selected from the ASIsafe program and correctly installed.

If a second 3SF1 safety switch with ➔ is used, SIL 3/PL e can be attained.

Evaluation of safety functions

Safety Evaluation in the TIA Selection Tool

The safety evaluation for the standards IEC 62061 and ISO 13849-1 is performed quickly and easily, directly in the TIA Selection Tool. In addition to the fast and safe calculation of machine safety functions – from the definition of the system structure to the selection of components – this enables shared data management during all project phases. Take the next step in the digital design of machinery and equipment with Safety Evaluation in the TIA Selection Tool.

In addition, the functionalities of the proven Safety Evaluation Tool are still available. It determines the achieved safety integrity (SIL/PL) step-by-step. You receive the results as a standards-compliant report that can be integrated in the documentation as proof of safety.

For more information, see www.siemens.com/safety-evaluation.

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Technical specifications

Type		3SF11.., 3SF12..
General data		
Standards		IEC 60947-5-1, ISO 14119
According to AS-Interface specification		
• I/O configuration/ID configuration		0/B
• ID1 code/ID2 code (hex)		F/F
• Power consumption, overall	mA	≤ 60
Inputs		
• Low signal range		Contact open
• High signal range		Contact closed, I_{in} dynamic (I_{peak} ≥ 5 mA)
Status display		Green/red dual LED
Rated impulse withstand voltage U_{imp}	kV	0.6
EMC strength		
• IEC 61000-1-2	kV	4
• IEC 61000-4-3	V/m	10
• IEC 61000-4-4 (A/B)	kV	1/2
Mechanical endurance		
• Basic switch		15 x 10^6 operating cycles
• With separate actuator, 3SF1...-..V..		1 x 10^6 operating cycles
PFH value		
Probability of failure upon request of the safety function, with 1 actuation per hour and B10 = 5 x 10^6		
• Basic switch	1/h	4 x 10^{-9}
• With separate actuator, 3SF1...-..V..	1/h	2 x 10^{-9}
• Hinge switch, 3SF1...-..U..	1/h	2 x 10^{-9}
Shock resistance according to IEC 60068-2-27		30 *g*/11 ms

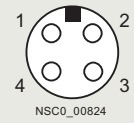
Type		3SF1234	3SF1134	3SF1244	3SF1214	3SF1114	3SF1124
Enclosure							
Enclosure							
• Material		Ultramid A3X2G7			Zinc die-casting GD-ZnAl4Cu1		
• Width	mm	31	40	50	31	40	56
• Dimensions according to EN		EN 50047	EN 50041	--	EN 50047	EN 50041	--
Degree of protection according to IEC 60529		IP65	IP66/IP67				
Ambient temperature							
• During operation	°C	-25 ... +60					
• Storage, transport	°C	-40 ... +80					
Mounting position		Any					

Pin assignments

M12 device plug, 4-pole

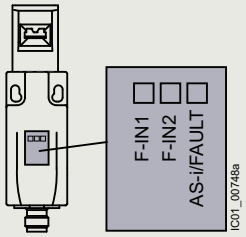
1 ASi +
2 Not assigned
3 ASi –
4 Not assigned

M12 socket, 4-pole



1 Channel 2
2 Channel 2
3 Not assigned
4 Not assigned

LED displays



3SF1 safety switches with AS-i and LED status displays

Status display (operating state)

LED	No voltage on AS-Interface chip	Communication OK	Communication failed	Slave has address "0"
AS-i/Fault (GN/RD/YE)				

Safe inputs

LED	Not actuated	Actuated		
F-IN1 (YE)			--	--
F-IN2 (YE)			--	--

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Selection and ordering data

Modular system

For the ASIsafe version of the position switch, the basic switch and actuator must be ordered separately.

1 or 2 contacts · 3 LEDs · Degree of protection IP65 (31 mm) or IP66/IP67 (50 mm) · M12 device plug

Version	Contacts	LEDs		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Basic switches · Enclosure width 31 mm according to EN 50047 · Degree of protection IP65								
 3SF1234-1KC05-1BA1								
***Rounded plungers*[1)]**								
With M12 device plug, 4-pole								
Channel 1 on NC contact, channel 2 on NC contact								
• Slow-action contacts	2 NC	24 V DC	➔	**3SF1234-1KC05-1BA1**		1	1 unit	42A
• Snap-action contacts	2 NC	24 V DC	➔	**3SF1234-1LC05-1BA1**		1	1 unit	42A
Basic switches · Enclosure width 50 mm · Degree of protection IP66/IP67 · Operating points according to EN 50047								
 3SF1244-1KC05-1BA2								
***Rounded plungers*[1)]**								
With M12 device plug, 4-pole								
Channel 1 on NC contact, channel 2 on M12 socket, right								
• Slow-action contacts	1 NC	24 V DC	➔	**3SF1244-1KC05-1BA2**		1	1 unit	42A
• Snap-action contacts	1 NC	24 V DC	➔	**3SF1244-1LC05-1BA2**		1	1 unit	42A

➔ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, for use in safety circuits.

1) For enclosures with widths of 31 mm and 50 mm, the basic switch is a complete unit with rounded plungers.

Note:

For the selection aid, see page 12/13.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Version		Roller diameter		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			mm						
Operating mechanisms									
3SE5000-0AB01	**Plain plungers**								
	• High-grade steel plungers		8.5	➔	**3SE5000-0AB01**		1	1 unit	41K
3SE5000-0AD03	**Roller plungers, type C, according to EN 50047**								
	• Plastic roller		10	➔	**3SE5000-0AD03**		1	1 unit	41K
	• High-grade steel roller		10	➔	**3SE5000-0AD04**		1	1 unit	41K
3SE5000-0AD10	**Roller plungers with central fixing**								
	• Plastic roller		10	➔	**3SE5000-0AD10**		1	1 unit	41K
	• High-grade steel roller		10	➔	**3SE5000-0AD11**		1	1 unit	41K
3SE5000-0AE10	**Roller levers, type E, according to EN 50047**								
	• Metal lever	Plastic roller	13	➔	**3SE5000-0AE10**		1	1 unit	41K
		High-grade steel roller	13	➔	**3SE5000-0AE11**		1	1 unit	41K
	• High-grade steel lever	Plastic roller	13	➔	**3SE5000-0AE12**		1	1 unit	41K
		High-grade steel roller	13	➔	**3SE5000-0AE13**		1	1 unit	41K
3SE5000-0AF10	**Angular roller levers**								
	• Metal lever	Plastic roller	13	➔	**3SE5000-0AF10**		1	1 unit	41K
		High-grade steel roller	13	➔	**3SE5000-0AF11**		1	1 unit	41K
	• High-grade steel lever	Plastic roller	13	➔	**3SE5000-0AF12**		1	1 unit	41K
		High-grade steel roller	13	➔	**3SE5000-0AF13**		1	1 unit	41K
Twist actuators									
3SE5000-0AK00	**Twist actuators, for 31/50 mm, according to EN 50047**								
	• Switching right or left, adjustable		--	➔	**3SE5000-0AK00**		1	1 unit	41K
3SE5000-0AA21	***Levers***								
	Twist levers, type A, according to EN 50047								
	• Metal lever	Plastic roller	19	➔	**3SE5000-0AA21**		1	1 unit	41K
			30	➔	**3SE5000-0AA25**		1	1 unit	41K
		High-grade steel roller	19	➔	**3SE5000-0AA22**		1	1 unit	41K
		- With ball bearing	19	➔	**3SE5000-0AA23**		1	1 unit	41K
	• High-grade steel lever	Plastic roller	19	➔	**3SE5000-0AA31**		1	1 unit	41K
		High-grade steel roller	19	➔	**3SE5000-0AA32**		1	1 unit	41K
	Twist levers 30 mm, straight[1)]								
	• Metal lever	Plastic roller	19	➔	**3SE5000-0AA24**		1	1 unit	41K
			30	➔	**3SE5000-0AA26**		1	1 unit	41K
3SE5000-0AA60	**Twist levers 100 mm, adjustable length, with grid hole**								
	• Metal lever	Plastic roller	19	➔	**3SE5000-0AA60**		1	1 unit	41K
			50	➔	**3SE5000-0AA67**		1	1 unit	41K
		High-grade steel roller	19	➔	**3SE5000-0AA61**		1	1 unit	41K
		Rubber roller	50	➔	**3SE5000-0AA68**		1	1 unit	41K
	• High-grade steel lever	Plastic roller	19	➔	**3SE5000-0AA62**		1	1 unit	41K
		High-grade steel roller	19	➔	**3SE5000-0AA63**		1	1 unit	41K
		Rubber roller	50	➔	**3SE5000-0AA68**		1	1 unit	41K

➔ Positively driven actuator, for use in safety circuits.

1) Can be clinch mounted (rotated 180°, rear of lever).

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Selection and ordering data

Modular system

For the ASIsafe version of the position switch, the basic switch and actuator must be ordered separately.

2 contacts · 3 LEDs · Degree of protection IP66/IP67 · M12 device plug

Version	Contacts	LEDs		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Basic switches · Enclosure width 31 mm according to EN 50047								
 3SF1214-1KC05-1BA1								
Rounded plungers[1] **With M12 device plug, 4-pole** Channel 1 on NC contact, channel 2 on NC contact								
• Slow-action contacts	2 NC	24 V DC	⊖	**3SF1214-1KC05-1BA1**		1	1 unit	42A
• Snap-action contacts	2 NC	24 V DC	⊖	**3SF1214-1LC05-1BA1**		1	1 unit	42A

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, for use in safety circuits.

1) For enclosures with widths of 31 mm, the basic switch is a complete unit with rounded plungers.

Note:

For the selection aid, see page 12/13.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Version		Roller diameter		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			mm						
Operating mechanisms									
3SE5000-0AB01	**Plain plungers**								
	• High-grade steel plunger		8.5	⊖	**3SE5000-0AB01**		1	1 unit	41K
3SE5000-0AD03	**Roller plungers, type C, according to EN 50047**								
	• Plastic roller		10	⊖	**3SE5000-0AD03**		1	1 unit	41K
	• High-grade steel roller		10	⊖	**3SE5000-0AD04**		1	1 unit	41K
3SE5000-0AD10	**Roller plungers with central fixing**								
	• Plastic roller		10	⊖	**3SE5000-0AD10**		1	1 unit	41K
	• High-grade steel roller		10	⊖	**3SE5000-0AD11**		1	1 unit	41K
3SE5000-0AE10	**Roller levers, type E, according to EN 50047**								
	• Metal lever	Plastic roller	13	⊖	**3SE5000-0AE10**		1	1 unit	41K
		High-grade steel roller	13	⊖	**3SE5000-0AE11**		1	1 unit	41K
	• High-grade steel lever	Plastic roller	13	⊖	**3SE5000-0AE12**		1	1 unit	41K
		High-grade steel roller	13	⊖	**3SE5000-0AE13**		1	1 unit	41K
3SE5000-0AF10	**Angular roller levers**								
	• Metal lever	Plastic roller	13	⊖	**3SE5000-0AF10**		1	1 unit	41K
		High-grade steel roller	13	⊖	**3SE5000-0AF11**		1	1 unit	41K
	• High-grade steel lever	Plastic roller	13	⊖	**3SE5000-0AF12**		1	1 unit	41K
		High-grade steel roller	13	⊖	**3SE5000-0AF13**		1	1 unit	41K
Twist actuators									
3SE5000-0AK00	**Twist actuators, for 31/50 mm, according to EN 50047**								
	Switching right or left, adjustable		--	⊖	**3SE5000-0AK00**		1	1 unit	41K
3SE5000-0AA21	***Levers***								
	Twist levers, type A, according to EN 50047								
	• Metal lever	Plastic roller	19	⊖	**3SE5000-0AA21**		1	1 unit	41K
			30	⊖	**3SE5000-0AA25**		1	1 unit	41K
		High-grade steel roller	19	⊖	**3SE5000-0AA22**		1	1 unit	41K
		- With ball bearing	19	⊖	**3SE5000-0AA23**		1	1 unit	41K
	• High-grade steel lever	Plastic roller	19	⊖	**3SE5000-0AA31**		1	1 unit	41K
		High-grade steel roller	19	⊖	**3SE5000-0AA32**		1	1 unit	41K
	Twist levers 30 mm, straight[1)]								
	• Metal lever	Plastic roller	19	⊖	**3SE5000-0AA24**		1	1 unit	41K
			30	⊖	**3SE5000-0AA26**		1	1 unit	41K
3SE5000-0AA60	**Twist levers 100 mm, adjustable length, with grid hole**								
	• Metal lever	Plastic roller	19	⊖	**3SE5000-0AA60**		1	1 unit	41K
			50	⊖	**3SE5000-0AA67**		1	1 unit	41K
		High-grade steel roller	19	⊖	**3SE5000-0AA61**		1	1 unit	41K
		Rubber roller	50	⊖	**3SE5000-0AA68**		1	1 unit	41K
	• High-grade steel lever	Plastic roller	19	⊖	**3SE5000-0AA62**		1	1 unit	41K
		High-grade steel roller	19	⊖	**3SE5000-0AA63**		1	1 unit	41K

⊖ Positively driven actuator, for use in safety circuits.

1) Can be clinch mounted (rotated 180°, rear of lever).

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Selection and ordering data

Modular system

For the ASIsafe version of the position switch, the basic switch and actuator must be ordered separately.

1 or 2 contacts · 3 LEDs · Degree of protection IP66/IP67 · M12 device plug

Version	Contacts	LEDs		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Basic switches · Enclosure width 40 mm according to EN 50041								
 3SF1114-1KA00-1BA1								
Rounded plungers								
With M12 device plug, 4-pole								
Channel 1 on NC contact, channel 2 on NC contact								
• Slow-action contacts	2 NC	24 V DC	➔	**3SF1114-1KA00-1BA1**		1	1 unit	42A
• Snap-action contacts	2 NC	24 V DC	➔	**3SF1114-1LA00-1BA1**		1	1 unit	42A
Basic switches · Enclosure width 56 mm · Operating points according to EN 50041								
 3SF1124-1KA00-1BA2								
Rounded plungers								
With M12 device plug, 4-pole								
Channel 1 on NC contact, channel 2 on M12 socket, right								
• Slow-action contacts	1 NC	24 V DC	➔	**3SF1124-1KA00-1BA2**		1	1 unit	42A
• Snap-action contacts	1 NC	24 V DC	➔	**3SF1124-1LA00-1BA2**		1	1 unit	42A

➔ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, for use in safety circuits.

Note:

For the selection aid, see page 12/13.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Version		Diameter mm		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operating mechanisms									
3SE5000-0AB01	**Plain plungers**								
	• High-grade steel plunger		8.5	➔	**3SE5000-0AB01**		1	1 unit	41K
3SE5000-0AC02	**Rounded plungers, type B, according to EN 50041**								
	• High-grade steel plunger, with 3 mm overtravel		10	➔	**3SE5000-0AC02**		1	1 unit	41K
3SE5000-0AD02	**Roller plungers, type C, according to EN 50041**								
	• High-grade steel roller, with 3 mm overtravel		13	➔	**3SE5000-0AD02**		1	1 unit	41K
3SE5000-0AE01	**Roller levers**								
	• Metal lever	Plastic roller	22	➔	**3SE5000-0AE01**		1	1 unit	41K
		High-grade steel roller	22	➔	**3SE5000-0AE02**		1	1 unit	41K
	• High-grade steel lever	Plastic roller	22	➔	**3SE5000-0AE03**		1	1 unit	41K
		High-grade steel roller	22	➔	**3SE5000-0AE04**		1	1 unit	41K
3SE5000-0AF01	**Angular roller levers**								
	• Metal lever	Plastic roller	22	➔	**3SE5000-0AF01**		1	1 unit	41K
		High-grade steel roller	22	➔	**3SE5000-0AF02**		1	1 unit	41K
	• High-grade steel lever	Plastic roller	22	➔	**3SE5000-0AF03**		1	1 unit	41K
		High-grade steel roller	22	➔	**3SE5000-0AF04**		1	1 unit	41K
Twist actuators									
3SE5000-0AH00	**Twist actuators, for 40/56/56 mm, XL, according to EN 50041**								
	• For twist levers, switching right and/or left, adjustable, only for enclosure widths 40 and 56 mm		--	➔	**3SE5000-0AH00**		1	1 unit	41K
	• For fork levers, latching		--	➔	**3SE5000-0AT10**		1	1 unit	41K
3SE5000-0AA01	***Levers***								
	Twist levers 27 mm, offset, type A, according to EN 50041								
	• Metal lever	Plastic roller	19	➔	**3SE5000-0AA01**		1	1 unit	41K
			30	➔	**3SE5000-0AA05**		1	1 unit	41K
			50	➔	**3SE5000-0AA07**		1	1 unit	41K
		2 plastic rollers	19	➔	**3SE5000-0AA04**		1	1 unit	41K
		High-grade steel roller	19	➔	**3SE5000-0AA02**		1	1 unit	41K
		- With ball bearing	19	➔	**3SE5000-0AA03**		1	1 unit	41K
		Rubber roller	50	➔	**3SE5000-0AA08**		1	1 unit	41K
	• High-grade steel lever	Plastic roller	19	➔	**3SE5000-0AA11**		1	1 unit	41K
		High-grade steel roller	19	➔	**3SE5000-0AA12**		1	1 unit	41K
	Twist levers 35 mm, offset, type A, according to EN 50041								
	• Metal lever	Plastic roller	19	➔	**3SE5000-0AA15**		1	1 unit	41K
	• High-grade steel lever	Plastic roller	19	➔	**3SE5000-0AA16**		1	1 unit	41K
	Twist levers 30 mm, straight[1], type A, according to EN 50041								
	• Metal lever	Plastic roller	19	➔	**3SE5000-0AA24**		1	1 unit	41K
			30	➔	**3SE5000-0AA26**		1	1 unit	41K
3SE5000-0AA60	**Twist levers 100 mm, adjustable length, with grid hole**								
	• Metal lever	Plastic roller	19	➔	**3SE5000-0AA60**		1	1 unit	41K
			50	➔	**3SE5000-0AA67**		1	1 unit	41K
		High-grade steel roller	19	➔	**3SE5000-0AA61**		1	1 unit	41K
		Rubber roller	50	➔	**3SE5000-0AA68**		1	1 unit	41K
	• High-grade steel lever	Plastic roller	19	➔	**3SE5000-0AA62**		1	1 unit	41K
		High-grade steel roller	19	➔	**3SE5000-0AA63**		1	1 unit	41K
3SE5000-0AT01	**Fork levers** (for switches with snap-action contacts only)								
	• 2 metal levers	2 plastic rollers	19	➔	**3SE5000-0AT01**		1	1 unit	41K
		2 high-grade steel rollers	19	➔	**3SE5000-0AT02**		1	1 unit	41K
	• 2 high-grade steel levers	2 plastic rollers	19	➔	**3SE5000-0AT03**		1	1 unit	41K
		2 high-grade steel rollers	19	➔	**3SE5000-0AT04**		1	1 unit	41K

➔ Positively driven actuator, for use in safety circuits.

1) Can be clinch mounted (rotated 180°, rear of lever).

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General data

Overview

The 3SF1 safety switches with safety-related communication can be directly connected using the AS-Interface bus system. The safety functions no longer have to be wired up conventionally.

With the 3SF1 safety switches the ASIsafe electronics are integrated in the switch enclosure.

3SF1 safety switches with head for separate actuator and with integrated ASIsafe electronics

3SF1 safety switches with separate actuator have the same enclosures as the 3SF1 position switches.

Operation

The actuator head is included in the scope of supply.
For actuation from four directions it can be adjusted through 4 × 90°. The switches can also be approached from above.

The actuator is not included in the scope of supply of the safety switches and must be ordered separately from a choice of different versions to suit the application (see page 12/106).

The actuator is encoded. Simple overruling by hand or auxiliary devices is impossible.

Locking devices

A high-grade steel blocking insert for attaching up to eight padlocks is available for even more security (see page 12/106).

Dust protection

For use in dusty environments, a protective cap made of rubber is offered that protects the actuator entries of the actuator head from contamination (see page 12/106).

Display

The switches have a status display with three LEDs:

- LED 1 (yellow): F-IN1
- LED 2 (yellow): F-IN2
- LED 3 (green/red): AS-i/FAULT

Connection

Connection to the AS-Interface is by means of a 4-pole M12 device plug (plastic version) connected to the yellow AS-Interface bus cable.

The wide enclosures (50 or 56 mm) also have an M12 socket for connecting a second safety switch. In this way, SIL 3 according to IEC 62061/IEC 61508 or PL e according to ISO 13849-1 is reached.

Benefits

The 3SF1 safety switches with separate actuator provide:

- ASIsafe electronics integrated in the enclosure, with low power consumption < 60 mA
- An extensive range of actuators
- Status display with three LEDs

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Application

Safety switches with separate actuator are used where the position of doors, covers or protective grilles must be monitored for safety reasons.

The safety switch can only be operated with the matching coded actuator. Simple overruling by hand or auxiliary devices is impossible.

Devices are available with enclosure versions to suit the particular ambient conditions. Different control tasks can be performed with the contact blocks best suited for the particular purpose. Dimensions and fixing points of the enclosure are in accordance with EN 50041 or EN 50047 standards.

The devices are suitable for use in any climate.

Standards

The switches comply with IEC 60947-1 (Low-Voltage Switchgear and Controlgear, General) and IEC 60947-5-1 (Electromechanical Control Circuit Devices).

The mechanical design of the switches corresponds to the requirements of the fail-safe principle according to ISO 14119.

Approvals

AS-Interface according to IEC 62026-2

The 3SF1 safety switches are approved according to UL 508, UL 50 and UL 746-C.

Safety circuits

Standard IEC 60947-5-1 requires positive opening of the NC contacts. In other words, for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked according to the standard IEC 60947-5-1 with the symbol ⊖.

With a 3SF1 safety switch with ⊖, SIL 2 according to IEC 62061/IEC 61508 or PL d according to ISO 13849-1 can be attained if the corresponding fail-safe evaluation units are selected from the ASIsafe program and correctly installed.

If a second 3SF1 safety switch with ⊖ is used, SIL 3/PL e can be attained.

Evaluation of safety functions

Safety Evaluation in the TIA Selection Tool

The safety evaluation for the standards IEC 62061 and ISO 13849-1 is performed quickly and easily, directly in the TIA Selection Tool. In addition to the fast and safe calculation of machine safety functions – from the definition of the system structure to the selection of components – this enables shared data management during all project phases. Take the next step in the digital design of machinery and equipment with Safety Evaluation in the TIA Selection Tool.

In addition, the functionalities of the proven Safety Evaluation Tool are still available. It determines the achieved safety integrity (SIL/PL) step-by-step. You receive the results as a standards-compliant report that can be integrated in the documentation as proof of safety.

For more information, see www.siemens.com/safety-evaluation.

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3SF1, plastic enclosure > Enclosure width 31 mm according to EN 50047/50 mm

Overview

- Contacts: 1 or 2 slow-action contacts
- Status indicator with three LEDs 24 V DC:
  - LED 1: F-IN1
  - LED 2: F-IN2
  - LED 3: AS-i/FAULT
- Degree of protection IP65 (31 mm) or IP66/IP67 (50 mm)
- 5 directions of approach
- M12 device plugs

Selection and ordering data

	Version[1]	Contacts		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosure width 31 mm according to EN 50047								
 3SF1234-1QV40-1BA1	**With M12 device plug, 4-pole** Channel 1 on NC contact, channel 2 on NC contact • Slow-action contacts	2 NC	⊖	**3SF1234-1QV40-1BA1**		1	1 unit	42A
Enclosure width 50 mm								
 3SF1244-1QV40-1BA2	**With M12 device plug, 4-pole** Channel 1 on NC contact, channel 2 on M12 socket, right • Slow-action contacts	1 NC	⊖	**3SF1244-1QV40-1BA2**		1	1 unit	42A

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

1) Supplied without actuator. Please order separately (see page 12/106).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

- Contacts: 1 or 2 slow-action contacts
- Status indicator with three LEDs 24 V DC:
  - LED 1: F-IN1
  - LED 2: F-IN2
  - LED 3: AS-i/FAULT
- Degree of protection IP66/IP67
- 5 directions of approach
- M12 device plugs

Selection and ordering data

	Version[1]	Contacts		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosure width 31 mm according to EN 50047								
 3SF1214-1QV40-1BA1	**With M12 device plug, 4-pole** Channel 1 on NC contact, channel 2 on NC contact • Slow-action contacts	2 NC	⊕	**3SF1214-1QV40-1BA1**		1	1 unit	42A
Enclosure width 40 mm according to EN 50041								
 3SF1114-1QV10-1BA1	**With M12 device plug, 4-pole** Channel 1 on NC contact, channel 2 on NC contact • Slow-action contacts	2 NC	⊕	**3SF1114-1QV10-1BA1**		1	1 unit	42A
Enclosure width 56 mm								
 3SF1124-1QV10-1BA2	**With M12 device plug, 4-pole** Channel 1 on NC contact, channel 2 on M12 socket, right • Slow-action contacts	1 NC	⊕	**3SF1124-1QV10-1BA2**		1	1 unit	42A

⊕ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

[1] Supplied without actuator. Please order separately (see page 12/106).

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Accessories

Selection and ordering data

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Actuators						
	Standard actuators					
3SE5000-0AV01	• Length 75.6 mm	**3SE5000-0AV01**		1	1 unit	41K
3SE5000-0AV02	• With vertical fixing, length 53 mm	**3SE5000-0AV02**		1	1 unit	41K
	• With transverse fixing					
3SE5000-0AV03	- Length 47 mm	**3SE5000-0AV03**		1	1 unit	41K
3SE5000-0AW11	- Length 40 mm, plastic[1]	**3SE5000-0AW11**		1	1 unit	41K
	Radius actuators					
	• Length 51 mm					
3SE5000-0AV04	- Direction of approach from the left	**3SE5000-0AV04**		1	1 unit	41K
3SE5000-0AV06	- Direction of approach from the right	**3SE5000-0AV06**		1	1 unit	41K
	Universal radius actuators					
3SE5000-0AV05-1AA6	• Length 77 mm	**3SE5000-0AV05**		1	1 unit	41K
	- Tab rotated 90°	**3SE5000-0AV05-1AA6**		1	1 unit	41K
	Universal radius actuators, heavy duty					
3SE5000-0AV07-1AK2	• Length 67 mm	**3SE5000-0AV07-1AK2**		1	1 unit	41K
3SE5000-0AV07	• Length 77 mm	**3SE5000-0AV07**		1	1 unit	41K
Optional accessories						
3SE5000-0AV08-1AA2	**Protective caps** Made of black rubber, for actuator head, to protect the actuator openings from contamination (only for enclosure width 40 or 56 mm)	**3SE5000-0AV08-1AA2**		1	1 unit	41K
3SE5000-0AV08-1AA3	**Blocking inserts** Made of high-grade steel, for actuator head for up to eight padlocks	**3SE5000-0AV08-1AA3**		1	1 unit	41K

[1] Not suitable for safety switches with tumbler.

Further versions for high-grade steel, see page 12/73.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

The 3SF1 safety switches with safety-related communication can be directly connected using the AS-Interface bus system.
The safety functions no longer have to be wired up conventionally.

With the 3SF1 safety switches the ASIsafe electronics are integrated in the switch enclosure.

3SF1 safety switch with tumbler and with integrated ASIsafe electronics

Operation

The actuator head is included in the scope of supply.
For actuation from four directions it can be adjusted through 4 × 90°. The switches can also be approached from above.

The actuator is not included in the scope of supply of the safety switches and must be ordered separately from a choice of different versions to suit the application (see page 12/106).

The actuator is encoded. Simple overruling by hand or auxiliary devices is impossible.

Locking devices

A high-grade steel blocking insert for attaching up to eight padlocks is available for even more security (see page 12/106).

Dust protection

For use in dusty environments, a protective cap made of rubber is offered that protects the actuator entries of the actuator head from contamination (see page 12/106).

Tumbler

There are two versions for interlocking the actuator:

- Spring-actuated lock (closed-circuit principle) with various release mechanisms
- Solenoid-locked (open-circuit principle)

For more explanations, see page 12/62.

Display

The switches have a status display with four LEDs:

- LED 1 (green): AS-i
- LED 2 (red): FAULT
- LED 3 (yellow): F-IN1
- LED 4 (yellow): F-IN2

Connection

Connection to the AS-Interface is by means of a 4-pole M12 device plug (plastic version) connected to the yellow AS-Interface bus cable (no additional supply of auxiliary power is required thanks to the low current consumption of the solenoid of max. 170 mA).

Benefits

The 3SF13 safety switches with tumbler provide:

- More safety through higher locking forces:
  - 1 300 N for the plastic version
  - 2 600 N for the metal version
- Various release mechanisms: lock release, escape release and emergency release
- ASIsafe electronics integrated in the enclosure; connected through 4-pole M12 device plug
- Current consumption of the solenoid no more than 170 mA
- Two contact blocks as standard equipment, hence fewer versions needed
- Same dimensions for all enclosure versions: plastic, metal
- An extensive range of actuators
- Status display with four LEDs
- 3SF1324-1S.21-1BK4 series with high degree of protection IP69 according to IEC 60529, cover with foamed seal

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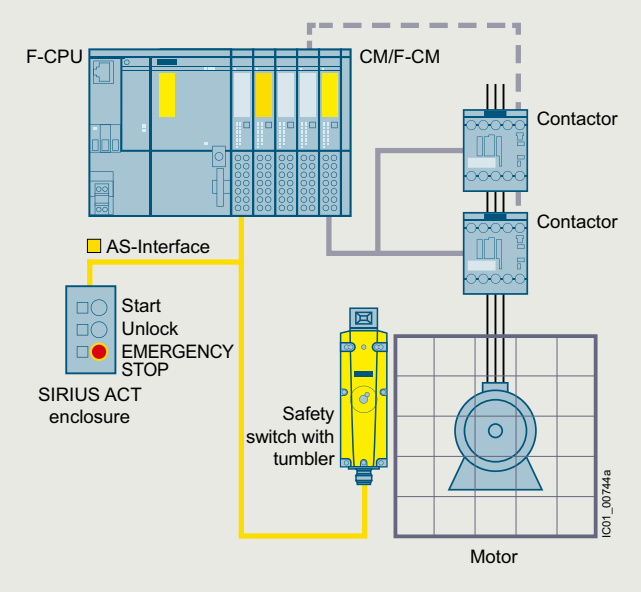
General data

Application

The safety switches with tumbler are exceptional safety-related devices which prevent an unforeseen or intentional opening of protective doors, protective grilles or other covers as long as a dangerous situation is present (e.g. follow-on motion of the switched-off machine).

The safety switches with tumbler have the following functions:

- Enabling the machine or process with closed and locked protective device
- Locking the machine or process with opened protective device
- Position monitoring of the protective device and tumbler



Connection to fail-safe control equipment via CM AS-i Safety ST and F-CM AS-i Safety ST

Standards

The switches comply with IEC 60947-1 (Low-Voltage Switchgear and Controlgear, General) and IEC 60947-5-1 (Electromechanical Control Circuit Devices).

The mechanical design of the switches corresponds to the requirements of the fail-safe principle according to ISO 14119.

Approvals

AS-Interface according to IEC 62026-2

The switches are approved for use with locking devices according to ISO 14119 and ISO 12100.

3SF13 safety switches with tumbler have a VDE test mark.

The 3SF1 safety switches are approved according to UL 508, UL 50 and UL 746-C.

Safety circuits

Standard IEC 60947-5-1 requires positive opening of the NC contacts. In other words, for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked according to the standard IEC 60947-5-1 with the symbol ⊖.

With a 3SF13 safety switch with ⊖, SIL 2 according to IEC 62061/IEC 61508 or PL d according to ISO 13849-1 can be attained if the corresponding fail-safe evaluation units are selected from the ASIsafe program and correctly installed.

If a second 3SF1 safety switch with ⊖ is used, SIL 3/PL e can be attained.

Evaluation of safety functions

Safety Evaluation in the TIA Selection Tool

The safety evaluation for the standards IEC 62061 and ISO 13849-1 is performed quickly and easily, directly in the TIA Selection Tool. In addition to the fast and safe calculation of machine safety functions – from the definition of the system structure to the selection of components – this enables shared data management during all project phases. Take the next step in the digital design of machinery and equipment with Safety Evaluation in the TIA Selection Tool.

In addition, the functionalities of the proven Safety Evaluation Tool are still available. It determines the achieved safety integrity (SIL/PL) step-by-step. You receive the results as a standards-compliant report that can be integrated in the documentation as proof of safety.

For more information, see www.siemens.com/safety-evaluation.

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Overview

Versions

- -1BA1: ASIsafe channel 1 on 1 NC contact from the actuator and channel 2 on 1 NC contact from the solenoid
- -1BA3: ASIsafe channel 1 on the first NC contact from the actuator and channel 2 on the second NC contact from the actuator
- -1BA4: ASIsafe channel 1 on 2 NC contact (2-channel) from the actuator, and channel 2 on 1 NC contact from the solenoid. The position switch transfers the information of actuators to a transfer channel because the discrepancy of the two actuator contacts is already evaluated in the switch.

The 3SF1324-1S.21-1BA4 safety switches are also recommended where there are several protective door tumblers and reliable diagnostics and quick restart capability of equipment is required.

- A response is received from the solenoid.
- No opening of the doors required after the solenoid is unlocked.

In connection with an ET 200SP module F-CM AS-i Safety ST, it is possible to achieve SIL 2 according to IEC 62061/IEC 61508 or PL d according to ISO 13849-1. They comply with the standard EN ISO 14119. A TÜV certificate is available.

Features

- Slow-action contacts
- 5 directions of approach
- Solenoid: Rated operational voltage 24 V DC
- 1 300 N locking force
- Degree of protection IP66/IP67, IP69
- Status display with four LEDs 24 V DC:
  - LED 1: AS-i
  - LED 2: FAULT
  - LED 3: F-IN1
  - LED 4: F-IN2
- M12 device plugs

Comparison of versions

Safety switches Type	Contacts Actuator/solenoid	Achievable safety level	Diagnostics Feedback from the solenoid	Reclosing condition after unlocking the solenoid (depending on the type of evaluation)
3SF1324-1S.21-1BA1	1 NC/1 NC	SIL 1/PL c	✓	Door does not have to be opened
	1 NC/1 NC	SIL 2/PL d	✓	Door must be opened
3SF1324-1S.21-1BA3	2 NC/--	SIL 2/PL d	--	Door does not have to be opened
3SF1324-1S.21-1BA4	2 NC/1 NC	SIL 2/PL d	✓	Door does not have to be opened
3SF1324-1S.21-1BK4 (IP69)	2 NC/1 NC	SIL 2/PL d	✓	Door does not have to be opened

✓ Available -- Not available

Selection and ordering data

Tumbler[1]	Contacts Actuator/solenoid		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
1 300 N locking force · Enclosure width 54 mm according to ISO 14119							
Spring-actuated locks							
With M12 device plug, 4-pole							
• With auxiliary release	1 NC/1 NC	➔	**3SF1324-1SD21-1BA1**		1	1 unit	42A
	2 NC/--	➔	**3SF1324-1SD21-1BA3**		1	1 unit	42A
	2 NC/1 NC	➔	**3SF1324-1SD21-1BA4**		1	1 unit	42A
- Degree of protection IP69 according to IEC 60529 (IP69 according to DIN 40050)	2 NC/1 NC	➔	**3SF1324-1SD21-1BK4**		1	1 unit	42A
• With auxiliary release with lock	1 NC/1 NC	➔	**3SF1324-1SE21-1BA1**		1	1 unit	42A
• With escape release from the front	1 NC/1 NC	➔	**3SF1324-1SF21-1BA1**		1	1 unit	42A
	2 NC/1 NC	➔	**3SF1324-1SF21-1BA4**		1	1 unit	42A
- Degree of protection IP69 according to IEC 60529 (IP69 according to DIN 40050)	2 NC/1 NC	➔	**3SF1324-1SF21-1BK4**		1	1 unit	42A
• With escape release from the back and auxiliary release from the front	1 NC/1 NC	➔	**3SF1324-1SG21-1BA1**		1	1 unit	42A
	2 NC/1 NC	➔	**3SF1324-1SG21-1BA4**		1	1 unit	42A
- Degree of protection IP69 according to IEC 60529 (IP69 according to DIN 40050)	2 NC/1 NC	➔	**3SF1324-1SG21-1BK4**		1	1 unit	42A
• With emergency release from the back and auxiliary release from the front	1 NC/1 NC	➔	**3SF1324-1SJ21-1BA1**		1	1 unit	42A
Solenoid-locked							
With M12 device plug, 4-pole	1 NC/1 NC	➔	**3SF1324-1SB21-1BA1**		1	1 unit	42A
	2 NC/--	➔	**3SF1324-1SB21-1BA3**		1	1 unit	42A

3SF1324-1SD21-1BA1

3SF1324-1SF21-1BA1

3SF1324-1SB21-1BA1

➔ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

[1] Supplied without actuator. Please order separately. For actuators and optional accessories, see page 12/68.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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3SF1, metal enclosures with locking force greater than 2 000 N

Overview

Version

1BA1: ASIsafe channel 1 on 1 NC contact from the actuator and channel 2 on 1 NC contact from the solenoid

Features

- Slow-action contacts
- Solenoid: Rated operational voltage 24 V DC
- 2 600 N locking force
- Degree of protection IP66/IP67
- Status display with four LEDs 24 V DC:
  - LED 1: AS-i
  - LED 2: FAULT
  - LED 3: F-IN1
  - LED 4: F-IN2
- M12 device plugs

Comparison of versions

Safety switches Type	Contacts Actuator/solenoid	Achievable safety level	Diagnostics Feedback from the solenoid	Reclosing condition after unlocking the solenoid (depending on the type of evaluation)
3SF1314-1S.11-1BA1	1 NC/1 NC	SIL 1/PL c	✓	Door does not have to be opened
	1 NC/1 NC	SIL 2/PL d	✓	Door must be opened

✓ Available

Selection and ordering data

Tumbler[1]	Contacts Actuator/solenoid		Complete units Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
2 600 N locking force · Enclosure width 54 mm according to ISO 14119							
Spring-actuated locks							
With M12 device plug, 4-pole							
• With auxiliary release	1 NC/1 NC	⊖	**3SF1314-1SD11-1BA1**		1	1 unit	42A
• With auxiliary release with lock	1 NC/1 NC	⊖	**3SF1314-1SE11-1BA1**		1	1 unit	42A
• With escape release from the front	1 NC/1 NC	⊖	**3SF1314-1SF11-1BA1**		1	1 unit	42A
• With escape release from the back and auxiliary release from the front	1 NC/1 NC	⊖	**3SF1314-1SG11-1BA1**		1	1 unit	42A
• With escape release from the back and auxiliary release with lock from the front	1 NC/1 NC	⊖	**3SF1314-1SH11-1BA1**		1	1 unit	42A
• With emergency release from the back and auxiliary release from the front	1 NC/1 NC	⊖	**3SF1314-1SJ11-1BA1**		1	1 unit	42A
Solenoid-locked							
With M12 device plug, 4-pole	1 NC/1 NC	⊖	**3SF1314-1SB11-1BA1**		1	1 unit	42A

3SF1314-1SD11-1BA1

3SF1314-1SF11-1BA1

3SF1314-1SB11-1BA1

⊖ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

[1] Supplied without actuator. Please order separately.

For actuators and optional accessories, see page 12/68.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

The 3SF1 safety hinge switches with safety-related communication can be directly connected using the AS-Interface bus system. The safety functions no longer have to be wired up conventionally.

With the 3SF1 hinge switches the ASIsafe electronics are integrated in the switch enclosure.

The hinge switches are provided for mounting on hinges. There are two actuator variants here:
- Hollow shaft, inner diameter 8 mm, outer 12 mm
- Solid shaft, diameter 10 mm

For the ASIsafe version of the hinge switch, the basic switch and actuator head must be ordered separately. The basic switches correspond to the 3SF1 position switches (use only versions with snap-action contacts).

The provisions and approvals are the same as for the 3SF1 standard switches (see page 12/93).

Selection and ordering data

Modular system

1 or 2 contacts · 3 LEDs · Degree of protection IP65 (31 mm) or IP66/IP67 (50 mm) · M12 device plug

Version	Contacts	LEDs		Modular system Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Basic switches · Enclosure width 31 mm according to EN 50047								
 3SF1234-1LC05-1BA1								
Rounded plungers								
With M12 device plug, 4-pole								
Channel 1 on NC contact, channel 2 on NC contact								
• Snap-action contacts	2 NC	24 V DC	➔	**3SF1234-1LC05-1BA1**		1	1 unit	42A
Basic switches · Enclosure width 50 mm · Operating points according to EN 50047								
 3SF1244-1LC05-1BA2								
Rounded plungers								
With M12 device plug, 4-pole								
Channel 1 on NC contact, channel 2 on M12 socket, right								
• Snap-action contacts	1 NC	24 V DC	➔	**3SF1244-1LC05-1BA2**		1	1 unit	42A
Actuator heads								
 3SE5000-0AU21								
With hollow shaft								
• Actuating angle 10°	--	--		**3SE5000-0AU21**		1	1 unit	41K
 3SE5000-0AU22								
With solid shaft								
• Actuating angle 10°	--	--		**3SE5000-0AU22**		1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

Accessories, see page 12/49.

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3SF1, metal enclosures > Enclosure width 31 mm according to EN 50047/40 mm according to EN 50041/56 mm

Overview

The 3SF1 safety hinge switches with safety-related communication can be directly connected using the AS-Interface bus system. The safety functions no longer have to be wired up conventionally.

With the 3SF1 hinge switches the ASIsafe electronics are integrated in the switch enclosure.

The hinge switches are provided for mounting on hinges. There are two actuator variants here:
- Hollow shaft, inner diameter 8 mm, outer 12 mm
- Solid shaft, diameter 10 mm

For the ASIsafe version of the hinge switch, the basic switch and actuator head must be ordered separately. The basic switches correspond to the 3SF1 position switches (use only versions with snap-action contacts).

The provisions and approvals are the same as for the 3SF1 standard switches (see page 12/93).

Selection and ordering data

Modular system

1 or 2 contacts · 3 LEDs · Degree of protection IP66/IP67 · M12 device plug

Version	Contacts	LEDs		Modular system ◇ Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Basic switches · Enclosure width 31 mm according to EN 50047								
3SF1214-1LC05-1BA1								
Rounded plungers								
With M12 device plug, 4-pole								
Channel 1 on NC contact, channel 2 on NC contact								
• Snap-action contacts	2 NC	24 V DC	➔	**3SF1214-1LC05-1BA1**		1	1 unit	42A
Basic switches · Enclosure width 40 mm according to EN 50041								
3SF1114-1LA00-1BA1								
Rounded plungers								
With M12 device plug, 4-pole								
Channel 1 on NC contact, channel 2 on NC contact								
• Snap-action contacts	2 NC	24 V DC	➔	**3SF1114-1LA00-1BA1**		1	1 unit	42A
Basic switches · Enclosure width 56 mm								
3SF1124-1LA00-1BA2								
Rounded plungers								
With M12 device plug, 4-pole								
Channel 1 on NC contact, channel 2 on M12 socket, right								
• Snap-action contacts	1 NC	24 V DC	➔	**3SF1124-1LA00-1BA2**		1	1 unit	42A
Actuator heads								
3SE5000-0AU21								
Hollow shaft								
• Actuating angle 10°	--	--		**3SE5000-0AU21**		1	1 unit	41K
3SE5000-0AU22								
Solid shaft								
• Actuating angle 10°	--	--		**3SE5000-0AU22**		1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Annex K, or positively driven actuator, necessary in safety circuits.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

More information	
Homepage, see www.siemens.com/sirius-position-switches Industry Mall, see www.siemens.com/product?3SE	Configuration Manual, see https://support.industry.siemens.com/cs/ww/en/view/43920150

3SE66 contact blocks and 3SE67 switching solenoids

A magnetically operated switch comprises a coded switching solenoid and a contact block (sensor unit). The switch must be connected to a safety relay, e.g. SIRIUS 3SK1, or a bus system, e.g. SIMATIC ET 200SP, for evaluation. The switches use reed contacts as mechanical contacts. The status of the contacts is monitored using an evaluation unit.

3SE66 contact blocks and 3SE67 switching solenoids, supplementary range in new design

Safety relays

3SK safety relays can be used worldwide since they possess all the required certification. Since they satisfy the highest safety requirements, they are suitable for all kinds of safety applications.

The following can be selected:

- 3SK1 Standard basic units:
  Simple and compact to satisfy all the essential requirements of safety sensor monitoring systems
- 3SK1 Advanced basic units:
  Multifunctional series with relay enabling circuits, semiconductor outputs or time-delayed outputs
- 3SK2 basic units:
  Multifunctional series whose functionality is parameterized using software. The basic units have semiconductor outputs. Relay outputs from the 3SK1 portfolio can also be connected via device connectors.
- Expansion units for inputs and outputs

The 3SE6806 safety relay is also available with two floating enabling circuits (safe circuits) as NO contact circuits and one floating signaling circuit as an NC contact circuit.

Benefits

Standard range

- Non-contact round, rectangular, small (25 mm x 33 mm) and larger (25 mm x 88 mm) versions
- Small, compact, safe
- Simple mounting with alignment of sensor and actuator, and concealed installation also easy
- Suitable for restricted spaces

Supplementary range

- Modern design for rectangular shape
- More functionality
- Greater operating distances and a larger horizontal or vertical displacement
- Various mounting positions possible (e.g. at 90° offset)
- SIL 3 and PL e diagnostics possible because there are two safety contacts and one signaling contact
- LED variant
- Fast connection possible using plug-in variants

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Application

SIRIUS 3SE6 magnetically operated switches are designed for mounting on movable protective guards (e.g. hoods, hinged flaps, doors, etc.). Evaluation can be performed by means of a safety relay or through connection to a bus system.
For more information about the protective door monitoring application, see flyer.

The 3SE66 non-contact, magnetically operated safety switches stand out due to their enclosed design with high degree of protection IP67. Since they are coded, they do not have to be concealed when installed. They are particularly suitable therefore for areas exposed to contamination, cleaning or disinfecting.

A solenoid monitoring system comprises one or more magnetically operated switches and an evaluation unit, e.g. a safety relay.

When contact blocks 1 NO + 1 NC (+ 1 NC signaling contact) or 2 NC (+ 1 NC signaling contact) are used, the 3SK safety relay, for example, provides a high degree of protection against manipulation and can be installed in safety circuits up to SIL 3 according to IEC 62061/IEC 61508 and PL e according to ISO 13849-1.

Evaluation of safety functions

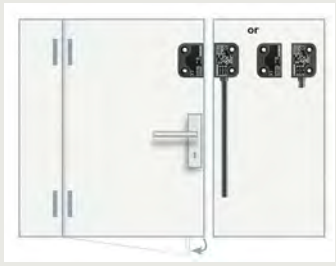
Safety Evaluation in the TIA Selection Tool

The safety evaluation for the standards IEC 62061 and ISO 13849-1 is performed quickly and easily, directly in the TIA Selection Tool. In addition to the fast and safe calculation of machine safety functions – from the definition of the system structure to the selection of components – this enables shared data management during all project phases. Take the next step in the digital design of machinery and equipment with Safety Evaluation in the TIA Selection Tool.

In addition, the functionalities of the proven Safety Evaluation Tool are still available. It determines the achieved safety integrity (SIL/PL) step-by-step. You receive the results as a standards-compliant report that can be integrated in the documentation as proof of safety.

For more information, see www.siemens.com/safety-evaluation.

Non-contact safety magnetically operated switches (with plug or cable) for right-hinged door



Non-contact safety magnetically operated switches (with plug or cable) for left-hinged door

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Combination of monitoring units and magnetically operated switches

Monitoring units		Magnetically operated switches (contact block + switching solenoid)			Achievable Safety Integrity Level (IEC 62061/ IEC 61508) Performance Level (ISO 13849-1)
		1 NO + 1 NC 3SE6605-.BA.. 3SE6704-.BA	**2 NC** 3SE6604-2BA.. **1 NO + 2 NC** 3SE6606-2BA04 3SE6704-2BA	--	
		1 NO + 1 NC (+ 1 NC signaling contact) 3SE6616-3CA01 3SE6626-3CA01 3SE6714-3CA 3SE6724-3CA	**2 NC; 2 NC (+ 1 NC signaling contact)** 3SE6614-4CA01 3SE6624-4CA01 3SE6617-2CA01 3SE6627-2CA01 3SE6617-2CA04 3SE6627-2CA04 3SE6714-2CA 3SE6724-2CA	**2 NC (+ 1 NC signaling contact)** 3SE6617-3CA01 3SE6627-3CA01 3SE6617-3CA04 3SE6627-3CA04 3SE6714-3CA 3SE6724-3CA	
Relay output					
SIRIUS safety relays	3SK1121 	✓	✓	✓	SIL 3/PL e
Semiconductor outputs					
SIRIUS safety relays	3SK1112, 3SK1122 	--/✓	✓	✓	SIL 3/PL e
	3SK2112, 3SK2122 	✓	✓	✓	SIL 3/PL e
ASIsafe compact safety modules	3RK1205, 3RK1405 	--	✓	✓	SIL 3/PL e
SIMATIC S7-1200					
• F-DI 16 x 24 V DC	6ES7226-6BA32-0XB0, 6AG1226-6BA32-5XB0 (SIPLUS)	✓	✓	✓	SIL 3/PL e
SIMATIC S7-1500/ET 200MP					
• F-DI 16 x 24 V DC	6ES7526-1BH00-0AB0, 6AG1526-1BH00-2AB0 (SIPLUS)	✓	✓	✓	SIL 3/PL e
SIMATIC ET 200SP					
• F-DI 8 x 24 V DC	6ES7136-6BA00-0CA0, 6AG1136-6BA00-2CA0 (SIPLUS)	✓	✓	✓	SIL 3/PL e
• F-PM-E 24 V DC/8 A PPM	6ES7136-6PA00-0BC0, 6AG1136-6PA00-2BC0 (SIPLUS)	✓	✓	✓	SIL 3/PL e
SIMATIC ET 200pro					
• 8/16 F-DI 24 V DC	6ES7148-4FA00-0AB0	✓	✓	✓	SIL 3/PL e
• 4/8 F-DI 24 V DC + 4 F-DO 24 V DC/2 A	6ES7148-4FC00-0AB0	✓	✓	✓	SIL 3/PL e
• F-SWITCH	6ES7148-4FS00-0AB0	✓	✓	✓	SIL 3/PL e
SIMATIC ET 200eco PN					
• F-DI 8 x 24 V DC + F-DQ 3 x 24 V DC/2 A	6ES7146-6FF00-0AB0	✓	✓	✓	SIL 3/PL e
SIMATIC ET 200AL					
• F-DI 4 x 24 V DC + F-DQ 2 x 24 V DC/2 A	6ES7146-5FF00-0BA0	✓	✓	✓	SIL 3/PL e

✓ Suitable magnetically operated switch

-- Not available

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3SE66, 3SE67 magnetically operated switches

Selection and ordering data

	Version	Size	Contacts	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm						
Standard range – Round sensor units								
3SE6704-1BA	**Switching solenoids (coded)**	M30	--	**3SE6704-1BA**		1	1 unit	41K
	Contact blocks							
3SE6605-1BA	• With cable 3 m	M30	1 NO + 1 NC	**3SE6605-1BA**		1	1 unit	41K
	• With M12 plug, 4-pole	M30	1 NO + 1 NC	**3SE6605-1BA02**		1	1 unit	41K
Standard range – Rectangular sensor units								
3SE6704-2BA	**Switching solenoids (coded)**							
	• Operating distance 5 mm	25 x 88	--	**3SE6704-2BA**		1	1 unit	41K
	• Operating distance 8 mm	25 x 88	--	**3SE6701-2BA**		1	1 unit	41K
	Contact blocks							
3SE660.-2BA	• With cable 3 m	25 x 88	1 NO + 1 NC	**3SE6605-2BA**		1	1 unit	41K
			2 NC	**3SE6604-2BA**		1	1 unit	41K
			1 NO + 2 NC	**3SE6606-2BA04**		1	1 unit	41K
	• With cable 10 m	25 x 88	1 NO + 1 NC	**3SE6605-2BA10**		1	1 unit	41K
			2 NC	**3SE6604-2BA10**		1	1 unit	41K
	• With M8 plug, 4-pole	25 x 88	1 NO + 1 NC	**3SE6605-2BA01**		1	1 unit	41K
			2 NC	**3SE6604-2BA01**		1	1 unit	41K
3SE6704-3BA	**Switching solenoids (coded)**	25 x 33	--	**3SE6704-3BA**		1	1 unit	41K
	Contact blocks							
3SE6605-3BA	• With cable 3 m	25 x 33	1 NO + 1 NC	**3SE6605-3BA**		1	1 unit	41K
	• With cable 5 m	25 x 33	1 NO + 1 NC	**3SE6605-3BA05**		1	1 unit	41K
	• With cable 10 m	25 x 33	1 NO + 1 NC	**3SE6605-3BA10**		1	1 unit	41K
Supplementary range – Rectangular sensor units for left-hinged door								
3SE6714-2CA	**Switching solenoids (coded)**							
	• Same level	25 x 88	--	**3SE6714-2CA**		1	1 unit	41K
	• 90° offset	25 x 88	--	**3SE6724-2CA**		1	1 unit	41K
	Contact blocks							
3SE6614-4CA01	• With M8 plug, 4-pole, with LED	25 x 88	2 NC	**3SE6614-4CA01**		1	1 unit	41K
	• ∅ 8 mm, latching connection, plug, 6-pole	25 x 88	2 NC + 1 NC[1)]	**3SE6617-2CA01**		1	1 unit	41K
	• With cable 3 m	25 x 88	2 NC + 1 NC[1)]	**3SE6617-2CA04**		1	1 unit	41K
	Switching solenoids (coded)							
3SE6714-3CA	• Same level	26 x 36	--	**3SE6714-3CA**		1	1 unit	41K
	• 90° offset	26 x 36	--	**3SE6724-3CA**		1	1 unit	41K
	Contact blocks							
3SE6616-3CA01	• ∅ 8 mm, latching connection, plug, 6-pole	26 x 36	1 NO + 1 NC + 1 NC[1)]	**3SE6616-3CA01**		1	1 unit	41K
		26 x 36	2 NC + 1 NC[1)]	**3SE6617-3CA01**		1	1 unit	41K
	• With cable 3 m	26 x 36	2 NC + 1 NC[1)]	**3SE6617-3CA04**		1	1 unit	41K

[1)] The NC is a signaling contact, not a safety contact.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Version	Size	Contacts	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm						
Supplementary range – Rectangular sensor units for right-hinged door								
3SE6714-2CA	**Switching solenoids (coded)**							
	• Same level	25 x 88	--	**3SE6714-2CA**		1	1 unit	41K
	• 90° offset	25 x 88	--	**3SE6724-2CA**		1	1 unit	41K
3SE6624-4CA01	**Contact blocks**							
	• With M8 plug, 4-pole, with LED	25 x 88	2 NC	**3SE6624-4CA01**		1	1 unit	41K
	• ∅ 8 mm, latching connection, plug, 6-pole	25 x 88	2 NC + 1 NC[1)]	**3SE6627-2CA01**		1	1 unit	41K
	• With cable 3 m	25 x 88	2 NC + 1 NC[1)]	**3SE6627-2CA04**		1	1 unit	41K
3SE6714-3CA	**Switching solenoids (coded)**							
	• Same level	26 x 36	--	**3SE6714-3CA**		1	1 unit	41K
	• 90° offset	26 x 36	--	**3SE6724-3CA**		1	1 unit	41K
3SE6626-3CA01	**Contact blocks**							
	• ∅ 8 mm, latching connection, plug, 6-pole	26 x 36	1 NO + 1 NC + 1 NC[1)]	**3SE6626-3CA01**		1	1 unit	41K
			2 NC + 1 NC[1)]	**3SE6627-3CA01**		1	1 unit	41K
	• With cable 3 m	26 x 36	2 NC + 1 NC[1)]	**3SE6627-3CA04**		1	1 unit	41K
Accessories for standard range								
3SX3260	**Spacer**	25 x 88	--	**3SX3260**		1	1 unit	41K
3SX3261		25 x 33	--	**3SX3261**		1	1 unit	41K
Accessories for supplementary range								
3SX5600-2GA01	**Spacer**	25 x 88	--	**3SX5600-2GA01**		1	1 unit	41K
3SX5600-2GA02		26 x 36	--	**3SX5600-2GA02**		1	1 unit	41K
3SX5601-3GA05	**Connecting cables** Length 5 m							
	• With M8 socket, 4-pole	--	--	**3SX5601-3GA05**		1	1 unit	41K
	• With ∅ 8 mm socket, 8 mm latching connection, 6-pole	--	--	**3SX5601-4GA05**		1	1 unit	41K
3RK1902-4BA00-5AA0	**M12 plugs, 5-pole**							
	• Straight, separate item	--	--	**3RK1902-4BA00-5AA0**		1	1 unit	42D
	• Angled, separate item	--	--	**3RK1902-4DA00-5AA0**		1	1 unit	42D

[1)] The second NC is a signaling contact, not a safety contact.

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3SE66, 3SE67 magnetically operated switches

Version	Rated control voltage	Number of sensors	Enabling/ signaling circuits	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Monitoring units								
3SK1 safety relays								
Standard or Advanced basic units								
• With relay output	24 V DC	6[1]	3 NO/1 NC	**3SK1121-1AB40**		1	1 unit	41L
• With semiconductor output	24 V DC	1	2 x F-DQ/1 QM	**3SK1112-1BB40**		1	1 unit	41L

3SK1121-1AB40

3SK2 safety relays								
Basic units								
• With semiconductor output	24 V DC	5	2 x F-DQ/1 QM	**3SK2112-1AA10**		1	1 unit	41L
		10	4 x F-DQ/2 QM	**3SK2122-1AA10**		1	1 unit	41L

3SK2112-1AA10

[1] Only when up to five 3SK1220 input expansion units are used, see page 11/28.

For further monitoring units, see pages 8/1, 9/1 and 11/1.

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Overview

More information

Homepage, see www.siemens.com/sirius-position-switches
Industry Mall, see www.siemens.com/product?3SE
Equipment Manual,
see https://support.industry.siemens.com/cs/ww/en/view/52233535

RFID non-contact safety switch with maximum tamper resistance

3SE63 RFID non-contact safety switches comply with the highest safety requirements, SIL 3, for monitoring the positions of movable protective devices.

An RFID safety switch consists of a coded RFID switch with an 8-pole M12 connection plug and an identical RFID actuator.

The switch is available in several versions:

- Family-coded with M12 plug or with additional 18 N magnetic catch as an option
- Individually coded, programmable once, with M12 plug or with additional 18 N magnetic catch as an option
- Individually coded, programmable more than once (an unlimited number of times), with M12 plug or version with additional 18 N magnetic catch

The actuator is therefore available in two versions:

- Standard
- With 18 N magnetic catch

The magnetic catch keeps doors and flaps closed with permanent magnets.

Mounting and maintenance

Various options for mounting save on enclosure variants:

- Mounting of the switch on the right or left side
- The actuator can be mounted on all sides

Quick and easy mounting thanks to universal mounting holes:

- Standard gauge/holes for 3SE6 magnetically operated switches
- Fine adjustment thanks to slotted holes

Little adjustment or maintenance required:

- Threshold indication by LED display on the switch for quick and easy adjustment during mounting and maintenance
- Molded switch allows it to be used as an end stop for small and medium-sized doors

Notes:

- Keep metal parts and cuttings away from the vicinity of the switch
- Minimum distance between two switches 100 mm

Optional accessories (mounting)

- Covers for sealing mounting holes, also suitable for tamper-proofing screw fixings
- Spacers (approx. 3 mm high) to facilitate cleaning under the installation surface when using high-pressure cleaners, for example

Coding

Family-coded

These safety switches are delivered ready to use, i.e. no programming is necessary.

Individually coded, programmable once

The assignment of safety switch and actuator thus created is irreversible.

The actuator is programmed simply by routine during startup, thus permanently preventing any form of tampering by means of a replacement actuator.

Individually coded, programmable several times

Programming procedure:

1. Apply operational voltage to safety sensor

2. Move actuator into detection range:
red LED lights up, yellow LED flashes (1 Hz)

3. After 10 s it changes to a shorter flashing frequency (3 Hz). In this state switch off operational voltage.

4. After the next time the operational voltage is switched on, the actuator is detected again to activate the programmed actuator code. The activated code is thus stored permanently.

The procedure for programming a new actuator can be repeated an unlimited number of times. When a new actuator is programmed the previous code becomes invalid. A protected coding process allows new actuators to be programmed for service purposes.

After this, a ten-minute lockout provides enhanced tamper protection. The green LED flashes until the lockout time has ended and the new actuator has been detected. If the operational voltage is interrupted during this time, the ten-minute guard time is restarted.

Diagnostics

The RFID safety switch indicates its operating state including faults by means of the LED display in the switch and the short-circuit-proof diagnostics output. The signals can then be used for central displays or non-safety-related control tasks.

There are the following diagnostics functions:

- Cross-circuit monitoring
- Open-circuit monitoring
- External voltage monitoring
- Ambient temperature too high
- Wrong or defective actuator
- Operating distance threshold identification with LED display

The signal combination "diagnostics output switched off" and "safety outputs still switched on" can be used to move the machine into a controlled stop position.

Any cross-circuit or a fault that is not currently compromising the safe function of a safety switch results in the disconnection of the safety channels after a 30-minute delay. However, the diagnostics output switches off instantaneously.

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3SE63 RFID safety switches

Mode of operation of the diagnostics LEDs

The safety switch indicates not only its operating state, but also faults by means of LEDs in three colors at the ends of the RFID switch.

- The green LED indicates readiness for operation when the control supply voltage is connected.
- The yellow LED indicates that there is an actuator in detection range. If the actuator is in the operating distance threshold, this is indicated by flashing. This flashing can be used to identify a change in the distance between sensor and actuator at an early stage (e.g. as a result of the sagging of a protective door). The installation should be tested before the distance increases further, the safety outputs switch off and the machine stops.
- The red LED indicates the individual causes of the fault by means of defined flashing frequencies.

Benefits

- Maximum tamper resistance by means of individual coding of switches and actuators at the highest safety level
- Plastic enclosure with integrated plug
- Two solid-state short-circuit-proof safety outputs, each 250 mA
- Integrated cross-circuit, open-circuit and external voltage monitoring, with series circuit as far as the control cabinet
- Safety and diagnostics signals can be connected in series
- Series connection of safety circuits according to SIL 3/PL e
- LED status indication including operating distance threshold indication for quick and easy adjustment during installation and maintenance
- Short-circuit-proof conventional diagnostics output
- Optional version with magnetic catch for interlocking hinge flaps or small doors even when de-energized
- Highly rugged thanks to the use of tested enclosure materials, resistant to aggressive cleaning products, with a degree of protection of up to IP69.
  IP69 does not automatically mean that it can be used outdoors.
  The devices must be installed with corresponding protection for this purpose. UV radiation additionally affects the enclosure.
- Fine adjustment thanks to slotted holes
- Little adjustment or maintenance required
- Molded switch allows it to be used as an end stop for small and medium-sized doors

Application

RFID non-contact safety switches are designed for use in safety circuits, and are used to monitor the positions of movable protective devices. They monitor the positions of rotating, laterally sliding or removable protective devices using the coded electronic actuator.
For more information about the protective door monitoring application, see flyer.

Their high degree of protection IP69 and the use of cleaning-product-resistant materials means that these switches are optimized for use under extreme environmental conditions.

Their electronic operating principle makes these switches ideal for metalworking machinery.

The switches have a larger operating distance and switching displacement than mechanical switches, improve the mounting tolerance of the protective door, and offer a wide range of diagnostics options.

The RFID switches can be connected to all standard evaluation units suitable for solid-state inputs and in which the built-in cross-circuit monitoring function can be deactivated, e.g.:

Monitoring units	Type
Relay output	
SIRIUS safety relays	3SK1111-.AB30, 3SK1121
Solid-state outputs	
SIRIUS safety relays	3SK1112, 3SK1122, 3SK2112, 3SK2122
SIMATIC S7-1200	
• F-DI 16 x 24 V DC	6ES7226-6BA32-0XB0, 6AG1226-6BA32-5XB0 (SIPLUS)
SIMATIC S7-1500/ET 200MP	
• F-DI 16 x 24 V DC	6ES7526-1BH00-0AB0, 6AG1526-1BH00-2AB0 (SIPLUS)
SIMATIC ET 200SP	
• F-DI 8 x 24 V DC	6ES7136-6BA00-0CA0, 6AG1136-6BA00-2CA0 (SIPLUS)
• F-PM-E 24 V DC/8 A PPM	6ES7136-6PA00-0BC0, 6AG1136-6PA00-2BC0 (SIPLUS)
SIMATIC ET 200pro	
• 8/16 F-DI 24 V DC	6ES7148-4FA00-0AB0
• 4/8 F-DI 24 V DC + 4 F-DO 24 V DC/2 A	6ES7148-4FC00-0AB0
• F-SWITCH	6ES7148-4FS00-0AB0
SIMATIC ET 200eco PN	
• F-DI 8 x 24 V DC + F-DQ 3 x 24 V DC/2 A	6ES7146-6FF00-0AB0
SIMATIC ET 200AL	
• F-DI 4 x 24 V DC + F-DQ 2 x 24 V DC/2 A	6ES7146-5FF00-0BA0

These safety categories can be achieved in safety circuits:

- SIL 3 according to IEC 62061/IEC 61508
- PL e according to ISO 13849-1

Evaluation of safety functions

Safety Evaluation in the TIA Selection Tool

The safety evaluation for the standards IEC 62061 and ISO 13849-1 is performed quickly and easily, directly in the TIA Selection Tool. In addition to the fast and safe calculation of machine safety functions – from the definition of the system structure to the selection of components – this enables shared data management during all project phases. Take the next step in the digital design of machinery and equipment with Safety Evaluation in the TIA Selection Tool.

In addition, the functionalities of the proven Safety Evaluation Tool are still available. It determines the achieved safety integrity (SIL/PL) step-by-step. You receive the results as a standards-compliant report that can be integrated in the documentation as proof of safety.

For more information, see www.siemens.com/safety-evaluation.

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Selection and ordering data

With M12 connection plug, 8-pole

Version		Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Rectangular safety switches 3SE63[1]						
RFID safety switch						
Actuator 3SE6310 must be ordered separately.						
• Family-coded	Without catch	**3SE6315-0BB01**		1	1 unit	41K
	With 18 N magnetic catch	**3SE6315-1BB01**		1	1 unit	41K
• Individually coded, programmable several times	Without catch	**3SE6315-0BB02**		1	1 unit	41K
	With 18 N magnetic catch	**3SE6315-1BB02**		1	1 unit	41K
• Individually coded, programmable once	Without catch	**3SE6315-0BB03**		1	1 unit	41K
	With 18 N magnetic catch	**3SE6315-1BB03**		1	1 unit	41K
RFID actuator						
• Standard	Without catch	**3SE6310-0BC01**		1	1 unit	41K
	With 18 N magnetic catch	**3SE6310-1BC01**		1	1 unit	41K

3SE6315-.BB0.

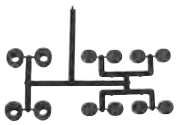
3SE6310-.BC01

[1] Not connectable via AS-i modules.

For monitoring unit, see pages 8/1, 9/1 and 11/1.

Accessories

Version	Length	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Optional accessories						
Covers and spacers	--	**3SX5600-1G**		1	1 unit	41K
One pack (1 unit) contains 8 covers and 4 spacers						
Connecting cables	3 m	**3SX5601-2GA03**		1	1 unit	41K
With M12 socket, 8-pole, straight, open end, rated voltage 30 V, rated current 2 A	5 m	**3SX5601-2GA05**		1	1 unit	41K
	10 m	**3SX5601-2GA10**		1	1 unit	41K
	15 m NEW	**3SX5601-2GA15**		1	1 unit	41K
M12 plug	--	**6GT2090-0BE00**		1	5 units	572
Straight, 8-pole						
Adapter cable[1]	0.5 m	**3SX5601-3SV00-1AK3**		1	1 unit	41K
With M12 socket, 8-pole on M12 plug 5-pole, for connection, e.g., to fail-safe field modules of SIMATIC ET 200eco PN and SIMATIC ET 200AL						


3SX5600-1G

3SX5601-2GA03

6GT2090-0BE00

3SX5601-3SV00-1AK3

[1] Extend if necessary with connecting cable 3SX5601-3SV15, length 1 m, see page 12/46.

[2] Suitable for wiring sensors that are connected to all fail-safe block I/O modules in the SIMATIC ET 200eco PN and ET 200AL series. For more information, see page 12/88 onwards.

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3SE64 RFID safety switches with tumbler NEW

Overview

More information
Homepage, see www.siemens.com/sirius-position-switches
Industry Mall, see www.siemens.com/product?3SE
Equipment Manual, see https://support.industry.siemens.com/cs/ww/en/view/109808156
Operating Instructions, see https://support.industry.siemens.com/cs/ww/en/view/109811041

3SE64 RFID non-contact safety switch with actuator
(right-hand button with escape release)

3SE64 RFID non-contact safety switches comply with the highest safety requirements and tamper protection according to ISO 14119 for monitoring the positions of movable protective devices.

The operating principle using a rotating shaft and star handle is unique. This allows the protective door to be pulled into its end position with almost zero backlash and simultaneous guard locking, even acting as a door stop. No additional door stop is therefore required.

Integrated latching, adjustable from 25 to 50 N with the aid of a star handle, ensures that the protective door remains closed after the tumbler has been released.

The 3SE64 safety switch consists of a coded RFID switch with an 8-pole M12 connection plug and an RFID actuator. They can be ordered family-coded or individually coded (programmable several times).

The two variants differ in the principle by which the guard locking function is activated:

Version 1	Version 2
The 3SE6415-1.B0. version operates according to the closed-circuit principle and is spring-locked.	The 3SE6415-1AB0. version operates according to the open-circuit principle and is solenoid-locked.
• PL e applies to the interlocking function, corresponding to SIL 3. • PL d applies to the guard locking function, corresponding to SIL 2. • In this version, the tumbler is monitored and consequently the DC required to achieve SIL 2/PL d is reached. • Used to protect personnel	• PL e applies to the interlocking function, corresponding to SIL 3. • In this case, the guard locking function does not have a SIL level or PL level. • Used to protect the process

One actuator is available for all versions.

A blocking insert protects operating personnel against inadvertently being closed in during maintenance and repair work.

An escape release allows the hazard zone to be exited from the inside if the protective door has accidentally been closed.

Mounting and maintenance

3SE64 RFID non-contact safety switch with actuators from three directions

- Various options for mounting save on enclosure variants:
  - Mounting of the switch on the right or left side of rotating or sliding doors, simple installation on profile systems
  - Mounting of the actuator from three sides (narrow, front and rear side of the switch), see figure above
- Quick and easy mounting thanks to universal mounting holes
- Little adjustment or maintenance required:
  - Threshold indication by LED display on the switch for quick and easy adjustment during mounting and maintenance
  - Dampers in the actuator allow it to be used as an end stop for small and medium-sized doors

Notes:

- Keep metal parts and cuttings away from the vicinity of the switch
- Minimum distance between two switches 250 mm (depending on the mounting position)

Optional accessories (mounting)

- Mounting plate for doors so that they are flush with the door frame
- Blocking insert for padlocks to prevent the door from being closed
- Triangular key to unlock the escape release
- Protection plate (masking plate) for the RFID actuator when used on glass and plastic doors
- Connecting cables in various lengths

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Coding

Family-coded

These safety switches are delivered ready to use, i.e. no programming is necessary.

Individually coded, programmable several times

Programming procedure:

1. Apply operational voltage to safety sensor

2. Move actuator into detection range:
red LED lights up, yellow LED flashes (1 Hz)

3. After 10 s it changes to a shorter flashing frequency (3 Hz).
In this state switch off operational voltage.

4. After the next time the operational voltage is switched on, the actuator is detected again to activate the programmed actuator code. The activated code is thus stored permanently.

The procedure for programming a new actuator can be repeated an unlimited number of times. When a new actuator is programmed the previous code becomes invalid. A protected coding process allows new actuators to be programmed for service purposes.

After this, a ten-minute lockout provides enhanced tamper protection. The green LED flashes until the lockout time has ended and the new actuator has been detected. If the operational voltage is interrupted during this time, the ten-minute guard time is restarted.

Diagnostics

The RFID safety switch indicates its operating state including faults by means of the LED display in the switch and the short-circuit-proof diagnostics output. The signals can then be used for central displays or non-safety-related control tasks.

There are the following diagnostics functions:

- Cross-circuit monitoring
- Open-circuit monitoring
- External voltage monitoring
- Ambient temperature too high
- Wrong or defective actuator
- Operating distance threshold identification with LED display

The signal combination "diagnostics output switched off" and "safety outputs still switched on" can be used to move the machine into a controlled stop position.

Any cross-circuit or a fault that is not currently compromising the safe function of a safety switch results in the disconnection of the safety channels after a 30-minute delay. However, the diagnostics output switches off instantaneously.

LED display

3SE64 RFID safety switch with LED display, auxiliary release and 8-pole M12 plug

Simple diagnostics with three colored LEDs:

- Green = Power
- Yellow = Status
- Red = Fault

Mode of operation of the diagnostics LEDs

The safety switch indicates not only its operating state, but also faults by means of LEDs in three colors located in the yellow cover of the RFID switch.

- The green LED indicates readiness for operation when the control supply voltage is connected.
- The yellow LED indicates that there is an actuator in detection range. If the actuator is in the operating distance threshold, this is indicated by flashing. This flashing can be used to identify a change in the distance between sensor and actuator at an early stage (e.g. as a result of the sagging of a protective door). The installation should be tested before the distance increases further, the safety outputs switch off and the machine stops.
- The red LED indicates the individual causes of the fault by means of defined flashing frequencies.

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3SE64 RFID safety switches with tumbler NEW

Benefits

- Maximum or requirements-oriented protection against tampering thanks to RFID technology
- Hygiene-compliant design ideal for food & beverage industries, degree of protection IP69
- Variable options for mounting on rotating or sliding doors, simple installation on profile systems
- Guard locking possible from three sides (three directions of actuation) by means of a star handle
- High actuator tolerances, see Fig. 1:
  - Longitudinal direction ±3.5 mm
  - Transverse direction ±2 mm
- Simple adjustment of latching force:
  By rotating the star handle through 180°, the latching force can be increased from 25 N (position I) to 50 N (position II), see Fig. 2.
- LED display, simple diagnostics with 3-colored LEDs
- Auxiliary release, M12 plug, 8-pole, A-coded, see LED display on page 12/123
- Actuator can be used for a door stop using the integrated damper
- Controlled shutdown process in the event of a cross-circuit: The controller first receives the fault signal, and is only disconnected after 30 minutes.

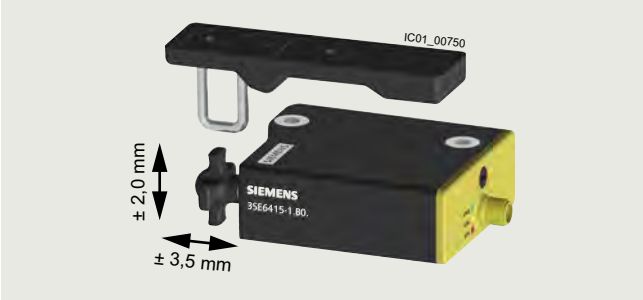


Fig. 1: Actuator tolerance

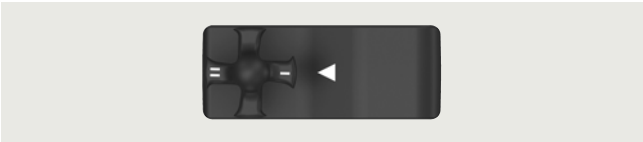


Fig. 2: Star handle for adjustment of latching force

Application

Whether for grids, covers or doors, rotating, laterally sliding or removable protective devices – safety tumblers ensure that moving guards cannot be opened until dangerous states such as over-travel movements of rollers, chains, shafts, etc. have ended. They are suitable for protecting both the personnel and the process.

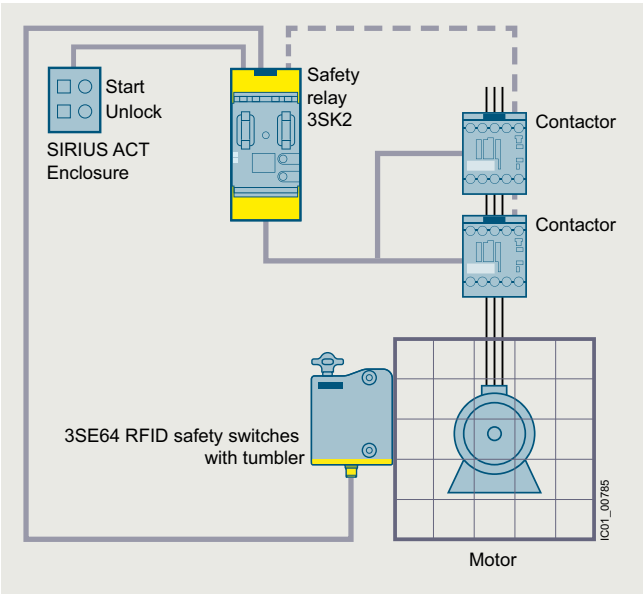
When the protective door is closed and the tumbler locked, the safety outputs are activated.

The actuator design for 3SE64 RFID safety switches with tumbler differs from the 3SE53 mechanical safety switches with tumbler in that it is based on an operating principle involving a rotating shaft and a star handle. The advantage is that, during closing, the protective door is pulled into its end position and kept closed with almost zero backlash. The tumbler can be approached from three sides, making the switch universally deployable.

Thanks to the high degree of protection IP69 and hygienic design, the 3SE64 RFID safety switch is preferred for hygiene-sensitive areas – for example in food production or the packaging and pharmaceutical industry.

The switches have a larger operating distance and switching displacement than mechanical switches, improve the mounting tolerance of the protective door, and offer a wide range of diagnostics options.

Application example



Protective door monitoring with tumbler using 3SE64 RFID safety switch up to SIL 3 or PL e using a 3SK2 safety relay

For a detailed description of this example of how 3SE64 RFID safety switches with tumblers can achieve different SIL/PL levels, see https://support.industry.siemens.com/cs/ww/en/view/109811081.

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The RFID switches can be connected to all standard evaluation units suitable for solid-state inputs and in which the built-in cross-circuit monitoring function can be deactivated, e.g.:

Monitoring units	Type		Safety assessment of the	
	Version	SIPLUS version	Interlocking function	Guard locking function
Solid-state outputs				
SIRIUS safety relays				
• 3SK2	3SK2112, 3SK2122	--	SIL 3/PL e	SIL 2/PL d
• 3SK1	3SK1111-.AB30, 3SK1112, 3SK112., 3SK1220	--	SIL 3/PL e	--
SIMATIC S7-1200				
• F-DI 16 x 24 V DC	6ES7226-6BA32-0XB0	6AG1226-6BA32-5XB0	SIL 3/PL e	--
SIMATIC S7-1500/ET 200MP				
• F-DI 16 x 24 V DC	6ES7526-1BH00-0AB0	6AG1526-1BH00-2AB0	SIL 3/PL e	--
• F-DQ 8 x 24 V DC/2A PPM	6ES7526-2BF00-0AB0	6AG1526-2BF00-2AB0	--	SIL 2/PL d
SIMATIC ET 200SP				
• F-DI 8 x 24 V DC	6ES7136-6BA00-0CA0	6AG1136-6BA00-2CA0	SIL 3/PL e	--
• F-DQ 8 x 24 V DC/0.5A PP	6ES7136-6DC00-0CA0	6AG1136-6DC00-2CA0	--	SIL 2/PL d
• F-PM-E 24 V DC/8A	6ES7136-6PA00-0BC0	6AG1136-6PA00-2BC0	SIL 3/PL e	--
SIMATIC ET 200pro				
• F-DI 8/16 24 V DC	6ES7148-4FA00-0AB0	--	SIL 3/PL e	--
• F-DI 4/8 24 V DC + 4 F-DQ 24 V DC/2A PM	6ES7148-4FC00-0AB0	--	SIL 3/PL e	--
SIMATIC ET 200eco PN				
• F-DI 8 x 24 V DC + F-DQ 3 x 24 V DC/2A PM	6ES7146-6FF00-0AB0	--	SIL 3/PL e	--
SIMATIC ET 200AL				
• F-DI 4 x 24 V DC + F-DQ 2 x 24 V DC/2A PM	6ES7146-5FF00-0BA0	--	SIL 3/PL e	--

These safety categories can be achieved in safety circuits:

- SIL 3 according to IEC 62061/IEC 61508
- PL e according to ISO 13849-1

Note:

In order to achieve the maximum achievable safety level (SIL 2 or PL d) of the guard locking function of the 3SE64 RFID safety switch, fail-safe PP-switching outputs of the safety relay or fail-safe controller must be used. When the tumbler of the 3SE64 is connected to standard SIMATIC output modules (DQ) and to fail-safe SIMATIC output modules with the PM switching principle (F-DQ PM-switching), no safety level (SIL or PL) can be reached. In this case, the guard locking function of the 3SE64 can only be used to protect the process.

Evaluation of safety functions

Safety Evaluation in the TIA Selection Tool

The safety evaluation for the standards IEC 62061 and ISO 13849-1 is performed quickly and easily, directly in the TIA Selection Tool. In addition to the fast and safe calculation of machine safety functions – from the definition of the system structure to the selection of components – this enables shared data management during all project phases. Take the next step in the digital design of machinery and equipment with Safety Evaluation in the TIA Selection Tool.

In addition, the functionalities of the proven Safety Evaluation Tool are still available. It determines the achieved safety integrity (SIL/PL) step-by-step. You receive the results as a standards-compliant report that can be integrated in the documentation as proof of safety.

For more information, see www.siemens.com/safety-evaluation.

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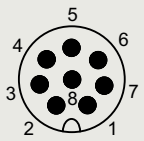
3SE64 RFID safety switches with tumbler NEW

Technical specifications

Type		3SE6415
General data		
Standards		IEC 60947-5-3, IEC 62061/IEC 61508, ISO 14119, ISO 13849-1
Enclosure material		Plastic, glass-fiber reinforced thermoplastic, self-extinguishing
Ambient temperature		
• During operation	°C	0 … +60
• During storage, transport	°C	-10 ... +90
Shock resistance		30 *g*/11 ms
Vibration resistance		10 ... 150 Hz/ amplitude 0.35 mm
Operating principle		RFID
Coding level according to ISO 14119		
• Individually coded, programmable several times		High
• Family-coded		Low
Series connection		Number of devices unlimited, ensure external line protection
Length of sensor chain		Max. 200 m (cable length and cable cross-section change the voltage drop in relation to the output current)
Mechanical data		
Locking force F_{Zh}	N	1 150
Latching force	N	25 or 50
Mechanical endurance	Operating cycles	≥ 1 000 000
Connection type		Integrated socket M12, 8-pole, A-coded
Degree of protection		IP66, IP67, IP69 according to IEC 60529
Safety assessment of the interlocking function		
Standards		ISO 13489-1, IEC 62061/IEC 61508
PL		Up to e
Category		Up to 4
PFHD at high demand rate		5.2×10^{-10}/h
PFD_{avg} at low demand rate		4.5×10^{-5}
SIL		Suitable for applications in SIL 3
Mission time	Years	20
Safety assessment of the guard locking function		
Standards		ISO 13489-1, IEC 62061/IEC 61508
PL		Up to d
Category		Up to 2
PFHD at high demand rate		2.0×10^{-9}/h
PFD_{avg} at low demand rate		4.5×10^{-4}
SIL		Suitable for applications in SIL 2
Mission time	Years	20

Pin assignment

M12 device plugs, 8-pole



1	WH = White	→	A1
2	BN = Brown	→	X1
3	GN = Green	→	A2
4	YE = Yellow	→	OSSD1
5	GY = Grey	→	OUT
6	PK = Pink	→	X2
7	BU = Blue	→	OSSD2
8	RD = Red	→	IN

IC03_31010

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Selection and ordering data

Plastic enclosures · With M12 connection plug, 8-pole · Locking force 1 150 N

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	3SE64 RFID safety systems switches with tumbler [1]					
3SE6415-1.B0.	Three LEDs for displaying the operating states (24 V DC), three directions of actuation, latching force adjustable with star handle: 25 N or 50 N, actuator 3SE6410 must be ordered separately.					
	• Closed-circuit principle with auxiliary release (tumbler monitored)					
	- Family-coded	**3SE6415-1BB01**		1	1 unit	41K
	- Individually coded, programmable several times	**3SE6415-1BB02**		1	1 unit	41K
	• Open-circuit principle with auxiliary release (actuator monitored)					
	- Family-coded	**3SE6415-1AB01**		1	1 unit	41K
	- Individually coded, programmable several times	**3SE6415-1AB02**		1	1 unit	41K
3SE6415-1CB01	• Closed-circuit principle with escape release (tumbler monitored), lever handle included as separate item, can be mounted on either side					
	- Family-coded	**3SE6415-1CB01**		1	1 unit	41K
	RFID actuator					
3SE6410-1AC01	With stainless steel bracket, can be used as door stop	**3SE6410-1AC01**		1	1 unit	41K

[1] Not connectable via AS-i modules.

Monitoring units, see from pages 8/1, 9/1 and 11/1 onwards.

