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Article No.

3RA1943-2C
3RA1943-2B
3RA1953-2B
3RA1953-2N

Or directly on the Internet, e.g. www.siemens.com/product?3RA1943-2C

Overview

More information	
Homepage, see www.siemens.com/soft-starter Industry Mall, see www.siemens.com/product?3RW TIA Selection Tool Cloud (TST Cloud), see http://mall.industry.siemens.com/spice/TSTWeb/?kmat=Sirius3rwFolder	Industry Online Support (SIOS), see https://support.industry.siemens.com/cs/ww/en/view/109747404 Simulation Tool for Soft Starters (STS), see page 6/7 or https://support.industry.siemens.com/cs/ww/en/view/101494917


3RW55


3RW44


3RW52


3RW40


3RW30

3RW soft starters		Page
High Performance soft starters		
3RW55 soft starters	• TIA integration optional • Plug-in communication modules for PROFINET, PROFIBUS 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 690 V) • Automatic parameterization for simple commissioning and reliability even under changing load conditions • Hybrid switching devices and three-phase motor control for minimum power loss and optimum/symmetrical motor control • Pump stop for reduced mechanical stress and optimum pump stop control	6/12
3RW44 soft starters	• TIA Integration optional • PROFIBUS and PROFINET • Integrated display • External display/control module optional • Extended protection functions • Up to 1200 kW at 400 V (can be used in supply systems up to 690 V)	6/27
General Performance soft starters		
3RW52 soft starters	• TIA integration optional • Plug-in communication modules for PROFINET, PROFIBUS and Modbus • HMI modules optional • Soft starting and stopping • Current limiting • Motor overload protection • Up to 560 kW at 400 V (can be used in supply systems up to 600 V) • Hybrid switching devices and three-phase motor control • Soft Torque for reduced mechanical loading and optimum pump stop control • Parameterization using potentiometers	6/42
Basic Performance soft starters		
3RW40 soft starters	• Soft starting and stopping • Current limiting • Motor overload protection • Up to 250 kW at 400 V (can be used in supply systems up to 600 V)	6/56
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)	6/71

Use of soft starters in conjunction with IE3/IE4 motors

Note:

For the use of SIRIUS 3RW soft starters in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

For more information, see page 1/7.


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 onto existing heat sinks	**3RF21** **3RF20** **3RF22**	6/99 6/104 6/108
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 versions "Low Noise" and "Short-Circuit Proof"	**3RF23** **3RF24**	6/112 6/122
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 three-phase switching devices	**3RF2900-0EA18**	6/133
Load monitoring	• For load monitoring of one or more loads (partial loads)	**3RF29..-0FA08,** **3RF29.0-0GA..**	6/134
Heating current monitoring	• For load monitoring of one or more loads (partial loads); remote teach	**3RF29..-0JA..**	6/135
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.**	6/136
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..**	6/137
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**	6/142, 6/146

Use of SIRIUS solid-state switching devices for switching motors in conjunction with IE3/IE4 motors

Note:

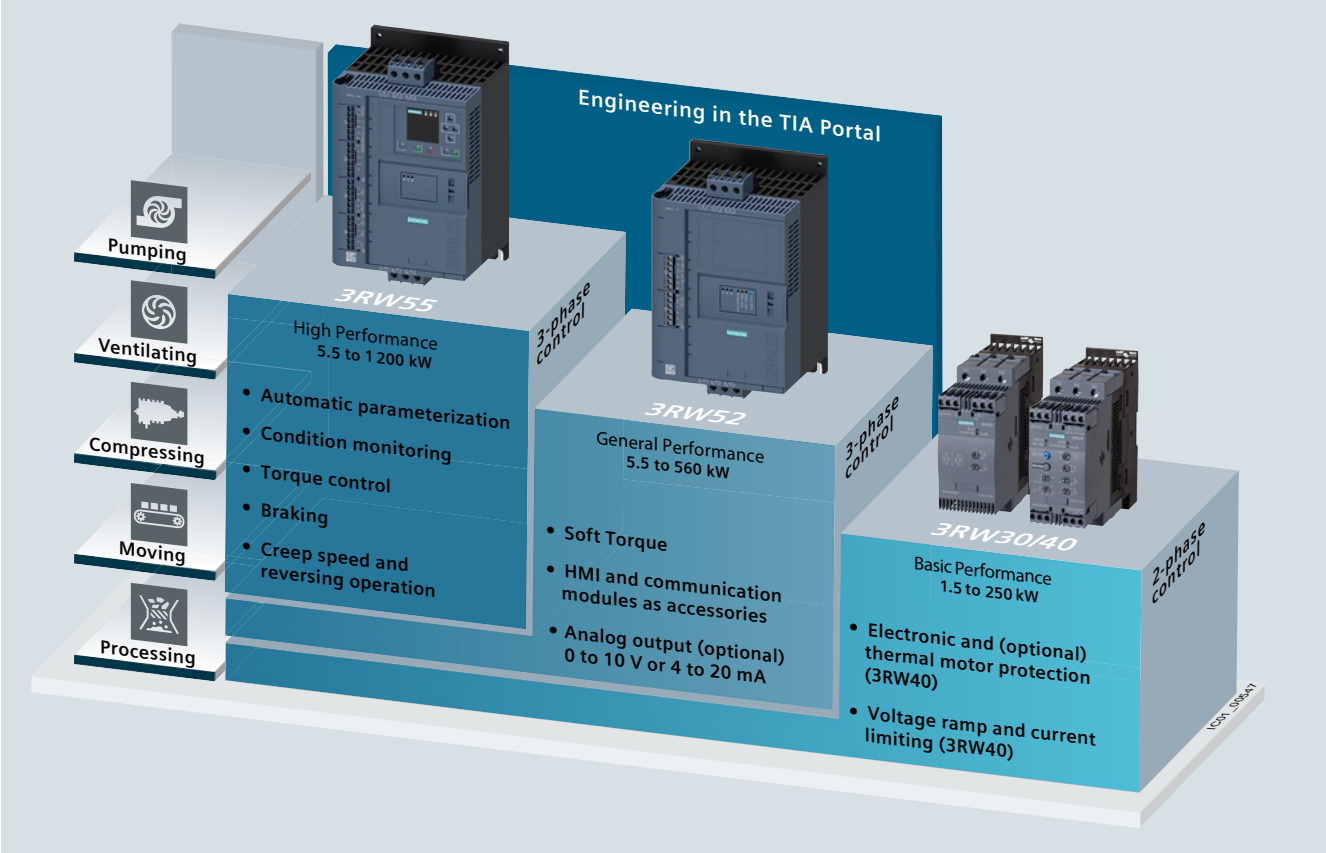
For the use of SIRIUS 3RF solid-state switching devices for switching motors in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

For more information, see page 1/7.

Overview

More information	
Homepage, see www.siemens.com/soft-starter Industry Mall, see www.siemens.com/product?3RW TIA Selection Tool Cloud (TST Cloud), see https://mall.industry.siemens.com/spice/TSTWeb?kmat=Sirius3reFolder	Industry Online Support (SIOS), see https://support.industry.siemens.com/cs/ww/en/view/109747404 Simulation Tool for Soft Starters (STS), see page 6/7 or https://support.industry.siemens.com/cs/ww/en/view/101494917

SIRIUS 3RW soft starters - as versatile as your application



Applications	High Performance		General Performance	Basic Performance	
	3RW55	3RW44	3RW52	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	●	●	❍	❍	
Very 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.

General data

SIRIUS soft starters		High Performance 3RW55	High Performance 3RW44	General Performance 3RW52	Basic Performance 3RW40	Basic Performance 3RW30
General technical specifications						
Operational current at 40 °C	A	13 ... 987	29 ... 1 214	13 ... 987	12.5 ... 432	3 ... 106
Operational voltage	V	200 ... 690[1]	200 ... 690[1]	200 ... 600	200 ... 600	200 ... 480
Operating power for three-phase motors						
• At 400 V, at 40 °C						
- Inline circuit	kW	5.5 ... 315	15 ... 710	5.5 ... 315	5.5 ... 250	1.5 ... 55
- Inside-delta circuit	kW	11 ... 560	22 ... 1 200	11 ... 560	--	--
• At 460/480 V at 50 °C						
- Inline circuit	hp	7.5 ... 400	15 ... 950	7.5 ... 400	7.5 ... 300	1.5 ... 75
- Inside-delta circuit	hp	10 ... 750	30 ... 1 700	10 ... 750	--	--
Ambient temperature[2]	°C	-25 ... +60	0 ... +60	-25 ... +60	-25 ... +60	-25 ... +60
Soft starting/stopping		✓	✓	✓	✓	✓[3]
Voltage ramp		✓	✓	✓	✓	✓
Starting voltage	%	20 ... 100	20 ... 100	30 ... 100	40 ... 100	40 ... 100
Ramp-up and ramp-down time	s	0 ... 360	0 ... 360	0 ... 20	0 ... 20	0 ... 20[3]
Pump stop (torque control)[4]		✓	✓	--	--	--
• Starting torque	%	10 ... 100	20 ... 100	--	--	--
• Torque limit	%	20 ... 200	20 ... 200	--	--	--
Soft Torque (torque limit)		--	--	✓	--	--
Integral bypass contact system		✓	✓	✓	✓	✓
Intrinsic device protection		✓	✓	✓	✓	--
Motor overload protection		✓	✓	✓	✓[5]	--
Thermistor motor protection evaluation		✓	✓	✓[6]	✓[6]	--
Analog output		✓	--	✓[6]	--	--
Remote RESET		✓	✓	✓	✓[6]	--
Adjustable current limiting		✓	✓	✓	✓	--
Inside-delta circuit[1]		✓	✓	✓	--	--
Breakaway pulse		✓	✓	--	--	--
Automatic parameterization		✓	--	--	--	--
Pump cleaning		✓	--	--	--	--
Reversing duty		✓	--	--	--	--
Condition monitoring		✓	--	--	--	--
User account administration[8]		✓	--	--	--	--
Creep speed in both directions of rotation		✓	✓	--	--	--
DC braking[4,7]		✓	✓	--	--	--
Combined braking[4,7]		✓	✓	--	--	--
Motor heating		✓	✓	--	--	--
Communication function[9]		✓	✓	✓	--	--
HMI module installable in the cabinet door		✓	✓[9]	✓[9]	--	--
Operating measured value display		✓	✓	✓[9]	--	--
Logbooks		✓	✓[8]	✓[9]	--	--
Event list		✓	✓	--	--	--
Slave pointer function		✓	✓	--	--	--
Trace function[8]		✓	✓	--	--	--
Programmable control inputs and outputs		✓	✓	--	--	--
Number of parameter sets		3	3	1	1	1
• Parameterizable via software[8]		✓	✓	--	--	--
Number of controlled phases		3	3	3	2	2
Heavy starting CLASS 30[4]		✓	✓	--	--	--

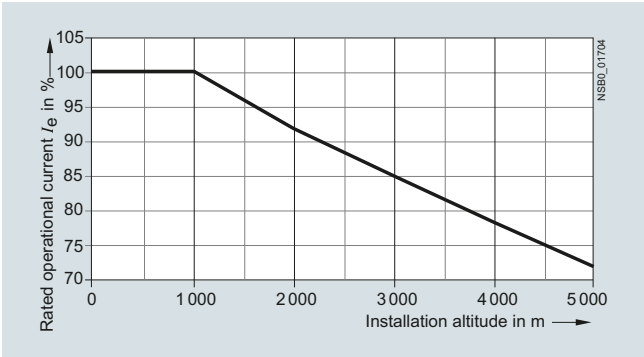
✓ Function available
-- Function not available
1) Inside-delta circuit only up to line voltage 600 V.
2) Note derating above 40 °C.
3) Only soft starting available for 3RW30.
4) Calculate soft starter and motor with size allowance where required.
5) When using the motor overload protection according to ATEX, an upstream contactor is required.
6) Special device versions only.
7) Not possible in inside-delta circuit.
8) With software Soft Starter ES (TIA Portal).
9) Only in conjunction with special accessories.

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 is based on IEC 60947-4-1.

At an installation altitude above 2 000 m, 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 additional fan)

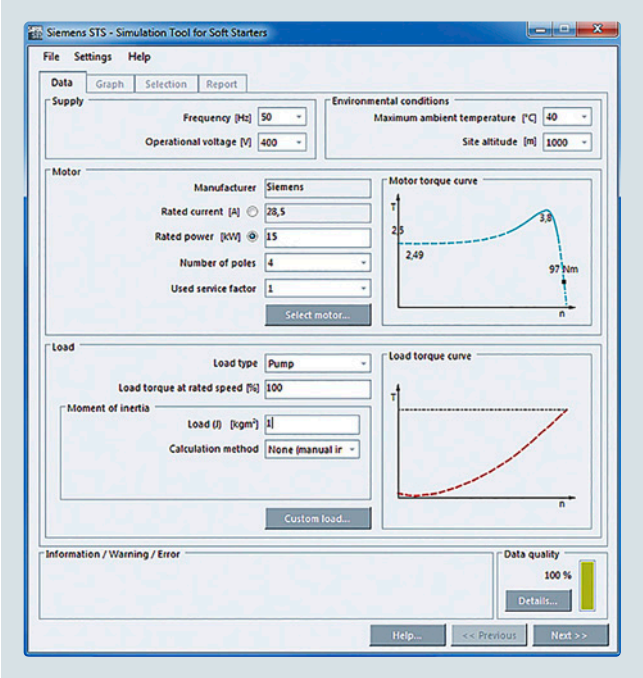
SIRIUS soft starters		High Performance 3RW55	High Performance 3RW44	General Performance 3RW52	Basic Performance 3RW40	Basic Performance 3RW30
Constraints						
Maximum starting time	s	20	10			3
Maximum starting current in % of motor current	I_e	300				
Maximum number of starts per hour	1/h	5				20

Simulation Tool for Soft Starters (STS)

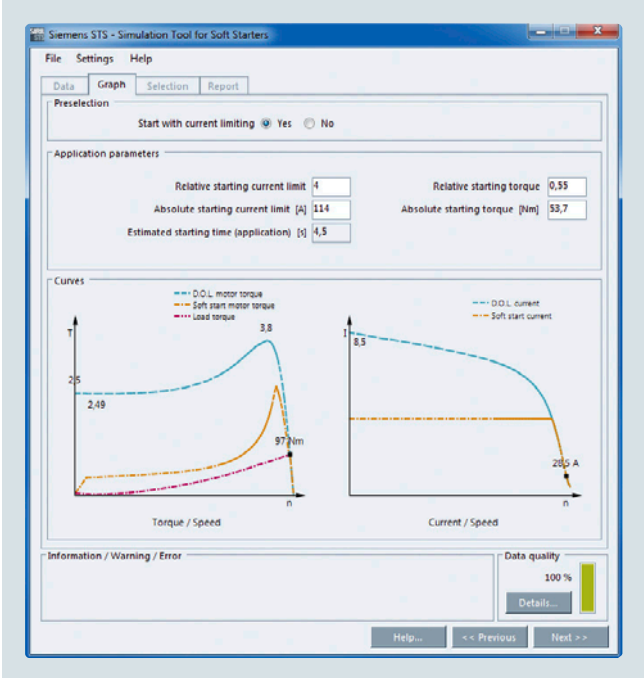
The Simulation Tool for Soft Starters (STS) provides a convenient means of designing soft starters using a simple, quick and easy-to-use interface.
Entering the motor and load data will simulate the application and prompt suggestions for suitable soft starters.

Link to the free download of the Simulation Tool for Soft Starters (STS).

- 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



Easy input of motor and load data



Graphic display of start operations

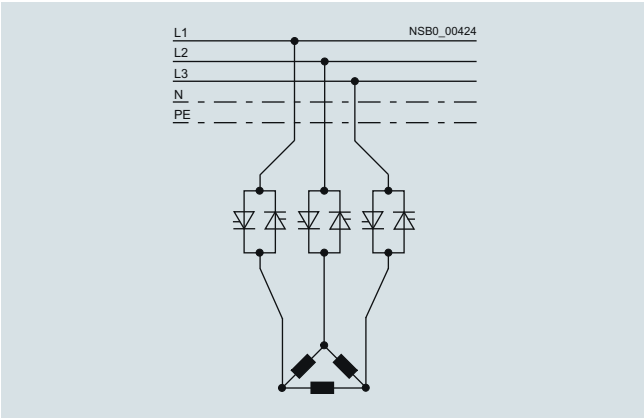
General data

Circuit concept

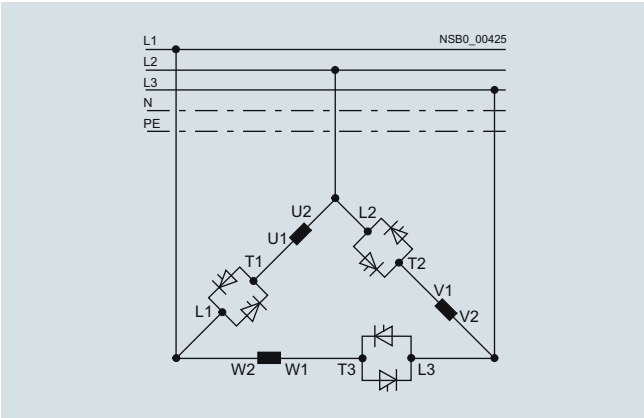
Three-phase controlled SIRIUS 3RW soft starters can be operated in two different types of circuit:

- 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 leads.
- Inside-delta circuit
  The wiring is similar to that of 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



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 wye-delta starters)

Which circuit?