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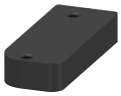
Accessories

	Version	Length	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		m					
Optional accessories							
 3SX5600-1F	**Mounting plate** For doors so that they are flush with the door frame To compensate for the height between the safety switch and the RFID actuator	--	**3SX5600-1F**		1	1 unit	41K
3SX5600-2F	**Blocking inserts** This is inserted into the actuator bracket to prevent the door from closing. For 1 to 6 padlocks (not included in the scope of supply), shackle diameter max. 6 mm	--	**3SX5600-2F**		1	1 unit	41K
3SX5600-3F	**Triangular keys** For safety switches 3SE6415-1CB01 To unlock the escape release when the red lever is missing.	--	**3SX5600-3F**		1	1 unit	41K
3SX5600-4F	**Protection plate (masking plate)** For the RFID actuator 3SE6410-1AC01 For use on glass and plastic doors on machinery, Material: Aluminum, Aluminum thread heads with M6-Thread including rubber washers	--	**3SX5600-4F**		1	1 unit	41K
3SX5601-2GA03	**Connecting cables** With M12 socket, 8-pole, straight, open end, rated voltage 30 V, rated current 2 A	3 5 10 15	**3SX5601-2GA03** **3SX5601-2GA05** **3SX5601-2GA10** **3SX5601-2GA15**		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41K 41K 41K 41K
3RK1902-4BA00-5AA0	**M12 plugs, 5-pole** • Straight, separate item • Angled, separate item	 -- --	 **3RK1902-4BA00-5AA0** **3RK1902-4DA00-5AA0**		 1 1	 1 unit 1 unit	 42D 42D
6GT2090-0BE00	**M12 plug, 8-pole** Straight	--	**6GT2090-0BE00**		1	5 units	572
3SX5601-3SV18	**Connecting cable** With M12 socket, 8-pole and M12 plug, 8-pole	1	**3SX5601-3SV18**		1	1 unit	41K

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Price groups
PG 41J, 41K, 42C, 42K, 343

13/2 **Introduction**

SIRIUS ACT pushbuttons and indicator lights
13/6 General data
Actuators and indicators, 22 mm, round, plastic, black
13/23 Complete units
13/32 Compact units
13/34 Actuating and signaling elements
Actuators and indicators, 22 mm, metal, shiny
13/47 Complete units
13/55 Compact units
13/57 Actuating and signaling elements
Actuators and indicators, flat, 30 mm, metal, matte
13/70 Actuating and signaling elements
Actuators and indicators, customized designs
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Holders
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13/90 Solid-state modules for ID key-operated switches
13/91 Modules for PROFINET
13/92 Support terminals
Enclosures
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13/95 Pushbuttons and indicator lights in the enclosure
13/100 Pushbuttons and indicator lights in the enclosure for AS-Interface
13/103 Pushbuttons and indicator lights in the enclosure for IO-Link
13/104 Pushbuttons and indicator lights in the enclosure for connection to SIMATIC ET 200
13/106 Two-hand operation consoles

Accessories
Labels
13/107 - Insert labels
13/110 - Label holders for labeling plates
13/112 - Labeling plates
13/119 - Labeling plates for enclosures
13/123 - Labels for laser printers
13/124 - Other labels
13/127 Protection/Access protection
13/133 Actuators
13/136 Enclosures
13/138 Miscellaneous accessories

SIRIUS 3SB2 pushbuttons and indicator lights, 16 mm
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13/145 Actuating and signaling elements
13/147 Contact blocks and lampholders
Accessories and spare parts
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SIRIUS 3SE7 cable-operated switches
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13/159 Accessories

SIRIUS 3SE2, 3SE3 foot switches
13/161 Plastic and metal enclosures

SIRIUS 8WD4 signaling columns
13/163 Electronically configurable 8WD46 signaling columns, 70 mm diameter NEW
8WD42 and 8WD44 signaling columns
13/170 General data
13/173 8WD42 signaling columns, 50 mm diameter
13/175 8WD44 signaling columns, 70 mm diameter

SIRIUS 8WD5 integrated signal lamps
13/180 8WD53 integrated signal lamps, 70 mm diameter

Note:

13/17 SIRIUS ACT pushbuttons and indicator lights can also be ordered in practical, environment-friendly multi-unit packaging.
Example:
3SU1000-1AA10-0AA0-Z X90; pack of 50
3SU1500-0AA10-0AA0-Z X05; pack of 5

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Introduction

Overview

	3SU1.0		
Pushbuttons and indicator lights			
Designs			
Nominal diameter	22 mm		
Version	Plastic		
Actuators	Complete units	Compact units	Actuating/ signaling elements
Pushbuttons	✓ see p. 13/23	--	✓ see p. 13/34
Illuminated pushbuttons	✓ see p. 13/23	--	✓ see p. 13/35
Mushroom pushbuttons	✓ see p. 13/25	--	✓ see p. 13/37
EMERGENCY STOP mushroom pushbuttons	✓ see p. 13/26	--	✓ see p. 13/38
Selector switches	✓ see p. 13/28	--	✓ see p. 13/40
Key-operated switches	✓ see p. 13/29	--	✓ see p. 13/42
ID key-operated switches	--	--	✓ see p. 13/44
Twin pushbuttons	--	--	✓ see p. 13/36
Quadruple pushbuttons	--	--	✓ see p. 13/36
Toggle switches	--	--	✓ see p. 13/39
Coordinate switches	✓ see p. 13/30	--	✓ see p. 13/45
Sensor switches	--	✓ see p. 13/32	--
Potentiometers	--	✓ see p. 13/32	--
Pushbuttons with extended stroke	--	✓ see p. 13/33	--
Indicators			
Indicator lights	✓ see p. 13/31	--	✓ see p. 13/45
Indicator lights in illuminated pushbutton design	--	--	✓ see p. 13/45
Acoustic signaling devices	--	✓ see p. 13/32	--
Modules			
Contact modules	✓ see p. 13/79 to 13/83		
LED modules	✓ see p. 13/84 to 13/87		
AS-Interface modules	✓ see p. 13/88		
Solid-state modules for IO-Link	✓ see p. 13/89		
Solid-state modules for ID key-operated switches	✓ see p. 13/90		
Modules for PROFINET	✓ see p. 13/91		
Support terminals	✓ see p. 13/92		
Connections			
Screw terminals	✓	✓	✓
Spring-loaded terminals	✓	--	✓
Solder pins	--	--	✓
AS-Interface	✓	--	✓
IO-Link	--	--	✓
PROFINET	--	--	✓

✓ Available

-- Not available

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	3SU1.5			3SU1.6			3SB2
Pushbuttons and indicator lights							
Designs							
Nominal diameter	22 mm			30 mm			16 mm
Version	Metal, shiny			Metal, matte, flat			Plastic, round
Actuators	Complete units	Compact units	Actuating/ signaling elements	Complete units	Compact units	Actuating/ signaling elements	
Pushbuttons	✓ see p. 13/47	--	✓ see p. 13/57	--	--	✓ see p. 13/70	✓ see p. 13/145
Illuminated pushbuttons	✓ see p. 13/47	--	✓ see p. 13/58	--	--	✓ see p. 13/70	✓ see p. 13/145
Mushroom pushbuttons	✓ see p. 13/49	--	✓ see p. 13/60	--	--	--	--
EMERGENCY STOP mushroom pushbuttons	✓ see p. 13/50	--	✓ see p. 13/61	--	--	--	✓ see p. 13/145
Selector switches	✓ see p. 13/52	--	✓ see p. 13/63	--	--	✓ see p. 13/71	✓ see p. 13/145
Key-operated switches	✓ see p. 13/53	--	✓ see p. 13/66	--	--	✓ see p. 13/72	✓ see p. 13/146
Twin pushbuttons	--	--	✓ see p. 13/59	--	--	--	--
Toggle switches	--	--	✓ see p. 13/63	--	--	--	--
Coordinate switches	✓ see p. 13/53	--	✓ see p. 13/68	--	--	--	--
Potentiometers	--	✓ see p. 13/55	--	--	--	--	
Pushbuttons with extended stroke	--	✓ see p. 13/56	--	--	--	--	--
Indicators							
Indicator lights	✓ see p. 13/54	--	✓ see p. 13/68	--	--	✓ see p. 13/72	✓ see p. 13/144
Acoustic signaling devices	--	✓ see p. 13/55	--	--	--	--	--
Modules							
Contact modules	✓ see p. 13/79 to 13/83						
LED modules	✓ see p. 13/84 to 13/87						
Wedge bases	--	--	--	--	--	--	✓ see p. 13/154
AS-Interface modules	✓ see p. 13/88						
Solid-state modules for IO-Link	✓ see p. 13/89						
Solid-state modules for ID key-operated switches	✓ see p. 13/90						
Modules for PROFINET	✓ see p. 13/91						
Support terminals	✓ see p. 13/92						
Connections							
Plug-in connection	--	--	--	--	--	--	✓
Screw terminals	✓	✓	✓	✓	✓	✓	--
Spring-loaded terminals	✓	✓	✓	✓	✓	✓	--
Solder pins	✓	✓	✓	✓	✓	✓	✓
AS-Interface	✓	✓	✓	✓	✓	✓	--
IO-Link	✓	✓	✓	✓	✓	✓	--
PROFINET	--	--	✓	--	--	✓	--

✓ Available

-- Not available

Note:

Safety characteristics, see page 16/9.

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Introduction

	3SU18	3SU18	3SE7	3SE29, 3SE39
	Enclosures	**Two-hand operation consoles**	**Cable-operated switches**	**Foot switches**
Enclosures				
Plastic	✓	✓	--	✓
Metal	✓	✓	✓	✓
Actuators				
Pushbuttons	✓	--	✓	✓
Illuminated pushbuttons		--	--	--
Mushroom pushbuttons	✓	✓	--	--
EMERGENCY STOP mushroom pushbuttons	✓	✓	✓	--
Selector switches	✓	--	--	--
Key-operated switches	✓	--	--	--
Cable-operated switches	--	--	✓	--
Indicators				
Indicator lights	✓	--	✓	--
Acoustic signaling devices	✓	--	--	--
Modules (see p. 13/83 to 13/92)				
1-pole/2-pole	✓/--	✓	--/✓	--/✓
3-pole/4-pole	--	--	✓	✓
Connections				
Screw terminals	✓	✓	✓	✓
AS-Interface	✓	--	--	--
IO-Link	✓	--	--	--
PROFINET	✓	--	--	--
Pages	see p. 13/93	see p. 13/106	see p. 13/156	see p. 13/161

✓ Available

-- Not available

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	8WD46	**8WD42**	**8WD44**	**8WD53**
	Signaling columns			**Integrated signal lamps**
	Electronically configurable	**Mechanically modular**		
Enclosures				
Plastic	✓	✓		✓
Illumination				
Incandescent lamps	--	✓		✓
Multi-color LED (RGB-LED)	✓	--		--
LEDs	--	✓		✓
Flashlights	--	✓		✓
Connections				
Screw terminals	--	✓		✓
Spring-loaded terminals	--	✓		--
M12 plugs	✓	--		--
Communication				
AS-Interface	--	✓	✓	--
IO-Link	✓	--	✓	--
Standard (without communication)	✓	✓	✓	✓
Functions				
Continuous lights	✓	✓	✓	✓
Blinklights	✓	✓	✓	✓
Flashlights	✓	✓	✓	✓
Rotating lights	✓	✓	✓	✓
Level indicators	✓	--	--	--
Acoustics				
• Buzzer	--	✓	✓	--
• Siren	✓	--	✓	--
Pages	see p. 13/163 onwards	see p. 13/170 ... 13/174	see p. 13/170 ... 13/172, 13/175	see p. 13/180 onwards

✓ Available

-- Not available

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Overview

SIRIUS ACT pushbuttons and indicator lights

SIRIUS ACT – commanding and signaling

SIRIUS ACT is a modular system of pushbuttons and indicator lights for front plate mounting and rear-mounted electrical modules. Thanks to SIRIUS ACT with PROFINET, commanding and signaling devices can be connected directly via PROFINET to the controller and HMI devices – including with safety functions. Engineering and commissioning are simplified by the TIA Portal.

Extensive portfolio

- Customized versions, e.g. special locks, inscriptions, equipped enclosures
- Communication-capable thanks to direct interfacing to AS-Interface, IO-Link or PROFINET

Diverse possible applications

- National and international approvals
- Many trade approvals
- Short delivery times thanks to global availability

Standards

- IEC 60947-1
- IEC 60947-5-1
- IEC 60947-5-5 for EMERGENCY STOP devices

More information

Homepage, see www.siemens.com/sirius-act
Industry Mall, see www.siemens.com/product?3SU1
Configurator, see www.siemens.com/sirius-act/configurator
Conversion tool, see www.siemens.com/conversion-tool
System Manual, see https://support.industry.siemens.com/cs/ww/en/view/107542462
TIA Portal, see www.siemens.com/TIA
TIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=SiriusActConfigurator

Video: SIRIUS ACT - Teaser trailer

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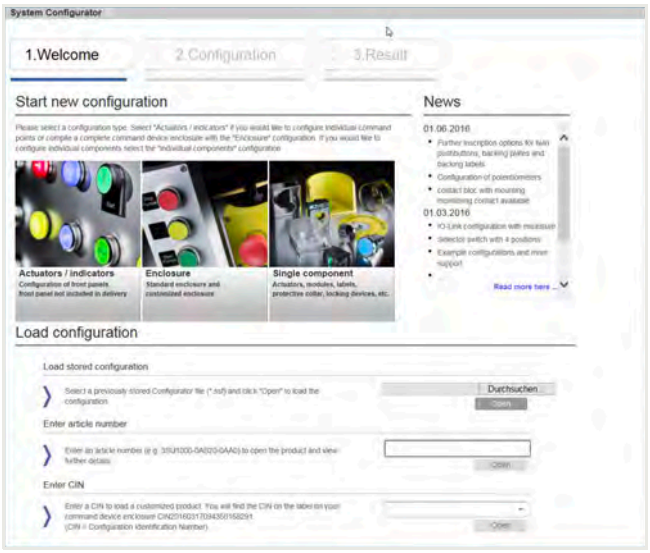
Configurator



- Fast and simple selection by intuitive navigation through clearly-organized menus using drag & drop
- Image preview of selected components
- Inscription of pushbuttons and labeling plates using the interactive inscription tools
- Once created, a configuration can be ordered as often as required using the customer-specific article number and the CIN (Configuration Identification Number)
- Everything at a glance: Product data sheets, certificates, dimensional drawings, list prices, inscription tool

Video: SIRIUS ACT - Configurator

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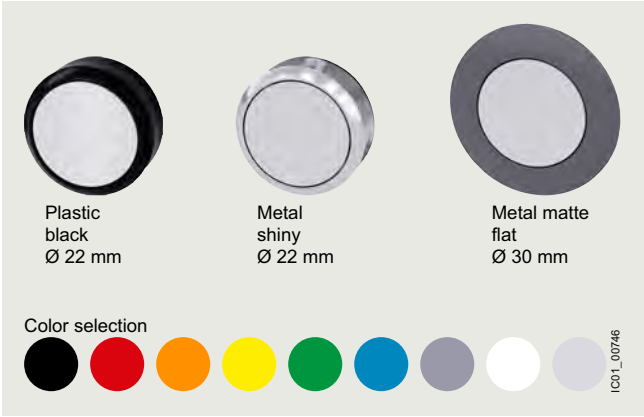
General data

Benefits

Design

Video: SIRIUS ACT - Design



SIRIUS ACT is available in three design lines.

Ruggedness

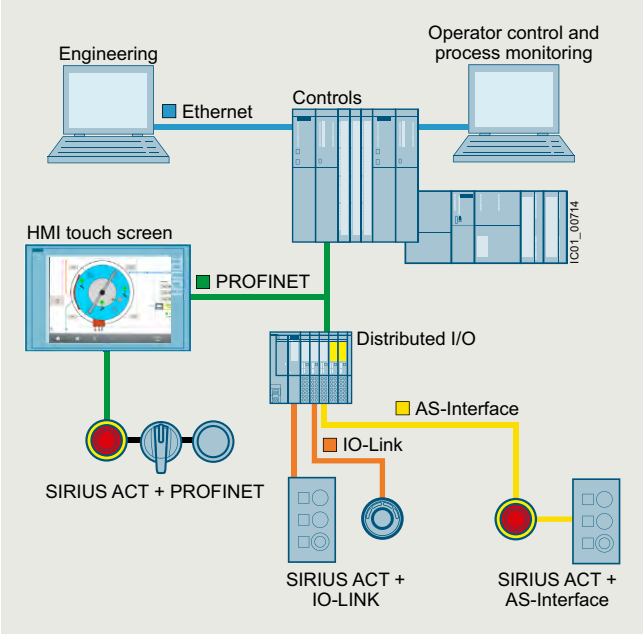
Video: SIRIUS ACT - Ruggedness

- Degree of protection IP66, IP67, IP69 (IP69K)

IP66	
6 = Protection against the ingress of dust	6 = Protection against powerful splashwater
IP67	
6 = Protection against the ingress of dust	7 = Protection against temporary immersion
IP69 (IP69K)	
6 = Protection against the ingress of dust	9 (9K) = Protection against water in high-pressure cleaning (approx. 80 bar) and high water jet temperatures (approx. 80 °C)

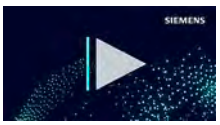
- Service life of 100 000 hours thanks to use of LEDs
- Media resistance (chemicals) thanks to solid stainless steel and high-grade plastics
- Mechanical endurance of 10 x 10^6 operating cycles
- Suitable for use in extreme environments
- Reliable, friction-locked fixing with just one screw
- Design stability according to use
- Simple geometry for mounting holes

Communication

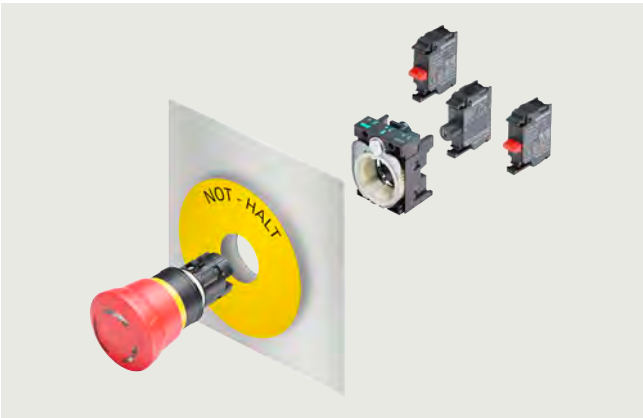


- Direct connection of the enclosure to AS-Interface or IO-Link
- Direct connection in the control cabinet to PROFINET, IO-Link or AS-Interface
- Can be integrated easily via the TIA Portal

Simple installation



Video: SIRIUS ACT – Installation



- Self-holding function of the actuator when mounting
- Twist prevention integrated into patented holder design
- Stackable contact modules
- Self-explanatory and fast installation using one hand
- Components can be mounted with holder removed
- No special tools required, simple size 2 screwdriver (cross-tip ISO 87641PZD1, flat-head ISO 2380-1 A/B 1x4.5) is sufficient

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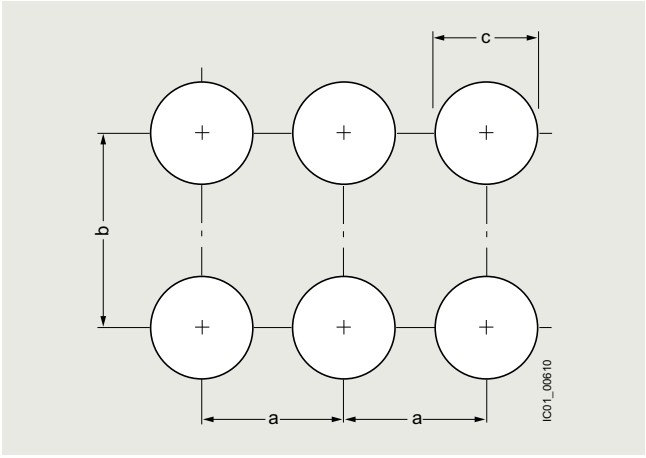
Mounting dimensions



Version	Minimum clearance		
	a	b	c
	mm	mm	mm
22 mm, plastic, black 22 mm, metal, shiny For front panel thickness 1 ... 6 mm			
3-slot holder	30	40	$22.3^{+0.4}$
4-slot holder	40	40	$22.3^{+0.4}$
30 mm, metal, matte For front panel thickness 1 ... 4 mm			
3-slot holder	40	45	$30.5^{+0.5}$

Versions

SIRIUS ACT is a modular system of pushbuttons and indicator lights with which customized versions can be configured flexibly.

One command point comprises:

- An actuating or signaling element in front of the control panel
- A holder for securing behind the control panel
- Up to six contact modules and/or one LED module (mounted on the holder), 1-pole contacts can be stacked
- A comprehensive range of accessories for inscription/marking

Complete units

Complete units made up of an actuating or signaling element, holder and contact modules and/or LED modules are offered for the most frequent application cases. The electrical parts are integrated and only have to be wired.

Compact units

Signaling devices, sensor switches, pushbuttons with extended stroke and potentiometers are available as compact units. The electronic circuitry is already integrated in these devices, i.e. it is not necessary to snap on a contact or LED module.

Complete units	Pages	Compact units	Pages
Plastic, black	13/23	Plastic, black	13/32
Metal, shiny	13/47	Metal, shiny	13/55

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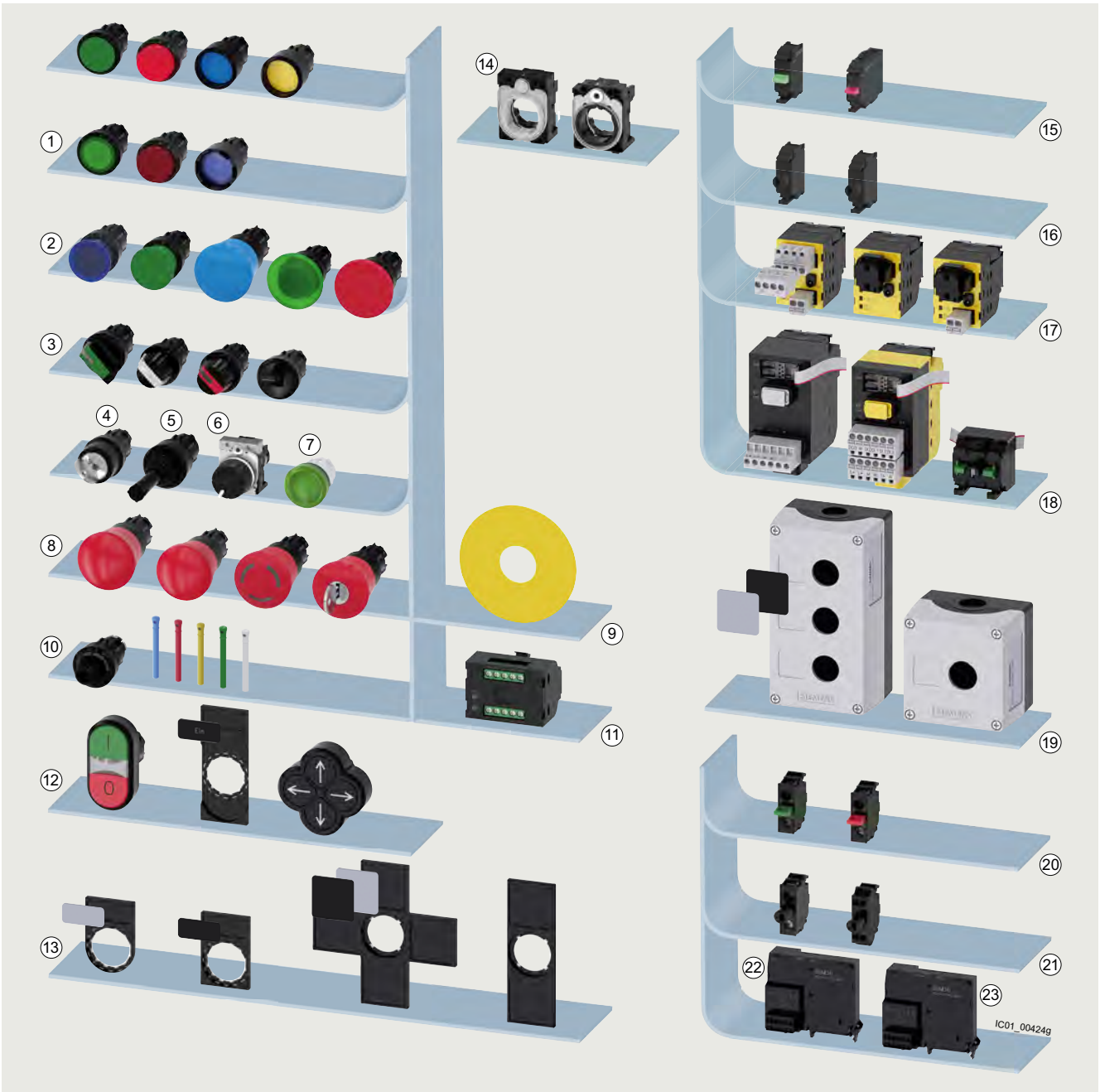
General data

Actuating and signaling elements



System overview of SIRIUS ACT pushbuttons and indicator lights from the plastic design line, pushbuttons and indicator lights available in three design lines.

Actuating and signaling elements		Pages
①	Pushbuttons, illuminated pushbuttons	13/23
②	Mushroom pushbuttons	13/25
③	Selector switches, toggle switches	13/39, 13/40
④⑤	Key-operated switches, coordinate switches	13/42, 13/45
⑥⑦	Potentiometers, indicator lights	13/32, 13/45
⑧⑨	EMERGENCY STOP mushroom pushbuttons, backing plates	13/26
⑩	ID key-operated switches, ID keys	13/44
⑪	Solid-state modules for ID key-operated switches	13/90
⑫	Twin pushbuttons, label holders, labeling plates, quadruple pushbuttons	13/36

Holders and labels		Pages
⑬	Label holders, labeling plates	From 13/110
⑭	Holders	From 13/76

Modules for front plate mounting		Pages
⑮	Contact modules	From 13/79
⑯	LED modules	From 13/84
⑰	AS-Interface modules	13/88
㉓	Solid-state modules for IO-Link	13/89
⑱	Modules for PROFINET: Interface modules, fail-safe interface modules, terminal modules	13/91

Enclosures		Pages
⑲	Enclosures	From 13/93

Modules for base mounting		Pages
⑳	Contact modules	From 13/83
㉑	LED modules	From 13/86
㉒	AS-Interface modules	13/88
㉓	Solid-state modules for IO-Link	13/89

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SIRIUS ACT with PROFINET

SIRIUS ACT with PROFINET connects pushbuttons and indicator lights directly via PROFINET to the controller and HMI devices – including with Safety functions.

With this solution designed for the control panel, up to 21 SIRIUS ACT devices can be connected to the controller via PROFINET. Integration of the EMERGENCY STOP mushroom pushbutton (SIL 3/PL e) is possible via PROFIsafe.

Non-SIRIUS ACT devices, e.g. position switches, can additionally be connected via the open, digital/analog interfaces (DI, DQ, AI).

The system is entirely integrated into TIA Portal and does not require any further addressing apart from the IP address for PROFINET.

Quick and easy installation with flat cables without special tools saves significantly on wiring outlay.

Video: SIRIUS ACT, Communication/PROFINET

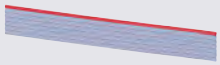
Interface modules/fail-safe interface modules

	Interface modules for PROFINET, 24 V DC 1 to 20 terminal modules can be connected	**3SU1400-1L□10-□AA1**	See page 13/91

Terminal modules

	Terminal modules with two contacts	**3SU1400-1MA□0-1□A1**	See page 13/91
	Terminal modules with two contacts and integrated LED	**3SU1401-1MC□0-1□A1**	
	Terminal modules with integrated LED	**3SU1401-1ME□0-1□A1**	

Accessories

	Memory modules For backing up the complete parameterization of the safety system without a PC/PG through the system interface	**3RK3931-0AA00**	See page 13/91
	LED modules for mounting on printed circuit boards	**3SU1401-3BA□0-5AA0**	See page 13/87
	**Flat ribbon cable**		
	7 cores, length 5 m	**3SU1900-0KQ80-0AA0**	See page 13/139
	7 cores, length 10 m	**3SU1900-0KP80-0AA0**	

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General data

ID key-operated switches

Groups of employees or individuals can be authenticated by means of the ID key-operated switch. The ID key-operated switch is electronic and has four switch positions that are selected by keys with different codes. Using the four ID keys with different codes, it is possible to select 1 to 4 positions. The ID keys are color-coded (yellow, blue, red, green, white) so that they can be clearly differentiated at a glance and used flexibly thanks to four function levels.

Video: SIRIUS ACT ID key-operated switches

RFID authentication solutions

Groups of employees or individuals can be authenticated by means of the ID key-operated switch. Color-coded keys for easy distinction between users.

Different versions of ID key-operated switches are available depending on the following features:

- Front ring material
- Conventional version: 1 + 4 non-isolated outputs
- Version with IO-Link: Option of individual coding

Operation:
Insert ID key, turn key to select the position. Standard keys can also be used in conjunction with the solid-state module for ID key-operated switches with IO-Link function. The white ID key is supplied without coding.

	3SU1000-4WS10-0AA0 **Plastic, black**	**3SU1500-0AA10-0AA0** **Holder, plastic**	**3SU1550-0AA10-0AA0** **Holder, universal**
ID key-operated switches			
Number of switching positions	4		
Actuating angle	45°		
Operating principle	Latching		
Switch position for key removal	Key removal possible in all four positions		
Color	Black		
Pages	13/44		

	3SU1400-1GC10-1AA0	**3SU1400-1GD10-1AA0**
Solid-state modules for ID key-operated switches		
Type of power supply	--	Via IO-Link master
Protocol is supported	--	IO-Link protocol
Number of NO contacts	5	5
IO-Link transfer rate	--	COM2 (38.4 kBaud)
Pages	13/90	13/90

	3SU1900-0FU60-0AA0 **ID keys ID group individual**	**3SU1900-0FV40-0AA0** **3SU1900-0FW30-0AA0** **3SU1900-0FX20-0AA0** **3SU1900-0FY50-0AA0** **ID keys**
ID keys		
Material	Plastic	Plastic
Version of RFID coding	Individually coded, programmable several times	ID group 1 ID group 2 ID group 3 ID group 4
Color	White	Green Yellow Red Blue
Pages	13/135	13/135

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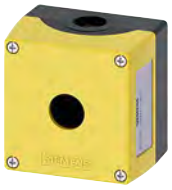
Article number schemes

Device types



3SU10	3SU11	3SU12	3SU14	3SU15	3SU18	3SU19
Device types						
Actuating and signaling elements	**Complete units**	**Compact units**	**Modules for actuators and indicators**	**Holders with module**	**Enclosures**	**Accessories**

Actuating and signaling elements

Product versions		**Article number**
SIRIUS ACT pushbuttons and indicator lights		**3SU1** □□□– □ □□□□– □□□□
Device type	Actuating and signaling elements	**0**
Material (front ring)	Plastic, black	**0**
	Metal, shiny	**5**
	Metal, matte	**6**
Illumination	Non-illuminated	**0**
	Illuminated/transparent	**1**
	Illuminated/non-illuminated	**2**
Type of actuator/indicator	Pushbutton	**0**
	Mushroom pushbutton/EMERGENCY STOP mushroom pushbutton/sensor switch	**1**
	Selector switch	**2**
	Twin pushbutton, toggle switch, quadruple pushbutton	**3**
	Key-operated switch	**4/5**
	Indicator light/acoustic signaling device	**6**
	Coordinate switch	**7**
Design of the actuator/lock	e.g. A = Flat	□
Function	e.g. B = Momentary contact	□
Color/key removal position	e.g. 10 = Black, 20 = Red	□□
Connection type	None	**0**
Module/holder equipment	e.g. A = Without module, without holder	□
Marking	e.g. A = None, C = "I", D = "O", R = "R"	□
Ambient condition	Standard	**0**
	ATEX Zone 1-2: Intrinsic safety	**2**
Example		**3SU1 0 0 0 – 0 A B 1 0 – 0 A A 0**

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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General data

Complete units

Product versions		Article number
SIRIUS ACT pushbuttons and indicator lights		**3SU1** □□□ – □ □□□□ – □□□□
Device type	Complete units	**1**
Material (front ring)	Plastic, black Metal, shiny Metal, matte	**0** **5** **6**
Illumination	Non-illuminated Illuminated (with/without LED, various voltages)	**0** **1** **...** **8**
Type of actuator/indicator	Pushbutton Mushroom pushbutton/EMERGENCY STOP mushroom pushbutton/sensor switch Selector switch Twin pushbutton, toggle switch Key-operated switch Indicator light/acoustic signaling device Coordinate switch	**0** **1** **2** **3** **4/5** **6** **7**
Design of the actuator/lock	e.g. A = Flat	□
Function	e.g. B = Momentary contact	□
Color/key removal position	e.g. 10 = Black, 20 = Red	□□
Connection type	Screw terminals Spring-loaded terminals	**1** **3**
Module/holder equipment including contact material	e.g. A = Without module, with holder B = 1 NO contact with holder C = 1 NC contact with holder	□
Marking	e.g. A = None, C = "I", D = "O", R = "R"	□
Ambient condition	Standard ATEX Zone 1-2: Intrinsic safety	**0** **2**
Example		**3SU1 1 0 0 – 0 A B 1 0 – 1 B A 0**

Compact units

Product versions		Article number
SIRIUS ACT pushbuttons and indicator lights		**3SU1** □□□ – □ □□□□ – □□□□
Device type	Compact units	**2**
Material (front ring)	Plastic, black Metal, shiny Metal, matte	**0** **5** **6**
Illumination	Non-illuminated Illuminated/non-illuminated	**0** **1**
Type of actuator/indicator	Pushbutton Sensor switch Potentiometer Acoustic signaling device	**0** **1** **2** **6**
Design of the actuator/lock	e.g. A = Flat	□
Function (voltage/resistance)	e.g. B = 24 V AC/DC	□
Color	e.g. 10 = Black, 20 = Red	□□
Connection type	None Screw terminals M12 connection, 4-pole Spring-loaded terminals	**0** **1** **2** **3**
Module/holder equipment including contact material	e.g. A = Without module, without holder B = 1 NO contact with holder C = 1 NC contact with holder	□
Marking	e.g. A = None	□
Ambient condition	Standard ATEX Zone 1-2: Intrinsic safety	**0** **2**
Example		**3SU1 2 0 1 – 6 A B 1 0 – 1 A A 0**

Note:

The article number schemes show an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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Modules for actuators and indicators

Product versions		Article number														
SIRIUS ACT pushbuttons and indicator lights		**3SU1**	□	□	□	–	□	□	□	□	□	–	□	□	□	□
Device type	Modules for actuators and indicators		**4**													
Material (front ring)	Plastic, black			**0**												
Illumination	Non-illuminated				**0**											
	Illuminated				**1**											
Mounting type	Front plate mounting						**1**									
	Base mounting						**2**									
	Printed circuit board						**3**									
Module type	Contact module							**A**								
	LED module							**B**								
	LED test module							**C**								
	Support terminal							**D**								
	AS-Interface module							**E**								
	Solid-state module for ID key-operated switches							**G**								
	Interface modules for PROFINET							**L**								
	Terminal modules							**M**								
Function/voltage	e.g. B = 24 V AC/DC								□							
Color	e.g. 10 = Black, 20 = Red									□	□					
Connection type	Screw terminals												**1**			
	Screw terminals + insulation piercing method												**2**			
	Spring-loaded terminals												**3**			
	Spring-loaded terminals + insulation piercing method												**4**			
	Socket terminals												**5**			
Module equipment including contact material	e.g. A = None B = 1 NO contact, silver C = 1 NC contact, silver													□		
Marking	None														**A**	
Ambient condition	Standard															**0**
	ATEX Zone 1-2: Intrinsic safety															**2**
Example		**3SU1**	**4**	**0**	**0**	**–**	**1**	**A**	**A**	**1**	**0**	**–**	**1**	**B**	**A**	**0**

Holders

Product versions		Article number														
SIRIUS ACT pushbuttons and indicator lights		**3SU1**	□	□	□	–	□	□	□	□	□	–	□	□	□	□
Device type	Holders		**5**													
Material (front ring)	Plastic, black			**0**												
	Metal, shiny			**1**												
	Universal for plastic and metal			**5**												
Illumination	Non-illuminated				**0**											
	Illuminated				**1**											
Mounting type	None						**0**									
	Front plate mounting						**1**									
Holder type	3x A							**A**								
	4x B							**B**								
Function/voltage	None								**A**							
	6 ... 24 V AC/DC								**G**							
Color	e.g. 10 = Black, 20 = Red									□	□					
Connection type	None												**1**			
	Screw terminals												**2**			
Module equipment including contact material and slot	e.g. A = None B = 1 NO contact, silver C = 1 NC contact, silver													□		
Marking	None														**A**	
Ambient condition	Standard															**0**
	ATEX Zone 1-2: Intrinsic safety															**2**
Example		**3SU1**	**5**	**0**	**0**	**–**	**0**	**A**	**A**	**1**	**0**	**–**	**0**	**A**	**A**	**0**

Note:

The article number schemes show an overview of product versions for better understanding of the logic behind the article numbers.

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General data

Enclosures

Product versions		Article number
SIRIUS ACT pushbuttons and indicator lights		**3SU1** □ □ □ – □ □ □ □ □ – □ □ □ □
Device type	Enclosures	**8**
Material (enclosure/front ring)	Plastic, black plastic Metal, shiny metal	**0** **5**
Number of command points	Command point ... Command points	**1** **...** **6**
Type of enclosure	Surface mounting 4-position selector switch and coordinate switch Palm pushbutton Two-hand operation console	**0** **1** **2** **3**
Equipment	e.g. command point, inscription, module	□ □
Communication capability	None AS-i	**0** **1**
Ambient condition	Standard ATEX Zone 1-2: Intrinsic safety	**0** **2**
Mounting/connection of modules	None Front plate mounting, screw terminals Base mounting, screw terminals Front mounting, spring-loaded terminals Base mounting, spring-loaded terminals	**0** **1** **2** **3** **4**
Cable exit from enclosure	None Direct entry of AS-i flat cable at top/on right AS-i insulation piercing method at top/on right	**A** **G** **H**
Design of enclosure top	Center command point With recess for labeling plate With protective collar 4 additional holes (two-hand operation console) 8 additional premachined breaking points (two-hand operation console)	**A** **B** **C** **D** **E**
Color of enclosure top	Gray Yellow	**1** **2**
Example		**3SU1 8 0 1 – 0 A A 0 0 – 0 A A 2**

Accessories

Product versions		Article number
SIRIUS ACT pushbuttons and indicator lights		**3SU1** □ □ □ – □ □ □ □ □ – □ □ □ □
Device type	Accessories	**9**
Material	Plastic, black Metal, shiny Metal, matte	**0** **5** **6**
Illumination	Non-illuminated Illuminated	**0** **1**
Type of accessory (labels, protection, actuator, enclosure)	e.g. 0AB = Insert label	□ □ □
Color	e.g. 10 = Black, 20 = Red	□ □
Marking	e.g. 0AA = None 0AB = ON 0AT = EMERGENCY STOP	□ □ □
Ambient condition	Standard ATEX Zone 1-2: Intrinsic safety	**0** **2**
Example		**3SU1 9 0 0 – 0 A B 2 0 – 0 A B 0**

Note:

The article number schemes show an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

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Ordering notes for multi-unit packaging

SIRIUS ACT pushbuttons and indicator lights can also be ordered in various types of practical, environment-friendly multi-unit packaging.

Multi-unit packaging with order code X90

When ordering products in multi-unit packaging, the article number of the product concerned must be supplemented with **"-Z"** and, in addition, the order code **X90** must be specified.

Ordering example:

3SU1000-0AB20-0AA0-Z X90; purchase order quantity 100 units
→ Delivery of one package containing 100 units

Examples of multi-unit packaging with order code X90

SIRIUS ACT pushbuttons and indicator lights	Multi-unit, quantity per package X90
Complete units (3SU11)	20
Compact units (3SU12)	
• Acoustic signaling devices, pushbuttons with extended stroke, potentiometers	50
Actuating and signaling elements (3SU10)	
• Pushbuttons, illuminated pushbuttons, indicator lights	100
• Stop switches, twin pushbuttons, mushroom pushbuttons 30/40 mm, EMERGENCY STOP mushroom pushbuttons 30/40 mm, toggle switches, selector switches, key-operated switches, ID key-operated switches, coordinate switches	50
• Mushroom pushbuttons 60 mm, EMERGENCY STOP mushroom pushbuttons 60 mm	40
Holders without module (3SU15)	100
Modules for actuators and indicators (3SU14)	
• Contact modules	150
• LED modules	50
Enclosures (3SU18)	
• Empty plastic enclosures	
- 3SU1801-0AA00-0AA2, 3SU1801-0AA00-0AB1	24
- 3SU1801-0AA00-0AC2	18
Accessories (3SU19)	
• Sealing plugs, label holders, EMERGENCY STOP backing plates, labeling plates for potentiometers, EMERGENCY STOP labeling plates for enclosures without recesses and without inscription, single frames, dust caps for key-operated switches, adapters for DIN-rail mounting, protective collars for EMERGENCY STOP mushroom pushbuttons (40 mm, for 5 padlocks, yellow)	100
• Labeling plates	150

Multi-unit packaging with order code X05

When ordering products in multi-unit packaging, the article number of the product concerned must be supplemented with **"-Z"** and, in addition, the order code **X05** must be specified.

Ordering example:
3SU1500-0AA10-0AA0-Z X05; purchase order quantity 5 units
→ Delivery of one package containing 5 units

Examples of multi-unit packaging with order code X05

SIRIUS ACT pushbuttons and indicator lights	Multi-unit, quantity per package X05
Holders without module (3SU15)	
• Plastic: 3SU1500-0AA10-0AA0	5
• Metal: 3SU1510-0AA10-0AA0	5
• Universal for plastic and metal: 3SU1550-0AA10-0AA0	5
Modules for actuators and indicators (3SU14)	
• Contact modules for front plate mounting	5
- Screw terminals: 3SU1400-1AA10-1BA0, 3SU1400-1AA10-1CA0	
- Spring-loaded terminals: 3SU1400-1AA10-3BA0, 3SU1400-1AA10-3CA0	
• LED modules for front plate mounting	5
- Screw terminals: 3SU1401-1BB00-1AA0, 3SU1401-1BB20-1AA0, 3SU1401-1BB30-1AA0, 3SU1401-1BB40-1AA0, 3SU1401-1BB50-1AA0, 3SU1401-1BB60-1AA0	
- Spring-loaded terminals: 3SU1401-1BB00-3AA0, 3SU1401-1BB20-3AA0, 3SU1401-1BB30-3AA0, 3SU1401-1BB40-3AA0, 3SU1401-1BB50-3AA0, 3SU1401-1BB60-3AA0	
• LED modules for base mounting	5
- Screw terminals: 3SU1401-2BB00-1AA0, 3SU1401-2BB20-1AA0, 3SU1401-2BB30-1AA0, 3SU1401-2BB40-1AA0, 3SU1401-2BB50-1AA0, 3SU1401-2BB60-1AA0	
- Spring-loaded terminals: 3SU1401-2BB00-3AA0, 3SU1401-2BB20-3AA0, 3SU1401-2BB30-3AA0, 3SU1401-2BB40-3AA0, 3SU1401-2BB50-3AA0, 3SU1401-2BB60-3AA0	

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General data

Application

Environmental conditions

The pushbuttons and indicator lights are climate-proof (KTW 24) and suitable for standard industrial applications and operation in marine applications.

Simple electrical equipment

Non-illuminated actuators, contact modules, enclosures and special accessories can be classified as simple electrical equipment according to IEC 60079-11. This means that they may be used in intrinsically safe circuits and in potentially explosive atmospheres. An overview of the devices and atmospheres can be found in Confirmation No. 3287.01.

Safety EMERGENCY STOP according to ISO 13850

For controls according to IEC 60204-1, the SIRIUS ACT mushroom pushbuttons are suitable for use as a safety EMERGENCY STOP.

Safety circuits

Standard IEC 60947-5-1 requires positive opening.
This means that for the purpose of personal safety, the reliable opening of NC contacts in all safety circuits is expressly prescribed for the electrical equipment of machines and is designated according to IEC 60947-5-1 with the symbol (⊖).

PL e according to ISO 13849-1 can be attained with the EMERGENCY STOP mushroom pushbuttons if the corresponding fail-safe evaluation units are selected and correctly installed, e.g. the 3SK safety relays (see page 11/1 onwards) or matching units from the ASIsafe, SIMATIC or SINUMERIK product ranges.

Technical specifications

More information	
Industry Mall, see www.siemens.com/product?3SU1	Conversion tool, see www.siemens.com/conversion-tool
Configurator, see www.siemens.com/sirius-act/configurator	System Manual, see https://support.industry.siemens.com/cs/ww/en/view/107542462

Type		**3SU1..0-.AA 3SU1..0-.JA**	**3SU1..1-.AA 3SU1..1-.JA**	**3SU1..0-.AB 3SU1..0-.BB 3SU1..0-.CB 3SU1..0-.DB 3SU1..0-.JB**	**3SU1..1-.AB 3SU1..1-.BB 3SU1..1-.JB**	**3SU10.0-.FB**
Product designation		**Pushbuttons**				
Operating principle of the actuating element		Latching		Momentary contact		
Optional expansion of product by light source		No	Yes	No	Yes	No
Mechanical endurance (operating cycles) typical		500 000		10 000 000	3 000 000	200 000
Frequency of operation, maximum	1/h	1 800		3 600		
Shock resistance according to IEC 60068-2-27		Half-sine wave 15 *g*/11 ms				
Vibration resistance according to IEC 60068-2-6		10 ... 500 Hz: 5 *g*				
Degree of protection IP		IP66, IP67, IP69 (IP69K)				IP65, IP66
Environmental category during operation according to IEC 60721		3M6, 3S2, 3B2, 3C3, 3K6 (with a relative air humidity of 10 ... 95%)				
Ambient temperature						
• During operation	°C	-25 … +70				
• During storage	°C	-40 ... +80				

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Type		3SU1.00-.AA 3SU1.00-.BA 3SU1.00-.CA 3SU1.50-.AA 3SU1.50-.BA 3SU1.50-.CA	3SU1.50-.EA	3SU1.01-.AA 3SU1.01-.BA 3SU1.51-.AA 3SU1.51-.BA 3SU1.51-.CA	3SU1.00-.AD 3SU1.00-.BD 3SU1.00-.CD 3SU1.50-.AD 3SU1.50-.BD 3SU1.50-.CD	3SU1.50-.ED	3SU1.01-.AD 3SU1.01-.BD
Product designation		**Mushroom pushbuttons**					
Operating principle of the actuating element		Latching			Momentary contact		
Optional expansion of product by light source		No		Yes	No		Yes
Mechanical endurance (operating cycles) typical		500 000	300 000	500 000	10 000 000	300 000	3 000 000
Frequency of operation, maximum	1/h	1 800			3 600	1 800	3 600
Shock resistance according to IEC 60068-2-27		Half-sine wave 15 *g*/11 ms					
Vibration resistance according to IEC 60068-2-6		10 ... 500 Hz: 5 *g*					
Degree of protection IP		IP66, IP67, IP69 (IP69K)	IP65, IP67, IP69 (IP69K)	IP66, IP67, IP69 (IP69K)		IP65, IP67, IP69 (IP69K)	IP66, IP67, IP69 (IP69K)
Environmental category during operation according to IEC 60721		3M6, 3S2, 3B2, 3C3, 3K6 (with a relative air humidity of 10 ... 95%)					
Ambient temperature							
• During operation	°C	-25 … +70					
• During storage	°C	-40 ... +80					

Type		3SU1...-.J 3SU1...-.H 3SU1...-.G
Product designation		**EMERGENCY STOP mushroom pushbuttons**
Mechanical endurance (operating cycles)		300 000
Frequency of operation, maximum	1/h	600
Shock resistance according to IEC 60068-2-27		Half-sine wave 15 *g*/11 ms
Vibration resistance according to IEC 60068-2-6		10 ... 500 Hz: 5 *g*
Degree of protection IP		IP66, IP67, IP69 (IP69K)
Environmental category during operation according to IEC 60721		3M6, 3S2, 3B2, 3C3, 3K6 (with a relative air humidity of 10 ... 95%)
Ambient temperature		
• During operation	°C	-25 … +70
• During storage	°C	-40 ... +80

Type		3SU1.5.-2A 3SU1.5.-2B 3SU1.5.-2C 3SU1.5.-2D 3SU1.5.-2E	3SU1.0.-2A 3SU1.0.-2B 3SU1.0.-2C	3SU1.0.-3E 3SU1.5.-3E	3SU1.0.-4B 3SU1.0.-4C 3SU1.0.-4D 3SU1.0.-4F 3SU1.0.-4G 3SU1.0.-4H 3SU1.0.-4J 3SU1.0.-4L 3SU1.0.-5B 3SU1.0.-5H 3SU1.0.-5P 3SU1.0.-5Q 3SU1.0.-5R 3SU1.0.-5S 3SU1.0.-5T 3SU1.0.-5X	3SU1...-4B 3SU1...-4C 3SU1...-4D 3SU1...-4F 3SU1...-4G 3SU1...-4H 3SU1...-4J 3SU1...-4L 3SU1...-5B 3SU1...-5H 3SU1...-5K 3SU1...-5L 3SU1...-5P 3SU1...-5Q 3SU1...-5R 3SU1...-5S 3SU1...-5T 3SU1...-5X	3SU1.0.-7A 3SU1.0.-7B 3SU1.5.-7A 3SU1.5.-7B
Product designation		**Selector switches**		**Toggle switches**	**Key-operated switches**		**Coordinate switches**
Mechanical endurance (operating cycles)		300 000	1 000 000			300 000	250 000
Frequency of operation, maximum	1/h	1 800					2 400
Shock resistance according to IEC 60068-2-27		Half-sine wave 15 *g*/11 ms					
Vibration resistance according to IEC 60068-2-6		10 ... 500 Hz: 5 *g*					
Degree of protection IP		IP66, IP67, IP69 (IP69K)		IP66, IP67, IP69 (IP69K)	IP66, IP67, IP69 (IP69K)		IP65, IP67
Ambient temperature							
• During operation	°C	-25 … +70					
• During storage	°C	-40 ... +80					

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General data

Type		3SU1400-.AA10-1.A0	3SU1400-1AA10-1GA0, 3SU1400-1AA10-1RA0	3SU1400-1AA10-1HA0	3SU1400-.AA10-3.A0	3SU1400-1AA10-3HA0	3SU1400-3AA10-5.A0
Product designation		**Contact modules**					
Insulation voltage, **rated value**	V	500					
Pollution degree		3					
Impulse withstand voltage, rated value	kV	6					
Operational voltage type		AC/DC					
Operational voltage, rated value							
• At AC at 50 Hz	V	5 ... 500					
• At DC	V	5 ... 500					
Thermal current	A	10					
Operational current, rated value							
• At AC-12							
- At 24 V	A	10					
- At 230 V	A	8					
• At AC-15							
- At 24 V	A	6					
- At 230 V	A	6	4		6		
- At 400 V	A	3					
- At 500 V	A	1.4					
• At DC-12							
- At 24 V	A	10					
- At 48 V	A	5					
- At 110 V	A	2.5					
- At 230 V	A	1		0.3	1	0.3	1
- At 400 V	A	0.3					
- At 500 V	A	0.3		0.2	0.3		
• At DC-13							
- At 24 V	A	3					
- At 48 V	A	1.5					
- At 110 V	A	0.7		0.6	0.7	0.6	0.7
- At 230 V	A	0.3					
- At 400 V	A	0.1					
- At 500 V	A	0.1					
Contact reliability		One contact failure per 100 million switching operations (17 V, 5 mA), one contact failure per 10 million switching operations (5 V, 1 mA)					
Mechanical endurance (operating cycles) typical		10 000 000					
Frequency of operation, maximum	1/s	3 600					
Fuse link version required for short-circuit protection of the auxiliary switch with type of coordination 1		gG/Dz 10 A, quick-response/Dz 10 A					
Uninterrupted current of miniature circuit breaker C characteristic	A	10					
Vibration resistance according to IEC 60068-2-6		10 ... 500 Hz: 5 *g*					
Shock resistance according to IEC 60068-2-27		Half-sine wave 15 *g*/11 ms					
Climate class during operation according to IEC 60721		3M6, 3S2, 3B2, 3C3, 3K6 (with a relative air humidity of 10 ... 95%, no condensation permitted in operation)					
Ambient temperature							
• During operation	°C	-25 … +70					
• During storage	°C	-40 ... +80					
Degree of protection IP		See product data sheet					
Type of electrical connection		**Screw terminals**			**Spring-loaded terminals**		**Socket terminals (THT)**
Type of connectable conductor cross-sections							
• Solid with end sleeve	mm^2	2 x (0.5 ... 0.75)			--		
• Solid without end sleeve	mm^2	2 x (1.0 ... 1.5)			2 x (0.25 ... 1.5)		--
• Finely stranded with end sleeve	mm^2	2 x (0.5 ... 1.5)			2 x (0.25 ... 0.75)		--
• Finely stranded without end sleeve	mm^2	2 x (1.0 ... 1.5)			2 x (0.25 ... 1.5)		--
• For AWG cables		2 x (18 ... 14)			2 x (24 ... 16)		--
Tightening torque for screw terminals	Nm	0.8 ... 0.9			--		

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Type		3SU1401-.....-1	3SU1401-.....-3	3SU1401-.....-5
Product designation		LED module		
Light source integrated in product		Yes		
Type of light source		LED		
Insulation voltage, rated value	V	320		
Pollution degree		3		
Impulse withstand voltage, rated value	kV	4		
Relative positive tolerance of the operational voltage	%	20		
Relative negative tolerance of the operational voltage	%	20		
Operating time typical	h	100 000		
Vibration resistance according to IEC 60068-2-6		10 ... 500 Hz: 5 *g*		
Shock resistance according to IEC 60068-2-27		Half-sine wave 15 *g*/11 ms		
Environmental category during operation according to IEC 60721		3M6, 3S2, 3B2, 3K6 (with a relative air humidity of 10 ... 95%, no condensation permitted in operation)		
Ambient temperature				
• During operation	°C	-25 … +70		
• During storage	°C	-40 ... +80		
Degree of protection IP of the terminal		See product data sheet		
Type of electrical connection		**Screw terminals**	**Spring-loaded terminals**	**Socket terminals (THT)**

Type		3SU1400-1GC10-1AA0	3SU1400-1GD10-1AA0
Product designation		Solid-state modules for ID key-operated switches	
Communication/protocol			
Protocol is supported by IO-Link protocol		No	Yes
Product function		Group ID 24 V DC	IO-Link 24 V DC
IO-Link transfer rate		--	COM2 (38.4 kBaud)
Point-to-point cycle time between the master and the IO-Link device, minimum	ms	--	10
Type of power supply via IO-Link master		--	Yes
Data volume			
• Of the address area of the inputs with cyclic transfer total	bytes	--	2
• Of the address area of the outputs with cyclic transfer total	bytes	--	0
Number of NO contacts		5	
General data			
Impulse withstand voltage, rated value	kV	0.8	
Insulation voltage, rated value	V	30	
Pollution degree		3	
Voltage type			
• Of operational voltage		DC	
• Of input voltage		DC	
Operational voltage			
• At DC, rated value	V	24	
• Rated value	V	18 … 30	
Current consumed, maximum	mA	49	
Ambient temperature			
• During operation	°C	-25 … +70	
• During storage	°C	-40 ... +80	
Degree of protection IP		See product data sheet	
Touch protection against electric shock		Finger-safe	
Connections			
Type of electrical connection		**Screw terminals**	
Connectable conductor cross-section for auxiliary contacts			
• Solid			
- With end sleeve	mm²	1 x (0.2 ... 2.5), 2 x (0.2 ... 0.75)	
- Without end sleeve	mm²	1 x (0.2 ... 2.5), 2 x (0.2 ... 0.75)	
• Finely stranded			
- With end sleeve	mm²	1 x (0.2 ... 2.5), 2 x (0.25 .. 0.75)	
- Without end sleeve	mm²	1 x (0.2 ... 2.5), 2 x (0.2 ... 0.75)	
AWG number as coded connectable conductor cross-section		26 … 14	
Tightening torque for screw terminals	Nm	0.35 … 0.4	

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General data

Type		3SU1400-1LK10-1AA1	3SU1400-1LK10-3AA1	3SU1400-1LL10-1BA1	3SU1400-1LL10-3BA1
Product designation		Interface module		Fail-safe interface module	
Operational voltage type		DC			
Supply voltage at DC rated value	V	24			
Current consumed, maximum	mA	150			
Product function at interface 1 PROFINET IO device		Yes			
Type of interface Fast Ethernet interface		Yes			
Interface 1 type RJ45 (Ethernet)		Yes			
Number of ports at interface 1		1			
Number of modules per rack, maximum		20			
Number of digital outputs		0		1	
Number of digital inputs		0		4	
Software version required for STEP 7 in the TIA Portal		Integrated in the TIA Portal with version 14 SP1 or higher (HSP for V13 and V14)			
Safety Integrity Level (SIL) according to IEC 62061		--		SIL 3	
Performance Level (PL) according to ISO 13849-1		--		e	
Ambient temperature					
• During operation	°C	60 … -25			
• During storage	°C	80 … -40			
Degree of protection IP		See product data sheet			
Connectable conductor cross-section					
• Solid					
- With end sleeve	mm^2	0.2 … 2.5			
• Finely stranded					
- With end sleeve	mm^2	0.25 … 2.5			
- Without end sleeve	mm^2	0.2 … 2.5			

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Supply voltage for light source at AC V	Supply voltage for light source at DC V	Color	Number of contact modules	Number of NO contacts	Number of NC contacts	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons										
		Pushbuttons with flat button, momentary contact								
--	--	Black	1	1	0	**3SU1100-0AB10-1BA0**		1	1 unit	41J
				0	1	**3SU1100-0AB10-1CA0**		1	1 unit	41J
				1	1	**3SU1100-0AB10-1FA0**		1	1 unit	41J
		Red	1	1	0	**3SU1100-0AB20-1BA0**		1	1 unit	41J
				0	1	**3SU1100-0AB20-1CA0**		1	1 unit	41J
				1	1	**3SU1100-0AB20-1FA0**		1	1 unit	41J
		Yellow	1	1	0	**3SU1100-0AB30-1BA0**		1	1 unit	41J
				1	1	**3SU1100-0AB30-1FA0**		1	1 unit	41J
		Green	1	1	0	**3SU1100-0AB40-1BA0**		1	1 unit	41J
				1	1	**3SU1100-0AB40-1FA0**		1	1 unit	41J
		Blue	1	1	0	**3SU1100-0AB50-1BA0**		1	1 unit	41J
				1	1	**3SU1100-0AB50-1FA0**		1	1 unit	41J
		White	1	1	0	**3SU1100-0AB60-1BA0**		1	1 unit	41J
				1	1	**3SU1100-0AB60-1FA0**		1	1 unit	41J
		Clear	1	1	0	**3SU1100-0AB70-1BA0**		1	1 unit	41J
				1	1	**3SU1100-0AB70-1FA0**		1	1 unit	41J
		Gray	1	1	1	**3SU1100-0AB80-1FA0**		1	1 unit	41J
		Pushbuttons with raised button, momentary contact								
--	--	Black	1	0	1	**3SU1100-0BB10-1CA0**		1	1 unit	41J
				1	1	**3SU1100-0BB10-1FA0**		1	1 unit	41J
		Red	1	0	1	**3SU1100-0BB20-1CA0**		1	1 unit	41J
				1	1	**3SU1100-0BB20-1FA0**		1	1 unit	41J
		Blue	1	1	0	**3SU1100-0BB50-1BA0**		1	1 unit	41J
		Illuminated pushbuttons with flat button, momentary contact with integrated LED								
24	24	Red	1	1	0	**3SU1102-0AB20-1BA0**		1	1 unit	41J
				0	1	**3SU1102-0AB20-1CA0**		1	1 unit	41J
				1	1	**3SU1102-0AB20-1FA0**		1	1 unit	41J
		Yellow	1	1	0	**3SU1102-0AB30-1BA0**		1	1 unit	41J
				1	1	**3SU1102-0AB30-1FA0**		1	1 unit	41J
		Green	1	1	0	**3SU1102-0AB40-1BA0**		1	1 unit	41J
				1	1	**3SU1102-0AB40-1FA0**		1	1 unit	41J
		Blue	1	1	0	**3SU1102-0AB50-1BA0**		1	1 unit	41J
				1	1	**3SU1102-0AB50-1FA0**		1	1 unit	41J
		White	1	1	0	**3SU1102-0AB60-1BA0**		1	1 unit	41J
				1	1	**3SU1102-0AB60-1FA0**		1	1 unit	41J
		Clear	1	1	0	**3SU1102-0AB70-1BA0**		1	1 unit	41J
				1	1	**3SU1102-0AB70-1FA0**		1	1 unit	41J
110	--	Red	1	0	1	**3SU1103-0AB20-1CA0**		1	1 unit	41J
				1	1	**3SU1103-0AB20-1FA0**		1	1 unit	41J
		Yellow	1	1	0	**3SU1103-0AB30-1BA0**		1	1 unit	41J
				1	1	**3SU1103-0AB30-1FA0**		1	1 unit	41J
		Green	1	1	0	**3SU1103-0AB40-1BA0**		1	1 unit	41J
				1	1	**3SU1103-0AB40-1FA0**		1	1 unit	41J
		Blue	1	1	0	**3SU1103-0AB50-1BA0**		1	1 unit	41J
				1	1	**3SU1103-0AB50-1FA0**		1	1 unit	41J
		White	1	1	0	**3SU1103-0AB60-1BA0**		1	1 unit	41J
				1	1	**3SU1103-0AB60-1FA0**		1	1 unit	41J
		Clear	1	1	0	**3SU1103-0AB70-1BA0**		1	1 unit	41J
				1	1	**3SU1103-0AB70-1FA0**		1	1 unit	41J

3SU1100-0AB40-1BA0

3SU1100-0BB20-1CA0

3SU1102-0AB40-1BA0

3SU1103-0AB20-1CA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Multi-unit packaging, see page 13/17.

Supply voltage for light source		Color	Number of			Screw terminals		PU (UNIT, SET, M)	PS*	PG
at AC	at DC		contact modules	NO contacts	NC contacts	Article No.	Price per PU			
V	V									
Pushbuttons										
Illuminated pushbuttons with flat button, momentary contact with integrated LED										
230	--	Red	1	0	1	**3SU1106-0AB20-1CA0**		1	1 unit	41J
				1	1	**3SU1106-0AB20-1FA0**		1	1 unit	41J
		Yellow	1	1	0	**3SU1106-0AB30-1BA0**		1	1 unit	41J
				1	1	**3SU1106-0AB30-1FA0**		1	1 unit	41J
		Green	1	1	0	**3SU1106-0AB40-1BA0**		1	1 unit	41J
				1	1	**3SU1106-0AB40-1FA0**		1	1 unit	41J
		Blue	1	1	0	**3SU1106-0AB50-1BA0**		1	1 unit	41J
				1	1	**3SU1106-0AB50-1FA0**		1	1 unit	41J
		White	1	1	0	**3SU1106-0AB60-1BA0**		1	1 unit	41J
				1	1	**3SU1106-0AB60-1FA0**		1	1 unit	41J
		Clear	1	1	0	**3SU1106-0AB70-1BA0**		1	1 unit	41J
				1	1	**3SU1106-0AB70-1FA0**		1	1 unit	41J

3SU1106-0AB40-1BA0

						Spring-loaded terminals				
Pushbuttons with flat button, momentary contact										
--	--	Black	1	1	0	**3SU1100-0AB10-3BA0**		1	1 unit	41J
				0	1	**3SU1100-0AB10-3CA0**		1	1 unit	41J
				1	1	**3SU1100-0AB10-3FA0**		1	1 unit	41J
		Red	1	0	1	**3SU1100-0AB20-3CA0**		1	1 unit	41J
				1	1	**3SU1100-0AB20-3FA0**		1	1 unit	41J
		Yellow	1	1	0	**3SU1100-0AB30-3BA0**		1	1 unit	41J
				1	1	**3SU1100-0AB30-3FA0**		1	1 unit	41J
		Green	1	1	0	**3SU1100-0AB40-3BA0**		1	1 unit	41J
				1	1	**3SU1100-0AB40-3FA0**		1	1 unit	41J
		Blue	1	1	0	**3SU1100-0AB50-3BA0**		1	1 unit	41J
				1	1	**3SU1100-0AB50-3FA0**		1	1 unit	41J
		White	1	1	0	**3SU1100-0AB60-3BA0**		1	1 unit	41J
				1	1	**3SU1100-0AB60-3FA0**		1	1 unit	41J

3SU1100-0AB30-3BA0

Illuminated pushbuttons with flat button, momentary contact with integrated LED										
24	24	Red	1	0	1	**3SU1102-0AB20-3CA0**		1	1 unit	41J
				1	1	**3SU1102-0AB20-3FA0**		1	1 unit	41J
		Yellow	1	1	0	**3SU1102-0AB30-3BA0**		1	1 unit	41J
				1	1	**3SU1102-0AB30-3FA0**		1	1 unit	41J
		Green	1	1	0	**3SU1102-0AB40-3BA0**		1	1 unit	41J
				1	1	**3SU1102-0AB40-3FA0**		1	1 unit	41J
		Blue	1	1	0	**3SU1102-0AB50-3BA0**		1	1 unit	41J
				1	1	**3SU1102-0AB50-3FA0**		1	1 unit	41J
		White	1	1	0	**3SU1102-0AB60-3BA0**		1	1 unit	41J
				1	1	**3SU1102-0AB60-3FA0**		1	1 unit	41J
		Clear	1	1	0	**3SU1102-0AB70-3BA0**		1	1 unit	41J
				1	1	**3SU1102-0AB70-3FA0**		1	1 unit	41J
110	--	Red	1	0	1	**3SU1103-0AB20-3CA0**		1	1 unit	41J
				1	1	**3SU1103-0AB20-3FA0**		1	1 unit	41J
		Yellow	1	1	1	**3SU1103-0AB30-3FA0**		1	1 unit	41J
		Green	1	1	0	**3SU1103-0AB40-3BA0**		1	1 unit	41J
				1	1	**3SU1103-0AB40-3FA0**		1	1 unit	41J
		Blue	1	1	1	**3SU1103-0AB50-3FA0**		1	1 unit	41J
		White	1	1	0	**3SU1103-0AB60-3BA0**		1	1 unit	41J
				1	1	**3SU1103-0AB60-3FA0**		1	1 unit	41J
		Clear	1	1	0	**3SU1103-0AB70-3BA0**		1	1 unit	41J
				1	1	**3SU1103-0AB70-3FA0**		1	1 unit	41J
230	--	Red	1	0	1	**3SU1106-0AB20-3CA0**		1	1 unit	41J
				1	1	**3SU1106-0AB20-3FA0**		1	1 unit	41J
		Yellow	1	1	1	**3SU1106-0AB30-3FA0**		1	1 unit	41J
		Green	1	1	0	**3SU1106-0AB40-3BA0**		1	1 unit	41J
				1	1	**3SU1106-0AB40-3FA0**		1	1 unit	41J
		Blue	1	1	1	**3SU1106-0AB50-3FA0**		1	1 unit	41J
		White	1	1	0	**3SU1106-0AB60-3BA0**		1	1 unit	41J
				1	1	**3SU1106-0AB60-3FA0**		1	1 unit	41J
		Clear	1	1	0	**3SU1106-0AB70-3BA0**		1	1 unit	41J
				1	1	**3SU1106-0AB70-3FA0**		1	1 unit	41J

3SU1102-0AB20-3CA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Mushroom pushbuttons

With red mushroom, diameter 40 mm, latching

3SU1100-1BA20-3CA0

Unlatching method	Number of contact modules	NO contacts	NC contacts	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				Screw terminals				
Pull to unlatch	1	0	1	**3SU1100-1BA20-1CA0**		1	1 unit	41J
		1	1	**3SU1100-1BA20-1FA0**		1	1 unit	41J
				Spring-loaded terminals				
Pull to unlatch	1	0	1	**3SU1100-1BA20-3CA0**		1	1 unit	41J
		1	1	**3SU1100-1BA20-3FA0**		1	1 unit	41J

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Unlatching method	Number of contact modules	NO contacts	NC contacts	Marking	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
EMERGENCY STOP mushroom pushbuttons, with self-adhesive yellow backing plate (diameter 75 mm), according to ISO 13850 and IEC 60947-5-5									
With red mushroom, diameter 40 mm, with positive latching									
Pull to unlatch	1	0	1	NOT-HALT ➔	**3SU1100-1HA20-1CH0**		1	1 unit	41J
		1	1	NOT-HALT ➔	**3SU1100-1HA20-1FH0**		1	1 unit	41J
				EMERGENCY STOP ➔	**3SU1100-1HA20-1FG0**		1	1 unit	41J
Rotate to unlatch	1	0	1	-- ➔	**3SU1100-1HB20-1CF0**		1	1 unit	41J
				NOT-HALT ➔	**3SU1100-1HB20-1CH0**		1	1 unit	41J
				EMERGENCY STOP ➔	**3SU1100-1HB20-1CG0**		1	1 unit	41J
				ARRET D'URGENCE ➔	**3SU1100-1HB20-1CJ0**		1	1 unit	41J
		0	2	EMERGENCY STOP ➔	**3SU1100-1HB20-1PG0**		1	1 unit	41J
		1	1	NOT-HALT ➔	**3SU1100-1HB20-1FH0**		1	1 unit	41J
				EMERGENCY STOP ➔	**3SU1100-1HB20-1FG0**		1	1 unit	41J
				ARRET D'URGENCE ➔	**3SU1100-1HB20-1FJ0**		1	1 unit	41J
					Spring-loaded terminals				
Rotate to unlatch	1	0	1	NOT-HALT ➔	**3SU1100-1HB20-3CH0**		1	1 unit	41J
		1	1	NOT-HALT ➔	**3SU1100-1HB20-3FH0**		1	1 unit	41J
With red mushroom, diameter 40 mm, with latching									
					Screw terminals				
Rotate to unlatch	2	0	2	NOT-HALT ➔	**3SU1100-1LB20-1PH0**		1	1 unit	41J

3SU1100-1HA20-1CH0

3SU1100-1HB20-1CH0

3SU1100-1LB20-1PH0

➔ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK safety relays, see page 11/1 onwards.
Certificate:

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Multi-unit packaging, see page 13/17.

Unlatching method	Number of contact modules	NO contacts	NC contacts		Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
EMERGENCY STOP mushroom pushbuttons, without yellow backing plate, according to ISO 13850 and IEC 60947-5									
With red mushroom, diameter 30 mm, with positive latching									
Rotate to unlatch	2	0	2	➔	**3SU1100-1GB20-1PA0**		1	1 unit	41J
With red mushroom, diameter 40 mm, with positive latching									
Rotate to unlatch	2	0	2	➔	**3SU1100-1HB20-1PA0**		1	1 unit	41J

3SU1100-1GB20-1PA0

3SU1100-1HB20-1PA0

➔ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK safety relays, see page 11/1 onwards.
Certificate:

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Operating principle	Color	Number of contact modules	NO contacts	NC contacts	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Selector switches									
Short black actuators, 2 switch positions, can be illuminated									
Latching, 90° (10:30/1:30 o'clock)	White	1	1	0	**3SU1100-2BF60-1BA0**		1	1 unit	41J
		2	1	1	**3SU1100-2BF60-1MA0**		1	1 unit	41J
	White 110 V	1	1	0	**3SU1103-2BF60-1BA0**		1	1 unit	41J
Short black actuators, 3 switch positions, can be illuminated									
Momentary contact, 2x45° (10:30/12/ 1:30 o'clock), reset from left + right	White	2	2	2	**3SU1100-2BM60-1LA0**		1	1 unit	41J
			2	0	**3SU1100-2BM60-1NA0**		1	1 unit	41J
Latching, 2x45° (10:30/12/ 1:30 o'clock)	White	2	2	2	**3SU1100-2BL60-1LA0**		1	1 unit	41J
			2	0	**3SU1100-2BL60-1NA0**		1	1 unit	41J
Spring-loaded terminals									
Short black actuators, 2 switch positions, can be illuminated									
Latching, 90° (10:30/1:30 o'clock)	White	1	1	0	**3SU1100-2BF60-3BA0**		1	1 unit	41J
		2	1	1	**3SU1100-2BF60-3MA0**		1	1 unit	41J
Short black actuators, 3 switch positions, can be illuminated									
Momentary contact, 2x45° (10:30/12/ 1:30 o'clock), reset from left + right	White	2	2	2	**3SU1100-2BM60-3LA0**		1	1 unit	41J
			2	0	**3SU1100-2BM60-3NA0**		1	1 unit	41J
Latching, 2x45° (10:30/12/ 1:30 o'clock)	White	2	2	2	**3SU1100-2BL60-3LA0**		1	1 unit	41J
			2	0	**3SU1100-2BL60-3NA0**		1	1 unit	41J

3SU1100-2BF60-1BA0

3SU1100-2BL60-1NA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Operating principle	Switch position for key removal	Number of contact modules	Number of NO contacts	Number of NC contacts	Number of keys	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Key-operated switches										
With RONIS lock, SB30, 2 switch positions										
Latching, 90° (10:30/1:30 o'clock)	O+I	1	1	0	2	**3SU1100-4BF11-1BA0**		1	1 unit	41J
			1	1	2	**3SU1100-4BF11-1FA0**		1	1 unit	41J
With RONIS lock, SB30, 3 switch positions										
Latching, 2x45° (10:30/12/ 1:30 o'clock)	I+O+II	2	2	0	2	**3SU1100-4BL11-1NA0**		1	1 unit	41J
						Spring-loaded terminals				
With RONIS lock, SB30, 2 switch positions										
Latching, 90° (10:30/1:30 o'clock)	O+I	1	1	0	2	**3SU1100-4BF11-3BA0**		1	1 unit	41J
			1	1	2	**3SU1100-4BF11-3FA0**		1	1 unit	41J
		2	0	2 with installation supervision	2	**3SU1100-4BF21-3TA0**		1	1 unit	41J
With Siemens lock, SSG10[1], 2 switch positions										
Latching, 90° (10:30/1:30 o'clock)	O+I	1	1	1	2	**3SU1100-5BF11-3FA0**		1	1 unit	41J

3SU1100-4BF11-1BA0

3SU1100-4BL11-1NA0

[1] Siemens lock (compatible with CES locks).

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Number of NO contacts (1 per direction)	Operating principle	Direction of actuation	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Coordinate switches							
Without mechanical interlock, 2 switch positions							
2	Momentary contact	Horizontal	**3SU1100-7AC10-1NA0**		1	1 unit	41J
		Vertical	**3SU1100-7AD10-1NA0**		1	1 unit	41J
	Latching	Horizontal	**3SU1100-7AA10-1NA0**		1	1 unit	41J
		Vertical	**3SU1100-7AB10-1NA0**		1	1 unit	41J
Without mechanical interlock, 4 switch positions							
4	Momentary contact	Horizontal/vertical	**3SU1100-7AF10-1QA0**		1	1 unit	41J
	Latching	Horizontal/vertical	**3SU1100-7AE10-1QA0**		1	1 unit	41J
With mechanical interlock, 2 switch positions							
2	Momentary contact	Horizontal	**3SU1100-7BC10-1NA0**		1	1 unit	41J
		Vertical	**3SU1100-7BD10-1NA0**		1	1 unit	41J
	Latching	Horizontal	**3SU1100-7BA10-1NA0**		1	1 unit	41J
		Vertical	**3SU1100-7BB10-1NA0**		1	1 unit	41J
With mechanical interlock, 4 switch positions							
4	Momentary contact	Horizontal/vertical	**3SU1100-7BF10-1QA0**		1	1 unit	41J
	Latching	Horizontal/vertical	**3SU1100-7BE10-1QA0**		1	1 unit	41J

3SU1100-7AC10-1NA0

3SU1100-7AF10-1QA0

3SU1100-7BA10-1NA0

3SU1100-7BF10-1QA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Operational voltage at AC V	Operational voltage at DC V	Color of actuating element	Color of light source	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Indicator lights								
With smooth lens and integrated LED								
24	24	Red	Red	**3SU1102-6AA20-1AA0**		1	1 unit	41J
		Yellow	Yellow	**3SU1102-6AA30-1AA0**		1	1 unit	41J
		Green	Green	**3SU1102-6AA40-1AA0**		1	1 unit	41J
		Blue	Blue	**3SU1102-6AA50-1AA0**		1	1 unit	41J
		White	White	**3SU1102-6AA60-1AA0**		1	1 unit	41J
		Clear	White	**3SU1102-6AA70-1AA0**		1	1 unit	41J
110	--	Amber	Amber	**3SU1103-6AA00-1AA0**		1	1 unit	41J
		Red	Red	**3SU1103-6AA20-1AA0**		1	1 unit	41J
		Yellow	Yellow	**3SU1103-6AA30-1AA0**		1	1 unit	41J
		Green	Green	**3SU1103-6AA40-1AA0**		1	1 unit	41J
		Blue	Blue	**3SU1103-6AA50-1AA0**		1	1 unit	41J
		White	White	**3SU1103-6AA60-1AA0**		1	1 unit	41J
		Clear	White	**3SU1103-6AA70-1AA0**		1	1 unit	41J
230	--	Amber	Amber	**3SU1106-6AA00-1AA0**		1	1 unit	41J
		Red	Red	**3SU1106-6AA20-1AA0**		1	1 unit	41J
		Yellow	Yellow	**3SU1106-6AA30-1AA0**		1	1 unit	41J
		Green	Green	**3SU1106-6AA40-1AA0**		1	1 unit	41J
		Blue	Blue	**3SU1106-6AA50-1AA0**		1	1 unit	41J
		White	White	**3SU1106-6AA60-1AA0**		1	1 unit	41J
		Clear	White	**3SU1106-6AA70-1AA0**		1	1 unit	41J
				Spring-loaded terminals				
24	24	Red	Red	**3SU1102-6AA20-3AA0**		1	1 unit	41J
		Yellow	Yellow	**3SU1102-6AA30-3AA0**		1	1 unit	41J
		Green	Green	**3SU1102-6AA40-3AA0**		1	1 unit	41J
		Blue	Blue	**3SU1102-6AA50-3AA0**		1	1 unit	41J
		White	White	**3SU1102-6AA60-3AA0**		1	1 unit	41J
		Clear	White	**3SU1102-6AA70-3AA0**		1	1 unit	41J
110	--	Red	Red	**3SU1103-6AA20-3AA0**		1	1 unit	41J
		Yellow	Yellow	**3SU1103-6AA30-3AA0**		1	1 unit	41J
		Green	Green	**3SU1103-6AA40-3AA0**		1	1 unit	41J
		Blue	Blue	**3SU1103-6AA50-3AA0**		1	1 unit	41J
		White	White	**3SU1103-6AA60-3AA0**		1	1 unit	41J
		Clear	White	**3SU1103-6AA70-3AA0**		1	1 unit	41J
230	--	Red	Red	**3SU1106-6AA20-3AA0**		1	1 unit	41J
		Yellow	Yellow	**3SU1106-6AA30-3AA0**		1	1 unit	41J
		Green	Green	**3SU1106-6AA40-3AA0**		1	1 unit	41J
		Blue	Blue	**3SU1106-6AA50-3AA0**		1	1 unit	41J
		White	White	**3SU1106-6AA60-3AA0**		1	1 unit	41J
		Clear	White	**3SU1106-6AA70-3AA0**		1	1 unit	41J

3SU1102-6AA30-1AA0

3SU1106-6AA50-1AA0

3SU1102-6AA40-3AA0

3SU1106-6AA60-3AA0

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* You can order this quantity or a multiple thereof.
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Selection and ordering data

Multi-unit packaging, see page 13/17.	Operational voltage at AC	Operational voltage at DC	Volume level	Degree of protection	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V	V	dB/cm						
Acoustic signaling devices									
3SU1200-6KB10-1AA0	24	24	80/10	IP40	**3SU1200-6KB10-1AA0**		1	1 unit	41J
	110	--	80/10	IP40	**3SU1200-6KC10-1AA0**		1	1 unit	41J
	230	--	80/10	IP40	**3SU1200-6KF10-1AA0**		1	1 unit	41J
	24	24	75/10	IP69	**3SU1200-6LB10-1AA0**		1	1 unit	41J
	110	--	75/10	IP69	**3SU1200-6LC10-1AA0**		1	1 unit	41J
	230	--	75/10	IP69	**3SU1200-6LF10-1AA0**		1	1 unit	41J

Selection and ordering data

Multi-unit packaging, see page 13/17.	Operating principle	Number of NO contacts	Number of NC contacts	Color	M12 plug, 4-pole Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Sensor switches									
3SU1200-1SK10-2SA0	Whether integrated in the two-hand operation console or installed as a door opening contact, the capacitive sensor switch is suitable for many different applications in industrial environments. The switch is actuated by simple contact with the hand or other part of the body (i.e. without the application of pressure). As a result, these switches are rugged, extremely durable and have the highest possible degree of protection IP66, IP67, IP69 (IP69K).								
	Without pressure	1	0	Black	**3SU1200-1SK10-2SA0**		1	1 unit	41J

Optional accessories

- "Protection for sensor switches", see page 13/131
- "Connectors for sensor switches, angled socket with screw terminal connection", see page 13/139

Selection and ordering data

Multi-unit packaging, see page 13/17.	Version of actuating element	Operating principle	Adjustable resistance	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			kΩ					
Potentiometers								
3SU1200-2PQ10-1AA0	**Rotary knob**	Stepless	1	**3SU1200-2PQ10-1AA0**		1	1 unit	41J
			2.2	**3SU1200-2PW10-1AA0**		1	1 unit	41J
			4.7	**3SU1200-2PR10-1AA0**		1	1 unit	41J
			10	**3SU1200-2PS10-1AA0**		1	1 unit	41J
			47	**3SU1200-2PT10-1AA0**		1	1 unit	41J
			100	**3SU1200-2PU10-1AA0**		1	1 unit	41J
			470	**3SU1200-2PV10-1AA0**		1	1 unit	41J

Labeling plates for potentiometers, see page 13/124.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Pushbuttons with extended stroke

For actuating relays, can only be combined with extension plunger, no contact module or LED module required

Version	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons with flat button	Red	**3SU1200-0EB20-0AA0**		1	1 unit	41J
	Green	**3SU1200-0EB40-0AA0**		1	1 unit	41J
Pushbuttons with raised button	Black	**3SU1200-0FB10-0AA0**		1	1 unit	41J
	Red	**3SU1200-0FB20-0AA0**		1	1 unit	41J
Pushbuttons with flat transparent button for insertion of insert labels	Red	**3SU1201-0EB20-0AA0**		1	1 unit	41J
	Clear	**3SU1201-0EB70-0AA0**		1	1 unit	41J

3SU1200-0EB20-0AA0

3SU1200-0FB10-0AA0

3SU1201-0EB70-0AA0

Accessories

Version	Material	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Extension plungers For compensation of the distance between the pushbutton and the resetting plunger of an overload relay	Plastic	Gray	**3SU1900-0KG10-0AA0**		1	1 unit	41J

3SU1900-0KG10-0AA0

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Version of actuating element / Front ring version	Operating principle / Unlatching method	Color, marking	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons							
3SU1000-0AB20-0AD0 **Pushbuttons with flat button** Standard	Momentary contact	Black	**3SU1000-0AB10-0AA0**		1	1 unit	41J
		Black, "O"	**3SU1000-0AB10-0AD0**		1	1 unit	41J
		Red	**3SU1000-0AB20-0AA0**		1	1 unit	41J
		Red, "O"	**3SU1000-0AB20-0AD0**		1	1 unit	41J
		Yellow	**3SU1000-0AB30-0AA0**		1	1 unit	41J
		Green	**3SU1000-0AB40-0AA0**		1	1 unit	41J
		Green, "I"	**3SU1000-0AB40-0AC0**		1	1 unit	41J
		Blue	**3SU1000-0AB50-0AA0**		1	1 unit	41J
		Blue, "R"	**3SU1000-0AB50-0AR0**		1	1 unit	41J
		White	**3SU1000-0AB60-0AA0**		1	1 unit	41J
		White, "I"	**3SU1000-0AB60-0AC0**		1	1 unit	41J
		Clear	**3SU1000-0AB70-0AA0**		1	1 unit	41J
		Gray	**3SU1000-0AB80-0AA0**		1	1 unit	41J
3SU1000-0AA30-0AA0	Latching / Push to unlatch	Black	**3SU1000-0AA10-0AA0**		1	1 unit	41J
		Red	**3SU1000-0AA20-0AA0**		1	1 unit	41J
		Yellow	**3SU1000-0AA30-0AA0**		1	1 unit	41J
		Green	**3SU1000-0AA40-0AA0**		1	1 unit	41J
		Blue	**3SU1000-0AA50-0AA0**		1	1 unit	41J
		White	**3SU1000-0AA60-0AA0**		1	1 unit	41J
3SU1000-0BB30-0AA0 **Pushbuttons with raised button** Standard	Momentary contact	Black	**3SU1000-0BB10-0AA0**		1	1 unit	41J
		Red	**3SU1000-0BB20-0AA0**		1	1 unit	41J
		Yellow	**3SU1000-0BB30-0AA0**		1	1 unit	41J
		Green	**3SU1000-0BB40-0AA0**		1	1 unit	41J
		Blue	**3SU1000-0BB50-0AA0**		1	1 unit	41J
		White	**3SU1000-0BB60-0AA0**		1	1 unit	41J
3SU1000-0CB40-0AA0 **Pushbuttons with flat button** Raised	Momentary contact	Black	**3SU1000-0CB10-0AA0**		1	1 unit	41J
		Red	**3SU1000-0CB20-0AA0**		1	1 unit	41J
		Yellow	**3SU1000-0CB30-0AA0**		1	1 unit	41J
		Green	**3SU1000-0CB40-0AA0**		1	1 unit	41J
		Blue	**3SU1000-0CB50-0AA0**		1	1 unit	41J
		White	**3SU1000-0CB60-0AA0**		1	1 unit	41J
3SU1000-0DB50-0AA0 **Pushbuttons with flat button** Raised, castellated	Momentary contact	Black	**3SU1000-0DB10-0AA0**		1	1 unit	41J
		Red	**3SU1000-0DB20-0AA0**		1	1 unit	41J
		Yellow	**3SU1000-0DB30-0AA0**		1	1 unit	41J
		Green	**3SU1000-0DB40-0AA0**		1	1 unit	41J
		Blue	**3SU1000-0DB50-0AA0**		1	1 unit	41J
		White	**3SU1000-0DB60-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Multi-unit packaging, see page 13/17.

Version of actuating element Front ring version	Operating principle Unlatching method	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons							
 3SU1001-0AB40-0AA0							
Illuminated pushbuttons with flat button Standard	Momentary contact	Amber	**3SU1001-0AB00-0AA0**		1	1 unit	41J
		Red	**3SU1001-0AB20-0AA0**		1	1 unit	41J
		Yellow	**3SU1001-0AB30-0AA0**		1	1 unit	41J
		Green	**3SU1001-0AB40-0AA0**		1	1 unit	41J
		Blue	**3SU1001-0AB50-0AA0**		1	1 unit	41J
		White	**3SU1001-0AB60-0AA0**		1	1 unit	41J
		Clear	**3SU1001-0AB70-0AA0**		1	1 unit	41J
 3SU1001-0AA20-0AA0	Latching Push to unlatch	Red	**3SU1001-0AA20-0AA0**		1	1 unit	41J
		Yellow	**3SU1001-0AA30-0AA0**		1	1 unit	41J
		Green	**3SU1001-0AA40-0AA0**		1	1 unit	41J
		Blue	**3SU1001-0AA50-0AA0**		1	1 unit	41J
		White	**3SU1001-0AA60-0AA0**		1	1 unit	41J
		Clear	**3SU1001-0AA70-0AA0**		1	1 unit	41J
 3SU1001-0BB70-0AA0							
Illuminated pushbuttons with raised button Standard	Momentary contact	Red	**3SU1001-0BB20-0AA0**		1	1 unit	41J
		Yellow	**3SU1001-0BB30-0AA0**		1	1 unit	41J
		Green	**3SU1001-0BB40-0AA0**		1	1 unit	41J
		Blue	**3SU1001-0BB50-0AA0**		1	1 unit	41J
		Clear	**3SU1001-0BB70-0AA0**		1	1 unit	41J
 3SU1001-0DB50-0AA0							
Illuminated pushbuttons with flat button Raised, castellated	Momentary contact	Blue	**3SU1001-0DB50-0AA0**		1	1 unit	41J
 3SU1000-0HC10-0AA0							
Stop pushbuttons Standard	Momentary contact, latching by pressing in and turning to the right Rotate to unlatch to the left	Black	**3SU1000-0HC10-0AA0**		1	1 unit	41J
		Red	**3SU1000-0HC20-0AA0**		1	1 unit	41J

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*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Twin pushbuttons

Version of actuating element	Operating principle	Color	Marking Symbol No.	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3SU1000-3AB66-0AL0								
Twin pushbuttons flat, flat	Momentary contact	Green/red	-- "I"/"O"	**3SU1000-3AB42-0AA0** **3SU1000-3AB42-0AK0**		1 1	1 unit 1 unit	41J 41J
		White/black	-- "I"/"O"	**3SU1000-3AB61-0AA0** **3SU1000-3AB61-0AK0**		1 1	1 unit 1 unit	41J 41J
		White/white	-- "–"/"+" Arrows, hor. Arrows, vert.	**3SU1000-3AB66-0AA0** **3SU1000-3AB66-0AL0** **3SU1000-3AB66-0AM0** **3SU1000-3AB66-0AN0**		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J
		Black/black	-- ⊙ ○ 5264/5265 (IEC 60417)	**3SU1000-3AB11-0AA0** **3SU1000-3AB11-0AQ0**		1 1	1 unit 1 unit	41J 41J
3SU1000-3BB42-0AK0								
Twin pushbuttons flat, raised	Momentary contact	Green/red	-- "I"/"O"	**3SU1000-3BB42-0AA0** **3SU1000-3BB42-0AK0**		1 1	1 unit 1 unit	41J 41J
		White/black	-- "I"/"O"	**3SU1000-3BB61-0AA0** **3SU1000-3BB61-0AK0**		1 1	1 unit 1 unit	41J 41J
3SU1001-3AB42-0AN0								
Twin pushbuttons flat, flat, illuminated	Momentary contact	Green/red	-- "I"/"O" Arrows, vert.	**3SU1001-3AB42-0AA0** **3SU1001-3AB42-0AK0** **3SU1001-3AB42-0AN0**		1 1 1	1 unit 1 unit 1 unit	41J 41J 41J
		White/black	-- "I"/"O"	**3SU1001-3AB61-0AA0** **3SU1001-3AB61-0AK0**		1 1	1 unit 1 unit	41J 41J
		White/white	-- "–"/"+" Arrows, vert. Symbols "Circular saw blade"/ "Tilt tipper"	**3SU1001-3AB66-0AA0** **3SU1001-3AB66-0AL0** **3SU1001-3AB66-0AN0** **3SU1001-3AB66-0AP0**		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J
3SU1001-3BB61-0AK0								
Twin pushbuttons flat, raised, illuminated	Momentary contact	Green/red	-- "I"/"O"	**3SU1001-3BB42-0AA0** **3SU1001-3BB42-0AK0**		1 1	1 unit 1 unit	41J 41J
		White/black	-- "I"/"O"	**3SU1001-3BB61-0AA0** **3SU1001-3BB61-0AK0**		1 1	1 unit 1 unit	41J 41J

Selection and ordering data

Quadruple pushbuttons

Version of actuating element	Operating principle	Color	Marking	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3SU1000-3FB11-0AU0								
Quadruple pushbuttons flat	Momentary contact	Black	-- Arrows, vert.; arrows, hor.	**3SU1000-3FB11-0AA0** **3SU1000-3FB11-0AU0**		1 1	1 unit 1 unit	41J 41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Version of actuating element	Operating principle / Unlatching method	Color, marking	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mushroom pushbuttons							
3SU1000-1AD20-0AA0							
Mushroom pushbuttons 30 mm diameter, 2 positions	Momentary contact	Black	**3SU1000-1AD10-0AA0**		1	1 unit	41J
		Red	**3SU1000-1AD20-0AA0**		1	1 unit	41J
		Yellow	**3SU1000-1AD30-0AA0**		1	1 unit	41J
		Green	**3SU1000-1AD40-0AA0**		1	1 unit	41J
	Latching / Pull to unlatch	Black	**3SU1000-1AA10-0AA0**		1	1 unit	41J
		Red	**3SU1000-1AA20-0AA0**		1	1 unit	41J
		Yellow	**3SU1000-1AA30-0AA0**		1	1 unit	41J
3SU1000-1BD40-0AA0							
Mushroom pushbuttons 40 mm diameter, 2 positions	Momentary contact	Black	**3SU1000-1BD10-0AA0**		1	1 unit	41J
		Red	**3SU1000-1BD20-0AA0**		1	1 unit	41J
		Yellow	**3SU1000-1BD30-0AA0**		1	1 unit	41J
		Green	**3SU1000-1BD40-0AA0**		1	1 unit	41J
	Latching / Pull to unlatch	Black	**3SU1000-1BA10-0AA0**		1	1 unit	41J
		Red	**3SU1000-1BA20-0AA0**		1	1 unit	41J
		Red "O"	**3SU1000-1BA20-0AD0**		1	1 unit	41J
		Yellow	**3SU1000-1BA30-0AA0**		1	1 unit	41J
		Green	**3SU1000-1BA40-0AA0**		1	1 unit	41J
3SU1000-1CD10-0AA0							
Mushroom pushbuttons 60 mm diameter, 2 positions	Momentary contact	Black	**3SU1000-1CD10-0AA0**		1	1 unit	41J
		Red	**3SU1000-1CD20-0AA0**		1	1 unit	41J
		Yellow	**3SU1000-1CD30-0AA0**		1	1 unit	41J
		Green	**3SU1000-1CD40-0AA0**		1	1 unit	41J
	Latching / Pull to unlatch	Black	**3SU1000-1CA10-0AA0**		1	1 unit	41J
		Red	**3SU1000-1CA20-0AA0**		1	1 unit	41J
3SU1001-1AD30-0AA0							
Mushroom pushbuttons 30 mm diameter, 2 positions, illuminated	Momentary contact	Red	**3SU1001-1AD20-0AA0**		1	1 unit	41J
		Yellow	**3SU1001-1AD30-0AA0**		1	1 unit	41J
		Green	**3SU1001-1AD40-0AA0**		1	1 unit	41J
		Blue	**3SU1001-1AD50-0AA0**		1	1 unit	41J
		White	**3SU1001-1AD60-0AA0**		1	1 unit	41J
		Clear	**3SU1001-1AD70-0AA0**		1	1 unit	41J
	Latching / Pull to unlatch	Red	**3SU1001-1AA20-0AA0**		1	1 unit	41J
		Yellow	**3SU1001-1AA30-0AA0**		1	1 unit	41J
		Green	**3SU1001-1AA40-0AA0**		1	1 unit	41J
		Blue	**3SU1001-1AA50-0AA0**		1	1 unit	41J
		Clear	**3SU1001-1AA70-0AA0**		1	1 unit	41J
3SU1001-1BA50-0AA0							
Mushroom pushbuttons 40 mm diameter, 2 positions, illuminated	Momentary contact	Yellow	**3SU1001-1BD30-0AA0**		1	1 unit	41J
		Green	**3SU1001-1BD40-0AA0**		1	1 unit	41J
		White	**3SU1001-1BD60-0AA0**		1	1 unit	41J
		Clear	**3SU1001-1BD70-0AA0**		1	1 unit	41J
	Latching / Pull to unlatch	Red	**3SU1001-1BA20-0AA0**		1	1 unit	41J
		Yellow	**3SU1001-1BA30-0AA0**		1	1 unit	41J
		Green	**3SU1001-1BA40-0AA0**		1	1 unit	41J
		Blue	**3SU1001-1BA50-0AA0**		1	1 unit	41J
		Clear	**3SU1001-1BA70-0AA0**		1	1 unit	41J
Mushroom pushbuttons 40 mm diameter, 2 positions	With positive latching / Rotate to unlatch	Black	**3SU1000-1HB10-0AA0**		1	1 unit	41J
		Blue	**3SU1000-1HB50-0AA0**		1	1 unit	41J
3SU1000-1HG10-0AA0							
Mushroom pushbuttons 40 mm diameter, 2 positions RONIS 455	With positive latching / Key-operated release	Black	**3SU1000-1HG10-0AA0**		1	1 unit	41J
Mushroom pushbuttons, 60 mm diameter, 2 positions	With positive latching / Rotate to unlatch	Black	**3SU1000-1JB10-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Version of actuating element	Outer diameter of mushroom	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm						
EMERGENCY STOP mushroom pushbuttons, according to ISO 13850 and IEC 60947-5-5							
With pull to unlatch							
With positive latching, 2 positions	40	Red	**3SU1000-1HA20-0AA0**		1	1 unit	41J
With rotate to unlatch							
With positive latching, 2 positions	33.8	Red	**3SU1000-1GB20-0AA0**		1	1 unit	41J
	40	Red	**3SU1000-1HB20-0AA0**		1	1 unit	41J
	60	Red	**3SU1000-1JB20-0AA0**		1	1 unit	41J
With latching, 2 positions	40	Red	**3SU1000-1LB20-0AA0**		1	1 unit	41J
With rotate to unlatch, can be illuminated							
With positive latching, 2 positions	33.8	Red	**3SU1001-1GB20-0AA0**		1	1 unit	41J
	40	Red	**3SU1001-1HB20-0AA0**		1	1 unit	41J
	60	Red	**3SU1001-1JB20-0AA0**		1	1 unit	41J

3SU1000-1HA20-0AA0

3SU1000-1GB20-0AA0

3SU1000-1HB20-0AA0

3SU1000-1JB20-0AA0

3SU1000-1LB20-0AA0

3SU1001-1HB20-0AA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Multi-unit packaging, see page 13/17.