Using the 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 inline circuit and inside-delta circuit, it is always possible to select the most favorable solution.

The braking function is possible only in the inline circuit.
The inside-delta circuit cannot be used in 690 V line supplies.

Configuration

The electronic 3RW soft starters are designed for normal starting. In case of heavy starting or increased starting frequency, a larger unit must be selected. The 3RW44 and 3RW52 soft starters may be used in isolated supply networks (IT systems) up to 600 V AC and the 3RW55 soft starter 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 "torque control", "pump stop" and "DC braking" stopping modes, because during the stopping time in these modes, an additional current loading applies in contrast to coasting 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 ramp-down 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 controls) should be dimensioned for direct-on-line starting, following the load short-circuit conditions. Fuses and switching devices must be ordered separately. The harmonic component load for starting currents 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, 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 6/7
or our Technical Support:
https://support.industry.siemens.com/My/ww/en/requests

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.

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 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/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 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.

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),
- 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 6/7) 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 cannot 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 an upstream switching element (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 motor starter protector/circuit breaker both in case of an overload and in case of a short-circuit.
The motor starter protector/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.

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 6/7 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:

- Tested fuseless switchgear assemblies comprising SIRIUS 3RW soft starters and motor starter protectors only comply with CLASS 10.
  To configure motor feeders, for example, for CLASS 20 or CLASS 30, fuses must be used together with SIRIUS 3RW soft starters.
- 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 possible due to the operating state of the thyristors).

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 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.

General data

Article No. scheme

Product versions		Article number								
Device type	**High Performance soft starters**	**3RW55**	☐	☐	–	☐	☐	☐	☐	☐
		3RW44	☐	☐	–	☐	☐	☐	☐	☐
	General Performance soft starters	**3RW52**	☐	☐	–	☐	☐	☐	☐	☐
	Basic Performance soft starters	**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, three-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:

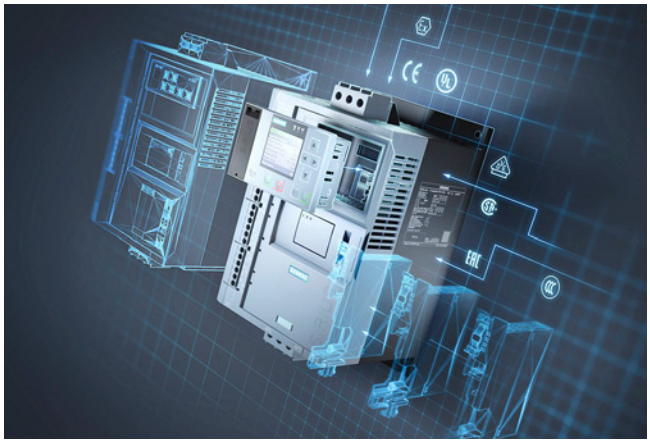
The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

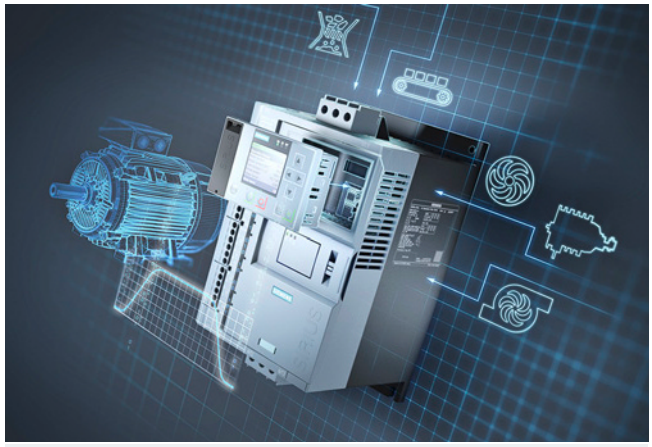
Can be flexibly deployed in many applications

Strong portfolio: comprehensive, coordinated soft starter portfolio



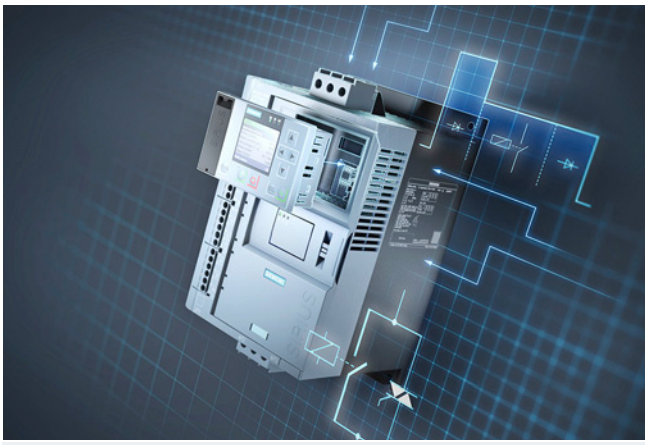
- The right hardware for all requirements, soft starters for tasks ranging from simple to demanding starting in Basic, General and High Performance versions
- Extensive portfolio for individual expansion: Optional HMIs for installation in the device or mounting on the control cabinet door Communication via PROFINET/PROFIBUS and Modbus
- Designer 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

Intelligent operation: concentrated, application-specific functionality



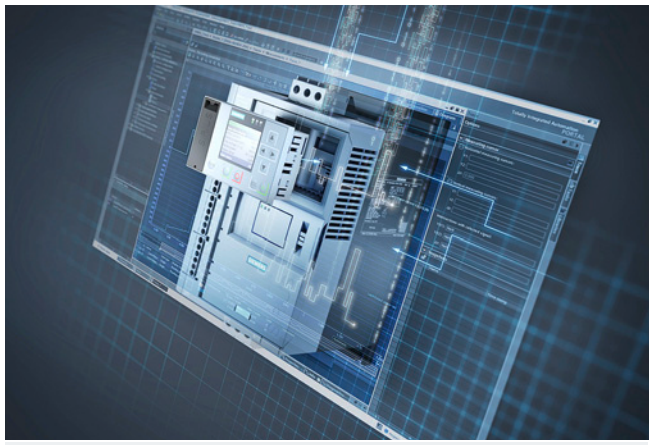
- Can be used in a wide variety of applications: Pumping, ventilating, compressing, moving and processing
- Integrated, self-learning automatic parameterization depending on motor starting conditions
- Application-specific functionality such as pump cleaning and pump stop
- Condition monitoring: Current and energy 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 interfaces
- Data availability and analysis: large volumes of data at any time and anywhere, even into MindSphere

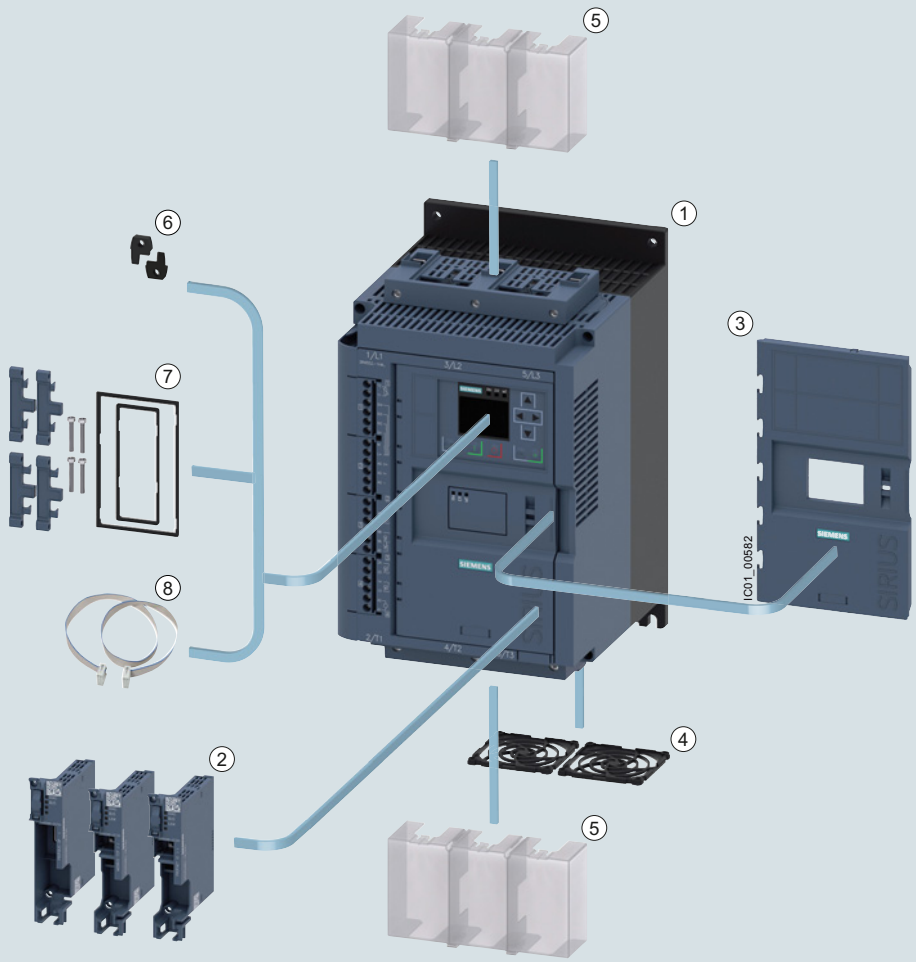
General data NEW

Overview

More information	
Homepage, see www.siemens.com/soft-starter Industry Mall, see www.siemens.com/product?3RW TIA Selection Tool Cloud (TST Cloud), see https://mall.industry.siemens.com/spice/tstweb/?KMAT=3rw55	Simulation Tool for Soft Starters (STS), see page 6/7 or https://support.industry.siemens.com/cs/ww/en/view/101494917 SIRIUS Soft Starter ES (TIA Portal), see page 14/5

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 560 kW (at 400 V).

The functions have been specially designed to offer maximum user friendliness. By means of the detachable HMI (with color display, local interface and a slot for MicroSD memory card) and plug-in communication modules (PROFINET, PROFIBUS, Modbus), they ensure maximum flexibility. With their modern hybrid switching technology, the SIRIUS 3RW55 soft starters offer efficient switching for long-term, energy-saving use.

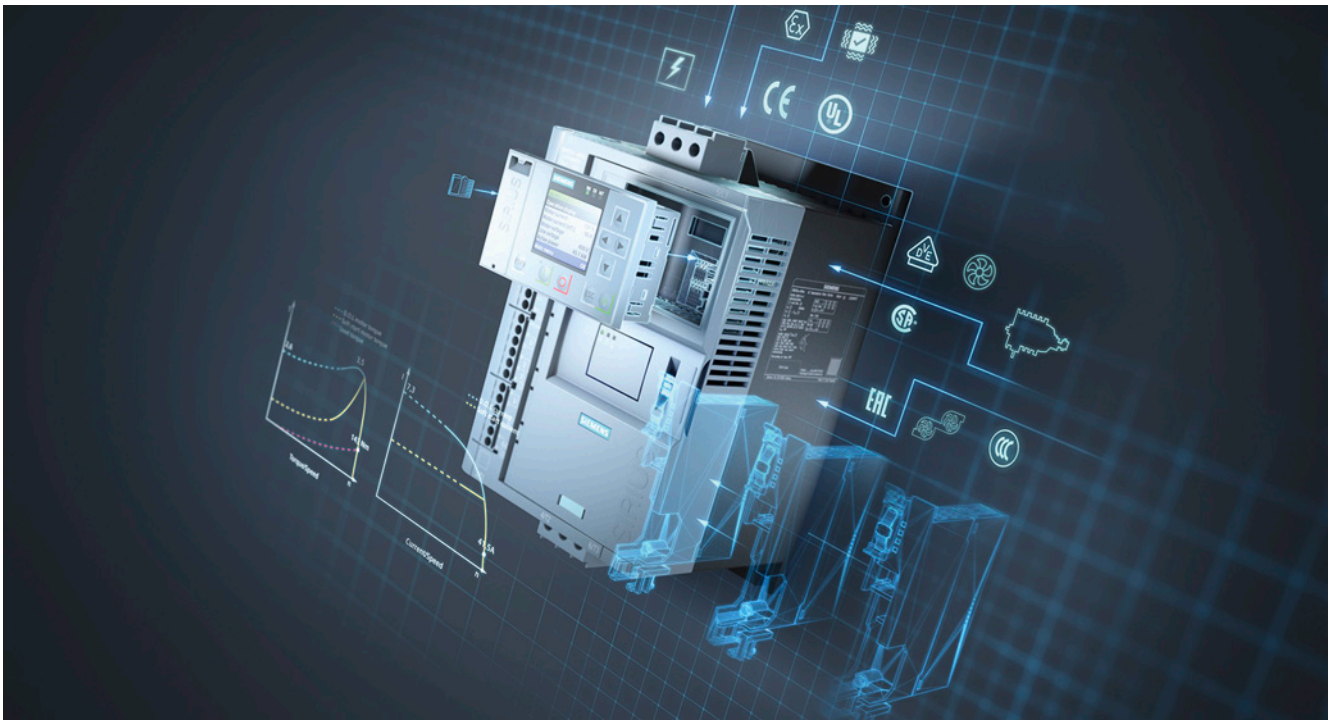


1 3RW55 soft starter

2 Communication modules
3 Hinged cover
4 Fan covers
5 Terminal covers
6 HMI push-in lugs for wall mounting
7 HMI IP65 door mounting kit
8 HMI soft starter connection cable

3RW55 High Performance soft starter with accessories (see page 6/25)

Benefits

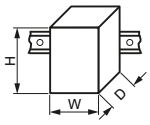


Product characteristics / function	Performance features / benefits
Automatic parameterization	Extremely simple commissioning and reliability even under changing load conditions
Hybrid switching devices and three-phase motor control	Minimum power loss and optimum/symmetrical motor control
Integration into TIA Portal – communication modules optional	Efficient configuration and maximum flexibility in automation engineering
HMI with color display, local interface, slot for micro SD 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

General data NEW

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/25099/td Manual "SIRIUS 3RW55 Soft Starter", see https://support.industry.siemens.com/cs/ww/en/view/109753752 FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/25099/faq	Simulation Tool for Soft Starters (STS), see page 6/7 or https://support.industry.siemens.com/cs/ww/en/view/101494917

Type		3RW551.-.HA.4 3RW551.-.HA.5	3RW552.-.HA.6 3RW553.-.HA.6	3RW552.-.HA.4 3RW553.-.HA.4	3RW554.-.HA.4	3RW554.-.HA.6
Installation/fixing/dimensions						
Width x height x depth 	mm	170 × 275 × 152	185 × 306 × 203		210 × 393 × 203	
Type of fixing		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				
Maximum installation altitude above sea level[1]	m	5 000	2 000	5 000		2 000
Ambient conditions						
Ambient temperature						
• During operation[2]	°C	-25 ... +60				
• During storage	°C	-40 ... +80				
Environmental category according to IEC 60721						
• During operation		3K6 (no ice formation, no 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 enter the devices), 1M4				
• During transport		2K2, 2C1, 2S1, 2M2 (max. height of fall 0.3 m)				

[1] Derating from 1 000 m, see Manual or characteristic curve on page 6/7.
[2] Note derating above 40 °C.

Type		3RW55..-.HA0.	3RW55..-.HA1.
Control circuit/control			
Control supply voltage			
• At AC/DC, rated value	V	24/24	--/--
• At AC	V	--/--	110 ... 250
• Relative negative tolerance/ relative positive tolerance with DC	%	-20/20	--/--
• Relative negative tolerance/ relative positive tolerance with AC	%	-20/20	-15/10
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, rated value	V	200 ... 480	200 ... 600	200 ... 690
• Relative negative tolerance/ relative positive tolerance	%	-15/10		
Operational voltage for inside-delta circuit, rated value	V	200 ... 480	200 ... 600	--
• Relative negative tolerance/ relative positive tolerance	%	-15/10		--/--
Operating frequency, rated value	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.