Version of actuating element	Outer diameter of mushroom	Make of lock	Color	Number of keys	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm								
EMERGENCY STOP mushroom pushbuttons, according to ISO 13850 and IEC 60947-5-5									
With key-operated release									
With positive latching, 2 positions	40	RONIS, SB30	Red	2	**3SU1000-1HF20-0AA0**		1	1 unit	41J
		RONIS, 455	Red	2	**3SU1000-1HG20-0AA0**		1	1 unit	41J
		BKS, S1	Red	2	**3SU1000-1HK20-0AA0**		1	1 unit	41J
		BKS, E7	Red	0	**3SU1000-1HM20-0AA0**		1	1 unit	41J
		BKS, E9	Red	0	**3SU1000-1HN20-0AA0**		1	1 unit	41J
		O.M.R. 73037	Red	2	**3SU1000-1HQ20-0AA0**		1	1 unit	41J
		Siemens, SSG10[1)]	Red	2	**3SU1000-1HR20-0AA0**		1	1 unit	41J
		Siemens, SSP9[1)]	Red	2	**3SU1000-1HS20-0AA0**		1	1 unit	41J
		Siemens, SMS1[1)]	Red	2	**3SU1000-1HT20-0AA0**		1	1 unit	41J

3SU1000-1HF20-0AA0

3SU1000-1HK20-0AA0

3SU1000-1HQ20-0AA0

3SU1000-1HR20-0AA0

[1)] Siemens lock (compatible with CES locks).

Selection and ordering data

Multi-unit packaging, see page 13/17.

Number of switching positions	Number of command points	Color of actuating element	Operating principle of the actuating element	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Toggle switches								
2	1	Black	Latching	**3SU1000-3EA10-0AA0**		1	1 unit	41J
			Momentary contact, reset from above	**3SU1000-3EC10-0AA0**		1	1 unit	41J

3SU1000-3EA10-0AA0

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Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Version of actuating element	Operating principle	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Selector switches							
2 switch positions, can be illuminated							
3SU1002-2BC40-0AA0							
Selector, short black actuator	Momentary contact, 45° (10:30/12 o'clock), reset from center to left	Black	**3SU1002-2BC10-0AA0**		1	1 unit	41J
		Red	**3SU1002-2BC20-0AA0**		1	1 unit	41J
		Yellow	**3SU1002-2BC30-0AA0**		1	1 unit	41J
		Green	**3SU1002-2BC40-0AA0**		1	1 unit	41J
		Blue	**3SU1002-2BC50-0AA0**		1	1 unit	41J
		White	**3SU1002-2BC60-0AA0**		1	1 unit	41J
3SU1002-2BF30-0AA0	Latching, 90° (10:30/1:30 o'clock)	Black	**3SU1002-2BF10-0AA0**		1	1 unit	41J
		Red	**3SU1002-2BF20-0AA0**		1	1 unit	41J
		Yellow	**3SU1002-2BF30-0AA0**		1	1 unit	41J
		Green	**3SU1002-2BF40-0AA0**		1	1 unit	41J
		Blue	**3SU1002-2BF50-0AA0**		1	1 unit	41J
		White	**3SU1002-2BF60-0AA0**		1	1 unit	41J
3SU1002-2CF20-0AA0							
Selector, long black actuator	Latching, 90° (10:30/1:30 o'clock)	Black	**3SU1002-2CF10-0AA0**		1	1 unit	41J
		Red	**3SU1002-2CF20-0AA0**		1	1 unit	41J
		White	**3SU1002-2CF60-0AA0**		1	1 unit	41J
3SU1002-2AF20-0AA0							
Rotary knob	Latching, 90° (10:30/1:30 o'clock)	Red	**3SU1002-2AF20-0AA0**		1	1 unit	41J
		White	**3SU1002-2AF60-0AA0**		1	1 unit	41J

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Illustrations are approximate

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Multi-unit packaging, see page 13/17.

Selector switches

Version of actuating element	Operating principle	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3 switch positions, can be illuminated							
Selector, short black actuator	Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from left + right	Black	**3SU1002-2BM10-0AA0**		1	1 unit	41J
		Red	**3SU1002-2BM20-0AA0**		1	1 unit	41J
		Yellow	**3SU1002-2BM30-0AA0**		1	1 unit	41J
		Green	**3SU1002-2BM40-0AA0**		1	1 unit	41J
		Blue	**3SU1002-2BM50-0AA0**		1	1 unit	41J
		White	**3SU1002-2BM60-0AA0**		1	1 unit	41J
	Latching, 2x45° (10:30/12/1:30 o'clock)	Black	**3SU1002-2BL10-0AA0**		1	1 unit	41J
		Red	**3SU1002-2BL20-0AA0**		1	1 unit	41J
		Yellow	**3SU1002-2BL30-0AA0**		1	1 unit	41J
		Green	**3SU1002-2BL40-0AA0**		1	1 unit	41J
		Blue	**3SU1002-2BL50-0AA0**		1	1 unit	41J
		White	**3SU1002-2BL60-0AA0**		1	1 unit	41J
	Momentary contact/latching, 2x45° (10:30/12/1:30 o'clock), reset from the left, latching to the right	Black	**3SU1002-2BP10-0AA0**		1	1 unit	41J
		Red	**3SU1002-2BP20-0AA0**		1	1 unit	41J
		Yellow	**3SU1002-2BP30-0AA0**		1	1 unit	41J
		Green	**3SU1002-2BP40-0AA0**		1	1 unit	41J
		Blue	**3SU1002-2BP50-0AA0**		1	1 unit	41J
		White	**3SU1002-2BP60-0AA0**		1	1 unit	41J
	Latching/momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from the right, latching to the left	Black	**3SU1002-2BN10-0AA0**		1	1 unit	41J
		Red	**3SU1002-2BN20-0AA0**		1	1 unit	41J
		Yellow	**3SU1002-2BN30-0AA0**		1	1 unit	41J
		Green	**3SU1002-2BN40-0AA0**		1	1 unit	41J
		Blue	**3SU1002-2BN50-0AA0**		1	1 unit	41J
		White	**3SU1002-2BN60-0AA0**		1	1 unit	41J
4 switch positions							
Rotary knob	Latching, 4x90° (3/6/9/12 o'clock)	White	**3SU1000-2AS60-0AA0**		1	1 unit	41J

3SU1002-2BM20-0AA0

3SU1002-2BL60-0AA0

3SU1002-2BP50-0AA0

3SU1002-2BN30-0AA0

3SU1000-2AS60-0AA0

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Operating principle	Make of lock	Switch position for key removal	Number of keys	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Key-operated switches								
2 switch positions								
3SU1000-4JC01-0AA0								
Momentary contact, 45° (10:30/12 o'clock), reset from center to left	RONIS, SB30	O	2	**3SU1000-4BC01-0AA0**		1	1 unit	41J
	RONIS, 455	O	2	**3SU1000-4CC01-0AA0**		1	1 unit	41J
	O.M.R. 73037, red	O	2	**3SU1000-4FC01-0AA0**		1	1 unit	41J
	O.M.R. 73038, light blue	O	2	**3SU1000-4GC01-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	O	2	**3SU1000-4HC01-0AA0**		1	1 unit	41J
	O.M.R. 73033, yellow	O	2	**3SU1000-4JC01-0AA0**		1	1 unit	41J
	Siemens, SSG10[1]	O	2	**3SU1000-5BC01-0AA0**		1	1 unit	41J
	Siemens, LSG1[1]	O	2	**3SU1000-5HC01-0AA0**		1	1 unit	41J
	BKS, S1	O	2	**3SU1000-5PC01-0AA0**		1	1 unit	41J
3SU1000-4BF11-0AA0								
Latching, 90° (10:30/ 1:30 o'clock)	RONIS, SB30	O	2	**3SU1000-4BF01-0AA0**		1	1 unit	41J
		O+I	2	**3SU1000-4BF11-0AA0**		1	1 unit	41J
		I	2	**3SU1000-4BF21-0AA0**		1	1 unit	41J
	RONIS, 455	O	2	**3SU1000-4CF01-0AA0**		1	1 unit	41J
		O+I	2	**3SU1000-4CF11-0AA0**		1	1 unit	41J
	RONIS, 421	O+I	2	**3SU1000-4DF11-0AA0**		1	1 unit	41J
3SU1000-4GF11-0AA0								
	O.M.R. 73037, red	O	2	**3SU1000-4FF01-0AA0**		1	1 unit	41J
		O+I	2	**3SU1000-4FF11-0AA0**		1	1 unit	41J
	O.M.R. 73038, light blue	O	2	**3SU1000-4GF01-0AA0**		1	1 unit	41J
		O+I	2	**3SU1000-4GF11-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	O	2	**3SU1000-4HF01-0AA0**		1	1 unit	41J
		O+I	2	**3SU1000-4HF11-0AA0**		1	1 unit	41J
		I	2	**3SU1000-4HF21-0AA0**		1	1 unit	41J
	O.M.R. 73033, yellow	O	2	**3SU1000-4JF01-0AA0**		1	1 unit	41J
		O+I	2	**3SU1000-4JF11-0AA0**		1	1 unit	41J
		I	2	**3SU1000-4JF21-0AA0**		1	1 unit	41J
3SU1000-5BF11-0AA0								
	Siemens, SSG10[1]	O	2	**3SU1000-5BF01-0AA0**		1	1 unit	41J
		O+I	2	**3SU1000-5BF11-0AA0**		1	1 unit	41J
		I	2	**3SU1000-5BF21-0AA0**		1	1 unit	41J
	Siemens, SSG10[1] with key monitoring	O	2	**3SU1000-5JF01-0AA0**		1	1 unit	41J
	Siemens, LSG1[1]	O	2	**3SU1000-5HF01-0AA0**		1	1 unit	41J
		O+I	2	**3SU1000-5HF11-0AA0**		1	1 unit	41J
3SU1000-5PF11-0AA0								
	BKS, S1	O	2	**3SU1000-5PF01-0AA0**		1	1 unit	41J
		O+I	2	**3SU1000-5PF11-0AA0**		1	1 unit	41J
		I	2	**3SU1000-5PF21-0AA0**		1	1 unit	41J
	BKS, E1	O	0	**3SU1000-5QF01-0AA0**		1	1 unit	41J
		O+I	0	**3SU1000-5QF11-0AA0**		1	1 unit	41J
	BKS, E2	O	0	**3SU1000-5RF01-0AA0**		1	1 unit	41J
		O+I	0	**3SU1000-5RF11-0AA0**		1	1 unit	41J
	BKS, E7	O	0	**3SU1000-5SF01-0AA0**		1	1 unit	41J
		O+I	0	**3SU1000-5SF11-0AA0**		1	1 unit	41J
	BKS, E9	O	0	**3SU1000-5TF01-0AA0**		1	1 unit	41J
		O+I	0	**3SU1000-5TF11-0AA0**		1	1 unit	41J

[1] Siemens lock (compatible with CES locks).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Multi-unit packaging, see page 13/17.

Key-operated switches

Operating principle	Make of lock	Switch position for key removal	Number of keys	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3 switch positions								
Momentary contact, 2x45° (10:30/12/ 1:30 o'clock), reset from left + right	RONIS, SB30	O	2	**3SU1000-4BM01-0AA0**		1	1 unit	41J
	O.M.R. 73037, red	O	2	**3SU1000-4FM01-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	O	2	**3SU1000-4HM01-0AA0**		1	1 unit	41J
	Siemens, SSG10[1]	O	2	**3SU1000-5BM01-0AA0**		1	1 unit	41J
	BKS, S1	O	2	**3SU1000-5PM01-0AA0**		1	1 unit	41J
Latching, 2x45° (10:30/12/ 1:30 o'clock)	RONIS, SB30	O	2	**3SU1000-4BL01-0AA0**		1	1 unit	41J
		I+O+II	2	**3SU1000-4BL11-0AA0**		1	1 unit	41J
		I	2	**3SU1000-4BL21-0AA0**		1	1 unit	41J
		II	2	**3SU1000-4BL31-0AA0**		1	1 unit	41J
		I+II	2	**3SU1000-4BL41-0AA0**		1	1 unit	41J
		O+I	2	**3SU1000-4BL51-0AA0**		1	1 unit	41J
	RONIS, 455	O	2	**3SU1000-4CL01-0AA0**		1	1 unit	41J
		I+O+II	2	**3SU1000-4CL11-0AA0**		1	1 unit	41J
	O.M.R. 73037, red	O	2	**3SU1000-4FL01-0AA0**		1	1 unit	41J
		O+I	2	**3SU1000-4FL51-0AA0**		1	1 unit	41J
	O.M.R. 73038, light blue	O	2	**3SU1000-4GL01-0AA0**		1	1 unit	41J
		I+O+II	2	**3SU1000-4GL11-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	O	2	**3SU1000-4HL01-0AA0**		1	1 unit	41J
		I+O+II	2	**3SU1000-4HL11-0AA0**		1	1 unit	41J
	O.M.R. 73033, yellow	I+O+II	2	**3SU1000-4JL11-0AA0**		1	1 unit	41J
	Siemens, SSG10[1]	O	2	**3SU1000-5BL01-0AA0**		1	1 unit	41J
		I+O+II	2	**3SU1000-5BL11-0AA0**		1	1 unit	41J
		I	2	**3SU1000-5BL21-0AA0**		1	1 unit	41J
		II	2	**3SU1000-5BL31-0AA0**		1	1 unit	41J
		I+II	2	**3SU1000-5BL41-0AA0**		1	1 unit	41J
		O+I	2	**3SU1000-5BL51-0AA0**		1	1 unit	41J
	Siemens, SSG10[1] with key monitoring	O	2	**3SU1000-5JL01-0AA0**		1	1 unit	41J
	BKS, S1	O	2	**3SU1000-5PL01-0AA0**		1	1 unit	41J
		I+O+II	2	**3SU1000-5PL11-0AA0**		1	1 unit	41J
		I	2	**3SU1000-5PL21-0AA0**		1	1 unit	41J
		II	2	**3SU1000-5PL31-0AA0**		1	1 unit	41J
		I+II	2	**3SU1000-5PL41-0AA0**		1	1 unit	41J
	BKS, E2	I+O+II	0	**3SU1000-5RL11-0AA0**		1	1 unit	41J
	BKS, E9	I+O+II	0	**3SU1000-5TL11-0AA0**		1	1 unit	41J

3SU1000-4BM01-0AA0

3SU1000-4FL01-0AA0

3SU1000-5BL01-0AA0

[1] Siemens lock (compatible with CES locks).

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Multi-unit packaging, see page 13/17.	Operating principle	Make of lock	Switch position for key removal	Number of keys	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Key-operated switches									
	3 switch positions								
3SU1000-4BP01-0AA0	Momentary contact/latching, 2x45° (10:30/12/ 1:30 o'clock), reset from the left, latching to the right	RONIS, SB30	O II O+II	2 2 2	**3SU1000-4BP01-0AA0** **3SU1000-4BP31-0AA0** **3SU1000-4BP61-0AA0**		1 1 1	1 unit 1 unit 1 unit	41J 41J 41J
		Siemens, SSG10[1]	O II O+II	2 2 2	**3SU1000-5BP01-0AA0** **3SU1000-5BP31-0AA0** **3SU1000-5BP61-0AA0**		1 1 1	1 unit 1 unit 1 unit	41J 41J 41J
3SU1000-5BP01-0AA0		BKS, S1	O	2	**3SU1000-5PP01-0AA0**		1	1 unit	41J
3SU1000-4GN01-0AA0	Latching/momentary contact, 2x45° (10:30/12/ 1:30 o'clock), reset from the right, latching to the left	RONIS, SB30	O I O+I	2 2 2	**3SU1000-4BN01-0AA0** **3SU1000-4BN21-0AA0** **3SU1000-4BN51-0AA0**		1 1 1	1 unit 1 unit 1 unit	41J 41J 41J
		O.M.R. 73038, light blue	O	2	**3SU1000-4GN01-0AA0**		1	1 unit	41J
		O.M.R. 73034, black	I	2	**3SU1000-4HN21-0AA0**		1	1 unit	41J
		Siemens, SSG10[1]	O I O+I	2 2 2	**3SU1000-5BN01-0AA0** **3SU1000-5BN21-0AA0** **3SU1000-5BN51-0AA0**		1 1 1	1 unit 1 unit 1 unit	41J 41J 41J
		BKS, S1	I O+I	2 2	**3SU1000-5PN21-0AA0** **3SU1000-5PN51-0AA0**		1 1	1 unit 1 unit	41J 41J

[1] Siemens lock (compatible with CES locks).

Selection and ordering data

Multi-unit packaging, see page 13/17.	Actuating angle	Operating principle	Switch position for key removal	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
ID key-operated switches									
	4 switch positions								
3SU1000-4WS10-0AA0	45°	Latching	Key removal possible in all 4 positions	Black	**3SU1000-4WS10-0AA0**		1	1 unit	41J

ID keys, see page 13/135.

Solid-state modules for ID key-operated switches, see page 13/90.

Plastic holders for ID key-operated switches, see page 13/76.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Product function Locking in zero position	Number of switching positions	Operating principle	Direction of actuation	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Coordinate switches								
No	2	Momentary contact	Horizontal	**3SU1000-7AC10-0AA0**		1	1 unit	41J
			Vertical	**3SU1000-7AD10-0AA0**		1	1 unit	41J
		Latching	Horizontal	**3SU1000-7AA10-0AA0**		1	1 unit	41J
			Vertical	**3SU1000-7AB10-0AA0**		1	1 unit	41J
	4	Momentary contact	Horizontal/ vertical	**3SU1000-7AF10-0AA0**		1	1 unit	41J
		Latching	Horizontal/ vertical	**3SU1000-7AE10-0AA0**		1	1 unit	41J
Yes	2	Momentary contact	Horizontal	**3SU1000-7BC10-0AA0**		1	1 unit	41J
			Vertical	**3SU1000-7BD10-0AA0**		1	1 unit	41J
		Latching	Horizontal	**3SU1000-7BA10-0AA0**		1	1 unit	41J
			Vertical	**3SU1000-7BB10-0AA0**		1	1 unit	41J
	4	Momentary contact	Horizontal/ vertical	**3SU1000-7BF10-0AA0**		1	1 unit	41J
		Latching	Horizontal/ vertical	**3SU1000-7BE10-0AA0**		1	1 unit	41J

3SU1000-7AA10-0AA0

3SU1000-7BA10-0AA0

Selection and ordering data

Multi-unit packaging, see page 13/17.

Product version	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Indicator lights						
With smooth lens	Amber	**3SU1001-6AA00-0AA0**		1	5 units	41J
	Red	**3SU1001-6AA20-0AA0**		1	5 units	41J
	Yellow	**3SU1001-6AA30-0AA0**		1	5 units	41J
	Green	**3SU1001-6AA40-0AA0**		1	5 units	41J
	Blue	**3SU1001-6AA50-0AA0**		1	5 units	41J
	White	**3SU1001-6AA60-0AA0**		1	5 units	41J
	Clear	**3SU1001-6AA70-0AA0**		1	5 units	41J
Indicator lights in illuminated pushbutton design						
--	Red	**3SU1001-0AD20-0AA0**		1	1 unit	41J
	Yellow	**3SU1001-0AD30-0AA0**		1	1 unit	41J
	Green	**3SU1001-0AD40-0AA0**		1	1 unit	41J
	Blue	**3SU1001-0AD50-0AA0**		1	1 unit	41J
	Clear	**3SU1001-0AD70-0AA0**		1	1 unit	41J

3SU1001-6AA40-0AA0

3SU1001-0AD50-0AA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

	Mounting diameter	Material	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm							
Sealing plugs[1]								
3SU1900-0FA10-0AA0	22	Plastic	Black	**3SU1900-0FA10-0AA0**		1	5 units	41J

[1] The sealing plug is mounted with a holder.
Modules might already be mounted on the holder.

	Product version	Mounting diameter	Accessory material	Accessory color	**Screw terminals** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm							
USB connections									
3SU1900-0GA10-0AA0	USB 3.0	22	Plastic	Black	**3SU1900-0GA10-0AA0**		1	1 unit	41J
RJ45 connections									
3SU1900-0GB10-0AA0	RJ-45 Cat. 5e	22	Plastic	Black	**3SU1900-0GB10-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Supply voltage for light source		Color	Number of			Screw terminals		PU (UNIT, SET, M)	PS*	PG
at AC	at DC		contact modules	NO contacts	NC contacts	Article No.	Price per PU			
V	V									
Pushbuttons										
Pushbuttons with flat button, momentary contact										
--	--	Black	1	1	0	**3SU1150-0AB10-1BA0**		1	1 unit	41J
				0	1	**3SU1150-0AB10-1CA0**		1	1 unit	41J
				1	1	**3SU1150-0AB10-1FA0**		1	1 unit	41J
		Red	1	1	0	**3SU1150-0AB20-1BA0**		1	1 unit	41J
				0	1	**3SU1150-0AB20-1CA0**		1	1 unit	41J
				1	1	**3SU1150-0AB20-1FA0**		1	1 unit	41J
		Yellow	1	1	0	**3SU1150-0AB30-1BA0**		1	1 unit	41J
				1	1	**3SU1150-0AB30-1FA0**		1	1 unit	41J
		Green	1	1	0	**3SU1150-0AB40-1BA0**		1	1 unit	41J
				1	1	**3SU1150-0AB40-1FA0**		1	1 unit	41J
		Blue	1	1	0	**3SU1150-0AB50-1BA0**		1	1 unit	41J
				1	1	**3SU1150-0AB50-1FA0**		1	1 unit	41J
		White	1	1	0	**3SU1150-0AB60-1BA0**		1	1 unit	41J
				1	1	**3SU1150-0AB60-1FA0**		1	1 unit	41J
		Clear	1	1	0	**3SU1150-0AB70-1BA0**		1	1 unit	41J
				1	1	**3SU1150-0AB70-1FA0**		1	1 unit	41J
Pushbuttons with raised button, momentary contact										
--	--	Black	1	1	0	**3SU1150-0BB10-1BA0**		1	1 unit	41J
				0	1	**3SU1150-0BB10-1CA0**		1	1 unit	41J
				1	1	**3SU1150-0BB10-1FA0**		1	1 unit	41J
		Red	1	0	1	**3SU1150-0BB20-1CA0**		1	1 unit	41J
				1	1	**3SU1150-0BB20-1FA0**		1	1 unit	41J
		Green	1	1	1	**3SU1150-0BB40-1FA0**		1	1 unit	41J
		Blue	1	1	0	**3SU1150-0BB50-1BA0**		1	1 unit	41J
				1	1	**3SU1150-0BB50-1FA0**		1	1 unit	41J
Illuminated pushbuttons with flat button, momentary contact, with integrated LED										
24	24	Amber	1	1	0	**3SU1152-0AB00-1BA0**		1	1 unit	41J
				1	1	**3SU1152-0AB00-1FA0**		1	1 unit	41J
		Red	1	0	1	**3SU1152-0AB20-1CA0**		1	1 unit	41J
				1	1	**3SU1152-0AB20-1FA0**		1	1 unit	41J
		Yellow	1	1	0	**3SU1152-0AB30-1BA0**		1	1 unit	41J
				1	1	**3SU1152-0AB30-1FA0**		1	1 unit	41J
		Green	1	1	0	**3SU1152-0AB40-1BA0**		1	1 unit	41J
				1	1	**3SU1152-0AB40-1FA0**		1	1 unit	41J
		Blue	1	1	0	**3SU1152-0AB50-1BA0**		1	1 unit	41J
				1	1	**3SU1152-0AB50-1FA0**		1	1 unit	41J
		White	1	1	0	**3SU1152-0AB60-1BA0**		1	1 unit	41J
				1	1	**3SU1152-0AB60-1FA0**		1	1 unit	41J
		Clear	1	1	0	**3SU1152-0AB70-1BA0**		1	1 unit	41J
				1	1	**3SU1152-0AB70-1FA0**		1	1 unit	41J
110	--	Amber	1	1	0	**3SU1153-0AB00-1BA0**		1	1 unit	41J
				1	1	**3SU1153-0AB00-1FA0**		1	1 unit	41J
		Red	1	0	1	**3SU1153-0AB20-1CA0**		1	1 unit	41J
				1	1	**3SU1153-0AB20-1FA0**		1	1 unit	41J
		Yellow	1	1	0	**3SU1153-0AB30-1BA0**		1	1 unit	41J
				1	1	**3SU1153-0AB30-1FA0**		1	1 unit	41J
		Green	1	1	0	**3SU1153-0AB40-1BA0**		1	1 unit	41J
				1	1	**3SU1153-0AB40-1FA0**		1	1 unit	41J
		Blue	1	1	0	**3SU1153-0AB50-1BA0**		1	1 unit	41J
				1	1	**3SU1153-0AB50-1FA0**		1	1 unit	41J
		White	1	1	0	**3SU1153-0AB60-1BA0**		1	1 unit	41J
				1	1	**3SU1153-0AB60-1FA0**		1	1 unit	41J
		Clear	1	1	0	**3SU1153-0AB70-1BA0**		1	1 unit	41J
				1	1	**3SU1153-0AB70-1FA0**		1	1 unit	41J

3SU1150-0AB30-1BA0

3SU1150-0BB20-1CA0

3SU1152-0AB50-1BA0

3SU1153-0AB60-1BA0

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Multi-unit packaging, see page 13/17.

Supply voltage for light source		Color	Number of			Screw terminals		PU (UNIT, SET, M)	PS*	PG
at AC	at DC		contact modules	NO contacts	NC contacts	Article No.	Price per PU			
V	V									
Pushbuttons										
Illuminated pushbuttons with flat button, momentary contact, with integrated LED										
230	--	Amber	1	1	0	**3SU1156-0AB00-1BA0**		1	1 unit	41J
				1	1	**3SU1156-0AB00-1FA0**		1	1 unit	41J
		Red	1	0	1	**3SU1156-0AB20-1CA0**		1	1 unit	41J
				1	1	**3SU1156-0AB20-1FA0**		1	1 unit	41J
		Yellow	1	1	0	**3SU1156-0AB30-1BA0**		1	1 unit	41J
				1	1	**3SU1156-0AB30-1FA0**		1	1 unit	41J
		Green	1	1	0	**3SU1156-0AB40-1BA0**		1	1 unit	41J
				1	1	**3SU1156-0AB40-1FA0**		1	1 unit	41J
		Blue	1	1	0	**3SU1156-0AB50-1BA0**		1	1 unit	41J
				1	1	**3SU1156-0AB50-1FA0**		1	1 unit	41J
		White	1	1	0	**3SU1156-0AB60-1BA0**		1	1 unit	41J
				1	1	**3SU1156-0AB60-1FA0**		1	1 unit	41J
		Clear	1	1	0	**3SU1156-0AB70-1BA0**		1	1 unit	41J
				1	1	**3SU1156-0AB70-1FA0**		1	1 unit	41J
						Spring-loaded terminals				
Pushbuttons with flat button, momentary contact										
--	--	Black	1	1	0	**3SU1150-0AB10-3BA0**		1	1 unit	41J
				0	1	**3SU1150-0AB10-3CA0**		1	1 unit	41J
				1	1	**3SU1150-0AB10-3FA0**		1	1 unit	41J
		Red	1	1	0	**3SU1150-0AB20-3CA0**		1	1 unit	41J
				0	1	**3SU1150-0AB20-3FA0**		1	1 unit	41J
		Yellow	1	1	0	**3SU1150-0AB30-3BA0**		1	1 unit	41J
				1	1	**3SU1150-0AB30-3FA0**		1	1 unit	41J
		Green	1	1	0	**3SU1150-0AB40-3BA0**		1	1 unit	41J
				1	1	**3SU1150-0AB40-3FA0**		1	1 unit	41J
		Blue	1	1	0	**3SU1150-0AB50-3BA0**		1	1 unit	41J
				1	1	**3SU1150-0AB50-3FA0**		1	1 unit	41J
		White	1	1	0	**3SU1150-0AB60-3BA0**		1	1 unit	41J
				1	1	**3SU1150-0AB60-3FA0**		1	1 unit	41J
Pushbuttons with raised button, momentary contact										
--	--	Red	1	0	1	**3SU1150-0BB20-3CA0**		1	1 unit	41J

3SU1156-0AB50-1BA0

3SU1150-0AB40-3BA0

3SU1150-0BB20-3CA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Multi-unit packaging, see page 13/17.

Supply voltage for light source at AC V	Supply voltage for light source at DC V	Color	Number of contact modules	Number of NO contacts	Number of NC contacts	Screw terminals Article No.	Screw terminals Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons										
Illuminated pushbuttons with flat button, momentary contact, with integrated LED										
3SU1152-0AB20-3CA0										
24	24	Red	1	0	1	**3SU1152-0AB20-3CA0**		1	1 unit	41J
				1	1	**3SU1152-0AB20-3FA0**		1	1 unit	41J
		Yellow	1	1	0	**3SU1152-0AB30-3BA0**		1	1 unit	41J
				1	1	**3SU1152-0AB30-3FA0**		1	1 unit	41J
		Green	1	1	0	**3SU1152-0AB40-3BA0**		1	1 unit	41J
				1	1	**3SU1152-0AB40-3FA0**		1	1 unit	41J
		Blue	1	1	0	**3SU1152-0AB50-3BA0**		1	1 unit	41J
				1	1	**3SU1152-0AB50-3FA0**		1	1 unit	41J
		White	1	1	0	**3SU1152-0AB60-3BA0**		1	1 unit	41J
				1	1	**3SU1152-0AB60-3FA0**		1	1 unit	41J
		Clear	1	1	0	**3SU1152-0AB70-3BA0**		1	1 unit	41J
				1	1	**3SU1152-0AB70-3FA0**		1	1 unit	41J
3SU1153-0AB60-3BA0										
110	--	Red	1	0	1	**3SU1153-0AB20-3CA0**		1	1 unit	41J
				1	1	**3SU1153-0AB20-3FA0**		1	1 unit	41J
		Yellow	1	1	0	**3SU1153-0AB30-3BA0**		1	1 unit	41J
				1	1	**3SU1153-0AB30-3FA0**		1	1 unit	41J
		Green	1	1	0	**3SU1153-0AB40-3BA0**		1	1 unit	41J
				1	1	**3SU1153-0AB40-3FA0**		1	1 unit	41J
		Blue	1	1	0	**3SU1153-0AB50-3BA0**		1	1 unit	41J
				1	1	**3SU1153-0AB50-3FA0**		1	1 unit	41J
		White	1	1	0	**3SU1153-0AB60-3BA0**		1	1 unit	41J
				1	1	**3SU1153-0AB60-3FA0**		1	1 unit	41J
		Clear	1	1	0	**3SU1153-0AB70-3BA0**		1	1 unit	41J
				1	1	**3SU1153-0AB70-3FA0**		1	1 unit	41J
3SU1156-0AB30-3BA0										
230	--	Red	1	0	1	**3SU1156-0AB20-3CA0**		1	1 unit	41J
				1	1	**3SU1156-0AB20-3FA0**		1	1 unit	41J
		Yellow	1	1	0	**3SU1156-0AB30-3BA0**		1	1 unit	41J
				1	1	**3SU1156-0AB30-3FA0**		1	1 unit	41J
		Green	1	1	0	**3SU1156-0AB40-3BA0**		1	1 unit	41J
				1	1	**3SU1156-0AB40-3FA0**		1	1 unit	41J
		Blue	1	1	0	**3SU1156-0AB50-3BA0**		1	1 unit	41J
				1	1	**3SU1156-0AB50-3FA0**		1	1 unit	41J
		White	1	1	0	**3SU1156-0AB60-3BA0**		1	1 unit	41J
				1	1	**3SU1156-0AB60-3FA0**		1	1 unit	41J
		Clear	1	1	0	**3SU1156-0AB70-3BA0**		1	1 unit	41J
				1	1	**3SU1156-0AB70-3FA0**		1	1 unit	41J

Selection and ordering data

Multi-unit packaging, see page 13/17.

Unlatching method	Number of contact modules	NO contacts	NC contacts	Screw terminals Article No.	Screw terminals Price per PU	PU (UNIT, SET, M)	PS*	PG
Mushroom pushbuttons								
With red mushroom, diameter 40 mm, latching								
3SU1150-1BA20-1CA0								
Pull to unlatch	1	0	1	**3SU1150-1BA20-1CA0**		1	1 unit	41J
		1	1	**3SU1150-1BA20-1FA0**		1	1 unit	41J
				Spring-loaded terminals				
Pull to unlatch	1	0	1	**3SU1150-1BA20-3CA0**		1	1 unit	41J
		1	1	**3SU1150-1BA20-3FA0**		1	1 unit	41J

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Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Unlatching method	Number of contact modules	NO contacts	NC contacts	Marking		Spring-loaded terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
EMERGENCY STOP mushroom pushbuttons, with yellow backing plate (diameter 60 mm), according to ISO 13850 and IEC 60947-5-5										
With red mushroom, diameter 30 mm, with positive latching										
Rotate to unlatch	1	0	1	--	⊖	**3SU1150-1GB20-3CW0**		1	1 unit	41J
	2	0	2	--	⊖	**3SU1150-1GB20-3PW0**		1	1 unit	41J
EMERGENCY STOP mushroom pushbuttons, with self-adhesive yellow backing plate (diameter 75 mm), according to ISO 13850 and IEC 60947-5-5						**Screw terminals**				
With red mushroom, diameter 40 mm, with positive latching										
Pull to unlatch	1	0	1	NOT-HALT	⊖	**3SU1150-1HA20-1CH0**		1	1 unit	41J
				EMERGENCY STOP	⊖	**3SU1150-1HA20-1CG0**		1	1 unit	41J
		1	1	NOT-HALT	⊖	**3SU1150-1HA20-1FH0**		1	1 unit	41J
				EMERGENCY STOP	⊖	**3SU1150-1HA20-1FG0**		1	1 unit	41J
				ARRET D'URGENCE	⊖	**3SU1150-1HA20-1FJ0**		1	1 unit	41J
Rotate to unlatch	1	0	1	NOT-HALT	⊖	**3SU1150-1HB20-1CH0**		1	1 unit	41J
				EMERGENCY STOP	⊖	**3SU1150-1HB20-1CG0**		1	1 unit	41J
				ARRET D'URGENCE	⊖	**3SU1150-1HB20-1CJ0**		1	1 unit	41J
		1	1	NOT-HALT	⊖	**3SU1150-1HB20-1FH0**		1	1 unit	41J
				EMERGENCY STOP	⊖	**3SU1150-1HB20-1FG0**		1	1 unit	41J
				ARRET D'URGENCE	⊖	**3SU1150-1HB20-1FJ0**		1	1 unit	41J
						Spring-loaded terminals				
Pull to unlatch	1	0	1	NOT-HALT	⊖	**3SU1150-1HA20-3CH0**		1	1 unit	41J
		1	1	NOT-HALT	⊖	**3SU1150-1HA20-3FH0**		1	1 unit	41J
	2	0	2	NOT-HALT	⊖	**3SU1150-1HA20-3PH0**		1	1 unit	41J
Rotate to unlatch	1	0	1	--	⊖	**3SU1150-1HB20-3CF0**		1	1 unit	41J
	2	0	2	--	⊖	**3SU1150-1HB20-3PF0**		1	1 unit	41J
	1	0	1	NOT-HALT	⊖	**3SU1150-1HB20-3CH0**		1	1 unit	41J
		1	1	NOT-HALT	⊖	**3SU1150-1HB20-3FH0**		1	1 unit	41J
	2	0	2	NOT-HALT	⊖	**3SU1150-1HB20-3PH0**		1	1 unit	41J

3SU1150-1GB20-3CW0

3SU1150-1HB20-1CH0

3SU1150-1HB20-3CF0

⊖ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK safety relays, see page 11/1 onwards.
Certificate:

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Illustrations are approximate

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Multi-unit packaging, see page 13/17.

Unlatching method	Number of contact modules	NO contacts	NC contacts	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
EMERGENCY STOP mushroom pushbuttons, without yellow backing plate, according to ISO 13850 and IEC 60947-5-5								
With red mushroom, diameter 40 mm, with positive latching								
Rotate to unlatch	2	0	2 ➔	**3SU1150-1HB20-1PA0**		1	1 unit	41J

3SU1150-1HB20-1PA0

➔ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK safety relays, see page 11/1 onwards.
Certificate:

Multi-unit packaging, see page 13/17.

Unlatching method	Supply voltage for light source at AC V	Supply voltage for light source at DC V	Number of contact modules	NO contacts	NC contacts	Marking	Spring-loaded terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
EMERGENCY STOP mushroom pushbuttons, can be illuminated, with yellow backing plate (diameter 60 mm), according to ISO 13850 and IEC 60947-5-5											
With red mushroom, diameter 30 mm, with positive latching											
Rotate to unlatch	24	24	1	0	1	-- ➔	**3SU1152-1GB20-3CW0**		1	1 unit	41J
			2	0	2	-- ➔	**3SU1152-1GB20-3PW0**		1	1 unit	41J

3SU1152-1GB20-3CW0

EMERGENCY STOP mushroom pushbuttons, can be illuminated, with self-adhesive yellow backing plate (diameter 75 mm), according to ISO 13850 and IEC 60947-5-5											
With red mushroom, diameter 40 mm, with positive latching											
Rotate to unlatch	24	24	2	0	2	-- ➔	**3SU1152-1HB20-3PF0**		1	1 unit	41J

3SU1152-1HB20-3PF0

							Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Rotate to unlatch	24 ... 240	24 ... 240	1	0	2	EMERGENCY STOP ➔	**3SU1158-1HB20-1PT0**		1	1 unit	41J

3SU1158-1HB20-1PT0

➔ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK safety relays, see page 11/1 onwards.
Certificate:

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Operating principle	Supply voltage for light source at AC V	Supply voltage for light source at DC V	Color	Number of contact modules	NO contacts	NC contacts	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Selector switches											
Short black actuators, 2 switch positions, can be illuminated											
Momentary contact, 45° (10:30/12 o'clock), reset from the right	--	--	White	1	1	0	**3SU1150-2BC60-1BA0**		1	1 unit	41J
3SU1150-2BF60-1BA0											
Latching, 90° (10:30/1:30 o'clock)	--	--	White	1	1	0	**3SU1150-2BF60-1BA0**		1	1 unit	41J
					1	1	**3SU1150-2BF60-1FA0**		1	1 unit	41J
				2	1	1	**3SU1150-2BF60-1MA0**		1	1 unit	41J
3SU1152-2BF20-1MA0	24	24	Red	2	1	1	**3SU1152-2BF20-1MA0**		1	1 unit	41J
Short black actuators, 3 switch positions, can be illuminated											
Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from left + right	--	--	White	2	2	2	**3SU1150-2BM60-1LA0**		1	1 unit	41J
					2	0	**3SU1150-2BM60-1NA0**		1	1 unit	41J
Latching, 2x45° (10:30/12/1:30 o'clock)	--	--	White	2	2	2	**3SU1150-2BL60-1LA0**		1	1 unit	41J
					2	0	**3SU1150-2BL60-1NA0**		1	1 unit	41J
Long black actuator, 2 switch positions, can be illuminated											
Latching, 90° (10:30/1:30 o'clock)	--	--	White	1	1	0	**3SU1150-2CF60-1BA0**		1	1 unit	41J
				2	2	0	**3SU1150-2CF60-1NA0**		1	1 unit	41J
Long black actuator, 3 switch positions, can be illuminated											
Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from left + right	--	--	White	2	1	1	**3SU1150-2CM60-1NA0**		1	1 unit	41J
Spring-loaded terminals											
Short black actuators, 2 switch positions, can be illuminated											
Latching, 90° (10:30/1:30 o'clock)	--	--	White	1	1	0	**3SU1150-2BF60-3BA0**		1	1 unit	41J
				2	1	1	**3SU1150-2BF60-3MA0**		1	1 unit	41J
3SU1150-2BL60-3NA0											
Short black actuator, 3 switch positions, can be illuminated											
Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from left + right	--	--	White	2	2	2	**3SU1150-2BM60-3LA0**		1	1 unit	41J
					2	0	**3SU1150-2BM60-3NA0**		1	1 unit	41J
Latching, 2x45° (10:30/12/1:30 o'clock)	--	--	White	2	2	2	**3SU1150-2BL60-3LA0**		1	1 unit	41J
					2	0	**3SU1150-2BL60-3NA0**		1	1 unit	41J

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Key-operated switches

Operating principle	Switch position for key removal	Number of contact modules	NO contacts	NC contacts	Number of keys	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
With RONIS lock, SB30, 2 switch positions										
Latching, 90° (10:30/ 1:30 o'clock)	O+I	1	1	0	2	**3SU1150-4BF11-1BA0**		1	1 unit	41J
	O+I		1	1	2	**3SU1150-4BF11-1FA0**		1	1 unit	41J
						Spring-loaded terminals				
	O+I	1	1	0	2	**3SU1150-4BF11-3BA0**		1	1 unit	41J
	O+I		1	1	2	**3SU1150-4BF11-3FA0**		1	1 unit	41J
	O	2	0	2	2	**3SU1150-4BF01-3PA0**		1	1 unit	41J

3SU1150-4BF11-1BA0

Selection and ordering data

Multi-unit packaging, see page 13/17.

Coordinate switches

Number of NO contacts (1 per direction)	Operating principle	Direction of actuation	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Without mechanical interlock, 2 switch positions							
2	Momentary contact	Horizontal	**3SU1150-7AC88-1NA0**		1	1 unit	41J
		Vertical	**3SU1150-7AD88-1NA0**		1	1 unit	41J
	Latching	Horizontal	**3SU1150-7AA88-1NA0**		1	1 unit	41J
		Vertical	**3SU1150-7AB88-1NA0**		1	1 unit	41J
Without mechanical interlock, 4 switch positions							
4	Momentary contact	Horizontal/vertical	**3SU1150-7AF88-1QA0**		1	1 unit	41J
	Latching	Horizontal/vertical	**3SU1150-7AE88-1QA0**		1	1 unit	41J
With mechanical interlock, 2 switch positions							
2	Momentary contact	Horizontal	**3SU1150-7BC88-1NA0**		1	1 unit	41J
		Vertical	**3SU1150-7BD88-1NA0**		1	1 unit	41J
	Latching	Horizontal	**3SU1150-7BA88-1NA0**		1	1 unit	41J
		Vertical	**3SU1150-7BB88-1NA0**		1	1 unit	41J
With mechanical interlock, 4 switch positions							
4	Momentary contact	Horizontal/vertical	**3SU1150-7BF88-1QA0**		1	1 unit	41J
	Latching	Horizontal/vertical	**3SU1150-7BE88-1QA0**		1	1 unit	41J

3SU1150-7AF88-1QA0

3SU1150-7BF88-1QA0

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Operational voltage at AC	Operational voltage at DC	Color of actuating element	Color of light source	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
V	V							
Indicator lights								
With smooth lens and integrated LED								
24	24	Amber	Amber	**3SU1152-6AA00-1AA0**		1	1 unit	41J
		Red	Red	**3SU1152-6AA20-1AA0**		1	1 unit	41J
		Yellow	Yellow	**3SU1152-6AA30-1AA0**		1	1 unit	41J
		Green	Green	**3SU1152-6AA40-1AA0**		1	1 unit	41J
		Blue	Blue	**3SU1152-6AA50-1AA0**		1	1 unit	41J
		White	White	**3SU1152-6AA60-1AA0**		1	1 unit	41J
		Clear	White	**3SU1152-6AA70-1AA0**		1	1 unit	41J
110	--	Amber	Amber	**3SU1153-6AA00-1AA0**		1	1 unit	41J
		Red	Red	**3SU1153-6AA20-1AA0**		1	1 unit	41J
		Yellow	Yellow	**3SU1153-6AA30-1AA0**		1	1 unit	41J
		Green	Green	**3SU1153-6AA40-1AA0**		1	1 unit	41J
		Blue	Blue	**3SU1153-6AA50-1AA0**		1	1 unit	41J
		White	White	**3SU1153-6AA60-1AA0**		1	1 unit	41J
		Clear	White	**3SU1153-6AA70-1AA0**		1	1 unit	41J
230	--	Red	Red	**3SU1156-6AA20-1AA0**		1	1 unit	41J
		Yellow	Yellow	**3SU1156-6AA30-1AA0**		1	1 unit	41J
		Green	Green	**3SU1156-6AA40-1AA0**		1	1 unit	41J
		Blue	Blue	**3SU1156-6AA50-1AA0**		1	1 unit	41J
		White	White	**3SU1156-6AA60-1AA0**		1	1 unit	41J
		Clear	White	**3SU1156-6AA70-1AA0**		1	1 unit	41J
				Spring-loaded terminals				
24	24	Red	Red	**3SU1152-6AA20-3AA0**		1	1 unit	41J
		Yellow	Yellow	**3SU1152-6AA30-3AA0**		1	1 unit	41J
		Green	Green	**3SU1152-6AA40-3AA0**		1	1 unit	41J
		Blue	Blue	**3SU1152-6AA50-3AA0**		1	1 unit	41J
		White	White	**3SU1152-6AA60-3AA0**		1	1 unit	41J
		Clear	White	**3SU1152-6AA70-3AA0**		1	1 unit	41J
110	--	Red	Red	**3SU1153-6AA20-3AA0**		1	1 unit	41J
		Yellow	Yellow	**3SU1153-6AA30-3AA0**		1	1 unit	41J
		Green	Green	**3SU1153-6AA40-3AA0**		1	1 unit	41J
		Blue	Blue	**3SU1153-6AA50-3AA0**		1	1 unit	41J
		White	White	**3SU1153-6AA60-3AA0**		1	1 unit	41J
		Clear	White	**3SU1153-6AA70-3AA0**		1	1 unit	41J
230	--	Red	Red	**3SU1156-6AA20-3AA0**		1	1 unit	41J
		Yellow	Yellow	**3SU1156-6AA30-3AA0**		1	1 unit	41J
		Green	Green	**3SU1156-6AA40-3AA0**		1	1 unit	41J
		Blue	Blue	**3SU1156-6AA50-3AA0**		1	1 unit	41J
		White	White	**3SU1156-6AA60-3AA0**		1	1 unit	41J
		Clear	White	**3SU1156-6AA70-3AA0**		1	1 unit	41J

3SU1152-6AA50-1AA0

3SU1156-6AA60-1AA0

3SU1152-6AA40-3AA0

3SU1156-6AA20-3AA0

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Selection and ordering data

Multi-unit packaging, see page 13/17.	Operational voltage at AC	Operational voltage at DC	Volume level	Degree of protection	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V	V	dB/cm						
Acoustic signaling devices									
3SU1200-6KB10-1AA0	24	24	80/10	IP40	**3SU1200-6KB10-1AA0**		1	1 unit	41J
	110	--	80/10	IP40	**3SU1200-6KC10-1AA0**		1	1 unit	41J
	230	--	80/10	IP40	**3SU1200-6KF10-1AA0**		1	1 unit	41J
	24	24	75/10	IP69	**3SU1200-6LB10-1AA0**		1	1 unit	41J
	110	--	75/10	IP69	**3SU1200-6LC10-1AA0**		1	1 unit	41J
	230	--	75/10	IP69	**3SU1200-6LF10-1AA0**		1	1 unit	41J

Selection and ordering data

Multi-unit packaging, see page 13/17.	Version of actuating element	Operating principle	Adjustable resistance	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			kΩ					
Potentiometers								
3SU1200-2PQ10-1AA0	**Rotary knob**	Stepless	1	**3SU1200-2PQ10-1AA0**		1	1 unit	41J
			2.2	**3SU1200-2PW10-1AA0**		1	1 unit	41J
			4.7	**3SU1200-2PR10-1AA0**		1	1 unit	41J
			10	**3SU1200-2PS10-1AA0**		1	1 unit	41J
			47	**3SU1200-2PT10-1AA0**		1	1 unit	41J
			100	**3SU1200-2PU10-1AA0**		1	1 unit	41J
			470	**3SU1200-2PV10-1AA0**		1	1 unit	41J

Labeling plates for potentiometers, see page 13/124.

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Version	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons with extended stroke						
For actuating relays, can only be combined with extension plunger, no contact module or LED module required						
Pushbuttons with flat button	Red	**3SU1250-0EB20-0AA0**		1	1 unit	41J
	Green	**3SU1250-0EB40-0AA0**		1	1 unit	41J
	Blue	**3SU1250-0EB50-0AA0**		1	1 unit	41J
Pushbuttons with raised button	Black	**3SU1250-0FB10-0AA0**		1	1 unit	41J
Pushbuttons with flat transparent button for insertion of insert labels	Red	**3SU1251-0EB20-0AA0**		1	1 unit	41J
	Clear	**3SU1251-0EB70-0AA0**		1	1 unit	41J

3SU1250-0EB40-0AA0

3SU1250-0FB10-0AA0

3SU1251-0EB20-0AA0

Version	Material	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories							
Extension plunders For compensation of the clearance between the pushbutton and the resetting plunger of an overload relay	Plastic	Gray	**3SU1900-0KG10-0AA0**		1	1 unit	41J

3SU1900-0KG10-0AA0

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Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Version of actuating element / Front ring version	Operating principle / Unlatching method	Color, marking	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons							
3SU1050-0AB40-0AC0							
Pushbuttons with flat button Standard	Momentary contact	Black	**3SU1050-0AB10-0AA0**		1	1 unit	41J
		Black, "O"	**3SU1050-0AB10-0AD0**		1	1 unit	41J
		Red	**3SU1050-0AB20-0AA0**		1	1 unit	41J
		Red, "O"	**3SU1050-0AB20-0AD0**		1	1 unit	41J
		Yellow	**3SU1050-0AB30-0AA0**		1	1 unit	41J
		Green	**3SU1050-0AB40-0AA0**		1	1 unit	41J
		Green, "I"	**3SU1050-0AB40-0AC0**		1	1 unit	41J
		Blue	**3SU1050-0AB50-0AA0**		1	1 unit	41J
		Blue, "R"	**3SU1050-0AB50-0AR0**		1	1 unit	41J
		White	**3SU1050-0AB60-0AA0**		1	1 unit	41J
		White, "⊖"	**3SU1050-0AB60-0AB0**		1	1 unit	41J
		White, "I"	**3SU1050-0AB60-0AC0**		1	1 unit	41J
		Clear	**3SU1050-0AB70-0AA0**		1	1 unit	41J
		Gray	**3SU1050-0AB80-0AA0**		1	1 unit	41J
3SU1050-0AA30-0AA0	Latching Push to unlatch	Black	**3SU1050-0AA10-0AA0**		1	1 unit	41J
		Red	**3SU1050-0AA20-0AA0**		1	1 unit	41J
		Yellow	**3SU1050-0AA30-0AA0**		1	1 unit	41J
		Green	**3SU1050-0AA40-0AA0**		1	1 unit	41J
		Blue	**3SU1050-0AA50-0AA0**		1	1 unit	41J
		White	**3SU1050-0AA60-0AA0**		1	1 unit	41J
3SU1050-0BB20-0AA0							
Pushbuttons with raised button Standard	Momentary contact	Black	**3SU1050-0BB10-0AA0**		1	1 unit	41J
		Red	**3SU1050-0BB20-0AA0**		1	1 unit	41J
		Yellow	**3SU1050-0BB30-0AA0**		1	1 unit	41J
		Green	**3SU1050-0BB40-0AA0**		1	1 unit	41J
		Blue	**3SU1050-0BB50-0AA0**		1	1 unit	41J
		White	**3SU1050-0BB60-0AA0**		1	1 unit	41J
	Latching Push to unlatch	Red	**3SU1050-0BA20-0AA0**		1	1 unit	41J
3SU1050-0CB50-0AA0							
Pushbuttons with flat button Raised	Momentary contact	Black	**3SU1050-0CB10-0AA0**		1	1 unit	41J
		Red	**3SU1050-0CB20-0AA0**		1	1 unit	41J
		Yellow	**3SU1050-0CB30-0AA0**		1	1 unit	41J
		Green	**3SU1050-0CB40-0AA0**		1	1 unit	41J
		Blue	**3SU1050-0CB50-0AA0**		1	1 unit	41J
		White	**3SU1050-0CB60-0AA0**		1	1 unit	41J
3SU1051-0CB40-0AA0							
Illuminated pushbuttons with flat button Raised	Momentary contact	Green	**3SU1051-0CB40-0AA0**		1	20 units	41J

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Multi-unit packaging, see page 13/17.

Version of actuating element Front ring version	Operating principle Unlatching method	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons							
 3SU1051-0AB30-0AA0							
Illuminated pushbuttons with flat button Standard	Momentary contact	Amber	**3SU1051-0AB00-0AA0**		1	1 unit	41J
		Red	**3SU1051-0AB20-0AA0**		1	1 unit	41J
		Yellow	**3SU1051-0AB30-0AA0**		1	1 unit	41J
		Green	**3SU1051-0AB40-0AA0**		1	1 unit	41J
		Blue	**3SU1051-0AB50-0AA0**		1	1 unit	41J
		White	**3SU1051-0AB60-0AA0**		1	1 unit	41J
		Clear	**3SU1051-0AB70-0AA0**		1	1 unit	41J
 3SU1051-0AA20-0AA0							
	Latching Push to unlatch	Red	**3SU1051-0AA20-0AA0**		1	1 unit	41J
		Yellow	**3SU1051-0AA30-0AA0**		1	1 unit	41J
		Green	**3SU1051-0AA40-0AA0**		1	1 unit	41J
		Blue	**3SU1051-0AA50-0AA0**		1	1 unit	41J
		White	**3SU1051-0AA60-0AA0**		1	1 unit	41J
		Clear	**3SU1051-0AA70-0AA0**		1	1 unit	41J
 3SU1051-0BB20-0AA0							
Illuminated pushbuttons with raised button Standard	Momentary contact	Amber	**3SU1051-0BB00-0AA0**		1	1 unit	41J
		Red	**3SU1051-0BB20-0AA0**		1	1 unit	41J
		Yellow	**3SU1051-0BB30-0AA0**		1	1 unit	41J
		Green	**3SU1051-0BB40-0AA0**		1	1 unit	41J
		Blue	**3SU1051-0BB50-0AA0**		1	1 unit	41J
		White	**3SU1051-0BB60-0AA0**		1	1 unit	41J
		Clear	**3SU1051-0BB70-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Version of actuating element	Operating principle	Color	Marking Symbol No.	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Twin pushbuttons								
3SU1050-3AB66-0AL0								
Twin pushbuttons flat, flat	Momentary contact	Green/red	-- "I"/"O"	**3SU1050-3AB42-0AA0** **3SU1050-3AB42-0AK0**		1 1	1 unit 1 unit	41J 41J
		White/black	-- "I"/"O"	**3SU1050-3AB61-0AA0** **3SU1050-3AB61-0AK0**		1 1	1 unit 1 unit	41J 41J
		White/white	-- "–"/"+" Arrows, hor.	**3SU1050-3AB66-0AA0** **3SU1050-3AB66-0AL0** **3SU1050-3AB66-0AM0**		1 1 1	1 unit 1 unit 1 unit	41J 41J 41J
		Black/black	-- ⊙ ○ 5264/5265 (IEC 60417)	**3SU1050-3AB11-0AA0** **3SU1050-3AB11-0AQ0**		1 1	1 unit 1 unit	41J 41J
3SU1050-3BB42-0AK0								
Twin pushbuttons flat, raised	Momentary contact	Green/red	-- "I"/"O"	**3SU1050-3BB42-0AA0** **3SU1050-3BB42-0AK0**		1 1	1 unit 1 unit	41J 41J
		White/black	-- "I"/"O"	**3SU1050-3BB61-0AA0** **3SU1050-3BB61-0AK0**		1 1	1 unit 1 unit	41J 41J
3SU1051-3AB42-0AN0								
Twin pushbuttons flat, flat, illuminated	Momentary contact	Green/red	-- "I"/"O" Arrows, vert.	**3SU1051-3AB42-0AA0** **3SU1051-3AB42-0AK0** **3SU1051-3AB42-0AN0**		1 1 1	1 unit 1 unit 1 unit	41J 41J 41J
		White/black	-- "I"/"O"	**3SU1051-3AB61-0AA0** **3SU1051-3AB61-0AK0**		1 1	1 unit 1 unit	41J 41J
3SU1051-3BB61-0AA0								
Twin pushbuttons flat, raised, illuminated	Momentary contact	Green/red	-- "I"/"O"	**3SU1051-3BB42-0AA0** **3SU1051-3BB42-0AK0**		1 1	1 unit 1 unit	41J 41J
		White/black	-- "I"/"O"	**3SU1051-3BB61-0AA0** **3SU1051-3BB61-0AK0**		1 1	1 unit 1 unit	41J 41J

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Version of actuating element	Operating principle Unlatching method	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mushroom pushbuttons							
2 switch positions							
 3SU1050-1AD20-0AA0							
Mushroom pushbuttons 30 mm diameter, 2 positions	Momentary contact	Black	**3SU1050-1AD10-0AA0**		1	1 unit	41J
		Red	**3SU1050-1AD20-0AA0**		1	1 unit	41J
		Yellow	**3SU1050-1AD30-0AA0**		1	1 unit	41J
		Green	**3SU1050-1AD40-0AA0**		1	1 unit	41J
	Latching Pull to unlatch	Black	**3SU1050-1AA10-0AA0**		1	1 unit	41J
		Red	**3SU1050-1AA20-0AA0**		1	1 unit	41J
 3SU1050-1BD30-0AA0							
Mushroom pushbuttons 40 mm diameter, 2 positions	Momentary contact	Black	**3SU1050-1BD10-0AA0**		1	1 unit	41J
		Red	**3SU1050-1BD20-0AA0**		1	1 unit	41J
		Yellow	**3SU1050-1BD30-0AA0**		1	1 unit	41J
		Green	**3SU1050-1BD40-0AA0**		1	1 unit	41J
	Latching Pull to unlatch	Black	**3SU1050-1BA10-0AA0**		1	1 unit	41J
		Red	**3SU1050-1BA20-0AA0**		1	1 unit	41J
		Yellow	**3SU1050-1BA30-0AA0**		1	1 unit	41J
 3SU1050-1CD40-0AA0							
Mushroom pushbuttons 60 mm diameter, 2 positions	Momentary contact	Black	**3SU1050-1CD10-0AA0**		1	1 unit	41J
		Red	**3SU1050-1CD20-0AA0**		1	1 unit	41J
		Yellow	**3SU1050-1CD30-0AA0**		1	1 unit	41J
		Green	**3SU1050-1CD40-0AA0**		1	1 unit	41J
	Latching Pull to unlatch	Black	**3SU1050-1CA10-0AA0**		1	1 unit	41J
		Red	**3SU1050-1CA20-0AA0**		1	1 unit	41J
 3SU1051-1AD60-0AA0							
Mushroom pushbuttons 30 mm diameter, 2 positions, illuminated	Momentary contact	Yellow	**3SU1051-1AD30-0AA0**		1	1 unit	41J
		Green	**3SU1051-1AD40-0AA0**		1	1 unit	41J
		Blue	**3SU1051-1AD50-0AA0**		1	1 unit	41J
		White	**3SU1051-1AD60-0AA0**		1	1 unit	41J
	Latching Pull to unlatch	Amber	**3SU1051-1AA00-0AA0**		1	1 unit	41J
		Red	**3SU1051-1AA20-0AA0**		1	1 unit	41J
		Yellow	**3SU1051-1AA30-0AA0**		1	1 unit	41J
		Green	**3SU1051-1AA40-0AA0**		1	1 unit	41J
		Blue	**3SU1051-1AA50-0AA0**		1	1 unit	41J
		Clear	**3SU1051-1AA70-0AA0**		1	1 unit	41J
 3SU1051-1BD40-0AA0							
Mushroom pushbuttons 40 mm diameter, 2 positions, illuminated	Momentary contact	Amber	**3SU1051-1BD00-0AA0**		1	1 unit	41J
		Yellow	**3SU1051-1BD30-0AA0**		1	1 unit	41J
		Green	**3SU1051-1BD40-0AA0**		1	1 unit	41J
		White	**3SU1051-1BD60-0AA0**		1	1 unit	41J
	Latching Pull to unlatch	Amber	**3SU1051-1BA00-0AA0**		1	1 unit	41J
		Red	**3SU1051-1BA20-0AA0**		1	1 unit	41J
		Yellow	**3SU1051-1BA30-0AA0**		1	1 unit	41J
		Green	**3SU1051-1BA40-0AA0**		1	1 unit	41J
		Blue	**3SU1051-1BA50-0AA0**		1	1 unit	41J
		Clear	**3SU1051-1BA70-0AA0**		1	1 unit	41J
 3SU1051-1CA50-0AA0							
Mushroom pushbuttons 60 mm diameter, 2 positions, illuminated	Momentary contact None	Amber	**3SU1051-1CD00-0AA0**		1	1 unit	41J
		Yellow	**3SU1051-1CD30-0AA0**		1	1 unit	41J
		Green	**3SU1051-1CD40-0AA0**		1	1 unit	41J
		White	**3SU1051-1CD60-0AA0**		1	1 unit	41J
	Latching Pull to unlatch	Red	**3SU1051-1CA20-0AA0**		1	1 unit	41J
		Yellow	**3SU1051-1CA30-0AA0**		1	1 unit	41J
		Green	**3SU1051-1CA40-0AA0**		1	1 unit	41J
		Blue	**3SU1051-1CA50-0AA0**		1	1 unit	41J
		Clear	**3SU1051-1CA70-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Multi-unit packaging, see page 13/17.

Version of actuating element	Operating principle / Unlatching method	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mushroom pushbuttons							
2 switch positions							
3SU1050-1HB10-0AA0							
Mushroom pushbuttons with raised mushroom, 40 mm diameter, 2 positions	With positive latching Rotate to unlatch	Black Yellow	**3SU1050-1HB10-0AA0** **3SU1050-1HB30-0AA0**		1 1	1 unit 1 unit	41J 41J
3 switch positions							
3SU1050-1EA20-0AA0							
Mushroom pushbuttons 40 mm diameter, 3 positions	Momentary contact	Black Red	**3SU1050-1ED10-0AA0** **3SU1050-1ED20-0AA0**		1 1	1 unit 1 unit	41J 41J
	Latching Pull to unlatch	Black Red	**3SU1050-1EA10-0AA0** **3SU1050-1EA20-0AA0**		1 1	1 unit 1 unit	41J 41J
3SU1051-1EA40-0AA0							
Mushroom pushbuttons 40 mm diameter, 3 positions, illuminated	Momentary contact	Red White	**3SU1051-1ED20-0AA0** **3SU1051-1ED60-0AA0**		1 1	1 unit 1 unit	41J 41J
	Latching Pull to unlatch	Red Green	**3SU1051-1EA20-0AA0** **3SU1051-1EA40-0AA0**		1 1	1 unit 1 unit	41J 41J

Selection and ordering data

Multi-unit packaging, see page 13/17.

Version of actuating element	Outer diameter of mushroom	Make of lock	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
EMERGENCY STOP mushroom pushbuttons, according to ISO 13850 and IEC 60947-5-5								
With pull to unlatch								
3SU1050-1HA20-0AA0								
With positive latching, 2 positions	40	--	Red	**3SU1050-1HA20-0AA0**		1	1 unit	41J
With rotate to unlatch								
3SU1050-1GB20-0AA0								
With positive latching, 2 positions	33.8	--	Red	**3SU1050-1GB20-0AA0**		1	1 unit	41J

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Multi-unit packaging, see page 13/17.

Version of actuating element	Outer diameter of mushroom	Make of lock	Color	Number of keys	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
EMERGENCY STOP mushroom pushbuttons, according to ISO 13850 and IEC 60947-5-5									
With rotate to unlatch									
With positive latching, 2 positions	40	--	Red	--	**3SU1050-1HB20-0AA0**		1	1 unit	41J
	60	--	Red	--	**3SU1050-1JB20-0AA0**		1	1 unit	41J
With latching, 2 positions	40	--	Red	--	**3SU1050-1LB20-0AA0**		1	1 unit	41J
With rotate to unlatch, can be illuminated									
With positive latching, 2 positions	33.8	--	Red	--	**3SU1051-1GB20-0AA0**		1	1 unit	41J
	40	--	Red	--	**3SU1051-1HB20-0AA0**		1	1 unit	41J
	60	--	Red	--	**3SU1051-1JB20-0AA0**		1	1 unit	41J
With key-operated release									
With positive latching, 2 positions	40	RONIS, SB30	Red	2	**3SU1050-1HF20-0AA0**		1	1 unit	41J
		RONIS, 455	Red	2	**3SU1050-1HG20-0AA0**		1	1 unit	41J
		RONIS, 421	Red	2	**3SU1050-1HH20-0AA0**		1	1 unit	41J
		BKS, S1	Red	2	**3SU1050-1HK20-0AA0**		1	1 unit	41J
		BKS, E7	Red	0	**3SU1050-1HM20-0AA0**		1	1 unit	41J
		BKS, E9	Red	0	**3SU1050-1HN20-0AA0**		1	1 unit	41J
		O.M.R. 73037	Red	2	**3SU1050-1HQ20-0AA0**		1	1 unit	41J
		Siemens, SSG10[1)]	Red	2	**3SU1050-1HR20-0AA0**		1	1 unit	41J
		Siemens, SSP9[1)]	Red	2	**3SU1050-1HS20-0AA0**		1	1 unit	41J
		Siemens, VL5[1)]	Black	2	**3SU1050-1HU10-0AA0**		1	1 unit	41J
			Red	2	**3SU1050-1HU20-0AA0**		1	1 unit	41J
		Siemens, VL1[1)]	Red	2	**3SU1050-1HV20-0AA0**		1	1 unit	41J

3SU1050-1HB20-0AA0

3SU1050-1JB20-0AA0

3SU1051-1HB20-0AA0

3SU1050-1HF20-0AA0

3SU1050-1HQ20-0AA0

3SU1050-1HR20-0AA0

[1)] Siemens lock (compatible with CES locks).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Toggle switches

Number of switching positions	Number of command points	Color of actuating element	Operating principle of the actuating element	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
2	1	Black	Latching	**3SU1050-3EA10-0AA0**		1	1 unit	41J
			Momentary contact, reset from above	**3SU1050-3EC10-0AA0**		1	1 unit	41J

3SU1050-3EA10-0AA0

Selection and ordering data

Multi-unit packaging, see page 13/17.

Selector switches

2 switch positions, can be illuminated

Version of actuating element	Operating principle	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Selector, short black actuator	Momentary contact, 45° (10:30/12 o'clock), reset from center to left	Black	**3SU1052-2BC10-0AA0**		1	1 unit	41J
		Red	**3SU1052-2BC20-0AA0**		1	1 unit	41J
		Yellow	**3SU1052-2BC30-0AA0**		1	1 unit	41J
		Green	**3SU1052-2BC40-0AA0**		1	1 unit	41J
		Blue	**3SU1052-2BC50-0AA0**		1	1 unit	41J
		White	**3SU1052-2BC60-0AA0**		1	1 unit	41J
	Latching, 90° (10:30/1:30 o'clock)	Amber	**3SU1052-2BF00-0AA0**		1	1 unit	41J
		Black	**3SU1052-2BF10-0AA0**		1	1 unit	41J
		Red	**3SU1052-2BF20-0AA0**		1	1 unit	41J
		Yellow	**3SU1052-2BF30-0AA0**		1	1 unit	41J
		Green	**3SU1052-2BF40-0AA0**		1	1 unit	41J
		Blue	**3SU1052-2BF50-0AA0**		1	1 unit	41J
		White	**3SU1052-2BF60-0AA0**		1	1 unit	41J
Selector, long black actuator	Momentary contact, 45° (10:30/12 o'clock), reset from center to left	Black	**3SU1052-2CC10-0AA0**		1	1 unit	41J
		Yellow	**3SU1052-2CC30-0AA0**		1	1 unit	41J
		Green	**3SU1052-2CC40-0AA0**		1	1 unit	41J
		Blue	**3SU1052-2CC50-0AA0**		1	1 unit	41J
		White	**3SU1052-2CC60-0AA0**		1	1 unit	41J
	Latching, 90° (10:30/1:30 o'clock)	Black	**3SU1052-2CF10-0AA0**		1	1 unit	41J
		Red	**3SU1052-2CF20-0AA0**		1	1 unit	41J
		Yellow	**3SU1052-2CF30-0AA0**		1	1 unit	41J
		Green	**3SU1052-2CF40-0AA0**		1	1 unit	41J
		Blue	**3SU1052-2CF50-0AA0**		1	1 unit	41J
		White	**3SU1052-2CF60-0AA0**		1	1 unit	41J

3SU1052-2BC20-0AA0

3SU1052-2BF40-0AA0

3SU1052-2CF60-0AA0

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Multi-unit packaging, see page 13/17.

Selector switches

3 switch positions, can be illuminated

Version of actuating element	Operating principle	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3SU1052-2BM50-0AA0							
Selector, short black actuator	Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from left + right	Amber	**3SU1052-2BM00-0AA0**		1	1 unit	41J
		Black	**3SU1052-2BM10-0AA0**		1	1 unit	41J
		Red	**3SU1052-2BM20-0AA0**		1	1 unit	41J
		Yellow	**3SU1052-2BM30-0AA0**		1	1 unit	41J
		Green	**3SU1052-2BM40-0AA0**		1	1 unit	41J
		Blue	**3SU1052-2BM50-0AA0**		1	1 unit	41J
		White	**3SU1052-2BM60-0AA0**		1	1 unit	41J
3SU1052-2BL30-0AA0							
	Latching, 2x45° (10:30/12/1:30 o'clock)	Amber	**3SU1052-2BL00-0AA0**		1	1 unit	41J
		Black	**3SU1052-2BL10-0AA0**		1	1 unit	41J
		Red	**3SU1052-2BL20-0AA0**		1	1 unit	41J
		Yellow	**3SU1052-2BL30-0AA0**		1	1 unit	41J
		Green	**3SU1052-2BL40-0AA0**		1	1 unit	41J
		White	**3SU1052-2BL60-0AA0**		1	1 unit	41J
3SU1052-2BN20-0AA0							
	Momentary contact/latching, 2x45° (10:30/12/1:30 o'clock), reset from the left, latching to the right	Black	**3SU1052-2BP10-0AA0**		1	1 unit	41J
		Red	**3SU1052-2BP20-0AA0**		1	1 unit	41J
		Green	**3SU1052-2BP40-0AA0**		1	1 unit	41J
		White	**3SU1052-2BP60-0AA0**		1	1 unit	41J
	Latching/momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from the right, latching to the left	Black	**3SU1052-2BN10-0AA0**		1	1 unit	41J
		Red	**3SU1052-2BN20-0AA0**		1	1 unit	41J
		Green	**3SU1052-2BN40-0AA0**		1	1 unit	41J
		White	**3SU1052-2BN60-0AA0**		1	1 unit	41J
3SU1052-2CL40-0AA0							
Selector, long black actuator	Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from left + right	Black	**3SU1052-2CM10-0AA0**		1	1 unit	41J
		Red	**3SU1052-2CM20-0AA0**		1	1 unit	41J
		Green	**3SU1052-2CM40-0AA0**		1	1 unit	41J
		White	**3SU1052-2CM60-0AA0**		1	1 unit	41J
	Latching, 2x45° (10:30/12/1:30 o'clock)	Black	**3SU1052-2CL10-0AA0**		1	1 unit	41J
		Red	**3SU1052-2CL20-0AA0**		1	1 unit	41J
		Green	**3SU1052-2CL40-0AA0**		1	1 unit	41J
		White	**3SU1052-2CL60-0AA0**		1	1 unit	41J
	Momentary contact/latching, 2x45° (10:30/12/1:30 o'clock), reset from the left, latching to the right	Black	**3SU1052-2CP10-0AA0**		1	1 unit	41J
		Red	**3SU1052-2CP20-0AA0**		1	1 unit	41J
		White	**3SU1052-2CP60-0AA0**		1	1 unit	41J
	Latching/momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from the right, latching to the left	Black	**3SU1052-2CN10-0AA0**		1	1 unit	41J
		Red	**3SU1052-2CN20-0AA0**		1	1 unit	41J
		White	**3SU1052-2CN60-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Multi-unit packaging, see page 13/17.

Selector switches

Version of actuating element	Operating principle	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
4 switch positions							
Rotary knob	Latching, 4x90° (3/6/9/12 o'clock)	White	**3SU1050-2AS60-0AA0**		1	1 unit	41J

3SU1050-2AS60-0AA0

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Operating principle	Make of lock	Switch position for key removal	Number of keys	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Key-operated switches								
2 switch positions								
3SU1050-4BC01-0AA0								
Momentary contact, 45° (10:30/12 o'clock), reset from center to left	RONIS, SB30	O	2	**3SU1050-4BC01-0AA0**		1	1 unit	41J
	RONIS, 455	O	2	**3SU1050-4CC01-0AA0**		1	1 unit	41J
	O.M.R. 73037, red	O	2	**3SU1050-4FC01-0AA0**		1	1 unit	41J
	O.M.R. 73038, light blue	O	2	**3SU1050-4GC01-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	O	2	**3SU1050-4HC01-0AA0**		1	1 unit	41J
	O.M.R. 73033, yellow	O	2	**3SU1050-4JC01-0AA0**		1	1 unit	41J
	Siemens, SSG10[1)]	O	2	**3SU1050-5BC01-0AA0**		1	1 unit	41J
	Siemens, LSG1[1)]	O	2	**3SU1050-5HC01-0AA0**		1	1 unit	41J
	Siemens, VL5[1)]	O	2	**3SU1050-5KC01-0AA0**		1	1 unit	41J
	Siemens, STGH10[1)]	O	2	**3SU1050-5LC01-0AA0**		1	1 unit	41J
	BKS, S1	O	2	**3SU1050-5PC01-0AA0**		1	1 unit	41J
3SU1050-4BF01-0AA0								
Latching, 90° (10:30/ 1:30 o'clock)	RONIS, SB30	O	2	**3SU1050-4BF01-0AA0**		1	1 unit	41J
		O+I	2	**3SU1050-4BF11-0AA0**		1	1 unit	41J
		I	2	**3SU1050-4BF21-0AA0**		1	1 unit	41J
	RONIS, 455	O	2	**3SU1050-4CF01-0AA0**		1	1 unit	41J
		O+I	2	**3SU1050-4CF11-0AA0**		1	1 unit	41J
		I	2	**3SU1050-4CF21-0AA0**		1	1 unit	41J
	RONIS, 421	O+I	2	**3SU1050-4DF11-0AA0**		1	1 unit	41J
3SU1050-4GF11-0AA0								
	O.M.R. 73037, red	O	2	**3SU1050-4FF01-0AA0**		1	1 unit	41J
		O+I	2	**3SU1050-4FF11-0AA0**		1	1 unit	41J
		I	2	**3SU1050-4FF21-0AA0**		1	1 unit	41J
	O.M.R. 73038, light blue	O	2	**3SU1050-4GF01-0AA0**		1	1 unit	41J
		O+I	2	**3SU1050-4GF11-0AA0**		1	1 unit	41J
		I	2	**3SU1050-4GF21-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	O	2	**3SU1050-4HF01-0AA0**		1	1 unit	41J
		O+I	2	**3SU1050-4HF11-0AA0**		1	1 unit	41J
		I	2	**3SU1050-4HF21-0AA0**		1	1 unit	41J
	O.M.R. 73033, yellow	O	2	**3SU1050-4JF01-0AA0**		1	1 unit	41J
		O+I	2	**3SU1050-4JF11-0AA0**		1	1 unit	41J
		I	2	**3SU1050-4JF21-0AA0**		1	1 unit	41J
3SU1050-5BF01-0AA0								
	Siemens, SSG10[1)]	O	2	**3SU1050-5BF01-0AA0**		1	1 unit	41J
		O+I	2	**3SU1050-5BF11-0AA0**		1	1 unit	41J
		I	2	**3SU1050-5BF21-0AA0**		1	1 unit	41J
	Siemens, SSG10[1)] with key monitoring	O	2	**3SU1050-5JF01-0AA0**		1	1 unit	41J
	Siemens, LSG1[1)]	O	2	**3SU1050-5HF01-0AA0**		1	1 unit	41J
		O+I	2	**3SU1050-5HF11-0AA0**		1	1 unit	41J
	Siemens, VL5[1)]	O	2	**3SU1050-5KF01-0AA0**		1	1 unit	41J
	Siemens, STGH10[1)]	O+I	2	**3SU1050-5LF11-0AA0**		1	1 unit	41J
3SU1050-5PF01-0AA0								
	BKS, S1	O	2	**3SU1050-5PF01-0AA0**		1	1 unit	41J
		O+I	2	**3SU1050-5PF11-0AA0**		1	1 unit	41J
		I	2	**3SU1050-5PF21-0AA0**		1	1 unit	41J
	BKS, E1	O	0	**3SU1050-5QF01-0AA0**		1	1 unit	41J
		O+I	0	**3SU1050-5QF11-0AA0**		1	1 unit	41J
	BKS, E2	O	0	**3SU1050-5RF01-0AA0**		1	1 unit	41J
		O+I	0	**3SU1050-5RF11-0AA0**		1	1 unit	41J
	BKS, E7	O	0	**3SU1050-5SF01-0AA0**		1	1 unit	41J
		O+I	0	**3SU1050-5SF11-0AA0**		1	1 unit	41J
	BKS, E9	O	0	**3SU1050-5TF01-0AA0**		1	1 unit	41J
		O+I	0	**3SU1050-5TF11-0AA0**		1	1 unit	41J

[1)] Siemens lock (compatible with CES locks).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Multi-unit packaging, see page 13/17.

Key-operated switches

Operating principle	Make of lock	Switch position for key removal	Number of keys	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3 switch positions								
3SU1050-4BM01-0AA0								
Momentary contact, 2x45° (10:30/12/ 1:30 o'clock), reset from left + right	RONIS, SB30	O	2	**3SU1050-4BM01-0AA0**		1	1 unit	41J
	RONIS, 455	O	2	**3SU1050-4CM01-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	O	2	**3SU1050-4HM01-0AA0**		1	1 unit	41J
	Siemens, SSG10[1)]	O	2	**3SU1050-5BM01-0AA0**		1	1 unit	41J
	Siemens, STGH10[1)]	O	2	**3SU1050-5LM01-0AA0**		1	1 unit	41J
	BKS, S1	O	2	**3SU1050-5PM01-0AA0**		1	1 unit	41J
Latching, 2x45° (10:30/12/ 1:30 o'clock)	RONIS, SB30	O	2	**3SU1050-4BL01-0AA0**		1	1 unit	41J
		I+O+II	2	**3SU1050-4BL11-0AA0**		1	1 unit	41J
		I	2	**3SU1050-4BL21-0AA0**		1	1 unit	41J
		II	2	**3SU1050-4BL31-0AA0**		1	1 unit	41J
		I+II	2	**3SU1050-4BL41-0AA0**		1	1 unit	41J
		O+I	2	**3SU1050-4BL51-0AA0**		1	1 unit	41J
	RONIS, 455	O	2	**3SU1050-4CL01-0AA0**		1	1 unit	41J
		I+O+II	2	**3SU1050-4CL11-0AA0**		1	1 unit	41J
	RONIS, 421		2	**3SU1050-4DL11-0AA0**		1	1 unit	41J
3SU1050-4FL11-0AA0	O.M.R. 73037, red	I+O+II	2	**3SU1050-4FL11-0AA0**		1	1 unit	41J
	O.M.R. 73038, light blue	O	2	**3SU1050-4GL01-0AA0**		1	1 unit	41J
		I+O+III	2	**3SU1050-4GL11-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	O	2	**3SU1050-4HL01-0AA0**		1	1 unit	41J
		I+O+II	2	**3SU1050-4HL11-0AA0**		1	1 unit	41J
3SU1050-5BL01-0AA0	Siemens, SSG10[1)]	O	2	**3SU1050-5BL01-0AA0**		1	1 unit	41J
		I+O+II	2	**3SU1050-5BL11-0AA0**		1	1 unit	41J
		I	2	**3SU1050-5BL21-0AA0**		1	1 unit	41J
		II	2	**3SU1050-5BL31-0AA0**		1	1 unit	41J
		I+II	2	**3SU1050-5BL41-0AA0**		1	1 unit	41J
	Siemens, SSG10[1)] with key monitoring	O	2	**3SU1050-5JL01-0AA0**		1	1 unit	41J
	BKS, S1	O	2	**3SU1050-5PL01-0AA0**		1	1 unit	41J
		I+O+II	2	**3SU1050-5PL11-0AA0**		1	1 unit	41J
		I	2	**3SU1050-5PL21-0AA0**		1	1 unit	41J
		I+II	2	**3SU1050-5PL41-0AA0**		1	1 unit	41J
3SU1050-4BP01-0AA0								
Momentary contact/latching, 2x45° (10:30/12/ 1:30 o'clock), reset from the left, latching to the right	RONIS, SB30	O	2	**3SU1050-4BP01-0AA0**		1	1 unit	41J
		O+II	2	**3SU1050-4BP61-0AA0**		1	1 unit	41J
	O.M.R. 73034, black	II	2	**3SU1050-4HP31-0AA0**		1	1 unit	41J
	O.M.R. 73033, yellow	II	2	**3SU1050-4JP31-0AA0**		1	1 unit	41J
	Siemens, SSG10[1)]	O	2	**3SU1050-5BP01-0AA0**		1	1 unit	41J
		II	2	**3SU1050-5BP31-0AA0**		1	1 unit	41J
		O+II	2	**3SU1050-5BP61-0AA0**		1	1 unit	41J
	BKS, S1	O	2	**3SU1050-5PP01-0AA0**		1	1 unit	41J
Latching/ momentary contact, 2x45° (10:30/12/ 1:30 o'clock), reset from the right, latching to the left	RONIS, SB30	O	2	**3SU1050-4BN01-0AA0**		1	1 unit	41J
		I	2	**3SU1050-4BN21-0AA0**		1	1 unit	41J
		O+IO+I	2	**3SU1050-4BN51-0AA0**		1	1 unit	41J
	Siemens, SSG10[1)]	O	2	**3SU1050-5BN01-0AA0**		1	1 unit	41J
		I	2	**3SU1050-5BN21-0AA0**		1	1 unit	41J
		O+I	2	**3SU1050-5BN51-0AA0**		1	1 unit	41J
	Siemens, STGH10[1)]	O+I	2	**3SU1050-5LN51-0AA0**		1	1 unit	41J

[1)] Siemens lock (compatible with CES locks)

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Number of NO contacts (1 per direction)	Operating principle	Direction of actuation	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Coordinate switches							
Without mechanical interlock, 2 switch positions							
2	Momentary contact	Horizontal	**3SU1050-7AC88-0AA0**		1	1 unit	41J
		Vertical	**3SU1050-7AD88-0AA0**		1	1 unit	41J
	Latching	Horizontal	**3SU1050-7AA88-0AA0**		1	1 unit	41J
		Vertical	**3SU1050-7AB88-0AA0**		1	1 unit	41J
Without mechanical interlock, 4 switch positions							
4	Momentary contact	Horizontal/vertical	**3SU1050-7AF88-0AA0**		1	1 unit	41J
	Latching	Horizontal/vertical	**3SU1050-7AE88-0AA0**		1	1 unit	41J
With mechanical interlock, 2 switch positions							
2	Momentary contact	Horizontal	**3SU1050-7BC88-0AA0**		1	1 unit	41J
		Vertical	**3SU1050-7BD88-0AA0**		1	1 unit	41J
	Latching	Horizontal	**3SU1050-7BA88-0AA0**		1	1 unit	41J
		Vertical	**3SU1050-7BB88-0AA0**		1	1 unit	41J
With mechanical interlock, 4 switch positions							
4	Momentary contact	Horizontal/vertical	**3SU1050-7BF88-0AA0**		1	1 unit	41J
	Latching	Horizontal/vertical	**3SU1050-7BE88-0AA0**		1	1 unit	41J

3SU1050-7AC88-0AA0

3SU1050-7BC88-0AA0

Selection and ordering data

Multi-unit packaging, see page 13/17.

Product version	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Indicator lights						
With smooth lens	Amber	**3SU1051-6AA00-0AA0**		1	5 units	41J
	Red	**3SU1051-6AA20-0AA0**		1	5 units	41J
	Yellow	**3SU1051-6AA30-0AA0**		1	5 units	41J
	Green	**3SU1051-6AA40-0AA0**		1	5 units	41J
	Blue	**3SU1051-6AA50-0AA0**		1	5 units	41J
	White	**3SU1051-6AA60-0AA0**		1	5 units	41J
	Clear	**3SU1051-6AA70-0AA0**		1	5 units	41J

3SU1051-6AA40-0AA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

	Mounting diameter	Material	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm							
Sealing plugs[1]								
3SU1950-0FA80-0AA0	22	Metal, shiny	Silver	**3SU1950-0FA80-0AA0**		1	5 units	41J

[1] The sealing plug is mounted with a holder.
Modules might already be mounted on the holder.

	Product version	Mounting diameter	Accessory material	Accessory color	**Screw terminals** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm							
USB connections									
3SU1950-0GA80-0AA0	USB 3.0	22	Metal, shiny	Silver	**3SU1950-0GA80-0AA0**		1	1 unit	41J
RJ45 connections									
3SU1950-0GB80-0AA0	RJ-45 Cat. 5e	22	Metal, shiny	Silver	**3SU1950-0GB80-0AA0**		1	1 unit	41J

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Overview

Actuators and indicators, flat, 30 mm, metal, matte, including adapter (adapter included in scope of supply)

Selection and ordering data

Multi-unit packaging, see page 13/17.

Version	Operating principle	Unlatching method	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons								
3SU1060-0JB50-0AA0								
Pushbuttons with flat button	Momentary contact	--	Black	**3SU1060-0JB10-0AA0**		1	1 unit	41J
			Red	**3SU1060-0JB20-0AA0**		1	1 unit	41J
			Yellow	**3SU1060-0JB30-0AA0**		1	1 unit	41J
			Green	**3SU1060-0JB40-0AA0**		1	1 unit	41J
			Blue	**3SU1060-0JB50-0AA0**		1	1 unit	41J
			White	**3SU1060-0JB60-0AA0**		1	1 unit	41J
			Gray	**3SU1060-0JB80-0AA0**		1	10 units	41J
			Amber	**3SU1060-0JB00-0AA0**		1	1 unit	41J
3SU1060-0JA20-0AA0								
	Latching	Push to unlatch	Black	**3SU1060-0JA10-0AA0**		1	1 unit	41J
			Red	**3SU1060-0JA20-0AA0**		1	1 unit	41J
			Yellow	**3SU1060-0JA30-0AA0**		1	1 unit	41J
			Green	**3SU1060-0JA40-0AA0**		1	1 unit	41J
			Blue	**3SU1060-0JA50-0AA0**		1	1 unit	41J
			White	**3SU1060-0JA60-0AA0**		1	1 unit	41J
3SU1061-0JB40-0AA0								
Illuminated pushbuttons with flat button	Momentary contact	--	Red	**3SU1061-0JB20-0AA0**		1	1 unit	41J
			Yellow	**3SU1061-0JB30-0AA0**		1	1 unit	41J
			Green	**3SU1061-0JB40-0AA0**		1	1 unit	41J
			Blue	**3SU1061-0JB50-0AA0**		1	1 unit	41J
			Clear	**3SU1061-0JB70-0AA0**		1	1 unit	41J
3SU1061-0JA30-0AA0								
	Latching	Push to unlatch	Red	**3SU1061-0JA20-0AA0**		1	1 unit	41J
			Yellow	**3SU1061-0JA30-0AA0**		1	1 unit	41J
			Green	**3SU1061-0JA40-0AA0**		1	1 unit	41J
			Blue	**3SU1061-0JA50-0AA0**		1	1 unit	41J
			Clear	**3SU1061-0JA70-0AA0**		1	1 unit	41J

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Version	Operating principle	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Selector switches							
2 switch positions, can be illuminated							
Selector, short black actuator and front ring for flat mounting	Momentary contact, 45° (10:30/12 o'clock), reset from center to left	Black	**3SU1062-2DC10-0AA0**		1	1 unit	41J
		Red	**3SU1062-2DC20-0AA0**		1	1 unit	41J
		Green	**3SU1062-2DC40-0AA0**		1	1 unit	41J
		White	**3SU1062-2DC60-0AA0**		1	1 unit	41J
	Latching, 90° (10:30/1:30 o'clock)	Black	**3SU1062-2DF10-0AA0**		1	1 unit	41J
		Red	**3SU1062-2DF20-0AA0**		1	1 unit	41J
		Green	**3SU1062-2DF40-0AA0**		1	1 unit	41J
		Blue	**3SU1062-2DF50-0AA0**		1	1 unit	41J
		White	**3SU1062-2DF60-0AA0**		1	1 unit	41J
Selector, long black actuator and front ring for flat mounting	Momentary contact, 45° (10:30/12 o'clock), reset from center to left	Black	**3SU1062-2EC10-0AA0**		1	1 unit	41J
		Red	**3SU1062-2EC20-0AA0**		1	1 unit	41J
		Green	**3SU1062-2EC40-0AA0**		1	1 unit	41J
		White	**3SU1062-2EC60-0AA0**		1	1 unit	41J
	Latching, 90° (10:30/1:30 o'clock)	Black	**3SU1062-2EF10-0AA0**		1	1 unit	41J
		Red	**3SU1062-2EF20-0AA0**		1	1 unit	41J
		Green	**3SU1062-2EF40-0AA0**		1	1 unit	41J
		White	**3SU1062-2EF60-0AA0**		1	1 unit	41J
3 switch positions (I+O+II), can be illuminated							
Selector, short black actuator and front ring for flat mounting	Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from left + right	Black	**3SU1062-2DM10-0AA0**		1	1 unit	41J
		Red	**3SU1062-2DM20-0AA0**		1	1 unit	41J
		Green	**3SU1062-2DM40-0AA0**		1	1 unit	41J
		White	**3SU1062-2DM60-0AA0**		1	1 unit	41J
	Latching, 2x45° (10:30/12/1:30 o'clock)	Black	**3SU1062-2DL10-0AA0**		1	1 unit	41J
		Red	**3SU1062-2DL20-0AA0**		1	1 unit	41J
		Yellow	**3SU1062-2DL30-0AA0**		1	1 unit	41J
		Green	**3SU1062-2DL40-0AA0**		1	1 unit	41J
		White	**3SU1062-2DL60-0AA0**		1	1 unit	41J
	Momentary contact to the right, latching to the left, 2x45° (10:30/12/1:30 o'clock)	White	**3SU1062-2DN60-0AA0**		1	1 unit	41J
Selector, long black actuator and front ring for flat mounting	Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from left + right	Black	**3SU1062-2EM10-0AA0**		1	1 unit	41J
		Red	**3SU1062-2EM20-0AA0**		1	1 unit	41J
		Green	**3SU1062-2EM40-0AA0**		1	1 unit	41J
		White	**3SU1062-2EM60-0AA0**		1	1 unit	41J
	Latching, 2x45° (10:30/12/1:30 o'clock)	Black	**3SU1062-2EL10-0AA0**		1	1 unit	41J
		Red	**3SU1062-2EL20-0AA0**		1	1 unit	41J
		Green	**3SU1062-2EL40-0AA0**		1	1 unit	41J
		White	**3SU1062-2EL60-0AA0**		1	1 unit	41J

3SU1062-2DC40-0AA0

3SU1062-2EC20-0AA0

3SU1062-2DL60-0AA0

3SU1062-2EL20-0AA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.	Make of lock	Operating principle	Switch position for key removal	Number of keys	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Key-operated switches									
3SU1060-4LF11-0AA0									
		2 switch positions							
	RONIS, SB30 and front ring for flat installation	Momentary contact, 45° (10:30/12 o'clock), reset from center to left	O	2	**3SU1060-4LC01-0AA0**		1	1 unit	41J
		Latching, 90° (10:30/1:30 o'clock)	O	2	**3SU1060-4LF01-0AA0**		1	1 unit	41J
			O+I	2	**3SU1060-4LF11-0AA0**		1	1 unit	41J
			I	2	**3SU1060-4LF21-0AA0**		1	1 unit	41J
3SU1060-4LL11-0AA0									
		3 switch positions							
	RONIS, SB30 and front ring for flat installation	Latching, 2x45° (10:30/12/ 1:30 o'clock)	I+O+II	2	**3SU1060-4LL11-0AA0**		1	1 unit	41J
		Momentary contact, 2x45° (10:30/12/ 1:30 o'clock), reset from left + right	O	2	**3SU1060-4LM01-0AA0**		1	1 unit	41J

Selection and ordering data

Multi-unit packaging, see page 13/17.	Version	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Indicator lights							
3SU1061-0JD40-0AA0	**With flat lens**	Red	**3SU1061-0JD20-0AA0**		1	1 unit	41J
		Yellow	**3SU1061-0JD30-0AA0**		1	1 unit	41J
		Green	**3SU1061-0JD40-0AA0**		1	1 unit	41J
		Blue	**3SU1061-0JD50-0AA0**		1	1 unit	41J
		Clear	**3SU1061-0JD70-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

	Mounting diameter	Material	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm							
Sealing plugs[1]								
3SU1960-0FA80-0AA0	30	Metal, matte	Sand gray	**3SU1960-0FA80-0AA0**		1	1 unit	41J

[1] The sealing plug is mounted with a holder.
Modules might already be mounted on the holder.

	Product version	Mounting diameter	Accessory material	Accessory color	**Screw terminals** ⊕ Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm							
USB connections									
3SU1960-0GA80-0AA0	USB 3.0	30	Metal, matte	Sand gray	**3SU1960-0GA80-0AA0**		1	1 unit	41J
RJ45 connections									
3SU1960-0GB80-0AA0	RJ-45 Cat. 5e	30	Metal, matte	Sand gray	**3SU1960-0GB80-0AA0**		1	1 unit	41J

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*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Options

Special locks for key-operated switches

The plastic and metal key-operated switches of type RONIS, BKS and Siemens (compatible with CES) can be optionally ordered with additional locks.

In this case **"-Z"**, the order code **"Y01"** and the required lock number must be added to the article number of the relevant key-operated switch for standard locking.

Order code	**Y01**
Standard delivery time	25 working days
Additional price per unit	
Ordering example	3SU1000-5BF01-0AA0-Z Y01 Z = SSG18

Ordering notes

- For all special locks, an additional price applies.
- The order code **"Y01"** must be quoted in accordance with the above table. Automated processing of the order with a defined delivery time can be guaranteed only for correctly submitted orders.
- For applications in which access security is important and several lock numbers are used, we recommend the use of BKS or Siemens key-operated switches.
- Special locks for VW (E1, E2, ...) will be delivered without keys, all others with two keys.
- Available special locks
  - Siemens lock (compatible with CES locks):
    SSG1 to SSG100; SMS1 to SMS100;
    LSG1; BAZ1, BAZ6, BAZ8, BAZ11, BAZ20, BAZ27, BAZ30, BAZ34; VL1, VL5; TAB501; STGH10; SSP9
  - BKS lock:
    S1 to S99; E1 to E25 (VW – without key);
    G3751 (VW – without key)
  - RONIS lock: SB30, SB31, 421, 455
  - O.M.R. lock: 73038, 73037, 73034, 73033
  - For key-operated switches with key monitoring and Siemens lock, locks SSG1 to SSG100 are possible.
  - With the Siemens locks VL1 and VL5, key removal is possible in the O, I, II, O+I and O+II positions.

Note:

Mixing of the special locks listed above from different key-operated switch brands is not possible.

Example:
A RONIS key-operated switch cannot be combined with an SSG10 lock.

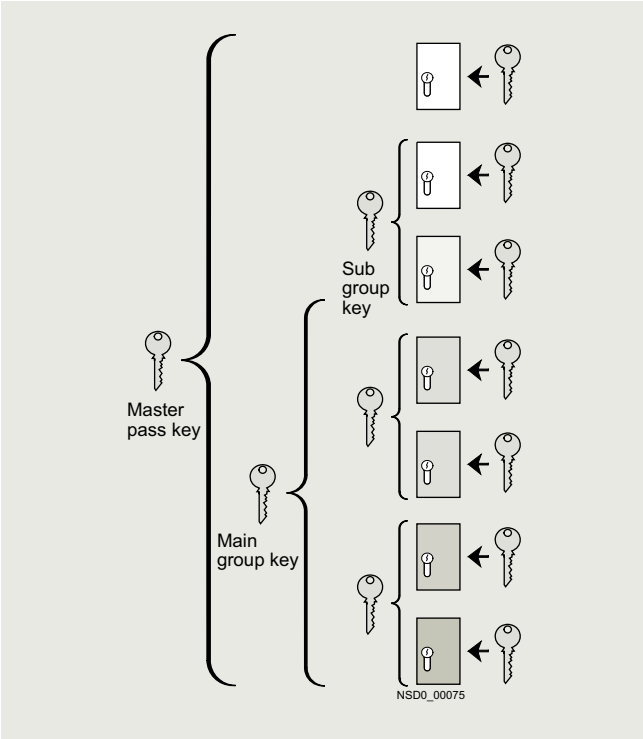
Master and master-pass key systems

The following key systems can be supplied with BKS or Siemens locks:

- Central lock systems
- Master key systems
- Central master key systems
- Master-pass key systems

When placing an order you must supplement the article number of the matching key-operated switches with **"-Z"** and quote the order code **"Y03"**.

Price and delivery time on request.
Email: sirius-attach.aud@siemens.com



Example of master-pass key system

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Options

Inscription of actuating and signaling elements

Actuators and indicators of plastic as well as metal version can be optionally inscribed with a laser.

Example of laser inscription

The actuators of the pushbuttons, illuminated pushbuttons, twin pushbuttons, mushroom pushbuttons, illuminated mushroom pushbuttons, EMERGENCY STOP mushroom pushbuttons (without lock), the lenses of the indicator lights, and the acoustic signaling devices can all be inscribed.

Version

The default typeface used for inscriptions with text is Arial and the text is centered.

The font height for illuminated actuators is 2.5 mm, for non-illuminated actuators 3 mm.

Up to 8 characters per line are possible.

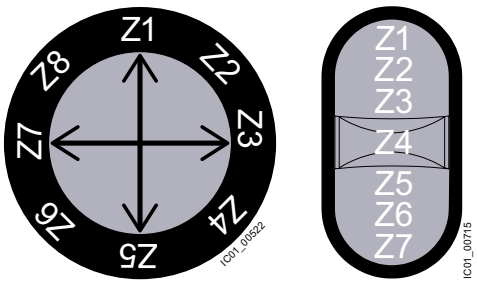
Notes:

Selected pushbuttons and twin pushbuttons can be supplied as standard with inscribed letters or symbols.

Selector switches, key-operated switches and toggle switches can only be inscribed on the front ring in the design lines
- 22 mm, plastic, black and
- Flat, 30 mm, metal matte

(only one text line and the supplement Y19).

Assignment of the positions on the actuator



Front ring and twin pushbutton

Ordering notes

To order, the inscribed actuating and signaling elements can be selected via the SIRIUS ACT configurator. An electronic order form is then generated.

Configurator, see www.siemens.com/sirius-act/configurator.

When ordering, add "**-Z**" and one of the following order codes to the article number of the actuator element or the indicator light:

- **Y10:** Text in upper/lower case, always upper case for beginning of line,
  e.g. Z1=Lift Z2=Lower
- **Y11:** Text in upper case,
  e.g. Z1=LIFT Z2=LOWER
- **Y12:** Text in lower case,
  e.g. Z1=lift off Z2=lower off
- **Y15:** Text in upper/lower case, all words begin with upper case letters,
  e.g. Z1=Lift Off Z2=Lower Off
- **Y13:** Symbol with number according to ISO 7000 or IEC 60417
- **Y19:** Inscription of choice, text or symbol, can only be ordered via SIRIUS ACT configurator with a Configuration Identification Number (CIN)

When ordering, specify the required inscription without umlauts (ä, ö, ü) and without spaces after Z=, Z1=, etc. in addition to the article number and order code (see ordering examples 1 to 3).

In the case of symbols, specify the symbol No. and the standard (see ordering example 2).

In the case of multi-line inscriptions, the text must be assigned to the respective line, e.g. Z1=Lift, Z2=Lower (see ordering examples 1 and 3).

The SIRIUS ACT configurator must be used to select special inscriptions and symbols (see ordering example 4). In this case a CIN (Configuration Identification Number) is generated for placement of future orders. It is then possible to place an order directly via the SIRIUS ACT configurator using the CIN (shopping cart in the Industry Mall) or via the standard ordering channels.

Standard ordering channels:

- Configurator: www.siemens.com/sirius-act/configurator
- Industry Mall: www.siemens.com/industrymall

Ordering example 1

A round pushbutton with 2 lines of text is required:

3SU1000-0AB20-0AA0-Z
Y10
Z1=Lift
Z2=Lower

Ordering example 2

A pushbutton inscribed with symbol No. 5389 according to IEC 60417 is required:

3SU1000-0AB20-0AA0-Z
Y13
Z=5389 IEC

Ordering example 3

A selector switch with 2 switch positions and multi-line inscription on the front ring is required:

3SU1002-2BF10-0AA0-Z
Y11
Z8=0
Z2=I

Ordering example 4

An indicator light with customized inscription is required:

3SU1001-6AA50-0AA0-Z
Y19
CIN.....
(20-digit number generated from the SIRIUS ACT configurator)

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Holders without module

Overview

- Plastic holders are mounted on actuators and indicators made of plastic (3SU100).
- Metal holders can be mounted on all versions of actuators and indicators, with the exception of ID key-operated switches.
- Universal holders can be mounted on actuators and indicators made of plastic or metal.
- All metal and universal holders are automatically grounded by their fastening screw. A grounding stud can also be fitted (see page 13/139).

Selection and ordering data

Multi-unit packaging, see page 13/17.	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Holders without module for plastic						
3SU1500-0AA10-0AA0	***3x without module***	**3SU1500-0AA10-0AA0**		1	5 units	41J
3SU1500-0BA10-0AA0	***4x without module*** For selector switches with 4 switch positions and for coordinate switches	**3SU1500-0BA10-0AA0**		1	1 unit	41J
Holders without module for metal						
3SU1510-0AA10-0AA0	***3x without module***	**3SU1510-0AA10-0AA0**		1	5 units	41J
3SU1550-0BA10-0AA0	***4x without module*** For selector switches with 4 switch positions and for coordinate switches	**3SU1550-0BA10-0AA0**		1	1 unit	41J
Holders without module, universal for plastic and metal						
3SU1550-0AA10-0AA0	***3x without module***	**3SU1550-0AA10-0AA0**		1	5 units	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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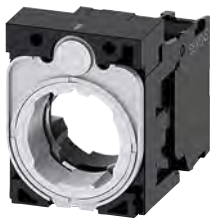
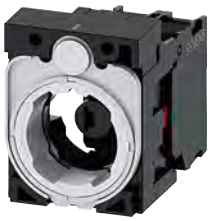
Overview

- Plastic holders are mounted on actuators and indicators made of plastic (3SU100).
- Metal holders can be mounted on all versions of actuators and indicators, with the exception of ID key-operated switches.
- Universal holders can be mounted on actuators and indicators made of plastic or metal.
- All metal and universal holders are inherently grounded. A grounding stud can also be fitted (see page 13/139).

Selection and ordering data

Number of contact modules	Number of LED modules	NO contacts	NC contacts	Color of light source		Screw terminals Article No.	PU (UNIT, SET, M)	PS*	PG
Holders with module for plastic									
 3SU1500-1AA10-1BA0									
3x with module									
1	0	1	0	--		**3SU1500-1AA10-1BA0**	1	1 unit	41J
		0	1		➔	**3SU1500-1AA10-1CA0**	1	1 unit	41J
		1	1		➔	**3SU1500-1AA10-1FA0**	1	1 unit	41J
2	0	2	0	--		**3SU1500-1AA10-1NA0**	1	1 unit	41J
		0	2		➔	**3SU1500-1AA10-1PA0**	1	1 unit	41J
		2	2		➔	**3SU1500-1AA10-1LA0**	1	1 unit	41J
 3SU1501-1AG20-1CA0									
3x with contact and LED module[1] (6 ... 24 V AC/DC)									
1	1	1	0	Amber		**3SU1501-1AG00-1BA0**	1	1 unit	41J
				Red		**3SU1501-1AG20-1BA0**	1	1 unit	41J
				Yellow		**3SU1501-1AG30-1BA0**	1	1 unit	41J
				Green		**3SU1501-1AG40-1BA0**	1	1 unit	41J
				Blue		**3SU1501-1AG50-1BA0**	1	1 unit	41J
				White		**3SU1501-1AG60-1BA0**	1	1 unit	41J
		0	1	Amber	➔	**3SU1501-1AG00-1CA0**	1	1 unit	41J
				Red	➔	**3SU1501-1AG20-1CA0**	1	1 unit	41J
				Yellow	➔	**3SU1501-1AG30-1CA0**	1	1 unit	41J
				Green	➔	**3SU1501-1AG40-1CA0**	1	1 unit	41J
				Blue	➔	**3SU1501-1AG50-1CA0**	1	1 unit	41J
				White	➔	**3SU1501-1AG60-1CA0**	1	1 unit	41J
		1	1	Amber	➔	**3SU1501-1AG00-1FA0**	1	1 unit	41J
				Red	➔	**3SU1501-1AG20-1FA0**	1	1 unit	41J
				Yellow	➔	**3SU1501-1AG30-1FA0**	1	1 unit	41J
				Green	➔	**3SU1501-1AG40-1FA0**	1	1 unit	41J
				Blue	➔	**3SU1501-1AG50-1FA0**	1	1 unit	41J
				White	➔	**3SU1501-1AG60-1FA0**	1	1 unit	41J
3SU1501-1AG20-1LA0									
2	1	2	0	Amber		**3SU1501-1AG00-1NA0**	1	1 unit	41J
				Red		**3SU1501-1AG20-1NA0**	1	1 unit	41J
				Yellow		**3SU1501-1AG30-1NA0**	1	1 unit	41J
				Green		**3SU1501-1AG40-1NA0**	1	1 unit	41J
				Blue		**3SU1501-1AG50-1NA0**	1	1 unit	41J
				White		**3SU1501-1AG60-1NA0**	1	1 unit	41J
		2	2	Amber	➔	**3SU1501-1AG00-1LA0**	1	1 unit	41J
				Red	➔	**3SU1501-1AG20-1LA0**	1	1 unit	41J
				Yellow	➔	**3SU1501-1AG30-1LA0**	1	1 unit	41J
				Green	➔	**3SU1501-1AG40-1LA0**	1	1 unit	41J
				Blue	➔	**3SU1501-1AG50-1LA0**	1	1 unit	41J
				White	➔	**3SU1501-1AG60-1LA0**	1	1 unit	41J

➔ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK safety relays, see page 11/1 onwards.
Certificate:

[1] Only for use with SIRIUS commanding and signaling devices.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Holders with module

Holders with module for metal

3SU1510-1AA10-1BA0

3SU1511-1AB20-3MA0

Number of contact modules	Number of LED modules	NO contacts	NC contacts	Color of light source		Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3x with module										
1	0	1	0	--		**3SU1510-1AA10-1BA0**		1	1 unit	41J
		0	1	--	➔	**3SU1510-1AA10-1CA0**		1	1 unit	41J
		1	1	--	➔	**3SU1510-1AA10-1FA0**		1	1 unit	41J
2	0	2	0	--		**3SU1510-1AA10-1NA0**		1	1 unit	41J
		0	2	--	➔	**3SU1510-1AA10-1PA0**		1	1 unit	41J
		2	2	--	➔	**3SU1510-1AA10-1LA0**		1	1 unit	41J
						Spring-loaded terminals				
2	0	2	0	--		**3SU1510-1AA10-3NA0**		1	1 unit	41J
		1	1	--	➔	**3SU1510-1AA10-3MA0**		1	1 unit	41J
3x with module and LED module (24 V AC/DC)										
0	1	0	0	Red		**3SU1511-1AB20-3AA0**		1	1 unit	41J
2	1	1	1	Red	➔	**3SU1511-1AB20-3MA0**		1	1 unit	41J
				Yellow	➔	**3SU1511-1AB30-3MA0**		1	1 unit	41J
				Green	➔	**3SU1511-1AB40-3MA0**		1	1 unit	41J
				Blue	➔	**3SU1511-1AB50-3MA0**		1	1 unit	41J
				White	➔	**3SU1511-1AB60-3MA0**		1	1 unit	41J
		2	0	White		**3SU1511-1AB60-3NA0**		1	1 unit	41J
		0	2	White	➔	**3SU1511-1AB60-3PA0**		1	1 unit	41J

➔ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK safety relays, see page 11/1 onwards.
Certificate:

Holders with module, universal for plastic and metal

3SU1550-1AA10-1BA0

3SU1551-1AB20-3MA0

Number of contact modules	Number of LED modules	NO contacts	NC contacts	Color of light source		Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3x with module										
1	0	1	0	--		**3SU1550-1AA10-1BA0**		1	1 unit	41J
		0	1	--	➔	**3SU1550-1AA10-1CA0**		1	1 unit	41J
		1	1	--	➔	**3SU1550-1AA10-1FA0**		1	1 unit	41J
2	0	2	0	--		**3SU1550-1AA10-1NA0**		1	1 unit	41J
		0	2	--	➔	**3SU1550-1AA10-1PA0**		1	1 unit	41J
		2	2	--	➔	**3SU1550-1AA10-1LA0**		1	1 unit	41J
						Spring-loaded terminals				
2	0	2	0	--		**3SU1550-1AA10-3NA0**		1	1 unit	41J
		1	1	--	➔	**3SU1550-1AA10-3MA0**		1	1 unit	41J
3x with module and LED module (24 V AC/DC)										
0	1	0	0	Red		**3SU1551-1AB20-3AA0**		1	1 unit	41J
2	1	1	1	Red	➔	**3SU1551-1AB20-3MA0**		1	1 unit	41J
				Yellow	➔	**3SU1551-1AB30-3MA0**		1	1 unit	41J
				Green	➔	**3SU1551-1AB40-3MA0**		1	1 unit	41J
				Blue	➔	**3SU1551-1AB50-3MA0**		1	1 unit	41J
				White	➔	**3SU1551-1AB60-3MA0**		1	1 unit	41J
		2	0	White		**3SU1551-1AB60-3NA0**		1	1 unit	41J
		0	2	White	➔	**3SU1551-1AB60-3PA0**		1	1 unit	41J

➔ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK safety relays, see page 11/1 onwards.
Certificate:

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

The contact modules are fitted with slow-action contacts (NO contacts or NC contacts). These ensure a high switching reliability even with small voltages and currents, such as 5 V/1 mA. They are suitable for use in electronic as well as conventional controls. The contact pieces of the NC contacts are positively driven.

Mounting system

- Front plate mounting:
  The contact modules are mounted on the rear face of a holder.
- Base mounting:
  The contact modules are used in the 3SU18 enclosures and are snapped into the lower part of the enclosure.

Connection methods

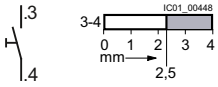
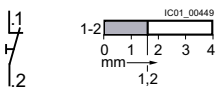
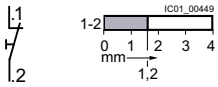
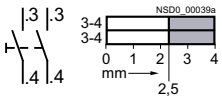
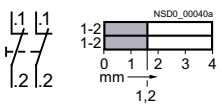
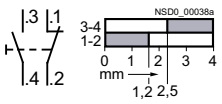
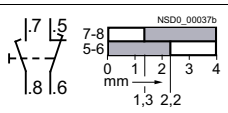
The contact modules are available with:

- Screw terminals
- Spring-loaded terminals
- Socket connection (THT) for PCB mounting

The terminal designations of the contact modules comply with EN 50013.

Selection and ordering data

Multi-unit packaging, see page 13/17.

Contact version	Number of NO contacts	Number of NC contacts		Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Contact modules for front plate mounting								
Silver alloy	1	0		**3SU1400-1AA10-1BA0**		1	5 units	41J
	0	1	➔ 	**3SU1400-1AA10-1CA0**		1	5 units	41J
	0	1 with installation supervision[1]	➔ 	**3SU1400-1AA10-1HA0**		1	1 unit	41J
	2	0		**3SU1400-1AA10-1DA0**		1	1 unit	41J
	0	2	➔ 	**3SU1400-1AA10-1EA0**		1	1 unit	41J
	1	1	➔ 	**3SU1400-1AA10-1FA0**		1	1 unit	41J
	1 leading switching	1 lagging switching	➔ 	**3SU1400-1AA10-1GA0**		1	1 unit	41J

3SU1400-1AA10-1BA0

3SU1400-1AA10-1HA0

3SU1400-1AA10-1FA0

➔ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK safety relays, see page 11/1 onwards.
Certificate:

[1] The contact module has 1 NO internal contact + 1 NC internal contact. The NO contact is connected in series with the NC contact and brought out at terminal 1-2. When the module is snapped onto the holder, the NO contact closes. It opens when the module is detached from the holder again (the NC contact remains closed). The NC contact opens when the EMERGENCY STOP device is actuated (the NO contact remains closed). The contact is closed only when both the NC and NO contacts are closed.
Only suitable for installation in 3SU18 enclosure with one command point and in connection with the adapter 3SU1900-0JF10-0AA0.

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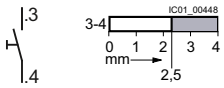
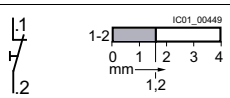
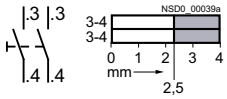
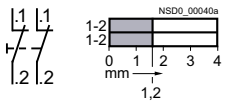
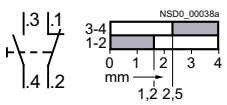
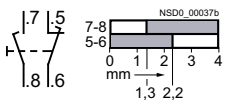
Contact modules

Multi-unit packaging, see page 13/17.

Contact version	Number of NO contacts	Number of NC contacts		Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Contact modules for front plate mounting								
Gold-plated	1	0		**3SU1400-1AA10-1LA0**		1	1 unit	41J
	0	1 ➔		**3SU1400-1AA10-1MA0**		1	1 unit	41J
	2	0		**3SU1400-1AA10-1NA0**		1	1 unit	41J
	0	2 ➔		**3SU1400-1AA10-1PA0**		1	1 unit	41J
	1	1 ➔		**3SU1400-1AA10-1QA0**		1	1 unit	41J
	1 leading	1 lagging ➔		**3SU1400-1AA10-1RA0**		1	1 unit	41J

3SU1400-1AA10-1LA0

➔ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK safety relays, see page 11/1 onwards.
Certificate:

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Multi-unit packaging, see page 13/17.

Contact version	Number of NO contacts	Number of NC contacts			Spring-loaded terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Contact modules for front plate mounting									
Silver alloy	1	0			**3SU1400-1AA10-3BA0**		1	5 units	41J
	0	1	➔		**3SU1400-1AA10-3CA0**		1	5 units	41J
	0	1 with installation supervision[1]	➔		**3SU1400-1AA10-3HA0**		1	1 unit	41J
	2	0			**3SU1400-1AA10-3DA0**		1	1 unit	41J
	0	2	➔		**3SU1400-1AA10-3EA0**		1	1 unit	41J
	1	1	➔		**3SU1400-1AA10-3FA0**		1	1 unit	41J
	1 leading	1 lagging	➔		**3SU1400-1AA10-3GA0**		1	1 unit	41J

3SU1400-1AA10-3BA0

3SU1400-1AA10-3HA0

3SU1400-1AA10-3DA0

3SU1400-1AA10-3FA0

➔ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK safety relays, see page 11/1 onwards.
Certificate:

[1] The contact module has 1 NO internal contact + 1 NC internal contact. The NO contact is connected in series with the NC contact and brought out at terminal 1-2. When the module is snapped onto the holder, the NO contact closes. It opens when the module is detached from the holder again (the NC contact remains closed). The NC contact opens when the EMERGENCY STOP device is actuated (the NO contact remains closed). The contact is closed only when both the NC and NO contacts are closed.
Only suitable for installation in 3SU18 enclosure with one command point and in connection with the adapter 3SU1900-0JF10-0AA0.

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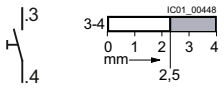
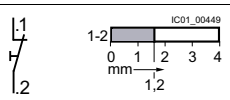
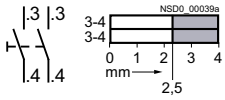
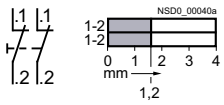
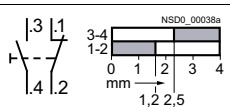
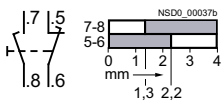
Contact modules

Multi-unit packaging, see page 13/17.

Contact version	Number of NO contacts	Number of NC contacts			Spring-loaded terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Contact modules for front plate mounting									
Gold-plated	1	0			**3SU1400-1AA10-3LA0**		1	1 unit	41J
	0	1	➔		**3SU1400-1AA10-3MA0**		1	1 unit	41J
	2	0			**3SU1400-1AA10-3NA0**		1	1 unit	41J
	0	2	➔		**3SU1400-1AA10-3PA0**		1	1 unit	41J
	1	1	➔		**3SU1400-1AA10-3QA0**		1	1 unit	41J
	1 leading	1 lagging	➔		**3SU1400-1AA10-3RA0**		1	1 unit	41J

3SU1400-1AA10-3LA0

➔ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK safety relays, see page 11/1 onwards.
Certificate:

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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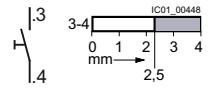
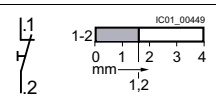
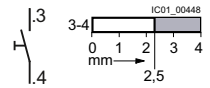
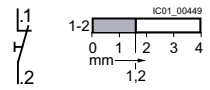
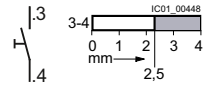
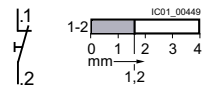
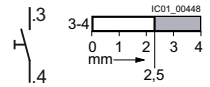
Multi-unit packaging, see page 13/17.

Contact version	Number of NO contacts	Number of NC contacts		Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Contact modules for base mounting								
Silver alloy	1	0		**3SU1400-2AA10-1BA0**		1	5 units	41J
	0	1		**3SU1400-2AA10-1CA0**		1	5 units	41J
Gold-plated	1	0		**3SU1400-2AA10-1LA0**		1	1 unit	41J
	0	1		**3SU1400-2AA10-1MA0**		1	1 unit	41J
				Spring-loaded terminals				
Silver alloy	1	0		**3SU1400-2AA10-3BA0**		1	5 units	41J
	0	1		**3SU1400-2AA10-3CA0**		1	5 units	41J
Gold-plated	1	0		**3SU1400-2AA10-3LA0**		1	1 unit	41J

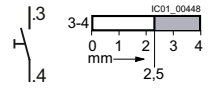
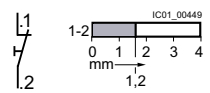
3SU1400-2AA10-1BA0

3SU1400-2AA10-1LA0

3SU1400-2AA10-3BA0

3SU1400-2AA10-3LA0

Multi-unit packaging, see page 13/17.

Contact version	Number of NO contacts	Number of NC contacts		Socket terminals (THT) Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Contact modules for mounting on printed circuit boards								
Silver alloy	1	0		**3SU1400-3AA10-5BA0**		1	1 unit	41J
	0	1		**3SU1400-3AA10-5CA0**		1	1 unit	41J

3SU1400-3AA10-5BA0

Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK safety relays, see page 11/1 onwards.
Certificate:

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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LED modules

Overview

LED modules

The commanding and signaling devices can be illuminated via LED modules with integrated LEDs.

Mounting system

- Front plate mounting:
  The LED modules are mounted on the rear face of a holder in the center position.
- Base mounting:
  The LED modules are used in the 3SU18 enclosures and are snapped into the lower part of the enclosure.

Connection methods

The LED modules are available with:

- Screw terminals
- Spring-loaded terminals
- Socket connection (THT) for PCB mounting

The terminal designations of the LED modules comply with EN 50013.

LED test modules

The LED test modules are used to test the LED modules (AC/DC versions). One LED module is connected to each test module for testing, see page 13/87.

Selection and ordering data

Multi-unit packaging, see page 13/17.

Operational voltage at AC	Operational voltage at DC	Color	Screw terminals ⏚ Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
V	V						
LED modules[1] for front plate mounting							
24	24	Amber	**3SU1401-1BB00-1AA0**		1	5 units	41J
		Red	**3SU1401-1BB20-1AA0**		1	5 units	41J
		Yellow	**3SU1401-1BB30-1AA0**		1	5 units	41J
		Green	**3SU1401-1BB40-1AA0**		1	5 units	41J
		Blue	**3SU1401-1BB50-1AA0**		1	5 units	41J
		White	**3SU1401-1BB60-1AA0**		1	5 units	41J
		Red/yellow/green[2]	**3SU1401-1BB24-1AA0**		1	1 unit	41J
110	--	Amber	**3SU1401-1BC00-1AA0**		1	1 unit	41J
		Red	**3SU1401-1BC20-1AA0**		1	1 unit	41J
		Yellow	**3SU1401-1BC30-1AA0**		1	1 unit	41J
		Green	**3SU1401-1BC40-1AA0**		1	1 unit	41J
		Blue	**3SU1401-1BC50-1AA0**		1	1 unit	41J
		White	**3SU1401-1BC60-1AA0**		1	1 unit	41J
		Red/yellow/green[2]	**3SU1401-1BC24-1AA0**		1	1 unit	41J
230	--	Amber	**3SU1401-1BF00-1AA0**		1	1 unit	41J
		Red	**3SU1401-1BF20-1AA0**		1	1 unit	41J
		Yellow	**3SU1401-1BF30-1AA0**		1	1 unit	41J
		Green	**3SU1401-1BF40-1AA0**		1	1 unit	41J
		Blue	**3SU1401-1BF50-1AA0**		1	1 unit	41J
		White	**3SU1401-1BF60-1AA0**		1	1 unit	41J
		Red/yellow/green[2]	**3SU1401-1BF24-1AA0**		1	1 unit	41J
6 ... 24	6 ... 24	Amber	**3SU1401-1BG00-1AA0**		1	1 unit	41J
		Red	**3SU1401-1BG20-1AA0**		1	1 unit	41J
		Yellow	**3SU1401-1BG30-1AA0**		1	1 unit	41J
		Green	**3SU1401-1BG40-1AA0**		1	1 unit	41J
		Blue	**3SU1401-1BG50-1AA0**		1	1 unit	41J
		White	**3SU1401-1BG60-1AA0**		1	1 unit	41J
		Red/yellow/green[2]	**3SU1401-1BG24-1AA0**		1	1 unit	41J
24 ... 240	24 ... 240	Amber	**3SU1401-1BH00-1AA0**		1	1 unit	41J
		Red	**3SU1401-1BH20-1AA0**		1	1 unit	41J
		Yellow	**3SU1401-1BH30-1AA0**		1	1 unit	41J
		Green	**3SU1401-1BH40-1AA0**		1	1 unit	41J
		Blue	**3SU1401-1BH50-1AA0**		1	1 unit	41J
		White	**3SU1401-1BH60-1AA0**		1	1 unit	41J

3SU1401-1BB30-1AA0

1) Only for use with SIRIUS commanding and signaling devices.
2) Only suitable for installation in 3SU18 enclosure with one command point and in connection with the adapter 3SU1900-0JF10-0AA0.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Multi-unit packaging, see page 13/17.

LED modules[1] for front plate mounting

3SU1401-1BB30-3AA0

Operational voltage at AC V	Operational voltage at DC V	Color	Spring-loaded terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
24	24	Amber	**3SU1401-1BB00-3AA0**		1	5 units	41J
		Red	**3SU1401-1BB20-3AA0**		1	5 units	41J
		Yellow	**3SU1401-1BB30-3AA0**		1	5 units	41J
		Green	**3SU1401-1BB40-3AA0**		1	5 units	41J
		Blue	**3SU1401-1BB50-3AA0**		1	5 units	41J
		White	**3SU1401-1BB60-3AA0**		1	5 units	41J
		Red/yellow/green	**3SU1401-1BB24-3AA0**		1	1 unit	41J
110	--	Amber	**3SU1401-1BC00-3AA0**		1	1 unit	41J
		Red	**3SU1401-1BC20-3AA0**		1	1 unit	41J
		Yellow	**3SU1401-1BC30-3AA0**		1	1 unit	41J
		Green	**3SU1401-1BC40-3AA0**		1	1 unit	41J
		Blue	**3SU1401-1BC50-3AA0**		1	1 unit	41J
		White	**3SU1401-1BC60-3AA0**		1	1 unit	41J
		Red/yellow/green	**3SU1401-1BC24-3AA0**		1	1 unit	41J
230	--	Amber	**3SU1401-1BF00-3AA0**		1	1 unit	41J
		Red	**3SU1401-1BF20-3AA0**		1	1 unit	41J
		Yellow	**3SU1401-1BF30-3AA0**		1	1 unit	41J
		Green	**3SU1401-1BF40-3AA0**		1	1 unit	41J
		Blue	**3SU1401-1BF50-3AA0**		1	1 unit	41J
		White	**3SU1401-1BF60-3AA0**		1	1 unit	41J
		Red/yellow/green	**3SU1401-1BF24-3AA0**		1	1 unit	41J
6 ... 24	6 ... 24	Amber	**3SU1401-1BG00-3AA0**		1	1 unit	41J
		Red	**3SU1401-1BG20-3AA0**		1	1 unit	41J
		Yellow	**3SU1401-1BG30-3AA0**		1	1 unit	41J
		Green	**3SU1401-1BG40-3AA0**		1	1 unit	41J
		Blue	**3SU1401-1BG50-3AA0**		1	1 unit	41J
		White	**3SU1401-1BG60-3AA0**		1	1 unit	41J
		Red/yellow/green	**3SU1401-1BG24-3AA0**		1	1 unit	41J
24 ... 240	24 ... 240	Amber	**3SU1401-1BH00-3AA0**		1	1 unit	41J
		Red	**3SU1401-1BH20-3AA0**		1	1 unit	41J
		Yellow	**3SU1401-1BH30-3AA0**		1	1 unit	41J
		Green	**3SU1401-1BH40-3AA0**		1	1 unit	41J
		Blue	**3SU1401-1BH50-3AA0**		1	1 unit	41J
		White	**3SU1401-1BH60-3AA0**		1	1 unit	41J

[1] Only for use with SIRIUS commanding and signaling devices.

Multi-unit packaging, see page 13/17.

LED modules for front plate mounting: ATEX Zone 1-2: Intrinsic safety

3SU1401-1BB00-1AA2

Operational voltage at AC V	Operational voltage at DC V	Color	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
24	24	Amber	**3SU1401-1BB00-1AA2**		1	1 unit	41J
		Red	**3SU1401-1BB20-1AA2**		1	1 unit	41J
		Yellow	**3SU1401-1BB30-1AA2**		1	1 unit	41J
		Green	**3SU1401-1BB40-1AA2**		1	1 unit	41J
		Blue	**3SU1401-1BB50-1AA2**		1	1 unit	41J
		White	**3SU1401-1BB60-1AA2**		1	1 unit	41J

3SU1401-1BB20-3AA2

Operational voltage at AC V	Operational voltage at DC V	Color	Spring-loaded terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
24	24	Amber	**3SU1401-1BB00-3AA2**		1	1 unit	41J
		Red	**3SU1401-1BB20-3AA2**		1	1 unit	41J
		Yellow	**3SU1401-1BB30-3AA2**		1	1 unit	41J
		Green	**3SU1401-1BB40-3AA2**		1	1 unit	41J
		Blue	**3SU1401-1BB50-3AA2**		1	1 unit	41J
		White	**3SU1401-1BB60-3AA2**		1	1 unit	41J

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LED modules

Multi-unit packaging, see page 13/17.

Operational voltage at AC	Operational voltage at DC	Color	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
V	V						
LED modules[1] for base mounting							
24	24	Amber	**3SU1401-2BB00-1AA0**		1	5 units	41J
		Red	**3SU1401-2BB20-1AA0**		1	5 units	41J
		Yellow	**3SU1401-2BB30-1AA0**		1	5 units	41J
		Green	**3SU1401-2BB40-1AA0**		1	5 units	41J
		Blue	**3SU1401-2BB50-1AA0**		1	5 units	41J
		White	**3SU1401-2BB60-1AA0**		1	5 units	41J
110	--	Amber	**3SU1401-2BC00-1AA0**		1	1 unit	41J
		Red	**3SU1401-2BC20-1AA0**		1	1 unit	41J
		Yellow	**3SU1401-2BC30-1AA0**		1	1 unit	41J
		Green	**3SU1401-2BC40-1AA0**		1	1 unit	41J
		Blue	**3SU1401-2BC50-1AA0**		1	1 unit	41J
		White	**3SU1401-2BC60-1AA0**		1	1 unit	41J
230	--	Amber	**3SU1401-2BF00-1AA0**		1	1 unit	41J
		Red	**3SU1401-2BF20-1AA0**		1	1 unit	41J
		Yellow	**3SU1401-2BF30-1AA0**		1	1 unit	41J
		Green	**3SU1401-2BF40-1AA0**		1	1 unit	41J
		Blue	**3SU1401-2BF50-1AA0**		1	1 unit	41J
		White	**3SU1401-2BF60-1AA0**		1	1 unit	41J
6 ... 24	6 ... 24	Amber	**3SU1401-2BG00-1AA0**		1	1 unit	41J
		Red	**3SU1401-2BG20-1AA0**		1	1 unit	41J
		Yellow	**3SU1401-2BG30-1AA0**		1	1 unit	41J
		Green	**3SU1401-2BG40-1AA0**		1	1 unit	41J
		Blue	**3SU1401-2BG50-1AA0**		1	1 unit	41J
		White	**3SU1401-2BG60-1AA0**		1	1 unit	41J
24 ... 240	24 ... 240	Amber	**3SU1401-2BH00-1AA0**		1	1 unit	41J
		Red	**3SU1401-2BH20-1AA0**		1	1 unit	41J
		Yellow	**3SU1401-2BH30-1AA0**		1	1 unit	41J
		Green	**3SU1401-2BH40-1AA0**		1	1 unit	41J
		Blue	**3SU1401-2BH50-1AA0**		1	1 unit	41J
		White	**3SU1401-2BH60-1AA0**		1	1 unit	41J

3SU1401-2BB60-1AA0

			Spring-loaded terminals				
24	24	Amber	**3SU1401-2BB00-3AA0**		1	5 units	41J
		Red	**3SU1401-2BB20-3AA0**		1	5 units	41J
		Yellow	**3SU1401-2BB30-3AA0**		1	5 units	41J
		Green	**3SU1401-2BB40-3AA0**		1	5 units	41J
		Blue	**3SU1401-2BB50-3AA0**		1	5 units	41J
		White	**3SU1401-2BB60-3AA0**		1	5 units	41J
110	--	Amber	**3SU1401-2BC00-3AA0**		1	1 unit	41J
		Red	**3SU1401-2BC20-3AA0**		1	1 unit	41J
		Yellow	**3SU1401-2BC30-3AA0**		1	1 unit	41J
		Green	**3SU1401-2BC40-3AA0**		1	1 unit	41J
		Blue	**3SU1401-2BC50-3AA0**		1	1 unit	41J
		White	**3SU1401-2BC60-3AA0**		1	1 unit	41J
230	--	Amber	**3SU1401-2BF00-3AA0**		1	1 unit	41J
		Red	**3SU1401-2BF20-3AA0**		1	1 unit	41J
		Yellow	**3SU1401-2BF30-3AA0**		1	1 unit	41J
		Green	**3SU1401-2BF40-3AA0**		1	1 unit	41J
		Blue	**3SU1401-2BF50-3AA0**		1	1 unit	41J
		White	**3SU1401-2BF60-3AA0**		1	1 unit	41J
6 ... 24	6 ... 24	Amber	**3SU1401-2BG00-3AA0**		1	1 unit	41J
		Red	**3SU1401-2BG20-3AA0**		1	1 unit	41J
		Yellow	**3SU1401-2BG30-3AA0**		1	1 unit	41J
		Green	**3SU1401-2BG40-3AA0**		1	1 unit	41J
		Blue	**3SU1401-2BG50-3AA0**		1	1 unit	41J
		White	**3SU1401-2BG60-3AA0**		1	1 unit	41J
24 ... 240	24 ... 240	Amber	**3SU1401-2BH00-3AA0**		1	1 unit	41J
		Red	**3SU1401-2BH20-3AA0**		1	1 unit	41J
		Yellow	**3SU1401-2BH30-3AA0**		1	1 unit	41J
		Green	**3SU1401-2BH40-3AA0**		1	1 unit	41J
		Blue	**3SU1401-2BH50-3AA0**		1	1 unit	41J
		White	**3SU1401-2BH60-3AA0**		1	1 unit	41J

3SU1401-2BB20-3AA0

[1] Only for use with SIRIUS commanding and signaling devices.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Multi-unit packaging, see page 13/17.

Operational voltage at AC	Operational voltage at DC	Color	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
V	V						
LED modules for base mounting: ATEX Zone 1-2: Intrinsic safety							
24	24	Amber	**3SU1401-2BB00-1AA2**		1	1 unit	41J
		Red	**3SU1401-2BB20-1AA2**		1	1 unit	41J
		Yellow	**3SU1401-2BB30-1AA2**		1	1 unit	41J
		Green	**3SU1401-2BB40-1AA2**		1	1 unit	41J
		Blue	**3SU1401-2BB50-1AA2**		1	1 unit	41J
		White	**3SU1401-2BB60-1AA2**		1	1 unit	41J

3SU1401-2BB00-1AA2

			Spring-loaded terminals				
24	24	Amber	**3SU1401-2BB00-3AA2**		1	1 unit	41J
		Red	**3SU1401-2BB20-3AA2**		1	1 unit	41J
		Yellow	**3SU1401-2BB30-3AA2**		1	1 unit	41J
		Green	**3SU1401-2BB40-3AA2**		1	1 unit	41J
		Blue	**3SU1401-2BB50-3AA2**		1	1 unit	41J
		White	**3SU1401-2BB60-3AA2**		1	1 unit	41J

3SU1401-2BB00-3AA2

Multi-unit packaging, see page 13/17.

Operational voltage at AC	Operational voltage at DC	Color	Socket terminals (THT) Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
V	V						
LED modules[1] for PCB mounting							
--	5	Amber	**3SU1401-3BA00-5AA0**		1	1 unit	41J
		Red	**3SU1401-3BA20-5AA0**		1	1 unit	41J
		Yellow	**3SU1401-3BA30-5AA0**		1	1 unit	41J
		Green	**3SU1401-3BA40-5AA0**		1	1 unit	41J
		Blue	**3SU1401-3BA50-5AA0**		1	1 unit	41J
		White	**3SU1401-3BA60-5AA0**		1	1 unit	41J

3SU1401-3BA20-5AA0

[1] Only for use with SIRIUS commanding and signaling devices.

Multi-unit packaging, see page 13/17.

Operational voltage at AC	Operational voltage at DC	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
V	V					
LED test modules[1] for front plate mounting						
6 … 240	6 … 240	**3SU1400-1CK10-1AA0**		1	1 unit	41J

3SU1400-1CK10-1AA0

LED test modules[1] for base mounting						
6 … 240	6 … 240	**3SU1400-2CK10-1AA0**		1	1 unit	41J

3SU1400-2CK10-1AA0

[1] Only to be used for SIRIUS ACT LED modules (6 to 24 V AC/DC, 24 V AC/DC, 24 to 240 V AC/DC).

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AS-Interface modules

Overview

Pushbuttons and indicator lights of the SIRIUS ACT series can be connected to the AS-Interface communications system quickly, easily and reliably with the help of various solutions.

Using special modules, EMERGENCY STOP command devices according to ISO 13850 can be directly connected through the standard AS-Interface with safety-related communication.

The following solutions are available:

- AS-Interface modules
- AS-Interface modules in safety-related version for EMERGENCY STOP mushroom pushbuttons according to ISO 13850

Selection and ordering data

	Operational voltage	Slave type	Number of digital inputs		Number of digital outputs	Screw terminals + Spring-loaded terminals	PU (UNIT, SET, M)	PS*	PG
			Standard	Safety-related		Article No. / Price per PU			
	V								
AS-Interface modules for front plate mounting									
3SU1400-1EC10-2AA0	30	2 F-DI	--	2	--	**3SU1400-1EA10-2AA0**	1	1 unit	41J
		2 F-DI + 1 LED	--	2	1	**3SU1401-1EE20-2AA0**	1	1 unit	41J
		2 F-DI + 1 DQ	--	2	1	**3SU1400-1EC10-2AA0**	1	1 unit	41J
						Insulation piercing method			
3SU1400-1EA10-4AA0	30	2 F-DI	--	2	--	**3SU1400-1EA10-4AA0**	1	1 unit	41J
		2 F-DI + 1 LED	--	2	1	**3SU1401-1EE20-4AA0**	1	1 unit	41J
						Spring-loaded terminals + Insulation piercing method			
3SU1400-1EC10-4AA0	30	2 F-DI + 1 DQ	--	2	1	**3SU1400-1EC10-4AA0**	1	1 unit	41J
		2 F-DI + 1 LED	--	2	1	**3SU1401-1EE60-4AA0**	1	1 unit	41J
						Spring-loaded terminals (push-in)			
3SU1400-1EJ10-6AA0	30	4 DI/3 DO AB	4	--	3	**3SU1400-1EJ10-6AA0**	1	1 unit	41J
		4 DI/4 DO	4	--	4	**3SU1400-1EK10-6AA0**	1	1 unit	41J
AS-Interface modules for base mounting									
3SU1400-2EJ10-6AA0	30	4 DI/3 DQ AB	4	0	3	**3SU1400-2EJ10-6AA0**	1	1 unit	41J
		4 DI/4 DQ	4	0	4	**3SU1400-2EK10-6AA0**	1	1 unit	41J
		2 F-DI	0	2	0	**3SU1400-2EA10-6AA0**	1	1 unit	41J
		2 F-DI + 1 LED, red	0	2	1 for controlling the LEDs	**3SU1401-2EE20-6AA0**	1	1 unit	41J
		2 F-DI + 1 LED, white	0	2	1 for controlling the LEDs	**3SU1401-2EE60-6AA0**	1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

The SIRIUS ACT pushbuttons and indicator lights can be connected to IO-Link quickly and safely. The connection is made via the solid-state module for IO-Link.

Selection and ordering data

	Operational voltage	Slave type	Number of digital inputs	Number of digital outputs	Spring-loaded terminals (push-in)	PU (UNIT, SET, M)	PS*	PG
	V				Article No. / Price per PU			
Solid-state modules for IO-Link, for front plate mounting								
3SU1400-1HL10-6AA0	24	Freely programmable (default 6 DI/2 DQ)	0 … 8	0 … 8	**3SU1400-1HL10-6AA0**	1	1 unit	41J
Solid-state modules for IO-Link, for base mounting								
3SU1400-2HL10-6AA0	24	Freely programmable (default 6 DI/2 DQ)	0 … 8	0 … 8	**3SU1400-2HL10-6AA0**	1	1 unit	41J

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Solid-state modules for ID key-operated switches

Overview

The SIRIUS ACT ID key-operated switches can be used to set up authorization management systems for your machine/plant to identify persons.

The ID key-operated switch is fixed with the holder on the front panel and the solid-state module is mounted on the back. The ID keys can be ordered as accessories. Complete range, see page 13/12.

The solid-state modules for ID key-operated switches can be ordered with and without IO-Link. The version with IO-Link can be easily programmed using function blocks.

Benefits

Advantages:

- Easy installation on the standard holder without special tools
- The status of operating modes can be queried via physical outputs or via the process image.

Selection and ordering data

	Type of power supply via IO-Link master	Protocol is supported, IO-Link protocol	Number of NO contacts	IO-Link transfer rate	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Solid-state modules for ID key-operated switches[1]									
3SU1400-1GC10-1AA0	--	No	5	--	**3SU1400-1GC10-1AA0**		1	1 unit	41J
3SU1400-1GD10-1AA0	Yes	Yes	5	COM2 (38.4 kBaud)	**3SU1400-1GD10-1AA0**		1	1 unit	41J

[1] Only use in conjunction with plastic holder 3SU1500-0AA10-0AA0.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

Interface modules

Interface modules are used to establish communication between the controller and the SIRIUS ACT system. They feature an RJ45 socket, to which the PROFINET cable can be connected.

Thanks to the integrated PROFIsafe communication with fail-safe interface modules, an EMERGENCY STOP mushroom pushbutton, for example, can be integrated in a fail-safe manner, thus achieving a safety category up to SIL 3/PL e.

If a defect develops on the interface module, it can be replaced without using a programming device thanks to the exchangeable memory module (supplied as standard with fail-safe interface module).

Terminal modules

With terminal modules, SIRIUS ACT commanding and signaling devices are simply connected to the interface module or other terminal modules using a 7-core flat ribbon cable, without the need for special tools. The terminal modules are mounted on the 3-fold holder of the SIRIUS ACT device series.

By combining terminal and interface modules, a SIRIUS ACT system with up to 21 devices can be set up.

For a complete overview of SIRIUS ACT with PROFINET, see page 13/11.

Selection and ordering data

Supply voltage at DC	Number of interfaces according to PROFINET/ Safety Integrity Level (SIL) according to IEC 62061	Number of digital inputs Standard	Number of digital inputs Safety-related	Number of digital outputs	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
V									
Interface modules for PROFINET									
	Interface modules								
					Screw terminals				
24	1/--	0	0	0	**3SU1400-1LK10-1AA1**		1	1 unit	41J
24	1/--	4	0	1	**3SU1400-1LK10-1BA1**		1	1 unit	41J
					Spring-loaded terminals				
24	1/--	0	0	0	**3SU1400-1LK10-3AA1**		1	1 unit	41J
24	1/--	4	0	1	**3SU1400-1LK10-3BA1**		1	1 unit	41J
	Fail-safe interface modules								
					Screw terminals				
24	1/SIL 3	4	0	1	**3SU1400-1LL10-1BA1**		1	1 unit	41J
					Spring-loaded terminals				
24	1/SIL 3	4	0	1	**3SU1400-1LL10-3BA1**		1	1 unit	41J

3SU1400-1LK10-1AA1

3SU1400-1LL10-3BA1

Product version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Memory modules for interface modules for PROFINET					
For backing up the complete parameterization of the safety system without a PC/PG through the system interface	**3RK3931-0AA00**		1	1 unit	42C

3RK3931-0AA00

Product version	Color of light source	**Insulation displacement connection** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal modules for PROFINET						
With 2 contacts	--	**3SU1400-1MA10-1BA1**		1	1 unit	41J
With 2 contacts and integrated LED	Amber	**3SU1401-1MC00-1CA1**		1	1 unit	41J
	Red	**3SU1401-1MC20-1CA1**		1	1 unit	41J
	Yellow	**3SU1401-1MC30-1CA1**		1	1 unit	41J
	Green	**3SU1401-1MC40-1CA1**		1	1 unit	41J
	Blue	**3SU1401-1MC50-1CA1**		1	1 unit	41J
	White	**3SU1401-1MC60-1CA1**		1	1 unit	41J
With integrated LED	Amber	**3SU1401-1ME00-1DA1**		1	1 unit	41J
	Red	**3SU1401-1ME20-1DA1**		1	1 unit	41J
	Yellow	**3SU1401-1ME30-1DA1**		1	1 unit	41J
	Green	**3SU1401-1ME40-1DA1**		1	1 unit	41J
	Blue	**3SU1401-1ME50-1DA1**		1	1 unit	41J
	White	**3SU1401-1ME60-1DA1**		1	1 unit	41J

3SU1401-1ME60-1DA1

Flat ribbon cable, see page 13/139 onwards.

LED modules for PCB mounting, see page 13/87 onwards.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Support terminals

Overview

Support terminals

The support terminals serve to collect electrical conductors, e.g. for all neutral conductors, in one enclosure. Up to four conductors, belonging to the same group, can be secured on one support terminal.

Mounting

- Front plate mounting:
  Support terminals for front plate mounting are installed on the rear face of a holder.
- Base mounting:
  The support terminals are used in 3SU18 enclosures and can be mounted at any placement position in the enclosure.

Connection methods

- Screw terminals
- Spring-loaded terminals

Selection and ordering data

Color	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Support terminals for front plate mounting					
Black	**3SU1400-1DA10-1AA0**		1	1 unit	41J
Blue	**3SU1400-1DA50-1AA0**		1	1 unit	41J
Green/yellow	**3SU1400-1DA43-1AA0**		1	1 unit	41J

3SU1400-1DA10-1AA0

Color	Spring-loaded terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Black	**3SU1400-1DA10-3AA0**		1	1 unit	41J
Blue	**3SU1400-1DA50-3AA0**		1	1 unit	41J
Green/yellow	**3SU1400-1DA43-3AA0**		1	1 unit	41J

3SU1400-1DA50-3AA0

Color	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Support terminals for base mounting					
Black	**3SU1400-2DA10-1AA0**		1	1 unit	41J
Blue	**3SU1400-2DA50-1AA0**		1	1 unit	41J
Green/yellow	**3SU1400-2DA43-1AA0**		1	1 unit	41J

3SU1400-2DA10-1AA0

Color	Spring-loaded terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Black	**3SU1400-2DA10-3AA0**		1	1 unit	41J
Blue	**3SU1400-2DA50-3AA0**		1	1 unit	41J
Green/yellow	**3SU1400-2DA43-3AA0**		1	1 unit	41J

3SU1400-2DA50-3AA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

Pushbuttons and indicator lights in the enclosure

Enclosures with standard fittings

Enclosed SIRIUS ACT pushbuttons and indicator lights are used as hand-operated command devices for separately allocated control units and cabinets. The devices are suitable for use in any climate and all have degree of protection IP66, IP67, IP69 (IP69K), including those with cable glands.

Standards

IEC 60947-5-1

Versions

The enclosed pushbuttons and indicator lights are available with conventional controls as well as for connection to AS-Interface. The following versions are available:

- Empty enclosures with 1 to 6 command points. The installed components must be ordered separately; modules for base mounting or 1-pole contact and LED modules for front plate mounting can be used, see page 13/79 onwards.
- Enclosures with standard fittings with 1 to 3 command points, e.g. EMERGENCY STOP enclosure with EMERGENCY STOP mushroom pushbutton
- Enclosures with customized fittings with 1 to 6 command points
- Special enclosure for selector switches (4 switch positions), coordinate switches, ID key-operated switches and sensor switches

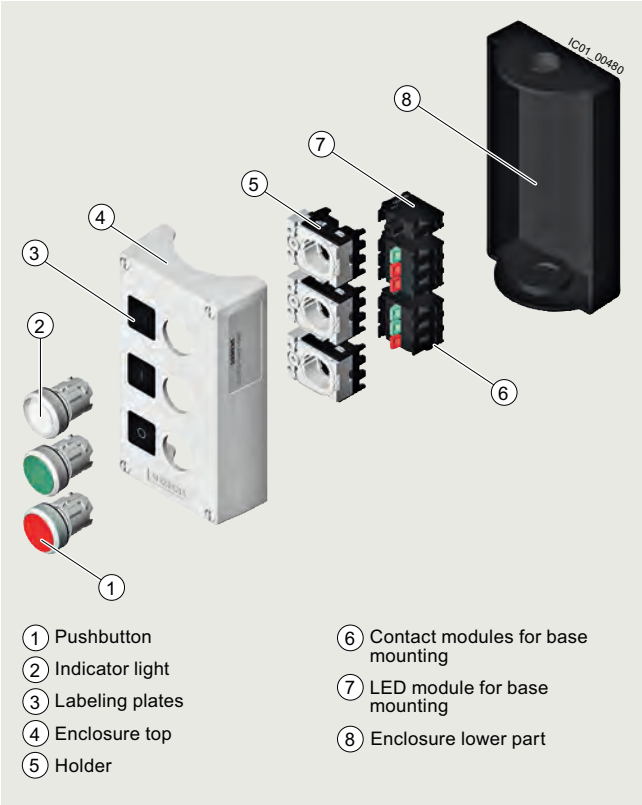
Color of the enclosures

Top:

- Gray, RAL 7035
- Pantone yellow C, for EMERGENCY STOP

Base:

- Black, RAL 9005



Setup of the pushbuttons and indicator lights in the enclosure

Customized enclosures

The fittings and labeling of the command points can be chosen using the configurator on the internet. The prices depend on the equipment selected, see www.siemens.com/sirius-act/configurator.

It is also possible to create a combination of two enclosures using connectors.

Application

The enclosures are climate-proof (KTW 24) according to ISO 6270-2 and are suitable for stationary use, and for use in marine applications.

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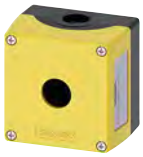
Empty enclosures

Selection and ordering data

Color of enclosure top	Number of command points	Enclosure version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosures for surface mounting							
Plastic							
Yellow	1	Center command point	**3SU1801-0AA00-0AA2**		1	1 unit	41J
		With protective collar	**3SU1801-0AA00-0AC2**		1	1 unit	41J
		With recess for labeling plate	**3SU1801-0AA00-0AB2**		1	1 unit	41J
	2	With recess for labeling plate	**3SU1802-0AA00-0AB2**		1	1 unit	41J
Gray	1	With recess for labeling plate	**3SU1801-0AA00-0AB1**		1	1 unit	41J
	2	With recess for labeling plate	**3SU1802-0AA00-0AB1**		1	1 unit	41J
	3	With recess for labeling plate	**3SU1803-0AA00-0AB1**		1	1 unit	41J
	4	With recess for labeling plate	**3SU1804-0AA00-0AB1**		1	1 unit	41J
	6	With recess for labeling plate	**3SU1806-0AA00-0AB1**		1	1 unit	41J
Metal							
Yellow	1	Center command point	**3SU1851-0AA00-0AA2**		1	1 unit	41J
		With protective collar	**3SU1851-0AA00-0AC2**		1	1 unit	41J
		With recess for labeling plate	**3SU1851-0AA00-0AB2**		1	1 unit	41J
		With protective collar for 5 padlocks, EMERGENCY STOP mushroom 40 mm and EMERGENCY STOP mushroom 40 mm with RONIS key-operated release	**3SU1851-0AA00-0AF2**		1	1 unit	41J
		With protective collar for 5 padlocks, EMERGENCY STOP mushroom 40 mm with BKS, Siemens[1] and O.M.R. key-operated release	**3SU1851-0AA00-0AG2**		1	1 unit	41J
		With protective collar for 5 padlocks, mushroom 60 mm	**3SU1851-0AA00-0AH2**		1	1 unit	41J
		With protective collar for 5 padlocks, mushroom 60 mm, horizontal mounting	**3SU1851-0AA00-0AJ2**		1	1 unit	41J
Gray	1	With protective collar for 5 padlocks, mushroom 60 mm	**3SU1851-0AA00-0AH1**		1	1 unit	41J
		With protective collar for 5 padlocks, mushroom 60 mm, horizontal mounting	**3SU1851-0AA00-0AJ1**		1	1 unit	41J
		With recess for labeling plate	**3SU1851-0AA00-0AB1**		1	1 unit	41J
		With protective collar	**3SU1851-0AA00-0AC1**		1	1 unit	41J
	2	With recess for labeling plate	**3SU1852-0AA00-0AB1**		1	1 unit	41J
	3	With recess for labeling plate	**3SU1853-0AA00-0AB1**		1	1 unit	41J
	4	With recess for labeling plate	**3SU1854-0AA00-0AB1**		1	1 unit	41J
	6	With recess for labeling plate	**3SU1856-0AA00-0AB1**		1	1 unit	41J
Enclosures for selector switches (4 switch positions), coordinate switches, ID key-operated switches and sensor switches							
Plastic, front plate mounting							
Gray	1	Center command point	**3SU1801-1AA00-1AA1**		1	1 unit	41J
Metal, front plate mounting							
Gray	1	Center command point	**3SU1851-1AA00-1AA1**		1	1 unit	41J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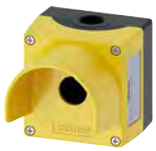
3SU1802-0AA00-0AB1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3SU1851-0AA00-0AH1

3SU1853-0AA00-0AB1

3SU1854-0AA00-0AB1

3SU1801-1AA00-1AA1

[1] Siemens lock (compatible with CES locks).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

Pushbuttons and indicator lights in the enclosure (standard fittings) are available with:

- 1 to 3 command points (equipped, for example, with A, B, C, in each case from bottom to top)
- Operational voltage up to 400 V
- Vertical mounting type
- Plastic enclosures are equipped with plastic actuators and indicators, metal enclosures are equipped with metal actuators and indicators
- Contact modules and LED modules for base mounting (are snapped into the lower part of the enclosure); screw terminals as standard; some versions also with spring-loaded terminals

Palm pushbuttons

Palm pushbuttons have a particularly large button surface. This means that they can be actuated quickly and easily with the hand, arm or foot.

Selection and ordering data

Color of enclosure top	Number of command points	Enclosure version Pushbutton and indicator light fittings	Color of actuating element Marking	Number of NC contacts	Number of NO contacts	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosures with standard fittings										
Plastic										
Yellow	1	Center command point A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching according to ISO 13850, rotate to unlatch	A = Red	1	0	**3SU1801-0NA00-2AA2**		1	1 unit	41J
				2	0	**3SU1801-0NB00-2AA2**		1	1 unit	41J
				1	1	**3SU1801-0NP00-2AA2**		1	1 unit	41J
		Center command point A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching according to ISO 13850, with RONIS SB30 lock, with key-operated release	A = Red	1	1	**3SU1801-0NN00-2AA2**		1	1 unit	41J
		With protective collar A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching according to ISO 13850, rotate to unlatch	A = Red	1	0	**3SU1801-0NA00-2AC2**		1	1 unit	41J
				2	0	**3SU1801-0NB00-2AC2**		1	1 unit	41J
	2	With recess for labeling plate A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with RONIS SB30 lock, key-operated release, with positive latching according to ISO 13850, rotate to unlatch/ B = Indicator light 24 V AC/DC	A = Red/ B = Red A = EMERGENCY STOP/ B = "Without inscription"	1	1	**3SU1802-0NA00-2AB2**		1	1 unit	41J
		With recess for labeling plate A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching according to ISO 13850, rotate to unlatch/ B = Indicator light 24 V AC/DC	A = Red/ B = Red A = "Without inscription"/ B = "Without inscription"	2	1	**3SU1802-0NB00-2AB2**		1	1 unit	41J

3SU1801-0NA00-2AA2

3SU1801-0NA00-2AC2

3SU1802-0NA00-2AB2

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Pushbuttons and indicator lights in the enclosure

	Color of enclosure top	Number of command points	Enclosure version Pushbutton and indicator light fittings	Color of actuating element Marking	Number of NC contacts	Number of NO contacts	Screw terminals Article No.	PU (UNIT, SET, M)	PS*	PG
Enclosures with standard fittings										
	Plastic									
3SU1801-2NG00-2AA2	Yellow	1	Center command point A = EMERGENCY STOP palm pushbuttons with positive latching according to ISO 13850, pull to unlatch	A = Red	1	1	**3SU1801-2NG00-2AA2**	1	1 unit	41J
3SU1801-0NE00-4AB2	Yellow	1	With recess for labeling plate A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching according to ISO 13850, rotate to unlatch	A = Red	2	1	**Spring-loaded terminals** **3SU1801-0NE00-4AB2**	1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Color of enclosure top	Number of command points	Enclosure version Pushbutton and indicator light fittings	Color of actuating element Marking	Number of NC contacts	Number of NO contacts	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosures with standard fittings											
Plastic											
3SU1801-0AB00-2AB1	Gray	1	With recess for labeling plate A = Pushbutton	A = Green A = I	0	1	**3SU1801-0AB00-2AB1**		1	1 unit	41J
				A = Red A = O	1	0	**3SU1801-0AC00-2AB1**		1	1 unit	41J
				A = White A = I	0	1	**3SU1801-0AD00-2AB1**		1	1 unit	41J
				A = Black A = O	1	0	**3SU1801-0AE00-2AB1**		1	1 unit	41J
							Spring-loaded terminals				
3SU1801-0BA00-4AB1	Gray	1	With recess for labeling plate A = Selector switch	A = Black	0 0	2 1	**3SU1801-0BA00-4AB1** **3SU1801-0BE00-4AB1**		1 1	1 unit 1 unit	41J 41J
			With recess for labeling plate A = Mushroom pushbutton, 30 mm, pull to unlatch	A = Red	1	0	**3SU1801-0BC00-4AB1**		1	1 unit	41J
3SU1801-0BD00-4AB1			With recess for labeling plate A = Illuminated pushbutton	A = Clear A = I	0	1	**3SU1801-0BD00-4AB1**		1	1 unit	41J
							Screw terminals				
3SU1802-0AB00-2AB1	Gray	2	With recess for labeling plate A = Pushbutton/ B = Pushbutton	A = Red/ B = Green A = O/ B = I	1	1	**3SU1802-0AB00-2AB1**		1	1 unit	41J
				A = Black/ B = Black A = O/ B = I	1	1	**3SU1802-0AC00-2AB1**		1	1 unit	41J
3SU1803-0AB00-2AB1		3	With recess for labeling plate A = Pushbutton/ B = Pushbutton/ C = Indicator light	A = Red/ B = Green/ C = Clear A = O/ B = I/ C = "Without inscription"	1	1	**3SU1803-0AB00-2AB1**		1	1 unit	41J
				A = Black/ B = White/ C = Clear A = O/ B = I/ C = "Without inscription"	1	1	**3SU1803-0AC00-2AB1**		1	1 unit	41J
			With recess for labeling plate A = Pushbutton/ B = Pushbutton/ C = Pushbutton	A = Red/ B = Black/ C = Black A = O/ B = I/ C = II	1	2	**3SU1803-0AD00-2AB1**		1	1 unit	41J
3SU1801-2GA00-2AA1		1	Center command point A = Palm pushbutton, momentary-contact type	A = Black	0	1	**3SU1801-2GA00-2AA1**		1	1 unit	41J

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Pushbuttons and indicator lights in the enclosure

Enclosures with standard fittings

Color of enclosure top	Number of command points	Enclosure version Pushbutton and indicator light fittings	Color of actuating element Marking	Number of NC contacts	Number of NO contacts	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Metal										
Yellow	1	Center command point A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching according to ISO 13850, rotate to unlatch	A = Red	1	0	**3SU1851-0NA00-2AA2**		1	1 unit	41J
				2	0	**3SU1851-0NB00-2AA2**		1	1 unit	41J
		With protective collar A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching according to ISO 13850, rotate to unlatch	A = Red	1	0	**3SU1851-0NA00-2AC2**		1	1 unit	41J
				2	0	**3SU1851-0NB00-2AC2**		1	1 unit	41J
				2	0	**3SU1851-0NC00-2AC2**		1	1 unit	41J
				2	1	**3SU1851-0ND00-2AC2**		1	1 unit	41J
	1	Center command point A = EMERGENCY STOP palm pushbuttons with positive latching according to ISO 13850, pull to unlatch	A = Red	1	1	**3SU1851-2NG00-2AA2**		1	1 unit	41J
Gray	1	With recess for labeling plate A = Pushbutton	A = Green A = I	0	1	**3SU1851-0AB00-2AB1**		1	1 unit	41J
			A = Red A = O	1	0	**3SU1851-0AC00-2AB1**		1	1 unit	41J
			A = White A = I	0	1	**3SU1851-0AD00-2AB1**		1	1 unit	41J
			A = Black A = O	1	0	**3SU1851-0AE00-2AB1**		1	1 unit	41J
	2	With recess for labeling plate A = Pushbutton/ B = Pushbutton	A = Red/ B = Green A = O/ B = I	1	1	**3SU1852-0AB00-2AB1**		1	1 unit	41J
			A = Black/ B = White A = O/ B = I	1	1	**3SU1852-0AC00-2AB1**		1	1 unit	41J
	3	With recess for labeling plate A = Pushbutton/ B = Pushbutton/ C = Indicator light	A = Red/ B = Green/ C = Clear A = O/ B = I/ C = "Without inscription"	1	1	**3SU1853-0AB00-2AB1**		1	1 unit	41J
		With recess for labeling plate A = Pushbutton/ B = Pushbutton/ C = Pushbutton	A = Red/ B = Black/ C = Black A = O/ B = I/ C = II	1	2	**3SU1853-0AD00-2AB1**		1	1 unit	41J
	1	Center command point A = Palm pushbutton, momentary-contact type	A = Black	0	1	**3SU1851-2GA00-2AA1**		1	1 unit	41J

3SU1851-0NA00-2AA2

3SU1851-0NA00-2AC2

3SU1851-2NG00-2AA2

3SU1851-0AC00-2AB1

3SU1852-0AB00-2AB1

3SU1853-0AB00-2AB1

3SU1851-2GA00-2AA1

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Customized enclosures[1)]

3SU1802-0AZ00 K0Y

3SU1853-0AZ00 K0Y

Number of command points	Product function/ EMERGENCY STOP function	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Plastic						
1	No	**3SU1801-0AZ00 K0Y**		1	1 unit	41J
	Yes	**3SU1801-0NZ00 K0Y**		1	1 unit	41J
2	No	**3SU1802-0AZ00 K0Y**		1	1 unit	41J
	Yes	**3SU1802-0NZ00 K0Y**		1	1 unit	41J
3	No	**3SU1803-0AZ00 K0Y**		1	1 unit	41J
	Yes	**3SU1803-0NZ00 K0Y**		1	1 unit	41J
4	No	**3SU1804-0AZ00 K0Y**		1	1 unit	41J
	Yes	**3SU1804-0NZ00 K0Y**		1	1 unit	41J
6	No	**3SU1806-0AZ00 K0Y**		1	1 unit	41J
	Yes	**3SU1806-0NZ00 K0Y**		1	1 unit	41J
Metal						
1	No	**3SU1851-0AZ00 K0Y**		1	1 unit	41J
	Yes	**3SU1851-0NZ00 K0Y**		1	1 unit	41J
2	No	**3SU1852-0AZ00 K0Y**		1	1 unit	41J
	Yes	**3SU1852-0NZ00 K0Y**		1	1 unit	41J
3	No	**3SU1853-0AZ00 K0Y**		1	1 unit	41J
	Yes	**3SU1853-0NZ00 K0Y**		1	1 unit	41J
4	No	**3SU1854-0AZ00 K0Y**		1	1 unit	41J
	Yes	**3SU1854-0NZ00 K0Y**		1	1 unit	41J
6	No	**3SU1856-0AZ00 K0Y**		1	1 unit	41J
	Yes	**3SU1856-0NZ00 K0Y**		1	1 unit	41J

1) The fittings and labeling of the command points can be chosen using the configurator on the internet. The prices depend on the equipment selected. When ordering, always add the article number and the code **"K0Y"** and the **CIN number** from the configurator.
Ordering example:
3SU1801-0AZ00
K0Y
CIN20150609140858154554,
see www.siemens.com/sirius-act/configurator.

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Pushbuttons and indicator lights in the enclosure for AS-Interface

Overview

With AS-Interface enclosures, distributed SIRIUS ACT pushbuttons and indicator lights can be quickly connected to the AS-Interface communications system.
Using suitable components you can assemble your own enclosures with integrated AS-Interface or flexibly modify existing enclosures.

Enclosures for AS-Interface

Enclosures

Color of enclosure top part:

- Gray, RAL 7035
- Pantone yellow C, for EMERGENCY STOP

Color of enclosure lower part:

- Black, RAL 9005

Equipping with AS-Interface slaves

The following slaves are available for connecting the command points:

- Slave in A/B technology with 4 digital inputs and 3 digital outputs (4 DI/3 DQ)
- Slave with 4 digital inputs and 4 digital outputs (4 DI/4 DQ)
- F slave with 2 safe inputs for EMERGENCY STOP mushroom pushbutton (2 F-DI), also with integrated red LED for the illuminated EMERGENCY STOP mushroom pushbutton.

The following table shows the maximum number of slaves possible:

Number of command points	Number of slaves for enclosures without EMERGENCY STOP	Number of slaves for enclosures with EMERGENCY STOP
1	--	1 x F slave 2 F-DI
2	1 x slave 4 DI/4 DQ or 4 DI/3 DQ	--
3	1 x slave 4 DI/4 DQ or 4 DI/3 DQ	1 x slave 4 DI/4 DQ or 4 DI/3 DQ + 1 x F slave
4	2 x slave 4 DI/4 DQ or 4 DI/3 DQ	2 x slave 4 DI/4 DQ or 4 DI/3 DQ + 1 x F slave
6	2 x slave 4 DI/4 DQ or 4 DI/3 DQ	2 x slave 4 DI/4 DQ or 4 DI/3 DQ + 1 x F slave

Connection

One set of links is required in each case to connect a slave to contact modules, LED modules, and the connection element.

The connection elements are mounted in the front-end cable glands and are used to connect the AS-Interface or bring unused inputs or outputs out of the enclosure.

For connection to AS-Interface, the following options are available:

- Terminal for shaped AS-Interface cable. The cable is contacted by the insulation piercing method and routed past the enclosure on the outside (possible only with plastic enclosure).
- Cable gland for the shaped AS-Interface cable or round cable. The cable is routed into the enclosure (preferable for metal enclosure).
- Connection using M12 plug.

If less than all inputs/outputs of the installed slaves in an enclosure are used for connecting the command devices, free inputs and outputs can be routed on request to the outside through an M12 socket on the top or bottom side of the enclosure.

To supply inputs with power, the S+ connection of the slave must be assigned to the socket, for outputs the OUT– connection must be assigned. Addressing is performed using the AS-Interface connections or the integrated addressing socket. An external power supply is not required.

Enclosures with standard fittings

Enclosures with standard fittings are available with:

- 1 to 3 command points
- Operational voltage through AS-Interface (approx. 30 V)
- Vertical mounting type
- Plastic enclosures are equipped with plastic actuators and indicators, metal enclosures are equipped with metal actuators and indicators

The enclosures without EMERGENCY STOP each have one module with 4I/3O; the enclosures with EMERGENCY STOP mushroom pushbuttons have a safe AS-Interface slave integrated in the enclosure. Enclosures with EMERGENCY STOP mushroom pushbuttons are fitted with two NC contact modules, which are wired to the safe F slave.

The contact modules and LED modules (with spring-loaded terminals) of the command devices and the AS-Interface slaves are mounted in the base of the enclosure and connected using cables. The plastic enclosures are designed with a connection for the AS-Interface flat cable (the cable is run along the outside of the enclosure). For metal enclosures, the AS-Interface cable is run inside the enclosure.

The enclosures with EMERGENCY STOP mushroom pushbuttons are also available with an M12 connection plug.

Customized enclosures (selection by configurator)

To order customized 3SU18 AS-Interface enclosures with pushbuttons and indicator lights, the configurator must be used to select the fittings.
An electronic order form will be generated for the options.

Configurator, see www.siemens.com/sirius-act/configurator.

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Selection and ordering data

Color of enclosure top	Number of command points	Enclosure version Command point fittings	Color Marking	Insulation piercing method Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosures with standard fittings								
Plastic								
 3SU1801-0NB10-4HB2								
Yellow	1	With recess for labeling plate A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching according to ISO 13850, rotate to unlatch	A = Red A = "Without inscription"	**3SU1801-0NB10-4HB2**		1	1 unit	41J
 3SU1801-0NB10-4HC2		With protective collar A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching according to ISO 13850, rotate to unlatch	A = Red	**3SU1801-0NB10-4HC2**		1	1 unit	41J
 3SU1802-0AB10-4HB1								
Gray	2	With recess for labeling plate A = Pushbutton/ B = Pushbutton	A = Red/ B = Green A = O/ B = I	**3SU1802-0AB10-4HB1**		1	1 unit	41J
			A = Black/ B = White A = O/ B = I	**3SU1802-0AC10-4HB1**		1	1 unit	41J
 3SU1803-0AB10-4HB1	3	With recess for labeling plate A = Pushbutton/ B = Pushbutton/ C = Indicator light	A = Red/ B = Green/ C = Clear A = O/ B = I/ C = "Without inscription"	**3SU1803-0AB10-4HB1**		1	1 unit	41J
Metal								
 3SU1851-0NB10-4GB2								
Yellow	1	With recess for labeling plate A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching according to ISO 13850, rotate to unlatch	A = Red A = "Without inscription"	**3SU1851-0NB10-4GB2**		1	1 unit	41J
 3SU1851-0NB10-4GC2		With protective collar A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching according to ISO 13850, rotate to unlatch	A = Red	**3SU1851-0NB10-4GC2**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Pushbuttons and indicator lights in the enclosure for AS-Interface

Customized enclosures for AS-Interface[1)]

3SU1802-0NZ10 K0Y

3SU1853-0NZ10 K0Y

Number of command points	Product function/ EMERGENCY STOP function	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Plastic						
1	Yes	**3SU1801-0NZ10 K0Y**		1	1 unit	41J
2	No	**3SU1802-0AZ10 K0Y**		1	1 unit	41J
	Yes	**3SU1802-0NZ10 K0Y**		1	1 unit	41J
3	No	**3SU1803-0AZ10 K0Y**		1	1 unit	41J
	Yes	**3SU1803-0NZ10 K0Y**		1	1 unit	41J
4	No	**3SU1804-0AZ10 K0Y**		1	1 unit	41J
	Yes	**3SU1804-0NZ10 K0Y**		1	1 unit	41J
6	No	**3SU1806-0AZ10 K0Y**		1	1 unit	41J
	Yes	**3SU1806-0NZ10 K0Y**		1	1 unit	41J
Metal						
1	Yes	**3SU1851-0NZ10 K0Y**		1	1 unit	41J
2	No	**3SU1852-0AZ10 K0Y**		1	1 unit	41J
	Yes	**3SU1852-0NZ10 K0Y**		1	1 unit	41J
3	No	**3SU1853-0AZ10 K0Y**		1	1 unit	41J
	Yes	**3SU1853-0NZ10 K0Y**		1	1 unit	41J
4	No	**3SU1854-0AZ10 K0Y**		1	1 unit	41J
	Yes	**3SU1854-0NZ10 K0Y**		1	1 unit	41J
6	No	**3SU1856-0AZ10 K0Y**		1	1 unit	41J
	Yes	**3SU1856-0NZ10 K0Y**		1	1 unit	41J

1) The fittings and labeling of the command points can be chosen using the configurator on the internet. The prices depend on the equipment selected. When ordering, always add the article number and the code **"K0Y"** and the **CIN number** from the configurator.
Ordering example:
3SU1801-0AZ00
K0Y
CIN20150609140858154554,
see www.siemens.com/sirius-act/configurator.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

Customized enclosures for IO-Link

With IO-Link enclosures, SIRIUS ACT pushbuttons and indicator lights can be quickly and reliably connected to the IO-Link communications system.

Benefits

Advantages:

- Easy configuration of customized enclosure solutions with IO-Link via configurator
- Quick and easy installation due to pre-wired, customized enclosure solutions with integrated IO-Link interface

Selection and ordering data

3SU1802-0AZ20 K0Y

Number of command points	Product function/ EMERGENCY STOP function	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Customized enclosures for IO-Link[1)]						
Plastic						
2	No	**3SU1802-0AZ20 K0Y**		1	1 unit	41J
3	No	**3SU1803-0AZ20 K0Y**		1	1 unit	41J
4	No	**3SU1804-0AZ20 K0Y**		1	1 unit	41J
6	No	**3SU1806-0AZ20 K0Y**		1	1 unit	41J
Metal						
2	No	**3SU1852-0AZ20 K0Y**		1	1 unit	41J
3	No	**3SU1853-0AZ20 K0Y**		1	1 unit	41J
4	No	**3SU1854-0AZ20 K0Y**		1	1 unit	41J
6	No	**3SU1856-0AZ20 K0Y**		1	1 unit	41J

1) The fittings and labeling of the command points can be chosen using the configurator on the internet. The prices depend on the equipment selected. When ordering, always add the article number and the code **"K0Y"** and the **CIN number** from the configurator.
Ordering example:
3SU1803-0AZ20
K0Y
CIN.....
see www.siemens.com/sirius-act/configurator.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Pushbuttons and indicator lights in the enclosure for connection to SIMATIC ET 200

Overview

SIRIUS ACT connection to safety field modules

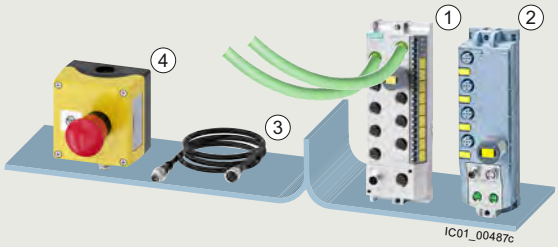
The connection of SIRIUS ACT enclosures with EMERGENCY STOP mushroom pushbutton and M12 plug-in connection to the fail-safe field modules of the SIMATIC ET 200eco PN and SIMATIC ET 200AL ensures fast and simple application in the field.

The market-compliant pin assignment of sensor, connecting cable and field module is identical in this solution. This ensures functional capability and excludes the possibility of sensor mix-ups.

The pre-wired enclosures can be implemented using various connection options with appropriate accessories (e.g. cables in different lengths, also partially preassembled).

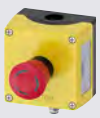
Additional SIRIUS devices, e.g. position and safety switches, can also be connected to the field modules. Advantage: Safe system technology in the field, from the sensor through to the field module (see page 12/88 onwards).

Configurator, see
www.siemens.com/SIMATIC-ET200-safety-sensor-configurator.