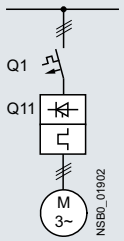
General data NEW

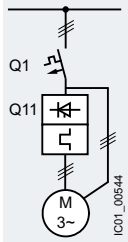
Motor feeders according to IEC with 3RV2/3VA motor starter protectors/circuit breakers (without semiconductor protection)

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 6/9.





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	**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	65	3VA2110-7MN32-0AA0	65	3VA2110-7MN32-0AA0	65
3RW5526	3VA2110-7MN32-0AA0	65	3VA2110-7MN32-0AA0	65	3VA2216-7MN32-0AA0	65	3VA2216-7MN32-0AA0	65
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:

In 690 V systems, in motor feeder tests with soft starters demonstrable short-circuit breaking capacities can only be achieved with the use of fuses (I_q > 5 to 10 kA).

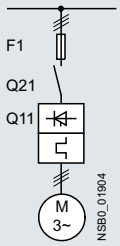
Motor feeders to IEC with 3NA3 fuses

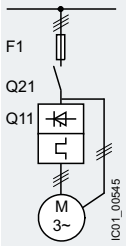
gG class full-range fuses for cable and line protection according to IEC 60269-2, without semiconductor protection

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 6/9.





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	**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	--	3RT2037	3NA3824-6	--	3RT2037	--	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

Note:

In inside-delta circuits, motor feeders with soft starters can only be operated in systems with up to 600 V.

General data NEW

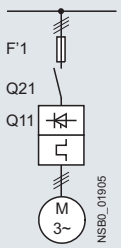
Motor feeders to IEC with 3NE1 SITOR fuses

gR class full-range fuses for semiconductor protection, cable and line 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 6/9.



Soft starters	gG 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	**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	--	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	--	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

Note:

In inside-delta circuits, a gR 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 In this case, we recommend using aR class partial-range fuses for semiconductor protection for type of coordination "2" (see page 6/19).

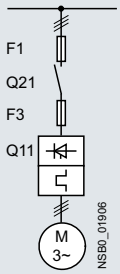
Motor feeders according to IEC with 3NE8 / 3NE3 / 3NC3 fuses

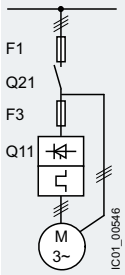
aR class partial-range fuses for semiconductor protection

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 6/9.





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	**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	--	3RT2037	3NA3824-6	3NE8021-1	--	3RT2037	--	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	--	3RT1064	3RT1064	2 x 3NA3354-6	--	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

Note:

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2/3VA motor starter protectors/circuit breakers can also be used, possibly with reduced short-circuit breaking capacity (see page 6/16). 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.

General data NEW

Reversing operation with reversing contactors

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/9.

(for an example circuit, see 3RW55 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	--	3RA2337	--	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

DC braking with braking contactors

(for an example circuit, see 3RW55 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 NC contacts parallel	with 3 NO contacts parallel	with 3 NC 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	--	--	--	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

Selection and ordering data

For normal starting (CLASS 10E)


3RW551.


3RW552.


3RW553.


3RW554.

At 40 °C					At 50 °C					SD[1]	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors				Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V	At 690 V		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	d					
Operational voltage 200 ... 480 V															
13	3	**5.5**	--	--	11.5	3	3	**7.5**	--	5	**3RW5513-□HA□4**		1	1 unit	42S
18	4	**7.5**	--	--	15.9	3	3	**10**	--	5	**3RW5514-□HA□4**		1	1 unit	42S
25	5.5	**11**	--	--	22.3	5	5	**15**	--	5	**3RW5515-□HA□4**		1	1 unit	42S
32	7.5	**15**	--	--	28.4	7.5	7.5	**15**	--	5	**3RW5516-□HA□4**		1	1 unit	42S
38	11	**18.5**	--	--	33.5	10	10	**20**	--	5	**3RW5517-□HA□4**		1	1 unit	42S
47	11	**22**	--	--	41.6	10	15	**30**	--	5	**3RW5524-□HA□4**		1	1 unit	42S
63	18.5	**30**	--	--	55.5	15	20	**40**	--	5	**3RW5525-□HA□4**		1	1 unit	42S
77	22	**37**	--	--	68	20	20	**50**	--	5	**3RW5526-□HA□4**		1	1 unit	42S
93	22	**45**	--	--	82.5	25	25	**60**	--	5	**3RW5527-□HA□4**		1	1 unit	42S

Type of electrical connection for the control circuit
Screw terminals — **1**
Spring-type terminals — **3**

Control supply voltage
24 V AC/DC — **0**
110 ... 250 V AC — **1**

[1] 3RW55 soft starter with screw terminals for operational voltage up to 480 V: Standard delivery time SD = 1 day (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

At 40 °C					At 50 °C					SD[1]	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors				Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V	At 690 V		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	d					
Operational voltage 200 ... 480 V															
113	30	**55**	--	--	101	30	30	**75**	--	5	**3RW5534-□HA□4**		1	1 unit	42S
143	37	**75**	--	--	128	30	40	**75**	--	5	**3RW5535-□HA□4**		1	1 unit	42S
171	45	**90**	--	--	153	40	50	**100**	--	5	**3RW5536-□HA□4**		1	1 unit	42S
210	55	**110**	--	--	186	50	60	**125**	--	5	**3RW5543-□HA□4**		1	1 unit	42S
250	75	**132**	--	--	220	60	75	**150**	--	5	**3RW5544-□HA□4**		1	1 unit	42S
315	90	**160**	--	--	279	75	100	**200**	--	5	**3RW5545-□HA□4**		1	1 unit	42S
370	110	**200**	--	--	328	100	125	**250**	--	5	**3RW5546-□HA□4**		1	1 unit	42S
470	132	**250**	--	--	416	125	150	**300**	--	5	**3RW5547-□HA□4**		1	1 unit	42S
570	160	**315**	--	--	504	150	200	**400**	--	5	**3RW5548-□HA□4**		1	1 unit	42S

Type of electrical connection for the control circuit
Spring-type terminals — **2**
Screw terminals — **6**

Control supply voltage
24 V AC/DC — **0**
110 ... 250 V AC — **1**

[1] 3RW55 soft starter with screw terminals for operational voltage up to 480 V: Standard delivery time SD = 1 day (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

Inline circuit **IE3/IE4 ready** **NEW**

For normal starting (CLASS 10E)


3RW551.


3RW552.


3RW553.


3RW554.

At 40 °C Operational current	Operating power for three-phase motors At 230 V	At 400 V	At 500 V	At 690 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	SD[1]	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	kW	kW	kW	kW	A	hp	hp	hp	hp	d					
Operational voltage 200 ... 600 V															
13	3	**5.5**	7.5	--	11.5	3	3	**7.5**	10	5	**3RW5513-□HA□5**		1	1 unit	42S
18	4	**7.5**	11	--	15.9	3	3	**10**	15	5	**3RW5514-□HA□5**		1	1 unit	42S
25	5.5	**11**	15	--	22.3	5	5	**15**	20	5	**3RW5515-□HA□5**		1	1 unit	42S
32	7.5	**15**	18.5	--	28.4	7.5	7.5	**15**	25	5	**3RW5516-□HA□5**		1	1 unit	42S
38	11	**18.5**	22	--	33.5	10	10	**20**	30	5	**3RW5517-□HA□5**		1	1 unit	42S
Operational voltage 200 ... 690 V															
25	5.5	**11**	15	22	22.3	5	5	**15**	20	5	**3RW5521-□HA□6**		1	1 unit	42S
47	11	**22**	30	45	41.6	10	15	**30**	40	5	**3RW5524-□HA□6**		1	1 unit	42S
63	18.5	**30**	37	55	55.5	15	20	**40**	50	5	**3RW5525-□HA□6**		1	1 unit	42S
77	22	**37**	45	75	68	20	20	**50**	60	5	**3RW5526-□HA□6**		1	1 unit	42S
93	22	**45**	55	90	82.5	25	25	**60**	75	5	**3RW5527-□HA□6**		1	1 unit	42S

Type of electrical connection for the control circuit
Screw terminals — **1**
Spring-type terminals — **3**

Control supply voltage
24 V AC/DC — **0**
110 ... 250 V AC — **1**

[1] 3RW55 soft starter with screw terminals for operational voltage up to 690 V: Standard delivery time SD = 2 days (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

At 40 °C Operational current	Operating power for three-phase motors At 230 V	At 400 V	At 500 V	At 690 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	SD[1]	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	kW	kW	kW	kW	A	hp	hp	hp	hp	d					
Operational voltage 200 ... 690 V															
113	30	**55**	75	110	101	30	30	**75**	75	5	**3RW5534-□HA□6**		1	1 unit	42S
143	37	**75**	90	132	128	30	40	**75**	100	5	**3RW5535-□HA□6**		1	1 unit	42S
171	45	**90**	110	160	153	40	50	**100**	125	5	**3RW5536-□HA□6**		1	1 unit	42S
210	55	**110**	132	200	186	50	60	**125**	150	5	**3RW5543-□HA□6**		1	1 unit	42S
250	75	**132**	160	250	220	60	75	**150**	200	5	**3RW5544-□HA□6**		1	1 unit	42S
315	90	**160**	200	315	279	75	100	**200**	250	5	**3RW5545-□HA□6**		1	1 unit	42S
370	110	**200**	250	355	328	100	125	**250**	300	5	**3RW5546-□HA□6**		1	1 unit	42S
470	132	**250**	315	400	416	125	150	**300**	400	5	**3RW5547-□HA□6**		1	1 unit	42S
570	160	**315**	355	560	504	150	200	**400**	500	5	**3RW5548-□HA□6**		1	1 unit	42S

Type of electrical connection for the control circuit
Spring-type terminals — **2**
Screw terminals — **6**

Control supply voltage
24 V AC/DC — **0**
110 ... 250 V AC — **1**

[1] 3RW55 soft starter with screw terminals for operational voltage up to 690 V: Standard delivery time SD = 2 days (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

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

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					SD[1]	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	d					
Operational voltage for inside-delta circuit 200 ... 480 V														
22.5	5.5	**11**	--	19.9	5	5	**15**	--	5	**3RW5513-□HA□4**		1	1 unit	42S
31.2	7.5	**15**	--	28	5	5	**15**	--	5	**3RW5514-□HA□4**		1	1 unit	42S
43.3	11	**18.5**	--	39	7.5	7.5	**20**	--	5	**3RW5515-□HA□4**		1	1 unit	42S
55.4	15	**22**	--	49	10	10	**30**	--	5	**3RW5516-□HA□4**		1	1 unit	42S
65.8	18.5	**30**	--	58	15	15	**40**	--	5	**3RW5517-□HA□4**		1	1 unit	42S
81.4	22	**45**	--	72	20	25	**50**	--	5	**3RW5524-□HA□4**		1	1 unit	42S
109	30	**55**	--	96	25	30	**60**	--	5	**3RW5525-□HA□4**		1	1 unit	42S
133	37	**75**	--	118	30	40	**75**	--	5	**3RW5526-□HA□4**		1	1 unit	42S
161	45	**90**	--	143	40	50	**100**	--	5	**3RW5527-□HA□4**		1	1 unit	42S

Type of electrical connection for the control circuit (position 13)
Screw terminals
Spring-type terminals

Control supply voltage (position 01)
24 V AC/DC
110 ... 250 V AC

[1] 3RW55 soft starter with screw terminals for operational voltage up to 480 V: Standard delivery time SD = 1 day (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					SD[1]	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	d					
Operational voltage for inside-delta circuit 200 ... 480 V														
195	55	**110**	--	175	50	60	**125**	--	5	**3RW5534-□HA□4**		1	1 unit	42S
247	75	**132**	--	222	60	75	**150**	--	5	**3RW5535-□HA□4**		1	1 unit	42S
296	90	**160**	--	265	75	100	**200**	--	5	**3RW5536-□HA□4**		1	1 unit	42S
363	110	**200**	--	322	100	125	**250**	--	5	**3RW5543-□HA□4**		1	1 unit	42S
433	132	**250**	--	381	125	150	**300**	--	5	**3RW5544-□HA□4**		1	1 unit	42S
545	160	**315**	--	483	150	200	**400**	--	5	**3RW5545-□HA□4**		1	1 unit	42S
640	200	**355**	--	568	150	200	**450**	--	5	**3RW5546-□HA□4**		1	1 unit	42S
814	250	**400**	--	721	200	250	**600**	--	5	**3RW5547-□HA□4**		1	1 unit	42S
987	315	**560**	--	873	300	350	**750**	--	5	**3RW5548-□HA□4**		1	1 unit	42S

Type of electrical connection for the control circuit (position 26)
Spring-type terminals
Screw terminals

Control supply voltage (position 01)
24 V AC/DC
110 ... 250 V AC

[1] 3RW55 soft starter with screw terminals for operational voltage up to 480 V: Standard delivery time SD = 1 day (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

Inside-delta circuit *IE3/IE4 ready* NEW

For normal starting (CLASS 10E)


3RW551.


3RW552.


3RW553.


3RW554.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					SD[1]	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	d					
Operational voltage for inside-delta circuit 200 ... 600 V														
22.5	5.5	**11**	15	19.9	5	5	**15**	20	5	**3RW5513-□HA□5**		1	1 unit	42S
31.2	7.5	**15**	18.5	28	5	5	**15**	25	5	**3RW5514-□HA□5**		1	1 unit	42S
43.3	11	**18.5**	22	39	7.5	7.5	**20**	30	5	**3RW5515-□HA□5**		1	1 unit	42S
55.4	15	**22**	30	49	10	10	**30**	40	5	**3RW5516-□HA□5**		1	1 unit	42S
65.8	18.5	**30**	37	58	15	15	**40**	50	5	**3RW5517-□HA□5**		1	1 unit	42S
43.3	11	**18.5**	22	39	7.5	7.5	**20**	30	5	**3RW5521-□HA□6**		1	1 unit	42S
81.4	22	**45**	45	72	20	25	**50**	60	5	**3RW5524-□HA□6**		1	1 unit	42S
109	30	**55**	55	96	25	30	**60**	75	5	**3RW5525-□HA□6**		1	1 unit	42S
133	37	**75**	90	118	30	40	**75**	100	5	**3RW5526-□HA□6**		1	1 unit	42S
161	45	**90**	110	143	40	50	**100**	125	5	**3RW5527-□HA□6**		1	1 unit	42S

Type of electrical connection for the control circuit
Screw terminals — **1**
Spring-type terminals — **3**

Control supply voltage
24 V AC/DC — **0**
110 ... 250 V AC — **1**

[1] 3RW55 soft starter with screw terminals for operational voltage up to 600 V: Standard delivery time SD = 2 days (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					SD[1]	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	d					
Operational voltage for inside-delta circuit 200 ... 600 V														
195	55	**110**	132	175	50	60	**125**	150	5	**3RW5534-□HA□6**		1	1 unit	42S
247	75	**132**	160	222	60	75	**150**	200	5	**3RW5535-□HA□6**		1	1 unit	42S
296	90	**160**	200	265	75	100	**200**	250	5	**3RW5536-□HA□6**		1	1 unit	42S
363	110	**200**	250	322	100	125	**250**	300	5	**3RW5543-□HA□6**		1	1 unit	42S
433	132	**250**	315	381	125	150	**300**	350	5	**3RW5544-□HA□6**		1	1 unit	42S
545	160	**315**	355	483	150	200	**400**	500	5	**3RW5545-□HA□6**		1	1 unit	42S
640	200	**355**	450	568	150	200	**450**	600	5	**3RW5546-□HA□6**		1	1 unit	42S
814	250	**400**	500	721	200	250	**600**	750	5	**3RW5547-□HA□6**		1	1 unit	42S
987	315	**560**	630	873	300	350	**750**	950	5	**3RW5548-□HA□6**		1	1 unit	42S

Type of electrical connection for the control circuit
Spring-type terminals — **2**
Screw terminals — **6**

Control supply voltage
24 V AC/DC — **0**
110 ... 250 V AC — **1**

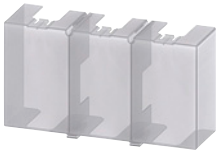
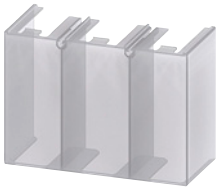
[1] 3RW55 soft starter with screw terminals for operational voltage up to 600 V: Standard delivery time SD = 2 days (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

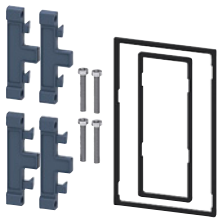
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Selection and ordering data

	Product designation	Manufacturer's Article No. of the soft starter	Type of product	Application	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
					d					
Fan covers										
 3RW5983-0FC00	**Fan cover**	3RW551(1x), 3RW552, 3RW553 (2x)	--	--	1	**3RW5983-0FC00**		1	1 unit	42S
		3RW554	--	--	1	**3RW5984-0FC00**		1	1 unit	42S
Terminal covers										
 3RW5983-0TC20	**Terminal cover**	3RW552, 3RW553 (2x)	--	--	1	**3RW5983-0TC20**		1	1 unit	42S
 3RW5984-0TC20		3RW554 (2x)	--	--	1	**3RW5984-0TC20**		1	1 unit	42S
Enclosure components										
 3RW5950-0GL20	**Hinged cover**	3RW55	Without cutout	--	1	**3RW5950-0GL20**		1	1 unit	42S
Communication modules										
 3RW5980-0CS00	**Communication module**	3RW55	PROFINET Standard	--	1	**3RW5980-0CS00**		1	1 unit	42S
			PROFIBUS	--	1	**3RW5980-0CP00**		1	1 unit	42S
			Modbus TCP	--	1	**3RW5980-0CT00**		1	1 unit	42S

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

Accessories NEW

	Product designation	Manufacturer's Article No. of the soft starter	Type of product	Application	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
					d					
HMI modules										
 3RW5980-0HD00	**Door mounting kit**	3RW55	IP65	For HMI modules	1	**3RW5980-0HD00**		1	1 unit	42S
Connection cables										
 3UF793	**HMI connection cable**	3RW55	5 m, round	For door mounting	1	**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	--	2	**3ZY1311-0AA00**		1	10 units	41L

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

Overview

More information	
Homepage, see www.siemens.com/soft-starter Industry Mall, see www.siemens.com/product?3RW TIA Selection Tool Cloud (TST Cloud), see https://mall.industry.siemens.com/spice/tstweb/?KMAT=3rw44	Simulation Tool for Soft Starters (STS), see page 6/7 or https://support.industry.siemens.com/cs/ww/en/view/101494917 SIRIUS Soft Starter ES (TIA Portal), see page 14/5 SIRIUS 3RW44 Soft Starter block library for SIMATIC PCS 7, see page 14/8

The SIRIUS 3RW44 High Performance soft starters are suitable for the torque-controlled soft starting and stopping as well as braking of three-phase asynchronous motors.

In addition to soft starting and stopping, the SIRIUS 3RW44 soft starters provide numerous functions for higher-level requirements. Soft starters are available in a performance range up to 710 kW (at 400 V) in the inline circuit and up to 1 200 kW (at 400 V) in the inside-delta circuit.

Combinations of various starting, operating and stopping possibilities ensure optimum adaptation to the application-specific requirements.

Benefits

3RW442.

3RW443.

3RW444.

3RW445.

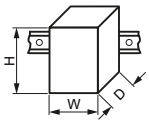
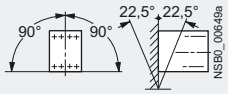
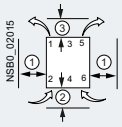
3RW446.

Product characteristics / function	Performance features / benefits
Soft starting with breakaway pulse, torque control or adjustable current limiting	Optimum adaptation to the requirements of the application
Keypad with a menu-prompted, multi-line graphic display with background lighting	Simple and fast commissioning and maintenance
Various setting options for the starting parameters such as starting torque, starting voltage, starting and stopping time, and much more in three separate parameter sets	Efficient configuration and maximum flexibility in automation engineering
Integral bypass contact system	Reduction of power loss during operation
Communication interface to the PC	More accurate setting of the parameters as well as control and monitoring
Connection to PROFIBUS and PROFINET with optional PROFIBUS DP or PROFINET module	Fast integration into higher-level controls

General data

Technical specifications

More information	
Manual "SIRIUS 3RW44 Soft Starters", see https://support.industry.siemens.com/cs/ww/en/view/21772518 FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16214/faq	Catalog LV 10, see www.siemens.com/lowvoltage/lv10

Type		3RW442.	3RW443.	3RW444.	3RW445.	3RW446.
Mechanics and environment						
Mounting dimensions (W x H x D) 						
• Screw terminals	mm	170 x 184 x 270	170 x 198 x 270	210 x 230 x 298	510 x 638.5 x 290	576 x 667 x 290
• Spring-type terminals	mm	170 x 184 x 270	170 x 198 x 270	210 x 230 x 298	510 x 638.5 x 290	576 x 667 x 290
Permissible ambient temperature						
During operation	°C	0 ... +60; (derating from +40)				
During storage	°C	-25 ... +80				
Weight	kg	6.5	7.9	11.5	50	78
Permissible mounting position						
Installation type		Stand-alone installation  ① ≥ 5 mm (≥ 0.2 in) ② ≥ 75 mm (≥ 3 in) ③ ≥ 100 mm (≥ 4 in)				
Permissible installation altitude	m	5000 (derating from 1 000, see characteristic curve on page 6/7)				
Degree of protection		IP00				

Type	Terminal		3RW44..-.BC3.	3RW44..-.BC4.
Control electronics				
Rated values				
Rated control supply voltage	A1/A2/PE	V	115 AC	230 AC
• Tolerance		%	-15/+10	
Rated frequency		Hz	50 ... 60	
• Tolerance		%	± 10	

Type		3RW44..-.BC.4	3RW44..-.BC.5	3RW44..-.BC.6
Power electronics				
Rated operational voltage for inline circuit[1]	V AC	200 ... 460	400 ... 600	400 ... 690
Tolerance	%	-15/+10		
Maximum blocking voltage (thyristor)	V AC	1 400	1 800	
Rated operational voltage for inside-delta circuit	V AC	200 ... 460	400 ... 600	
Tolerance	%	-15/+10		
Rated frequency	Hz	50 ... 60		
Tolerance	%	± 10		
Uninterrupted duty at 40 °C (% of I_e)	%	115		
Minimum load (% of set motor current I_M)	%	8		
Maximum cable length between soft starter and motor	m	500[2]		

1) 3RW44 soft starters may be used in isolated supply networks (IT systems) up to 600 V AC.

2) At the project configuration stage, it is important to make allowance for the voltage drop on the motor cable up to the motor connection.

Type		3RW4422	3RW4423	3RW4424	3RW4425	3RW4426	3RW4427
Power electronics							
Rated operational current I_e	A	29	36	47	57	77	93
Load rating with rated operational current I_e • According to IEC and UL/CSA[1], for individual mounting, AC-53a - At 40 / 50 / 60 °C	A	29/26/23	36/32/29	47/42/37	57/51/45	77/68/59	93/82/72
Smallest adjustable rated motor current I_M For the motor overload protection	A	5	7	9	11	15	18
Power loss • In operation after completed starting with uninterrupted rated operational current (40/50/60 °C) approx.	W	8/7.5/7	10/9/8.5	32/31/29	36/34/31	45/41/37	55/51/47
• During starting with current limit set to 350% I_M (40 / 50 / 60 °C)	W	400/345/290	470/410/355	600/515/440	725/630/525	940/790/660	1160/980/830
Permissible rated motor current and starts per hour at 40 / 50 / 60 °C							
• **For normal starting (CLASS 10)**							
- Rated motor current I_M[2], start-up time 10 s	A	29/26/23	36/32.5/29	47/42/37	57/51/45	77/68/59	93/82/72
- Starts per hour[3]	1/h	20	15	20	20	20	20
- Rated motor current I_M[2], start-up time 20 s	A	29/26/23	36/32.5/29	47/42/37	57/51/45	77/68/59	93/82/72
- Starts per hour[3]	1/h	10	6	10	10	8	8

1) Measurement at 60 °C according to UL/CSA not required.

2) Current limit on soft starter set to 350% I_M, ON period = 70%. Maximum adjustable rated motor current I_M dependent on CLASS setting.

3) For intermittent duty S4 with ON period = 70%, T_u = 40 / 50 / 60 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

Type		3RW4434	3RW4435	3RW4436
Power electronics				
Rated operational current I_e	A	113	134	162
Load rating with rated operational current I_e • According to IEC and UL/CSA[1], for individual mounting, AC-53a - At 40 / 50 / 60 °C	A	113/100/88	134/117/100	162/145/125
Smallest adjustable rated motor current I_M For the motor overload protection	A	22	26	32
Power loss • In operation after completed starting with uninterrupted rated operational current (40/50/60 °C) approx.	W	64/58/53	76/67/58	95/83/71
• During starting with current limit set to 350% I_M (40 / 50 / 60 °C)	W	1 350/1 140/970	1 700/1 400/1 140	2 460/1 980/1 620
Permissible rated motor current and starts per hour at 40 / 50 / 60 °C				
• **For normal starting (CLASS 10)**				
- Rated motor current I_M[2], start-up time 10 s	A	113/100/88	134/117/100	162/145/125
- Starts per hour[3]	1/h	20	15	20
- Rated motor current I_M[2], start-up time 20 s	A	113/100/88	134/117/100	162/145/125
- Starts per hour[3]	1/h	9	6	7

1) Measurement at 60 °C according to UL/CSA not required.

2) Current limit on soft starter set to 350% I_M, ON period = 70%. Maximum adjustable rated motor current I_M dependent on CLASS setting.

3) For intermittent duty S4 with ON period = 70%, T_u = 40 / 50 / 60 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

Type		3RW4443	3RW4444	3RW4445	3RW4446	3RW4447
Power electronics						
Rated operational current I_e	A	203	250	313	356	432
Load rating with rated operational current I_e • According to IEC and UL/CSA[1], for individual mounting, AC-53a - At 40 / 50 / 60 °C	A	203/180/156	250/215/185	313/280/250	356/315/280	432/385/335
Smallest adjustable rated motor current I_M For the motor overload protection	A	40	50	62	71	86
Power loss • In operation after completed starting with uninterrupted rated operational current (40/50/60 °C) approx.	W	89/81/73	110/94/83	145/126/110	174/147/126	232/194/159
• During starting with current limit set to 350% I_M (40 / 50 / 60 °C)	W	3 350/2 600/2 150	4 000/2 900/2 350	4 470/4 000/3 400	5 350/4 050/3 500	5 860/5 020/4 200
Permissible rated motor current and starts per hour at 40 / 50 / 60 °C						
• **For normal starting (CLASS 10)**						
- Rated motor current I_M[2], start-up time 10 s	A	203/180/156	250/215/185	313/280/250	356/315/280	432/385/335
- Starts per hour[3]	1/h	20	20	19	17	16
- Rated motor current I_M[2], start-up time 20 s	A	203/180/156	250/215/185	313/280/250	356/315/280	432/385/335
- Starts per hour[3]	1/h	9	10	6	4	5

1) Measurement at 60 °C according to UL/CSA not required.

2) Current limit on soft starter set to 350% I_M, ON period = 70%. Maximum adjustable rated motor current I_M dependent on CLASS setting.

3) For intermittent duty S4 with ON period = 70%, T_u = 40 / 50 / 60 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

General data

Type		3RW4453	3RW4454	3RW4455	3RW4456	3RW4457	3RW4458
Power electronics							
Rated operational current I_e	A	551	615	693	780	880	970
Load rating with rated operational current I_e • According to IEC and UL/CSA[1], for individual mounting, AC-53a - At 40 / 50 / 60 °C	A	551/494/438	615/551/489	693/615/551	780/693/615	880/780/693	970/850/760
Smallest adjustable rated motor current I_M For the motor overload protection	A	110	123	138	156	176	194
Power loss • In operation after completed starting with uninterrupted rated operational current (40/50/60 °C) approx.	W	159/135/113	186/156/130	220/181/152	214/176/146	250/204/168	270/215/179
• During starting with current limit set to 350% I_M							
- At 40 °C	W	7 020	8 100	9 500	11 100	13 100	15 000
- At 50 °C	W	6 111	7 020	8 100	9 500	11 000	12 500
- At 60 °C	W	5 263	5 996	7 020	8 100	8 100	10 700
Permissible rated motor current and starts per hour at 40 / 50 / 60 °C							
• **For normal starting (CLASS 10)**							
- Rated motor current I_M[2], start-up time 10 s	A	551/494/438	615/551/489	693/615/551	780/693/615	880/780/693	970/850/760
- Starts per hour[3]	1/h	20	20	16	13	8	5
- Rated motor current I_M[2], start-up time 20 s	A	551/494/438	615/551/489	693/615/551	780/693/615	880/780/693	970/850/760
- Starts per hour[3]	1/h	10	9	6	4	0.3	0.3

[1] Measurement at 60 °C according to UL/CSA not required.

[2] Current limit on soft starter set to 350% I_M, ON period = 70%. Maximum adjustable rated motor current I_M dependent on CLASS setting.

[3] For intermittent duty S4 with ON period = 70%, T_u = 40 / 50 / 60 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

Type		3RW4465	3RW4466
Power electronics			
Rated operational current I_e	A	1 076	1 214
Load rating with rated operational current I_e • According to IEC and UL/CSA[1], for individual mounting, AC-53a - At 40 / 50 / 60 °C	A	1 076/970/880	1 214/1 076/970
Smallest adjustable rated motor current I_M For the motor overload protection	A	215	242
Power loss • In operation after completed starting with uninterrupted rated operational current (40/50/60 °C) approx.	W	510/420/360	630/510/420
• During starting with current limit set to 350% I_M			
- At 40 °C	W	15 000	17 500
- At 50 °C	W	13 000	15 000
- At 60 °C	W	11 500	13 000
Permissible rated motor current and starts per hour at 40 / 50 / 60 °C			
• **For normal starting (CLASS 10)**			
- Rated motor current I_M[2], start-up time 10 s	A	1 076/970/880	1 214/1 076/970
- Starts per hour[3]	1/h	11	6
- Rated motor current I_M[2], start-up time 20 s	A	1 076/970/880	1 214/1 076/970
- Starts per hour[3]	1/h	3	0.5

[1] Measurement at 60 °C according to UL/CSA not required.

[2] Current limit on soft starter set to 350% I_M, ON period = 70%. Maximum adjustable rated motor current I_M dependent on CLASS setting.

[3] For intermittent duty S4 with ON period = 70%, T_u = 40 / 50 / 60 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

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 and soft starter) is sufficient.

If type of coordination "2" is to be fulfilled, then semiconductor fuses must be fitted in the motor feeder.

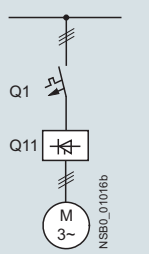
ToC 1 — Type of coordination "1" according to IEC 60947-4-1: After a short-circuit incident, the unit is defective and therefore unsuitable for further use (protection of persons and system guaranteed).

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/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.

Inline circuit fuseless version

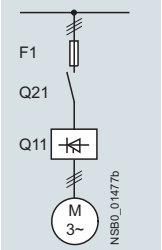


Soft starters (ToC 1)		Motor starter protectors/circuit breakers[1]		
	Rated current	400 V + 10%		Rated current
Q11		Q1	I_q	
Type	A	Type	kA	A
Type of coordination "1"				
3RW4422	29	3RV2021-4EA10	42	32
3RW4423	36	3RV2021-4FA10	42	40
3RW4424	47	3RV2031-4WA10	32	52
3RW4425	57	3RV2031-4JA10	32	65
3RW4426	77	3RV2031-4RA10	32	80
3RW4427	93	3RV2042-4MA10	32	100
3RW4434	113	3VA2216-5MN32	55	160
3RW4435	134	3VA2216-5MN32	55	160
3RW4436	162	3VA2220-7MN32	55	200
3RW4443	203	3VA2325-7MN32	110	250
3RW4444	250	3VA2325-7MN32	110	250
3RW4445	313	3VA2440-7MN32	110	400
3RW4446	356	3VA2450-7MN32	110	500
3RW4447	432	3VA2450-7MN32	110	500
3RW4453	551	3VL6780-3SB36	65	800
3RW4454	615	3VL6780-3SB36	65	800
3RW4455	693	3VL6780-3SB36	65	800
3RW4456	780	3VL7710-3SB36	65	1 000
3RW4457	880	3VL7710-3SB36	65	1 000
3RW4458	970	3VL7712-3SB36	65	1 250
3RW4465	1 076	3VL7712-3SB36	65	1 250
3RW4466	1 214	3VL7712-3SB36	65	1 250

[1] The rated motor current must be considered when selecting the devices.