1 SIMATIC ET 200eco PN field module, fail-safe, 6ES7146-6FF00-0AB0
2 SIMATIC ET 200AL field module, fail-safe, 6ES7146-5FF00-0BA0
3 Connecting cable, 5-pole, 3SX5601-3SV15
4 SIRIUS ACT enclosure, EMERGENCY STOP, with M12 plug, 5-pole, 3SU1801-0NH00-4NB2

SIRIUS ACT connection to safety field modules

Sensors with M12 plug		Type	SIL	Connection accessories M12 method, A-coded		Type	Cable length
SIRIUS ACT enclosure, EMERGENCY STOP							
	Enclosure plastic, yellow, with 1 command point, A = EMERGENCY STOP mushroom pushbutton, red, 40 mm, with positive latching according to ISO 13850, rotate to unlatch, "Stop" label, 2 NC, spring-loaded terminals, base mounting, M12 plug (5-pole), bottom	3SU1801-0NH00-4NB2 (see page 13/105)	3		**Connecting cable** with M12 socket, 5-pole and M12 plug, 5-pole	3SX5601-3SV15 (see page 12/46)	1 m
					or		
					Connecting cable with M12 socket, 5-pole, open end	3SX5601-3SB55 (see page 12/46)	5 m
					and		
					M12 plug 5-pole, straight, separate item	3RK1902-4BA00-5AA0 (see page 12/46)	--
	**Enclosure** plastic, yellow, with 1 command point, A = EMERGENCY STOP mushroom pushbutton, red, 40 mm, illuminated, with positive latching according to ISO 13850, rotate to unlatch, "Stop" label, 2 NC, LED, white, 24 V, spring-loaded terminals, base mounting, M12 plug (8-pole), bottom	3SU1801-0NV00-4SA2 (see page 13/105)	3		**Connecting cable** with M12 socket, 8-pole and M12 plug, 8-pole	3SX5601-3SV18 (see page 12/69)	1 m
					and		
					ET 200 Y-cable for connecting 1 x 2-channel sensor with M12 socket, 8-pole on 2 x M12 plugs, 5-pole	6ES7194-6KC00-0XA0 (see page 12/69)	0.2 m
					or		
	Enclosure plastic, gray, with 2 command points, B = EMERGENCY STOP mushroom pushbutton, red, 40 mm, rotate to unlatch, 2 x 1 NC, black "Off" label, A = pushbutton, blue, 1 NO, black "Reset" label, spring-loaded terminals, base mounting, M12 plug (8-pole), bottom	3SU1802-0NE00-4SB1 (see page 13/105)	3		**Connecting cables** with M12 socket, 8-pole, straight, open end	3SX5601-2GA03 (see page 12/69)	3 m
						3SX5601-2GA05 (see page 12/69)	5 m
						3SX5601-2GA10 (see page 12/69)	10 m
						3SX5601-2GA15 (see page 12/69)	15 m
					and		
					M12 plug 8-pole, straight	6GT2090-0BE00 (see page 12/69)	--
					and		
					ET 200 Y-cable for connecting 1 x 2-channel sensor with M12 socket, 8-pole on 2 x M12 plugs, 5-pole	6ES7194-6KC00-0XA0 (see page 12/69)	0.2 m

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Pushbuttons and indicator lights in the enclosure for connection to SIMATIC ET 200

Selection and ordering data

	Color of enclosure top	Number of command points	Enclosure version Pushbutton and indicator light fittings	Color of actuating element Marking	Number of NC contacts	Number of NO contacts	Spring-loaded terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosures with standard fittings for connection to fail-safe field modules of the SIMATIC ET 200eco PN and SIMATIC ET 200AL											
Plastic											
3SU1801-0NH00-4NB2	Yellow	1	With recess for labeling plate A = EMERGENCY STOP mushroom pushbutton, 40 mm, with positive latching according to ISO 13850, rotate to unlatch, M12 plug (5-pole), bottom	A = Red A = Stop	2	0	**3SU1801-0NH00-4NB2**		1	1 unit	41J
3SU1801-0NV00-4SA2	Yellow	1	Center command point A = EMERGENCY STOP mushroom pushbutton, 40 mm, illuminated, with positive latching according to ISO 13850, rotate to unlatch, LED, white, 24 V, M12 plug (8-pole), bottom	A = Red	2	0	**3SU1801-0NV00-4SA2**		1	1 unit	41J
3SU1802-0NE00-4SB1	Gray	2	With recess for labeling plate B = EMERGENCY STOP mushroom pushbutton, 40 mm, rotate to unlatch/ A = Pushbutton, M12 plug (8-pole), bottom	B = Red/ A = Blue B = Off/ A = Reset	2 0	0 1	**3SU1802-0NE00-4SB1**		1	1 unit	41J

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Two-hand operation consoles

Overview

Equipment

The two-hand operation consoles are pre-equipped with commanding devices. In the case of plastic enclosures the command points are equipped as standard with actuators and indicators made of plastic and in the case of metal enclosures they are equipped with actuators and indicators made of metal.

The standard equipment comprises:

- 2 black mushroom pushbuttons, diameter 40 mm, 1 NO + 1 NC
- 1 red EMERGENCY STOP mushroom pushbutton according to ISO 13850, diameter 40 mm, with positive latching, 2 NC

The plastic version can be retrofitted with up to 8 customized command points. The surface of the console has premachined breaking points for this purpose.

Application

The two-hand operation consoles are required for use with machines and systems that have hazardous areas, in order to direct both hands of the operator to one position.

The operation consoles are primarily used on presses, stamping machines, printing presses and paper converting machines, in the chemical industry and in the rubber and plastics industries.

The control command is given by pressing the two mushroom pushbuttons on the sides simultaneously (within 0.5 s of each other) and must be maintained for as long as a hazard exists.

For the further processing of control commands, evaluation units such as 3SK safety relays are used.

Standards

The two-hand operation consoles comply with the requirements of EN 574/ISO 13851.

Selection and ordering data

Version of actuating element	Color of actuating element	Number of NO contacts	Number of NC contacts	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Two-hand operation consoles								
Plastic								
None	--	0	0	**3SU1803-3AA00-0AA1**		1	1 unit	41J
A = Mushroom pushbutton/ momentary contact B = EMERGENCY STOP mushroom pushbutton/ rotate to unlatch C = Mushroom pushbutton/ momentary contact	A = Black B = Red C = Black	2	4	**3SU1803-3NB00-1AE1**		1	1 unit	41J
Metal								
None	--	0	0	**3SU1853-3AA00-0AA1**		1	1 unit	41J
A = Mushroom pushbutton/ momentary contact B = EMERGENCY STOP mushroom pushbutton/ rotate to unlatch C = Mushroom pushbutton/ momentary contact	A = Black B = Red C = Black	2	4	**3SU1853-3NB00-1AA1**		1	1 unit	41J
With 4 additional command points for 22 mm command devices A = Mushroom pushbutton/ momentary contact B = EMERGENCY STOP mushroom pushbutton/ rotate to unlatch C = Mushroom pushbutton/ momentary contact	A = Black B = Red C = Black	2	4	**3SU1853-3NB00-1AD1**		1	1 unit	41J

3SU1803-3NB00-1AE1

3SU1853-3AA00-0AA1

3SU1853-3NB00-1AA1

3SU1853-3NB00-1AD1

Version	Material	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories							
Stands for two-hand operation consoles							
with cutouts for metric cable glands	Metal	Black	**3SU1950-0HN10-0AA0**		1	1 unit	41J

3SU1950-0HN10-0AA0

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Overview

Labels can be inserted for identification purposes for the 22 mm and 30 mm design lines of the pushbuttons (clear) and illuminated pushbuttons with flat button. These insert labels are made of transparent plastic with black inscription; they can be fitted in any 90° angle.

Inscription

The inscription is in upper/lower case, all words begin with upper case letters. Graphic symbols, including those not listed in the catalog, are according to ISO 7000 or IEC 60417.

The insert labels without inscription are suitable for user marking with permanent pen.

Customized inscriptions, see "Options", page 13/109.

Selection and ordering data

Color	Marking	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Insert labels						
	For self-inscription					
Milky white/black (label/lettering)	None	**3SU1900-0AB71-0AA0**		100	10 units	41J
	With customized inscription					
Milky white/black (label/lettering)	Inscriptions or symbols, see "Options", page 13/109.	**3SU1900-0AB71-0AZ0**		1	1 unit	41J
	Inscription in German					
Milky white/black (label/lettering)	Ein	**3SU1900-0AB71-0AB0**		100	10 units	41J
	Aus	**3SU1900-0AB71-0AC0**		100	10 units	41J
	Auf	**3SU1900-0AB71-0AD0**		100	10 units	41J
	Ab	**3SU1900-0AB71-0AE0**		100	10 units	41J
	Vor	**3SU1900-0AB71-0AF0**		100	10 units	41J
	Zurück	**3SU1900-0AB71-0AG0**		100	10 units	41J
	Rechts	**3SU1900-0AB71-0AH0**		100	10 units	41J
	Links	**3SU1900-0AB71-0AJ0**		100	10 units	41J
	Halt	**3SU1900-0AB71-0AK0**		100	10 units	41J
	Zu	**3SU1900-0AB71-0AL0**		100	10 units	41J
	Schnell	**3SU1900-0AB71-0AM0**		100	10 units	41J
	Langsam	**3SU1900-0AB71-0AN0**		100	10 units	41J
	Betrieb	**3SU1900-0AB71-0AP0**		100	10 units	41J
	Störung	**3SU1900-0AB71-0AQ0**		100	10 units	41J
	Einrichten	**3SU1900-0AR0**		100	10 units	41J
	Inscription in English					
Milky white/black (label/lettering)	On	**3SU1900-0AB71-0DJ0**		100	10 units	41J
	Off	**3SU1900-0AB71-0DK0**		100	10 units	41J
	Up	**3SU1900-0AB71-0DL0**		100	10 units	41J
	Down	**3SU1900-0AB71-0DM0**		100	10 units	41J
	Forward	**3SU1900-0AB71-0DN0**		100	10 units	41J
	Right	**3SU1900-0AB71-0DQ0**		100	10 units	41J
	Left	**3SU1900-0AB71-0DR0**		100	10 units	41J
	Stop	**3SU1900-0AB71-0DS0**		100	10 units	41J
	Start	**3SU1900-0AB71-0DT0**		100	10 units	41J
	Reset	**3SU1900-0AB71-0DU0**		100	10 units	41J
	Test	**3SU1900-0AB71-0DV0**		100	10 units	41J
	Open	**3SU1900-0AB71-0DW0**		100	10 units	41J
	Close	**3SU1900-0AB71-0DX0**		100	10 units	41J
	Running	**3SU1900-0AB71-0EB0**		100	10 units	41J
	Fast	**3SU1900-0AB71-0EE0**		100	10 units	41J
	Slow	**3SU1900-0AB71-0EF0**		100	10 units	41J

3SU1900-0AB71-0AA0

3SU1900-0AB71-0AB0

3SU1900-0AB71-0DN0

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Insert labels

3SU1900-0AB71-0QC0

3SU1900-0AB71-0QT0

3SU1900-0AB71-0RB0

3SU1900-0AB71-0RN0

Color	Marking	Symbol No.	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
With symbol (ON/OFF)							
Milky white/black (label/lettering)	O	5008 IEC	**3SU1900-0AB71-0QA0**		100	10 units	41J
	I	5007 IEC	**3SU1900-0AB71-0QB0**		100	10 units	41J
	II	--	**3SU1900-0AB71-0QC0**		100	10 units	41J
	III	--	**3SU1900-0AB71-0QD0**		100	10 units	41J
With symbol (graphic)							
Milky white/black (label/lettering)	ARROW DIRECTION TO RIGHT	5022 IEC	**3SU1900-0AB71-0QR0**		100	10 units	41J
	ARROW DIRECTION UP AND TO LEFT	--	**3SU1900-0AB71-0QS0**		100	10 units	41J
	CLOCKWISE ROTATION	0004 ISO	**3SU1900-0AB71-0QT0**		100	10 units	41J
	COUNTERCLOCK-WISE ROTATION	--	**3SU1900-0AB71-0QU0**		100	10 units	41J
	RAPID TRAVERSE	0266 ISO	**3SU1900-0AB71-0QV0**		100	10 units	41J
	FEED	0259 ISO	**3SU1900-0AB71-0QW0**		100	10 units	41J
	INCREASE, PLUS	5005 IEC	**3SU1900-0AB71-0QX0**		100	10 units	41J
	DECREASE, MINUS	5006 IEC	**3SU1900-0AB71-0QY0**		100	10 units	41J
	ELECTRIC MOTOR	0011 ISO	**3SU1900-0AB71-0RA0**		100	10 units	41J
	HORN	5014 IEC	**3SU1900-0AB71-0RB0**		100	10 units	41J
	WATER INLET	--	**3SU1900-0AB71-0RC0**		100	10 units	41J
	PUMP	0134 ISO	**3SU1900-0AB71-0RD0**		100	10 units	41J
	COOLANT PUMP	0355 ISO	**3SU1900-0AB71-0RE0**		100	10 units	41J
	CLAMP	5653 IEC	**3SU1900-0AB71-0RF0**		100	10 units	41J
	UNLOCK, UNCLAMP	5652 IEC	**3SU1900-0AB71-0RG0**		100	10 units	41J
	BRAKE	--	**3SU1900-0AB71-0RH0**		100	10 units	41J
	RELEASE BRAKE	0021 ISO	**3SU1900-0AB71-0RJ0**		100	10 units	41J
	INTERLOCK	0022 ISO	**3SU1900-0AB71-0RK0**		100	10 units	41J
	UNLOCK	0023 ISO	**3SU1900-0AB71-0RL0**		100	10 units	41J
	SET UP	0910 ISO	**3SU1900-0AB71-0RM0**		100	10 units	41J
	ON/OFF, MOMENTARY CONTACT	5011 IEC	**3SU1900-0AB71-0RN0**		100	10 units	41J
	MANUAL OPERATION	0096 ISO	**3SU1900-0AB71-0RP0**		100	10 units	41J
	AUTOMATIC CYCLE	0017 ISO	**3SU1900-0AB71-0RQ0**		100	10 units	41J
	SUCTION	--	**3SU1900-0AB71-0RR0**		100	10 units	41J
	BLOWING	--	**3SU1900-0AB71-0RS0**		100	10 units	41J

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Options

Customized inscriptions

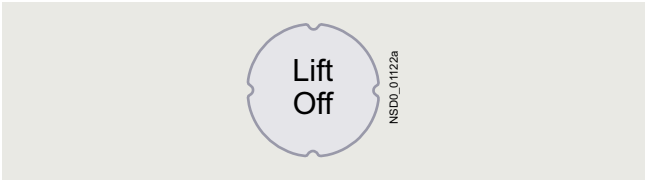
The labels can be inscribed with text and symbols not listed in the ordering data.

The default typeface used for inscriptions with text is Arial and the text is centered.

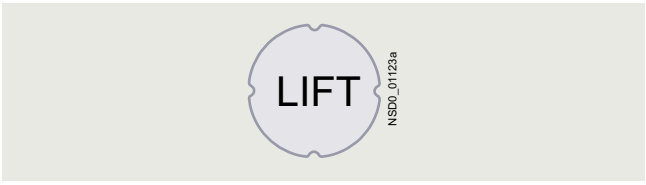
The font height is 2.5 mm.

Up to 6 characters per line are possible.

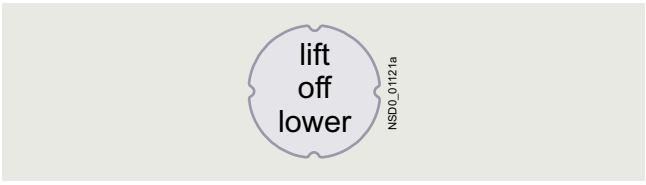
Examples of customized inscriptions



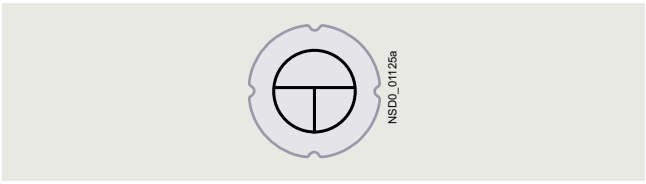
Two-line inscription in upper/lower case (Q0Y)



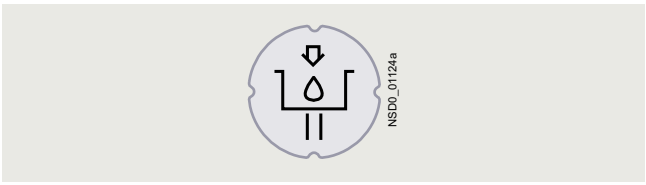
Single-line inscription in upper case (Q1Y)



Three-line inscription in lower case (Q2Y)



Symbol number 5011 according to IEC 60417 (Q3Y)



Any symbol according to order form supplement (Q9Y)

Ordering notes

Append the following order codes to the article number:

- **Q0Y:** Text line(s) in upper/lower case, always upper case for beginning of line,
  e.g. Z1=Lift Z2=Lower
- **Q1Y:** Text line(s) in upper case,
  e.g. Z1=LIFT Z2=LOWER
- **Q2Y:** Text line(s) in lower case,
  e.g. Z1=lift off Z2=lower off
- **Q5Y:** Text line(s) in upper/lower case, all words begin with upper case letters,
  e.g. Z1=Lift Off Z2=Lower Off
- **Q3Y:** Symbol with number according to ISO 7000 or IEC 60417
- **Q9Y:** Inscription of choice, text or symbol,
  can only be ordered via SIRIUS ACT configurator with a Configuration Identification Number (CIN)

When ordering, specify the required inscription without umlauts (ä, ö, ü) and without spaces after Z=, Z1=, etc. in addition to the article number and order code (see ordering examples 1 to 3).

In the case of multi-line inscriptions, the text must be assigned to the respective line,
e.g. Z1=LIFT Z2=LOWER (see ordering example 1).

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417 (see ordering examples 2 and 3).

The SIRIUS ACT configurator must be used to select special inscriptions and symbols (see ordering example 4). In this case, a CIN (Configuration Identification Number) is generated for placement of future orders. It is then possible to place an order directly via the SIRIUS ACT configurator using the CIN (Mall shopping cart) or via the standard ordering channels.

Standard ordering channels:

- Configurator: www.siemens.com/sirius-act/configurator
- Industry Mall: www.siemens.com/industrymall

Ordering example 1

A label with 2 lines of text is required:

3SU1900-0AB71-0AZ0
Q1Y
Z1=LIFT
Z2=LOWER

Ordering example 2

A label inscribed with symbol No. 5011 according to IEC 60417 is required:

3SU1900-0AB71-0AZ0
Q3Y
Z=5011 IEC

Ordering example 3

A label inscribed with symbol No. 1118 according to ISO 7000 is required:

3SU1900-0AB71-0AZ0
Q3Y
Z=1118 ISO

Ordering example 4

A label with customized inscription is required:

3SU1900-0AB71-0AZ0
Q9Y
CIN.....
(20-digit number generated from the SIRIUS ACT configurator)

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Material, label holder shape	Mounting diameter	Label holder color	Label fastening method	Labeling plate size Height	Labeling plate size Width	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm			mm	mm					
Label holders for labeling plates										
For 1 labeling plate										
Plastic, with rounded bottom	22	Black	Self-adhesive	12.5	27	**3SU1900-0AG10-0AA0**		100	10 units	41J
				17.5	27	**3SU1900-0AH10-0AA0**		100	10 units	41J
				27	27	**3SU1900-0AJ10-0AA0**		100	10 units	41J
			Snap-on	12.5	27	**3SU1900-0AR10-0AA0**		100	10 units	41J
				17.5	27	**3SU1900-0AS10-0AA0**		100	10 units	41J
				27	27	**3SU1900-0AT10-0AA0**		100	10 units	41J
Plastic, with square bottom	22	Black	Self-adhesive	12.5	27	**3SU1900-0AN10-0AA0**		100	10 units	41J
				17.5	27	**3SU1900-0AP10-0AA0**		100	10 units	41J
				27	27	**3SU1900-0AQ10-0AA0**		100	10 units	41J
For 2 labeling plates										
Plastic, with rounded bottom	22	Black	Self-adhesive	17.5	27	**3SU1900-0BQ10-0AA0**		1	10 units	41J
			Snap-on	17.5	27	**3SU1900-0BR10-0AA0**		1	10 units	41J
For 4 labeling plates										
Plastic, with rounded bottom	22	Black	Self-adhesive	17.5	27	**3SU1900-0BS10-0AA0**		1	10 units	41J
			Snap-on	17.5	27	**3SU1900-0BT10-0AA0**		1	10 units	41J
For actuators and indicators										
Plastic, with rounded bottom	30	Black	Self-adhesive	17.5	27	**3SU1960-0AH10-0AA0**		1	10 units	41J
			Snap-on	17.5	27	**3SU1960-0AS10-0AA0**		1	10 units	41J
Label holders for labeling plates, coordinate switches										
Plastic, with square bottom	22	Black	Self-adhesive	27	27	**3SU1900-0AL10-0AA0**		1	1 unit	41J
Plastic, cross	22	Black	Self-adhesive	27	27	**3SU1900-0AM10-0AA0**		1	1 unit	41J

3SU1900-0AG10-0AA0

3SU1900-0AN10-0AA0

3SU1900-0BQ10-0AA0

3SU1900-0BT10-0AA0

3SU1960-0AH10-0AA0

3SU1900-0AL10-0AA0

3SU1900-0AM10-0AA0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Multi-unit packaging, see page 13/17.

	Material, label holder shape	Mounting diameter	Label holder color	Label fastening method	Labeling plate size		Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
					Height	Width					
		mm			mm	mm					
Label holders for labeling plates, twin pushbuttons											
3SU1900-0AK10-0AA0	Plastic, rectangular	22	Black	Self-adhesive	12.5	27	**3SU1900-0AK10-0AA0**		100	10 units	41J
Single frames											
3SU1900-0AX10-0AA0	Plastic, square	22	Black	--	29.8	29.8	**3SU1900-0AX10-0AA0**		1	10 units	41J

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Overview

Label holders of black plastic, and labeling plates (black with white print or silver-colored with black print) for sticking or snapping in place, are available for labeling. They are not suitable for EMERGENCY STOP buttons. Note mounting dimensions!
The label holders cannot be used in conjunction with sealing plugs, protective caps, protective collars and locking devices.

Inscription

The inscription is in upper/lower case, all words begin with upper case letters. Graphic symbols, including those not listed in the catalog, are according to ISO 7000 or IEC 60417.

Customized inscriptions, see "Options", page 13/118.

Labeling plates for sticking/snapping in place

The labels are available in three sizes:

- 12.5 mm × 27 mm
- 17.5 mm × 27 mm
- 27 mm × 27 mm

For mounting the labeling plates, you can choose between label holders for stick-on or snap-on mounting.

Selection and ordering data

Multi-unit packaging, see page 13/17.

Color	Marking	Symbol No.	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Labeling plates 12.5 mm x 27 mm							
3SU1900-0AC16-0AA0							
For self-inscription							
Black/white (label/lettering)	None	--	**3SU1900-0AC16-0AA0**		100	10 units	41J
With customized inscription							
Black/white (label/lettering)	Inscriptions or symbols, see "Options", page 13/118.		**3SU1900-0AC16-0AZ0**		1	1 unit	41J
3SU1900-0AC16-0AG0							
Inscription in German							
Black/white (label/lettering)	Ein	--	**3SU1900-0AC16-0AB0**		100	10 units	41J
	Aus	--	**3SU1900-0AC16-0AC0**		100	10 units	41J
	Auf	--	**3SU1900-0AC16-0AD0**		100	10 units	41J
	Ab	--	**3SU1900-0AE0**		100	10 units	41J
	Vor	--	**3SU1900-0AF0**		100	10 units	41J
	Zurück	--	**3SU1900-0AG0**		100	10 units	41J
	Rechts	--	**3SU1900-0AH0**		100	10 units	41J
	Links	--	**3SU1900-0AJ0**		100	10 units	41J
	Halt	--	**3SU1900-0AK0**		100	10 units	41J
	Zu	--	**3SU1900-0AL0**		100	10 units	41J
	Betrieb	--	**3SU1900-0AP0**		100	10 units	41J
	Störung	--	**3SU1900-0AQ0**		100	10 units	41J
	Hand Auto	--	**3SU1900-0DB0**		100	10 units	41J
	Hand O Auto	--	**3SU1900-0DD0**		100	10 units	41J
3SU1900-0AC16-0DN0							
Inscription in English							
Black/white (label/lettering)	On	--	**3SU1900-0AC16-0DJ0**		100	10 units	41J
	Off	--	**3SU1900-0AC16-0DK0**		100	10 units	41J
	Up	--	**3SU1900-0AC16-0DL0**		100	10 units	41J
	Down	--	**3SU1900-0AC16-0DM0**		100	10 units	41J
	Forward	--	**3SU1900-0AC16-0DN0**		100	10 units	41J
	Reverse	--	**3SU1900-0AC16-0DP0**		100	10 units	41J
	Right	--	**3SU1900-0AC16-0DQ0**		100	10 units	41J
	Left	--	**3SU1900-0AC16-0DR0**		100	10 units	41J
	Stop	--	**3SU1900-0AC16-0DS0**		100	10 units	41J
	Start	--	**3SU1900-0AC16-0DT0**		100	10 units	41J
	Reset	--	**3SU1900-0AC16-0DU0**		100	10 units	41J
	Test	--	**3SU1900-0AC16-0DV0**		100	10 units	41J
	Open	--	**3SU1900-0AC16-0DW0**		100	10 units	41J
	Close	--	**3SU1900-0AC16-0DX0**		100	10 units	41J
	Jog	--	**3SU1900-0AC16-0DE0**		100	10 units	41J
	Running	--	**3SU1900-0AC16-0EB0**		100	10 units	41J
	Fault	--	**3SU1900-0AC16-0EC0**		100	10 units	41J
	Run	--	**3SU1900-0AC16-0ED0**		100	10 units	41J
	Stop Start	--	**3SU1900-0AC16-0DC0**		100	10 units	41J
	Off On	--	**3SU1900-0AC16-0DH0**		100	10 units	41J
	Power off	--	**3SU1900-0AC16-0DF0**		100	10 units	41J
	Power on	--	**3SU1900-0AC16-0DG0**		100	10 units	41J
	Man O Auto	--	**3SU1900-0AC16-0DY0**		100	10 units	41J
	Man Auto	--	**3SU1900-0AC16-0EA0**		100	10 units	41J

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Multi-unit packaging, see page 13/17.

Labeling plates 12.5 mm x 27 mm

3SU1900-0AC16-0GA0

Inscription in French

Color	Marking	Symbol No.	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Black/white (label/lettering)	Marche	--	**3SU1900-0AC16-0GA0**		100	10 units	41J
	Arrêt	--	**3SU1900-0AC16-0GB0**		100	10 units	41J
	Montée	--	**3SU1900-0AC16-0GC0**		100	10 units	41J
	Descente	--	**3SU1900-0AC16-0GD0**		100	10 units	41J
	Avant	--	**3SU1900-0AC16-0GE0**		100	10 units	41J
	Retour	--	**3SU1900-0AC16-0GF0**		100	10 units	41J
	Droite	--	**3SU1900-0AC16-0GG0**		100	10 units	41J
	Gauche	--	**3SU1900-0AC16-0GH0**		100	10 units	41J
	Ouvert	--	**3SU1900-0AC16-0GJ0**		100	10 units	41J
	Fermé	--	**3SU1900-0AC16-0GK0**		100	10 units	41J
	Rapide	--	**3SU1900-0AC16-0GL0**		100	10 units	41J
	En service	--	**3SU1900-0AC16-0GM0**		100	10 units	41J
	Défaut	--	**3SU1900-0AC16-0GN0**		100	10 units	41J
	Réglage	--	**3SU1900-0AC16-0GP0**		100	10 units	41J
	Arrêt d'urgence	--	**3SU1900-0AC16-0GQ0**		100	10 units	41J
	Hors service	--	**3SU1900-0AC16-0GR0**		100	10 units	41J
	Sous tension	--	**3SU1900-0AC16-0GS0**		100	10 units	41J
	Manu Auto	--	**3SU1900-0AC16-0GT0**		100	10 units	41J
	Marche Arrêt	--	**3SU1900-0AC16-0GU0**		100	10 units	41J
	Réarmement	--	**3SU1900-0AC16-0GV0**		100	10 units	41J

3SU1900-0AC16-0QG0

With symbol

Color	Marking	Symbol No.	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Black/white (label/lettering)	O	--	**3SU1900-0AC16-0QA0**		100	10 units	41J
	I	--	**3SU1900-0AC16-0QB0**		100	10 units	41J
	O I	--	**3SU1900-0AC16-0QG0**		100	10 units	41J
	1 2	--	**3SU1900-0AC16-0QJ0**		100	10 units	41J
	↑ ARROW DIRECTION UP	--	**3SU1900-0AC16-0QS0**		100	10 units	41J

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Multi-unit packaging, see page 13/17.

Color	Marking	Symbol No.	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Labeling plates 12.5 mm x 27 mm							
	For self-inscription						
Silver/black (label/lettering)	None	--	**3SU1900-0AC81-0AA0**		100	10 units	41J
	With customized inscription						
Silver/black (label/lettering)	Inscriptions or symbols, see "Options", page 13/118.		**3SU1900-0AC81-0AZ0**		1	1 unit	41J
	Inscription in German						
Silver/black (label/lettering)	Ein	--	**3SU1900-0AC81-0AB0**		100	10 units	41J
	Aus	--	**3SU1900-0AC81-0AC0**		100	10 units	41J
	Auf	--	**3SU1900-0AC81-0AD0**		100	10 units	41J
	Ab	--	**3SU1900-0AE0**		100	10 units	41J
	Vor	--	**3SU1900-0AC81-0AF0**		100	10 units	41J
	Zurück	--	**3SU1900-0AG0**		100	10 units	41J
	Rechts	--	**3SU1900-0AH0**		100	10 units	41J
	Links	--	**3SU1900-0AJ0**		100	10 units	41J
	Halt	--	**3SU1900-0AK0**		100	10 units	41J
	Zu	--	**3SU1900-0AL0**		100	10 units	41J
	Schnell	--	**3SU1900-0AM0**		100	10 units	41J
	Langsam	--	**3SU1900-0AN0**		100	10 units	41J
	Betrieb	--	**3SU1900-0AP0**		100	10 units	41J
	Störung	--	**3SU1900-0AQ0**		100	10 units	41J
	Einrichten	--	**3SU1900-0AR0**		100	10 units	41J
	Hand Auto	--	**3SU1900-0DB0**		100	10 units	41J
	Stop Start	--	**3SU1900-0DC0**		100	10 units	41J
	Hand O Auto	--	**3SU1900-0DD0**		100	10 units	41J
	Inscription in English						
Silver/black (label/lettering)	On	--	**3SU1900-0DJ0**		100	10 units	41J
	Off	--	**3SU1900-0DK0**		100	10 units	41J
	Up	--	**3SU1900-0DL0**		100	10 units	41J
	Down	--	**3SU1900-0DM0**		100	10 units	41J
	Stop	--	**3SU1900-0DS0**		100	10 units	41J
	Start	--	**3SU1900-0DT0**		100	10 units	41J
	Reset	--	**3SU1900-0DU0**		100	10 units	41J
	Test	--	**3SU1900-0DV0**		100	10 units	41J
	Open	--	**3SU1900-0DW0**		100	10 units	41J
	Close	--	**3SU1900-0DX0**		100	10 units	41J
	Man O Auto	--	**3SU1900-0DY0**		100	10 units	41J
	Man Auto	--	**3SU1900-0EA0**		100	10 units	41J
	Running	--	**3SU1900-0EB0**		100	10 units	41J
	Fault	--	**3SU1900-0EC0**		100	10 units	41J
	Fast	--	**3SU1900-0EE0**		100	10 units	41J
	Slow	--	**3SU1900-0EF0**		100	10 units	41J
	With symbol						
Silver/black (label/lettering)	O	5008 IEC	**3SU1900-0AC81-0QA0**		100	10 units	41J
	I	5007 IEC	**3SU1900-0AC81-0QB0**		100	10 units	41J
	II	--	**3SU1900-0AC81-0QC0**		100	10 units	41J
	III	--	**3SU1900-0AC81-0QD0**		100	10 units	41J
	O I	--	**3SU1900-0AC81-0QG0**		100	10 units	41J
	I O II	--	**3SU1900-0AC81-0QK0**		100	10 units	41J
	1 O 2	--	**3SU1900-0AC81-0QL0**		100	10 units	41J
	→ ARROW DIRECTION TO RIGHT	5022 IEC	**3SU1900-0AC81-0QR0**		100	10 units	41J
	↑ ARROW DIRECTION UP	--	**3SU1900-0AC81-0QS0**		100	10 units	41J

3SU1900-0AC81-0AA0

3SU1900-0AC81-0AB0

3SU1900-0AC81-0DK0

3SU1900-0AC81-0QK0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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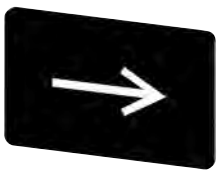
Multi-unit packaging, see page 13/17.

Labeling plates 17.5 mm x 27 mm

3SU1900-0AD16-0AA0

3SU1900-0AD16-0AC0

3SU1900-0AD16-0DK0



3SU1900-0AD16-0QR0

Color	Marking	Symbol No.	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
For self-inscription							
Black/white (label/lettering)	None	--	**3SU1900-0AD16-0AA0**		100	10 units	41J
With customized inscription							
Black/white (label/lettering)	Inscriptions or symbols, see "Options", page 13/118.		**3SU1900-0AD16-0AZ0**		1	1 unit	41J
Inscription in German							
Black/white (label/lettering)	Ein	--	**3SU1900-0AD16-0AB0**		100	10 units	41J
	Aus	--	**3SU1900-0AD16-0AC0**		100	10 units	41J
	Auf	--	**3SU1900-0AD16-0AD0**		100	10 units	41J
	Ab	--	**3SU1900-0AE0**		100	10 units	41J
	Vor	--	**3SU1900-0AF0**		100	10 units	41J
	Zurück	--	**3SU1900-0AG0**		100	10 units	41J
	Halt	--	**3SU1900-0AK0**		100	10 units	41J
	Zu	--	**3SU1900-0AL0**		100	10 units	41J
	Betrieb	--	**3SU1900-0AP0**		100	10 units	41J
	Störung	--	**3SU1900-0AQ0**		100	10 units	41J
	Hand Auto	--	**3SU1900-0DB0**		100	10 units	41J
Inscription in English							
Black/white (label/lettering)	Stop Start	--	**3SU1900-0AD16-0DC0**		100	10 units	41J
	On	--	**3SU1900-0AD16-0DJ0**		100	10 units	41J
	Off	--	**3SU1900-0AD16-0DK0**		100	10 units	41J
	Up	--	**3SU1900-0AD16-0DL0**		100	10 units	41J
	Down	--	**3SU1900-0AD16-0DM0**		100	10 units	41J
	Forward	--	**3SU1900-0AD16-0DN0**		100	10 units	41J
	Reverse	--	**3SU1900-0AD16-0DP0**		100	10 units	41J
	Right	--	**3SU1900-0AD16-0DQ0**		100	10 units	41J
	Stop	--	**3SU1900-0AD16-0DS0**		100	10 units	41J
	Start	--	**3SU1900-0AD16-0DT0**		100	10 units	41J
	Open	--	**3SU1900-0AD16-0DW0**		100	10 units	41J
	Close	--	**3SU1900-0AD16-0DX0**		100	10 units	41J
	Man Auto	--	**3SU1900-0AD16-0EA0**		100	10 units	41J
	Running	--	**3SU1900-0AD16-0EB0**		100	10 units	41J
	Fault	--	**3SU1900-0AD16-0EC0**		100	10 units	41J
Inscription in French							
Black/white (label/lettering)	Marche	--	**3SU1900-0AD16-0GA0**		100	10 units	41J
	Arrêt	--	**3SU1900-0AD16-0GB0**		100	10 units	41J
	Droite	--	**3SU1900-0AD16-0GG0**		100	10 units	41J
	Gauche	--	**3SU1900-0AD16-0GH0**		100	10 units	41J
	En service	--	**3SU1900-0AD16-0GM0**		100	10 units	41J
	Défaut	--	**3SU1900-0AD16-0GN0**		100	10 units	41J
	Sous tension	--	**3SU1900-0AD16-0GS0**		100	10 units	41J
	Manu Auto	--	**3SU1900-0AD16-0GT0**		100	10 units	41J
	Marche Arrêt	--	**3SU1900-0AD16-0GU0**		100	10 units	41J
	Réarmement	--	**3SU1900-0AD16-0GV0**		100	10 units	41J
With symbol							
Black/white (label/lettering)	O	5008 IEC	**3SU1900-0AD16-0QA0**		100	10 units	41J
	I	5007 IEC	**3SU1900-0AD16-0QB0**		100	10 units	41J
	O I	--	**3SU1900-0AD16-0QG0**		100	10 units	41J
	→ ARROW DIRECTION TO RIGHT	5022 IEC	**3SU1900-0AD16-0QR0**		100	10 units	41J
	↑ ARROW DIRECTION UP	--	**3SU1900-0AD16-0QS0**		100	10 units	41J

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Multi-unit packaging, see page 13/17.

Color	Marking	Symbol No.	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Labeling plates 17.5 mm x 27 mm							
3SU1900-0AD81-0AA0							
For self-inscription							
Silver/black (label/lettering)	None	--	**3SU1900-0AD81-0AA0**		100	10 units	41J
With customized inscription							
Silver/black (label/lettering)	Inscriptions or symbols, see "Options", page 13/118.		**3SU1900-0AD81-0AZ0**		1	1 unit	41J
3SU1900-0AD81-0AP0							
Inscription in German							
Silver/black (label/lettering)	Ein	--	**3SU1900-0AD81-0AB0**		100	10 units	41J
	Aus	--	**3SU1900-0AD81-0AC0**		100	10 units	41J
	Auf	--	**3SU1900-0AD81-0AD0**		100	10 units	41J
	Ab	--	**3SU1900-0AD81-0AE0**		100	10 units	41J
	Vor	--	**3SU1900-0AD81-0AF0**		100	10 units	41J
	Zurück	--	**3SU1900-0AD81-0AG0**		100	10 units	41J
	Rechts	--	**3SU1900-0AH0**		100	10 units	41J
	Halt	--	**3SU1900-0AK0**		100	10 units	41J
	Zu	--	**3SU1900-0AL0**		100	10 units	41J
	Betrieb	--	**3SU1900-0AP0**		100	10 units	41J
	Störung	--	**3SU1900-0AQ0**		100	10 units	41J
	Hand Auto	--	**3SU1900-0DB0**		100	10 units	41J
	Hand O Auto	--	**3SU1900-0DD0**		100	10 units	41J
3SU1900-0AD81-0EC0							
Inscription in English							
Silver/black (label/lettering)	On	--	**3SU1900-0AD81-0DJ0**		100	10 units	41J
	Off	--	**3SU1900-0AD81-0DK0**		100	10 units	41J
	Stop	--	**3SU1900-0AD81-0DS0**		100	10 units	41J
	Start	--	**3SU1900-0AD81-0DT0**		100	10 units	41J
	Reset	--	**3SU1900-0AD81-0DU0**		100	10 units	41J
	Man O Auto	--	**3SU1900-0AD81-0DY0**		100	10 units	41J
	Fault	--	**3SU1900-0AD81-0EC0**		100	10 units	41J
3SU1900-0AD81-0QG0							
With symbol							
Silver/black (label/lettering)	O	5008 IEC	**3SU1900-0AD81-0QA0**		100	10 units	41J
	I	5007 IEC	**3SU1900-0AD81-0QB0**		100	10 units	41J
	O I	--	**3SU1900-0AD81-0QG0**		100	10 units	41J
	I O II	--	**3SU1900-0AD81-0QK0**		100	10 units	41J
	1 O 2	--	**3SU1900-0AD81-0QL0**		100	10 units	41J
	→ ARROW DIRECTION TO RIGHT	5022 IEC	**3SU1900-0AD81-0QR0**		100	10 units	41J
	↑ ARROW DIRECTION UP	--	**3SU1900-0AD81-0QS0**		100	10 units	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Multi-unit packaging, see page 13/17.	Color	Marking	Symbol No.	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Labeling plates 27 mm x 27 mm								
3SU1900-0AE16-0AA0	***For self-inscription***							
	Black/white (label/lettering)	None	--	**3SU1900-0AE16-0AA0**		100	10 units	41J
	Silver/black (label/lettering)	None	--	**3SU1900-0AE81-0AA0**		100	10 units	41J
	With customized inscription							
	Black/white (label/lettering)	Inscriptions or symbols, see "Options", page 13/118.		**3SU1900-0AE16-0AZ0**		1	1 unit	41J
3SU1900-0AE81-0AA0	Silver/black (label/lettering)			**3SU1900-0AE81-0AZ0**		1	1 unit	41J
	Inscription in German							
3SU1900-0AE16-0AD0	Black/white (label/lettering)	Ein	--	**3SU1900-0AE16-0AB0**		100	10 units	41J
		Aus	--	**3SU1900-0AE16-0AC0**		100	10 units	41J
		Auf	--	**3SU1900-0AE16-0AD0**		100	10 units	41J
		Ab	--	**3SU1900-0AE16-0AE0**		100	10 units	41J
		Vor	--	**3SU1900-0AE16-0AF0**		100	10 units	41J
		Zurück	--	**3SU1900-0AG0**		100	10 units	41J
		Rechts	--	**3SU1900-0AH0**		100	10 units	41J
		Links	--	**3SU1900-0AJ0**		100	10 units	41J
		Halt	--	**3SU1900-0AK0**		100	10 units	41J
		Zu	--	**3SU1900-0AL0**		100	10 units	41J
		Betrieb	--	**3SU1900-0AP0**		100	10 units	41J
		Störung	--	**3SU1900-0AQ0**		100	10 units	41J
		Hand Auto	--	**3SU1900-0DB0**		100	10 units	41J
	Inscription in English							
3SU1900-0AE16-0DK0	Black/white (label/lettering)	On	--	**3SU1900-0AE16-0DJ0**		100	10 units	41J
		Off	--	**3SU1900-0AE16-0DK0**		100	10 units	41J
		Up	--	**3SU1900-0AE16-0DL0**		100	10 units	41J
		Down	--	**3SU1900-0AE16-0DM0**		100	10 units	41J
		Forward	--	**3SU1900-0AE16-0DN0**		100	10 units	41J
		Reverse	--	**3SU1900-0AE16-0DP0**		100	10 units	41J
		Stop	--	**3SU1900-0AE16-0DS0**		100	10 units	41J
		Start	--	**3SU1900-0AE16-0DT0**		100	10 units	41J
		EMERGENCY STOP	--	**3SU1900-0AE16-0DA0**		100	10 units	41J
		Stop Start	--	**3SU1900-0AE16-0DC0**		100	10 units	41J
	Inscription in French							
3SU1900-0AE16-0GB0	Black/white (label/lettering)	Marche	--	**3SU1900-0AE16-0GA0**		100	10 units	41J
		Arrêt	--	**3SU1900-0AE16-0GB0**		100	10 units	41J
		Montée	--	**3SU1900-0AE16-0GC0**		100	10 units	41J
		Descente	--	**3SU1900-0AE16-0GD0**		100	10 units	41J
		En service	--	**3SU1900-0AE16-0GM0**		100	10 units	41J
		Défaut	--	**3SU1900-0AE16-0GN0**		100	10 units	41J
		Sous tension	--	**3SU1900-0AE16-0GS0**		100	10 units	41J
		Manu Auto	--	**3SU1900-0AE16-0GT0**		100	10 units	41J
		Marche Arrêt		**3SU1900-0AE16-0GU0**		100	10 units	41J
	With symbol							
3SU1900-0AE16-0QG0	Black/white (label/lettering)	O I	--	**3SU1900-0AE16-0QG0**		100	10 units	41J
		→ ARROW DIRECTION TO RIGHT	5022 IEC	**3SU1900-0AE16-0QR0**		100	10 units	41J

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Options

Customized inscriptions

The labels can be inscribed with text and symbols not listed in the ordering data.

The default typeface used for inscriptions with text is Arial and the text is centered.

Up to 11 characters per line are possible.

Font height

Label size 12.5 mm × 27 mm, max. 3 lines:

Font height	1-line	4 mm
	2-line	3 mm
	3-line	1.75 mm

Label size 17.5 mm × 27 mm, max. 3 lines:

Font height	1- to 2-line	4 mm
	3-line	3 mm

Label size 27 mm × 27 mm, max. 5 lines:

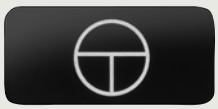
Font height	1- to 3-line	4 mm
	4-line	3.5 mm
	5-line	3 mm

Examples of customized inscriptions

Two-line inscription in upper/lower case (Q0Y)

Single-line inscription in upper case (Q1Y)

Three-line inscription in lower case (Q2Y)



Symbol number 5011 according to IEC 60417 (Q3Y)

Any symbol according to order form supplement (Q9Y)

Ordering notes

Append the following order codes to the article number:

- **Q0Y:** Text line(s) in upper/lower case, always upper case for beginning of line, e.g. Z1=Lift Z2=Lower
- **Q1Y:** Text line(s) in upper case, e.g. Z1=LIFT Z2=LOWER
- **Q2Y:** Text line(s) in lower case, e.g. Z1=lift off Z2=lower off
- **Q5Y:** Text line(s) in upper/lower case, all words begin with upper case letters, e.g. Z1=Lift Off Z2=Lower Off
- **Q3Y:** Symbol with number according to ISO 7000 or IEC 60417
- **Q9Y:** Inscription of choice, text or symbol, can only be ordered via SIRIUS ACT configurator with a Configuration Identification Number (CIN)

When ordering, specify the required inscription without umlauts (ä, ö, ü) and without spaces after Z=, Z1=, etc. in addition to the article number and order code (see ordering examples 1 to 3).

In the case of multi-line inscriptions, the text must be assigned to the respective line, e.g. Z1=LIFT Z2=LOWER (see ordering example 1).

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417 (see ordering examples 2 and 3).

The SIRIUS ACT configurator must be used to select special inscriptions and symbols (see ordering example 4). In this case, a CIN (Configuration Identification Number) is generated for placement of future orders. It is then possible to place an order directly via the SIRIUS ACT configurator using the CIN (Mall shopping cart) or via the standard ordering channels.

Standard ordering channels:

- Configurator: www.siemens.com/sirius-act/configurator
- Industry Mall: www.siemens.com/industrymall

Ordering example 1

A label with 2 lines of text is required:

3SU1900-0AC16-0AZ0
Q1Y
Z1=LIFT
Z2=LOWER

Ordering example 2

A label inscribed with symbol No. 5011 according to IEC 60417 is required:

3SU1900-0AC16-0AZ0
Q3Y
Z=5011 IEC

Ordering example 3

A label inscribed with symbol No. 1118 according to ISO 7000 is required:

3SU1900-0AC16-0AZ0
Q3Y
Z=1118 ISO

Ordering example 4

An indicator light with customized inscription is required:

3SU1900-0AC16-0AZ0
Q9Y
CIN.....
(20-digit number generated from the SIRIUS ACT configurator)

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Overview

The labeling plates in size 22 mm x 22 mm can be attached to enclosures with recesses for labels. There are versions in black with white print or silver-colored with black print.

Inscription

The inscription is in upper/lower case, all words begin with upper case letters. Graphic symbols, including those not listed in the catalog, are according to ISO 7000 or IEC 60417.

Customized inscriptions, see "Options", page 13/122.

Selection and ordering data

Multi-unit packaging, see page 13/17.

Color	Marking	Symbol No.	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Labeling plates 22 mm x 22 mm							
For self-inscription							
Black/white (label/lettering)	None	--	**3SU1900-0AF16-0AA0**		100	10 units	41J
With customized inscription							
Black/white (label/lettering)	Inscriptions or symbols, see "Options", page 13/122.		**3SU1900-0AF16-0AZ0**		1	1 unit	41J
Inscription in German							
Black/white (label/lettering)	Ein	--	**3SU1900-0AF16-0AB0**		1	10 units	41J
	Aus	--	**3SU1900-0AF16-0AC0**		1	10 units	41J
	Auf	--	**3SU1900-0AF16-0AD0**		1	10 units	41J
	Ab	--	**3SU1900-0AE16-0AE0**		1	10 units	41J
	Vor	--	**3SU1900-0AF16-0AF0**		1	10 units	41J
	Zurück	--	**3SU1900-0AF16-0AG0**		1	10 units	41J
	Rechts	--	**3SU1900-0AF16-0AH0**		1	10 units	41J
	Links	--	**3SU1900-0AF16-0AJ0**		1	10 units	41J
	Halt	--	**3SU1900-0AF16-0AK0**		1	10 units	41J
	Zu	--	**3SU1900-0AF16-0AL0**		1	10 units	41J
	Schnell	--	**3SU1900-0AF16-0AM0**		1	10 units	41J
	Langsam	--	**3SU1900-0AF16-0AN0**		1	10 units	41J
	Betrieb	--	**3SU1900-0AF16-0AP0**		1	10 units	41J
	Störung	--	**3SU1900-0AF16-0AQ0**		1	10 units	41J
	Einrichten	--	**3SU1900-0AF16-0AR0**		1	10 units	41J
	NOT AUS	--	**3SU1900-0AF16-0AS0**		1	10 units	41J
Inscription in English							
Black/white (label/lettering)	On	--	**3SU1900-0AF16-0DJ0**		1	10 units	41J
	Off	--	**3SU1900-0AF16-0DK0**		1	10 units	41J
	Up	--	**3SU1900-0AF16-0DL0**		1	10 units	41J
	Down	--	**3SU1900-0AF16-0DM0**		1	10 units	41J
	Forward	--	**3SU1900-0AF16-0DN0**		1	10 units	41J
	Right	--	**3SU1900-0AF16-0DQ0**		1	10 units	41J
	Left	--	**3SU1900-0AF16-0DR0**		1	10 units	41J
	Stop	--	**3SU1900-0AF16-0DS0**		1	10 units	41J
	Start	--	**3SU1900-0AF16-0DT0**		1	10 units	41J
	Reset	--	**3SU1900-0AF16-0DU0**		1	10 units	41J
	Test	--	**3SU1900-0AF16-0DV0**		1	10 units	41J
	Open	--	**3SU1900-0AF16-0DW0**		1	10 units	41J
	Close	--	**3SU1900-0AF16-0DX0**		1	10 units	41J
	Running	--	**3SU1900-0AF16-0EB0**		1	10 units	41J
	Fault	--	**3SU1900-0AF16-0EC0**		1	10 units	41J
	Fast	--	**3SU1900-0AF16-0EE0**		1	10 units	41J
	Slow	--	**3SU1900-0AF16-0EF0**		1	10 units	41J
	EMERGENCY STOP	--	**3SU1900-0AF16-0DA0**		1	10 units	41J

3SU1900-0AF16-0AA0

3SU1900-0AF16-0AB0

3SU1900-0AF16-0AP0

3SU1900-0AF16-0DM0

3SU1900-0AF16-0EC0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Multi-unit packaging, see page 13/17.

Color	Marking	Symbol No.	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Labeling plates 22 mm x 22 mm							
Inscription in French							
Black/white (label/lettering)	Marche	--	**3SU1900-0AF16-0GA0**		1	10 units	41J
	Arrêt	--	**3SU1900-0AF16-0GB0**		1	10 units	41J
	Montée	--	**3SU1900-0AF16-0GC0**		1	10 units	41J
	Descente	--	**3SU1900-0AF16-0GD0**		1	10 units	41J
	Retour	--	**3SU1900-0AF16-0GF0**		1	10 units	41J
	Droite	--	**3SU1900-0AF16-0GG0**		1	10 units	41J
	Gauche	--	**3SU1900-0AF16-0GH0**		1	10 units	41J
	Ouvert	--	**3SU1900-0AF16-0GJ0**		1	10 units	41J
	Fermé	--	**3SU1900-0AF16-0GK0**		1	10 units	41J
	Rapide	--	**3SU1900-0AF16-0GL0**		1	10 units	41J
	En service	--	**3SU1900-0AF16-0GM0**		1	10 units	41J
	Défaut	--	**3SU1900-0AF16-0GN0**		1	10 units	41J
	Sous tension	--	**3SU1900-0AF16-0GS0**		1	10 units	41J
	Manu Auto	--	**3SU1900-0AF16-0GT0**		1	10 units	41J
	Marche Arrêt	--	**3SU1900-0AF16-0GU0**		1	10 units	41J
	Réarmement	--	**3SU1900-0AF16-0GV0**		1	10 units	41J
	Lent	--	**3SU1900-0AF16-0GW0**		1	10 units	41J
	Arrêt d'urgence	--	**3SU1900-0AF16-0GQ0**		1	10 units	41J
With symbol (ON/OFF)							
Black/white (label/lettering)	O	5008 IEC	**3SU1900-0AF16-0QA0**		1	10 units	41J
	I	5007 IEC	**3SU1900-0AF16-0QB0**		1	10 units	41J
	II	--	**3SU1900-0AF16-0QC0**		1	10 units	41J
	III	--	**3SU1900-0AF16-0QD0**		1	10 units	41J
	O I	--	**3SU1900-0AF16-0QG0**		1	10 units	41J
	I O II	--	**3SU1900-0AF16-0QK0**		1	10 units	41J
	I O (below each other)	--	**3SU1900-0AF16-0QP0**		1	10 units	41J
	II O I (below each other)	--	**3SU1900-0AF16-0QQ0**		1	10 units	41J
With symbol (graphic)							
Black/white (label/lettering)	ARROW DIRECTION TO RIGHT	5022 IEC	**3SU1900-0AF16-0QR0**		1	10 units	41J
	PUMP	0134 ISO	**3SU1900-0AF16-0RD0**		1	10 units	41J
	FAN	--	**3SU1900-0AF16-0RV0**		1	10 units	41J
	COOLING	--	**3SU1900-0AF16-0RW0**		1	10 units	41J
	ILLUMINATION	--	**3SU1900-0AF16-0RX0**		1	10 units	41J
	MOTOR	--	**3SU1900-0AF16-0RY0**		1	10 units	41J

3SU1900-0AF16-0GA0

3SU1900-0AF16-0GB0

3SU1900-0AF16-0QQ0

3SU1900-0AF16-0RW0

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Multi-unit packaging, see page 13/17.	Color	Marking	Symbol No.	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Labeling plates 22 mm x 22 mm								
3SU1900-0AF81-0AA0	***For self-inscription***							
	Silver/black (label/lettering)	None	--	**3SU1900-0AF81-0AA0**		100	10 units	41J
	With customized inscription							
	Silver/black (label/lettering)	Inscriptions or symbols, see "Options", page 13/122.		**3SU1900-0AF81-0AZ0**		1	1 unit	41J
3SU1900-0AF81-0AB0	***Inscription in German***							
	Silver/black (label/lettering)	Ein	--	**3SU1900-0AF81-0AB0**		1	10 units	41J
		Aus	--	**3SU1900-0AF81-0AC0**		1	10 units	41J
		Auf	--	**3SU1900-0AF81-0AD0**		1	10 units	41J
		Ab	--	**3SU1900-0AF81-0AE0**		1	10 units	41J
		Vor	--	**3SU1900-0AF81-0AF0**		1	10 units	41J
		Zurück	--	**3SU1900-0AG0**		1	10 units	41J
		Rechts	--	**3SU1900-0AH0**		1	10 units	41J
		Links	--	**3SU1900-0AJ0**		1	10 units	41J
3SU1900-0AF81-0DD0		Halt	--	**3SU1900-0AK0**		1	10 units	41J
		Zu	--	**3SU1900-0AL0**		1	10 units	41J
		Schnell	--	**3SU1900-0AM0**		1	10 units	41J
		Langsam	--	**3SU1900-0AN0**		1	10 units	41J
		Betrieb	--	**3SU1900-0AP0**		1	10 units	41J
		Störung	--	**3SU1900-0AQ0**		1	10 units	41J
		Einrichten	--	**3SU1900-0AR0**		1	10 units	41J
		NOT AUS	--	**3SU1900-0AS0**		1	10 units	41J
		NOT-HALT	--	**3SU1900-0AT0**		1	10 units	41J
		Hand O Auto	--	**3SU1900-0DD0**		1	10 units	41J
3SU1900-0AF81-0DU0	***Inscription in English***							
	Silver/black (label/lettering)	Stop	--	**3SU1900-0AF81-0DS0**		1	10 units	41J
		Start	--	**3SU1900-0AF81-0DT0**		1	10 units	41J
		Reset	--	**3SU1900-0AF81-0DU0**		1	10 units	41J
		Test	--	**3SU1900-0AF81-0DV0**		1	10 units	41J
		Open	--	**3SU1900-0AF81-0DW0**		1	10 units	41J
3SU1900-0AF81-0QK0	***With symbol (ON/OFF)***							
	Silver/black (label/lettering)	O	5008 IEC	**3SU1900-0AF81-0QA0**		1	10 units	41J
		I	5007 IEC	**3SU1900-0AF81-0QB0**		1	10 units	41J
		II	--	**3SU1900-0AF81-0QC0**		1	10 units	41J
		III	--	**3SU1900-0AF81-0QD0**		1	10 units	41J
		O I	--	**3SU1900-0AF81-0QG0**		1	10 units	41J
		I O II	--	**3SU1900-0AF81-0QK0**		1	10 units	41J
		I O (below each other)	--	**3SU1900-0AF81-0QP0**		1	10 units	41J
		II O I (below each other)	--	**3SU1900-0AF81-0QQ0**		1	10 units	41J
3SU1900-0AF81-0QR0	***With symbol (graphic)***							
	Silver/black (label/lettering)	→ ARROW DIRECTION TO RIGHT	5022 IEC	**3SU1900-0AF81-0QR0**		1	10 units	41J

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Options

Customized inscriptions

The labels can be inscribed with text and symbols not listed in the ordering data.

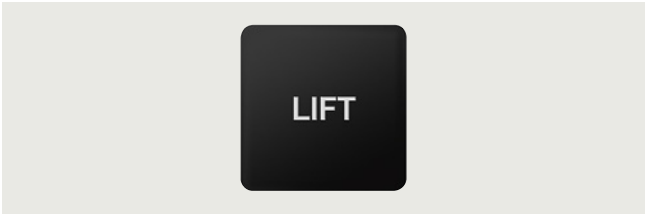
The default typeface used for inscriptions with text is Arial and the text is centered.

The font height is 4 mm (1- and 2-line) and 3.5 mm (3-line).

Up to 8 characters per line are possible.

Examples of customized inscriptions

Two-line inscription in upper/lower case (Q0Y)



Single-line inscription in upper case (Q1Y)

Backing plate for enclosures, customized inscription (Q2Y)

Symbol number 5011 according to IEC 60417 (Q3Y)

Any symbol according to order form supplement (Q9Y)

Ordering notes

Append the following order codes to the article number:

- **Q0Y:** Text line(s) in upper/lower case, always upper case for beginning of line,
  e.g. Z1=Lift Z2=Lower
- **Q1Y:** Text line(s) in upper case,
  e.g. Z1=LIFT Z2=LOWER
- **Q2Y:** Text line(s) in lower case,
  e.g. Z1=lift off Z2=lower off
- **Q5Y:** Text line(s) in upper/lower case, all words begin with upper case letters,
  e.g. Z1=Lift Off Z2=Lower Off
- **Q3Y:** Symbol with number according to ISO 7000 or IEC 60417
- **Q9Y:** Inscription of choice, text or symbol, can only be ordered via SIRIUS ACT configurator with a Configuration Identification Number (CIN)

When ordering, specify the required inscription without umlauts (ä, ö, ü) and without spaces after Z=, Z1=, etc. in addition to the article number and order code (see ordering examples 1 to 3).

In the case of multi-line inscriptions, the text must be assigned to the respective line,
e.g. Z1=LIFT Z2=LOWER (see ordering example 1).

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417 (see ordering examples 2 and 3).

The SIRIUS ACT configurator must be used to select special inscriptions and symbols (see ordering example 4). In this case, a CIN (Configuration Identification Number) is generated for placement of future orders. It is then possible to place an order directly via the SIRIUS ACT configurator using the CIN (Mall shopping cart) or via the standard ordering channels.

Standard ordering channels:

- Configurator: www.siemens.com/sirius-act/configurator
- Industry Mall: www.siemens.com/industrymall

Ordering example 1

A label with 2 lines of text is required:

3SU1900-0AF16-0AZ0
Q1Y
Z1=LIFT
Z2=LOWER

Ordering example 2

A label inscribed with symbol No. 5011 according to IEC 60417 is required:

3SU1900-0AF16-0AZ0
Q3Y
Z=5011 IEC

Ordering example 3

A label inscribed with symbol No. 1118 according to ISO 7000 is required:

3SU1900-0AF16-0AZ0
Q3Y
Z=1118 ISO

Ordering example 4

A label with customized inscription is required:

3SU1900-0AF16-0AZ0
Q9Y
CIN.....
(20-digit number generated from the SIRIUS ACT configurator)

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Overview

More information

Label Designer software, see www.siemens.com/sirius-label-designer

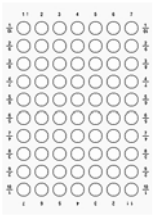
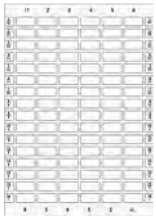
Label inscriptions

Using the *Label Designer* software, which can be downloaded from the internet, and the labeling plates for laser inscription you can create your own customized labels with a standard laser printer. The self-adhesive or snap-on labels can be stuck or snapped onto the corresponding label holders. Round labels are provided for inserting in illuminated pushbuttons and switches.

The labels are suitable for inscription with one to three lines of text or symbols.

For applications with more exacting requirements we recommend factory-printed labeling plates and insert labels (laser-printed or engraved depending on the type).

Selection and ordering data

	Mounting type	Height	Width	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm	mm					
Labels for printing – insert labels								
 3SU1900-0BH60-0AA0	Insert	--	--	**3SU1900-0BH60-0AA0**		100	490 units	41J
Labels for printing – labeling plates								
 3SU1900-0BJ61-0AA0	Self-adhesive	12.5	27.5	**3SU1900-0BJ61-0AA0**		100	480 units	41J
		17.5	27	**3SU1900-0BK61-0AA0**		100	720 units	41J
		27	27	**3SU1900-0BL61-0AA0**		100	480 units	41J
		22	22	**3SU1900-0BM61-0AA0**		100	700 units	41J

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*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.	Color	Mounting diameter	Mounting type	Outer diameter	Marking	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm		mm						
EMERGENCY STOP backing plates (2 mm thick)										
3SU1900-0BB31-0AT0	Yellow/black (label/lettering)	22	None	45	None	**3SU1900-0BA31-0AA0**		1	10 units	41J
					EMERGENCY OFF (Polish)	**3SU1900-0BA31-0ND0**		1	10 units	41J
				60	NOT-HALT, EMERGENCY STOP, ARRÊT D'URGENCE, EMERGENZA (German, English, French, Italian)	**3SU1900-0BN31-0NC0**		1	10 units	41J
				75	None	**3SU1900-0BB31-0AA0**		1	10 units	41J
					NOT-AUS	**3SU1900-0BB31-0AS0**		1	10 units	41J
					NOT-HALT	**3SU1900-0BB31-0AT0**		1	10 units	41J
					EMERGENCY STOP	**3SU1900-0BB31-0DA0**		1	10 units	41J
					EMERGENCY OFF (Polish)	**3SU1900-0BB31-0ND0**		1	10 units	41J
	With customized inscription									
	Yellow/black (label/lettering)	22	None	45	Inscriptions or symbols, see "Options", page 13/126.	**3SU1900-0BA31-0AZ0**		1	10 units	41J
				75		**3SU1900-0BB31-0AZ0**		1	10 units	41J
EMERGENCY STOP backing plates (5 mm thick), illuminated (24 V AC/DC)										
3SU1901-0BD31-0AA0	Yellow/black (label/lettering)	22	Self-adhesive	60	None	**3SU1901-0BD31-0AA0**		1	1 unit	41J
					NOT-AUS	**3SU1901-0BD31-0AS0**		1	1 unit	41J
					NOT-HALT	**3SU1901-0BD31-0AT0**		1	1 unit	41J
					EMERGENCY STOP	**3SU1901-0BD31-0DA0**		1	1 unit	41J
					NOT-HALT, EMERGENCY STOP, EMERGENZA, EMERGENCIA (German, English, Italian, Spanish)	**3SU1901-0BD31-0NB0**		1	1 unit	41J
	With customized inscription									
	Yellow/black (label/lettering)	22	None	60	Inscriptions or symbols, see "Options", page 13/126.	**3SU1901-0BD31-0AZ0**		1	1 unit	41J
EMERGENCY STOP backing plates (0.3 mm thick)										
3SU1900-0BC31-0NB0	Yellow/black (label/lettering)	22	Self-adhesive	75	None	**3SU1900-0BC31-0AA0**		1	10 units	41J
					NOT-AUS	**3SU1900-0BC31-0AS0**		1	10 units	41J
					NOT-HALT	**3SU1900-0BC31-0AT0**		1	10 units	41J
					EMERGENCY STOP	**3SU1900-0BC31-0DA0**		1	10 units	41J
					ARRÊT D'URGENCE	**3SU1900-0BC31-0GQ0**		1	10 units	41J
					EMERGENZA	**3SU1900-0BC31-0JA0**		1	10 units	41J
					Nodstop	**3SU1900-0BC31-0LA0**		1	10 units	41J
					EMERGENCY OFF (Chinese)	**3SU1900-0BC31-0MA0**		1	10 units	41J
					NOT-HALT, EMERGENCY STOP, EMERGENZA, EMERGENCIA (German, English, Italian, Spanish)	**3SU1900-0BC31-0NB0**		1	10 units	41J
	With customized inscription									
	Yellow/black (label/lettering)	22	Self-adhesive	75	Inscriptions or symbols, see "Options", page 13/126.	**3SU1900-0BC31-0AZ0**		1	1 unit	41J
Labeling plates (1.2 mm thick) for potentiometers										
3SU1900-0BG16-0RU0	Black/white (label/lettering)	22	None	40	--	**3SU1900-0BG16-0AA0**		1	10 units	41J
					SYMBOL: 0 ... 9	**3SU1900-0BG16-0RT0**		1	10 units	41J
					SYMBOL: 0 … 10	**3SU1900-0BG16-0SA0**		1	10 units	41J
					SYMBOL: Power up	**3SU1900-0BG16-0RU0**		1	10 units	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Color	Mounting diameter	Label fastening method	Height	Width	Marking	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm		mm	mm						
Labeling plates (0.3 mm thick) for enclosures with EMERGENCY STOP without recess											
3SU1900-0BE31-0AS0	Yellow/black (label/lettering)	22	Self-adhesive	38	112	None NOT-AUS NOT-HALT	**3SU1900-0BE31-0AA0** **3SU1900-0BE31-0AS0** **3SU1900-0BE31-0AT0**		1 1 1	10 units 10 units 10 units	41J 41J 41J
Labeling plates (0.3 mm thick) for enclosures with EMERGENCY STOP with recess											
3SU1900-0BF31-0AA0	Yellow/black (label/lettering)	22	Self-adhesive	38	112	None	**3SU1900-0BF31-0AA0**		1	10 units	41J
Device labeling plates for modules with front-plate mounting											
3SU1900-0AY61-0AA0	White/black (label/lettering)	22	Insert	9.5	10.5	None	**3SU1900-0AY61-0AA0**		100	10 units	41J

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Options

Customized inscriptions

The labels can be inscribed with text and symbols not listed in the ordering data.

The EMERGENCY STOP backing plates can be divided into as many as four radial segments. Each segment can be custom-labeled.

The default typeface used for inscriptions with text is Arial and the text is centered.

EMERGENCY STOP backing plate 75 mm:

The font height is 5 mm.
With two radial segments, up to 20 characters are permissible.
With four radial segments, up to 10 characters are permissible.

EMERGENCY STOP backing plate 60 mm:

The font height is 4 mm.
With two radial segments, up to 16 characters are permissible.
With four radial segments, up to 8 characters are permissible.

EMERGENCY STOP backing plate 45 mm:

The font height is 4 mm.
With two radial segments, up to 10 characters are permissible.

Ordering notes

Append the following order codes to the article number:

- **Q0Y:** Segment(s) in upper/lower case, always upper case for beginning of segment, e.g. Z1=Not halt Z2=Emergency stop
- **Q1Y:** Segment(s) in upper case, e.g. Z1=NOT HALT Z2=EMERGENCY STOP
- **Q2Y:** Segment(s) in lower case, e.g. Z1=not halt Z2=emergency stop
- **Q5Y:** Segment(s) in upper/lower case, all words begin with upper case letters, e.g. Z1=Not Halt Z2=Emergency Stop
- **Q3Y:** Symbol with number according to ISO 7000 or IEC 60417
- **Q9Y:** Inscription of choice, text or symbol, can only be ordered via SIRIUS ACT configurator with a Configuration Identification Number (CIN)

When ordering, specify the required inscription without umlauts (ä, ö, ü) and without spaces after Z=, Z1 =, etc. in addition to the article number and order code (see ordering examples 1 to 4).

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417 (see ordering examples 2 and 3).

The SIRIUS ACT configurator must be used to select special inscriptions and symbols (see ordering example 5). In this case, a CIN (Configuration Identification Number) is generated for placement of future orders. It is then possible to place an order directly via the SIRIUS ACT configurator using the CIN (Mall shopping cart) or via the standard ordering channels.

Standard ordering channels:

- Configurator: www.siemens.com/sirius-act/configurator
- Industry Mall: www.siemens.com/industrymall

With ordering options Q0Y, Q1Y, Q2Y, Q3Y and Q5Y, a single-line inscription of two or four radial segments can be implemented. The text or symbol must be assigned to the respective radial segments as follows:

Ordering example 1, two radial segments

An EMERGENCY STOP backing plate,
diameter 75 mm, with two radial segments is required

3SU1900-0BB31-0AZ0
Q1Y
Z1=NOT
Z2=HALT

Ordering example 2, four radial segments

An EMERGENCY STOP backing plate,
diameter 75 mm, with four radial segments is required

3SU1900-0BB31-0AZ0
Q1Y
Z1=E-STOP
Z2=EMERGENCIA
Z3=NOT-HALT
Z4=EMERGENZA

Ordering example 3

An EMERGENCY STOP backing plate,
diameter 75 mm, with symbol No. 5011 according to IEC 60417 is required:

3SU1900-0BB31-0AZ0
Q3Y
Z=5011 IEC

Ordering example 4

An EMERGENCY STOP backing plate,
diameter 75 mm, with symbol No. 1118 according to ISO 7000 is required:

3SU1900-0BB31-0AZ0
Q3Y
Z=1118 ISO

Ordering example 5

An EMERGENCY STOP backing plate,
diameter 75 mm, with customized inscription is required:

3SU1900-0BB31-0AZ0
Q9Y
CIN.....
(20-digit number generated from the SIRIUS ACT configurator)

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Overview

Protection and access protection are suitable for actuators and indicators with diameters 22 mm and 30 mm.

The protective collars cannot be used in conjunction with label holders or single frames.

Selection and ordering data

	Product designation Product version	Mounting diameter mm	Material	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Protective caps									
 3SU1900-0DA10-0AA0	**Sealable cap for pushbuttons, flat**	22	Plastic	Black Clear	**3SU1900-0DA10-0AA0** **3SU1900-0DA70-0AA0**		1 1	1 unit 1 unit	41J 41J
 3SU1900-0EL70-0AA0	**Sealable caps** for • Pushbuttons, raised • Pushbuttons with front ring, raised • Pushbuttons with front ring, raised, castellated	22	Plastic	Black Clear	**3SU1900-0EL10-0AA0** **3SU1900-0EL70-0AA0**		1 1	1 unit 1 unit	41J 41J
 3SU1960-0DA70-0AA0	**Sealable cap for pushbuttons, flat**	30	Plastic	Clear	**3SU1960-0DA70-0AA0**		1	1 unit	41J
 3SU1960-0EY70-0AA0	**Sealable caps for selector switches, short**	30	Plastic	Clear	**3SU1960-0EY70-0AA0**		1	1 unit	41J
 3SU1900-0DB70-0AA0	**Silicone protective caps for pushbuttons, flat**	22	Plastic	Clear	**3SU1900-0DB70-0AA0**		1	5 units	41J

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*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Protection/Access protection

	Product designation Product version	Mounting diameter mm	Material	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Protective caps									
3SU1900-0ED70-0AA0	**Silicone-free protective caps for pushbuttons, flat**	22	Plastic	Clear	**3SU1900-0ED70-0AA0**		1	1 unit	41J
3SU1900-0DC70-0AA0	**Silicone protective caps for pushbuttons, raised**	22	Plastic	Clear	**3SU1900-0DC70-0AA0**		1	1 unit	41J
3SU1900-0EE70-0AA0	**Silicone-free protective caps for pushbuttons, raised**	22	Plastic	Clear	**3SU1900-0EE70-0AA0**		1	1 unit	41J
3SU1900-0DD70-0AA0	**Silicone protective caps for selectors, short**	22	Plastic	Clear	**3SU1900-0DD70-0AA0**		1	1 unit	41J
3SU1900-0EF70-0AA0	**Silicone-free protective caps for selectors, short**	22	Plastic	Clear	**3SU1900-0EF70-0AA0**		1	1 unit	41J
3SU1900-0DE70-0AA0	**Silicone protective caps for mushroom pushbuttons, 40 mm**	22	Plastic	Clear	**3SU1900-0DE70-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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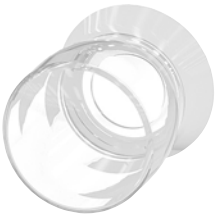
Multi-unit packaging, see page 13/17.

Product designation Product version	Mounting diameter mm	Material	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Protective caps								
 3SU1900-0EG70-0AA0 **Silicone-free protective caps for mushroom pushbuttons, 40 mm**	22	Plastic	Clear	**3SU1900-0EG70-0AA0**		1	1 unit	41J
Silicone protective caps for EMERGENCY STOP, 30 mm	22	Plastic	Clear	**3SU1900-0EN70-0AA0**		1	1 unit	41J
 3SU1900-0DF70-0AA0 **Silicone protective caps for EMERGENCY STOP, 40 mm**	22	Plastic	Clear	**3SU1900-0DF70-0AA0**		1	1 unit	41J
 3SU1900-0DG70-0AA0 **Silicone protective caps for twin pushbuttons, flat**	22	Plastic	Clear	**3SU1900-0DG70-0AA0**		1	1 unit	41J
 3SU1900-0DH70-0AA0 **Silicone protective caps for twin pushbuttons, raised**	22	Plastic	Clear	**3SU1900-0DH70-0AA0**		1	1 unit	41J
 3SU1900-0EK70-0AA0 **Silicone-free protective caps for twin pushbuttons, raised**	22	Plastic	Clear	**3SU1900-0EK70-0AA0**		1	1 unit	41J
 3SU1900-0EB10-0AA0 **Dust caps for key-operated switches** For Siemens[1], BKS, RONIS and O.M.R.	22	Plastic	Clear	**3SU1900-0EB10-0AA0**		1	1 unit	41J
 3SU1900-0EM70-0AA0 **Dust caps for ID key-operated switches**	22	Plastic	Clear	**3SU1900-0EM70-0AA0**		1	1 unit	41J

[1] Siemens lock (compatible with CES locks).

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Protection/Access protection

	Product designation Product version	Mounting diameter mm	Material	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Protective collars									
3SU1900-0DJ10-0AA0	**Sun collars for illuminated pushbuttons**	22	Plastic	Black	**3SU1900-0DJ10-0AA0**		1	1 unit	41J
3SU1900-0DW10-0AA0	**360° protective collars for pushbuttons and selectors, short**	22	Plastic	Black	**3SU1900-0DW10-0AA0**		1	1 unit	41J
3SU1950-0DK80-0AA0	**360° protective collars for pushbuttons** Visibility from the side	22	Metal	Silver	**3SU1950-0DK80-0AA0**		1	1 unit	41J
3SU1950-0DL80-0AA0	**360° protective collar for mushroom pushbuttons** 40 mm, visibility from the side	22	Metal	Silver	**3SU1950-0DL80-0AA0**		1	1 unit	41J
3SU1900-0DY30-0AA0	**Protective collars for EMERGENCY STOP mushroom pushbuttons** Without lock or with RONIS lock	22	Plastic	Yellow Gray	**3SU1900-0DY30-0AA0** **3SU1900-0DY80-0AA0**		1 1	1 unit 1 unit	41J 41J

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Multi-unit packaging, see page 13/17.

Product designation Product version	Mounting diameter mm	Material	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Protective collars								
 3SU1900-0JH30-0AA0								
Protective collars for EMERGENCY STOP mushroom pushbuttons 30 and 40 mm, can be mounted in the top position	22	Plastic	Yellow	**3SU1900-0JH30-0AA0**		1	1 unit	41J
 3SU1950-0DX30-0AA0								
Protective collars for EMERGENCY STOP mushroom pushbuttons Without lock or with RONIS lock, 40 mm, for 5 padlocks	22	Metal	Yellow Gray	**3SU1950-0DX30-0AA0** **3SU1950-0DX80-0AA0**		1 1	1 unit 1 unit	41J 41J
Protective collars for EMERGENCY STOP mushroom pushbuttons 60 mm, for 3 padlocks	22	Plastic	Yellow	**3SU1900-0EX30-0AA0**		1	1 unit	41J
 3SU1900-0EA30-0AA0								
360° protective collars for • Mushroom pushbuttons (30, 40 and 60 mm) • EMERGENCY STOP mushroom pushbuttons without lock (40 and 60 mm) • EMERGENCY STOP mushroom pushbuttons with RONIS lock (40 mm)	22	Plastic	Yellow	**3SU1900-0EA30-0AA0**		1	1 unit	41J
 3SU1900-0EC10-0AA0								
Protection for sensor switches	22	Plastic	Black	**3SU1900-0EC10-0AA0**		1	1 unit	41J

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Protection/Access protection

	Product version	Mounting diameter mm	Material	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Locking devices									
3SU1950-0DM80-0AA0	**Locking devices for pushbuttons** Flat, for raised front ring and raised, castellated front ring	22	Metal	Silver	**3SU1950-0DM80-0AA0**		1	1 unit	41J
3SU1950-0DN80-0AA0	**Locking devices for pushbuttons** Raised	22	Metal	Silver	**3SU1950-0DN80-0AA0**		1	1 unit	41J
3SU1950-0DP80-0AA0	**Locking devices for mushroom pushbuttons D30, D40**	22	Metal	Silver	**3SU1950-0DP80-0AA0**		1	1 unit	41J
3SU1950-0DQ80-0AA0	**Locking devices for selectors** Short/long actuator, in the left position	22	Metal	Silver	**3SU1950-0DQ80-0AA0**		1	1 unit	41J
3SU1950-0DR80-0AA0	**Locking devices for selectors** Short/long actuator, in the center position	22	Metal	Silver	**3SU1950-0DR80-0AA0**		1	1 unit	41J
3SU1950-0DS80-0AA0	**Locking devices for selectors** Short/long actuator, in the right position	22	Metal	Silver	**3SU1950-0DS80-0AA0**		1	1 unit	41J
3SU1950-0DT80-0AA0	**Locking devices for selectors** Short/long actuator, window from center to right, blocked on left	22	Metal	Silver	**3SU1950-0DT80-0AA0**		1	1 unit	41J
3SU1950-0DU80-0AA0	**Locking devices for selectors** Short/long actuator, window from center to left, blocked on right	22	Metal	Silver	**3SU1950-0DU80-0AA0**		1	1 unit	41J
3SU1950-0DV80-0AA0	**Locking device with cover**	22	Metal	Silver	**3SU1950-0DV80-0AA0**		1	1 unit	41J

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Selection and ordering data

Multi-unit packaging, see page 13/17.

Sealing plugs[1)]

Mounting diameter	Material	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
mm							
22	Plastic	Black	**3SU1900-0FA10-0AA0**		1	5 units	41J
	Metal, shiny	Silver	**3SU1950-0FA80-0AA0**		1	5 units	41J
30	Metal, matte	Sand gray	**3SU1960-0FA80-0AA0**		1	1 unit	41J

3SU1900-0FA10-0AA0

3SU1950-0FA80-0AA0

[1)] The sealing plug is mounted with a holder.
Modules might already be mounted on the holder.

USB connections

Product version	Mounting diameter	Accessory material	Accessory color	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm							
USB 3.0	22	Plastic	Black	**3SU1900-0GA10-0AA0**		1	1 unit	41J
		Metal, shiny	Silver	**3SU1950-0GA80-0AA0**		1	1 unit	41J
	30	Metal, matte	Sand gray	**3SU1960-0GA80-0AA0**		1	1 unit	41J

3SU1900-0GA10-0AA0

3SU1960-0GA80-0AA0

RJ45 connections

Product version	Mounting diameter	Accessory material	Accessory color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
RJ-45 Cat. 5e	22	Plastic	Black	**3SU1900-0GB10-0AA0**		1	1 unit	41J
		Metal, shiny	Silver	**3SU1950-0GB80-0AA0**		1	1 unit	41J
	30	Metal, matte	Sand gray	**3SU1960-0GB80-0AA0**		1	1 unit	41J

3SU1900-0GB10-0AA0

3SU1950-0GB80-0AA0

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*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Actuators

	Material	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Buttons, flat[1]							
	For pushbuttons						
3SU1900-0FT20-0AA0	Plastic	Black	**3SU1900-0FT10-0AA0**		100	10 units	41J
		Red	**3SU1900-0FT20-0AA0**		100	10 units	41J
		Yellow	**3SU1900-0FT30-0AA0**		100	10 units	41J
		Green	**3SU1900-0FT40-0AA0**		100	10 units	41J
		Blue	**3SU1900-0FT50-0AA0**		100	10 units	41J
		White	**3SU1900-0FT60-0AA0**		100	10 units	41J
	For illuminated pushbuttons						
3SU1901-0FT30-0AA0	Plastic	Amber	**3SU1901-0FT00-0AA0**		100	10 units	41J
		Red	**3SU1901-0FT20-0AA0**		100	10 units	41J
		Yellow	**3SU1901-0FT30-0AA0**		100	10 units	41J
		Green	**3SU1901-0FT40-0AA0**		100	10 units	41J
		Blue	**3SU1901-0FT50-0AA0**		100	10 units	41J
		White	**3SU1901-0FT60-0AA0**		100	10 units	41J
		Clear	**3SU1901-0FT70-0AA0**		100	10 units	41J
Buttons, raised[1]							
	For pushbuttons						
3SU1900-0FS30-0AA0	Plastic	Black	**3SU1900-0FS10-0AA0**		1	10 units	41J
		Red	**3SU1900-0FS20-0AA0**		1	10 units	41J
		Yellow	**3SU1900-0FS30-0AA0**		1	10 units	41J
		Green	**3SU1900-0FS40-0AA0**		1	10 units	41J
	For illuminated pushbuttons						
3SU1901-0FS40-0AA0	Plastic	Red	**3SU1901-0FS20-0AA0**		1	10 units	41J
		Yellow	**3SU1901-0FS30-0AA0**		1	10 units	41J
		Green	**3SU1901-0FS40-0AA0**		1	10 units	41J
		Blue	**3SU1901-0FS50-0AA0**		1	10 units	41J
		Clear	**3SU1901-0FS70-0AA0**		1	10 units	41J

[1] Buttons are not interchangeable between pushbuttons and illuminated pushbuttons with a raised front ring and with a raised, castellated front ring.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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	Material	Key number	Version of RFID coding	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
RONIS keys									
3SU1950-0FB80-0AA0	Metal	SB30[1] 455	--	Silver	**3SU1950-0FB80-0AA0** **3SU1950-0FC80-0AA0**		1 1	1 unit 1 unit	41J 41J
BKS keys									
3SU1950-0FD80-0AA0	Metal	S1[1]	--	Silver	**3SU1950-0FD80-0AA0**		1	1 unit	41J
O.M.R. keys									
3SU1950-0FJ50-0AA0	Metal	73038 73037 73034 73033	--	Blue Red Black Yellow	**3SU1950-0FJ50-0AA0** **3SU1950-0FK20-0AA0** **3SU1950-0FL10-0AA0** **3SU1950-0FM30-0AA0**		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J
Siemens keys[1]									
3SU1950-0FP80-0AA0	Metal	LSG1 SSG10[2] VL5	--	Silver	**3SU1950-0FN80-0AA0** **3SU1950-0FP80-0AA0** **3SU1950-0FQ80-0AA0**		1 1 1	1 unit 1 unit 1 unit	41J 41J 41J
ID keys ID group individual									
3SU1900-0FU60-0AA0	Plastic	--	Individually coded, programmable several times	White	**3SU1900-0FU60-0AA0**		1	1 unit	41J
ID keys									
3SU1900-0FV40-0AA0	Plastic	--	ID group 1 ID group 2 ID group 3 ID group 4	Green Yellow Red Blue	**3SU1900-0FV40-0AA0** **3SU1900-0FW30-0AA0** **3SU1900-0FX20-0AA0** **3SU1900-0FY50-0AA0**		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J

1) Siemens lock (compatible with CES locks).

2) Also available with special lock. Supplement the article number with **"-Z"** and the order code **"Y04"** and specify the required lock in plain text. Additional price on request.

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Enclosures

Overview

The accessories can be used for plastic and metal enclosures.

Selection and ordering data

	Product version	Material	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Metric cable glands								
3SU1900-0HG10-0AA0	**M20 for round cable and enclosure** With 1 to 3 command points	Plastic	Black	**3SU1900-0HG10-0AA0**		1	1 unit	41J
	M25 for round cable and enclosure With 4 and 6 command points	Plastic	Black	**3SU1900-0HH10-0AA0**		1	1 unit	41J
	M20 for round cable and AS-i enclosure With 1 to 3 command points with 2-pole cable connector for AS-i module	Plastic	Black	**3SU1900-0JA10-0AA0**		1	1 unit	41J
	M25 for round cable and AS-i enclosure With 4 and 6 command points with 2-pole plug-in connector for AS-i module	Plastic	Black	**3SU1900-0JB10-0AA0**		1	1 unit	41J
	M20 for round cable and IO-Link enclosure With 1 to 3 command points with 10-pole plug-in connector for IO-Link	Plastic	Black	**3SU1900-0JC10-0AA0**		1	1 unit	41J
	M25 for round cable and IO-Link enclosure With 4 and 6 command points with 10-pole plug-in connector for IO-Link	Plastic	Black	**3SU1900-0JD10-0AA0**		1	1 unit	41J
	M20 for AS-i shaped cable and AS-i enclosure With 1 to 3 command points with 2-pole plug-in connector for AS-i module	Plastic	Black	**3SU1900-0HE10-0AA0**		1	1 unit	41J
	M25 for AS-i shaped cable and AS-i enclosure With 4 and 6 command points with 2-pole plug-in connector for AS-i module	Plastic	Black	**3SU1900-0HF10-0AA0**		1	1 unit	41J
Connection pieces								
3SU1900-0JQ10-0AA0	**M20/M20, M20/M25, M25/M25 cable entry** For connecting two enclosures, plastic or metal	Plastic	Black	**3SU1900-0JQ10-0AA0**		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Product version	Material	Color	Insulation piercing method Article No.	PU (UNIT, SET, M) Price per PU	PS*	PG
Adapters for AS-i shaped cable							
 3SU1900-0HX10-0AA0	M20 cable entry	Plastic	Black	**3SU1900-0HX10-0AA0**	1	1 unit	41J
	M25 cable entry	Plastic	Black	**3SU1900-0HY10-0AA0**	1	1 unit	41J
Adapters for tab connection							
 3SU1900-0JJ10-0AA0	**Adapter, M12 plug** M20/M25 cable entry						
	4-pole	Plastic	Black	**3SU1900-0JJ10-0AA0**	1	1 unit	41J
	5-pole	Plastic	Black	**3SU1900-0JK10-0AA0**	1	1 unit	41J
	8-pole	Plastic	Black	**3SU1900-0JL10-0AA0**	1	1 unit	41J
 3SU1900-0JM10-0AA0	**Adapter, M12 socket** M20/M25 cable entry						
	4-pole	Plastic	Black	**3SU1900-0JM10-0AA0**	1	1 unit	41J
	5-pole	Plastic	Black	**3SU1900-0JN10-0AA0**	1	1 unit	41J
	8-pole	Plastic	Black	**3SU1900-0JP10-0AA0**	1	1 unit	41J
Adapters for enclosures with 1 command point							
 3SU1900-0JF10-0AA0	Between enclosure top and lower part, for installation of 2-pole or two 1-pole contact modules with front plate mounting. Not suitable for 3SU1801-1AA00-1AA1.	Plastic	Black	**3SU1900-0JF10-0AA0**	1	1 unit	41J
Adapters for modules with base mounting							
 3SU1900-0JG10-0AA0	Without fixing screws	Plastic	Black	**3SU1900-0JG10-0AA0**	1	1 unit	41J
Enclosure cover monitoring[1)]							
 3SU1900-0HM10-0AA0	Module with extension plunger	Plastic	Black	**3SU1900-0HM10-0AA0**	1	1 unit	41J

1) In addition, a 3SU1400-2AA10-.BA0 contact module is required.

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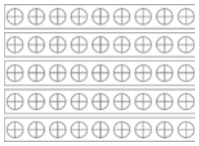
Miscellaneous accessories

Selection and ordering data

Product designation Product version	Material	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Miscellaneous accessories							
 3SU1900-0KA10-0AA0 **PCB carriers**	Plastic	Black	**3SU1900-0KA10-0AA0**		100	10 units	41J
 3SU1900-0KC10-0AA0 **Pressure plates for selectors and locks**	Plastic	White	**3SU1900-0KC10-0AA0**		100	10 units	41J
 3SU1900-0KF10-0AA0 **Drilling template for grid** 30 mm x 40 mm, horizontal	Plastic	Black	**3SU1900-0KF10-0AA0**		1	1 unit	41J
 3SU1900-0KG10-0AA0 **Extension plungers** For compensation of the distance between the pushbutton and the resetting plunger of an overload relay	Plastic	Gray	**3SU1900-0KG10-0AA0**		1	1 unit	41J
 3SU1950-0JE80-0AA0 **Strut profile mounting adapters**	Metal	Sand gray	**3SU1950-0JE80-0AA0**		1	1 unit	41J
 3RK1901-3QA00 **Cable clip for cable adapters** For enclosure with AS-Interface shaped cable	Plastic	Black	**3RK1901-3QA00**		100	10 units	42C

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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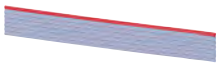
Multi-unit packaging, see page 13/17.