General data

Inline circuit fused version (line protection only)



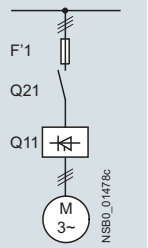
Soft starters ToC 1		Line protection, maximum			Line contactors up to 400 V	Braking contactors[1)2)]	
	Rated current	690 V + 5%	Rated current	Size	(optional)	(example circuit, see Manual 3RW44)	
Q11 Type	A	F1 Type	A		Q21 Type	Q91 Type	Q92 Type
Type of coordination "1"[3)]: I_q = 65 kA							
3RW4422	29	3NA3820-6	50	00	3RT2027	3RT2526	--
3RW4423	36	3NA3822-6	63	00	3RT2035	3RT2526	--
3RW4424	47	3NA3824-6	80	00	3RT2036	3RT2535	--
3RW4425	57	3NA3830-6	100	00	3RT2037	3RT2535	--
3RW4426	77	3NA3132-6	125	1	3RT2038	3RT2024	3RT2035
3RW4427	93	3NA3136-6	160	1	3RT2046	3RT2025	3RT2036
3RW4434	113	3NA3244-6	250	2	3RT1054	3RT2027	3RT2037
3RW4435	134	3NA3244-6	250	2	3RT1055	3RT2036	3RT2038
3RW4436	162	3NA3365-6	500	3	3RT1056	3RT2037	3RT2038
3RW4443	203	2 x 3NA3354-6	2 x 355	3	3RT1064	3RT2037	3RT1054
3RW4444	250	2 x 3NA3354-6	2 x 355	3	3RT1065	3RT2037	3RT1055
3RW4445	313	2 x 3NA3365-6	2 x 500	3	3RT1075	3RT1054	3RT1056
3RW4446	356	2 x 3NA3365-6	2 x 500	3	3RT1075	3RT1054	3RT1056
3RW4447	432	2 x 3NA3365-6	2 x 500	3	3RT1076	3RT1055	3RT1064
3RW4453	551	2 x 3NA3365-6	2 x 500	3	3TF68	3RT1064	3RT1066
3RW4454	615	2 x 3NA3365-6	2 x 500	3	3TF68	3RT1064	3RT1075
3RW4455	693	2 x 3NA3365-6	2 x 500	3	3TF69	3RT1065	3RT1075
3RW4456	780	2 x 3NA3365-6	2 x 500	3	3TF69	3RT1065	3RT1075
3RW4457	880	2 x 3NA3365-6	2 x 500	3	--	3RT1075	3RT1076
3RW4458	970	3 x 3NA3365-6	3 x 500	3	--	3RT1075	3RT1076
3RW4465	1 076	3 x 3NA3365-6	3 x 500	3	--	3RT1075	3TF68
3RW4466	1 214	3 x 3NA3365-6	3 x 500	3	--	3RT1076	3TF68

1) If the ramp-down function "Combined braking" is selected, no braking contactor is required.
If the ramp-down function "DC braking" is selected, a braking contactor must be used in addition (type, see table).
For applications with large centrifugal masses ($J_{Load} > J_{Motor}$) the function "DC braking" is recommended.

2) Additional auxiliary relay K4:
LZS:RT4A4T30
(3RW44 soft starter with rated control supply voltage 230 V AC),
LZS:RT4A4S15
(3RW44 soft starter with rated control supply voltage 115 V AC).

3) The type of coordination "1" refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

Inline circuit fused version with 3NE1 SITOR all-range fuse (semiconductor and line protection)



For matching fuse bases, see Catalog LV 10:

- "Fuse systems" →
  "SITOR Semiconductor Fuses"
  or www.siemens.com/sitor
- "Switch disconnectors"

Soft starters (ToC 2)		All-range fuses				Line contactors up to 480 V	Braking contactors[1)2)]	
	Rated current		Rated current	Voltage	Size	(optional)	(example circuit, see Manual 3RW44)	
Q11 Type	A	F'1 Type	A	V		Q21 Type	Q91 Type	Q92 Type
Type of coordination "2"[3)]: I_q = 65 kA								
3RW4422	29	3NE1020-2	80	690 + 5%	00	3RT2027	3RT2526	--
3RW4423	36	3NE1020-2	80	690 + 5%	00	3RT2035	3RT2526	--
3RW4424	47	3NE1021-2	100	690 + 5%	00	3RT2036	3RT2535	--
3RW4425	57	3NE1022-2	125	690 + 5%	00	3RT2037	3RT2535	--
3RW4426	77	3NE1022-2	125	690 + 5%	00	3RT2038	3RT2024	3RT2035
3RW4427	93	3NE1224-2	160	690 + 5%	1	3RT2046	3RT2025	3RT2036
3RW4434	113	3NE1225-2	200	690 + 5%	1	3RT1054	3RT2027	3RT2037
3RW4435	134	3NE1227-2	250	690 + 5%	1	3RT1055	3RT2036	3RT2038
3RW4436	162	3NE1227-2	250	690 + 5%	1	3RT1056	3RT2037	3RT2038
3RW4443	203	3NE1230-2	315	600 + 10%	1	3RT1064	3RT2037	3RT1054
3RW4444	250	3NE1331-2	350	460 + 10%	2	3RT1065	3RT2037	3RT1055
3RW4445	313	3NE1333-2	450	690 + 5%	2	3RT1075	3RT1054	3RT1056
3RW4446	356	3NE1334-2	500	690 + 5%	2	3RT1075	3RT1054	3RT1056
3RW4447	432	3NE1435-2	560	690 + 5%	3	3RT1076	3RT1055	3RT1064
3RW4453	551	2 x 3NE1334-2	500	690 + 10%	2	3TF68	3RT1064	3RT1066
3RW4454	615	2 x 3NE1334-2	500	690 + 10%	2	3TF68	3RT1064	3RT1075
3RW4455	693	2 x 3NE1334-2	500	690 + 10%	2	3TF69	3RT1065	3RT1075
3RW4456	780	2 x 3NE1435-2	560	690 + 10%	3	3TF69	3RT1065	3RT1075
3RW4457	880	2 x 3NE1435-2	560	690 + 10%	3	--	3RT1075	3RT1076
3RW4458	970	2 x 3NE1435-2	560	690 + 10%	3	--	3RT1075	3RT1076
3RW4465	1 076	3 x 3NE1334-2	500	690 + 10%	2	--	3RT1075	3TF68
3RW4466	1 214	3 x 3NE1435-2	560	690 + 10%	3	--	3RT1076	3TF68

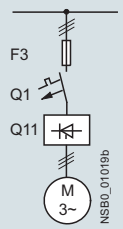
1) If the ramp-down function "Combined braking" is selected, no braking contactor is required.
If the ramp-down function "DC braking" is selected, a braking contactor must be used in addition (type, see table).
For applications with large centrifugal masses ($J_{Load} > J_{Motor}$) the function "DC braking" is recommended.

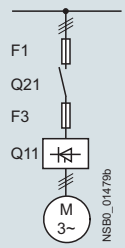
2) Additional auxiliary relay K4:
LZS:RT4A4T30
(3RW44 soft starter with rated control supply voltage 230 V AC),
LZS:RT4A4S15
(3RW44 soft starter with rated control supply voltage 115 V AC).

3) The type of coordination "2" refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

General data

Inline circuit fused version with 3NE or 3NC SITOR semiconductor fuse
(semiconductor protection by fuse, line and overload protection by circuit breaker)





For matching fuse bases, see Catalog LV 10:
- "Fuse systems" → "SITOR Semiconductor Fuses" or www.siemens.com/sitor
- "Switch disconnectors"

Soft starters (ToC 2)		Semiconductor fuses, minimum			Semiconductor fuses (cylinder)		
Q11 Type	Rated current A	690 V + 10% F3 Type	Rated current A	Size	F3 Type	Rated current A	Size
Type of coordination "2"[1]: I_q = 65 kA							
3RW4422	29	3NE4120	80	0	3NC2280	80	22 x 58
3RW4423	36	3NE4121	100	0	3NC2200	100	22 x 58
3RW4424	47	3NE4121	100	0	3NC2200	100	22 x 58
3RW4425	57	3NE4122	125	0	--	--	--
3RW4426	77	3NE4124	160	0	--	--	--
3RW4427	93	3NE3224	160	1	--	--	--
3RW4434	113	3NE3225	200	1	--	--	--
3RW4435	134	3NE3225	200	1	--	--	--
3RW4436	162	3NE3227	250	1	--	--	--
3RW4443	203	3NE3230-0B	315	1	--	--	--
3RW4444	250	3NE3230-0B	315	1	--	--	--
3RW4445	313	3NE3233	450	1	--	--	--
3RW4446	356	3NE3333	450	2	--	--	--
3RW4447	432	3NE3335	560	2	--	--	--
3RW4453	551	2 x 3NE3335	560	2	--	--	--
3RW4454	615	2 x 3NE3335	560	2	--	--	--
3RW4455	693	2 x 3NE3335	560	2	--	--	--
3RW4456	780	2 x 3NE3336	630	2	--	--	--
3RW4457	880	2 x 3NE3336	630	2	--	--	--
3RW4458	970	2 x 3NE3336	630	2	--	--	--
3RW4465	1 076	2 x 3NE3340-8	900	2	--	--	--
3RW4466	1 214	2 x 3NE3340-8	900	2	--	--	--

Soft starters (ToC 2)		Line contactors up to 480 V	Braking contactors[2)3)] (example circuit, see Manual 3RW44)		Motor starter protectors/ circuit breakers		Line protection, maximum		
Q11 Type	Rated current A	(optional) Q21 Type	Q91 Type	Q92 Type	400 V + 10% Q1 Type	Rated current A	690 V + 5% F1 Type	Rated current A	Size
Type of coordination "2"[1]: I_q = 65 kA									
3RW4422	29	3RT2027	3RT2526	--	3RV2021-4EA10	32	3NA3820-6	50	00
3RW4423	36	3RT2035	3RT2526	--	3RV2021-4FA10	40	3NA3822-6	63	00
3RW4424	47	3RT2036	3RT2535	--	3RV2031-4WA10	52	3NA3824-6	80	00
3RW4425	57	3RT2037	3RT2535	--	3RV2031-4JA10	65	3NA3830-6	100	00
3RW4426	77	3RT2038	3RT2024	3RT2035	3RV2031-4RA10	80	3NA3132-6	125	1
3RW4427	93	3RT2046	3RT2025	3RT2036	3RV2042-4MA10	100	3NA3136-6	160	1
3RW4434	113	3RT1054	3RT2027	3RT2037	3VA2216-5MN32	160	3NA3244-6	250	2
3RW4435	134	3RT1055	3RT2036	3RT2038	3VA2216-5MN32	160	3NA3244-6	250	2
3RW4436	162	3RT1056	3RT2037	3RT2038	3VA2220-7MN32	200	3NA3365-6	500	3
3RW4443	203	3RT1064	3RT2037	3RT1054	3VA2325-7MN32	250	2 x 3NA3354-6	2 x 355	3
3RW4444	250	3RT1065	3RT2037	3RT1055	3VA2325-7MN32	250	2 x 3NA3354-6	2 x 355	3
3RW4445	313	3RT1075	3RT1054	3RT1056	3VA2440-7MN32	400	2 x 3NA3365-6	2 x 500	3
3RW4446	356	3RT1075	3RT1054	3RT1056	3VA2450-7MN32	500	2 x 3NA3365-6	2 x 500	3
3RW4447	432	3RT1076	3RT1055	3RT1064	3VA2450-7MN32	500	2 x 3NA3365-6	2 x 500	3
3RW4453	551	3TF68	3RT1064	3RT1066	3VL6780	800	2 x 3NA3365-6	2 x 500	3
3RW4454	615	3TF68	3RT1064	3RT1075	3VL6780	800	2 x 3NA3365-6	2 x 500	3
3RW4455	693	3TF69	3RT1065	3RT1075	3VL6780	800	2 x 3NA3365-6	2 x 500	3
3RW4456	780	3TF69	3RT1065	3RT1075	3VL7710	1 000	2 x 3NA3365-6	2 x 500	3
3RW4457	880	--	3RT1075	3RT1076	3VL7710	1 000	2 x 3NA3365-6	2 x 500	3
3RW4458	970	--	3RT1075	3RT1076	3VL7712	1 250	3 x 3NA3365-6	3 x 500	3
3RW4465	1 076	--	3RT1075	3TF68	3VL7712	1 250	3 x 3NA3365-6	3 x 500	3
3RW4466	1 214	--	3RT1076	3TF68	3VL7712	1 250	3 x 3NA3365-6	3 x 500	3

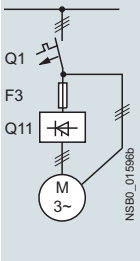
1) The type of coordination "2" refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

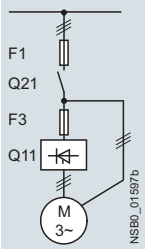
2) If the ramp-down function "Combined braking" is selected, no braking contactor is required. If the ramp-down function "DC braking" is selected, a braking contactor must be used in addition (type, see table).

For applications with large centrifugal masses ($J_{Load} > J_{Motor}$) the function "DC braking" is recommended.

3) Additional auxiliary relay K4:
LZS:RT4A4T30
(3RW44 soft starter with rated control supply voltage 230 V AC),
LZS:RT4A4S15
(3RW44 soft starter with rated control supply voltage 115 V AC).

Inside-delta circuit fused version with 3NE or 3NC SITOR fuses
(semiconductor protection by fuse, line and overload protection by motor starter protector/circuit breaker)





For matching fuse bases, see Catalog LV 10:
- "Fuse systems" → "SITOR Semiconductor Fuses" or www.siemens.com/sitor
- "Switch disconnectors"

Soft starters ToC 2		Semiconductor fuses, minimum			Semiconductor fuses (cylinder)		
Q11 Type	Rated current A	690 V + 10% F3 Type	Rated current A	Size	F3 Type	Rated current A	Size
Type of coordination "2" [1]							
3RW4422	50	3NE4120	80	0	3NC2280	80	22 x 58
3RW4423	62	3NE4121	100	0	3NC2200	100	22 x 58
3RW4424	81	3NE4121	100	0	3NC2200	100	22 x 58
3RW4425	99	3NE4122	125	0	--	--	--
3RW4426	133	3NE4124	160	0	--	--	--
3RW4427	161	3NE3224	160	1	--	--	--
3RW4434	196	3NE3225	200	1	--	--	--
3RW4435	232	3NE3225	200	1	--	--	--
3RW4436	281	3NE3227	250	1	--	--	--
3RW4443	352	3NE3230-0B	315	1	--	--	--
3RW4444	433	3NE3230-0B	315	1	--	--	--
3RW4445	542	3NE3233	450	1	--	--	--
3RW4446	617	3NE3333	450	2	--	--	--
3RW4447	748	3NE3335	560	2	--	--	--
3RW4453	954	2 x 3NE3335	560	2	--	--	--
3RW4454	1 065	2 x 3NE3335	560	2	--	--	--
3RW4455	1 200	2 x 3NE3335	560	2	--	--	--
3RW4456	1 351	2 x 3NE3336	630	2	--	--	--
3RW4457	1 524	2 x 3NE3336	630	2	--	--	--
3RW4458	1 680	2 x 3NE3336	630	2	--	--	--
3RW4465	1 864	2 x 3NE3340-8	900	2	--	--	--
3RW4466	2 103	2 x 3NE3340-8	900	2	--	--	--

Soft starters ToC 2		Line contactors up to 480 V	Motor starter protectors/circuit breakers		Line protection, maximum		
Q11 Type	Rated current A	(optional) Q21 Type	400 V +10% Q1 Type	Rated current A	690 V + 5% F1 Type	Rated current A	Size
Type of coordination "2" [1]							
3RW4422	50	3RT2036	3RV2032-4VA10	45	3NA3824-6	80	00
3RW4423	62	3RT2037	3RV2032-4JA10	65	3NA3830-6	100	00
3RW4424	81	3RT2046	3RV2042-4YA10	93	3NA3132-6	125	1
3RW4425	99	3RT2047	3RV2042-4MA10	100	3NA3136-6	160	1
3RW4426	133	3RT1055	3VA2216-.MS32-0AA0	160	3NA3240-6	200	2
3RW4427	161	3RT1056	3VA2220-.MS32-0AA0	200	3NA3244-6	250	2
3RW4434	196	3RT1064	3VA2325-.MS32-0AA0	250	3NA3360-6	400	3
3RW4435	232	3RT1065	3VA2325-.MS32-0AA0	250	3NA3360-6	400	3
3RW4436	281	3RT1066	3VA2440-.MS32-0AA0	400	2 x 3NA3360-6	2 x 400	3
3RW4443	352	3RT1075	3VA2440-.MS32-0AA0	400	2 x 3NA3365-6	2 x 500	3
3RW4444	433	3RT1076	3VA2450-.MS32-0AA0	500	2 x 3NA3365-6	2 x 500	3
3RW4445	542	3TF6844	3VL5763	630	3 x 3NA3365-6	3 x 500	3
3RW4446	617	3TF6844	3VL6780	800	3 x 3NA3365-6	3 x 500	3
3RW4447	748	3TF69	3VL6780	800	3 x 3NA3365-6	3 x 500	3
3RW4453	954	--	3VL7710	1 000	3 x 3NA3365-6	3 x 500	3
3RW4454	1 065	--	3VL7712	1 250	3 x 3NA3365-6	3 x 500	3
3RW4455	1 200	--	3VL8716	1 600	3 x 3NA3365-6	3 x 500	3
3RW4456	1 351	--	3VL8716	1 600	3 x 3NA3372	3 x 630	3
3RW4457	1 524	--	3VL8716	1 600	3 x 3NA3372	3 x 630	3
3RW4458	1 680	--	3WL1220	2 000	2 x 3NA3480	2 x 1000	4
3RW4465	1 864	--	3WL1225	2 500	2 x 3NA3482	2 x 1250	4
3RW4466	2 103	--	3WL1225	2 500	2 x 3NA3482	2 x 1250	4

[1] The type of coordination "2" refers to soft starters in combination with the stipulated protective device (circuit breaker/fuse), not to any additional components in the feeder.
If the F3 semiconductor fuse is not used, the type of coordination "2" is reduced to type of coordination "1" for soft starters in combination with the stipulated protective device.