Product designation Product version	Material	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Miscellaneous accessories							
 3SU1900-0KH80-0AA0	**Adapters for DIN-rail mounting**	Plastic	Black	**3SU1900-0KH80-0AA0**	1	1 unit	41J
 3SU1950-0KJ80-0AA0	**Adapters for actuators and indicators with 30 mm diameter** With front ring for flat mounting	Metal	Silver	**3SU1950-0KJ80-0AA0**	1	1 unit	41J
 3SU1950-0KB10-0AA0	**Adapters for 30.5 mm to 22.5 mm mounting hole**	Metal, shiny	Silver	**3SU1950-0KB10-0AA0**	1	1 unit	41J
	(for 22 mm range)	Metal, matte	Sand gray	**3SU1960-0KB10-0AA0**	1	1 unit	41J
 3SU1910-0KK80-0AA0	**Grounding studs** For grounding metal actuators for fitting in front plates made of non-conducting materials						
	• For metal holders	Metal	Silver	**3SU1910-0KK80-0AA0**	100	50 units	41J
 3SU1950-0KK80-0AA0	• For universal holders for plastic and metal	Metal	Silver	**3SU1950-0KK80-0AA0**	100	50 units	41J
 3SU1900-0KL10-0AA0	**Plugs for sensor switches, angled socket with screw terminal connection**	Plastic	Black	**3SU1900-0KL10-0AA0**	1	1 unit	41J
 3SU1900-0KP80-0AA0	**Flat ribbon cable** 7 cores						
	• Length 5 m	Plastic	Gray	**3SU1900-0KQ80-0AA0**	1	1 unit	41J
	• Length 10 m	Plastic	Gray	**3SU1900-0KP80-0AA0**	1	1 unit	41J

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General data

Overview

More information

Industry Mall, see www.siemens.com/product?3SB2

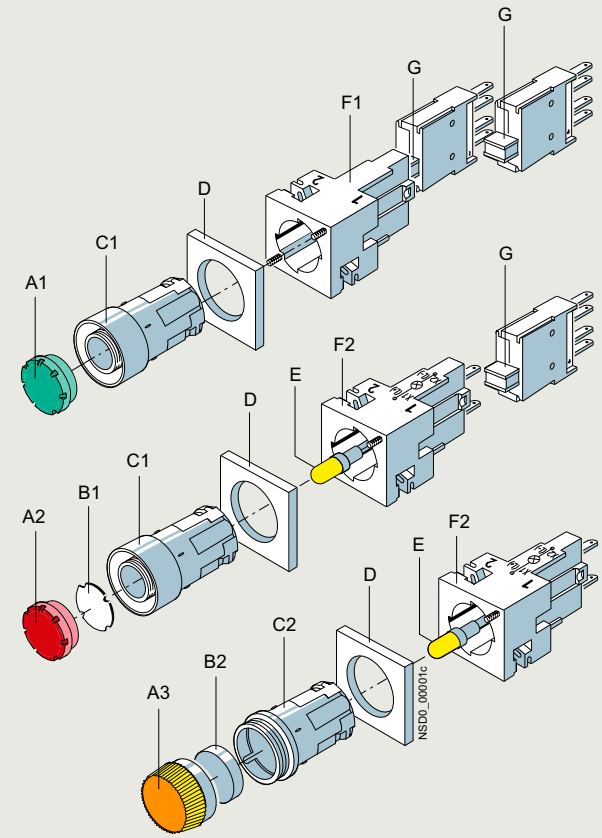
Configuration Manual, see https://support.industry.siemens.com/cs/ww/en/view/107194954

The 3SB2 pushbuttons and indicator lights are provided for front plate mounting and rear connection with flat connectors. For use on printed circuit boards, contact blocks and lampholders with solder pins are also available.

Standards

IEC 60947-1,
IEC 60947-5-1,
IEC 60947-5-5 for EMERGENCY STOP mushroom pushbuttons

Version with flat connector

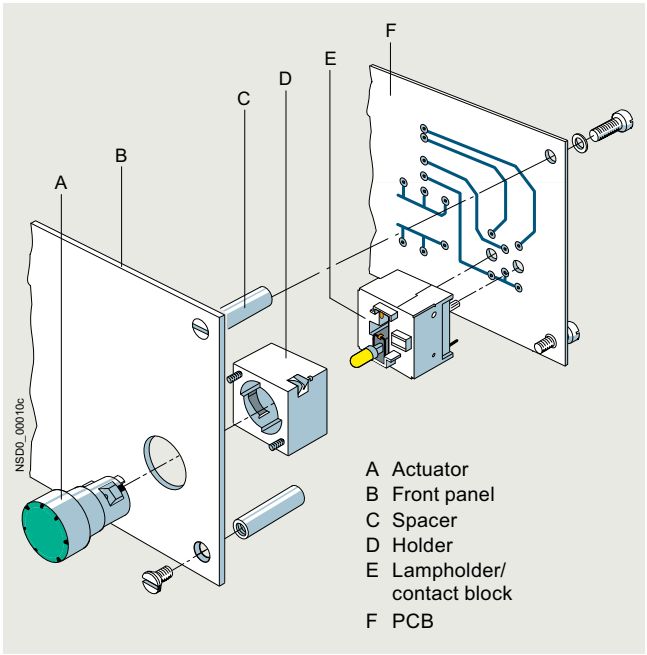


A1 Button, flat
A2 Illuminated button, flat
A3 Screw lens for indicator light
B1 Insert label, for labeling
B2 Insert cap, for labeling
C1 Collar with extruded front ring
C2 Collar for indicator light
D Frame for rectangular design
E Wedge base lamp, W2 x 4.6 d
F1 Holder
F2 Lampholder with holder
G Contact block (1 NO or 1 NC) for snapping onto the holder or onto the lampholder

3SB2 pushbuttons and indicator lights

PCB mounting

For use on printed circuit boards, special contact blocks and lampholders for soldering into the printed circuit board are available. For this purpose, the contact blocks and lampholders are fitted with 0.8 mm x 0.8 mm solder pins of length 3.5 mm.



3SB2 pushbuttons with solder pins

Connection methods

Flat connectors

Solder pin connections

The connection method is indicated in the corresponding tables by the respective symbol shown on orange backgrounds.

Application

The devices are climate-proof and suitable for marine applications.

Safety EMERGENCY STOP according to ISO 13850

For controls according to IEC 60204-1, the mushroom push-buttons of the 3SB2 series are suitable for use as a safety EMERGENCY STOP.

Safety circuits

Standard IEC 60947-5-1 requires positive opening. This means that for the purpose of personal safety, the reliable opening of NC contacts in all safety circuits is expressly prescribed for the electrical equipment of machines and is designated according to IEC 60947-5-1 with the symbol ⊖.

PL e according to ISO 13849-1 can be attained with the EMERGENCY STOP mushroom pushbuttons if the corresponding fail-safe evaluation units are selected and correctly installed, e.g. the 3SK safety relays (see page 11/1 onwards) or matching units from the ASIsafe, SIMATIC or SINUMERIK product ranges.

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Technical specifications

Type		3SB2
Contact blocks and lampholders		
Standards		IEC 60947-5-1 IEC 60947-5-5
Rated insulation voltage U_i	V	250
Conventional thermal current I_{th}	A	10
Rated operational currents I_e at rated operational voltage U_e		
• Alternating current AC-12		
- At U_e = 24 … 230 V	A	10
• Alternating current AC-15		
- At U_e = 24 … 230 V	A	4
• Direct current DC-12		
- At U_e = 24 V	A	6
- At U_e = 60 V	A	5
- At U_e = 110 V	A	2.5
- At U_e = 230 V	A	1
• Direct current DC-13		
- At U_e = 24 V	A	3
- At U_e = 60 V	A	1.5
- At U_e = 110 V	A	0.7
- At U_e = 230 V	A	0.3
Contact stability		
• Test voltage/test current		5 V/1 mA
Lamps		
• Bases		Wedge base W2 x 4.6 d
• Rated voltage	V	6, 12, 24, 30, 48, 60
• Rated power, max.	W	1
Short-circuit protection weld-free according to IEC 60947-5-1		
• DIAZED fuse links, utilization category gG		10 A TDz, 16 A Dz
• Miniature circuit breaker with C characteristic according to IEC 60898		10 A
Electrical endurance		
• For utilization category AC-15 with 3RT contactors		10 x 10^6 operating cycles
Mechanical endurance		10 x 10^6 operating cycles
Degree of protection according to IEC 60529		
• Connection of contact blocks and lampholders behind the front plate		IP00
• Contact chambers of the contact blocks behind the front plate		IP40
Finger protection according to IEC 60529 and DGUV Regulation 3		With voltages > 50 V AC or 120 V DC, insulating sleeves must be fitted to the unassigned flat connectors.
Data according to UL and CSA		
Rated voltage		
• Contact blocks	V	250 AC
• Indicator lights (lamp with wedge base W2 × 4.6 d)	V	60; 1 W
Uninterrupted current	A	5
Switching capacity		B 300, R 300
Actuating and signaling elements		
Mechanical endurance		
• Pushbuttons		10 x 10^6 operating cycles
• Actuators, rotary or latching		3 x 10^5 operating cycles
• Illuminated pushbuttons		3 x 10^6 operating cycles
Climatic withstand capability		Climate-proof; suitable for marine applications
Ambient temperature		
• During operation, non-illuminated devices and complete with LED	°C	-25 … +70
• During operation, devices with incandescent lamp	°C	-25 … +60
• During storage, transport	°C	-40 ... +80
Degree of protection according to IEC 60529		
• Actuators and indicators		IP65
• Actuators and indicators with protective cap		IP67
Protective measures		
• For mounting in metal front plates and enclosures		The actuators and lens assemblies must not be included in the protective measures.
• For fitting into enclosures with total insulation		The protective measure "Total insulation" is retained.
Shock resistance according to IEC 60068-2-27		
• Shock amplitude		≤ 50 *g*
• Shock duration	ms	11
• Shock form		Half-sine

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General data

Configuration

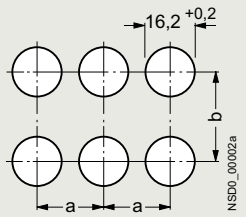
Design

Two design versions can be mounted:

- Round design: The 3SB2 pushbuttons and indicator lights consist of the actuator, holder, contact block and lampholders. Depending on the specific application, various versions can be assembled. Complete units are offered for the most commonly used applications.
- Square design: With square, black frames the round units can be given a square look. The frames are inserted underneath the round actuators. Further mounting is the same as for the round version.

Mounting and fixing:

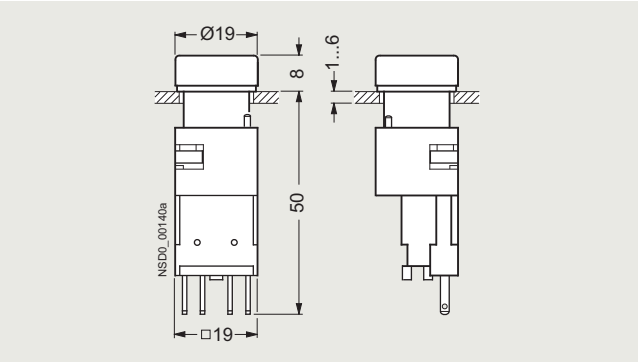
Mounting dimensions according to EN 50007
(does not apply to EMERGENCY STOP mushroom pushbuttons):



Minimum clearance	a	b
Round design	19	19
Square design without labeling plate	21	21
Round and square design with labeling plate	21	32
For 2 selector switches and 3 switching positions, maintained contact, side by side	21	21

For mounting, the actuator or the lens assembly is inserted from the front into the hole in the front plate. Four small nubs ensure a secure fitting in the hole. The holder is plugged on from the back and snaps automatically into place. The module is fixed to the holder with two screws so that it is immune to vibrations.

One or two contact blocks can be mounted on the holder. They are inserted into the holder with slide slots and held down with two snap brackets.



Pushbutton (flat) with holder and contact block

If a command point is fitted with an indicator light or illuminated pushbutton, a lamp socket with lampholder must be used instead of a holder. It is suitable for incandescent lamps or LEDs with bases of type W2 x 4.6 d.

PCB mounting

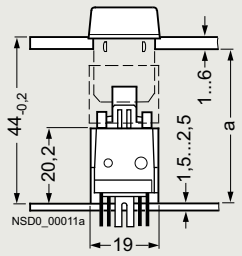
The command point comprises the actuator – e.g. 3SB2 pushbutton, illuminated pushbutton or indicator light –, which is mounted in the front plate, and a contact block and a lampholder which are soldered to the PCB. For this purpose, the contact blocks and lampholders are fitted with 0.8 mm x 0.8 mm solder pins of length 3.5 mm.

Mounting and fixing:

Mounting dimensions according to EN 50007

The actuators are mounted in the same way as 3SB2 front plate mounting devices.

The contact blocks and lampholders are plugged into the printed circuit board by means of their solder pins and can be flow-soldered. After soldering, the devices must be flush with the board and perpendicular to it. The printed circuit board must be supported on spacing bolts so that it cannot sag or bend more than 0.1 mm.



Length **a** of spacing bolts:
a = $44_{-0.2}$ minus front plate thickness.

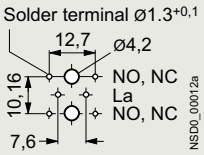
When using backing plates, the length **a** is reduced by 0.8 mm.

Illuminated pushbutton with solder pin connection

To avoid bending the PCB when the command device is operated, sufficient spacing bolts must be provided as shown in the table below:

PCB thickness	Max. distance between spacing bolts
1.5 mm	80 mm
2.5 mm	150 mm
When using EMERGENCY STOP pushbuttons	Always 50 mm

These details are based on epoxy resin glass fiber mat.



Solder pin spacing

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Selection and ordering data

Version	Contact blocks	Color of actuator	Flat connectors Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 3SB2202-0AE01							
Pushbuttons with flat button	1 NO	Black	**3SB2202-0AB01**		1	1 unit	41J
	1 NC	Black	**3SB2203-0AB01**		1	1 unit	41J
	1 NC	Red	**3SB2203-0AC01**		1	1 unit	41J
	1 NO	Yellow	**3SB2202-0AD01**		1	1 unit	41J
	1 NO	Green	**3SB2202-0AE01**		1	1 unit	41J
	1 NO	Blue	**3SB2202-0AF01**		1	1 unit	41J
	1 NO	White	**3SB2202-0AG01**		1	1 unit	41J
	1 NO	Clear[1]	**3SB2202-0AH01**		1	1 unit	41J
Illuminated pushbuttons with flat button Lampholder W2 x 4.6 d without lamp[2]	1 NC	Red	**3SB2207-0AC01**		1	1 unit	41J
	1 NO	Yellow[1]	**3SB2206-0AD01**		1	1 unit	41J
	1 NO	Green	**3SB2206-0AE01**		1	1 unit	41J
	1 NO	Blue	**3SB2206-0AF01**		1	1 unit	41J
	1 NO	Clear[1]	**3SB2206-0AH01**		1	1 unit	41J
Illuminated pushbuttons with flat button Lampholder W2 x 4.6 d with 24 V incandescent lamp	1 NC	Red	**3SB2227-0AC01**		1	1 unit	41J
	1 NO	Yellow[1]	**3SB2226-0AD01**		1	1 unit	41J
	1 NO	Green	**3SB2226-0AE01**		1	1 unit	41J
	1 NO	Blue	**3SB2226-0AF01**		1	1 unit	41J
	1 NO	Clear[1]	**3SB2226-0AH01**		1	1 unit	41J
 3SB2207-0LC01							
Pushbuttons with raised button	1 NO	Black	**3SB2202-0LB01**		1	1 unit	41J
	1 NC	Red	**3SB2203-0LC01**		1	1 unit	41J
	1 NO	Yellow	**3SB2202-0LD01**		1	1 unit	41J
	1 NO	Blue	**3SB2202-0LF01**		1	1 unit	41J
	1 NO	Clear[1]	**3SB2202-0LH01**		1	1 unit	41J
Illuminated pushbuttons with raised button Lampholder W2 x 4.6 d without lamp[2]	1 NC	Red	**3SB2207-0LC01**		1	1 unit	41J
	1 NO	Yellow[1]	**3SB2206-0LD01**		1	1 unit	41J
	1 NO	Green	**3SB2206-0LE01**		1	1 unit	41J
	1 NO	Blue	**3SB2206-0LF01**		1	1 unit	41J
	1 NO	Clear[1]	**3SB2206-0LH01**		1	1 unit	41J
Illuminated pushbuttons with raised button Lampholder W2 x 4.6 d with 24 V incandescent lamp	1 NC	Red	**3SB2227-0LC01**		1	1 unit	41J
	1 NO	Yellow[1]	**3SB2226-0LD01**		1	1 unit	41J
	1 NO	Green	**3SB2226-0LE01**		1	1 unit	41J
	1 NO	Blue	**3SB2226-0LF01**		1	1 unit	41J
	1 NO	Clear[1]	**3SB2226-0LH01**		1	1 unit	41J
 3SB2203-1AC01							
EMERGENCY STOP mushroom pushbuttons according to ISO 13850, latching[3] Latch automatically when pressed; unlatch by turning the mushroom head counterclockwise, with yellow backing plate with inscription "NOT-HALT"	1 NC ⊖	Red	**3SB2203-1AC01**		1	1 unit	41J

⊖ Positive opening according to IEC 60947-5-1, Annex K. Can be used with 3SK safety relays, see page 11/1 onwards.
Certificate:

1) Inscription with insert labels is possible.

2) Wedge base lamps, see "Accessories", page 13/154.

3) The mushroom pushbutton cannot be combined with 3SB2902-0AB backing plate or 3SB2902-0AA single frame.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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Complete units

Version	Contact blocks	Color of actuator	Flat connectors Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3SB2202-2AC01							
Selectors, 2 switch positions Switching sequence O-I, actuating angle 62°, latching	1 NO	Black	**3SB2202-2AB01**		1	1 unit	41J
	1 NO	Red	**3SB2202-2AC01**		1	1 unit	41J
	1 NO	Green	**3SB2202-2AE01**		1	1 unit	41J
	1 NO	White	**3SB2202-2AG01**		1	1 unit	41J
Selectors, 3 switch positions Switching sequence I-O-II, 2 × actuating angle 62°, latching	1 NO, 1 NO	Black	**3SB2210-2DB01**		1	1 unit	41J
	1 NO, 1 NO	Red	**3SB2210-2DC01**		1	1 unit	41J
	1 NO, 1 NO	Green	**3SB2210-2DE01**		1	1 unit	41J
	1 NO, 1 NO	White	**3SB2210-2DG01**		1	1 unit	41J
Selectors, 3 switch positions Switching sequence I-O-II, 2 × actuating angle 50°, momentary contact	1 NO, 1 NO	Black	**3SB2210-2EB01**		1	1 unit	41J
	1 NO, 1 NO	Red	**3SB2210-2EC01**		1	1 unit	41J
	1 NO, 1 NO	Green	**3SB2210-2EE01**		1	1 unit	41J
	1 NO, 1 NO	White	**3SB2210-2EG01**		1	1 unit	41J

Version	Contact blocks	Lock No.	Key removal position	Flat connectors Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3SB2202-4LB01								
CES key-operated switches[1], 2 switch positions Switching sequence O-I, actuating angle 62°, latching	1 NO	SB2	O	**3SB2202-4LA01**		1	1 unit	41J
	1 NO	SB2	O + I	**3SB2202-4LB01**		1	1 unit	41J
CES key-operated switches[1], 3 switch positions Switching sequence I-O-II, 2 × actuating angle 62°, latching	1 NO, 1 NO	SB2	O	**3SB2210-4PA01**		1	1 unit	41J
	1 NO, 1 NO	SB2	I + O + II	**3SB2210-4PB01**		1	1 unit	41J
CES key-operated switches[1], 3 switch positions Switching sequence I-O-II, 2 × actuating angle 50°, momentary contact	1 NO, 1 NO	SB2	O	**3SB2210-4QA01**		1	1 unit	41J

[1] Also available with additional locking systems. The article number must be supplemented with **"-Z"**, the order code **"Y01"** and the required lock number.

Version	Color of screw lens	Flat connectors Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3SB2224-6BE06						
Indicator lights Lampholder W2 x 4.6 d without lamp[1]	Red	**3SB2204-6BC06**		1	1 unit	41J
	Yellow	**3SB2204-6BD06**		1	1 unit	41J
	Green	**3SB2204-6BE06**		1	1 unit	41J
	White	**3SB2204-6BG06**		1	1 unit	41J
	Clear	**3SB2204-6BH06**		1	1 unit	41J
Indicator lights Lampholder W2 x 4.6 d with 24 V incandescent lamp	Red	**3SB2224-6BC06**		1	1 unit	41J
	Yellow	**3SB2224-6BD06**		1	1 unit	41J
	Green	**3SB2224-6BE06**		1	1 unit	41J
	White	**3SB2224-6BG06**		1	1 unit	41J
	Clear	**3SB2224-6BH06**		1	1 unit	41J

[1] Wedge base lamps, see "Accessories", page 13/154.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Selection and ordering data

Pushbuttons

Version	Color of actuator	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3SB2000-0AF01						
Pushbuttons with flat button	Black	**3SB2000-0AB01**		1	1 unit	41J
	Red	**3SB2000-0AC01**		1	1 unit	41J
	Yellow	**3SB2000-0AD01**		1	1 unit	41J
	Green	**3SB2000-0AE01**		1	1 unit	41J
	Blue	**3SB2000-0AF01**		1	1 unit	41J
	White	**3SB2000-0AG01**		1	1 unit	41J
	Clear[1]	**3SB2000-0AH01**		1	1 unit	41J
Illuminated pushbuttons with flat button	Red	**3SB2001-0AC01**		1	1 unit	41J
	Yellow[1]	**3SB2001-0AD01**		1	1 unit	41J
	Green	**3SB2001-0AE01**		1	1 unit	41J
	Blue	**3SB2001-0AF01**		1	1 unit	41J
	White	**3SB2000-0AG01**		1	1 unit	41J
	Clear[1]	**3SB2000-0AH01**		1	1 unit	41J
3SB2000-0LF01						
Pushbuttons with raised button	Black	**3SB2000-0LB01**		1	1 unit	41J
	Red	**3SB2000-0LC01**		1	1 unit	41J
	Yellow	**3SB2000-0LD01**		1	1 unit	41J
	Blue	**3SB2000-0LF01**		1	1 unit	41J
	White	**3SB2000-0LG01**		1	1 unit	41J
	Clear[1]	**3SB2000-0LH01**		1	1 unit	41J
Illuminated pushbuttons with raised button	Red	**3SB2001-0LC01**		1	1 unit	41J
	Yellow[1]	**3SB2001-0LD01**		1	1 unit	41J
	Green	**3SB2001-0LE01**		1	1 unit	41J
	Blue	**3SB2001-0LF01**		1	1 unit	41J
	Clear[1]	**3SB2000-0LH01**		1	1 unit	41J
3SB2000-1AC01						
EMERGENCY STOP mushroom pushbuttons according to ISO 13850, latching[2] Latch automatically when pressed; unlatch by turning the mushroom head counterclockwise	Red	**3SB2000-1AC01**		1	1 unit	41J

[1] Inscription is possible by inserting a label.

[2] The mushroom pushbutton cannot be combined with 3SB2902-0AB backing plate or 3SB2902-0AA single frame.

Selectors

Version		Color of actuator	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3SB2000-2AB01							
Selectors with 2 switch positions Switching sequence O-I, actuating angle 62°, latching		Black Red Green White	**3SB2000-2AB01** **3SB2000-2AC01** **3SB2000-2AE01** **3SB2000-2AG01**		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J
Selectors with 2 switch positions Switching sequence O-I, actuating angle 50°, momentary contact (reset from the right)		Black Red Green	**3SB2000-2BB01** **3SB2000-2BC01** **3SB2000-2BE01**		1 1 1	1 unit 1 unit 1 unit	41J 41J 41J
Selectors with 2 switch positions Switching sequence O-I, actuating angle 90°, latching		Black Red Green White	**3SB2000-2HB01** **3SB2000-2HC01** **3SB2000-2HE01** **3SB2000-2HG01**		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J
Selectors with 3 switch positions Switching sequence I-O-II, actuating angle 2 x 62°, latching		Black Red Green White	**3SB2000-2DB01** **3SB2000-2DC01** **3SB2000-2DE01** **3SB2000-2DG01**		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J
Selectors with 3 switch positions Switching sequence I-O-II, actuating angle 2 x 50°, momentary contact		Black Red Green White	**3SB2000-2EB01** **3SB2000-2EC01** **3SB2000-2EE01** **3SB2000-2EG01**		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J
Selectors with 3 switch positions Switching sequence I-O-II, actuating angle 2 x 90°, latching		Black	**3SB2000-2JB01**		1	1 unit	41J

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Actuating and signaling elements

Key-operated switches

3SB2000-4LB01

Version		Lock No.	Key removal position	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
CES key-operated switches[1] with 2 keys, 2 switch positions Switching sequence O-I, actuating angle 62°, latching		SB2	O+I O	**3SB2000-4LB01** **3SB2000-4LA01**		1 1	1 unit 1 unit	41J 41J
CES key-operated switches[1] with 2 keys, 2 switch positions Switching sequence O-I, actuating angle 50°, momentary contact		SB2	O	**3SB2000-4MA01**		1	1 unit	41J
CES key-operated switches[1] with 2 keys, 3 switch positions Switching sequence I-O-II, actuating angle 2 x 62°, latching		SB2	I+O+II O I	**3SB2000-4PB01** **3SB2000-4PA01** **3SB2000-4PC01**		1 1 1	1 unit 1 unit 1 unit	41J 41J 41J
CES key-operated switches[1] with 2 keys, 3 switch positions Switching sequence I-O-II, actuating angle 2 x 50°, momentary contact		SB2	O	**3SB2000-4QA01**		1	1 unit	41J

[1] Also available with additional locking systems. The article number must be supplemented with **"-Z"**, the order code **"Y01"** and the required lock number.

Indicator lights

3SB2001-6BD06

Version	Color of screw lens	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Indicator lights with concentric rings (Inscription with insert caps is not possible)	Red	**3SB2001-6BC06**		1	1 unit	41J
	Yellow	**3SB2001-6BD06**		1	1 unit	41J
	Green	**3SB2001-6BE06**		1	1 unit	41J
	Blue	**3SB2001-6BF06**		1	1 unit	41J
	White	**3SB2001-6BG06**		1	1 unit	41J
	Clear	**3SB2001-6BH06**		1	1 unit	41J
Indicator lights, smooth For inscription with insert caps[1]	Red	**3SB2001-6CC06**		1	1 unit	41J
	Yellow	**3SB2001-6CD06**		1	1 unit	41J
	Green	**3SB2001-6CE06**		1	1 unit	41J
	Blue	**3SB2001-6CF06**		1	1 unit	41J
	Clear	**3SB2001-6CH06**		1	1 unit	41J

[1] Insert caps, see "Accessories", page 13/151.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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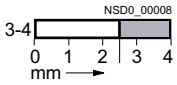
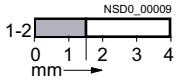
Selection and ordering data

Version	Graphic symbols	Operating travel Contact closed Contact open	Flat connectors Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Contact blocks and lampholders with flat connectors 2 × 2.8 - 0.8 mm according to IEC 60760							
Holders for fixing the actuator and the contact blocks							
 3SB2908-0AA							
Holders for 2 contact blocks Inscription with identification number 1-2	--	--	**3SB2908-0AA**		1	5 units	41J
Lampholders with holder for fixing the actuator and the contact blocks							
 3SB2304-2A							
Lampholders W2 x 4.6 d without lamp	X1 (L+) X2 (L-) NSD0_00003	--	**3SB2304-2A**		1	1 unit	41J
Lampholders W2 x 4.6 d	X1 (L+) X2 (L-) NSD0_00003	--					
• With 6 V incandescent lamp			**3SB2304-2F**		1	1 unit	41J
• With 24 V incandescent lamp			**3SB2304-2H**		1	1 unit	41J
Contact blocks for fixing in the holder or lampholder							
 3SB2404-0B							
Contact blocks with one contact[1]							
1 NO		 NSD0_00008	**3SB2404-0B**		1	1 unit	41J
1 NC ➔		 NSD0_00009	**3SB2404-0C**		1	1 unit	41J

➔ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK safety relays, see page 11/1 onwards.
Certificate:

[1] Plug-in and insulating sleeves, see "Accessories", page 13/155.

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Contact blocks and lampholders

Version	Graphic symbols	Operating travel Contact closed Contact open	Solder pin connections Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Contact blocks and lampholders with solder pins							
3SB2908-0AB **Holders for contact block with solder pins** For mounting the actuators in the front panel	--	--	**3SB2908-0AB**		1	5 units	41J
Lampholders Wedge base W2 x 4.6 d[1]	(L+) X1 (L-) X2	--	**3SB2455-2A**		1	1 unit	41J
Contact blocks							
3SB2455-0B 1 NO	.3 .4	NSD0_00015 3-4 0 1 2 3 4 mm 2,3	**3SB2455-0B**		1	1 unit	41J
1 NC ➔	.1 .2	NSD0_00017 1-2 0 1 2 3 4 mm 1,6	**3SB2455-0C**		1	1 unit	41J
1 NO + 1 NC ➔	13 21 14 22	NSD0_00019 21-22 0 1 2 3 4 mm 1,6	**3SB2455-0J**		1	1 unit	41J
1 NO + 1 NO	13 23 14 24	NSD0_00021 13-14 23-24 0 1 2 3 4 mm 2,3	**3SB2455-0E**		1	1 unit	41J
1 NC + 1 NC ➔	11 21 12 22	NSD0_00023 21-22 11-12 0 1 2 3 4 mm 1,6	**3SB2455-0F**		1	1 unit	41J
Contact blocks and lampholders, wedge base W2 x 4.6 d[1]							
3SB2455-1B 1 NO	13 X1 14 X2	NSD0_01082 13-14 0 1 2 3 4 mm 2,3	**3SB2455-1B**		1	1 unit	41J
1 NC ➔	21 X1 22 X2	NSD0_01083 21-22 0 1 2 3 4 mm 1,6	**3SB2455-1C**		1	1 unit	41J
1 NO + 1 NC ➔	13 21 X1 14 22 X2	NSD0_00019 21-22 0 1 2 3 4 mm 1,6	**3SB2455-1J**		1	1 unit	41J
1 NO + 1 NO	13 23 X1 14 24 X2	NSD0_00021 13-14 23-24 0 1 2 3 4 mm 2,3	**3SB2455-1E**		1	1 unit	41J
1 NC + 1 NC ➔	11 21 X1 12 22 X2	NSD0_00023 21-22 11-12 0 1 2 3 4 mm 1,6	**3SB2455-1F**		1	1 unit	41J

➔ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK safety relays, see page 11/1 onwards.
Certificate:

[1] The lamp is not included in the scope of supply.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

Clear pushbuttons, illuminated pushbuttons and indicator lights can be fitted with insert labels and caps for identification purposes.

The insert labels and insert caps are made of a milky-transparent plastic with black lettering; they can be fitted in any 90° angle.

Inscription

The inscriptions have upper case initial letters. Graphic symbols, including those not listed in the catalog, are according to ISO 7000 or IEC 60417.

Customized inscriptions, see "Options", page 13/152.

Selection and ordering data

	Inscription/symbol		Symbol No.	**Insert labels** For pushbuttons and illuminated pushbuttons, flat Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
For self-inscription								
3SB2901-4AA	Blank		--	**3SB2901-4AA**		100	10 units	41J
With inscription								
3SB2901-4AB	Ein		--	**3SB2901-4AB**		100	10 units	41J
	Aus		--	**3SB2901-4AC**		100	10 units	41J
	Auf		--	**3SB2901-4AD**		100	10 units	41J
	Ab		--	**3SB2901-4AE**		100	10 units	41J
	Vor		--	**3SB2901-4AF**		100	10 units	41J
	Zurück		--	**3SB2901-4AG**		100	10 units	41J
	Rechts		--	**3SB2901-4AH**		100	10 units	41J
	Links		--	**3SB2901-4AJ**		100	10 units	41J
	Halt		--	**3SB2901-4AK**		100	10 units	41J
	Zu		--	**3SB2901-4AL**		100	10 units	41J
	Langsam		--	**3SB2901-4AN**		100	10 units	41J
	Störung		--	**3SB2901-4AQ**		100	10 units	41J
3SB2901-4EB	On		--	**3SB2901-4EB**		100	10 units	41J
	Start		--	**3SB2901-4EK**		100	10 units	41J
	Stop		--	**3SB2901-4EL**		100	10 units	41J
	Reset		--	**3SB2901-4EM**		100	10 units	41J
	Test		--	**3SB2901-4EN**		100	10 units	41J
	0		--	**3SB2901-4RA**		100	10 units	41J
	1		--	**3SB2901-4RB**		100	10 units	41J
	2		--	**3SB2901-4RC**		100	10 units	41J
	3		--	**3SB2901-4RD**		100	10 units	41J
	4		--	**3SB2901-4RE**		100	10 units	41J
	5		--	**3SB2901-4RF**		100	10 units	41J
	6		--	**3SB2901-4RG**		100	10 units	41J
	7		--	**3SB2901-4RH**		100	10 units	41J
	8		--	**3SB2901-4RJ**		100	10 units	41J
	9		--	**3SB2901-4RK**		100	10 units	41J
Graphic ON/OFF symbols								
	O (Off)		5008 IEC	**3SB2901-4MB**		100	10 units	41J
	I (On)		5007 IEC	**3SB2901-4MC**		100	10 units	41J
	II (On)		--	**3SB2901-4MD**		100	10 units	41J

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Illustrations are approximate

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Insert labels and insert caps

	Inscription/symbol		Symbol No.	Insert labels For pushbuttons and illuminated pushbuttons, flat Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Graphic equipment symbols								
3SB2901-4PA	Electric motor		0011 ISO	**3SB2901-4PA**		100	10 units	41J
	Horn		5014 IEC	**3SB2901-4PB**		100	10 units	41J
	Pump		0134 ISO	**3SB2901-4PD**		100	10 units	41J
	Coolant pump		0355 ISO	**3SB2901-4PE**		100	10 units	41J
Graphic motion symbols								
3SB2901-4NA	Motion in direction of arrow (straight)		5022 IEC	**3SB2901-4NA**		100	10 units	41J
	Motion in direction of arrow (diagonal)		--	**3SB2901-4NB**		100	10 units	41J
	Clockwise rotation		0004 ISO	**3SB2901-4NC**		100	10 units	41J
	Counterclockwise rotation		--	**3SB2901-4ND**		100	10 units	41J
	Fast motion		0266 ISO	**3SB2901-4NE**		100	10 units	41J
	Increase (plus)		5005 IEC	**3SB2901-4NG**		100	10 units	41J
	Decrease (minus)		5006 IEC	**3SB2901-4MC**		100	10 units	41J
Graphic control symbols								
3SB2901-4QK	Clamp		--	**3SB2901-4QB**		100	10 units	41J
	Release		--	**3SB2901-4QC**		100	10 units	41J
	Release brake		0021 ISO	**3SB2901-4QE**		100	10 units	41J
	Lock		0022 ISO	**3SB2901-4QF**		100	10 units	41J
	Unlock		0023 ISO	**3SB2901-4QG**		100	10 units	41J
	On/Off, momentary contact		5011 IEC	**3SB2901-4QJ**		100	10 units	41J
	Manual operation		0096 ISO	**3SB2901-4QK**		100	10 units	41J
	Automatic sequence		0017 ISO	**3SB2901-4QL**		100	10 units	41J
Customized inscriptions								
	Inscription of choice (see "Options", page 13/152)			**3SB2901-4AZ**				
	1 line of text with up to 6 characters with 3 mm font height. Please add the appropriate order code to the article number and specify the line of text required.			**K0Y**		1	1 unit	41J
				K1Y or K2Y		1	1 unit	41J
	Other graphic symbols			**3SB2901-4AZ**				
	Please add the order code **"K3Y"** to the article number and specify the serial number and the applied standard (ISO 7000 or IEC 60417).			**K3Y**		1	1 unit	41J
	Any inscription or symbol			**3SB2901-4AZ**				
	Please add the order code **"K9Y"** to the article number and specify the inscription or the symbol required.			**K9Y**		1	1 unit	41J

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Illustrations are approximate

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	Inscription/symbol		Symbol No.	**Insert caps** For pushbuttons and illuminated pushbuttons, raised Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
For self-inscription								
3SB2901-5AA	Blank		--	**3SB2901-5AA**		100	10 units	41J
With inscription								
3SB2901-5EB	On		--	**3SB2901-5EB**		100	10 units	41J
	Aus		--	**3SB2901-5AC**		100	10 units	41J
	Auf		--	**3SB2901-5AD**		100	10 units	41J
	Zu		--	**3SB2901-5AL**		100	10 units	41J
3SB2901-5AC	0		--	**3SB2901-5RA**		100	10 units	41J
	1		--	**3SB2901-5RB**		100	10 units	41J
	2		--	**3SB2901-5RC**		100	10 units	41J
	3		--	**3SB2901-5RD**		100	10 units	41J
	4		--	**3SB2901-5RE**		100	10 units	41J
	5		--	**3SB2901-5RF**		100	10 units	41J
	6		--	**3SB2901-5RG**		100	10 units	41J
	7		--	**3SB2901-5RH**		100	10 units	41J
	8		--	**3SB2901-5RJ**		100	10 units	41J
	9		--	**3SB2901-5RK**		100	10 units	41J
Graphic ON/OFF symbols								
	O (Off)		5008 IEC	**3SB2901-5MB**		100	10 units	41J
	I (On)		5007 IEC	**3SB2901-5MC**		100	10 units	41J
Graphic motion symbols								
3SB2901-5NA	Motion in direction of arrow		5022 IEC	**3SB2901-5NA**		100	10 units	41J
	Motion in direction of arrow		--	**3SB2901-5NB**		100	10 units	41J
	Increase (plus)		5005 IEC	**3SB2901-5NG**		100	10 units	41J
	Decrease (minus)		5006 IEC	**3SB2901-5MC**		100	10 units	41J
Graphic control symbols								
	Clamp		--	**3SB2901-5QB**		100	10 units	41J
	Release		--	**3SB2901-5QC**		100	10 units	41J
Customized inscriptions								
	Inscription of choice (see "Options", page 13/152)			**3SB2901-5AZ**				
	1 line of text with up to 6 characters with 3 mm font height. Please add the appropriate order code to the article number and specify the line of text required.			**K0Y**		1	1 unit	41J
				K1Y or K2Y		1	1 unit	41J
	Other graphic symbols			**3SB2901-5AZ**				
	Please add the order code **"K3Y"** to the article number and specify the serial number and the applied standard (ISO 7000 or IEC 60417).			**K3Y**		1	1 unit	41J
	Any inscription or symbol			**3SB2901-5AZ**				
	Please add the order code **"K9Y"** to the article number and specify the inscription or the symbol required.			**K9Y**		1	1 unit	41J

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Illustrations are approximate

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Insert labels and insert caps

	Inscription/symbol	Symbol No.	Insert caps For indicator lights Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
For self-inscription							
3SB2901-7AA	Blank	--	**3SB2901-7AA**		100	10 units	41J
With inscription							
3SB2901-7AP	Betrieb	--	**3SB2901-7AP**		100	1 unit	41J
	Störung	--	**3SB2901-7AQ**		100	10 units	41J
Graphic symbols							
3SB2901-7QK	Pump	0134 ISO	**3SB2901-7PD**		100	10 units	41J
	Manual operation	0096 ISO	**3SB2901-7QK**		100	10 units	41J
Customized inscriptions							
	Inscription of choice (see "Options")		**3SB2901-7AZ**				
	1 line of text with up to 6 characters with 3 mm font height. Please add the appropriate order code to the article number and specify the line of text required.		**K0Y**		1	1 unit	41J
			K1Y or K2Y		1	1 unit	41J
	Other graphic symbols		**3SB2901-7AZ**				
	Please add the order code **"K3Y"** to the article number and specify the serial number and the applied standard (ISO 7000 or IEC 60417).		**K3Y**		1	1 unit	41J
	Any inscription or symbol		**3SB2901-7AZ**				
	Please add the order code **"K9Y"** to the article number and specify the inscription or the symbol required.		**K9Y**		1	1 unit	41J

Options

Customized inscriptions

Labels and caps can be inscribed with text and symbols not listed in the ordering data. Append the following order codes to the article number:

- Text line in upper/lower case, always upper case for beginning of line (e.g. "Lift"): **K0Y**
- Text line in upper case (e.g. "LIFT"): **K1Y**
- Text line in lower case (e.g. "lift"): **K2Y**
- Symbol with number according to ISO 7000 or IEC 60417: **K3Y**
- Any inscription or symbols according to order form supplement: **K9Y**

When ordering, specify the required inscription in plain text in addition to the article number and order code. In the case of special inscriptions with words in languages other than German, give the exact spelling and specify the language.

One line with up to 6 characters with 3 mm font height is possible for the inscription (see ordering example 1).

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417 (see ordering examples 2 and 3).

For special symbols (order code K9Y), a CAD drawing in DXF format can be submitted.

Ordering example 1

3SB2901–4AZ
K1Y
Z1=Pump

Ordering example 2

3SB2901–4AZ
K3Y
Z=5008 IEC

Ordering example 3

3SB2901–4AZ
K3Y
Z=1118 ISO

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

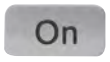
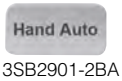
The backing plates consist of a black plastic label holder and a labeling plate (silver with black print) for sticking in place.

Note mounting dimensions!

Inscription

The inscriptions (also special inscriptions) are in lower case with upper case initial letters. Graphic symbols, including those not listed in the catalog, are according to ISO 7000 or IEC 60417. For customized inscriptions, see "Options".

Selection and ordering data

	Inscription/symbol	Symbol No.	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Labeling plates, self-adhesive, 9.5 mm × 18.5 mm							
3SB2901-2AA	Blank	--	**3SB2901-2AA**		100	10 units	41J
3SB2901-2AB	Ein	--	**3SB2901-2AB**		100	10 units	41J
	Aus	--	**3SB2901-2AC**		100	10 units	41J
	Auf	--	**3SB2901-2AD**		100	10 units	41J
	Zu	--	**3SB2901-2AL**		100	10 units	41J
	Vor	--	**3SB2901-2AF**		100	10 units	41J
	Zurück	--	**3SB2901-2AG**		100	10 units	41J
	Schnell	--	**3SB2901-2AM**		100	10 units	41J
	Langsam	--	**3SB2901-2AN**		100	10 units	41J
	Betrieb	--	**3SB2901-2AP**		100	10 units	41J
	Störung	--	**3SB2901-2AQ**		100	10 units	41J
	Einrichten	--	**3SB2901-2AR**		100	10 units	41J
 3SB2901-2EB	On	--	**3SB2901-2EB**		100	10 units	41J
	Off	--	**3SB2901-2EC**		100	10 units	41J
	Start	--	**3SB2901-2EL**		100	10 units	41J
	Reset	--	**3SB2901-2EM**		100	10 units	41J
	Fault	--	**3SB2901-2EW**		100	10 units	41J
 3SB2901-2BA	Hand Auto	--	**3SB2901-2BA**		100	10 units	41J
	Hand O Auto	--	**3SB2901-2BE**		100	10 units	41J
	Man O Auto	--	**3SB2901-2ET**		100	10 units	41J
3SB2901-2NA	**Graphic symbols**						
	O (Off)	5008 IEC	**3SB2901-2MB**		100	10 units	41J
	I (On)	5007 IEC	**3SB2901-2MC**		100	10 units	41J
	O I (horizontal)	--	**3SB2901-2MF**		100	10 units	41J
	Motion in direction of arrow	5002 IEC	**3SB2901-2NA**		100	10 units	41J
	Customized inscriptions or symbols (see "Options")	--	**3SB2901-2XZ**				
			K0Y		1	10 units	41J
			K1Y, K2Y or K3Y		1	10 units	41J
			K9Y		1	10 units	41J
Label holders for label size 9.5 mm x 18.5 mm							
3SB2902-0AB	**Label holders for labeling plates** The label holders must not be used with the 3SB2...-1AC01 EMERGENCY STOP mushroom pushbutton.	--	**3SB2902-0AB**		100	10 units	41J

Options

Customized inscriptions

The labels can be inscribed with text and symbols not listed in the ordering data. Append the following order codes to the article number:

- Text line(s) in upper/lower case, always upper case for beginning of line (e.g. "Lift off"): **K0Y**
- Text line(s) in upper case (e.g. "LIFT OFF"): **K1Y**
- Text line(s) in lower case (e.g. "lift off"): **K2Y**
- Symbol with number according to ISO 7000 or IEC 60417: **K3Y**
- Any inscription or symbols according to order form supplement: **K9Y**

When ordering, specify the required inscription in plain text in addition to the article number and order code. In the case of special inscriptions with words in languages other than German, give the exact spelling and specify the language.

Two lines of 11 characters per line are possible with 4 mm (1 line) or 3 mm (2 lines) font height.

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417 (see ordering example).

For special symbols (order code K9Y), a CAD drawing in DXF format can be submitted.

Ordering example

3SB2901-2XZ
K3Y
Z=1118 ISO

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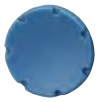
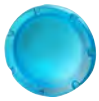
Mounting parts and components

Selection and ordering data

	Version	Lamp voltage	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V						
Buttons and lenses[1]								
 3SB2910-0AF	**Buttons, flat** For pushbuttons	--	Black	**3SB2910-0AB**		100	10 units	41J
		--	Red	**3SB2910-0AC**		100	10 units	41J
		--	Yellow	**3SB2910-0AD**		100	10 units	41J
		--	Green	**3SB2910-0AE**		100	10 units	41J
		--	Blue	**3SB2910-0AF**		100	10 units	41J
		--	White	**3SB2910-0AG**		100	10 units	41J
		--	Clear	**3SB2910-0AH**		100	10 units	41J
 3SB2910-0CF	**Buttons, flat** For illuminated pushbuttons	--	Red	**3SB2910-0CC**		100	10 units	41J
		--	Yellow	**3SB2910-0CD**		100	10 units	41J
		--	Green	**3SB2910-0CE**		100	10 units	41J
		--	Blue	**3SB2910-0CF**		100	10 units	41J
		--	White	**3SB2910-0AG**		100	10 units	41J
		--	Clear	**3SB2910-0AH**		100	10 units	41J
3SB2910-0BD	**Buttons, raised** For pushbuttons	--	Black	**3SB2910-0BB**		1	10 units	41J
		--	Red	**3SB2910-0BC**		1	10 units	41J
		--	Yellow	**3SB2910-0BD**		1	10 units	41J
		--	Clear	**3SB2910-0BH**		1	10 units	41J
3SB2910-0DD	**Buttons, raised** For illuminated pushbuttons	--	Red	**3SB2910-0DC**		1	10 units	41J
		--	Yellow	**3SB2910-0DD**		1	10 units	41J
		--	Clear	**3SB2910-0BH**		1	10 units	41J
3SB2910-1AD	**Screw lenses** With concentric rings	--	Red	**3SB2910-1AC**		100	10 units	41J
		--	Yellow	**3SB2910-1AD**		100	10 units	41J
		--	Green	**3SB2910-1AE**		100	10 units	41J
		--	Blue	**3SB2910-1AF**		100	10 units	41J
		--	White	**3SB2910-1AG**		100	10 units	41J
		--	Clear	**3SB2910-1AH**		100	10 units	41J
3SB2910-1BE	**Screw lenses** Smooth, for inscription with insert cap	--	Red	**3SB2910-1BC**		100	10 units	41J
		--	Yellow	**3SB2910-1BD**		100	10 units	41J
		--	Green	**3SB2910-1BE**		100	10 units	41J
		--	Blue	**3SB2910-1BF**		100	10 units	41J
		--	Clear	**3SB2910-1BH**		100	10 units	41J
Keys for actuators								
3SB2908-2AJ	**Keys** For CES key-operated switch, Lock No. SB2	--	--	**3SB2908-2AJ**		1	1 unit	41J
Lamps, wedge base[2]								
3SB2908-1AE	**Incandescent lamps** Wedge base W2 x 4.6 d, 1.0 W	AC/DC	Clear					
		6		**3SB2908-1AA**		100	10 units	41J
		12		**3SB2908-1AB**		100	10 units	41J
		24		**3SB2908-1AC**		100	10 units	41J
		30		**3SB2908-1AD**		100	10 units	41J
		48		**3SB2908-1AE**		1	10 units	41J
		60		**3SB2908-1AF**		1	10 units	41J
3SB3901-1SB	**LED lamps, super-bright** Wedge base W2 x 4.6 d	24 AC/DC	Red	**3SB3901-1SB**		1	10 units	41J
			Yellow	**3SB3901-1RB**		1	10 units	41J
			Green	**3SB3901-1TB**		1	10 units	41J
			White	**3SB3901-1UB**		1	10 units	41J
			Blue	**3SB2908-1BD**		1	10 units	41J
3SB2908-1BD		28 AC/DC	Red	**3SB3901-1SE**		1	10 units	41J
			Yellow	**3SB3901-1RE**		1	10 units	41J
			Green	**3SB3901-1TE**		1	10 units	41J
			White	**3SB3901-1UE**		1	10 units	41J
			Blue	**3SB3901-1VE**		1	10 units	41J
3SB2908-2AB	**Lamp extractors** For lamps with base W2 x 4.6 d	--	--	**3SB2908-2AB**		1	1 unit	41J

[1] Included in the scope of supply of actuators or indicator lights.

[2] Included in the scope of supply of some complete units.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for command points						
3SB2902-0AA	**Single frames** For square design[1]	**3SB2902-0AA**		100	10 units	41J
3SB2908-2AG	**Backing plates, yellow, Ø 50 mm** As high-contrast background for EMERGENCY STOP, self-adhesive					
	• Without inscription	**3SB2908-2AF**		1	1 unit	41J
	• With German inscription "NOT-HALT"	**3SB2908-2AG**		1	1 unit	41J
	• With German inscription "NOT-AUS"	**3SB2908-2AK**		1	1 unit	41J
3SB2908-3AA	**Sealing plugs** Plastic, black (degree of protection IP65)	**3SB2908-3AA**		1	1 unit	41J
3SB2908-3AB	**Protective caps, clear** Silicone, for pushbuttons with flat and raised buttons	**3SB2908-3AB**		1	1 unit	41J
Flat connectors						
3SB2908-8AA	**Plug-in sleeves** For flat connectors 2.8 × 0.8 mm, cross-section 0.5 ... 1.5 mm^2	**3SB2908-8AA**		100	250 units	41J
3SB2908-8AB	**Insulating sleeves** For flat connectors, attachable from the front	**3SB2908-8AB**		100	250 units	41J
3SB2908-8AD	**Complete connectors**[2] For connecting contact blocks and lampholders (up to 10 connections) Ensure finger protection according to IEC 60529 and DGUV Regulation 3	**3SB2908-8AD**		1	1 unit	41J
3SB2908-8AE	**Plug-in sleeves** For flat connectors 2.8 × 0.8 mm, with locating spring for latching in complete connector	**3SB2908-8AE**		100	10 units	41J
Tools						
3SB2908-2AA	**Dismantling tools** For holders and lampholders with holder	**3SB2908-2AA**		1	1 unit	41J
3SB2908-2AC	**Mounting tools** For buttons and screw lenses	**3SB2908-2AC**		1	1 unit	41J
6179 0950	**Crimping tools for non-insulated connections, type KRBC 0560**[3] For plug-in sleeves (both versions)	**6179 0950**				

[1] Not suitable for EMERGENCY STOP mushroom pushbuttons.

[2] Required 3SB2908-8AE plug-in sleeves for flat connectors 2.8 × 0.8 mm are not included in the scope of supply.

[3] Crimping tool available from: Lapp Kabel, Stuttgart, Germany (see page 16/18).

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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3SE7 metal enclosures

Overview

3SE7 cable-operated switches

More information

Homepage, see www.siemens.com/sirius-command
Industry Mall, see www.siemens.com/product?3SE7
Configuration Manual, see https://support.industry.siemens.com/cs/ww/en/view/109758224

The cable-operated switches are used for monitoring or as EMERGENCY STOP devices on particularly endangered system components.

If the cable-operated switch and cable system is to function properly, the steel cable, cable clamps, cable eyes and eyebolts for the basic equipment must be ordered separately (see page 13/160).

As the effective range of a cable-operated switch is only limited by the length of the trip-wire, large systems can also be protected. Cable-operated switches (requiring pulling at both ends) and conveyor belt unbalance trackers are used primarily for monitoring very long belt systems.

Contact blocks

The switches for cable lengths up to 50 m are supplied with 1 NO + 1 NC, 2 NC, or 1 NO + 2 NC contacts and those up to 75 m with 1 NO + 3 NC contacts. The switches for cable lengths of 2 x 100 m and the conveyor belt unbalance tracker are supplied with 2 NO + 2 NC contacts.

The NC contacts for cable-break and cable-pull signaling are positive-opening. The NO contact can be used, for example, for signaling purposes.

Readiness for use and display

Cable-operated switches with one-sided operation are made ready for use by pre-tensioning the turnbuckle.

On switches with interlocking, with a pre-tensioned cable, the locking must be deactivated beforehand in order to return the cable-operated switch to its original position.

The cable-operated switch and the conveyor belt unbalance tracker can be supplied optionally with a factory-fitted LED (red, 24 V DC). This light in innovative chip-on-board technology allows the operating state of the switch to be visible at a distance of at least 50 m.

Application

Standards

The switches are equipped with latching mechanism and positive-opening NC contacts and are thus suitable for operation in EMERGENCY STOP devices according to ISO 13850.

Technical specifications

Type		3SE7120-2	3SE7120-1	3SE7150	3SE7140	3SE7141	3SE7160	3SE7310
General data								
Standards		IEC 60947-5-1 IEC 60204-1, ISO 13850						
Approvals		UL/CSA						
Electrical design		Contacts electrically isolated from each other						
Electrical load								
• 2-pole, at AC-15		400 V AC, 6 A				240 V AC, 2 A	400 V AC, 6 A	--
• 3-pole, at AC-15		240 V AC, 2 A			--			
• 4-pole, at AC-15		--					400 V AC, 6 A	
• Minimum		24 V AC/DC, 10 mA						
Short-circuit protection	A	6 (slow)						
Mechanical endurance	Operating cycles	10 000 00	100 000					
Contact material		Fine silver						
Operation		By cable pull	By cable pull or cable break					
Cable length, maximum	m	5		20	50	75	2 x 100	–
Distance between cable supports, max.	m	3			5		4	–
Enclosures								
Enclosure material		GD Al alloy, coated (color), dark black RAL 9005						
Cover		Shock-resistant thermoplast					Metal	
Degree of protection according to IEC 60529 [1]		IP65				IP67	IP65	
Ambient temperature	°C	-25 ... +70						
Mounting		Designed for M5						
Mounting distance	mm	30 and 40						
Cable entry		2 x (M20 x 1.5)			1 x (M20 x 1.5) 2 x (M25 x 1.5)	3 x (M20 x 1.5)	2 x (M25 x 1.5)	
Connection type		Screw terminals M3.5, self-lifting clamp terminal						

[1] IP54 for versions with key-operated release.

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Selection and ordering data

Version	Cable length	Contacts	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	m						
Cable-operated switches for cable-pull and cable-break monitoring							
3SE7120-2DD01 3SE7120-1BH00							
Metal enclosures, IP65 (cover made of plastic)	5						
• Without latching (only for cable-pull monitoring):							
- Spring, 55 N		1 NO + 1 NC ➔	**3SE7120-2DD01**		1	1 unit	41K
- Spring, 100 N		1 NO + 1 NC ➔	**3SE7120-2DD01-1AS7**		1	1 unit	41K
• With latching and button reset		2 NC ➔	**3SE7120-1BF00**		1	1 unit	41K
- With yellow cover		1 NO + 2 NC ➔	**3SE7120-1BH00**		1	1 unit	41K
3SE7150-2DD00 3SE7150-1BH00							
Metal enclosures, IP65 (cover made of plastic), with alignment window	20						
• Without latching		1 NO + 1 NC ➔	**3SE7150-2DD00**		1	1 unit	41K
• With latching and button reset		1 NO + 1 NC ➔	**3SE7150-1BD00**		1	1 unit	41K
		2 NC ➔	**3SE7150-1BF00**		1	1 unit	41K
- With yellow cover		1 NO + 2 NC ➔	**3SE7150-1BH00**		1	1 unit	41K
3SE7150-1BD04 3SE7150-1BH04							
Metal enclosures, IP65 (cover made of plastic), with alignment window, with LED, red, 24 V DC	20						
• Without latching		1 NO + 1 NC ➔	**3SE7150-2DD04**		1	1 unit	41K
• With latching and button reset		1 NO + 1 NC ➔	**3SE7150-1BD04**		1	1 unit	41K
- With yellow cover		1 NO + 2 NC ➔	**3SE7150-1BH04**		1	1 unit	41K
3SE7140-1BD00							
Metal enclosures, IP65 (cover made of plastic)	50						
• With latching and button reset		1 NO + 1 NC ➔	**3SE7140-1BD00**		1	1 unit	41K
		2 NC ➔	**3SE7140-1BF00**		1	1 unit	41K
• In addition with LED, red, 24 V DC							
- 1 x M20 x 1.5		1 NO + 1 NC ➔	**3SE7140-1BD04**		1	1 unit	41K
- 2 x M25 x 1.5		1 NO + 1 NC ➔	**3SE7140-1BD04-1AS6**		1	1 unit	41K
• With latching and key unlatching		1 NO + 1 NC ➔	**3SE7140-1CD00**		1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK safety relays, see page 11/1 onwards.
Certificate:

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3SE7 metal enclosures

	Version	Cable length	Contacts	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		m						
Cable-operated switches for cable-pull and cable-break monitoring								
3SE7141-1EG10 3SE7141-1EG10-0CA1	**Metal enclosures, IP67** (cover made of plastic)							
	• With EMERGENCY STOP mushroom, with rotate to unlatch	75	1 NO + 3 NC ➔	**3SE7141-1EG10**		1	1 unit	41K
	- With yellow cover		1 NO + 3 NC	**3SE7141-1EG10-0CA1**		1	1 unit	41K
3SE7160-1AE04	**Metal enclosures, IP65** With actuation on both sides	2 x 100						
	• With latching and button reset		2 NO + 2 NC ➔	**3SE7160-1AE00**		1	1 unit	41K
			1 NO + 1 NC ➔	**3SE7160-1BD00**		1	1 unit	41K
	- With LED, red, 24 V DC		2 NO + 2 NC ➔	**3SE7160-1AE04**		1	1 unit	41K
Conveyor belt unbalance trackers								
3SE7310-1AE04	**Metal enclosures, IP65**							
	• With latching and push to unlatch	--	2 NO + 2 NC ➔	**3SE7310-1AE00**		1	1 unit	41K
	- With LED, red, 24 V DC		2 NO + 2 NC ➔	**3SE7310-1AE04**		1	1 unit	41K

➔ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK safety relays, see page 11/1 onwards.
Certificate:

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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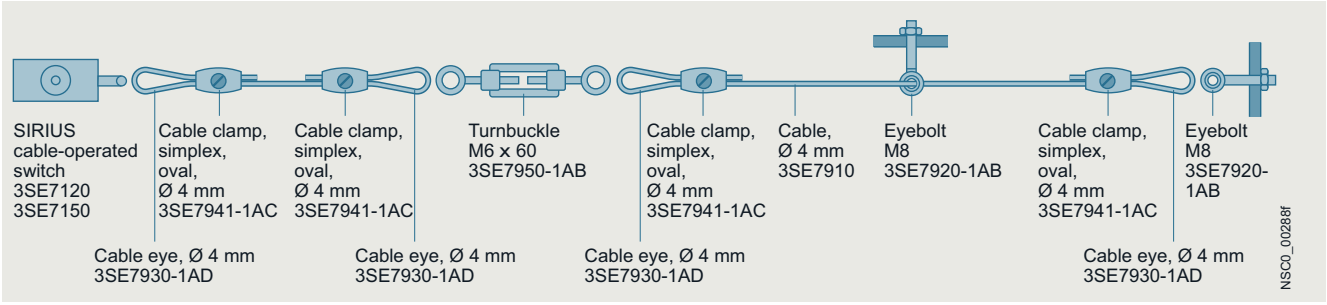
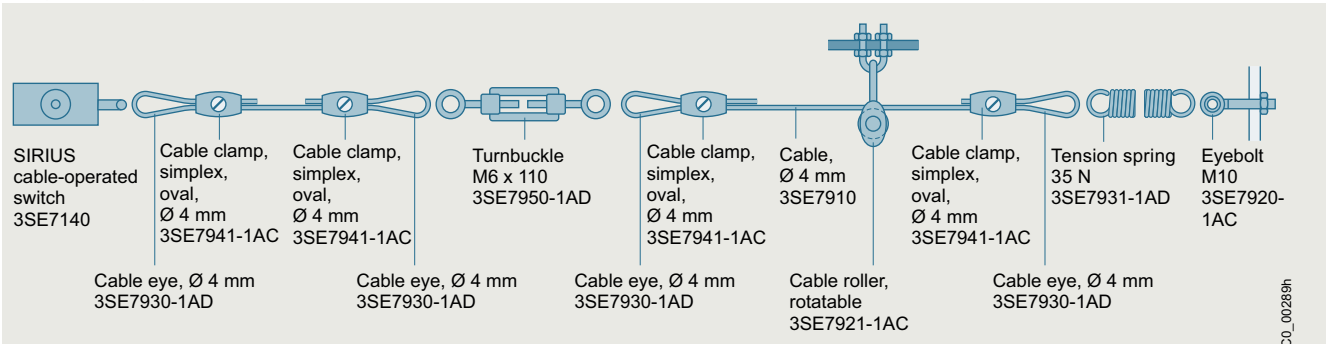
Overview

Configuration of the cable pulls

Short cable lengths up to 25 m

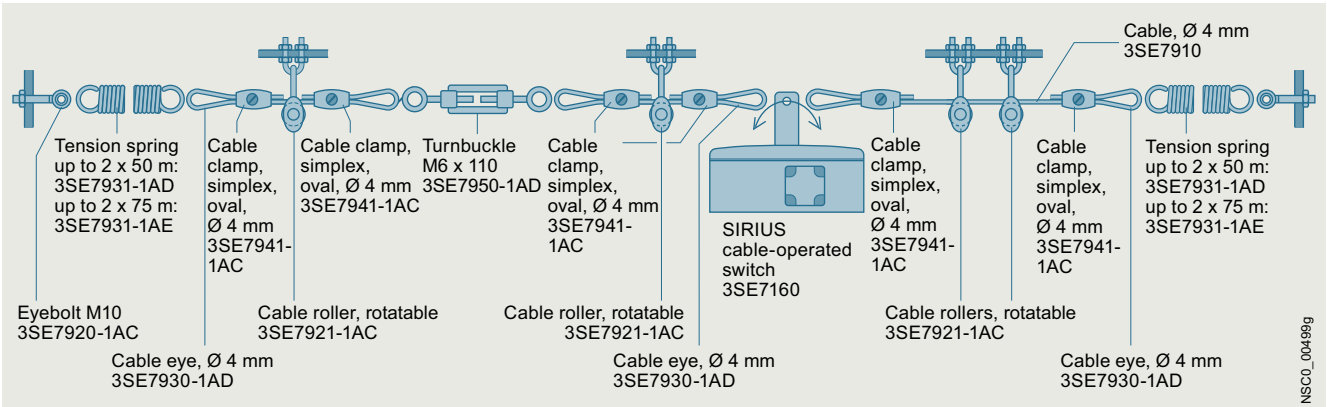


Long cable lengths up to 50 m



Use of a tension spring is essential for cable length ≥ 25 m.

Pulling from both sides up to 2 x 100 m



Spring must always be on both sides, as the switch is otherwise not able to be operated.

Note:

Large temperature fluctuations require corresponding compensation springs. Cable supports must be used at the recommended intervals.

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Accessories

Selection and ordering data

The basic equipment for the cable-operated switch and cable system includes: Steel cable, cable clamps, cable eyes and eyebolts

	Version	Length/ diameter	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Trip-wire with fixing							
3SE7910-3AA	**Steel cable** With red plastic sheath, Ø 4 mm, including sheath; steel wire Ø 3.2 mm	10 m 15 m 20 m 50 m	**3SE7910-3AA** **3SE7910-3AB** **3SE7910-3AC** **3SE7910-3AH**		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41K 41K 41K 41K
3SE7941-1AC 3SE7942-1AA	**Cable clamps**, galvanized white, zinc-plated						
	• Oval	Ø 4 mm	**3SE7941-1AC**		1	1 unit	41K
	• Single (1 set = 4 units)	2 x Ø 4 mm	**3SE7942-1AA**		1	4 units	41K
3SE7943-1AC 3SE7944-1AC	• Simplex (1 set = 4 units)	Ø 4 mm	**3SE7943-1AC**		1	4 units	41K
	• Duplex (1 set = 4 units)	2 x Ø 4 mm	**3SE7944-1AC**		1	4 units	41K
3SE7931-1AB	**Tension springs** (zinc-plated) To maintain the counter tension						
	• 13 N	--	**3SE7931-1AB**		1	1 unit	41K
	• 35 N, for cable pulls up to 50 m	--	**3SE7931-1AD**		1	1 unit	41K
	• > 35 N, for cable pulls up to 2 × 75 m	--	**3SE7931-1AE**		1	1 unit	41K
3SE7921-1AC	**Cable roller** For changing the direction of the cable, rotatable	Ø 4 mm	**3SE7921-1AC**		1	1 unit	41K
3SE7921-1AA	**Fixture for cable roller** (incl. fixing nuts)	--	**3SE7921-1AA**		1	1 unit	41K
3SE7930-1AD	**Cable eyes** For changing the direction of the cable and improved power transmission at the fixing points (1 set = 4 units)	Ø 4 mm	**3SE7930-1AD**		1	4 units	41K
3SE7920-1AB	**Bolts** • Eyebolts for fixing the cable						
	- Including M8 nut	--	**3SE7920-1AB**		1	1 unit	41K
	- Including M10 nut	--	**3SE7920-1AC**		1	1 unit	41K
3SE7922-1AB	• Lifting eyebolt, rotated for cable tensioning and low-wear cable routing in the case of frequent pulling						
	- Including M6 nut	--	**3SE7922-1AB**		1	1 unit	41K
3SE7950-1AB	**Turnbuckles** For precise adjustment of the pre-tension						
	• M6 x 60	--	**3SE7950-1AB**		1	1 unit	41K
	• M6 x 110	--	**3SE7950-1AD**		1	1 unit	41K
3SE7932-1AC	**Carabiner hooks DIN 5299, Form C, 50 mm x 5 mm** For easy fastening of the cable to the tension spring, turnbuckle and lifting eye bolt						
	Stainless steel (1 set = 2 units)	--	**3SE7932-1AC**		1	4 units	41K
Spare parts							
3SX3235	**LED lamps,** red 24 V DC diameter 25 mm; for M20 x 1.5 connection	--	**3SX3235**		1	1 unit	41K

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

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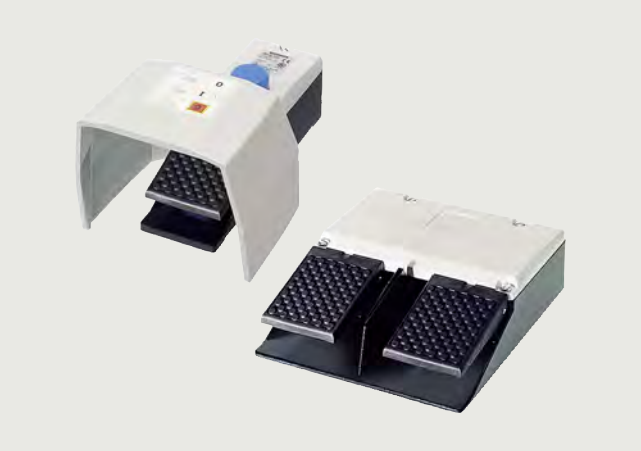
Overview



3SE29 foot switch with metal enclosure

More information

Homepage, see www.siemens.com/sirius-command

Industry Mall, see www.siemens.com/product?3SE2

Configuration Manual, see https://support.industry.siemens.com/cs/ww/en/view/109758224

Standard switches

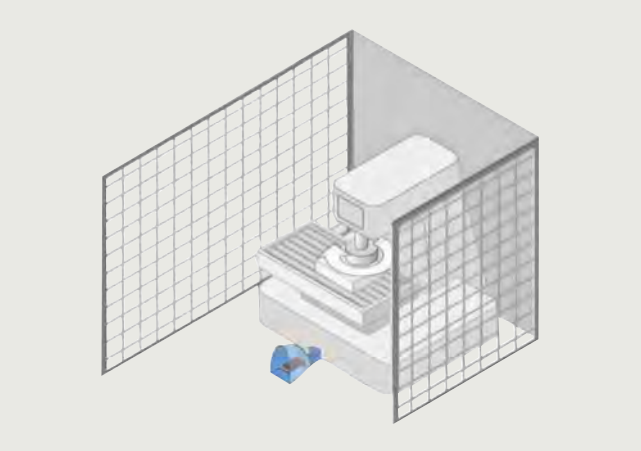
The 3SE29 and 3SE39 foot switch range encompasses versions in a metal enclosure for rugged applications as well as versions with plastic enclosure for less harsh environments. The devices can be supplied with or without a cover and have fixing holes for them to be screwed to the floor.

Depending on the particular application, the metal enclosures can be ordered with contact blocks in latching or momentary-contact versions. The momentary-contact pedal switch in the plastic enclosure has one microswitch (changeover contact) per actuating pedal.

Safety foot switches

The 3SE2924-3AA20 one-pedal safety foot switches are used on machines and plants as OK switches when operation by hand is not possible. The switches have an interlocking function.

The safety foot switches are protected by a guard hood against accidental operation.



Application example

The switches have two contact blocks, each with one NO contact and one NC contact. The NO contacts and NC contacts of the two contact blocks are connected in series for easy connection of a single-phase motor. The normal workflow is initiated by pressing down the pedal as far as the pressure point so that the two NO contacts close and the motor starts to run.

If in the event of danger the pedal is pressed beyond the resistance of the pressure point, the positive-opening NC contacts will open and the motor is stopped. At the same time the independent latching takes effect and holds the NC contacts in open position. This prevents the machine parts from continuing to run out of control or from being restarted.

After the hazard is eliminated, the machine can only be restarted after manually releasing the switch using a pushbutton on the top of the enclosure. The contacts are then released again and return to their initial position (the NO contacts are open and the NC contacts are closed).

Technical specifications

Type		3SE29	3SE39
Metal and plastic enclosures			
Standards		IEC 60947-5-1	
Electrical load			
• At AC-15, 400 V			
- 1 NO + 1 NC	A	10	--
- 2 NO + 2 NC	A	6	--
- 3SE2924-3AA20 (2 NO + 2 NC)	A	10	--
• At 250 V AC	A	–	5
Short-circuit protection			
- 1 NO + 1 NC	A	10 (slow)	--
- 2 NO + 2 NC	A	6 (slow)	--
- 3SE2924-3AA20 (2 NO + 2 NC)	A	10 (slow)	--
- 1 CO	A	--	5 (slow)
Mechanical endurance		> 10^6 operating cycles	
Material			
• Enclosures		Aluminum casting	Impact-resistant thermoplast, self-extinguishing according to UL 94 VO
• Covers		Thermoplast	–
• Guard hoods		Aluminum casting	Metal
Degree of protection		IP65	IP65
Ambient temperature	°C	-25 ... +80	-10 ... +75
Connection		Cable entry, metric	Cable AWG20, UL Style 2464, length 3 m

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Plastic and metal enclosures

Selection and ordering data

Version	Slow-action contacts for each pedal	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Metal enclosures, degree of protection IP65						
3SE290.-.AA20 3SE291.-.AA20	**Momentary-contact foot switches (non-latching), 1-pedal,** M20 x 1.5 cable entry					
• Without hood	1 NO + 1 NC ⊕	**3SE2902-0AB20**		1	1 unit	41K
	2 NO + 2 NC ⊕	**3SE2903-1AB20**		1	1 unit	41K
• With hood	1 NO + 1 NC ⊕	**3SE2902-0AA20**		1	1 unit	41K
	2 NO + 2 NC ⊕	**3SE2903-1AA20**		1	1 unit	41K
	Foot switches (latching), 1-pedal, M20 x 1.5 cable entry					
• Without hood	1 NO + 1 NC ⊕	**3SE2912-2AB20**		1	1 unit	41K
• With hood	1 NO + 1 NC ⊕	**3SE2912-2AA20**		1	1 unit	41K
3SE2932-.AB20	**Momentary-contact foot switches (non-latching), 2-pedal,** M25 x 1.5 cable entry					
• Without hood	1 NO + 1 NC ⊕	**3SE2932-0AB20**		1	1 unit	41K
	2 NO + 2 NC ⊕	**3SE2932-1AB20**		1	1 unit	41K
3SE2932-.AA20						
• With hood	1 NO + 1 NC ⊕	**3SE2932-0AA20**		1	1 unit	41K
	2 NO + 2 NC ⊕	**3SE2932-1AA20**		1	1 unit	41K
3SE2924-3AA20	**Safety foot switches, 1-pedal** With hood M20 x 1.5 cable entry with interlocking function; NO closes as momentary contact type NC opens with automatic latching (safety function)	2 NO + 2 NC ⊕	**3SE2924-3AA20**	1	1 unit	41K
Plastic enclosures, degree of protection IP65						
3SE3934-5CB20	**Momentary-contact pedal switches**, 3 m cable	Microswitch				
• One pedal, without hood		1 CO	**3SE3902-4CB20**	1	1 unit	41K
• Two pedals, without hood		2 x 1 CO	**3SE3934-5CB20**	1	1 unit	41K
Accessories						
	Contact block, Supersedes momentary-contact foot switches 3SE2903-1A.20[1] and 3SE2932-1A.20[2]	1 NO + 1 NC	**3SE3982-0K**	1	1 unit	41K
	Contact block, Supersedes momentary-contact foot switches 3SE2902-0A.20 and 3SE2932-0A.20[3]	1 NO + 1 NC	**3SE3982-0L**	1	1 unit	41K
	Contact block, 16 A Supersedes momentary-contact foot switch 3SE2924-3AA20[1]	1 NO + 1 NC	**3SE3982-7J**	1	1 unit	41K

⊕ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK safety relays, see page 11/1 onwards.
Certificate:

1) Number of contact blocks required for the momentary-contact foot switch = 2.
2) Number of contact blocks required per pedal = 2.
3) Number of contact blocks required per pedal = 1.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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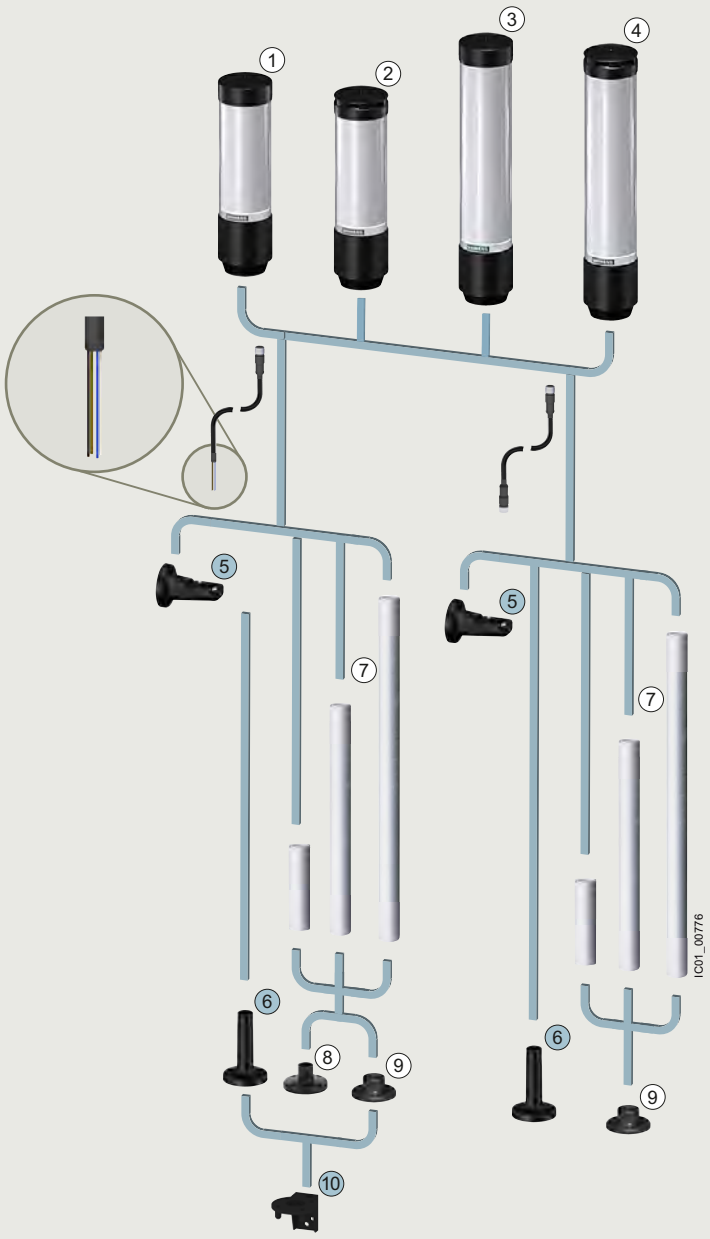
NEW **Electronically configurable 8WD46 signaling columns, 70 mm diameter**

Overview



Signaling column with 9 segments

(1) Without acoustic signaling:
Conventional signaling column 8WD4613-5HH37/
Signaling column for IO-Link 8WD4613-5HH47

(2) With acoustic signaling:
Conventional signaling column 8WD4613-5JH37/
Signaling column for IO-Link 8WD4613-5JH47

Signaling column with 15 segments

(3) Without acoustic signaling:
Conventional signaling column 8WD4615-5HH37/
Signaling column for IO-Link 8WD4615-5HH47

(4) With acoustic signaling:
Conventional signaling column 8WD4615-5JH37/
Signaling column for IO-Link 8WD4615-5JH47

Accessories

(5) Bracket for wall mounting 8WD4618-0CA

(6) Foot with tube 8WD4618-0DA

(7) Tube 8WD4208-0EF/8WD4308-0E.

(8) Foot for tube mounting (≤ 400 mm) 8WD4308-0DB

(9) Foot for tube mounting (> 400 mm) 8WD4308-0DC

(10) Bracket for mounting on feet 8WD4408-0CC

Degree of protection IP66/IP69 (IP69K)

8WD46 signaling column with up to 15 segments

More information

Homepage, see www.siemens.com/sirius-signaling-columns
Industry Mall, see www.siemens.com/product?8WD4
Manual, see https://support.industry.siemens.com/cs/ww/en/view/109810633
Operating Instructions, see https://support.industry.siemens.com/cs/ww/en/view/109810488

Video:
SIRIUS 8WD46 signaling column – Electronics can be individually configured

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Electronically configurable 8WD46 signaling columns, 70 mm diameter NEW

The electronically configurable 8WD46 signaling columns are flexible in design and versatile in use thanks to their new compact and electronically modular design.

Features:

- Thermoplast enclosure, diameter 70 mm
- With 9 or 15 segments (number of segments adjustable for each block)
- With or without acoustic element
- Degree of protection IP66/IP69 (IP69K)

Two product series are available:

- Conventional signaling columns
  - Configuration of signaling column via USB interface
  - Fast connection of the signaling column to the application via 8-pole M12 plug
- Signaling columns for IO-Link
  - Configuration of signaling column via IO-Link interface (IODD)
  - Fast connection of the signaling column to the application via 4-pole M12 plug

Mounting options

Tube mounting	Wall mounting	Floor mounting
Foot with integrated tube	Bracket for single-sided mounting	Floor mounting without accessories

Benefits

- Choice of various light and acoustic signals with different functions:
  Continuous light, blinklight, flashlight and rotating light; siren
- Light elements with particularly long-lasting LEDs
- Variety of colors: > 1 million colors
- Optimized homogeneous illumination thanks to improved diffuser technology
- Acoustic signals can be adjusted in tone and volume
- Extremely resistant to shock and vibrations
- Simple configuration and fast connection using M12 plugs
- No wiring required
- No special tools needed
- Fewer versions thanks to electronic modularity
- Communication-capable through connection to IO-Link

Application

8WD46 signaling columns are used in machines or in automatic processes for monitoring complex procedures or as visual or acoustic warning devices in emergency situations, e.g. for displaying individual assembly stages.

Communication capability

IODD (IO Device Description)

The IO Device Description (IODD) has been defined to provide a full, transparent description of system characteristics as far as the IO-Link device. The IODD contains information on communication characteristics, device parameters, identification, process and diagnostics data.

The IODD for signaling columns for IO-Link is available at the link below, see https://support.industry.siemens.com/cs/ww/en/view/109807683.

Connection

Conventional signaling columns

Wiring of the signaling elements using screw or spring-loaded terminals is not required. The signaling column is connected via an 8-pole M12 plug.

Signaling columns for IO-Link

The signaling column is connected via a 4-pole M12 plug.

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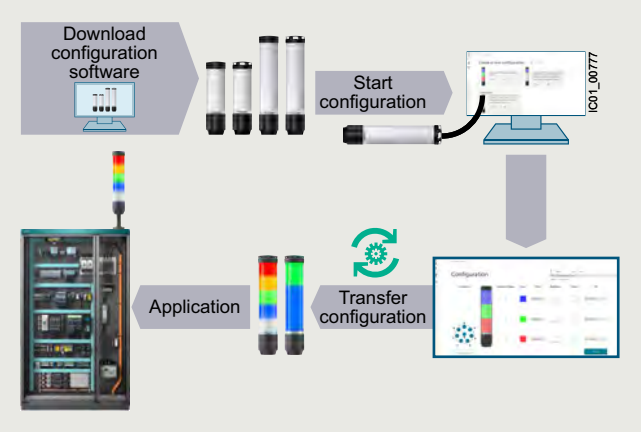
NEW **Electronically configurable 8WD46 signaling columns, 70 mm diameter**

Configuration



Simple and fast configuration

Conventional signaling columns

Configuration options via configuration software and transfer via USB interface, see https://support.industry.siemens.com/cs/ww/en/view/109807684.

Signaling columns for IO-Link

Configuration options via IO-Link. The setting is made via the IO Device Description (IODD), see Communication capability.

Optical configuration options

Colors	Intensity	Light pattern
Ten different colors • Eight preset colors: - Red - Green - Yellow - Blue - White - Turquoise - Violet - Light yellow • > 1 million colors can be configured	The brightness can be adjusted for each block.	Optical signal profiles: • Blinklights • Flashlights (single, double and triple-flash lights) • Continuous lights • Rotating lights One light pattern per block can be selected.

Acoustic configuration options (siren)

Tones	Volume
Ten different tones can be set	• 80 to 105 dB • Four different volume levels can be set

Various operating modes

Signaling column mode	Automatic scaling mode	Level mode	Individual mode

Individual configuration of light pattern, color, brightness and acoustic signals

Signaling column mode

Individual segments can be connected to form a block. The blocks have fixed positions and may be off if the corresponding block and the optical signal are not activated.

Automatic scaling mode

The segments are automatically and uniformly distributed among the number of controlled pins and status messages. If the segments cannot be uniformly distributed, the color with the highest priority will be assigned to the last segment.

Level mode

- The segments are used as level indicators.
- From 0% (all segments are switched off) up to 100% (all segments are activated).

Examples: Order progress, liquid tank, material quantity

Individual mode

Each segment can be set and controlled individually, thus allowing for a maximum range of individual signaling options.

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Electronically configurable 8WD46 signaling columns, 70 mm diameter NEW

Technical specifications

Version		Conventional signaling columns				Signaling columns for IO-Link			
Type		8WD4613-5HH37	5JH37	8WD4615-5HH37	5JH37	8WD4613-5HH47	5JH47	8WD4615-5HH47	5JH47
General data									
Approvals		cULus, EAC, CE							
Operational voltage type		DC							
Operational voltage at DC	V	24							
Relative positive tolerance of the operational voltage	%	10				20			
Relative negative tolerance of the operational voltage	%	10				20			
Insulation voltage (U_i)	V	50							
Impulse withstand voltage (U_{imp})	V	330							
Operational current	mA	335	405	555	620	335	405	555	620
Current consumed, minimum	mA	65		95		65		95	
Inrush current	mA	800							
Type of external power supply required		SELV/PELV extra-low voltage							
Overvoltage category		I							
Pollution degree		3							
Letter code according to IEC 81346-2:2019		P							
Equipment protection class according to IEC 61140		III							
Type of interface for parameterization		USB-C				IO-Link			
Type of parameterization		Software				IODD			
Optical signal									
Light source integrated in product		Yes							
Type of light source		RGB-LED, multi-color							
LED service life	h	50 000							
Color of calotte		Clear							
Number of light segments		9		15		9		15	
Number of settable colors		1 000 000							
Type of optical signal		Blink, flash, continuous, double flash, triple flash, rotating							
Product function: Settable optical signal		Yes							
Product function: Settable luminous intensity		Yes							
Default number of signal blocks		3		5		3		5	
Default type of signal blocks									
• 1		Green/ continuous light/ 3 light segments		White/ continuous light/ 3 light segments		Green/ continuous light/ 3 light segments		White/ continuous light/ 3 light segments	
• 2		Yellow/ continuous light/ 3 light segments		Blue/ continuous light/ 3 light segments		Yellow/ continuous light/ 3 light segments		Blue/ continuous light/ 3 light segments	
• 3		Red/ continuous light/ 3 light segments		Green/ continuous light/ 3 light segments		Red/ continuous light/ 3 light segments		Green/ continuous light/ 3 light segments	
• 4		--		Yellow/ continuous light/ 3 light segments		--		Yellow/ continuous light/ 3 light segments	
• 5		--		Red/ continuous light/ 3 light segments		--		Red/ continuous light/ 3 light segments	
Flash frequency	Hz	1							
Blink frequency									
• 1	Hz	1							
• 2	Hz	2							
• 3	Hz	3							

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NEW **Electronically configurable 8WD46 signaling columns, 70 mm diameter**

Version		Conventional signaling columns				Signaling columns for IO-Link			
Type		8WD4613-5HH37	8WD4613-5JH37	8WD4615-5HH37	8WD4615-5JH37	8WD4613-5HH47	8WD4613-5JH47	8WD4615-5HH47	8WD4615-5JH47
Acoustic signal									
Type of acoustic signal		--	Multi-tone	--	Multi-tone	--	Multi-tone	--	Multi-tone
Default type of acoustic signal		--	Continu-ous tone	--	Continu-ous tone	--	Continu-ous tone	--	Continu-ous tone
Product function: Settable acoustic signal		No	Yes	No	Yes	No	Yes	No	Yes
Service life of the acoustic signaling device	h	--	5 000	--	5 000	--	5 000	--	5 000
Volume level	dB	--	80 ... 105	--	80 ... 105	--	80 ... 105	--	80 ... 105
Default volume level	dB	--	80	--	80	--	80	--	80
Number of settable tones		--	10	--	10	--	10	--	10
Default tone frequency	kHz	--	2.7	--	2.7	--	2.7	--	2.7
Tone frequency of alternating tone	kHz	--	0.245 ... 6	--	0.245 ... 6	--	0.245 ... 6	--	0.245 ... 6
Communication									
IO-Link mode		--				24-bit output			
Type of connectable IO device		--				Signaling column			
IO-Link transfer rate		--				COM 3			
Protocol is supported IO-Link protocol		No				Yes			
Number of IO-Link ports		--				1			
Point-to-point cycle time between the master and the IO-Link device, minimum		--				6			
Enclosures									
Height	mm	271		372		271		372	
Width	mm	72							
Outer diameter	mm	∅ 72							
Material		PC							
Color of enclosure		Black							
Mounting type		Floor mounting, tube mounting, bracket mounting							
Degree of protection IP		IP66/IP69K							
Degree of protection according to NEMA		4/4X/12/13							
Type of electrical connection		M12 plug, 8-pole				M12 plug, 4-pole			
Ambient conditions									
Ambient temperature during operation	°C	-30 ... +60							

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Electronically configurable 8WD46 signaling columns, 70 mm diameter NEW

Selection and ordering data

	Type of acoustic signal	Number of light segments	Default number of signal blocks	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Conventional signaling columns · With M12 plug, 8-pole · 24 V DC								
	Without acoustics							
8WD4613-5HH37 8WD4615-5HH37	--	9	3	**8WD4613-5HH37**		1	1 unit	42K
		15	5	**8WD4615-5HH37**		1	1 unit	42K
	With acoustics							
8WD4613-5JH37 8WD4615-5JH37	Multi-tone	9	3	**8WD4613-5JH37**		1	1 unit	42K
		15	5	**8WD4615-5JH37**		1	1 unit	42K
Signaling columns for IO-Link · With M12 plug, 4-pole · 24 V DC								
	Without acoustics							
8WD4613-5HH47 8WD4615-5HH47	--	9	3	**8WD4613-5HH47**		1	1 unit	42K
		15	5	**8WD4615-5HH47**		1	1 unit	42K
	With acoustics							
8WD4613-5JH47 8WD4615-5JH47	Multi-tone	9	3	**8WD4613-5JH47**		1	1 unit	42K
		15	5	**8WD4615-5JH47**		1	1 unit	42K

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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NEW **Electronically configurable 8WD46 signaling columns, 70 mm diameter**

	Version	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories							
8WD4..8-0DA	**Foot with tube**						
	Tube length 100 mm						
	• Standard	Black	**8WD4308-0DA**		1	1 unit	41J
	• Degree of protection IP66/IP69 (IP69K)	Black	**8WD4618-0DA**		1	1 unit	42K
	Foot, single						
8WD4308-0DB	• Plastic, for tube mounting, for tube lengths ≤ 400 mm	Black	**8WD4308-0DB**		1	1 unit	41J
8WD4308-0DC	• Metal, for tube lengths > 400 mm	Black	**8WD4308-0DC**		1	1 unit	41J
8WD4208-0EF	**Tubes, single**						
	• Length 100 mm	Silver	**8WD4208-0EF**		1	1 unit	41J
	• Length 150 mm	Silver	**8WD4308-0EE**		1	1 unit	41J
	• Length 250 mm	Silver	**8WD4308-0EA**		1	1 unit	41J
	• Length 400 mm	Silver	**8WD4308-0EB**		1	1 unit	41J
	• Length 1 000 mm	Silver	**8WD4308-0ED**		1	1 unit	41J
8WD4408-0CC	**Brackets for mounting on feet**	Black	**8WD4408-0CC**		1	1 unit	41J
8WD4..8-0CA	**Brackets for wall mounting** (mounting without feet and tube)						
	For single-sided mounting						
	• Standard	Black	**8WD4308-0CA**		1	1 unit	41J
	• Degree of protection IP66/IP69 (IP69K)	Black	**8WD4618-0CA**		1	1 unit	42K
	Connecting cables						
	• Length 5 m						
3SX5601-3SB54	- With M12 socket, 4-pole and open end		**3SX5601-3SB54**		1	1 unit	41K
	• Length 1 m						
3SX5601-3SV15	- With M12 socket, 5-pole and M12 plug, 5-pole		**3SX5601-3SV15**		1	1 unit	41K
3SX5601-3SV18	- With M12 socket, 8-pole and M12 plug, 8-pole		**3SX5601-3SV18**		1	1 unit	41K
	USB C cable Length 3 m		**6SL3255-0AA00-2CA0**		1	1 unit	343

Further connecting cables, see pages 12/46 and 12/69.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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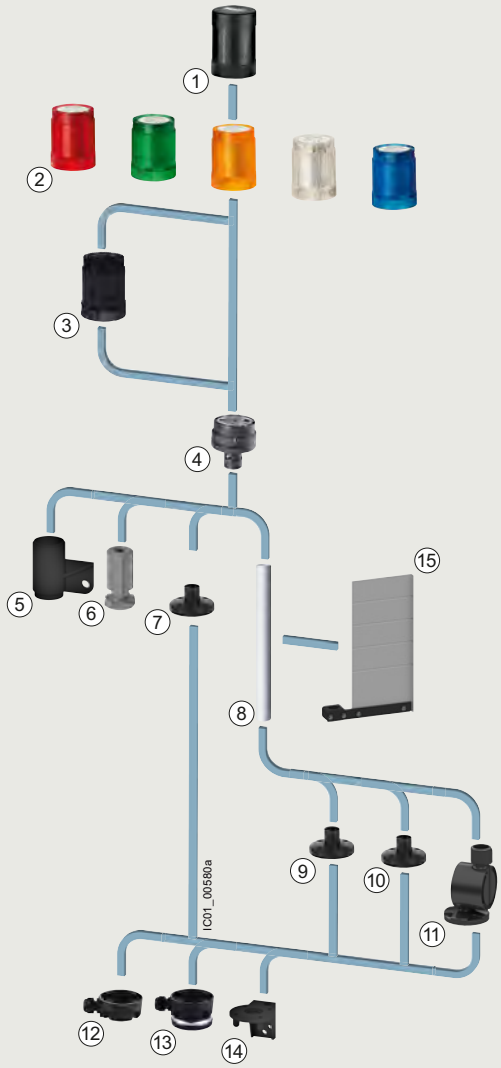
Overview

The 8WD4 signaling columns are flexible in design and versatile in use.