Selection and ordering data

For normal starting (CLASS 10)


3RW442.


3RW443.


3RW444.


3RW445.


3RW446.

3RW ambient temperature 40 °C Rated values of three-phase motors					3RW ambient temperature 50 °C Rated values of three-phase motors					SD[1]	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	690 V	Operational current I_e	Rating at operational voltage U_e 200 V	230 V	460 V	575 V						
A	kW	kW	kW	kW	A	hp	hp	hp	hp	d					
Inline circuit, rated operational voltage 200 ... 460 V															
29	5.5	**15**	--	--	26	7.5	7.5	**15**	--	5	**3RW4422-□BC□4**		1	1 unit	42H
36	7.5	**18.5**	--	--	32	10	10	**20**	--	5	**3RW4423-□BC□4**		1	1 unit	42H
47	11	**22**	--	--	42	10	15	**25**	--	5	**3RW4424-□BC□4**		1	1 unit	42H
57	15	**30**	--	--	51	15	15	**30**	--	5	**3RW4425-□BC□4**		1	1 unit	42H
77	18.5	**37**	--	--	68	20	20	**50**	--	5	**3RW4426-□BC□4**		1	1 unit	42H
93	22	**45**	--	--	82	25	25	**60**	--	5	**3RW4427-□BC□4**		1	1 unit	42H
113	30	**55**	--	--	100	30	30	**75**	--	5	**3RW4434-□BC□4**		1	1 unit	42H
134	37	**75**	--	--	117	30	40	**75**	--	5	**3RW4435-□BC□4**		1	1 unit	42H
162	45	**90**	--	--	145	40	50	**100**	--	5	**3RW4436-□BC□4**		1	1 unit	42H
203	55	**110**	--	--	180	50	60	**125**	--	5	**3RW4443-□BC□4**		1	1 unit	42H
250	75	**132**	--	--	215	60	75	**150**	--	5	**3RW4444-□BC□4**		1	1 unit	42H
313	90	**160**	--	--	280	75	100	**200**	--	5	**3RW4445-□BC□4**		1	1 unit	42H
356	110	**200**	--	--	315	100	125	**250**	--	5	**3RW4446-□BC□4**		1	1 unit	42H
432	132	**250**	--	--	385	125	150	**300**	--	5	**3RW4447-□BC□4**		1	1 unit	42H
551	160	**315**	--	--	494	150	200	**400**	--	15	**3RW4453-□BC□4**		1	1 unit	42H
615	200	**355**	--	--	551	150	200	**450**	--	15	**3RW4454-□BC□4**		1	1 unit	42H
693	200	**400**	--	--	615	200	250	**500**	--	15	**3RW4455-□BC□4**		1	1 unit	42H
780	250	**450**	--	--	693	200	250	**600**	--	15	**3RW4456-□BC□4**		1	1 unit	42H
880	250	**500**	--	--	780	250	300	**700**	--	15	**3RW4457-□BC□4**		1	1 unit	42H
970	315	**560**	--	--	850	300	350	**750**	--	15	**3RW4458-□BC□4**		1	1 unit	42H
1 076	355	**630**	--	--	970	350	400	**850**	--	15	**3RW4465-□BC□4**		1	1 unit	42H
1 214	400	**710**	--	--	1 076	350	450	**950**	--	15	**3RW4466-□BC□4**		1	1 unit	42H

Article No. supplement for connection types

- With screw terminals **1**
- With spring-type terminals **3**

Article No. supplement for connection types

- With spring-type terminals **2**
- With screw terminals **6**

Article No. supplement for rated control supply voltage U_s[2]

- 115 V AC **3**
- 230 V AC **4**

[1] 3RW442. to 3RW444. soft starters with screw terminals: Standard delivery time SD = 1 day (d).

[2] Control by way of the internal 24 V DC supply and direct control via PLC possible.

Note:

For the constraints for the motor outputs specified here, see page 6/7.

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

For normal starting (CLASS 10)


3RW442.


3RW443.


3RW444.


3RW445.


3RW446.

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	690 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	SD[1]	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	kW	kW	kW	kW	A	hp	hp	hp	hp	d					
Inline circuit, rated operational voltage 400 ... 600 V															
29	--	15	**18.5**	--	26	--	--	15	**20**	5	**3RW4422-□BC□5**		1	1 unit	42H
36	--	18.5	**22**	--	32	--	--	20	**25**	5	**3RW4423-□BC□5**		1	1 unit	42H
47	--	22	**30**	--	42	--	--	25	**30**	5	**3RW4424-□BC□5**		1	1 unit	42H
57	--	30	**37**	--	51	--	--	30	**40**	5	**3RW4425-□BC□5**		1	1 unit	42H
77	--	37	**45**	--	68	--	--	50	**50**	5	**3RW4426-□BC□5**		1	1 unit	42H
93	--	45	**55**	--	82	--	--	60	**75**	5	**3RW4427-□BC□5**		1	1 unit	42H
113	--	55	**75**	--	100	--	--	75	**75**	5	**3RW4434-□BC□5**		1	1 unit	42H
134	--	75	**90**	--	117	--	--	75	**100**	5	**3RW4435-□BC□5**		1	1 unit	42H
162	--	90	**110**	--	145	--	--	100	**125**	5	**3RW4436-□BC□5**		1	1 unit	42H
203	--	110	**132**	--	180	--	--	125	**150**	5	**3RW4443-□BC□5**		1	1 unit	42H
250	--	132	**160**	--	215	--	--	150	**200**	5	**3RW4444-□BC□5**		1	1 unit	42H
313	--	160	**200**	--	280	--	--	200	**250**	5	**3RW4445-□BC□5**		1	1 unit	42H
356	--	200	**250**	--	315	--	--	250	**300**	5	**3RW4446-□BC□5**		1	1 unit	42H
432	--	250	**315**	--	385	--	--	300	**400**	5	**3RW4447-□BC□5**		1	1 unit	42H
551	--	315	**355**	--	494	--	--	400	**500**	15	**3RW4453-□BC□5**		1	1 unit	42H
615	--	355	**400**	--	551	--	--	450	**600**	15	**3RW4454-□BC□5**		1	1 unit	42H
693	--	400	**500**	--	615	--	--	500	**700**	15	**3RW4455-□BC□5**		1	1 unit	42H
780	--	450	**560**	--	693	--	--	600	**750**	15	**3RW4456-□BC□5**		1	1 unit	42H
880	--	500	**630**	--	780	--	--	700	**850**	15	**3RW4457-□BC□5**		1	1 unit	42H
970	--	560	**710**	--	850	--	--	750	**900**	15	**3RW4458-□BC□5**		1	1 unit	42H
1 076	--	630	**800**	--	970	--	--	850	**1 100**	15	**3RW4465-□BC□5**		1	1 unit	42H
1 214	--	710	**900**	--	1 076	--	--	950	**1 200**	15	**3RW4466-□BC□5**		1	1 unit	42H

Article No. supplement for connection types

- With screw terminals **1**
- With spring-type terminals **3**

Article No. supplement for connection types

- With spring-type terminals **2**
- With screw terminals **6**

Article No. supplement for rated control supply voltage U_s[2]

- 115 V AC **3**
- 230 V AC **4**

[1] Soft starter with screw terminals:
3RW442. to 3RW444. Standard delivery time SD = 2 days (d),
3RW445. to 3RW446. Standard delivery time SD = 5 days (d).

[2] Control by way of the internal 24 V DC supply and direct control via PLC possible.

Note:

For the constraints for the motor outputs specified here, see page 6/7.

Inline circuit **IE3/IE4 ready**

For normal starting (CLASS 10)


3RW442.


3RW443.


3RW444.


3RW445.


3RW446.

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	690 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	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	kW	kW	kW	kW	A	hp	hp	hp	hp	d					
Inline circuit, rated operational voltage 400 ... 690 V															
29	--	15	18.5	**30**	26	--	--	15	**20**	5	**3RW4422-□BC□6**		1	1 unit	42H
36	--	18.5	22	**37**	32	--	--	20	**25**	5	**3RW4423-□BC□6**		1	1 unit	42H
47	--	22	30	**45**	42	--	--	25	**30**	5	**3RW4424-□BC□6**		1	1 unit	42H
57	--	30	37	**55**	51	--	--	30	**40**	5	**3RW4425-□BC□6**		1	1 unit	42H
77	--	37	45	**75**	68	--	--	50	**50**	5	**3RW4426-□BC□6**		1	1 unit	42H
93	--	45	55	**90**	82	--	--	60	**75**	5	**3RW4427-□BC□6**		1	1 unit	42H
113	--	55	75	**110**	100	--	--	75	**75**	5	**3RW4434-□BC□6**		1	1 unit	42H
134	--	75	90	**132**	117	--	--	75	**100**	5	**3RW4435-□BC□6**		1	1 unit	42H
162	--	90	110	**160**	145	--	--	100	**125**	5	**3RW4436-□BC□6**		1	1 unit	42H
203	--	110	132	**200**	180	--	--	125	**150**	5	**3RW4443-□BC□6**		1	1 unit	42H
250	--	132	160	**250**	215	--	--	150	**200**	5	**3RW4444-□BC□6**		1	1 unit	42H
313	--	160	200	**315**	280	--	--	200	**250**	5	**3RW4445-□BC□6**		1	1 unit	42H
356	--	200	250	**355**	315	--	--	250	**300**	5	**3RW4446-□BC□6**		1	1 unit	42H
432	--	250	315	**400**	385	--	--	300	**400**	5	**3RW4447-□BC□6**		1	1 unit	42H
551	--	315	355	**560**	494	--	--	400	**500**	15	**3RW4453-□BC□6**		1	1 unit	42H
615	--	355	400	**630**	551	--	--	450	**600**	15	**3RW4454-□BC□6**		1	1 unit	42H
693	--	400	500	**710**	615	--	--	500	**700**	15	**3RW4455-□BC□6**		1	1 unit	42H
780	--	450	560	**800**	693	--	--	600	**750**	15	**3RW4456-□BC□6**		1	1 unit	42H
880	--	500	630	**900**	780	--	--	700	**850**	15	**3RW4457-□BC□6**		1	1 unit	42H
970	--	560	710	**1 000**	850	--	--	750	**900**	15	**3RW4458-□BC□6**		1	1 unit	42H
1 076	--	630	800	**1 100**	970	--	--	850	**1 100**	15	**3RW4465-□BC□6**		1	1 unit	42H
1 214	--	710	900	**1 200**	1 076	--	--	950	**1 200**	15	**3RW4466-□BC□6**		1	1 unit	42H

Article No. supplement for connection types

- With screw terminals **1**
- With spring-type terminals **3**

Article No. supplement for connection types

- With spring-type terminals **2**
- With screw terminals **6**

Article No. supplement for rated control supply voltage U_s[1)]

- 115 V AC **3**
- 230 V AC **4**

[1)] Control by way of the internal 24 V DC supply and direct control via PLC possible.

Note:

For the constraints for the motor outputs specified here, see page 6/7.

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

Selection and ordering data

For normal starting (CLASS 10)


3RW442.


3RW443.


3RW444.


3RW445.


3RW446.

3RW ambient temperature 40 °C Rated values of three-phase motors					3RW ambient temperature 50 °C Rated values of three-phase motors					SD[1]	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	690 V	Operational current I_e	Rating at operational voltage U_e 200 V	230 V	460 V	575 V						
A	kW	kW	kW	kW	A	hp	hp	hp	hp	d					
Inside-delta circuit, rated operational voltage 200 ... 460 V															
50	15	**22**	--	--	45	10	15	**30**	--	5	**3RW4422-□BC□4**		1	1 unit	42H
62	18.5	**30**	--	--	55	15	20	**40**	--	5	**3RW4423-□BC□4**		1	1 unit	42H
81	22	**45**	--	--	73	20	25	**50**	--	5	**3RW4424-□BC□4**		1	1 unit	42H
99	30	**55**	--	--	88	25	30	**60**	--	5	**3RW4425-□BC□4**		1	1 unit	42H
133	37	**75**	--	--	118	30	40	**75**	--	5	**3RW4426-□BC□4**		1	1 unit	42H
161	45	**90**	--	--	142	40	50	**100**	--	5	**3RW4427-□BC□4**		1	1 unit	42H

Article No. supplement for connection types
- With screw terminals **1**
- With spring-type terminals **3**

196	55	**110**	--	--	173	50	60	**125**	--	5	**3RW4434-□BC□4**		1	1 unit	42H
232	75	**132**	--	--	203	60	75	**150**	--	5	**3RW4435-□BC□4**		1	1 unit	42H
281	90	**160**	--	--	251	75	100	**200**	--	5	**3RW4436-□BC□4**		1	1 unit	42H
352	110	**200**	--	--	312	100	125	**250**	--	5	**3RW4443-□BC□4**		1	1 unit	42H
433	132	**250**	--	--	372	125	150	**300**	--	5	**3RW4444-□BC□4**		1	1 unit	42H
542	160	**315**	--	--	485	150	200	**400**	--	5	**3RW4445-□BC□4**		1	1 unit	42H
617	200	**355**	--	--	546	150	200	**450**	--	5	**3RW4446-□BC□4**		1	1 unit	42H
748	250	**400**	--	--	667	200	250	**600**	--	5	**3RW4447-□BC□4**		1	1 unit	42H
954	315	**560**	--	--	856	300	350	**750**	--	15	**3RW4453-□BC□4**		1	1 unit	42H
1 065	355	**630**	--	--	954	350	400	**850**	--	15	**3RW4454-□BC□4**		1	1 unit	42H
1 200	400	**710**	--	--	1 065	350	450	**950**	--	15	**3RW4455-□BC□4**		1	1 unit	42H
1 351	450	**800**	--	--	1 200	450	500	**1 050**	--	15	**3RW4456-□BC□4**		1	1 unit	42H
1 524	500	**900**	--	--	1 351	450	600	**1 200**	--	15	**3RW4457-□BC□4**		1	1 unit	42H
1 680	560	**1 000**	--	--	1 472	550	650	**1 300**	--	15	**3RW4458-□BC□4**		1	1 unit	42H
1 864	630	**1 100**	--	--	1 680	650	750	**1 500**	--	15	**3RW4465-□BC□4**		1	1 unit	42H
2 103	710	**1 200**	--	--	1 864	700	850	**1 700**	--	15	**3RW4466-□BC□4**		1	1 unit	42H

Article No. supplement for connection types
- With spring-type terminals **2**
- With screw terminals **6**

Article No. supplement for rated control supply voltage U_s[2]
- 115 V AC **3**
- 230 V AC **4**

[1] 3RW442. to 3RW444. soft starters with screw terminals: Standard delivery time SD = 1 day (d).

[2] Control by way of the internal 24 V DC supply and direct control via PLC possible.

Note:

For the constraints for the motor outputs specified here, see page 6/7.

Inside-delta circuit *IE3/IE4 ready*

For normal starting (CLASS 10)


3RW442.


3RW443.


3RW444.


3RW445.


3RW446.

3RW ambient temperature 40 °C Rated values of three-phase motors					3RW ambient temperature 50 °C Rated values of three-phase motors					SD[1]	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	690 V	Operational current I_e	Rating at operational voltage U_e 200 V	230 V	460 V	575 V						
A	kW	kW	kW	kW	A	hp	hp	hp	hp	d					
Inside-delta circuit, rated operational voltage 400 ... 600 V															
50	--	22	**30**	--	45	--	--	30	**40**	5	**3RW4422-□BC□5**		1	1 unit	42H
62	--	30	**37**	--	55	--	--	40	**50**	5	**3RW4423-□BC□5**		1	1 unit	42H
81	--	45	**45**	--	73	--	--	50	**60**	5	**3RW4424-□BC□5**		1	1 unit	42H
99	--	55	**55**	--	88	--	--	60	**75**	5	**3RW4425-□BC□5**		1	1 unit	42H
133	--	75	**90**	--	118	--	--	75	**100**	5	**3RW4426-□BC□5**		1	1 unit	42H
161	--	90	**110**	--	142	--	--	100	**125**	5	**3RW4427-□BC□5**		1	1 unit	42H
196	--	110	**132**	--	173	--	--	125	**150**	5	**3RW4434-□BC□5**		1	1 unit	42H
232	--	132	**160**	--	203	--	--	150	**200**	5	**3RW4435-□BC□5**		1	1 unit	42H
281	--	160	**200**	--	251	--	--	200	**250**	5	**3RW4436-□BC□5**		1	1 unit	42H
352	--	200	**250**	--	312	--	--	250	**300**	5	**3RW4443-□BC□5**		1	1 unit	42H
433	--	250	**315**	--	372	--	--	300	**350**	5	**3RW4444-□BC□5**		1	1 unit	42H
542	--	315	**355**	--	485	--	--	400	**500**	5	**3RW4445-□BC□5**		1	1 unit	42H
617	--	355	**450**	--	546	--	--	450	**600**	5	**3RW4446-□BC□5**		1	1 unit	42H
748	--	400	**500**	--	667	--	--	600	**750**	5	**3RW4447-□BC□5**		1	1 unit	42H
954	--	560	**630**	--	856	--	--	750	**950**	15	**3RW4453-□BC□5**		1	1 unit	42H
1 065	--	630	**710**	--	954	--	--	850	**1 050**	15	**3RW4454-□BC□5**		1	1 unit	42H
1 200	--	710	**800**	--	1 065	--	--	950	**1 200**	15	**3RW4455-□BC□5**		1	1 unit	42H
1 351	--	800	**900**	--	1 200	--	--	1 050	**1 350**	15	**3RW4456-□BC□5**		1	1 unit	42H
1 524	--	900	**1 000**	--	1 351	--	--	1 200	**1 500**	15	**3RW4457-□BC□5**		1	1 unit	42H
1 680	--	1 000	**1 200**	--	1 472	--	--	1 300	**1 650**	15	**3RW4458-□BC□5**		1	1 unit	42H
1 864	--	1 100	**1 350**	--	1 680	--	--	1 500	**1 900**	15	**3RW4465-□BC□5**		1	1 unit	42H
2 103	--	1 200	**1 500**	--	1 864	--	--	1 700	**2 100**	15	**3RW4466-□BC□5**		1	1 unit	42H

Article No. supplement for connection types

- With screw terminals **1**
- With spring-type terminals **3**

Article No. supplement for connection types

- With spring-type terminals **2**
- With screw terminals **6**

Article No. supplement for rated control supply voltage U_s[2]

- 115 V AC **3**
- 230 V AC **4**

[1] Soft starter with screw terminals:
3RW442. to 3RW444. Standard delivery time SD = 2 days (d),
3RW445. to 3RW446. Standard delivery time SD = 5 days (d).

[2] Control by way of the internal 24 V DC supply and direct control via PLC possible.

Note:

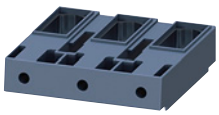
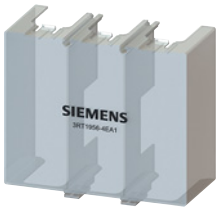
For the constraints for the motor outputs specified here, see page 6/7.

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

Selection and ordering data

More information

Manual "SIRIUS 3RW44 Soft Starters", see
https://support.industry.siemens.com/cs/ww/en/view/21772518

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
USB PC cables							
 3UF7941-0AA00-0	**For PC/PG communication with SIRIUS 3RW44 soft starters** Through the system interface, for connecting to the USB interface of the PC/PG	▶	**3UF7941-0AA00-0**		1	1 unit	42J
Communication modules							
 3RW4900-0KC00	**PROFIBUS communication module** For 3RW44 soft starter integration in the PROFIBUS network with DPV1 slave functionality. With firmware version E04 and higher (or date of manufacture 01.05.2009 and later) of the module, DPV1 operation of the soft starter on a Y-link is also possible (only DPV0 operation possible with < E04).	▶	**3RW4900-0KC00**		1	1 unit	42H
 3RW4900-0NC00	**PROFINET communication module** For 3RW44 soft starter integration in the PROFINET network, suitable for devices with firmware version E12 or higher	▶	**3RW4900-0NC00**		1	1 unit	42H
External display and operator module							
 3RW4900-0AC00	For indicating and operating the functions provided by the soft starter using an externally mounted display and operator module in degree of protection IP54 (e.g. in the control cabinet door)	▶	**3RW4900-0AC00**		1	1 unit	42H
	Connection cables From the device interface (serial) of the 3RW44 soft starter to the external display and operator module						
	• Length 0.5 m, flat	▶	**3UF7932-0AA00-0**		1	1 unit	42J
	• Length 0.5 m, round	▶	**3UF7932-0BA00-0**		1	1 unit	42J
	• Length 1.0 m, round	▶	**3UF7937-0BA00-0**		1	1 unit	42J
	• Length 2.5 m, round	▶	**3UF7933-0BA00-0**		1	1 unit	42J
Box terminal blocks for soft starters							
 3RT1956-4G	**Box terminal block** (2 units are required for each device)						
	3RW442. Included in the scope of supply						
	3RW443. • Up to 70 mm²	▶	**3RT1955-4G**		1	1 unit	41B
	• Up to 120 mm²	▶	**3RT1956-4G**		1	1 unit	41B
	Auxiliary conductor connection for box terminals	5	**3TX7500-0A**		1	1 unit	41B
	3RW444. • Up to 240 mm² (with auxiliary conductor connection)	▶	**3RT1966-4G**		1	1 unit	41B
Covers for soft starters							
	Terminal covers for box terminals Additional touch protection to be fitted at the box terminals (2 units required per device)						
	3RW442. and 3RW443.	▶	**3RT1956-4EA2**		1	1 unit	41B
	3RW444.	2	**3RT1966-4EA2**		1	1 unit	41B
 3RT1956-4EA1	**Terminal covers for cable lugs and busbar connections**						
	3RW442. and 3RW443. For complying with the voltage clearances and as touch protection (2 units required per contactor) Also fits on mounted box terminals.	▶	**3RT1956-4EA1**		1	1 unit	41B
	3RW444.	2	**3RT1966-4EA1**		1	1 unit	41B

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

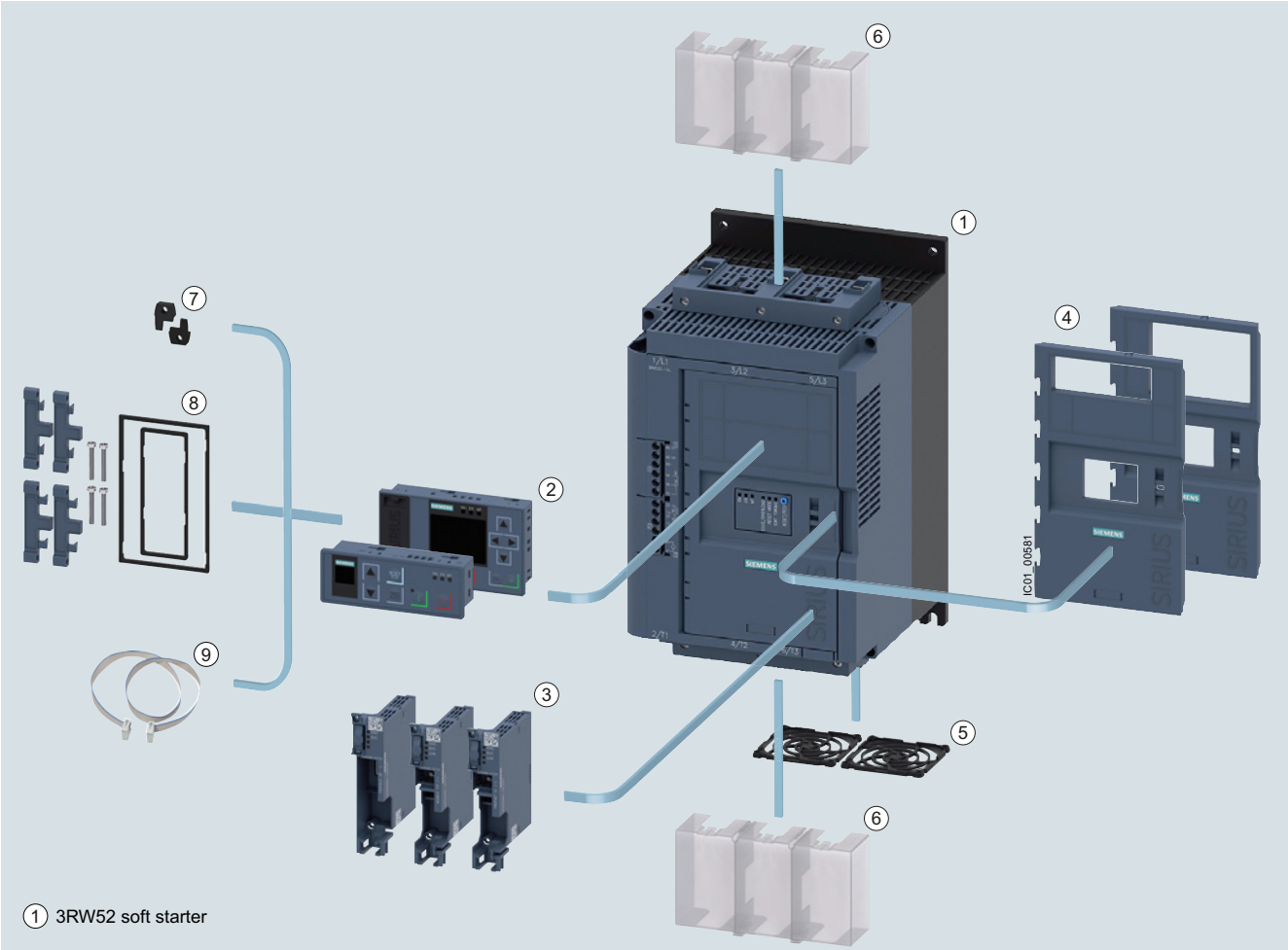
General data NEW

Overview

More information	
Homepage, see www.siemens.com/soft-starter Industry Mall, see www.siemens.com/product?3RW TIA Selection Tool Cloud (TST Cloud), see https://mall.industry.siemens.com/spice/tstweb/?KMAT=3rw52	Simulation Tool for Soft Starters (STS), see page 6/7 or https://support.industry.siemens.com/cs/ww/en/view/101494917 SIRIUS Soft Starter ES (TIA Portal) for diagnostics, see page 14/5

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).

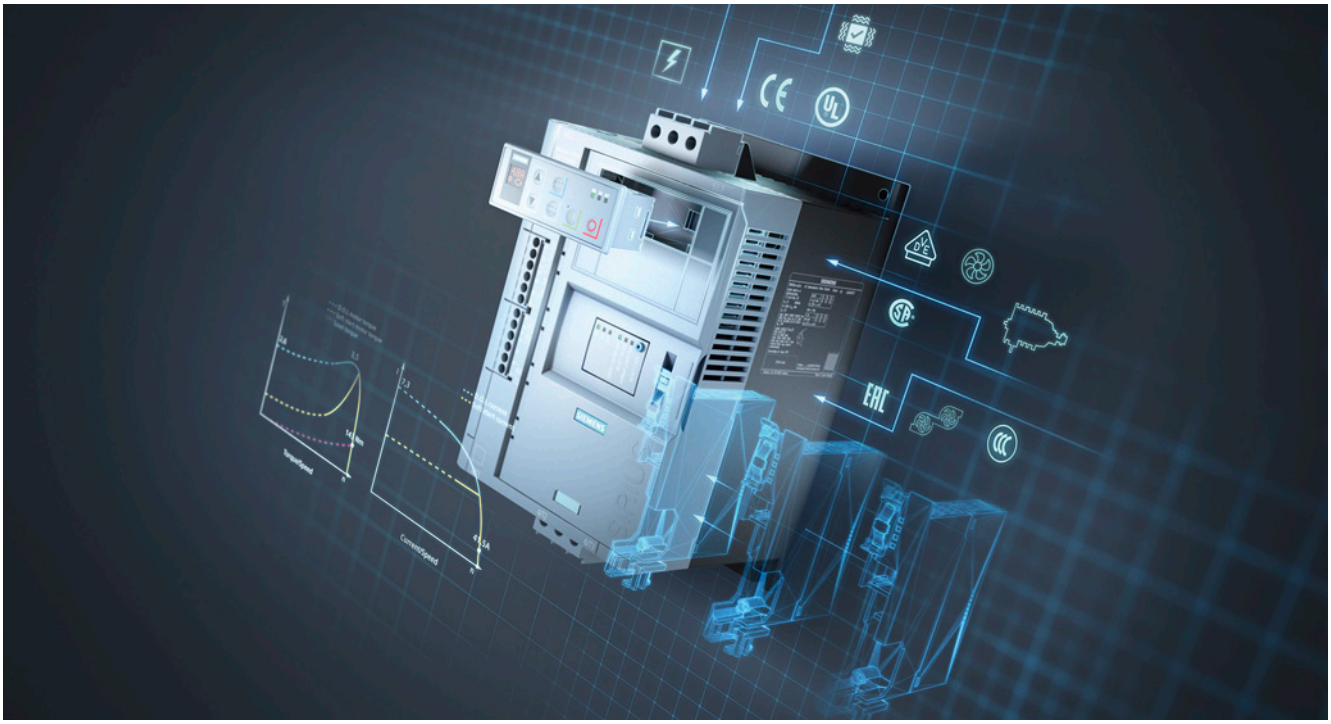
With optional HMI modules, plug-in communication modules (PROFINET, PROFIBUS, Modbus) and either an analog output or thermistor motor protection, they ensure maximum flexibility. With their modern hybrid switching technology, the SIRIUS 3RW52 soft starters offer efficient switching for long-term, energy-saving use.



1. 3RW52 soft starter
2. HMI modules
3. Communication modules
4. Hinged cover
5. Fan covers
6. Terminal covers
7. Push-in lugs for wall mounting
8. IP65 door mounting kit
9. HMI soft starter connection cable

General Performance soft starters with accessories (see page 6/54), for expansion with HMI module or communication modules.

Benefits

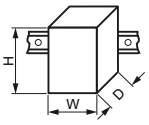


Product characteristics / function	Performance features / benefits
Hybrid switching devices and three-phase motor control	Minimum power loss and optimum/symmetrical motor control
TIA-Integration – communication modules and HMI modules optional	Efficient configuration and maximum flexibility in automation 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

General data NEW

Technical specifications

More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/25100/td Manual "SIRIUS 3RW52 Soft Starter", 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 6/7 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 × 275 × 152		185 × 306 × 203		210 × 393 × 203
Type of fixing		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				
Maximum installation altitude above sea level[1]	m	5 000				
Ambient conditions						
Ambient temperature						
• During operation[2]	°C	-25 ... +60				
• During storage	°C	-40 ... +80				
Environmental category according to IEC 60721						
• During operation		3K6 (no ice formation, no 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 enter the devices), 1M4				
• During transport		2K2, 2C1, 2S1, 2M2 (max. height of fall 0.3 m)				

[1] Derating above 1 000 m, see Manual or characteristic curve on page 6/7.
[2] Note derating above 40 °C.