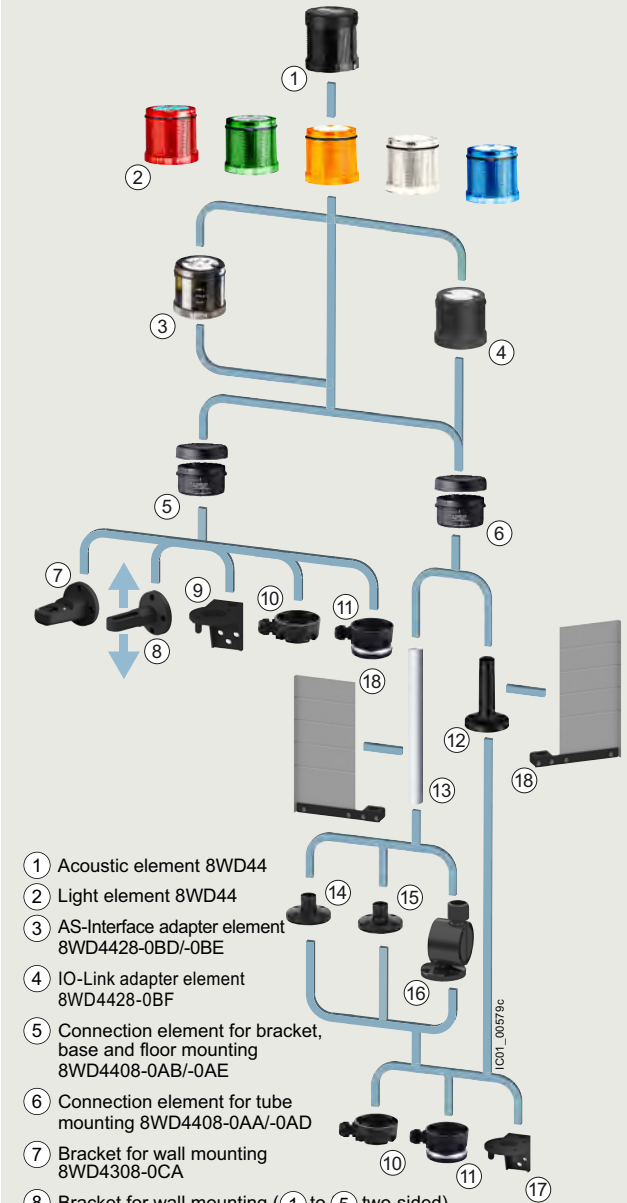
More information

Homepage, see www.siemens.com/sirius-signaling-columns
Industry Mall, see www.siemens.com/product?8WD4
Manual, see https://support.industry.siemens.com/cs/ww/en/view/109758131



1 Acoustic element 8WD42.0-0FA
2 Light element 8WD42
3 AS-Interface adapter element 8WD4228-0BB
4 Connection element 8WD4208-0AA
5 Bracket for wall mounting 8WD4208-0CD
6 Adapter for single-hole mounting 8WD4208-0EH
7 Foot for base mounting 8WD4208-0DE
8 Tube 8WD4208-0EF/8WD4308-0E.
9 Foot for tube mounting (≤ 400 mm) 8WD4308-0DB
10 Foot for tube mounting (> 400 mm) 8WD4308-0DC
11 Adjustable-angle foot for tube mounting 8WD4408-0DF
12 Socket 8WD4308-0DD
13 Socket (magnetic fixing) 8WD4308-0DE
14 Bracket for mounting on feet 8WD4408-0CC
15 Optional 8WD4408-0FA labeling panel

8WD42 signaling column (width 50 mm) with up to four elements



1 Acoustic element 8WD44
2 Light element 8WD44
3 AS-Interface adapter element 8WD4428-0BD/-0BE
4 IO-Link adapter element 8WD4428-0BF
5 Connection element for bracket, base and floor mounting 8WD4408-0AB/-0AE
6 Connection element for tube mounting 8WD4408-0AA/-0AD
7 Bracket for wall mounting 8WD4308-0CA
8 Bracket for wall mounting (1 to 5 two-sided) 8WD4308-0CB
9 Bracket for base mounting 8WD4408-0CD
10 Socket 8WD4308-0DD
11 Socket (magnetic fixing) 8WD4308-0DE
12 Foot with tube 8WD4308-0DA
13 Tube 8WD4208-0EF/8WD4308-0E.
14 Foot for tube mounting (≤ 400 mm) 8WD4308-0DB
15 Foot for tube mounting (> 400 mm) 8WD4308-0DC
16 Adjustable-angle foot for tube mounting 8WD4408-0DF
17 Bracket for mounting on feet 8WD4408-0CC
18 Optional 8WD4408-0FA labeling panel

8WD44 signaling column (width 70 mm) with up to five elements

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Two product series are available:

- 8WD42
  - Thermoplast enclosure, diameter 50 mm
  - Degree of protection IP54
  - Up to four elements can be mounted between the connection element and the cover
- 8WD44
  - Thermoplast enclosure, diameter 70 mm
  - Advanced design and significantly improved illumination
  - Fast and flexible connection using spring-loaded terminals
  - Integrated degree of protection IP65
  - Up to five elements can be mounted between the connection element and the cover

Mounting examples for signaling columns

The illustrated examples are from the left:

- 8WD42: Cover (without No.), four light elements ②, connection element ④, tube ⑧, foot ⑨
- 8WD44: Acoustic element with cover ①, two light elements ②, connection element ⑥, foot with tube ⑫
- 8WD44: Cover (without No.), four light elements ②, AS-Interface adapter element ③, connection element ⑤, bracket for wall mounting ⑦
- 8WD44: Cover (without No.), three light elements ②, AS-Interface adapter element ③, connection element ⑥, foot with tube ⑫

Note:

The cover is supplied with the connection element.

Benefits

- Choice of various light and acoustic elements with different functions:
  Continuous light, blinklight, flashlight and rotating light; buzzer and siren
- Light elements with particularly long-lasting LEDs
- Variety of colors: red, yellow, green, white or blue
- Optimized illumination through improved prism technology with the 8WD44
- Acoustic elements can be adjusted in tone and volume
- Extremely resistant to shock and vibrations
- Easy connection and quick lamp change with secure bayonet mechanism
- Communication capability through connection to AS-Interface
- Communication capability through connection to IO-Link for 8WD44 only

Application

8WD4 signaling columns are used in machines or in automatic processes for monitoring complex procedures or as visual or acoustic warning devices in emergency situations, e.g. for displaying individual assembly stages.

Communication capability

Connection to AS-Interface

The 8WD4 signaling columns can be directly connected to the AS-Interface bus system through an adapter element that can be integrated in the column. Wiring outlay is reduced as the result. The two-wire bus cable is fixed to the terminals in the connection element. Up to four signaling elements can be mounted on it using an adapter element.

A/B technology enables the connection of up to 62 slaves on one AS-Interface system.

IODD (IO Device Description)

The IO Device Description (IODD) has been defined to provide a full, transparent description of system characteristics as far as the IO-Link device. The IODD contains information on communication characteristics, device parameters, identification, process and diagnostics data.

The IODD is available under IO-Link Device Definition, see https://support.industry.siemens.com/cs/ww/en/view/109761427.

Connection

The signaling elements are wired up using terminals in the connection element, screw terminals on the 8WD42 and screw or spring-loaded terminals on the 8WD44.

Cable outlet

The connecting cables can be guided either downwards or sideways through the cable gland using an adapter that can be screwed under the foot. This makes wiring easier if there is no access from below.

Connection to AS-Interface

8WD42

The two-wire bus cable is fixed to the screw terminals in the connection element. The adapter element must be the first module to be mounted on the connection element. A maximum of four signaling elements can then be mounted on it.

The 8WD4228-0BB adapter element is a standard slave.

8WD44

The two-wire bus cable is fixed to the screw or spring-loaded terminals in the connection element. The adapter element must be the first module to be mounted on the connection element. The signaling elements can then be mounted on it.

The 8WD4428-0BE adapter element is a standard slave.
A maximum of four signaling elements can be mounted on it.

The 8WD4428-0BD adapter element with A/B technology enables the connection of up to 62 slaves on one AS-Interface system. The addressing socket provides user-friendly parameterization of the AS-Interface elements. A maximum of three signaling elements can be mounted on it.

Connection to IO-Link

8WD4428-0BF

The 8WD44 signaling columns are directly connected to the IO-Link system using an IO-Link adapter element that can be integrated in the column and can accommodate up to five light elements.

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Technical specifications

Type		8WD42	8WD44
General data			
Approvals		UL, CSA	UL, CSA
Light and acoustic elements			
Rated voltage, power consumption			
Light elements with incandescent lamp		(AC values for 50/60 Hz)	(AC values for 50/60 Hz)
• Continuous lights		12 V, 24 V, 115 V, 230 V AC/DC	12 V, 24 V, 115 V, 230 V AC/DC
• Blinklights		24 V AC/DC/125 mA; 115 V AC/20 mA; 230 V AC/15 mA	24 V AC/DC/125 mA; 115 V AC/20 mA; 230 V AC/15 mA
• Flashlights		24 V DC/125 mA	24 V DC/125 mA; 115 V AC/20 mA; 230 V AC/35 mA
• Max. inrush current, blinklights/flashlights		--	500 mA
Light elements with integrated LED			
• Continuous lights		24 V AC/DC/30 mA; 115 V AC/25 mA; 230 V AC/35 mA	24 V AC/DC/40 mA; 115 V AC/25 mA; 230 V AC/35 mA
• Blinklights		24 V AC/DC/35 mA; 115 V AC/25 mA; 230 V AC/35 mA	24 V AC/DC/30 mA
• Rotating lights		--	24 V AC/DC/70 mA
Acoustic elements			
• Buzzer element (tone: pulsating or continuous tone)		85 dB: 24 V AC/DC/30 mA; 115 V AC/DC/35 mA; 230 V AC/35 mA	85 dB: 24 V AC/DC/25 mA; 115 V AC/25 mA; 230 V AC/25 mA
• Siren element (8 tones + volume can be set, 102 dB)		--	24 V AC/DC/80 mA; 115 V AC/30 mA; 230 V AC/16 mA
• Siren element (95 ... 105 dB)		--	24 V DC/100 mA
Power consumption			
• Incandescent lamp, BA15d base	W	Max. 5	7
• Flashlights, flash energy	Ws	--	2
Service life			
• Flashlights		--	4×10^6 flashes
AS-Interface adapter elements			
IO code/ID code		8/F	8/E
Power supply		Through bus cable	Through bus cable
• Operational voltage	V	18.5 … 31.6	18.5 … 31.6
• Power consumption I_{max}	mA	50	100
Protective measures			
• Watchdog		✓	✓
• Short-circuit/overload protection		External back-up fuse M 1.6 A	✓
• Reverse polarity protection		✓	✓
• Induction protection		N/A	✓
Outputs		4 relay outputs	3 solid-state outputs
• Load voltage		External auxiliary voltage	Through bus cable or external auxiliary voltage, selectable
	V	0 … 30 DC	
	V	0 ... 230 AC	
• Current-carrying capacity ΣI_{max}			
- With external auxiliary voltage	A	1.5	0.3
- Without external auxiliary voltage	A	--	0.2
Operating temperature	°C	-20 … +50	-20 … +50
Enclosures			
Enclosure material		Thermoplast (polyamide), impact-resistant, black	Thermoplast (polyamide), impact-resistant, black
Light elements		Thermoplast (polycarbonate)	Thermoplast (polycarbonate)
Mounting			
• Horizontal (base mounting, foot with 25 mm diameter tube)		✓	✓
• Horizontal (single-hole mounting)		✓	--
• Vertical with bracket		✓	✓
Degree of protection			
• Light elements		IP54	IP65 (seal premounted with every module)
• Acoustic elements, AS-i adapter elements		IP54	IP65
Operating temperature	°C	-20 … +50	-20 … +50
Connection		M3 screw terminals	Spring-loaded terminals/M3 screw terminals
• Conductor cross-sections	mm^2	Max. 2.5	Max. 2.5
• Tightening torque	Nm	Max. 0.4	--/max. 0.4

✓ Available -- Not available

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Overview

Features:

- Thermoplast enclosure, diameter 50 mm
- Degree of protection IP54
- Up to four elements can be mounted between the connection element and the cover

Selection and ordering data

	Version	Rated voltage	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V						
Acoustic elements[1]								
8WD4220-0FA	**Buzzer elements,** 85 dB, tone frequency approx. 2 300 Hz, pulsating or continuous tone, settable by means of a wire jumper	24 AC/DC	Black	**8WD4220-0FA**		1	1 unit	41J
		115 AC/DC	Black	**8WD4240-0FA**		1	1 unit	41J
		230 AC	Black	**8WD4250-0FA**		1	1 unit	41J
Light elements for incandescent lamp/LED, BA15d base[2]								
8WD4200-1AD	**Continuous light elements**	24 ... 230 AC/DC	Red	**8WD4200-1AB**		1	1 unit	41J
			Green	**8WD4200-1AC**		1	1 unit	41J
			Yellow	**8WD4200-1AD**		1	1 unit	41J
			Clear	**8WD4200-1AE**		1	1 unit	41J
			Blue	**8WD4200-1AF**		1	1 unit	41J
Light elements with integrated LED								
8WD4220-5AB	**Continuous light elements**	24 AC/DC	Red	**8WD4220-5AB**		1	1 unit	41J
			Green	**8WD4220-5AC**		1	1 unit	41J
			Yellow	**8WD4220-5AD**		1	1 unit	41J
			Clear	**8WD4220-5AE**		1	1 unit	41J
			Blue	**8WD4220-5AF**		1	1 unit	41J
8WD4240-5AC		115 AC	Red	**8WD4240-5AB**		1	1 unit	41J
			Green	**8WD4240-5AC**		1	1 unit	41J
			Yellow	**8WD4240-5AD**		1	1 unit	41J
			Clear	**8WD4240-5AE**		1	1 unit	41J
			Blue	**8WD4240-5AF**		1	1 unit	41J
		230 AC	Red	**8WD4250-5AB**		1	1 unit	41J
			Green	**8WD4250-5AC**		1	1 unit	41J
			Yellow	**8WD4250-5AD**		1	1 unit	41J
			Clear	**8WD4250-5AE**		1	1 unit	41J
			Blue	**8WD4250-5AF**		1	1 unit	41J
8WD4220-5BD	**Blinklight elements**	24 AC/DC	Red	**8WD4220-5BB**		1	1 unit	41J
			Green	**8WD4220-5BC**		1	1 unit	41J
			Yellow	**8WD4220-5BD**		1	1 unit	41J
			Clear	**8WD4220-5BE**		1	1 unit	41J
			Blue	**8WD4220-5BF**		1	1 unit	41J
8WD4240-5BE		115 AC	Red	**8WD4240-5BB**		1	1 unit	41J
			Green	**8WD4240-5BC**		1	1 unit	41J
			Yellow	**8WD4240-5BD**		1	1 unit	41J
			Clear	**8WD4240-5BE**		1	1 unit	41J
			Blue	**8WD4240-5BF**		1	1 unit	41J
8WD4250-5BF		230 AC	Red	**8WD4250-5BB**		1	1 unit	41J
			Green	**8WD4250-5BC**		1	1 unit	41J
			Yellow	**8WD4250-5BD**		1	1 unit	41J
			Clear	**8WD4250-5BE**		1	1 unit	41J
			Blue	**8WD4250-5BF**		1	1 unit	41J
	Flashlight elements	24 DC	Red	**8WD4220-0CB**		1	1 unit	41J
			Green	**8WD4220-0CC**		1	1 unit	41J
			Yellow	**8WD4220-0CD**		1	1 unit	41J
			Clear	**8WD4220-0CE**		1	1 unit	41J
			Blue	**8WD4220-0CF**		1	1 unit	41J
Adapter elements for AS-Interface								
8WD4228-0BB	**AS-Interface adapter elements** With external auxiliary voltage	For 4 signaling elements 24 V DC	Black	**8WD4228-0BB**		1	1 unit	41J

[1] One acoustic element can be mounted per signaling column. The cover is included in the scope of supply of the acoustic elements and fixed in place.

[2] The lamp is not included in the scope of supply. Please order separately, see page 13/174.

*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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	Version	Rated voltage	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V						
Connection elements								
8WD4208-0AA	**Connection elements with cover** For tube, floor and bracket mounting Necessary for assembling the signaling column	--	Black	**8WD4208-0AA**		1	1 unit	41J
Mounting								
8WD4308-0DB	**Foot, single**							
	• Plastic, for tube mounting, for tube lengths ≤ 400 mm	--	Black	**8WD4308-0DB**		1	1 unit	41J
	• Metal, for tube lengths > 400 mm	--	Black	**8WD4308-0DC**		1	1 unit	41J
	• Plastic, for base mounting (without tube)	--	Black	**8WD4208-0DE**		1	1 unit	41J
8WD4408-0DF	**Adjustable-angle feet** For positioning in 7.5° increments[1] Plastic, for tube mounting (including rubber seal)	--	Black	**8WD4408-0DF**		1	1 unit	41J
8WD4208-0EF	**Tubes, single**							
	• Length 100 mm	--	Silver	**8WD4208-0EF**		1	1 unit	41J
	• Length 150 mm	--	Silver	**8WD4308-0EE**		1	1 unit	41J
	• Length 250 mm	--	Silver	**8WD4308-0EA**		1	1 unit	41J
	• Length 400 mm	--	Silver	**8WD4308-0EB**		1	1 unit	41J
	• Length 1 000 mm	--	Silver	**8WD4308-0ED**		1	1 unit	41J
8WD4308-0DD	**Sockets for feet**							
	• Side cable outlet (can also be used without feet)	--	Black	**8WD4308-0DD**		1	1 unit	41J
8WD4308-0DE	• Side cable outlet, with magnetic fixing[2]	--	Black	**8WD4308-0DE**		1	1 unit	41J
8WD4408-0CC	**Brackets for mounting on feet**	--	Black	**8WD4408-0CC**		1	1 unit	41J
8WD4208-0CD	**Brackets for wall mounting** (plastic) Mounting without feet and tube	--	Black	**8WD4208-0CD**		1	1 unit	41J
8WD4208-0EH	**Adapters for single-hole mounting** Mounting without feet and tube, with M18 thread and fixing nut	--	Silver	**8WD4208-0EH**		1	1 unit	41J
Lamps								
8WD4328-1XX	**Incandescent lamps, 5 W**							
	BA15d base	24 AC/DC	Clear	**8WD4328-1XX**		1	10 units	41J
		115 AC	Clear	**8WD4348-1XX**		1	10 units	41J
		230 AC	Clear	**8WD4358-1XX**		1	10 units	41J
8WD4428-6XB	**LEDs**							
	BA15d base	24 AC/DC	Red	**8WD4428-6XB**		1	1 unit	41J
			Green	**8WD4428-6XC**		1	1 unit	41J
			Yellow	**8WD4428-6XD**		1	1 unit	41J
			Clear	**8WD4428-6XE**		1	1 unit	41J
			Blue	**8WD4428-6XF**		1	1 unit	41J
		115 AC	Red	**8WD4448-6XB**		1	1 unit	41J
			Green	**8WD4448-6XC**		1	1 unit	41J
			Yellow	**8WD4448-6XD**		1	1 unit	41J
			Clear	**8WD4448-6XE**		1	1 unit	41J
			Blue	**8WD4448-6XF**		1	1 unit	41J
		230 AC	Red	**8WD4458-6XB**		1	1 unit	41J
			Green	**8WD4458-6XC**		1	1 unit	41J
			Yellow	**8WD4458-6XD**		1	1 unit	41J
			Clear	**8WD4458-6XE**		1	1 unit	41J
			Blue	**8WD4458-6XF**		1	1 unit	41J

[1] Markings for 30°, 45°, 60° and 90°.

[2] For horizontal mounting, only 1 element is recommended.

Labeling panels, see 8WD44 signaling columns, page 13/179.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

Features:

- Thermoplast enclosure, diameter 70 mm
- Advanced design and significantly improved illumination
- Fast and flexible connection using spring-loaded terminals
- Integrated degree of protection IP65
- Up to five elements can be mounted

Selection and ordering data

	Version	Rated voltage	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V						
Acoustic elements[1]								
8WD4240-0FA	**Buzzer elements** 85 dB, pulsating or continuous tone, settable by means of a wire jumper	24 AC/DC	Black	**8WD4420-0FA**		1	1 unit	41J
		115 AC	Black	**8WD4440-0FA**		1	1 unit	41J
		230 AC	Black	**8WD4450-0FA**		1	1 unit	41J
	Siren elements, multi-tone, 102 dB, 8 tones and volume can be set	24 AC/DC	Black	**8WD4420-0EA2**		1	1 unit	41J
		115 AC	Black	**8WD4440-0EA2**		1	1 unit	41J
		230 AC	Black	**8WD4450-0EA2**		1	1 unit	41J
8WD4420-0EA	**Siren elements,** 95 ... 105 dB, IP65, alternating continuous tone	24 DC	Black	**8WD4420-0EA**		1	1 unit	41J
Light elements for incandescent lamp/LED, BA15d base[2]								
8WD4400-1AD	**Continuous light elements**	12 ... 230 AC/DC	Red	**8WD4400-1AB**		1	1 unit	41J
			Green	**8WD4400-1AC**		1	1 unit	41J
			Yellow	**8WD4400-1AD**		1	1 unit	41J
			Clear	**8WD4400-1AE**		1	1 unit	41J
			Blue	**8WD4400-1AF**		1	1 unit	41J
Light elements with integrated flash lamp[3]								
8WD4420-0CB	**Flashlight elements** with integrated electronic flash	24 DC	Red	**8WD4420-0CB**		1	1 unit	41J
			Green	**8WD4420-0CC**		1	1 unit	41J
			Yellow	**8WD4420-0CD**		1	1 unit	41J
			Clear	**8WD4420-0CE**		1	1 unit	41J
			Blue	**8WD4420-0CF**		1	1 unit	41J
8WD4440-0CC		115 AC	Red	**8WD4440-0CB**		1	1 unit	41J
			Green	**8WD4440-0CC**		1	1 unit	41J
			Yellow	**8WD4440-0CD**		1	1 unit	41J
			Clear	**8WD4440-0CE**		1	1 unit	41J
			Blue	**8WD4440-0CF**		1	1 unit	41J
8WD4450-0CF		230 AC	Red	**8WD4450-0CB**		1	1 unit	41J
			Green	**8WD4450-0CC**		1	1 unit	41J
			Yellow	**8WD4450-0CD**		1	1 unit	41J
			Clear	**8WD4450-0CE**		1	1 unit	41J
			Blue	**8WD4450-0CF**		1	1 unit	41J

1) One acoustic element can be mounted per signaling column. The cover is included in the scope of supply of the acoustic elements and fixed in place.

2) The lamp is not included in the scope of supply. Please order separately.

3) The lamp is included in the scope of supply.

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	Version	Rated voltage	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V						
Complete units, signaling columns								
8WD4423-5AK05-0AF0	3-stage Top: Continuous light, blue Center: Continuous light, green, with integrated LED Bottom: Flashlight element, clear, integrated electronic flashlight Connection element for tube mounting, tube, 250 mm, foot, plastic	24 DC	Blue, Green, Clear	**8WD4423-5AK05-0AF0**		1	1 unit	41J
8WD4423-5AK05-0AE0	3-stage Top: Continuous light, yellow Center: Continuous light, blue Bottom: Continuous light, green, with integrated LED Connection element for tube mounting, tube, 250 mm, foot, plastic	24 AC/DC	Yellow, Blue, Green	**8WD4423-5AK05-0AE0**		1	1 unit	41J
8WD4421-0GA05-0AG0	Connection element for tube mounting, tube, 250 mm, foot, plastic	--	--	**8WD4421-0GA05-0AG0**		1	1 unit	41J

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Version	Rated voltage	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V						
Light elements with integrated LED								
8WD4420-5AB	**Continuous light elements**	24 AC/DC	Red	**8WD4420-5AB**		1	1 unit	41J
			Green	**8WD4420-5AC**		1	1 unit	41J
			Yellow	**8WD4420-5AD**		1	1 unit	41J
			Clear	**8WD4420-5AE**		1	1 unit	41J
			Blue	**8WD4420-5AF**		1	1 unit	41J
8WD4440-5AC		115 AC	Red	**8WD4440-5AB**		1	1 unit	41J
			Green	**8WD4440-5AC**		1	1 unit	41J
			Yellow	**8WD4440-5AD**		1	1 unit	41J
			Clear	**8WD4440-5AE**		1	1 unit	41J
			Blue	**8WD4440-5AF**		1	1 unit	41J
8WD4450-5AD		230 AC	Red	**8WD4450-5AB**		1	1 unit	41J
			Green	**8WD4450-5AC**		1	1 unit	41J
			Yellow	**8WD4450-5AD**		1	1 unit	41J
			Clear	**8WD4450-5AE**		1	1 unit	41J
			Blue	**8WD4450-5AF**		1	1 unit	41J
8WD4420-5BF	**Blinklight elements**	24 AC/DC	Red	**8WD4420-5BB**		1	1 unit	41J
			Green	**8WD4420-5BC**		1	1 unit	41J
			Yellow	**8WD4420-5BD**		1	1 unit	41J
			Clear	**8WD4420-5BE**		1	1 unit	41J
			Blue	**8WD4420-5BF**		1	1 unit	41J
8WD4440-5BE		115 AC	Red	**8WD4440-5BB**		1	1 unit	41J
			Green	**8WD4440-5BC**		1	1 unit	41J
			Yellow	**8WD4440-5BD**		1	1 unit	41J
			Clear	**8WD4440-5BE**		1	1 unit	41J
			Blue	**8WD4440-5BF**		1	1 unit	41J
8WD4450-5BB		230 AC	Red	**8WD4450-5BB**		1	1 unit	41J
			Green	**8WD4450-5BC**		1	1 unit	41J
			Yellow	**8WD4450-5BD**		1	1 unit	41J
			Clear	**8WD4450-5BE**		1	1 unit	41J
			Blue	**8WD4450-5BF**		1	1 unit	41J
8WD4420-5DD	**Rotating light elements**	24 AC/DC	Red	**8WD4420-5DB**		1	1 unit	41J
			Green	**8WD4420-5DC**		1	1 unit	41J
			Yellow	**8WD4420-5DD**		1	1 unit	41J
			Clear	**8WD4420-5DE**		1	1 unit	41J
			Blue	**8WD4420-5DF**		1	1 unit	41J
Adapter elements for AS-Interface and IO-Link								
		24 V DC						
8WD4428-0BD	**AS-Interface adapter elements** With/without external auxiliary voltage, switchable							
	• A/B technology	For 3 signaling elements	Black	**8WD4428-0BD**		1	1 unit	41J
	• Standard AS-i	For 4 signaling elements	Black	**8WD4428-0BE**		1	1 unit	41J
8WD4428-0BF	**IO-Link adapter element**	For 5 signaling elements	Black	**8WD4428-0BF**		1	1 unit	41J

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Illustrations are approximate

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8WD42 and 8WD44 signaling columns > 8WD44 signaling columns, 70 mm diameter

	Version	Color	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Connection elements[1]							
8WD4408-0AA	**Connection elements with cover**						
	• For tube mounting	Black	**8WD4408-0AA**		1	1 unit	41J
	• For bracket, base and floor mounting	Black	**8WD4408-0AB**		1	1 unit	41J
			Spring-loaded terminals				
	• For tube mounting	Black	**8WD4408-0AD**		1	1 unit	41J
	• For bracket, base and floor mounting	Black	**8WD4408-0AE**		1	1 unit	41J
	Cover (replacement)	Black	**8WD4408-0XA**		1	1 unit	41J

[1] The connection element with cover is an essential part for assembling the signaling columns.

	Version	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mounting							
8WD4308-0DA	**Foot with tube** Tube length 100 mm	Black	**8WD4308-0DA**		1	1 unit	41J
	Foot, single						
8WD4308-0DB	• Plastic, for tube mounting, for tube lengths ≤ 400 mm	Black	**8WD4308-0DB**		1	1 unit	41J
	• Metal, for tube lengths > 400 mm	Black	**8WD4308-0DC**		1	1 unit	41J
8WD4408-0DF	**Adjustable-angle feet** For positioning in 7.5° increments[1] Plastic, for tube mounting (including rubber seal)	Black	**8WD4408-0DF**		1	1 unit	41J
	Tubes, single						
8WD4208-0EF	• Length 100 mm	Silver	**8WD4208-0EF**		1	1 unit	41J
	• Length 150 mm	Silver	**8WD4308-0EE**		1	1 unit	41J
	• Length 250 mm	Silver	**8WD4308-0EA**		1	1 unit	41J
	• Length 400 mm	Silver	**8WD4308-0EB**		1	1 unit	41J
	• Length 1 000 mm	Silver	**8WD4308-0ED**		1	1 unit	41J
	Sockets for feet						
8WD4308-0DD	• Side cable outlet (can also be used without feet)	Black	**8WD4308-0DD**		1	1 unit	41J
8WD4308-0DE	• Side cable outlet, with magnetic fixing[2]	Black	**8WD4308-0DE**		1	1 unit	41J
8WD4308-0CA	**Brackets for wall mounting** (mounting without feet and tube) • For single-sided mounting	Black	**8WD4308-0CA**		1	1 unit	41J
8WD4308-0CB	• For double-sided mounting	Black	**8WD4308-0CB**		1	1 unit	41J

[1] Markings for 30°, 45°, 60° and 90°.

[2] For horizontal mounting, only one element is recommended.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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	Version		Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mounting								
8WD4408-0CC	**Brackets for mounting on feet**		Black	**8WD4408-0CC**		1	1 unit	41J
8WD4408-0CD	**Brackets for base mounting** Mounting without feet and tube		Black	**8WD4408-0CD**		1	1 unit	41J
	Adapter for tube mounting according to NPT Mounting on tube, ∅ 25 mm, with NPT 1/2" thread		Black	**8WD4308-0DF**		1	1 unit	41J

	Version	Rated voltage	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V						
Lamps								
8WD4328-1XX	**Incandescent lamps, 5 W**							
	BA15d base	24 AC/DC	Clear	**8WD4328-1XX**		1	10 units	41J
		115 AC	Clear	**8WD4348-1XX**		1	10 units	41J
		230 AC	Clear	**8WD4358-1XX**		1	10 units	41J
8WD4428-6XE	**LEDs**							
	BA15d base	24 AC/DC	Red	**8WD4428-6XB**		1	1 unit	41J
			Green	**8WD4428-6XC**		1	1 unit	41J
			Yellow	**8WD4428-6XD**		1	1 unit	41J
			Clear	**8WD4428-6XE**		1	1 unit	41J
			Blue	**8WD4428-6XF**		1	1 unit	41J
		115 AC	Red	**8WD4448-6XB**		1	1 unit	41J
			Green	**8WD4448-6XC**		1	1 unit	41J
			Yellow	**8WD4448-6XD**		1	1 unit	41J
			Clear	**8WD4448-6XE**		1	1 unit	41J
			Blue	**8WD4448-6XF**		1	1 unit	41J
		230 AC	Red	**8WD4458-6XB**		1	1 unit	41J
			Green	**8WD4458-6XC**		1	1 unit	41J
			Yellow	**8WD4458-6XD**		1	1 unit	41J
			Clear	**8WD4458-6XE**		1	1 unit	41J
			Blue	**8WD4458-6XF**		1	1 unit	41J
Inscriptions for 8WD42 and 8WD44								
8WD4408-0FA	**Labeling panels** With fixing accessories, for mounting on ∅ 25 mm tube Inscription area/ step 50 mm x 140 mm Suitable for standard labels, e.g. • Zweckform 3425 • Herma 4457	--	--	**8WD4408-0FA**		1	1 unit	41J

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*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

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8WD53 integrated signal lamps, 70 mm diameter

Overview

8WD53 integrated signal lamps

More information
Homepage, see www.siemens.com/sirius-command
Industry Mall, see www.siemens.com/product?8WD5
Configuration Manual, see https://support.industry.siemens.com/cs/ww/en/view/107194954

Design

Features:

- Thermoplast enclosures, diameter 70 mm
- Degree of protection IP65
- Rated voltage 24 V, 115 V, 230 V AC/DC
- Ambient temperature -20 to +50 °C, incandescent lamp up to 60 °C

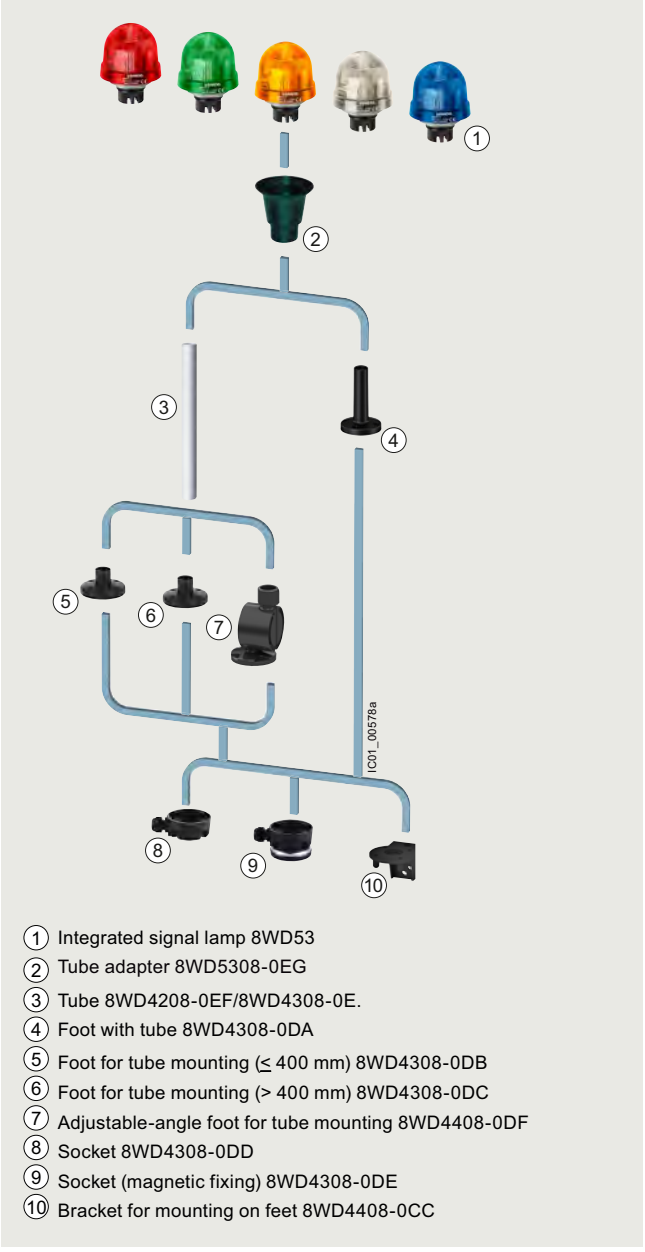
The special shape of the integrated signal lamps means that the light is emitted optimally in every direction (to the sides and upwards). Continuous lights (with incandescent lamp or LED) and flashlights are available in five colors. As well as the continuous-light version, a blinklight or rotating light version is also available.

The LED versions of the integrated signal lamps offer a considerably longer endurance than the incandescent lamp versions.

They all have the high degree of protection IP65 and are made of a material highly resistant to impact.

Mounting

8WD53 integrated signal lamps can be mounted at any point of the machine for the purpose of giving visual signals. They are mounted by means of a PG-29 screw base with nut.



① Integrated signal lamp 8WD53
② Tube adapter 8WD5308-0EG
③ Tube 8WD4208-0EF/8WD4308-0E.
④ Foot with tube 8WD4308-0DA
⑤ Foot for tube mounting (≤ 400 mm) 8WD4308-0DB
⑥ Foot for tube mounting (> 400 mm) 8WD4308-0DC
⑦ Adjustable-angle foot for tube mounting 8WD4408-0DF
⑧ Socket 8WD4308-0DD
⑨ Socket (magnetic fixing) 8WD4308-0DE
⑩ Bracket for mounting on feet 8WD4408-0CC

8WD53 integrated signal lamps with five elements

Application

SIRIUS 8WD53 integrated signal lamps can be used as visual signaling devices in harsh ambient conditions and in outdoor installations.

Visual signaling devices for indicating operating conditions can be used for the following applications:

- Manufacturing plants
- Injection molding machines
- Conveyors
- Assembly systems for electronic components

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Selection and ordering data

	Version	Rated voltage	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		V						
Light elements for incandescent lamp/LED, BA15d base								
8WD5300-1AB	**Continuous lights**[1]	12 ... 230 AC/DC	Red	**8WD5300-1AB**		1	1 unit	41J
			Green	**8WD5300-1AC**		1	1 unit	41J
			Yellow	**8WD5300-1AD**		1	1 unit	41J
			Clear	**8WD5300-1AE**		1	1 unit	41J
			Blue	**8WD5300-1AF**		1	1 unit	41J
Light elements with integrated flash lamp								
8WD5320-0CC	**Flashlights** with integrated electronic flash	24 AC/DC	Red	**8WD5320-0CB**		1	1 unit	41J
			Green	**8WD5320-0CC**		1	1 unit	41J
			Yellow	**8WD5320-0CD**		1	1 unit	41J
			Clear	**8WD5320-0CE**		1	1 unit	41J
			Blue	**8WD5320-0CF**		1	1 unit	41J
		115 AC	Red	**8WD5340-0CB**		1	1 unit	41J
			Green	**8WD5340-0CC**		1	1 unit	41J
			Yellow	**8WD5340-0CD**		1	1 unit	41J
			Clear	**8WD5340-0CE**		1	1 unit	41J
			Blue	**8WD5340-0CF**		1	1 unit	41J
8WD5350-0CD		230 AC	Red	**8WD5350-0CB**		1	1 unit	41J
			Green	**8WD5350-0CC**		1	1 unit	41J
			Yellow	**8WD5350-0CD**		1	1 unit	41J
			Clear	**8WD5350-0CE**		1	1 unit	41J
			Blue	**8WD5350-0CF**		1	1 unit	41J
Light elements with integrated LED								
8WD5320-5AE	**Continuous lights**	24 AC/DC	Red	**8WD5320-5AB**		1	1 unit	41J
			Green	**8WD5320-5AC**		1	1 unit	41J
			Yellow	**8WD5320-5AD**		1	1 unit	41J
			Clear	**8WD5320-5AE**		1	1 unit	41J
			Blue	**8WD5320-5AF**		1	1 unit	41J
	Blinklights	24 AC/DC	Red	**8WD5320-5BB**		1	1 unit	41J
			Green	**8WD5320-5BC**		1	1 unit	41J
			Yellow	**8WD5320-5BD**		1	1 unit	41J
			Clear	**8WD5320-5BE**		1	1 unit	41J
			Blue	**8WD5320-5BF**		1	1 unit	41J
8WD5320-5DF	**Rotating lights**	24 AC/DC	Red	**8WD5320-5DB**		1	1 unit	41J
			Green	**8WD5320-5DC**		1	1 unit	41J
			Yellow	**8WD5320-5DD**		1	1 unit	41J
			Clear	**8WD5320-5DE**		1	1 unit	41J
			Blue	**8WD5320-5DF**		1	1 unit	41J

[1] Lamp not included in scope of supply, see page 13/179.

Accessories, see next page.

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8WD53 integrated signal lamps, 70 mm diameter

	Version	Color	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories required for mounting on tubes							
8WD5308-0EG	**Tube adapter** This accessory is an essential prerequisite for use of the mounting accessories listed below.	Black	**8WD5308-0EG**		1	1 unit	41J
Mounting accessories (optional)							
8WD4308-0DA	**Foot with tube** Tube length 100 mm	Black	**8WD4308-0DA**		1	1 unit	41J
	Foot, single						
8WD4308-0DB	• Plastic, for tube mounting, for tube lengths ≤ 400 mm	Black	**8WD4308-0DB**		1	1 unit	41J
8WD4308-0DC	• Metal, for tube lengths > 400 mm	Black	**8WD4308-0DC**		1	1 unit	41J
8WD4408-0DF	**Adjustable-angle feet** For positioning in 7.5° increments[1] Plastic, for tube mounting (including rubber seal)	Black	**8WD4408-0DF**		1	1 unit	41J
8WD4208-0EF	**Tubes, single**						
	• Length 100 mm	Silver	**8WD4208-0EF**		1	1 unit	41J
	• Length 150 mm	Silver	**8WD4308-0EE**		1	1 unit	41J
	• Length 250 mm	Silver	**8WD4308-0EA**		1	1 unit	41J
	• Length 400 mm	Silver	**8WD4308-0EB**		1	1 unit	41J
	• Length 1 000 mm	Silver	**8WD4308-0ED**		1	1 unit	41J
	Sockets for feet						
8WD4308-0DD	• Side cable outlet (can also be used without feet)	Black	**8WD4308-0DD**		1	1 unit	41J
8WD4308-0DE	• Side cable outlet, with magnetic fixing[2]	Black	**8WD4308-0DE**		1	1 unit	41J
8WD4408-0CC	**Brackets for mounting on feet**	Black	**8WD4408-0CC**		1	1 unit	41J

[1] Markings for 30°, 45°, 60° and 90°.

[2] For horizontal mounting, only one element is recommended.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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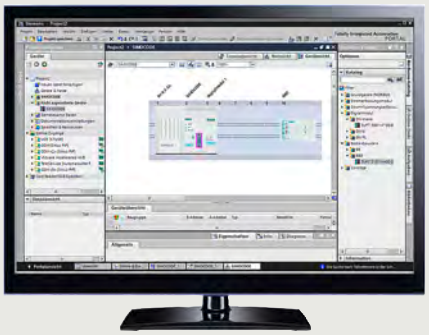

	Price groups PG 368, 41L, 42B, 42C, 42D, 42H, 42J, 42S
14/2	**Introduction**
14/4	**Simulation Tool for Soft Starters (STS)**
14/5	**SIRIUS Soft Starter ES (TIA Portal)**
14/7	**SIRIUS 3RW soft starter block library for SIMATIC PCS 7**
14/10	**Motor Starter ES**
14/12	**SIMOCODE ES (TIA Portal)**
14/15	**SIMOCODE pro block library for SIMATIC PCS 7**
14/19	**AS-Interface block library for SIMATIC PCS 7**
14/22	**SIRIUS Safety ES (TIA Portal)**
14/25	**SIRIUS Sim**

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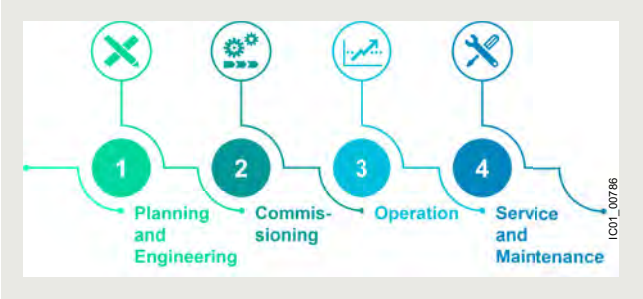
Overview

More information

Industry Mall, see www.siemens.com/product?3ZS1

International competition, enormous cost pressure and time constraints, higher productivity and quality: Equipment and system planners and operators face a wide range of challenges in executing projects as efficiently and cost-effectively as possible. We provide extensive support in this process with our SIRIUS software applications to help users achieve the best possible results with SIRIUS products in a targeted and efficient manner.



Software applications for all phases of the project

Support provided by SIRIUS software applications is strongly oriented to the needs of the user in the specific phases of the project.

Planning

The TIA Selection Tool can be used for selection, configuration and ordering of SIRIUS products. Intelligent selection wizards check the compatibility of the configured components and enable error-free ordering, see page 7 or www.siemens.com/tst.

Assistance with standard-compliant dimensioning and electrical planning is provided by Control Panel Design (CPD). At the push of a button you receive the appropriate switching and protection devices for your motor, including standard-compliant cable cross-sections and short-circuit values for fuseless and fused load feeders, see page 8 or www.siemens.com/cpd.

Convenient soft starter design is possible using the Simulation Tool for Soft Starters (STS), see page 14/4.

Commissioning

The engineering programs of the SIRIUS ES software family are used for parameterization and commissioning of all software-configurable SIRIUS devices (such as SIMOCODE, soft starters and motor starters and 3SK2 safety relays).

The SIRIUS simulation tool can be used to quickly and easily test the generated functions and configurations in an office environment without having to be connected to any device.

The corresponding devices can also be easily and conveniently installed into the SIMATIC PCS 7 process control system with the PCS 7 block library, e.g. for SIMOCODE, soft starters, and AS-Interface. See the following individual product descriptions for details about the different packages.

Operation

Seamless embedding of SIRIUS devices in the Totally Integrated Automation Portal (TIA Portal) provides a variety of possibilities for operation and monitoring, e.g. with SIMATIC WinCC.

Linking of data to MindSphere, along with a corresponding application, also enables detailed evaluation and optimization with regard to device status and alarms and error messages.

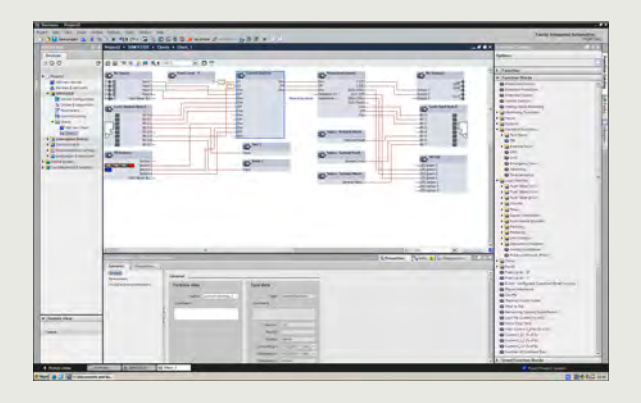
Service and maintenance

The engineering programs of the SIRIUS ES software family also provide support in this phase for diagnostics of the basic and fast SIRIUS devices and for detecting and easily eliminating faults. See the following individual product descriptions for details about the different packages.

Engineering software

SIRIUS ES engineering software (E-SW)

The SIRIUS ES programs, such as SIRIUS Safety ES, SIMOCODE ES or SIRIUS Soft Starter ES, are based on the central engineering framework Totally Integrated Automation Portal (TIA Portal), which provides users with a consistent, efficient and intuitive solution for all automation tasks. Thus, the TIA Portal is also the integrated working environment for the programs in the SIRIUS software family. The same operator control concept, the elimination of interfaces and a high degree of user-friendliness make it possible to quickly integrate SIRIUS devices into an automation process and start them up with the TIA Portal.



Efficient engineering and startup with graphic user interfaces and simple network and device configuration

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The SIRIUS ES programs (TIA Portal), such as SIRIUS Safety ES, SIRIUS Soft Starter ES and SIMOCODE ES, are available in two versions, which differ in terms of user-friendliness, scope of functions and price:

- Basic
  The basic variant contains all basic functions that are needed to parameterize devices. These include both parameterization functions and also operator control, diagnostics and test functions.
  It is available free of charge for downloading from the Siemens Industry Online Support Portal.
- Professional
  The Professional variants contain the complete functionality of the software packages. The functionality includes communication functions such as access via PROFIBUS/PROFINET and S7 routing.

The SIRIUS ES program Motor Starter ES is available in three versions (basic, standard, premium) which differ in their user-friendliness, scope of functions and price.

Note:

The scope of functions depends on the SIRIUS ES program, see the individual product description for details.

Types of licenses

The programs of the SIRIUS ES software family are available in the following license forms:

- Floating license – the license for any one user.
  - Authorizes any one user
  - Independent of the number of installations (unlike the single license which is allowed to be installed once only)
  - Only the actual use of the program has to be licensed
  - License for parallel use of the TIA Portal version and of Version 2007 of SIRIUS ES (combo license)
- Trial license (free use of all program functions for 14/21 days for test and evaluation purposes, included on every product CD/DVD, available in the download file of the SIRIUS ES program in the Service&Support portal).

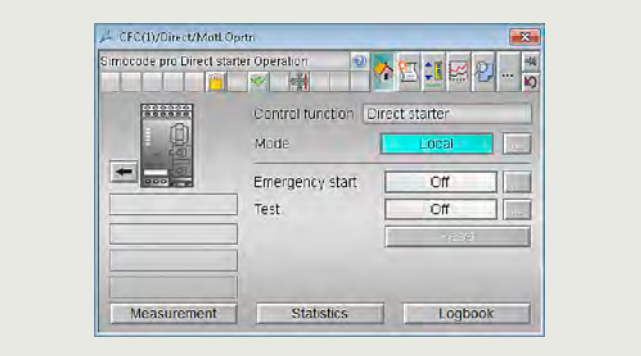
The following delivery versions are also available for a number of programs of the SIRIUS ES software family:

- Upgrade
  Switching from an old to a new version with expanded functions, e.g. upgrade from SIMOCODE ES 2007 to SIMOCODE ES V17.

Types of delivery

- License/software download
  Simply download your new software and license key from the internet via the Online Software Delivery (OSD) platform. After you have placed your order in our mall, you will receive your access data by email, which will allow you to immediately download the license or software you have ordered.
  For more information see www.siemens.com/tia-online-software-delivery.
- Software Update Service
  To keep you up to date at all times we offer a special service which automatically supplies you with all the service packs and upgrades within the SIRIUS ES (TIA Portal) range of programs.
- Package delivery
  The software is on a DVD and is delivered together with the license on a USB flash drive.

Block libraries for SIMATIC PCS 7



Advanced Process Library (APL) – faceplates and blocks for control of the SIMOCODE pro block library for PCS 7

The corresponding devices can be easily and conveniently installed into the SIMATIC PCS 7 process control system with the PCS 7 block library, e.g. for SIMOCODE, soft starters, and AS-Interface. PCS 7 block libraries contain the diagnostics and driver blocks corresponding with the diagnostics and driver concept of SIMATIC PCS 7 as well as the elements (symbols and faceplate) required for operator control and process monitoring.

Types of delivery and licenses

The PCS 7 block libraries supplied on CD-ROM or by license/software download allow users to run the required engineering software on the engineering station (single license) including the runtime software for executing the AS blocks in an automation system (single license). If the AS blocks are to be used in additional automation systems, the corresponding number of runtime licenses are required which are supplied without a data carrier.

Notes on security

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

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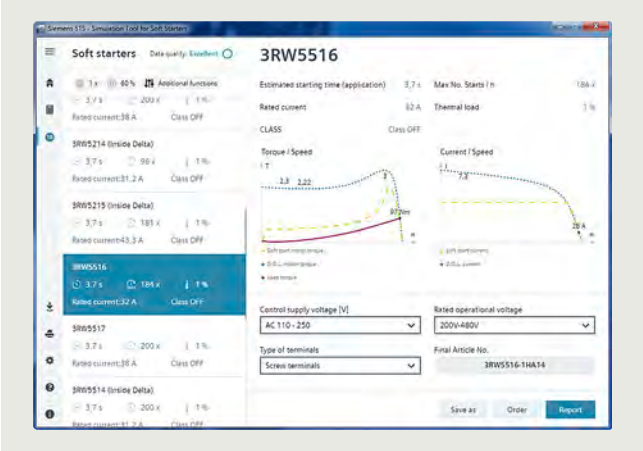
Simulation Tool for Soft Starters (STS)

Overview



Easy input of motor and load data

More information

Simulation Tool for Soft Starters (STS), see https://support.industry.siemens.com/cs/ww/en/view/101494917

The Simulation Tool for Soft Starters (STS) provides a convenient means of designing soft starters using a simple, quick and easy-to-use interface. Entering the motor and load data will simulate the application and prompt suggestions for suitable soft starters.

STS app

The Simulation Tool for Soft Starters (STS) is available free of charge as a download and as an app (for Android or iOS), see "More information".

Benefits

- Simple, quick and user-friendly operator interface
- Detailed and up-to-date Siemens motor database, including IE3 and IE4 motors
- Simulation of heavy starting up to CLASS 30
- Update-capable (e.g. motors, load types, functions)
- Fast simulations with minimum input data
- Immediate, graphical curve charts of start operations with limit values
- View in table form of suitable soft starters for the application

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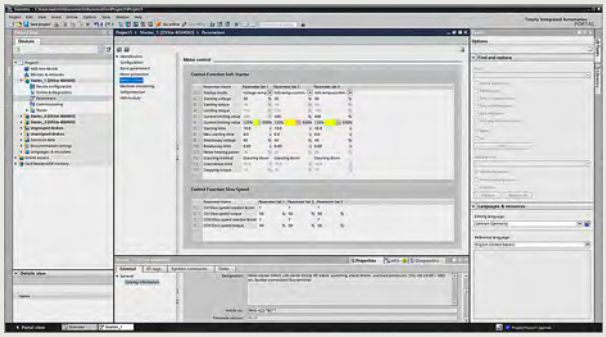
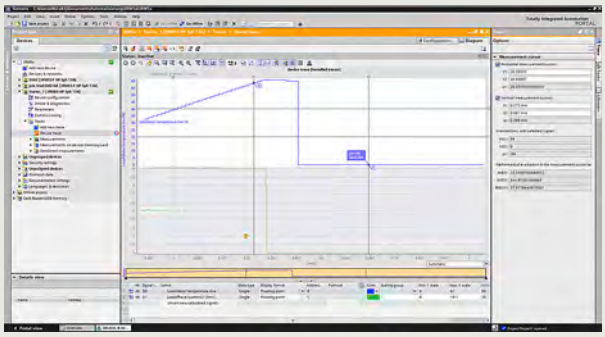
Overview



Easy and clearly arranged parameter setting of the SIRIUS 3RW44 and 3RW55 soft starters with SIRIUS Soft Starter ES (TIA Portal)



Graphic presentation of measured values with the trace function (oscilloscope function) of SIRIUS Soft Starter ES (TIA Portal) Professional

More information

Technical specifications and system requirements, see https://support.industry.siemens.com/cs/ww/en/ps/24230/td

Download of the basic variant of Soft Starter ES, see https://support.industry.siemens.com/cs/ww/en/view/109793076

The SIRIUS Soft Starter ES (TIA Portal) software permits quick and easy parameterization, monitoring and diagnostics of SIRIUS 3RW44 and 3RW5 soft starters for service purposes. The device parameters can be configured directly on the PC and transferred to the soft starter through a serial cable or an optional PROFIBUS/PROFINET interface.

The powerful SIRIUS Soft Starter ES Basic tool for startup or maintenance personnel is available for downloading free of charge in the Siemens Industry Online Support, see "More information".

SIRIUS Soft Starter ES is integrated seamlessly when further TIA Portal-based software such as STEP 7 or WinCC is available, thus enabling users to achieve a consistent, efficient and intuitive solution for all automation tasks.

However, use of SIRIUS Soft Starter ES as stand-alone software also provides these advantages.

Efficient engineering with two program versions

The SIRIUS Soft Starter ES (TIA Portal) software program is available in two versions, which differ in their user-friendliness, scope of functions and price.

SIRIUS Soft Starter ES	Basic	Professional
Access via the local interface on the device	✓	✓
Parameter assignment	✓	✓
Operating	✓	✓
Diagnostics	✓	✓
Expert list	--	✓
Parameter comparison	--	✓
Service data (slave pointer, statistics data)	--	✓
Trace	--	✓
Access via PROFIBUS/PROFINET	--	✓
Teleservice via MPI	✓	✓
Routing	--	✓
Bulk engineering (group function)	--	✓

✓ Function available

-- Function not available

Additional functions

SIRIUS Soft Starter ES offers numerous advantages of the TIA Portal that can be used in an integrated working environment.

Seamless integration

When using other TIA Portal-based software such as STEP 7 or WinCC, for example, the configuration for devices and networks for all components used is created in a standardized environment.

Working with libraries

Users can create copy templates for SIRIUS 3RW44 and 3RW55 soft starter device configuration and can manage them in global or project libraries. This way, individual modules, diagrams and complete device configurations can be saved as reusable elements for frequently occurring tasks.

Teleservice via MPI

SIRIUS Soft Starter ES (TIA Portal) supports the use of MPI Teleservice (comprising the Teleservice software and various Teleservice adapters) for remote diagnostics of the devices. This facilitates diagnostics and maintenance, and it shortens response times for service purposes.

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SIRIUS Soft Starter ES (TIA Portal)

Benefits

- Transparent setting of the device functions and their parameters – online and offline
- Effective diagnostics functions on the soft starter and display of the most important measured values
- Trace function (oscilloscope function) for recording measured values and events (in the SIRIUS Soft Starter ES (TIA Portal) Professional version).
- Complete transparency thanks to printout, logbook and event memory
- High degree of user-friendliness – convenient user interface, with English, German, French, Italian, Spanish and Chinese as possible operating languages
- Time savings thanks to shorter startup times
- Fast, low-cost licensing using a simple licensing procedure (available online too)

Selection and ordering data

SIRIUS Soft Starter ES (TIA Portal) parameterization and service software for SIRIUS 3RW44 and 3RW5 soft starters

- Delivered without PC cable

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SIRIUS Soft Starter ES V17 Basic					
Basic functional scope including Professional trial license Engineering software, class A, 6 languages (German/English/Chinese included, French/Italian/Spanish as a download), online functions via system interface Type of delivery: Software and documentation available free of charge as a download, see https://support.industry.siemens.com/cs/ww/en/view/109793076					
SIRIUS Soft Starter ES V17 Professional					
 3ZS1320-6CC13-0YA5					
Floating license for one user Engineering software, class A, 6 languages (German/English/Chinese included, French/Italian/Spanish as a download), Combo license for parallel use of versions 2007 and V17 of SIRIUS ES, communication via system interface or PROFIBUS/PROFINET Type of delivery:					
• Software and documentation on DVD and floating license on USB flash drive	**3ZS1320-6CC13-0YA5**		1	1 unit	42H
• Software and documentation as a download and floating license as a download	**3ZS1320-6CE13-0YB5**		1	1 unit	42H
Upgrade for Soft Starter ES 2007 Premium Engineering software, class A, 6 languages (German/English/Chinese included, French/Italian/Spanish as a download), Combo license for parallel use of versions 2007 and V17 of SIRIUS ES, online functions via system interface or PROFIBUS/PROFINET Type of delivery:					
• Software and documentation on DVD and floating license on USB flash drive	**3ZS1320-6CC13-0YE5**		1	1 unit	42H

Notes:

Soft Starter ES Standard and Premium V14 to V15.1 licenses and Soft Starter ES V16 Professional licenses can also be used for Soft Starter ES V17 Professional.

For description of the software versions, see page 14/5.

Accessories

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Optional accessories					
 3RW5950-0CH00					
Optional communications modules for SIRIUS 3RW5					
• PROFINET High-Feature with integrated switch	**3RW5950-0CH00**		1	1 unit	42S
• PROFINET Standard	**3RW5980-0CS00**		1	1 unit	42S
• PROFIBUS	**3RW5980-0CP00**		1	1 unit	42S
• EtherNet/IP	**3RW5980-0CE00**		1	1 unit	42S
• Modbus RTU	**3RW5980-0CR00**		1	1 unit	42S
• Modbus TCP	**3RW5980-0CT00**		1	1 unit	42S

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

More information

Technical specifications, see
https://support.industry.siemens.com/cs/ww/en/ps/16710/td

Overview of the available versions incl. programming manuals, Getting Started, updates and hotfixes, compatibility check

- For 3RW44, see
  https://support.industry.siemens.com/cs/ww/en/view/109760625
- For 3RW52 and 3RW55, see
  https://support.industry.siemens.com/cs/ww/en/view/109770336

The SIRIUS 3RW soft starter block library for PCS 7 can be used for simple and convenient integration of SIRIUS 3RW44, 3RW52 and 3RW55 soft starters into the SIMATIC PCS 7 process control system. The PCS 7 block library contains the diagnostics and driver blocks corresponding to the SIMATIC PCS 7 diagnostics and driver concept as well as the elements (symbols and faceplates) required for operator control and process monitoring.

Integrated functionality for optimal process control for all process control systems

In addition to the general sensor technology, the motor feeder data are increasingly being integrated into the process control system. By integrating the SIRIUS 3RW44, 3RW52 and 3RW55 soft starters into the process control system it becomes possible to prevent errors in the motor feeder simply and reliably, or to detect these errors quickly and rectify them. Downtimes are reduced to a minimum or can be prevented before they happen.

For example, the output and display of the key measured values, calculated by the SIRIUS 3RW44, 3RW52 and 3RW55 soft starters is also a good aid for being able to assess and monitor the current system status.

Easy integration with the PCS 7 block library

The PCS 7 block library can be used for simple and easy integration of SIRIUS 3RW44, 3RW52 and 3RW55 soft starters into the SIMATIC PCS 7 process control system. The focus here is simple configuration. Functioning of the blocks is based on the PCS 7 standard libraries and is optimally harmonized with the functions of these soft starters.

Users who have previously integrated motor feeders with conventional technology via signal blocks and motor or valve blocks or, for example, already have experience with SIMOCODE blocks, are easily able to switch to SIRIUS 3RW44, 3RW52 and 3RW55.

All blocks required for the automation systems are provided by the PCS 7 block library – as are the block symbols and faceplates for the operator station required for monitoring and control.

With the integration of the SIRIUS 3RW44, 3RW52 and 3RW55 into SIMATIC PDM, the system-wide device parameterization and diagnostics of these soft starters are possible from a central point.

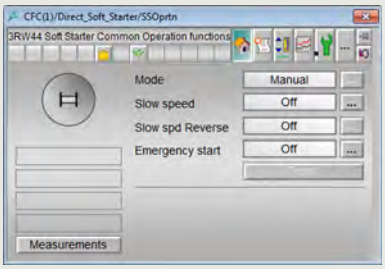
Motor block for direct control of the drive

The low-voltage motors started and protected by SIRIUS 3RW44, 3RW52 and 3RW55 soft starters can be integrated into the process automation via the motor blocks. This means that they form the interface between the process control system and the motors controlled by these soft starters.

To reduce the amount of configuring work required, functions for signal processing and technological functions are integrated into one motor block.

The important measured value – the current in the motor feeder – is recorded via the soft starter and monitored for motor protection. The motor current is accessible from the I&C system via the motor blocks.

The block symbols and faceplates for the motor blocks display the motor feeders on the operator station and provide all the required information for monitoring and control as well as detailed diagnostics.



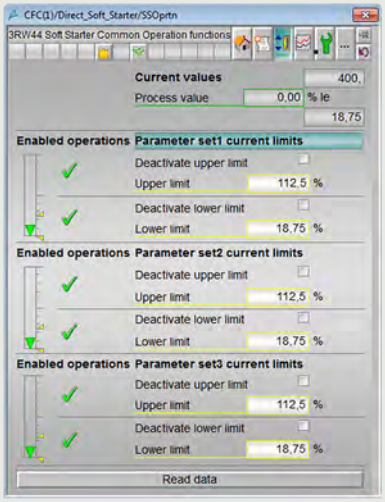
Faceplate of the motor block

Evaluation of additional motor feeder measurements

All measured values calculated by the soft starter, such as current, voltage and output of the feeder, are displayed and output via the measured value blocks. A key advantage here is that where required, a wide range of information on important motor feeder measurements is available, e.g. for load monitoring.

The SIRIUS 3RW44, 3RW52 and 3RW55 soft starters are not only able to detect measured values here, but also to react if these values are exceeded or undershot, for example, via custom settings – with a motor shut-down or with a warning.

The faceplate for the measured values is accessed from the motor block faceplate.



Faceplate for measured values

Evaluation of maintenance-related motor feeder data

The SIRIUS 3RW44, 3RW52 and 3RW55 soft starters have powerful functions to detect and monitor maintenance-related motor feeder data. For example, the operating and downtimes of the motor, operating cycles and overload tripping events are detected and stored directly on the device. If required, the information already on the device is available via the statistics block in the I&C system. The display is provided on a separate faceplate for the statistics block on the operator station.

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SIRIUS 3RW soft starter block library for SIMATIC PCS 7

Benefits

- Uniform and continuous integration into SIMATIC PCS 7
- Standardized blocks for simple integration and optimal operation
- With Advanced Process Library (APL)
- Greater process transparency due to greater information density in the I&C system
- System-wide device parameterization and diagnostics with SIMATIC PDM

Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SIRIUS 3RW52 and 3RW55 soft starter block library for SIMATIC PCS 7 Version V9.1 with Advanced Process Library (APL)					
3ZS1633-1XE51-0YA0	**Engineering software V9.1** For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English Scope of supply: AS blocks and faceplates for integrating SIRIUS 3RW52 and 3RW55 into the PCS 7 process control system with Advanced Process Library, for PCS 7 version V9.1 Type of delivery: One license for one engineering station, one license for one automation system				
	• Software and documentation as software download (OSD)	**3ZS1633-1XE51-0YA0**	1	1 unit	42H
	Runtime license V9.1 For execution of the AS blocks in an automation system (single license) Required for using the AS blocks of the engineering software V9.1 on an additional automation system within a plant Type of delivery: One license for one automation system, without software and documentation				
	• Certificate of License (CoL) in electronic form (OSD)[1]	**3ZS1633-2XE51-0YB0**	1	1 unit	42H
SIRIUS 3RW52 and 3RW55 soft starter block library for SIMATIC PCS 7 Version V9 with Advanced Process Library (APL)					
3ZS1633-1XX50-0YA0	**Engineering software V9.0 + SP3** For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English Scope of supply: AS blocks and faceplates for integrating SIRIUS 3RW52 and 3RW55 into the PCS 7 process control system with Advanced Process Library, for PCS 7 version V9.0 + SP3 Type of delivery: One license for one engineering station, one license for one automation system				
	• Software and documentation on CD	**3ZS1633-1XX50-0YA0**	1	1 unit	42H
	• Software and documentation as software download (OSD)	**3ZS1633-1XE50-0YA0**	1	1 unit	42H
	Runtime license V9.0 + SP3 For execution of the AS blocks in an automation system (single license) Required for using the AS blocks of the engineering software V9.0 + SP3 on an additional automation system within a plant Type of delivery: One license for one automation system, without software and documentation				
	• Certificate of License (CoL) in paper form	**3ZS1633-2XX50-0YB0**	1	1 unit	42H
	• Certificate of License (CoL) in electronic form (OSD)[1]	**3ZS1633-2XE50-0YB0**	1	1 unit	42H

[1] With a Certificate of License (CoL) in electronic form, the license is supplied via Online Software Delivery (OSD) as a PDF file. Notification of this with a download link is received by email.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SIRIUS 3RW44 soft starter block library for SIMATIC PCS 7 version V9 with Advanced Process Library (APL)					
3ZS1633-1XX03-0YA0					
Engineering software V9 For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English Scope of supply: AS blocks and faceplates for integrating SIRIUS 3RW44 into the PCS 7 process control system with Advanced Process Library, for PCS 7 versions V9.0+SP2 Type of delivery: One license for one automation system, without software and documentation					
• Software and documentation on CD	**3ZS1633-1XX03-0YA0**		1	1 unit	42H
Runtime license V9 For execution of the AS blocks in an automation system (single license) Required for using the AS blocks of the engineering software V9.0+SP2 on an additional automation system within a plant Type of delivery: One license for one automation system, without software and documentation					
• Certificate of License (CoL) in paper form	**3ZS1633-2XX03-0YB0**		1	1 unit	42H

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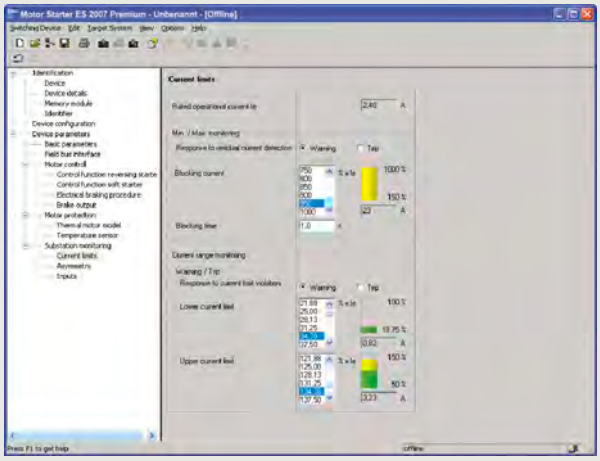
Overview



Motor Starter ES for parameterization, monitoring, diagnostics and testing of motor starters

More information

Technical specifications and system requirements, see https://support.industry.siemens.com/cs/ww/en/ps/16713/td

Motor Starter ES is used for startup, parameterization, diagnostics, documentation and the preventative maintenance of the motor starters in the SIMATIC ET 200S, ET 200pro, ECOFAST and M200D product families.

Interfacing is performed

- Via the local interface on the device
- With PROFIBUS DP-V1-capable motor starters from any point in PROFIBUS
  (applies to ET 200S DP V1/ET 200pro/ECOFAST/M200D)
- With PROFINET-capable motor starters from any point in PROFINET
  (applies to ET 200S DP V1/ET 200pro/M200D).

Using Motor Starter ES, the communication-capable motor starters are easily parameterized during startup, monitored during normal operation and successfully diagnosed for service purposes. Preventive maintenance is supported by a function for reading out diverse statistical data (e.g. operating hours, operating cycles, cut-off currents, etc.). The user is supported during these procedures with comprehensive Help functions and plain text displays.

Motor Starter ES can either be used as a stand-alone program or it can be integrated into STEP 7 via an object manager.

Note:

The Motor Starter ES functionalities in relation to startup, parameterization and diagnostics are integrated directly in the TIA Portal from V17 and are accessible online for the SIMATIC ET 200pro, ET 200SP and M200D motor starters.

Efficient engineering with three program versions

The Motor Starter ES software program is available in three versions which differ in their user-friendliness, scope of functions and price.

Motor Starter ES	Basic	Standard	Premium
ET 200S High Feature PROFIBUS IM	✓	✓	✓
ET 200S High Feature PROFINET IM	✓	✓	✓
ECOFAST AS-Interface High Feature	✓	✓	--
ECOFAST PROFIBUS	✓	✓	✓
ET 200pro PROFIBUS IM	✓	✓	✓
ET 200pro PROFINET IM	✓	✓	✓
M200D AS-Interface Standard	✓	✓	(✓)
M200D PROFIBUS	✓	✓	✓
M200D PROFINET	✓	✓	✓

✓ Function available

(✓) Available with restricted functionality

-- Function not available

Motor Starter ES	Basic	Standard	Premium
Access via the local interface on the device	✓	✓	✓
Parameter assignment	✓	✓	✓
Operating	✓	✓	✓
Diagnostics	--	✓	✓
Creation of templates	--	✓	✓
Comparison functions	--	✓	✓
Standard-compliant printout according to EN ISO 7200	--	✓	✓
Service data (slave pointer, statistics data)	--	✓	✓
Access via PROFIBUS	--	--	✓
Access via PROFINET	--	--	✓
S7 routing	--	--	✓
Teleservice via MPI	--	--	✓
STEP 7 object manager[1)]	--	--	✓
Trace function	--	✓	✓

✓ Function available

-- Function not available

1) Only for STEP 7 V5.x

Additional functions

Standard-compliant printouts

The software tool greatly simplifies machine documentation. It enables parameterization printouts according to ISO 7200. The elements to be printed are easy to select and group as required.

Easy creation of templates

Templates can be created for devices and applications with only minimum differences in their parameters. These templates contain all the parameters which are needed for the parameterization. In addition it is possible to specify which of these parameters are fixed and which can be adapted, e.g. by the startup engineer.

Teleservice via MPI

The Motor Starter ES Premium version supports the use of MPI Teleservice (comprising the Teleservice software and various Teleservice adapters) for remote diagnostics of the devices. This facilitates diagnostics and maintenance, and it shortens response times for service purposes.

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Benefits

- Fast, error-free configuration and startup of motor starters even without extensive previous knowledge
- Transparent setting of the device functions and their parameters – online and offline
- Effective diagnostics functions on the soft starter and display of the most important measured values
- Trace function (oscilloscope function) for recording measured values and events (included in the Motor Starter ES Standard and Premium software version for M200D, PROFIBUS and PROFINET).

Selection and ordering data

Parameterization, startup and diagnostics software Motor Starter ES 2007

For ECOFAST Motor Starter, SIMATIC ET 200S High Feature Starter, SIMATIC ET 200pro Starter and M200D (AS-i Standard, PROFIBUS, PROFINET)

- Delivered without PC cable

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Motor Starter ES 2007 Basic					
3ZS1310-4CC10-0YA5					
Floating license for one user Engineering software in limited-function version for diagnostics purposes, class A, 3 languages (German/English/French), communication via system interface Type of delivery:					
• Software and documentation on CD and floating license on USB flash drive	**3ZS1310-4CC10-0YA5**		1	1 unit	42D
• Floating license as a download	**3ZS1310-4CE10-0YB5**		1	1 unit	42D
Motor Starter ES 2007 Standard					
3ZS1310-5CC10-0YA5					
Floating license for one user Engineering software, class A, 3 languages (German/English/French), communication through the system interface Type of delivery:					
• Software and documentation on CD and floating license on USB flash drive	**3ZS1310-5CC10-0YA5**		1	1 unit	42D
• Floating license as a download	**3ZS1310-5CE10-0YB5**		1	1 unit	42D
Motor Starter ES 2007 Premium					
3ZS1310-6CC10-0YA5					
Floating license for one user Engineering software, class A, 3 languages (German/English/French), communication via system interface or PROFIBUS/PROFINET, STEP 7 Object Manager Type of delivery:					
• Software and documentation on CD and floating license on USB flash drive	**3ZS1310-6CC10-0YA5**		1	1 unit	42D
• Floating license as a download	**3ZS1310-6CE10-0YB5**		1	1 unit	42D

For description of the software versions, see page 14/10.

Accessories

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Optional accessories					
RS 232 interface cables Serial data connection between ET 200pro MS/FC, M200D and laptop/PC/PG or MS	**3RK1922-2BP00**		1	1 unit	42D
USB interface cables Serial data connection between ET 200pro MS/FC, M200D and laptop/PC/PG or MS	**6SL3555-0PA00-2AA0**		1	1 unit	368
USB/serial adapters For connecting an RS 232 PC cable to the USB interface of a PC, recommended for use in conjunction with ET 200S/ECOFAST/ET 200pro motor starters	**3UF7946-0AA00-0**		1	1 unit	42J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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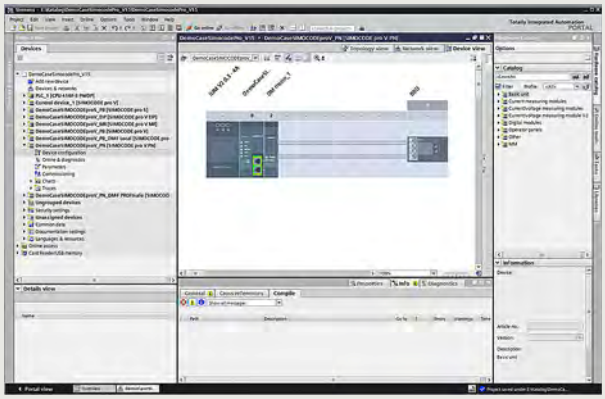
SIMOCODE ES (TIA Portal)

Overview



Selection of SIMOCODE pro device configuration in SIMOCODE ES (TIA Portal)

More information

Industry Mall, see www.siemens.com/product?3ZS1

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16716/td

Software download

- SIMOCODE ES (TIA Portal), basic functional scope including Professional Trial License, see https://support.industry.siemens.com/cs/ww/en/view/109793078
- SIMOCODE ES 2007, see https://support.industry.siemens.com/cs/ww/en/view/109750623

SIMOCODE ES is the central software for configuration, startup, operation and diagnostics of SIMOCODE pro.

SIMOCODE ES (TIA Portal) is available as a powerful successor to Version 2007, which is based on the central engineering framework Totally Integrated Automation Portal (TIA Portal).

The engineering software is integrated seamlessly when further TIA Portal-based software such as STEP 7 or WinCC is available, thus enabling users to achieve a consistent, efficient and intuitive solution for all automation tasks.

However, use of SIMOCODE ES as stand-alone software also provides these advantages.

Two program versions

The user can choose between two versions of SIMOCODE ES:

- SIMOCODE ES Basic
- SIMOCODE ES Professional

The powerful SIMOCODE ES Basic tool for startup or maintenance personnel is available for downloading free of charge in the Siemens Industry Online Support, see "More information".

SIMOCODE ES Professional is a perfect tool for engineers or configuration engineers with its extended scope of functions and integrated graphics editor. Unlike the Basic version, SIMOCODE ES Professional also permits parameter assignment and diagnostics via PROFIBUS/PROFINET/Ethernet. Indication of all operating, service and diagnostics data supplies important information about the current state of the motor and plant at all times – everywhere on PROFIBUS/PROFINET/Ethernet.

SIMOCODE ES	Basic	Professional
Access via the local interface on the device	✓	✓
Parameter assignment in list form	✓	✓
Parameter assignment via expert list	--	✓
Bulk engineering	--	✓
Working with libraries	✓	✓
Parameter printing in list form	✓	✓
Operating	✓	✓
Diagnostics	✓	✓
Test	✓	✓
Service data	✓	✓
Analog value recording[1)]	✓	✓
Trend display of measured values	--	✓
Parameterizing with convenient graphical display	--	✓
Parameterizing with the integrated graphics editor (CFC-based)	--	✓
Printing of diagrams	--	✓
Parameter comparison	--	✓
Access via PROFIBUS/PROFINET/Ethernet	--	✓
Teleservice via MPI	--	✓
Routing[2)]	--	✓
Firmware update basic units[1)]	✓	✓

✓ Function available

-- Function not available

1) For SIMOCODE pro V.

2) See https://support.industry.siemens.com/cs/ww/en/view/109738745.

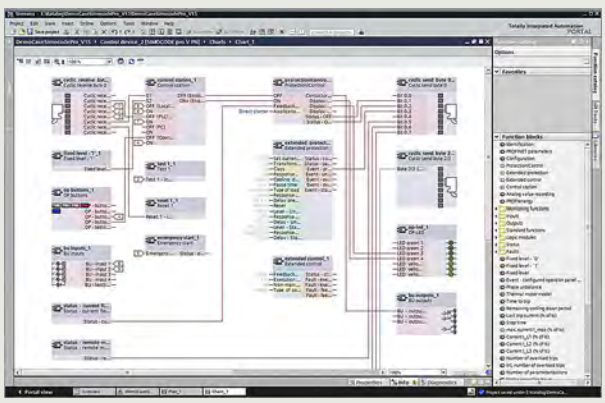
Working with libraries

Users can create copy templates for SIMOCODE pro device configuration and can manage them in global or project libraries.

This way, individual modules, diagrams and complete device configurations can be saved as reusable elements for frequently occurring tasks.

Integrated graphics editor

The graphics editor is part of SIMOCODE ES Professional. It is based on the Continuous Function Chart (CFC) and adds a powerful tool to the parameterizing interface that enables easy parameterization of devices by drag & drop. What is more, all the parameters can also be edited directly in the graphics editor. Extremely compact documentation of all configured parameters is possible, as is the graphic online presentation of the configured device functions including all signal states during operation.



Parameterize easily and ergonomically with the CFC-based graphics editor of SIMOCODE ES Professional

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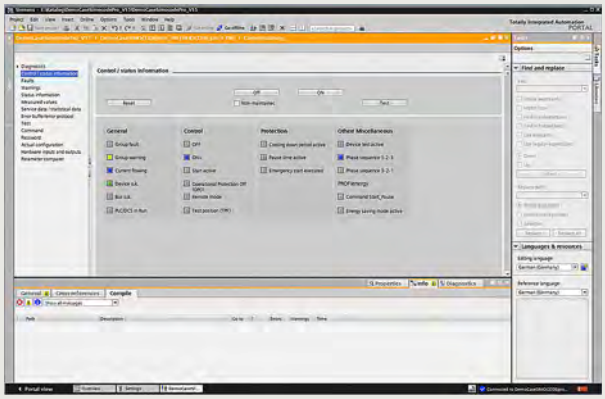
Online functions for startup and diagnostics

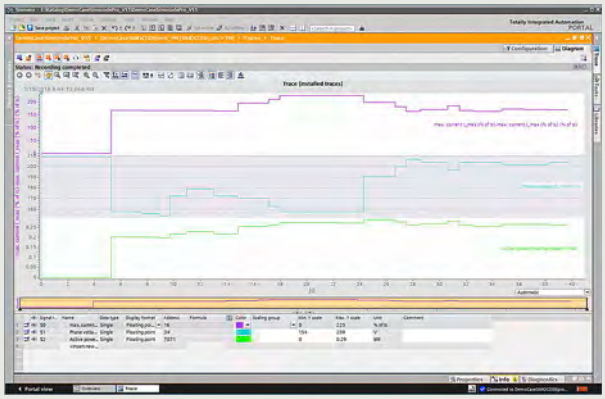
To this end, SIMOCODE ES provides powerful functions for startup and diagnostics of motor feeders. Besides a detailed display of status information and the causes of faults, all available measurement and statistics data can be retrieved online. Access to the fault and event memory and also to analog values recorded on the device, e.g. current or voltage, is also possible.



Commissioning functions of SIMOCODE ES

Trend display of measured values

With this online function, SIMOCODE ES Professional can present the trends of different measured values. It is thus possible for example to record and evaluate the startup characteristic of a motor or its behavior under different load conditions.



Live trend display of SIMOCODE ES

Additional functions

SIMOCODE ES offers numerous advantages of the TIA Portal that can be used in an integrated working environment.

Seamless integration

When using other TIA Portal-based software such as STEP 7 or WinCC, for example, the configuration for devices and networks for all components used is created in a standardized environment.

Teleservice via MPI

The SIMOCODE ES (TIA Portal) Professional version supports the use of MPI Teleservice (comprising the Teleservice software and various Teleservice adapters) for remote diagnostics of the devices. This facilitates diagnostics and maintenance, and it shortens response times for service purposes.

Benefits

- Easy parameterization with the graphics editor based on the Continuous Function Chart (CFC) reduces engineering work and shortens startup times
- Clear plant documentation by means of graphic presentation
- Detailed information, also when there are faults, is a help for maintenance personnel and shortens downtimes
- Universally applicable through stand-alone version or seamless integration into the central engineering framework when other TIA Portal-based software such as STEP 7 or WinCC are available
- Parameter changes are also possible during normal operation
- Users can create copy templates for device configurations and can manage them in global libraries

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SIMOCODE ES (TIA Portal)

Selection and ordering data

Parameterization and service software for SIMOCODE pro 3UF7

- Delivered without PC cable

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SIMOCODE ES V17 Basic					
Basic functional scope including Professional Trial License Engineering software, class A, 6 languages (German/English/Chinese included, French/Italian/Spanish as a download), for all SIMOCODE pro, online functions via system interface Type of delivery: Software and documentation available free of charge as a download, see https://support.industry.siemens.com/cs/ww/en/view/109793078					
SIMOCODE ES V17 Professional					
 3ZS1322-6CC15-0YA5					
Floating license for one user Engineering software, class A, 6 languages (German/English/Chinese included, French/Italian/Spanish as a download), Combo license for parallel use of versions 2007 and V17 of SIRIUS ES, for all SIMOCODE pro, online functions via system interface and PROFIBUS/PROFINET/Ethernet, parameterizing with the integrated graphics editor (CFC-based) Type of delivery:					
• Software and documentation on DVD and floating license on USB flash drive	**3ZS1322-6CC15-0YA5**		1	1 unit	42J
• Software and documentation as a download and floating license as a download	**3ZS1322-6CE15-0YB5**		1	1 unit	42J
Upgrade for SIMOCODE ES 2007 Premium Engineering software, class A, 6 languages (German/English/Chinese included, French/Italian/Spanish as a download), Combo license for parallel use of versions 2007 and V17 of SIRIUS ES, for all SIMOCODE pro, online functions via system interface and PROFIBUS/PROFINET/Ethernet, parameterizing with the integrated graphics editor (CFC-based) Type of delivery:					
• Software and documentation on DVD and floating license on USB flash drive	**3ZS1322-6CC15-0YE5**		1	1 unit	42J
Software update service For 1 year with automatic extension, requires software version of SIMOCODE ES (TIA Portal), engineering software, class A, online functions via system interface and PROFIBUS/PROFINET/Ethernet, parameterizing with integrated graphics editor (CFC-based) Type of delivery:					
• Software and documentation on DVD	**3ZS1322-6CC00-0YL5**		1	1 unit	42J

Notes:

For description of the software versions, see page 14/12.

Please order PC cable separately, see "Accessories".

SIMOCODE ES Standard and Premium V12 to V15 licenses can also be used for SIMOCODE ES V16/V17 Professional.

Accessories

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Optional accessories					
 3UF7941-0AA00-0					
USB PC cables For connecting to the USB interface of a PC/PG, for communication with SIMOCODE ES via the system interface	**3UF7941-0AA00-0**		1	1 unit	42J
USB/serial adapters For connecting an RS 232 PC cable to the USB interface of a PC, recommended for use in conjunction with SIMOCODE ES	**3UF7946-0AA00-0**		1	1 unit	42J

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

Advanced Process Library (APL) - faceplates and blocks for statistical data of the SIMOCODE pro library for PCS 7

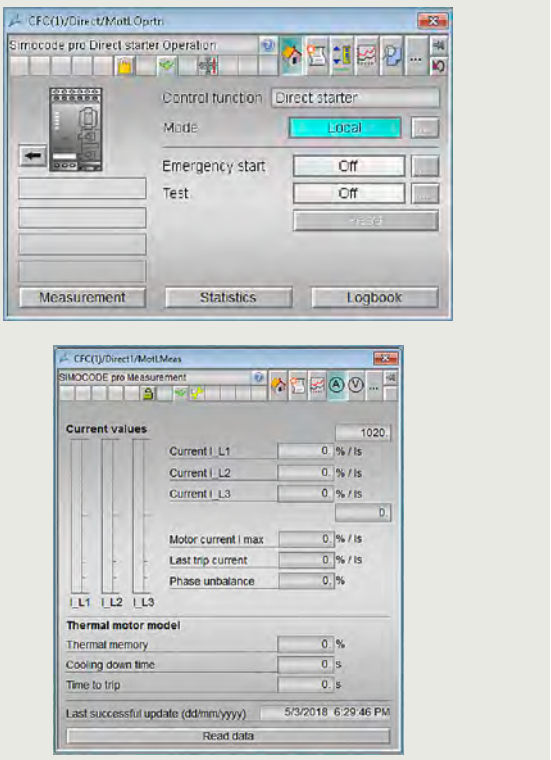
More information

Industry Mall, see www.siemens.com/product?3ZS1

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16718/td

Overview of the available versions incl. programming manuals, Getting Started, updates and hotfixes, compatibility check, see https://support.industry.siemens.com/cs/ww/en/view/109760422

The PCS 7 block library can be used for simple and easy integration of SIMOCODE pro into the SIMATIC PCS 7 process control system. One focus here is on easy configuration, because the number of required configuration steps is reduced crucially. The configuration of the blocks is based on the PCS 7 standard configuration processes and is optimally harmonized with the functions of SIMOCODE pro. Users who have previously integrated conventional motor feeders into PCS 7 will therefore find it easy to switch to SIMOCODE pro.



Advanced Process Library (APL) - faceplates and function blocks for control and measured data of the SIMOCODE pro library for PCS 7

Benefits

- Uniform and continuous integration into SIMATIC PCS 7
- Standardized blocks for simple integration and optimal operation
- Greater process transparency due to greater information density in the I&C system

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Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SIMOCODE pro block library for SIMATIC PCS 7 version V9.1 with Advanced Process Library (APL)					
3ZS1632-1XE04-0YA0					
Engineering software V9.1 For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English Scope of supply: AS blocks and faceplates for integrating SIMOCODE pro into the PCS 7 process control system with Advanced Process Library, for PCS 7 version V9.1 Type of delivery: One license for one engineering station, one license for one automation system					
• Software and documentation as software download (OSD)	**3ZS1632-1XE04-0YA0**		1	1 unit	42J
Runtime license V9.1 For execution of the AS blocks in an automation system (single license) Required for using the AS blocks of the engineering software V9.1 within a plant Type of delivery: One license for one automation system, without software and documentation					
• Certificate of License (CoL) in electronic form (OSD)[1]	**3ZS1632-2XE04-0YB0**		1	1 unit	42J
Upgrade for PCS 7 block library SIMOCODE pro V8 or V9.0[2] To version SIMOCODE pro V9.1 for one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English Scope of supply: AS blocks and faceplates for integrating SIMOCODE pro into the PCS 7 process control system with Advanced Process Library, for PCS 7 version V9.1 Type of delivery: One license for one engineering station, one license for one automation system					
• Software and documentation as software download (OSD)	**3ZS1632-1XE04-0YE0**		1	1 unit	42J
Upgrade for PCS 7 block library SIMOCODE pro V7 (without APL)[2] To version SIMOCODE pro V9.1 (with APL) for one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English Scope of supply: AS blocks and faceplates for integrating SIMOCODE pro into the PCS 7 process control system with Advanced Process Library, for PCS 7 version V9.1 Type of delivery: One license for one engineering station, one license for one automation system					
• Software and documentation as software download (OSD)	**3ZS1632-1XE04-0YF0**		1	1 unit	42J

1) With a Certificate of License (CoL) in electronic form, the license is supplied via Online Software Delivery (OSD) as a PDF file. Notification of this with a download link is received by email.

2) The upgrade is valid equally for existing engineering software incl. runtime license and for a single runtime license.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SIMOCODE pro block library for SIMATIC PCS 7 version V9.0 with Advanced Process Library (APL)					
3ZS1632-1XX03-0YA0					
Engineering software V9.0					
For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English					
Scope of supply: AS blocks and faceplates for integrating SIMOCODE pro into the PCS 7 process control system with Advanced Process Library, for PCS 7 version V9.0					
Type of delivery: One license for one engineering station, one license for one automation system					
• Software and documentation on CD	**3ZS1632-1XX03-0YA0**		1	1 unit	42J
• Software and documentation as software download (OSD)	**3ZS1632-1XE03-0YA0**		1	1 unit	42J
Runtime license V9.0					
For execution of the AS blocks in an automation system (single license)					
Required for using the AS blocks of the engineering software V9.0 within a plant					
Type of delivery: One license for one automation system, without software and documentation					
• Certificate of License (CoL) in paper form	**3ZS1632-2XX03-0YB0**		1	1 unit	42J
• Certificate of License (CoL) in electronic form (OSD)[1]	**3ZS1632-2XE03-0YB0**		1	1 unit	42J
Upgrade for PCS 7 block library SIMOCODE pro V8					
To version SIMOCODE pro V9.0 for one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English					
Scope of supply: AS blocks and faceplates for integrating SIMOCODE pro into the PCS 7 process control system with Advanced Process Library, for PCS 7 version V9.0					
Type of delivery: One license for one engineering station, one license for one automation system					
• Software and documentation on CD	**3ZS1632-1XX03-0YE0**		1	1 unit	42J

[1] With a Certificate of License (CoL) in electronic form, the license is supplied via Online Software Delivery (OSD) as a PDF file. Notification of this with a download link is received by email.

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SIMOCODE pro block library for SIMATIC PCS 7

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SIMOCODE pro block library for SIMATIC PCS 7 without Advanced Process Library (APL)					
3UF7982-0AA10-0					
Engineering software V7					
For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English/French					
Scope of supply: AS blocks and faceplates for integrating SIMOCODE pro into the PCS 7 process control system, for PCS 7 versions V7.0/V7.1					
Type of delivery: One license for one engineering station, one license for one automation system					
• Software and documentation on CD	**3UF7982-0AA10-0**		1	1 unit	42J
Runtime license V7					
For execution of the AS blocks in an automation system (single license)					
Required for using the AS blocks of the engineering software V7 or the engineering software migration V7-V9 on an additional automation system within a plant					
Type of delivery: One license for one automation system, without software and documentation					
• Certificate of License (CoL) in paper form	**3UF7982-0AA11-0**		1	1 unit	42J
Engineering software migration V7-V9					
For upgrading (migrating) an existing engineering software V7 of the SIMOCODE pro block library for PCS 7					
Conditions of use: Availability of the engineering software V7 (license) of the SIMOCODE pro block library for PCS 7 for the PCS 7 version V7.0 or V7.1					
The engineering software migration V7-V9 can be installed directly onto a system with PCS 7 version V8 or V9; installation of the previous version is not required.					
For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English/French					
Scope of supply: AS blocks and faceplates for integrating SIMOCODE pro into the PCS 7 process control system					
Type of delivery: License for upgrading an existing license for one engineering station and a plant's assigned runtime licenses					
For PCS 7 versions V8.0/V8.1/V8.2/V9.0					
• Software and documentation on CD	**3UF7982-0AA20-0**		1	1 unit	42J
• Software and documentation as software download (OSD)	**3UF7982-0AA20-1**		1	1 unit	42J
For PCS 7 version V9.1					
• Software and documentation as software download (OSD)	**3UF7982-0AA30-1**		1	1 unit	42J

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

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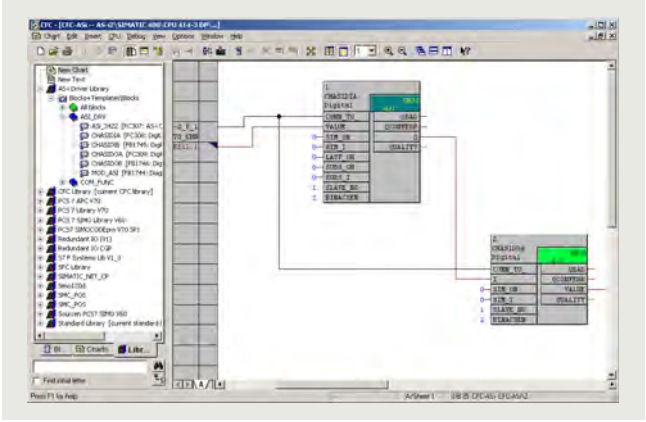
Overview



AS-Interface block library for SIMATIC PCS 7 in CFC chart

More information

Overview of the available versions incl. programming manuals, Getting Started, service packs, updates and hotfixes, compatibility check, see https://support.industry.siemens.com/cs/ww/en/view/109759605

The AS-Interface block library for PCS 7 is integrated in the SIMATIC PCS 7 process control system and expands it for integration of the AS-Interface system.

As the result, the advantages of AS-Interface such as the considerable reduction of wiring outlay for distributed actuators/sensors and very simple installation can also be used in a system based on PCS 7.

The library contains modules for accessing the I/O data of AS-i slaves, modules for diagnostics of the AS-i system, and faceplates for the PCS 7 Maintenance Station.

Supported AS-Interface modules

The AS-Interface block library for PCS 7 can be used with the following AS-i master modules, see also page 2/1 onwards:

- CM AS-i Master ST (in ET 200SP station) 3RK7137-6SA00-0BC1
- CP 343-2 (in ET 200M station) 6GK7343-2AH01-0XA0
- CP 343-2P (in ET 200M station) 6GK7343-2AH11-0XA0

The support of further AS-i modules is described in the manuals of the libraries, see section "More information".

The CM AS-i Master ST module is supported with IM 155-6 PN High Feature or IM 155-6 DP High Feature within an ET 200SP station interfaced via PROFINET or PROFIBUS (ET 200SP PROFIBUS from engineering software V9.0 SP2 Update 1).

The AS-i master CP 343-2 and CP 343-2P are supported within an ET 200M station interfaced via PROFINET or PROFIBUS.

With the CM AS-i Master ST, CP 343-2 or CP 343-2P modules, digital AS-i slaves with standard addressing and extended addressing (A/B slaves; see also remark under "Application") can be operated via the library.

Analog AS-i slaves on the CM AS-i Master ST module are supported from engineering software V9.1.

Hardware and software requirements

The libraries require the following PCS 7 versions:

- Engineering software V9.1: PCS 7 version V9.1
- Engineering software V9.0: PCS 7 version V9.0
- Engineering software V8.1: PCS 7 versions V8.2, V8.1 and V8.0 (from V8.0 SP1 Update 3)

Notes:

More information on the combination of the various modules and software versions can be found via the compatibility tool, see https://support.industry.siemens.com/cs/ww/en/view/64847781

The delivery of the engineering software includes the basic version of the library. Service packs and updates are available for downloading to adapt to the PCS 7 version used, see https://support.industry.siemens.com/cs/ww/en/view/109759605

Benefits

- Easy connection of AS-Interface to PCS 7
- Engineering work reduced to positioning and connecting the blocks in the CFC
- With no additional configuring steps required for connection to the PCS 7 Maintenance Station, diagnostics for the AS-i system is optimally guaranteed.

Application

The AS-Interface block library for PCS 7 is used in systems based on PCS 7 where the actuators and sensors are connected using AS-Interface.

Notes:

The AS-i masters CP 343-2 and CP 343-2P do not transmit I/O data from AS-i slaves with a B address via the cyclic process image (partition), but via data records.

To prevent delays in the communication of driver blocks for B slaves, we recommend avoiding the use of AS-i slaves with B addresses for PCS 7 configurations with CP 343-2 or CP 343-2P.

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Selection and ordering data

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
AS-Interface block library for SIMATIC PCS 7 version V9.1 with Advanced Process Library (APL)					
3ZS1635-1XE04-0YA0	**Engineering software V9.1** For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English Scope of supply: AS blocks and faceplates for integrating AS-Interface into the PCS 7 process control system with Advanced Process Library (APL), for PCS 7 version V9.1 and higher Type of delivery: One license for one engineering station, one license for one automation system				
	• Software and documentation as software download (OSD)	**3ZS1635-1XE04-0YA0**	1	1 unit	42C
	Runtime license V9.1 For execution of the AS blocks in an automation system (single license) Required for using the AS blocks of the engineering software V9.1 on an additional automation system within a plant Type of delivery: One license for one automation system, without software and documentation				
	• Certificate of License (CoL) in electronic form (OSD)[1]	**3ZS1635-2XE04-0YB0**	1	1 unit	42C
AS-Interface block library for SIMATIC PCS 7 version V9.0 with Advanced Process Library (APL)					
3ZS1635-1XX03-0YA0	**Engineering software V9.0** For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English Scope of supply: AS blocks and faceplates for integrating AS-Interface into the PCS 7 process control system with Advanced Process Library (APL), for PCS 7 version V9.0 Type of delivery: One license for one engineering station, one license for one automation system				
	• Software and documentation on CD	**3ZS1635-1XX03-0YA0**	1	1 unit	42C
	Runtime license V9.0 For execution of the AS blocks in an automation system (single license) Required for using the AS blocks of the engineering software V9.0 on an additional automation system within a plant Type of delivery: One license for one automation system, without software and documentation				
	• Certificate of License (CoL) in paper form	**3ZS1635-2XX03-0YB0**	1	1 unit	42C

[1] With a Certificate of License (CoL) in electronic form, the license is supplied via Online Software Delivery (OSD) as a PDF file. Notification of this with a download link is received by email.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
AS-Interface block library for SIMATIC PCS 7 version V8 with Advanced Process Library (APL)					
3ZS1635-1XX02-0YA0					
Engineering software V8.1					
For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English					
Scope of supply: AS blocks and faceplates for integrating AS-Interface into the PCS 7 process control system with Advanced Process Library (APL), for PCS 7 versions V8.2, V8.1 and V8.0 (from V8.0 SP1 Update 3)					
Type of delivery: One license for one engineering station, one license for one automation system					
• Software and documentation on CD	**3ZS1635-1XX02-0YA0**		1	1 unit	42C
Runtime license V8					
For execution of the AS blocks in an automation system (single license)					
Required for using the AS blocks of the engineering software V8 or V8.1 on an additional automation system within a plant					
Type of delivery: One license for one automation system, without software and documentation					
• Certificate of License (CoL) in paper form	**3ZS1635-2XX02-0YB0**		1	1 unit	42C

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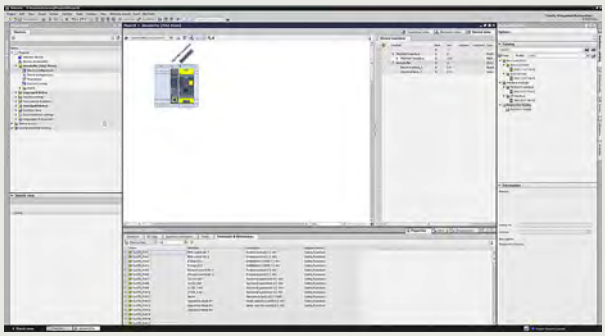
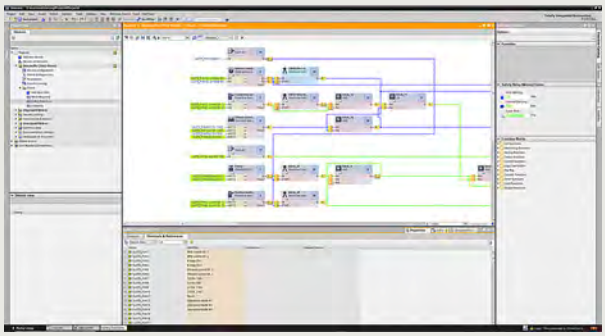
SIRIUS Safety ES (TIA Portal)

Overview



SIRIUS Safety ES (TIA Portal): Configuration



SIRIUS Safety ES (TIA Portal): Logic

More information

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/26081/td

Download of SIRIUS Safety ES Basic, see https://support.industry.siemens.com/cs/ww/en/view/109793090

The SIRIUS Safety ES (TIA Portal) software permits quick and easy parameterization, commissioning and diagnostics of SIRIUS 3SK2 safety relays. Device configuration and device functionality can easily be created graphically directly on the PC and transferred to the switching device through a USB cable or an optional PROFIBUS/PROFINET interface.

The powerful SIRIUS Safety ES Basic program version for startup or maintenance personnel is available for downloading free of charge in the Siemens Industry Online Support, see "More information".

SIRIUS Safety ES is integrated seamlessly when further TIA Portal-based software such as STEP 7 or WinCC is available, thus enabling users to achieve a consistent, efficient and intuitive solution for all automation tasks.

However, use of SIRIUS Safety ES (TIA Portal) as stand-alone software also provides these advantages.

Efficient engineering with two program versions

The SIRIUS Safety ES (TIA Portal) software program is available in two versions, which differ in their user-friendliness and scope of functions.

SIRIUS Safety ES (TIA Portal)	Basic	Professional
Unlimited number of function blocks	--	✓
Access to the local interface on the device	✓	✓
Access via PROFINET/PROFIBUS	--	✓
Routing	--	✓
Parameter comparison	--	✓
Parameter assignment	✓	✓

✓ Function available

-- Function not available

Additional functions

SIRIUS Safety ES (TIA Portal) offers numerous advantages of the TIA Portal that can be used in an integrated working environment.

Seamless integration

When using other TIA Portal-based software such as STEP 7 or WinCC, for example, the configuration for devices and networks for all components used is created in a standardized environment.

Working with libraries

Users can create copy templates for frequently-used applications or parameters and can manage them in global or project libraries. This way, individual modules, diagrams and complete device configurations can be saved as reusable elements for frequently occurring tasks.

Interface to SIRIUS Sim 3SK2

The integrated interface to the simulation software SIRIUS Sim allows all parameterization, application testing and diagnostics to be carried out on the digital twin without any real hardware components. This saves time and capital costs.

SIRIUS Sim, see page 14/25 or https://support.industry.siemens.com/cs/ww/en/view/109763750.

Benefits

- Transparent setting of the device functions and their parameters
- Effective support during commissioning
- Comprehensive diagnostics functions
- Complete transparency thanks to printout, logbook memory
- High degree of user-friendliness – convenient user interface, with English, German, French, Italian, Spanish and Chinese as possible operating languages
- Time savings thanks to shorter startup times
- Fast, low-cost licensing using a simple licensing procedure (available online too)

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Selection and ordering data

Parameterization and service software for SIRIUS 3SK2 safety relays

- Delivered without PC cable

Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SIRIUS Safety ES V17 Basic					
Basic functional scope including Professional Trial License Engineering software, class A, 6 languages (German/English/Chinese included, French/Italian/Spanish as a download), for all 3SK2, online functions via system interface Type of delivery: Software and documentation available free of charge as a download, see https://support.industry.siemens.com/cs/ww/en/view/109793090					
SIRIUS Safety ES V17 Professional					
 3ZS1326-2CC10-0YA5					
Floating license for one user Engineering software, class A, 6 languages (German/English/Chinese included, French/Italian/Spanish as a download), Combo license for parallel use of versions V1.0 and V17 of the Safety ES, for all 3SK2, online functions via system interface and PROFIBUS/PROFINET, parameterizing with the integrated graphics editor (CFC-based) Type of delivery:					
• Software and documentation on DVD and floating license on USB flash drive	**3ZS1326-2CC10-0YA5**		1	1 unit	41L
• Software and documentation as a download and floating license as a download	**3ZS1326-2CE10-0YB5**		1	1 unit	41L
Upgrade for Safety ES V1.0 Premium Engineering software, class A, 6 languages (German/English/Chinese included, French/Italian/Spanish as a download), Combo license for parallel use of versions V1.0 and V17 of the Safety ES, for all 3SK2, online functions via system interface and PROFIBUS/PROFINET/Ethernet, parameterizing with the integrated graphics editor (CFC-based) Type of delivery:					
• Software and documentation on DVD and floating license on USB flash drive	**3ZS1326-2CC10-0YE5**		1	1 unit	41L

Notes:

For description of the software versions, see page 14/22.

Please order PC cable separately, see 14/24.

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Accessories

	Version	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Optional accessories						
3UF7941-0AA00-0	**USB PC cables** For connecting to the USB interface of a PC/PG, for communication with 3SK2 through the system interface, recommended for use in connection with 3SK2	**3UF7941-0AA00-0**		1	1 unit	42J
3SK2511-1FA10	**Interface modules** • For connecting 3SK2 safety relays via PROFINET					
		Screw terminals				
	- Screw terminals	**3SK2511-1FA10**		1	1 unit	41L
		Spring-loaded terminals (push-in)				
	- Spring-loaded terminals (push-in)	**3SK2511-2FA10**		1	1 unit	41L
3RK3511-1BA10	• For connecting 3SK2 safety relays via PROFIBUS					
		Screw terminals				
	- Screw terminals	**3RK3511-1BA10**		1	1 unit	42B
		Spring-loaded terminals				
	- Spring-loaded terminals	**3RK3511-2BA10**		1	1 unit	42B
3UF7930-0AA00-0	**Connecting cables** For connecting central units with expansion modules or interface module Length: 0.025 m (flat)	**3UF7930-0AA00-0**		1	1 unit	42J

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* You can order this quantity or a multiple thereof.
Illustrations are approximate

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Overview

More information

SIRIUS Sim,
see https://support.industry.siemens.com/cs/ww/en/view/109763750

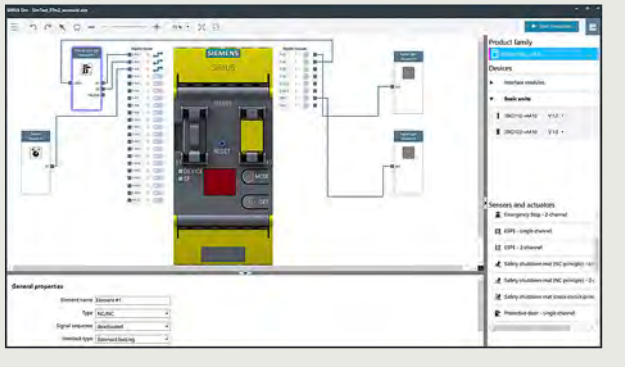
The SIRIUS simulation tool can be used to quickly and easily test functions and configurations in an office environment. These configurations can then be loaded directly into real devices.

SIRIUS Sim is available free of charge as a download, see "More information".

General functions

- Comment function:
  comments can be placed in the logic diagram of the simulator.
- Simple exchange of devices and elements:
  when exchanging devices and elements, the connections are retained and do not have to be re-created.

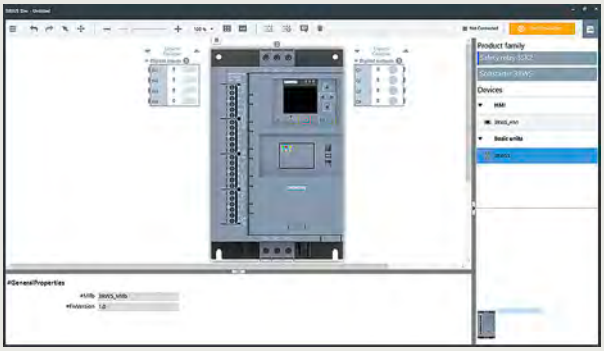
SIRIUS Sim 3SK2



SIRIUS Sim 3SK2

- Support of SIRIUS 3SK2 safety relays and SIRIUS 3SK1 output expansions as well as the SIRIUS 3RM1 fail-safe motor starters and the SIRIUS 3RQ1 forced-guided coupling relays
- Display of connection status to ES tool:
  The connection status to the engineering software is displayed in the simulator. This makes it clear at first glance whether the simulator is connected to the ES tool.
- Automatic generation of the function elements:
  At the press of a button, the necessary function elements can be automatically generated based on the configuration data. Duplicated entry, in the engineering software and in the simulator, is unnecessary.

SIRIUS Sim 3RW55



SIRIUS Sim 3RW55

- Complete parameterization of the SIRIUS 3RW55 High Performance and new 3RW55 Failsafe soft starters
- Complete navigation with the same menu structure as on the HMI
- Optional storage of the parameterization on a micro SD memory card for transfer to the real soft starter
- Simulation of startup and shutdown, including operating phases
- Simulation of different fault states

Benefits

- Intuitive user interface
- Already contains predefined, standard application examples
- Simple familiarization with the devices
- Application engineering and testing in the simulation results in time and cost savings
- Free download

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Notes

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SITOP power supply

For more information, see Catalog KT 10.1, https://support.industry.siemens.com/cs/ww/en/view/109745655

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SITOP power supply

Overview

More information
Homepage, see www.siemens.com/sitop
Industry Mall, see www.siemens.com/product?SITOP
Further products, see Catalog KT 10.1

Advanced power supplies

SITOP PSU8600 – the power supply system with complete TIA integration and open communication all the way to the cloud

Advanced power supplies

SITOP PSU8200 – the technology power supply for sophisticated solutions

Standard power supplies

SITOP PSU6200 – the all-round power supply for a wide variety of applications

Standard power supplies

SITOP smart – the high-performance standard power supply

Basic power supplies

SITOP lite – the low-cost basic power supply

Basic power supplies

LOGO!Power – the flat power supply for distribution boards

SIMATIC design power supplies

The optimum power supply for SIMATIC S7 and more

DC/DC converters

Stable supply despite fluctuating DC voltage

Special designs and applications

Designed for special tasks and conditions

SITOP DC-UPS uninterruptible power supplies

SITOP UPS500 with capacitors
Protection against power failure on the input side by buffering in the minutes range

SITOP UPS1600 with SITOP PSU8600 battery modules plus DC-UPS
Protection against power failure on the input side by buffering in the hours range.
DC-UPS with Ethernet/PROFINET – open and system-integrated in TIA

Add-on modules

Redundancy modules
Protection against failure of a power supply unit due to redundant design of the power supply

Selectivity modules
Protection against overload and short circuit through electronic protection of 24 V feeders

Buffer modules
Protection against power failure in the seconds range

SITOP inrush current limiters
Protecting your loads

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Appendix

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SITRAIN – Digital Industry Academy

Introduction

The Future of Learning starts now

Globalization, digitalization, new work, Internet of Things, new business models – our way of working, living and learning is changing rapidly. With SITRAIN, the future of learning begins today: SITRAIN stands for a modern learning culture that focuses on the needs of learners and the demands of innovative companies.
With SITRAIN – Digital Industry Academy, the future of learning is yours.

Face-to-face training or digital training, location-independent, 24/7, on-demand or learning at fixed dates and course times? With a personal learning consultant, in a team, or on your own responsibility? Everything is possible. SITRAIN offers a wide range of different learning options with the "Learning Journey", "Learning Membership" and "Learning Event".

The three learning formats of SITRAIN – Digital Industry Academy

Learning Journey

The combination for sustainable learning success

- The optimal mix of self-study units and guided live modules
- Includes a Learning Membership to work through the self-study modules and access on-demand content
- The SITRAIN learning consultant is available for questions and one-on-one consultations
- Ideal integration into the daily work routine and adaptation to one's own learning pace.

Learning Membership

Securing knowledge through continuous learning on your own responsibility

- With access to the comprehensive and constantly growing range of self-study units on SITRAIN access, the digital learning platform
- Search and find specific learning content or simply have a look around – anytime and anywhere
- A modern learning culture through continuous learning on your own responsibility and transparency about your learning success in the team or company.

Learning Event

Acquire theoretical and practical knowledge in a compact and guided format

- You achieve a defined learning goal in the shortest possible time
- The learning consultant guides you through the practical exercises and is also exclusively available to you during the theoretical sessions for the entire duration
- Focused learning, outside of the daily work routine, in a protected learning environment – virtually, in the training center, or at your company.

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Introduction

Expand your knowledge, apply what you have learned, develop future skills

The SITRAIN Digital Industry Academy combines didactically effective methods and modular options.

The four building blocks of SITRAIN – Digital Industry Academy

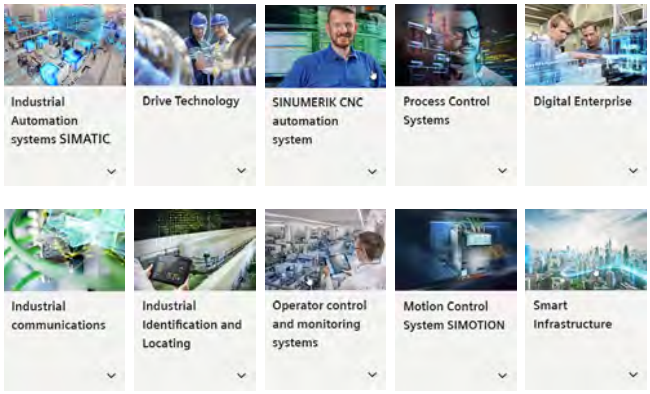
Different methods for maximum learning success:

- Live
- On your own responsibility
- On demand
- Individual

Learn the way you want to learn. For learning success that takes you further.

Education and training directly from the manufacturer

For individual knowledge building, the following topics concerning the industrial product and solution portfolio of Siemens are available. Experience the new learning culture with SITRAIN.



Training cases catalog

https://www.siemens.com/sitrain-catalog-training-cases

Find your local offer here

SITRAIN – Digital Industry Academy worldwide

You will find the regional knowledge offer in the country selection. One click will take you to the corresponding website.

SITRAIN – Digital Industry Academy

www.siemens.com/sitrain

- SITRAIN Learning Journey: www.siemens.com/sitrain-learning-journey
- SITRAIN Learning Membership: www.siemens.com/sitrain-learning-membership
- SITRAIN Learning Event: www.siemens.com/sitrain-learning-event

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Overview

General

With regard to delivery service, communications and environmental protection, our logistics service ensures "quality from the moment of ordering right through to delivery". By designing our infrastructure according to customer requirements and implementing electronic order processing, we have successfully optimized our logistics processes.

Our delivery processes are designed such that, as a rule, a confirmed deadline is not generally exceeded. In fact, wherever possible, we aim to deliver up to three working days ahead of schedule to optimize the overall delivery situation (e.g. in anticipation of holidays and peak order periods).

We are proud of our personal consulting service, on-time deliveries and one-day delivery within Germany.

To achieve this, we supply the preferred types marked with ► ex warehouse[1].

We regard the ISO 9001 certification and consistent quality checks as an integral part of our services.

Electronic order processing is fast, cost-efficient and error-free. Please contact us if you want to benefit from these advantages.

[1] Due to the current tight delivery situation on the market, no standard delivery times or preferred types are listed for our articles in this edition of the catalog.
Current information is given at the Mall for the respective article number, at www.siemens.com/sirius/mall.

Packaging, packing units

The packaging in which our equipment is dispatched provides protection against dust and mechanical damage during transport, thus ensuring that you receive our products in a perfect state.

We select our packaging for maximum environmental compatibility and reusability and, in particular, with a view to reducing waste.

With our multi-unit packaging and reusable packaging, we offer you specific types of packaging that are both kind to the environment and tailored to your requirements.

Your advantages at a glance:

- Lower order costs
- Cost savings through uniform-type packaging: low/no disposal costs
- Reduced time and cost thanks to short unpacking times
- "Just-in-time" delivery directly to the production line helps reduce stock: cost savings through reduction of storage area
- Fast assembly thanks to supply in sets
- Standard Euro boxes – corresponding to the Euro pallet modular system – suitable for most conveyor systems
- Active contribution to environmental protection

Unless stated otherwise in the "Selection and ordering data" of this catalog, our products are supplied individually packed.

For small parts/accessories, we offer you economical packaging units as standard packs containing more than one item, e.g. 5, 10, 50 or 100 units. It is essential that whole number multiples of these quantities be ordered to ensure satisfactory quality of the products and problem-free order processing.

The products are delivered in a neutral carton. The label includes warning notices, the CE mark and product description information in English and German.

In addition to the article number (MLFB) and the packed number of items in the packaging the Instr. Order No. is also be specified for the operating instructions, which can be obtained from your local Siemens representative (you will find a list of your local Siemens contacts at www.siemens.com/automation-contact).

The device article number of most devices can also be acquired through the EAN barcode to simplify ordering and storage logistics.

The related master data are available from your local Siemens representative.

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Multi-unit and reusable packaging

The devices listed in the tables from page 16/6 onwards can be ordered in multi-unit or reusable packaging (further versions on request).

If ordering multi-unit or reusable packaging for the first time, please first consult your local Siemens representative with regard to pack type, quantity, delivery time and the precise order designation. Use of the reusable packaging is reserved solely for customers that have signed a packaging return agreement with their Siemens representative in advance.

Multi-unit and reusable packaging is not available as a pack type for all products. Some products are unsuited for this pack type and would only involve an increased risk of damage in transit.

For both pack types, the quantity of devices ordered (per article number) must be divisible by the pack quantity. If this is not the case, the electronic order processing system rounds up to the next integer multiple of packaging.

Multi-unit packaging

Products in a quantity sufficient to fill a multi-unit packaging: 1/2 (W96) and 1/4 (W97) ENK

As standard, multi-unit packs contain uniform-type, unpacked individual products (one device type) in an appropriately sized carton made of recyclable cardboard. The products of the SIRIUS range can be ordered in units of 1/1, 1/2, 1/4 and 1/8 standard Euro boxes (ENK).

Reusable packaging (uniform type)

Standard Euro box (ENK) made of durable molded plastic with foam inserts

Standard reusable packaging contains uniform-type, un-packed individual products (one device type) in a reusable standard Euro box (ENK) made of durable molded plastic with foam inserts for protection during transport.

The standard Euro box (ENK) also serves as transport packaging. The reusable packaging (ENK) plus foam inserts are returned by the customer (free of charge) to the supply base.

Please contact your Siemens representative to clarify the delivery details or conditions for reusable packaging (ENK) (to find Siemens representatives, see www.siemens.com/automation-contact). Suitable arrangements will then be agreed with you.

Set deliveries (reusable, different devices)

On request, we also deliver order-related packs of larger quantities of different types of devices in a standard Euro box (ENK).

Please contact your Siemens representative to clarify the delivery details or conditions for set supply or delivery in reusable packaging. Suitable arrangements will then be agreed with you.

Packaging dimensions

Packing material	Length mm	Height mm	Width mm
ENK	596	219	396
W95	575	190	375
W96	375	190	290
W97	290	190	195
W98	290	100	195

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Logistics

Multi-unit and reusable packaging, quantity in units, supplied in indivisible pack quantities with delivery time on request

SIRIUS

Devices	Size	Reusable	Multi-unit			
		X95 (1/1 ENK)	**W95** (1/1 ENK)	**W96** (1/2 ENK)	**W97** (1/4 ENK)	**W98** (1/8 ENK)
3RT2 contactors						
3RT201.-1A..1/-1A..2	S00	144	--	72	40	--
3RT201.-1B..1/-1B..2	S00	72	--	72	40	--
3RT201.-2A.../-2B...	S00	120	--	60	32	--
3RT202.-1A..0/-2B..0	S0	48	--	24	12	--
3RT202.-2A..0/-2B..0	S0	40	--	18	8	--
3RT203.-....0	S2	30	--	15	6	--
3RT203.-....4	S2	30	--	15	--	--
3RH29 snap-on auxiliary switches						
3RH2911-1F./-1GA/-1HA	--	351	--	240	120	60
3RH2911-2F./-2G./-2H./-2X.	--	321	--	196	100	50
3RH2911-2D.	--	321	--	--	--	--
3RH21 contactor relays						
3RH21..-1A..0	S00	144	--	72	40	--
3RH21..-1B..0	S00	72	--	72	40	--
3RH21..-2A..0/-2B..0	S00	120	--	60	32	--
3RV2 motor starter protectors						
3RV2011-...10/-...15	S00	43	--	24	12	--
3RV2011-...20/-...25	S00	40	--	16	8	--
3RV2021-...10/-...15	S0	43	--	24	12	--
3RV2021-...20/-...25	S0	35	--	16	8	--
3RV2031-....0/-....5	S2	24	--	12	5	--
3RU2 thermally delayed overload relays						
3RU2116-..B0	S00	64	--	32	16	--
3RU2116-..C0	S00	56	--	24	12	--
3RU2126-..B0	S0	56	--	32	16	--
3RU2126-..C0	S0	48	--	24	12	--
3RU2136-..B0	S2	36	--	18	--	--

When ordering products in multi-unit packaging for devices from the SIRIUS range, the article number of the product concerned must be supplemented with **"-Z"** and, in addition, the order code **"W9."** must be specified.

Ordering example:
3RT2015-1AB02-Z W97;
Order quantity 40 items →
Packed number of items 40

For products packed in reusable packaging, the article number must be supplemented with **"-Z"** and the order code **"X95"**.

Ordering example:
3RT2018-1AB01-Z X95;
Order quantity 144 items →
Packed number of items 144

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SIRIUS

Multi-unit packaging with order code X90 (on request)

Devices	Size	Multi-unit or quantity per pack
	mm	X90
SlimLine Compact modules		
• 3RK2200-0C.00-2AA2 (SC17.5), 3RK1.05-.B.00-2AA2 (SC17.5F)	17.5	16
• 3RK..0.-..E00-2AA2 (SC22.5), 3RK1.07-...00-2AA2 (SC22.5)	22.5	12
3RQ1 coupling relays		
• 3RQ1.00-.EB00, -.EW00, -.GB00, -.GW00	17.5	16
• 3RQ1000-.HB00, -.HW00, -.LB00, -.LW00	22.5	12
3RQ2 coupling relays		
• 3RQ2000-..W0.	22.5	12
3RM1 motor starters		
• 3RM1.0.-.AA.4	22.5	12
SIMOCODE pro S 3UF7 motor management and control devices		
• 3UF7020-1A.01-0, 3UF7600-1A.01-0	22.5	12
3RP25 electronic timing relays		
• 3RP2505-.A, 3RP2505-.C, 3RP251., 3RP2525-.A, 3RP2527, 3RP253., 3RP255.	17.5	16
• 3RP2505-.B, 3RP2505-.R, 3RP2525-.B, 3RP254., 3RP256., 3RP257.	22.5	12
3RS2 temperature monitoring relays		
• 3RS2500-1...0, 3RS2600-1...0, 3RS2800-1...0, 3RS2900-1...0	22.5	12
3RN2 thermistor motor protection relays		
• 3RN2000-.A, 3RN2010-.C	17.5	16
• 3RN201.-.B, 3RN2013-.G, 3RN2023-.D	22.5	12
3SK safety relays		
• 3SK1120, 3SK1220	17.5	16
• 3SK1111, 3SK1112, 3SK1121, 3SK1122, 3SK1211, 3SK1230, 3SK2511	22.5	12

When ordering products in multi-unit packaging, the article number of the product concerned must be supplemented with **"-Z"** and, in addition, the order code **"X90"**must be specified.

Ordering examples:

- SC17.5F SlimLine Compact safety module 3RK1205-0BE00-2AA2-Z X90;
  Order quantity 16 items →
  Packed number of items 16
- SC22.5 analog SlimLine Compact module 3RK1207-0CE00-2AA2-Z X90;
  Order quantity 12 items →
  Packed number of items 12

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Appendix

Logistics

SIRIUS ACT

Multi-unit packaging with order code X90

Pushbuttons and indicator lights	Multi-unit or quantity per pack X90
Complete units (3SU11)	20
Compact units (3SU12)	
• Acoustic signaling devices, pushbuttons with extended stroke, potentiometers	50
Actuating and signaling elements (3SU10)	
• Pushbuttons, illuminated pushbuttons, indicator lights	100
• Stop switches, twin pushbuttons, mushroom pushbuttons 30/40 mm, EMERGENCY STOP mushroom pushbuttons 30/40 mm, toggle switches, selector switches, key-operated switches, ID key-operated switches, coordinate switches	50
• Mushroom pushbuttons 60 mm, EMERGENCY STOP mushroom pushbuttons 60 mm	40
Holders without module (3SU15)	100
Modules for actuators and indicators (3SU14)	
• Contact modules	150
• LED modules	50
Enclosures (3SU18)	
• Empty plastic enclosures	
- 3SU1801-0AA00-0AA2, 3SU1801-0AA00-0AB1	24
- 3SU1801-0AA00-0AC2	18
Accessories (3SU19)	
• Sealing plugs, label holders, EMERGENCY STOP backing plates, labeling plates for potentiometers, EMERGENCY STOP labeling plates for enclosures without recesses and without inscription, single frames, dust caps for key-operated switches, adapters for mounting on DIN rails, protective collars for EMERGENCY STOP mushroom pushbuttons (40 mm, for 5 padlocks, yellow)	100
• Labeling plates	150

When ordering products in multi-unit packaging for devices from the SIRIUS ACT range, the article number of the product concerned must be supplemented with **"-Z"** and, in addition, the ordering code **"X90"** must be specified.

Ordering example:
3SU1000-0AB20-0AA0-Z X90;
Order quantity 100 items →
Packed number of items 100

Multi-unit packaging with order code X05

Pushbuttons and indicator lights	Multi-unit or quantity per pack X05
Holders without module (3SU15)	
• Plastic: 3SU1500-0AA10-0AA0	5
• Metal: 3SU1510-0AA10-0AA0	5
• Universal for plastic and metal: 3SU1550-0AA10-0AA0	5
Modules for actuators and indicators (3SU14)	
• Contact modules for front plate mounting	5
- Screw terminals: 3SU1400-1AA10-1BA0, 3SU1400-1AA10-1CA0	
- Spring-loaded terminals: 3SU1400-1AA10-3BA0, 3SU1400-1AA10-3CA0	
• LED modules for front plate mounting	5
- Screw terminals: 3SU1401-1BB00-1AA0, 3SU1401-1BB20-1AA0, 3SU1401-1BB30-1AA0, 3SU1401-1BB40-1AA0, 3SU1401-1BB50-1AA0, 3SU1401-1BB60-1AA0	
- Spring-loaded terminals: 3SU1401-1BB00-3AA0, 3SU1401-1BB20-3AA0, 3SU1401-1BB30-3AA0, 3SU1401-1BB40-3AA0, 3SU1401-1BB50-3AA0, 3SU1401-1BB60-3AA0	
• LED modules for base mounting	5
- Screw terminals: 3SU1401-2BB00-1AA0, 3SU1401-2BB20-1AA0, 3SU1401-2BB30-1AA0, 3SU1401-2BB40-1AA0, 3SU1401-2BB50-1AA0, 3SU1401-2BB60-1AA0	
- Spring-loaded terminals: 3SU1401-2BB00-3AA0, 3SU1401-2BB20-3AA0, 3SU1401-2BB30-3AA0, 3SU1401-2BB40-3AA0, 3SU1401-2BB50-3AA0, 3SU1401-2BB60-3AA0	

When ordering products in multi-unit packaging for devices from the SIRIUS ACT range, the article number of the product concerned must be supplemented with **"-Z"** and, in addition, the ordering code **"X05"**.

Ordering example:
3SU1500-0AA10-0AA0-Z X05;
Order quantity 5 items →
Packed number of items 5

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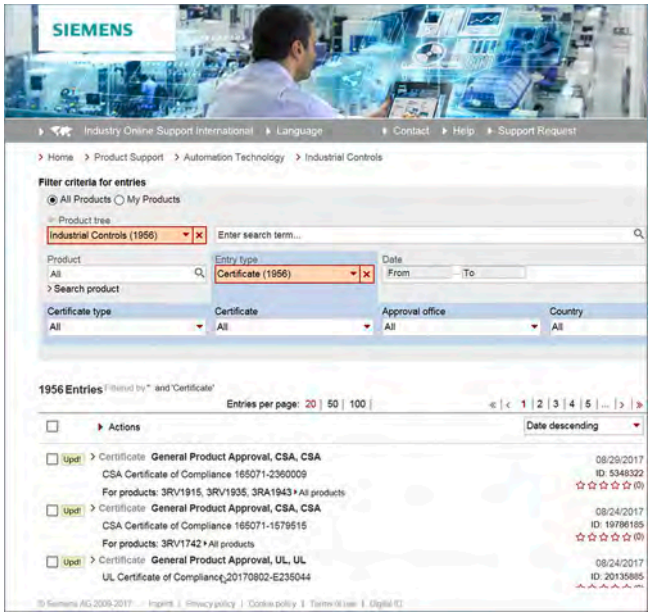
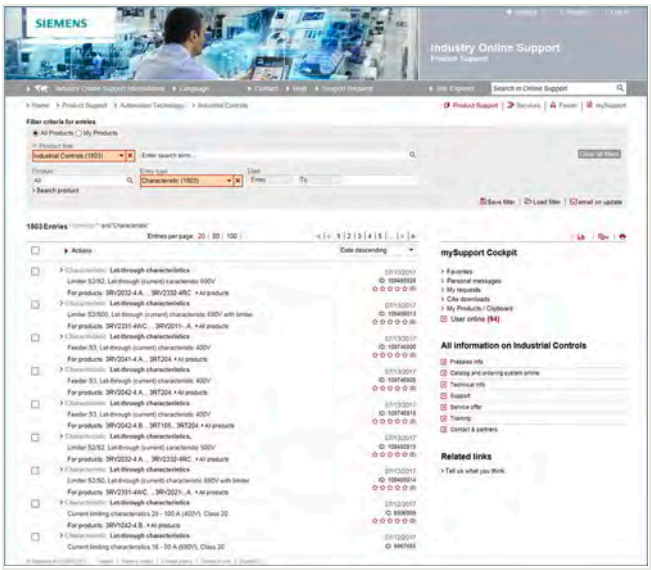
Approvals, test certificates, characteristic curves

An overview of the certificates available for Industrial Control products along with more technical documentation can be consulted daily on the internet at:

www.siemens.com/sirius/approvals



Product support: Approvals/certificates



Product support: Characteristics

Safety characteristics

In the following standards, the so-called B10 values for calculating the safety integrity or Safety Integrity Level (SIL) in functional safety at a high or continuous demand rate are required also for electromechanical switchgear:

- IEC 62061 "Safety of machines – Functional safety of safety-related electrical, electronic and programmable electronic control systems"
- ISO 13849-1 "Safety of machines – Safety-related components of controls – Part 1: General Principles"

Failure rates of electromechanical components are required for calculating the safety integrity or Safety Integrity Level (SIL) in functional safety:
- in the manufacturing industry at a high demand rate
- in the process industry at a low demand rate

Further requirements are laid down in IEC 61511-1 "Functional safety – Safety instrumented systems for the process industry sector – Part 1: Framework, definitions, system, hardware and software requirements".

The German versions of the above standards are:
- EN 62061
- EN ISO 13849
- EN 61511-1

The Safety Evaluation in the TIA Selection Tool assists in calculating the safety functions as verification for the machine documentation. It is available free of charge at www.siemens.com/safety-evaluation.

More information such as notes on trainings and Safety Consulting as well as application examples with calculations are available at www.siemens.com/safety-integrated.

Definitions

$\lambda\,(t)\,dt$ is the probability that a unit which has not failed by a certain time t will fail in the following interval $(t;\ t+dt)$.
Failure rates have the dimension 1/time unit, e.g. 1/h.
Failure rates for components are often specified in FIT (failures in time unit): 1 FIT equals 10^{-9}/h.
From the failure rate it is possible to derive a (mathematical) distribution function of the failure probability:

$F(t) = 1 - \exp(-\lambda t)$, with λ as constant failure rate

- The mean value of this exponential distribution is also referred to as:
  - Mean Time To Failure (MTTF) in the case of irreparable components; 63.2% of components fail by the MTTF.
  - Mean Operating Time Between Failures (MTBF) in the case of reparable components.
- $MTTF = 1/\lambda$
  (MTTF is a statistical mean value but no guarantee for endurance).

Electromechanical components are often irreparable components. In general, the failure rate of monitored units changes with age.

The B10 value for devices subject to wear is expressed in number of operating cycles:

- It is the number of operating cycles after which 10% of the test specimens fail in the course of an endurance test (or: the number of operating cycles after which 10% of the devices have failed).

For low demand rates (mainly in the process industry), the failure rate and not the B10 value is used to determine the failure probability.

The safety characteristics of electromechanical SIRIUS products can be found at https://support.industry.siemens.com/cs/ww/en/view/109739348 or in the SIEMENS Industry Online Support Portal (www.siemens.com/online-support) under the Entry ID: 109739348.

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Appendix

Standards and approvals

Standards

IEC	EN/EN IEC	Title
60947-1 60947-2 60947-3	60947-1 60947-2 60947-3	Low-voltage switchgear and controlgear: General rules • Circuit-breakers • Switches, disconnectors, switch-disconnectors and fuse-combination units
60947-4-1 60947-4-2 60947-4-3	60947-4-1 60947-4-2 60947-4-3	• Contactors and motor starters: Electromechanical contactors and motor starters • Contactors and motor starters: Semiconductor motor controllers and starters, soft starters • Contactors and motor starters: Semiconductor controllers and contactors for non-motor loads
60947-5-1 60947-5-2 60947-5-3 60947-5-5 60947-5-6 60947-5-7 60947-5-8 60947-5-9	60947-5-1 60947-5-2 60947-5-3 60947-5-5 60947-5-6 60947-5-7 60947-5-8 60947-5-9	• Control circuit devices and switching elements: Electromechanical control circuit devices • Control circuit devices and switching elements: Proximity switches • Control circuit devices and switching elements: Requirements for proximity devices with defined behavior under fault conditions • Control circuit devices and switching elements: Electrical EMERGENCY STOP devices with mechanical latching function • Control circuit devices and switching elements: DC interface for proximity sensors and switching amplifiers (NAMUR) • Control circuit devices and switching elements: Requirements for proximity devices with analog output • Control circuit devices and switching elements: Three-position enabling switches • Control circuit devices and switching elements: Flow rate switches
60947-6-1 60947-6-2	60947-6-1 60947-6-2	• Multiple function equipment - Transfer switching equipment • Multiple function equipment - Control and protective switching devices (or equipment) (CPS)
60947-7-1 60947-7-2 60947-7-3 60947-7-4 60947-7-5	60947-7-1 60947-7-2 60947-7-3 60947-7-4 --	• Ancillary equipment - Terminal blocks for copper conductors • Ancillary equipment - Protective conductor terminal blocks for copper conductors • Ancillary equipment - Safety requirements for fuse terminal blocks • Ancillary equipment - PCB terminal blocks for copper conductors • Ancillary equipment - Terminal blocks for aluminum conductors
60947-8	60947-8	• Control units for built-in thermal protection (PTC) for rotating electrical machines
60947-9-1	60947-9-1	• Low-voltage switchgear and controlgear - Active arc-fault mitigation systems - Arc quenching devices
62026-2	62026-2	• Network control devices (CDIs): Actuator sensor interface
60269-1 60269-4	60269-1 60269-4	Low-voltage fuses: General requirements Low-voltage fuses: Supplementary requirements for fuse-links for the protection of semiconductor devices
60050-441	--	International Electrotechnical Vocabulary. Switchgear, controlgear and fuses
61439-1 61439-2 61439-3 61439-4 61439-5 61439-6 61439-7 -- 61140	61439-1 61439-2 61439-3 61439-4 61439-5 61439-6 -- 50274 61140	Low-voltage switchgear and controlgear assemblies: General rules Low-voltage switchgear and controlgear assemblies: Power switchgear and controlgear assemblies Low-voltage switchgear and controlgear assemblies: Distribution boards intended to be operated by ordinary persons (DBO) Low-voltage switchgear and controlgear assemblies: Particular requirements for assemblies for construction sites (ACS) Low-voltage switchgear and controlgear assemblies: Assemblies for power distribution in public networks Low-voltage switchgear and controlgear assemblies: Busbar trunking systems (busways) Low-voltage switchgear and controlgear assemblies: Assemblies for specific applications such as marinas, camping sites, market squares, electric vehicle charging stations Low-voltage switchgear and controlgear assemblies: Protection against electric shock - Protection against unintentional direct contact with hazardous live parts Low-voltage switchgear and controlgear assemblies: Protection against electric shock - Common aspects for installation and equipment
60664-1	60664-1	Insulation coordination for electrical equipment in low-voltage systems; Principles, requirements and tests
60204-1 60079-0 60079-14	60204-1 60079-0 60079-14	Electrical equipment of machines: General requirements Hazardous areas - Equipment - General requirements Hazardous areas - Electrical installations design, selection and erection
61810-1 61812-1	61810-1 61812-1	Electromechanical elementary relays: General requirements and safety requirements Time relays for industrial and residential use: Requirements and tests
60999-1 60999-2	60999-1 60999-2	Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units: General requirements and particular requirements for clamping units for conductors from 0.2 mm^2 up to 35 mm^2 (included) Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units: Particular requirements for clamping units for conductors above 35 mm^2 up to 300 mm^2 (included)
IEC/TR 61000-4-1	61000-4-1	Electromagnetic compatibility (EMC); Test and measuring techniques; Overview of IEC 61000-4 series
61000-6-2 61000-6-3 61000-6-4	61000-6-2 61000-6-3 61000-6-4	Electromagnetic compatibility (EMC); Generic standards - Immunity for industrial environments Electromagnetic compatibility (EMC); Generic standards - Emission standard for residential, commercial and light-industrial environments Electromagnetic compatibility (EMC); Generic standards - Emission standard for industrial environments
61869-1	61869-1	Instrument transformers: General requirements
61869-2	61869-2	Instrument transformers: Additional requirements for current transformers

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UL	CSA C22.2	ASME	JIS	Title
508	--	--	--	Industrial control equipment
60947-1	No. 60947-1	--	--	Low-voltage switchgear and controlgear: General rules
60947-4-1	No. 60947-4-1	--	--	Low-voltage switchgear and controlgear: Contactor and motor starters - Electromechanical contactors and motor starters
60947-4-2	No. 60947-4-2	--	--	Low-voltage switchgear and controlgear: Contactors and motor-starters - AC semiconductor motor controllers and starters
60947-5-1	No. 60947-5-1	--	--	Low-voltage switchgear and controlgear: Control circuit devices and switching elements - Electromechanical control circuit devices
60947-5-5	60947-5-5	--	--	Low-voltage switchgear and controlgear: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function
489	No. 5	--	--	Molded case circuit breakers, molded case switches, and circuit breaker enclosures
1012	--	--	--	Power units other than CLASS 2
1059	--	--	--	Terminal blocks
486A-486B	No. 65	--	--	Wire connectors
486E	--	--	--	Equipment wiring terminals for use with aluminum and/or copper conductors
50	No. 94.1	--	--	Enclosures for electrical equipment - Non-environmental considerations
50E	No. 94.2	--	--	Enclosures for electrical equipment - Environmental considerations
--	No. 14	--	--	Industrial control equipment
--	No. 107.1	--	--	Power conversion equipment
--	--	A17.5/ CSA B 44.1	--	Elevator and escalator electrical equipment
--	--	--	C 8201-4-1	Low-voltage switchgear and controlgear; Contactors and motor-starters

Approval requirements valid in different countries

Siemens low-voltage switchgear and controlgear are designed, manufactured and tested according to the relevant German standards (DIN and VDE), IEC publications and European standards (EN) as well as CSA and UL standards. The standards assigned to the single devices are stated in the relevant parts of this catalog.

As far as is economically viable, the requirements of the various standards valid in other countries are also taken into account in the design of the equipment.

In some countries an approval is required for certain low-voltage switchgear and controlgear components (see table below). Depending on the market requirements, these components have been submitted for approval to the authorized testing institutes.

In some cases, CSA for Canada and UL for the USA only approve special switchgear versions. Such special versions are listed separately from the standard versions in the individual parts of this catalog.

For this equipment, partial limitations of the maximum permissible voltages, currents and ratings can be imposed, or special approval and, in some cases, special identification is required.

For use on board ship, the specifications of the marine classification societies must also be observed (see table on page16/12). In some cases, they require type tests of the components to be approved.

The Chinese certification system has changed. As of November 1, 2020, the self-declaration by Siemens (Self-Declaration of Compliance (SDOC)) forms the basis of CCC and the import to China. The CCC scope, product labeling, certification procedures, implementation rules in manufacturing and regulations regarding the import to China have remained unchanged. All CCC certificates issued by CQC have been transferred to SDOCs and all CCC certificates issued by CQC are invalid as of November 1, 2020.

UKCA: As of January 1, 2023, all devices to be marketed in Great Britain require a manufacturer's declaration (UK Declaration of Conformity) and must be supplied with a IKCA mark. The declaration is based on UK regulations and the underlying British standards (BS). Alternatively, EN standards can also be applied. Otherwise, the same requirements apply as for the EU Declaration of Conformity.

Testing bodies, approval identification and approval requirements

Country	Canada	USA	China	Armenia, Belarus, Kazakhstan Kirgizstan, Russia
Government-appointed or private, officially recognized testing bodies	CSA UL (USA)	UL	Self-Declaration of Compliance (Siemens)	Official national regulation/TR
Mark of conformity	c UL c UL us c UL us c UL us	UL UL us c UL us c UL us	CCC	EAC
Approval requirement	+	+	+	+
Remarks	--	--	--	Eurasian customs union

For more information about the approval marks, see page 16/14.

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Standards and approvals

Marine classification societies

Country	Germany Norway	Great Britain	France	CIS	Italy	Poland	USA
Name	DNV	Lloyds Register of Shipping	Bureau Veritas	Russian Maritime Register of Shipping	Registro Italiano Navale	Polski Rejestre Statków	American Bureau of Shipping
Codes	DNV	LR	BV	RS	RINA	PRS	ABS

CE marking

Manufacturers of products which fall within the subject area to which EU directives apply must identify their products, operating instructions or packaging with a CE mark of conformity.

By attaching the CE marking, the manufacturer confirms that the product conforms to the relevant basic requirements of all directives applicable to the product. The mark of conformity is a mandatory requirement for putting products into circulation throughout the EU.

All the products in this catalog are in conformance with the relevant specific EU directives and bear the CE mark of conformity CE.

- Low-voltage directive
- EMC directive
- Machinery directive
- ATEX directive
- RED directive
- RoHS directive

Accident prevention

Test certificates and approvals from DGUV, SUVA (Swiss institute for accident prevention), TÜV or VDE are available for some devices in safety control systems. For details, see the respective product descriptions.

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Ex protection certificates for SIRIUS controls

Controls that are installed in a potentially explosive atmosphere or motor protection devices that protect a motor installed in a potentially explosive atmosphere against overloading or a pump in said atmosphere from dry running must comply with certain special requirements. These requirements are laid down in the following standards:

- EN 50495
- EN IEC 60079-0
- EN 60079-1
- EN 60079-7
- EN 60079-11
- EN 60079-14
- EN 60079-17
- EN 60079-31
- EN IEC 60947-1
- EN IEC 60947-4-1
- EN 60947-4-2
- EN 60947-5-1
- EN 60947-8
- EN ISO/IEC 80079-34
- EN ISO 80079-36
- EN ISO 80079-37

Certification

Controls and motor protection devices that are brought into circulation within the member states of the EU in accordance with EU directive 2014/34/EU must have been constructed and tested according to the above-mentioned standards and must have a declaration of conformity from the manufacturer based on a prototype test certificate.

The quality management (QM) system of the manufacturer is subject to certain requirements and a "QM certificate" must be obtained for the manufacturer from a recognized authority.

Certification of the QM system

A certificate of approval for quality assurance production has been issued by DEKRA Testing and Certification GmbH[1)] under the number BVS 20 ATEX ZQS/E111 according to Directive 2014/34/EU. The quality management (QM) system is also checked within the scope of the IEC Ex Scheme. Conformity with the requirements is confirmed using document DE/BVS/QAR15.0002/08.

These certificates are valid for equipment groups I and II and categories M2 and 2: Safety and control devices for electrical equipment.

Certificates

Declarations of conformity and prototype test certificates are available at www.siemens.com/online-support for viewing and downloading. As far as explosion protection is concerned, these are available for the following products:

- 3RB, 3RK, 3RM, 3RN, 3RU, 3RV, 3RW, 3UF motor protection devices
- 3RS2 temperature monitoring relays
- 3SU1 LED modules

You can find more information about industrial controls for applications in explosion-protected areas at www.siemens.com/sirius/atex.

1) DEKRA Testing and Certification GmbH
The certification authority of "DEKRA Testing and Certification GmbH" with authority number 0158 according to Article 13 of Directive 2014/34/EU of the European Parliament and Council certifies that Siemens Amberg, Cham, Suzhou and Trutnov maintains a quality assurance system for production that satisfies Appendices IV and VII of this Directive.

Selection box

Description of certificate with view and download option

Identifying markings

All equipment must be marked according to the ATEX guideline. The ATEX identification code contains the equipment group, the approved environment, the number of the certification authority and other technical data required for explosion protection.

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Standards and approvals

Certificate of the AS-International Association for AS-Interface products

AS-Interface products are tested and certified by the AS-International Association. The products have been tested in an accredited test laboratory according to testing guidelines.

Special standards for the USA and Canada

In the USA and Canada, for machine tools and processing machines in particular, supply lines are laid using rubber insulated cable enclosed in heavy-duty steel piping similar to that used for gas or water pipe systems.

The tubing system must be completely watertight and electrically conductive (especially sleeving and elbows). Since the tubing system can also be used for grounding, the threaded cable entries of enclosed units must be fitted with PG or metric thread metal adapters for the tube thread. The necessary adapters are specified for the switchgear as accessories; they should be ordered separately unless otherwise specified.

Low-voltage switchgear and controlgear for auxiliary circuits (e.g. contactor relays, commanding and signaling devices and auxiliary switches/auxiliary contacts in general) are generally only approved by CSA and UL for **"Heavy Duty"** or **"Standard Duty"** and are identified either with these specifications in addition to the maximum permissible voltage or by using an abbreviation.

The abbreviations are harmonized with IEC 60947-5-1 Annex 1 Table A.1 and correspond to the stated utilization categories.

For various switching devices detailed in the catalog, a note has been included to the effect that, above a certain voltage, the auxiliary switches/auxiliary contacts can only be used if they have the same polarity. This means that the input terminals can only be connected to the same pole of the control voltage, e.g. "600 V AC above 300 V AC same polarity".

Distinguishing features of UL approvals (for USA and Canada)

Recognized Component	Listed Product
Devices are identified on the rating plate using the "UL recognition mark": USA: , c US Canada: c , c US	Devices are identified using the "UL listing mark" on the rating plate e.g. USA: LISTED XXX IND. CONT. EQ. Canada: c LISTED XXX IND. CONT. EQ. (XXX stands for: UL Code Classification Number)
Devices are approved as modules for "factory wiring" or other conditions of acceptability, i.e.: As devices for installation in control systems, which are selected, installed, wired and tested entirely by trained personnel in factories, workshops or elsewhere, **according to the operating conditions**.	Devices are approved for "field wiring", i.e.: • As devices for installation in control systems, which are completely wired by trained personnel in factories, workshops or elsewhere. • As single devices for sale in retail outlets in the USA/Canada.
If devices are or c approved as "listed products", they are also approved as or c "recognized components".	

For more information about UL and CSA, see page 16/11.

Special standards for Russia, Australia and China

EAC approval for Armenia, Belarus, Kazakhstan, Kirgizstan, Russia

EAC mark

Since February 15, 2013, Russia, Kazakhstan, Belarus and other countries have been united in the Eurasian EAC customs union.

All devices delivered to the customs union must have these customs certifications.

RCM approval for Australia

RCM mark

The RCM mark is required for marketing Siemens electronic devices in Australia. Electronic devices must provide proof of EMC clearance in Australia, similar to the CE mark of conformity laid down by the EMC directive applicable in the EU and bear the "RCM" mark.

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Quality management

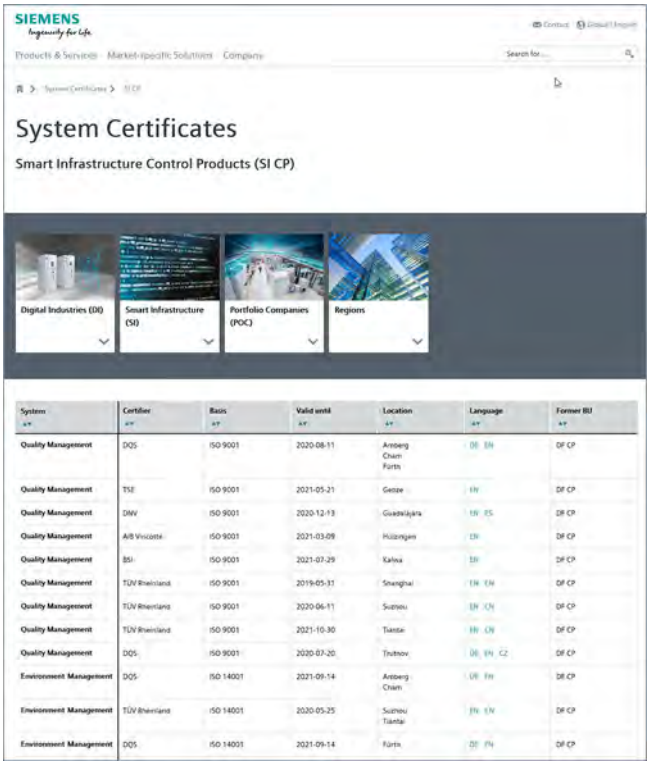
The quality management system of our "Electrical Products" Business Unit in the "Smart Infrastructure" business complies with the international standard EN ISO 9001.

The products and systems described in this catalog are developed, manufactured and sold under application of a certified quality management system according to ISO 9001.

Certificates

For information about available certifications of the quality management system for Industrial Controls products, please visit website address:

https://new.siemens.com/global/en/general/system-certificates/si-ep.html



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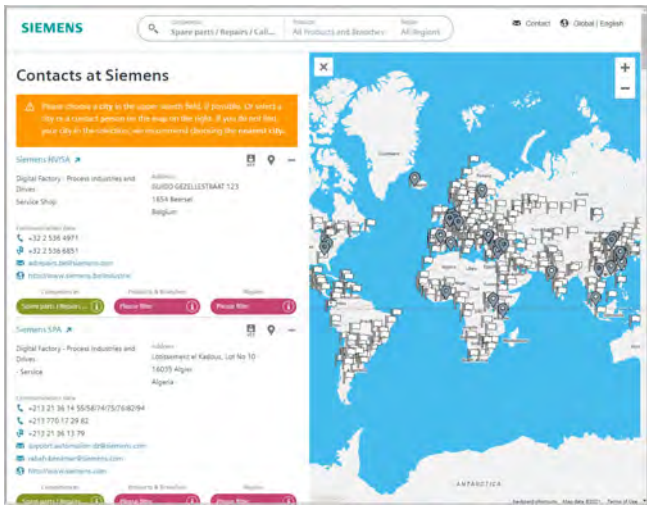
Partners at Siemens

Overview



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You start by selecting

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- products and branches,
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Overview

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Partner Finder

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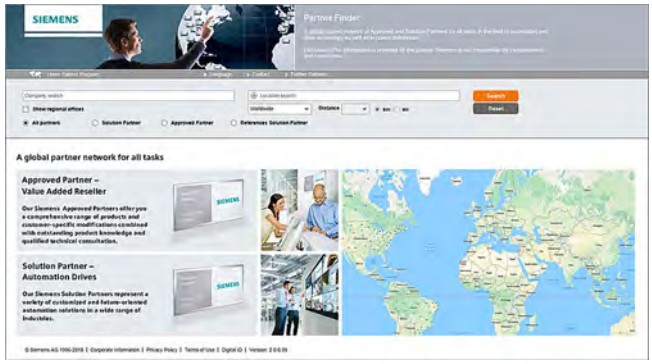

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  Internet: www.conta-clip.de
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- **GMC-I Messtechnik GmbH**
  Internet: www.gossenmetrawatt.com
- **Harting Customised Solutions GmbH & Co. KG**
  Internet: www.Harting.com/solution-partner
- **Jacob GmbH**
  Elektrotechnische Fabrik
  Email: jacob@jacob-gmbh.de
- **KnorrTec**
  Internet: www.knorrtec.de
- **U. I. Lapp GmbH**
  Email: info@lappkabel.de
  Internet: www.lappkabel.de
- **Murrplastik Systemtechnik GmbH**
  Internet: www.murrplastik.de
- **Wieland Electric GmbH**
  Email: info@wieland-electric.com

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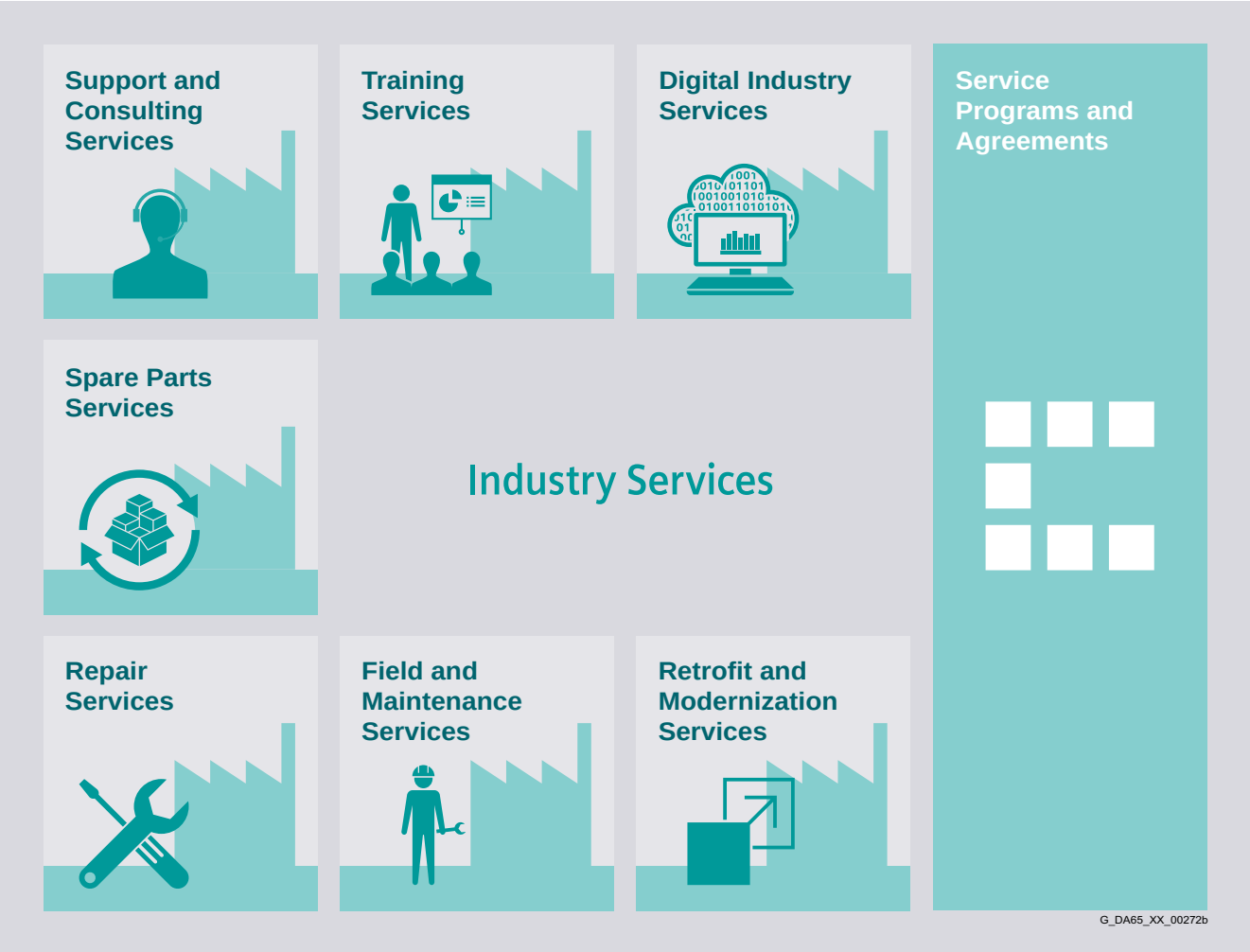
Overview



Keep your business running and shaping your digital future – with Industry Services

Optimizing the productivity of your equipment and operations can be a challenge, especially with constantly changing market conditions. Working with our service experts makes it easier. We understand your industry's unique processes and provide the services needed so that you can better achieve your business goals.

You can count on us to maximize your uptime and minimize your downtime, increasing your operations' productivity and reliability. When your operations have to be changed quickly to meet a new demand or business opportunity, our services give you the flexibility to adapt. Of course, we take care that your production is protected against cyber threats. We assist in keeping your operations as energy and resource efficient as possible and reducing your total cost of ownership. As a trendsetter, we ensure that you can capitalize on the opportunities of digitalization and by applying data analytics to enhance decision making: You can be sure that your plant reaches its full potential and retains this over the longer lifespan.

You can rely on our highly dedicated team of engineers, technicians and specialists to deliver the services you need – safely, professionally and in compliance with all regulations. We are there for you, where you need us, when you need us.

www.siemens.com/industryservices

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Overview (continued)

Digital Industry Services

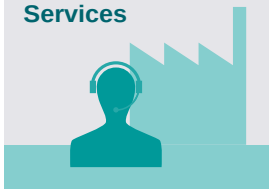
Digital Industry Services make your industrial processes transparent to gain improvements in productivity, asset availability, and energy efficiency.

Production data is generated, filtered and translated with intelligent analytics to enhance decision-making.

This is done whilst taking data security into consideration and with continuous protection against cyber-attack threats.

www.siemens.com/global/en/products/services/industry/digital-industry-services.html

Support and Consulting Services



Industry Online Support site for comprehensive information, application examples, FAQs and support requests.

Technical and Engineering Support for advice and answers for all inquiries about functionality, handling, and fault clearance. The Service Card as prepaid support for value added services such as Priority Call Back or Extended Support offers the clear advantage of quick and easy purchasing.

Information & Consulting Services, e.g. SIMATIC System Audit; clarity about the state and service capability of your automation system or Lifecycle Information Services; transparency on the lifecycle of the products in your plants.

https://support.industry.siemens.com/cs/ww/en/sc/2235

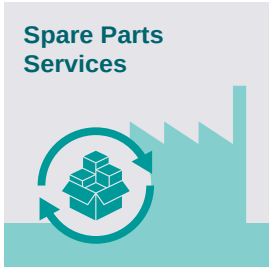
Training Services

From the basics and advanced to specialist skills, SITRAIN courses provide expertise right from the manufacturer – and encompass the entire spectrum of Siemens products and systems for the industry.

Worldwide, SITRAIN courses are available wherever you need a training course in more than 170 locations in over 60 countries.

https://support.industry.siemens.com/cs/ww/en/sc/2226

Spare Parts Services



Spare Parts Services are available worldwide for smooth and fast supply of spare parts – and thus optimal plant availability. Genuine spare parts are available for up to ten years. Logistic experts take care of procurement, transport, custom clearance, storage and order management. Reliable logistics processes ensure that components reach their destination as needed.

Since not all spare parts can be kept in stock at all times, Siemens offers a preventive measure for spare parts provisioning on the customer's premises with optimized **Spare Parts Packages** for individual products, custom-assembled drive components and entire integrated drive trains – including risk consulting.

Asset Optimization Services help you design a strategy for parts supply where your investment and carrying costs are reduced and the risk of obsolescence is avoided.

https://support.industry.siemens.com/cs/ww/en/sc/2110

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Overview (continued)

Repair Services are offered on-site and in regional repair centers for fast restoration of faulty devices' functionality.

Also available are extended repair services, which include additional diagnostic and repair measures, as well as emergency services.

https://support.industry.siemens.com/cs/ww/en/sc/2154

Provide a cost-effective solution for the expansion of entire plants, optimization of systems or upgrading existing products to the latest technology and software, e.g. migration services for automation systems.

Service experts support projects from planning through commissioning and, if desired over the entire extended lifespan, e.g. Retrofit for Integrated Drive Systems for an extended lifetime of your machines and plants.

https://support.industry.siemens.com/cs/ww/en/sc/2286

Siemens specialists are available globally to provide expert field and maintenance services, including commissioning, functional testing, preventive maintenance and fault clearance.

All services can be included in customized service agreements with defined reaction times or fixed maintenance intervals.

https://support.industry.siemens.com/cs/ww/en/sc/2265

A technical Service Program or Agreement enables you to easily bundle a wide range of services into a single annual or multi-year agreement.

You pick the services you need to match your unique requirements or fill gaps in your organization's maintenance capabilities.

Programs and agreements can be customized as KPI-based and/or performance-based contracts.

https://support.industry.siemens.com/cs/ww/en/sc/2275

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Online Support

Overview

Siemens Industry and Online Support with some 1.7 million visitors per month is one of the most popular web services provided by Siemens. It is the central access point for comprehensive technical know-how about products, systems and services for automation and drives applications as well as for process industries.

In connection with the challenges and opportunities related to digitalization you can look forward to continued support with innovative offerings.

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Overview

Software types

Software requiring a license is categorized into types.
The following software types have been defined:

- Engineering software
- Runtime software

Engineering software

This includes all software products for creating (engineering) user software, e.g. for configuring, programming, parameterizing, testing, commissioning or servicing.

Data generated with engineering software and executable programs can be duplicated for your own use or for use by third-parties free-of-charge.

Runtime software

This includes all software products required for plant/machine operation, e.g. operating system, basic system, system expansions, drivers, etc.

The duplication of the runtime software and executable programs created with the runtime software for your own use or for use by third-parties is subject to a charge.

You can find information about license fees according to use in the ordering data (e.g. in the catalog). Examples of categories of use include per CPU, per installation, per channel, per instance, per axis, per control loop, per variable, etc.

Information about extended rights of use for parameterization/configuration tools supplied as integral components of the scope of supply can be found in the readme file supplied with the relevant product(s).

License types

Siemens Industry Automation & Drive Technologies offers various types of software license:

- Floating license
- Single license
- Rental license
- Rental floating license
- Trial license
- Demo license
- Demo floating license

Floating license

The software may be installed for internal use on any number of devices by the licensee. Only the concurrent user is licensed. The concurrent user is the person using the program. Use begins when the software is started.
A license is required for each concurrent user.

Single license

Unlike the floating license, a single license permits only one installation of the software per license.

The type of use licensed is specified in the ordering data and in the Certificate of License (CoL). Types of use include for example per instance, per axis, per channel, etc.

One single license is required for each type of use defined.

Rental license

A rental license supports the "sporadic use" of engineering software. Once the license key has been installed, the software can be used for a specific period of time (the operating hours do not have to be consecutive).
One license is required for each installation of the software.

Rental floating license

The rental floating license corresponds to the rental license, except that a license is not required for each installation of the software. Rather, one license is required per object (for example, user or device).

Trial license

A trial license supports "short-term use" of the software in a non-productive context, e.g. for testing and evaluation purposes. It can be transferred to another license.

Demo license

The demo license support the "sporadic use" of engineering software in a non-productive context, for example, use for testing and evaluation purposes. It can be transferred to another license. After the installation of the license key, the software can be operated for a specific period of time, whereby usage can be interrupted as often as required.

One license is required per installation of the software.

Demo floating license

The demo floating license corresponds to the demo license, except that a license is not required for each installation of the software. Rather, one license is required per object (for example, user or device).

Certificate of License (CoL)

The CoL is the licensee's proof that the use of the software has been licensed by Siemens. A CoL is required for every type of use and must be kept in a safe place.

Downgrading

The licensee is permitted to use the software or an earlier version/release of the software, provided that the licensee owns such a version/release and its use is technically feasible.

Delivery versions

Software is constantly being updated.
The following delivery versions

- PowerPack
- Upgrade

can be used to access updates.

Existing bug fixes are supplied with the ServicePack version.

PowerPack

PowerPacks can be used to upgrade to more powerful software. The licensee receives a new license agreement and CoL (Certificate of License) with the PowerPack. This CoL, together with the CoL for the original product, proves that the new software is licensed.
A separate PowerPack must be purchased for each original license of the software to be replaced.

Upgrade

An upgrade permits the use of a new version of the software on the condition that a license for a previous version of the product is already held.
The licensee receives a new license agreement and CoL with the upgrade. This CoL, together with the CoL for the previous product, proves that the new version is licensed.
A separate upgrade must be purchased for each original license of the software to be upgraded.

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Overview (continued)

ServicePack

ServicePacks are used to debug existing products. ServicePacks may be duplicated for use as prescribed according to the number of existing original licenses.

License key

Siemens Industry Automation & Drive Technologies supplies software products with and without license keys.

The license key serves as an electronic license stamp and is also the "switch" for activating the software (floating license, rental license, etc.).

The complete installation of software products requiring license keys includes the program to be licensed (the software) and the license key (which represents the license).

Software Update Service (SUS)

As part of the SUS contract, all software updates for the respective product are made available to you free of charge for a period of one year from the invoice date. The contract will automatically be extended for one year if it is not canceled three months before it expires.

The possession of the current version of the respective software is a basic condition for entering into an SUS contract.

You can download explanations concerning license conditions from https://mall.industry.siemens.com/legal/ww/en/terms_of_trade_en.pdf

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1. General Provisions

By using this catalog you can purchase products (hardware, software and services) described therein from Siemens Aktiengesellschaft subject to the following Terms and Conditions of Sale and Delivery (hereinafter referred to as "T&C"). Please note that the scope, the quality and the conditions for supplies and services, including software products, by any Siemens entity having a registered office outside Germany, shall be subject exclusively to the General Terms and Conditions of the respective Siemens entity. The following T&C apply exclusively for orders placed with Siemens Aktiengesellschaft, Germany.

1.1 For customers with a seat or registered office in European Union

For customers with a seat or registered office in European Union, the following terms and conditions apply subordinate to T&C:

- for products, which include specific terms and conditions in the description text, these specific terms and conditions shall apply and subordinate thereto,
- for stand-alone software products and software products forming a part of a product or project, the "General License Conditions for Software Products for Automation and Drives for Customers with a Seat or registered Office in Germany"[1)] and/or
- for consulting services the “Allgemeine Geschäftsbedingungen für Beratungsleistungen der Division DF – Deutschland” (available only in German) and/or
- for other services, the „Supplementary Terms and Conditions for Services (“BL”)[1)] and/or
- for other supplies the "General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry"[1)].
  In case such supplies should contain Open Source Software, the conditions of which shall prevail over the "General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry"[1)], a notice will be contained in the scope of delivery in which the applicable conditions for Open Source Software are specified. This shall apply mutatis mutandis for notices referring to other third party software components.

1.2 For customers with a seat or registered office outside European Union

For customers with a seat or registered office outside European Union, the following terms and conditions apply subordinate to T&C:

- for products, which include specific terms and conditions in the description text, these specific terms and conditions shall apply and subordinate thereto,
- for consulting services the "Standard Terms and Conditions for Consulting Services of the Division DF for Customers with a Seat or Registered Office Outside of Germany"[1)] and/or
- for other services the "International Terms & Conditions for Services"[1)] supplemented by "Software Licensing Conditions"[1)] and/or
- for other supplies of hard- and software the "International Terms & Conditions for Products"[1)] supplemented by "Software Licensing Conditions"[1)]

1.3 For customers with master or framework agreement

To the extent our supplies and/or services offered are covered by an existing master or framework agreement, the terms and conditions of that agreement shall apply instead of T&C.

2. Prices

The prices are in € (Euro) ex point of delivery, exclusive of packaging.

The sales tax (value added tax) is not included in the prices. It shall be charged separately at the respective rate according to the applicable statutory legal regulations.

Prices are subject to change without prior notice. We will charge the prices valid at the time of delivery.

To compensate for variations in the price of raw materials (e.g. silver, copper, aluminum, lead, gold, dysprosium and neodym), surcharges are calculated on a daily basis using the so-called metal factor for products containing these raw materials.
A surcharge for the respective raw material is calculated as a supplement to the price of a product if the basic official price of the raw material in question is exceeded.

The metal factor of a product indicates the basic official price (for those raw materials concerned) as of which the surcharges on the price of the product are applied, and with what method of calculation.

An exact explanation of the metal factor can be downloaded at:

https://mall.industry.siemens.com/legal/ww/en/terms_of_trade_en.pdf

To calculate the surcharge (except in the cases of dysprosium and neodym), the official price from the day prior to that on which the order was received or the release order was effected is used.

To calculate the surcharge applicable to dysprosium and neodym ("rare earths"), the corresponding three-month basic average price in the quarter prior to that in which the order was received or the release order was effected is used with a one-month buffer (details on the calculation can be found in the explanation of the metal factor).

3. Additional Terms and Conditions

The dimensions are in mm. In Germany, according to the German law on units in measuring technology, data in inches apply only to devices for export.

Illustrations are not binding.

Insofar as there are no remarks on the individual pages of this catalog – especially with regard to data, dimensions and weights given – these are subject to change without prior notice.

[1)] The text of the Terms and Conditions of Siemens AG can be downloaded at
https://mall.industry.siemens.com/legal/ww/en/terms_of_trade_en.pdf

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4. Export Regulations

We shall not be obligated to fulfill any agreement if such fulfillment is prevented by any impediments arising out of national or international foreign trade or customs requirements or any embargoes and/or other sanctions.

Export may be subject to license. We shall indicate in the delivery details whether licenses are required under German, European and US export lists.

Our products are controlled by the U.S. Government (when labeled with "ECCN" unequal "N") and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be resold, transferred, or otherwise disposed of, to any other country or to any person other than the authorized ultimate consignee or end-user(s), either in their original form or after being incorporated into other items, without first obtaining approval from the U.S. Government or as otherwise authorized by U.S. law and regulations. Products labeled with "AL" unequal "N" are subject to European/national export authorization.

The export indications can be viewed in advance in the description of the respective goods on the Industry Mall, our online catalog system. Only the export labels "AL" and "ECCN" indicated on order confirmations, delivery notes and invoices are authoritative.

Products without label, with label "AL:N"/"ECCN:N", or label "AL:9X9999"/"ECCN: 9X9999" may require authorization from responsible authorities depending on the final end-use, or the destination.

If you transfer goods (hardware and/or software and/or technology as well as corresponding documentation, regardless of the mode of provision) delivered by us or works and services (including all kinds of technical support) performed by us to a third party worldwide, you shall comply with all applicable national and international (re-)export control regulations. In any event of such transfer of goods, works and services you shall comply with the (re-) export control regulations of the Federal Republic of Germany, of the European Union and of the United States of America.

Prior to any transfer of goods, works and services provided by us to a third party you shall in particular check and guarantee by appropriate measures that

- there will be no infringement of an embargo imposed by the European Union, by the United States of America and/ or by the United Nations by such transfer, by brokering of contracts concerning those goods, works and services or by provision of other economic resources in connection with those goods, works and services, also considering the limitations of domestic business and prohibitions of by-passing those embargos;
- such goods, works and services are not intended for use in connection with armaments, nuclear technology or weapons, if and to the extent such use is subject to prohibition or authorization, unless required authorization is provided;
- the regulations of all applicable Sanctioned Party Lists of the European Union and the United States of America concerning the trading with entities, persons and organizations listed therein are considered.

If required to enable authorities or us to conduct export control checks, you, upon request by us, shall promptly provide us with all information pertaining to the particular end customer, the particular destination and the particular intended use of goods, works and services provided by us, as well as any export control restrictions existing.

You acknowledge that under the EU embargo regulations against Iran, Syria and Russia respectively the sale of certain listed goods and related services is subject to authorization by the competent export control authorities of the European Union. If (i) the goods or services ordered by you are destined for Iran, Syria or Russia, and (ii) the contract for our supplies and/or services is subject to prior authorization of the competent export control authorities of the European Union, the contract between you and us shall come into force in this respect only upon granting of such authorization.

The products listed in this catalog may be subject to European/German and/or US export regulations. Any export requiring approval is therefore subject to authorization by the relevant authorities.

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Notes

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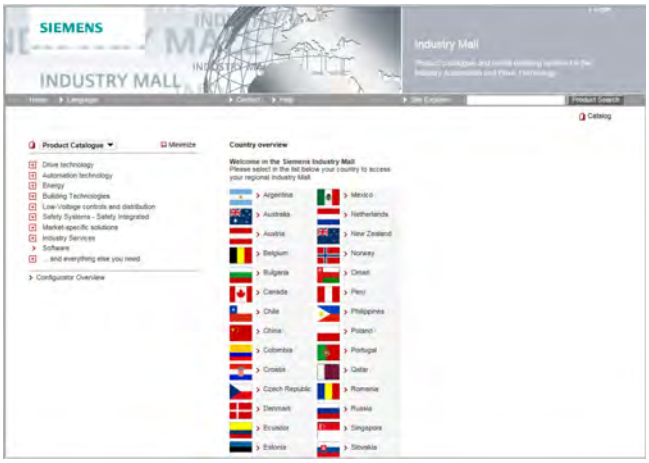
Easy product selection and ordering: Industry Mall



Industry Mall

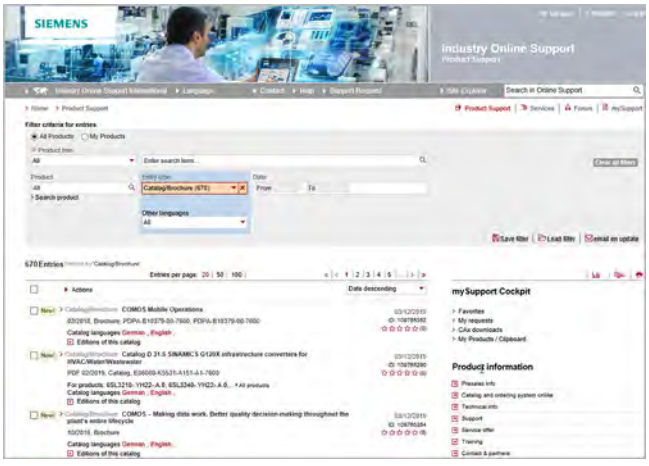
The Industry Mall is a Siemens AG Internet ordering platform. It provides you with online access to a comprehensive product spectrum that is presented in an informative, well-organized way.

Powerful search functions help you select the required products, while configurators enable you to configure complex product and system components quickly and easily. CAx data are also available for you to use.

Data transfer allows the entire procedure, from selection through ordering to tracking and tracing, to be carried out online. Availability checks, individual customer discounting, and quotation preparation are also possible.

www.siemens.com/industrymall

Downloading catalogs



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The filter box makes it possible to perform targeted searches.

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Addresses can be found at
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Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connetion is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

For additional information on industrial security measures that may be implemented, please visit **https://www.siemens.com/industrialsecurity.**

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under **https://www.siemens.com/cert.**

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