Type		3RW521.-..C0.	3RW521.-..C1.	3RW522.-..C0. 3RW523.-..C0.	3RW522.-..C1. 3RW523.-..C1.	3RW524.-..C0.	3RW524.-..C1.
Control circuit/control							
Control supply voltage							
• At AC/DC, rated value	V	24/24	--/--	24/24	--/--	24/24	--/--
• At AC	V	--	110 ... 250	--	110 ... 250	--	110 ... 250
• Relative negative tolerance/ relative positive tolerance with AC	%	-20/20	-15/10	-20/20	-15/10	-20/20	-15/10
• Relative negative tolerance/ relative positive tolerance with DC	%	-20/20	--/--	-20/20	--/--	-20/20	--/--
Frequency of the control supply voltage	Hz	50 ... 60					
• Relative negative tolerance/relative positive tolerance	%	-10/10					
Control supply current in standby mode, rated value	mA	160	30	160	30	160	30
Holding current in bypass mode, rated value	mA	360	75	380	75	470	100
Maximum locked-rotor current on closing the bypass contacts	A	0.75	0.17	7.6	2.5	7.6	2.2
Maximum inrush current peak on applying the control supply voltage	A	3.3	12.2	3.3	12.2	3.3	12.2
Duration of inrush current peak on applying the control supply voltage	ms	12.1	2.2	12.1	2.2	12.1	2.2
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, rated value	V	200 ... 480	200 ... 600
• Relative negative tolerance/ relative positive tolerance	%	-15/10	
Operational voltage for inside-delta circuit, rated value	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 set I_e.

General data NEW

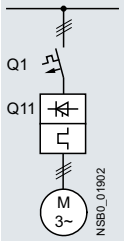
Motor feeders according to IEC with 3RV2/3VA motor starter protectors/circuit breakers

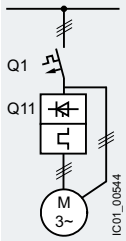
Without semiconductor protection

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 6/9.





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	**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	65	3VA2110-7MN32-0AA0	65	3VA2110-7MN32-0AA0	65
3RW5226	3VA2110-7MN32-0AA0	65	3VA2110-7MN32-0AA0	65	3VA2216-7MN32-0AA0	65	3VA2216-7MN32-0AA0	65
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

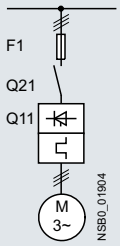
Motor feeders according to IEC with 3NA3 fuses

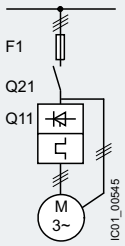
gG class full-range fuses for cable and line protection according to IEC 60269-2, without semiconductor protection

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 6/9.





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	**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

General data NEW

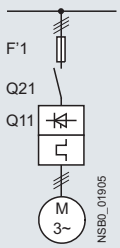
Motor feeders according to IEC with 3NE1 SITOR fuses

gR class full-range fuses for semiconductor protection, cable and line 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 6/9.



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	F'1	Q21	Q21
Type	Type	Type	Type
Type of coordination "2" ToC 2	**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	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

Note:

In inside-delta circuits, a gR 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 In this case, we recommend using aR class partial-range fuses for semiconductor protection for type of coordination "2" (see page 6/49).

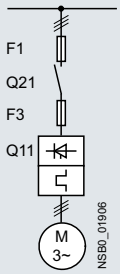
Motor feeders according to IEC with 3NE8 / 3NE4 / 3NE3 fuses

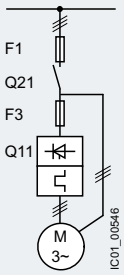
aR class partial-range fuses for semiconductor protection

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 6/9.





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 690 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	**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:

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2/3VA motor starter protectors/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.

Inline circuit **IE3/IE4 ready** **NEW**

Selection and ordering data

For normal starting (CLASS 10A)


3RW521.


3RW522.


3RW523.


3RW524.

At 40 °C				At 50 °C					SD[1]	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	d					
Operational voltage 200 ... 480 V														
13	3	**5.5**	--	11.5	2	3	**7.5**	--	5	**3RW5213-□□C□4**		1	1 unit	42S
18	4	**7.5**	--	15.9	3	5	**10**	--	5	**3RW5214-□□C□4**		1	1 unit	42S
25	5.5	**11**	--	22.3	5	7.5	**15**	--	5	**3RW5215-□□C□4**		1	1 unit	42S
32	7.5	**15**	--	28.4	7.5	10	**20**	--	5	**3RW5216-□□C□4**		1	1 unit	42S
38	11	**18.5**	--	33.5	10	10	**20**	--	5	**3RW5217-□□C□4**		1	1 unit	42S
47	11	**22**	--	41.6	10	10	**30**	--	5	**3RW5224-□□C□4**		1	1 unit	42S
63	18.5	**30**	--	55.5	15	20	**40**	--	5	**3RW5225-□□C□4**		1	1 unit	42S
77	22	**37**	--	68	20	25	**50**	--	5	**3RW5226-□□C□4**		1	1 unit	42S
93	22	**45**	--	82.5	25	30	**60**	--	5	**3RW5227-□□C□4**		1	1 unit	42S

Type of electrical connection for the control circuit
Screw terminals — **1 3**
Spring-type terminals

Product function
Analog output — **A T**
Thermistor motor protection

Control supply voltage
24 V AC/DC — **0 1**
110 ... 250 V AC

[1] 3RW52 soft starter with screw terminals for operational voltage up to 480 V: Standard delivery time SD = 1 day (d).

Note:
For the constraints for the motor outputs specified here, see page 6/7.

At 40 °C				At 50 °C					SD[1]	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	d					
Operational voltage 200 ... 480 V														
113	30	**55**	--	101	30	30	**75**	--	5	**3RW5234-□□C□4**		1	1 unit	42S
143	37	**75**	--	128	40	40	**100**	--	5	**3RW5235-□□C□4**		1	1 unit	42S
171	45	**90**	--	153	50	50	**100**	--	5	**3RW5236-□□C□4**		1	1 unit	42S
210	55	**110**	--	186	60	60	**150**	--	5	**3RW5243-□□C□4**		1	1 unit	42S
250	75	**132**	--	220	60	75	**150**	--	5	**3RW5244-□□C□4**		1	1 unit	42S
315	90	**160**	--	279	75	100	**200**	--	5	**3RW5245-□□C□4**		1	1 unit	42S
370	110	**200**	--	328	100	125	**250**	--	5	**3RW5246-□□C□4**		1	1 unit	42S
470	132	**250**	--	416	150	150	**350**	--	5	**3RW5247-□□C□4**		1	1 unit	42S
570	160	**315**	--	504	150	200	**400**	--	5	**3RW5248-□□C□4**		1	1 unit	42S

Type of electrical connection for the control circuit
Spring-type terminals — **2 6**
Screw terminals

Product function
Analog output — **A T**
Thermistor motor protection

Control supply voltage
24 V AC/DC — **0 1**
110 ... 250 V AC

[1] 3RW52 soft starter with screw terminals for operational voltage up to 480 V: Standard delivery time SD = 1 day (d).

Note:
For the constraints for the motor outputs specified here, see page 6/7.

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

NEW IE3/IE4 ready Inline circuit

For normal starting (CLASS 10A)


3RW5213.


3RW522.


3RW523.


3RW524.

At 40 °C				At 50 °C					SD[1]	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	d					
Operational voltage 200 ... 600 V														
13	3	**5.5**	7.5	11.5	2	3	**7.5**	10	5	**3RW5213-□□C□5**		1	1 unit	42S
18	4	**7.5**	11	15.9	3	5	**10**	10	5	**3RW5214-□□C□5**		1	1 unit	42S
25	5.5	**11**	15	22.3	5	7.5	**15**	20	5	**3RW5215-□□C□5**		1	1 unit	42S
32	7.5	**15**	18.5	28.4	7.5	10	**20**	25	5	**3RW5216-□□C□5**		1	1 unit	42S
38	11	**18.5**	22	33.5	10	10	**20**	30	5	**3RW5217-□□C□5**		1	1 unit	42S
47	11	**22**	30	41.6	10	10	**30**	40	5	**3RW5224-□□C□5**		1	1 unit	42S
63	18.5	**30**	37	55.5	15	20	**40**	50	5	**3RW5225-□□C□5**		1	1 unit	42S
77	22	**37**	45	68	20	25	**50**	60	5	**3RW5226-□□C□5**		1	1 unit	42S
93	22	**45**	55	82.5	25	30	**60**	75	5	**3RW5227-□□C□5**		1	1 unit	42S

Type of electrical connection for the control circuit
Screw terminals — 1
Spring-type terminals — 3

Product function
Analog output — A
Thermistor motor protection — T

Control supply voltage
24 V AC/DC — 0
110 ... 250 V AC — 1

[1] 3RW52 soft starter with screw terminals for operational voltage up to 600 V: Standard delivery time SD = 2 days (d).

Note:
For the constraints for the motor outputs specified here, see page 6/7.

At 40 °C				At 50 °C					SD[1]	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	d					
Operational voltage 200 ... 600 V														
113	30	**55**	75	101	30	30	**75**	100	5	**3RW5234-□□C□5**		1	1 unit	42S
143	37	**75**	90	128	40	40	**100**	125	5	**3RW5235-□□C□5**		1	1 unit	42S
171	45	**90**	110	153	50	50	**100**	150	5	**3RW5236-□□C□5**		1	1 unit	42S
210	55	**110**	132	186	60	60	**150**	150	5	**3RW5243-□□C□5**		1	1 unit	42S
250	75	**132**	160	220	60	75	**150**	200	5	**3RW5244-□□C□5**		1	1 unit	42S
315	90	**160**	200	279	75	100	**200**	250	5	**3RW5245-□□C□5**		1	1 unit	42S
370	110	**200**	250	328	100	125	**250**	300	5	**3RW5246-□□C□5**		1	1 unit	42S
470	132	**250**	315	416	150	150	**350**	450	5	**3RW5247-□□C□5**		1	1 unit	42S
570	160	**315**	355	504	150	200	**400**	500	5	**3RW5248-□□C□5**		1	1 unit	42S

Type of electrical connection for the control circuit
Spring-type terminals — 2
Screw terminals — 6

Product function
Analog output — A
Thermistor motor protection — T

Control supply voltage
24 V AC/DC — 0
110 ... 250 V AC — 1

[1] 3RW52 soft starter with screw terminals for operational voltage up to 600 V: Standard delivery time SD = 2 days (d).

Note:
For the constraints for the motor outputs specified here, see page 6/7.

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

Inside-delta circuit **IE3/IE4 ready** **NEW**

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					SD[1]	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V		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	d					
Operational voltage 200 ... 480 V														
22.5	5.5	**11**	--	19.9	5	5	**10**	--	5	**3RW5213-□□C□4**		1	1 unit	42S
31.5	7.5	**15**	--	28	7.5	7.5	**20**	--	5	**3RW5214-□□C□4**		1	1 unit	42S
43.3	11	**18.5**	--	39	10	10	**25**	--	5	**3RW5215-□□C□4**		1	1 unit	42S
55.4	15	**22**	--	49	15	15	**30**	--	5	**3RW5216-□□C□4**		1	1 unit	42S
65.8	18.5	**30**	--	58	15	20	**40**	--	5	**3RW5217-□□C□4**		1	1 unit	42S
81.4	22	**45**	--	72	20	25	**50**	--	5	**3RW5224-□□C□4**		1	1 unit	42S
109	30	**55**	--	96	30	30	**75**	--	5	**3RW5225-□□C□4**		1	1 unit	42S
133	37	**75**	--	118	30	40	**75**	--	5	**3RW5226-□□C□4**		1	1 unit	42S
161	45	**90**	--	143	40	50	**100**	--	5	**3RW5227-□□C□4**		1	1 unit	42S

Type of electrical connection for the control circuit (□□)
Screw terminals — **1 3**
Spring-type terminals

Product function (□)
Analog output — **A T**
Thermistor motor protection

Control supply voltage (□)
24 V AC/DC — **0 1**
110 ... 250 V AC

[1] 3RW52 soft starter with screw terminals for operational voltage up to 480 V: Standard delivery time SD = 1 day (d).

Note:
For the constraints for the motor outputs specified here, see page 6/7.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					SD[1]	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V		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	d					
Operational voltage 200 ... 480 V														
196	55	**110**	--	175	50	60	**125**	--	5	**3RW5234-□□C□4**		1	1 unit	42S
248	75	**132**	--	222	75	75	**150**	--	5	**3RW5235-□□C□4**		1	1 unit	42S
296	90	**160**	--	265	75	100	**200**	--	5	**3RW5236-□□C□4**		1	1 unit	42S
364	110	**200**	--	322	100	125	**250**	--	5	**3RW5243-□□C□4**		1	1 unit	42S
433	132	**250**	--	381	125	150	**300**	--	5	**3RW5244-□□C□4**		1	1 unit	42S
546	160	**315**	--	483	150	200	**400**	--	5	**3RW5245-□□C□4**		1	1 unit	42S
641	200	**355**	--	568	200	200	**450**	--	5	**3RW5246-□□C□4**		1	1 unit	42S
814	250	**400**	--	721	250	250	**600**	--	5	**3RW5247-□□C□4**		1	1 unit	42S
987	315	**560**	--	873	300	350	**750**	--	5	**3RW5248-□□C□4**		1	1 unit	42S

Type of electrical connection for the control circuit (□□)
Spring-type terminals — **2 6**
Screw terminals

Product function (□)
Analog output — **A T**
Thermistor motor protection

Control supply voltage (□)
24 V AC/DC — **0 1**
110 ... 250 V AC

[1] 3RW52 soft starter with screw terminals for operational voltage up to 480 V: Standard delivery time SD = 1 day (d).

Note:
For the constraints for the motor outputs specified here, see page 6/7.

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

NEW **IE3/IE4 ready** **Inside-delta circuit**

For normal starting (CLASS 10A)


3RW521.


3RW522.


3RW523.


3RW524.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					SD[1]	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V		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	d					
Operational voltage 200 ... 600 V														
22.5	5.5	**11**	15	19.9	5	5	**10**	15	5	**3RW5213-□□C□5**		1	1 unit	42S
31.5	7.5	**15**	18.5	28	7.5	7.5	**20**	25	5	**3RW5214-□□C□5**		1	1 unit	42S
43.3	11	**18.5**	22	39	10	10	**25**	30	5	**3RW5215-□□C□5**		1	1 unit	42S
55.4	15	**22**	30	49	15	15	**30**	40	5	**3RW5216-□□C□5**		1	1 unit	42S
65.8	18.5	**30**	37	58	15	20	**40**	50	5	**3RW5217-□□C□5**		1	1 unit	42S
81.4	22	**45**	45	72	20	25	**50**	60	5	**3RW5224-□□C□5**		1	1 unit	42S
109	30	**55**	55	96	30	30	**75**	75	5	**3RW5225-□□C□5**		1	1 unit	42S
133	37	**75**	90	118	30	40	**75**	100	5	**3RW5226-□□C□5**		1	1 unit	42S
161	45	**90**	110	143	40	50	**100**	125	5	**3RW5227-□□C□5**		1	1 unit	42S

Type of electrical connection for the control circuit
Screw terminals — **1 3**
Spring-type terminals

Product function
Analog output — **A T**
Thermistor motor protection

Control supply voltage
24 V AC/DC — **0 1**
110 ... 250 V AC

[1] 3RW52 soft starter with screw terminals for operational voltage up to 600 V: Standard delivery time SD = 2 days (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					SD[1]	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V		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	d					
Operational voltage 200 ... 600 V														
196	55	**110**	132	175	50	60	**125**	150	5	**3RW5234-□□C□5**		1	1 unit	42S
248	75	**132**	160	222	75	75	**150**	200	5	**3RW5235-□□C□5**		1	1 unit	42S
296	90	**160**	200	265	75	100	**200**	250	5	**3RW5236-□□C□5**		1	1 unit	42S
364	110	**200**	250	322	100	125	**250**	300	5	**3RW5243-□□C□5**		1	1 unit	42S
433	132	**250**	315	381	125	150	**300**	350	5	**3RW5244-□□C□5**		1	1 unit	42S
546	160	**315**	355	483	150	200	**400**	500	5	**3RW5245-□□C□5**		1	1 unit	42S
641	200	**355**	450	568	200	200	**450**	600	5	**3RW5246-□□C□5**		1	1 unit	42S
814	250	**400**	500	721	250	250	**600**	800	5	**3RW5247-□□C□5**		1	1 unit	42S
987	315	**560**	630	873	300	350	**750**	950	5	**3RW5248-□□C□5**		1	1 unit	42S

Type of electrical connection for the control circuit
Spring-type terminals — **2 6**
Screw terminals

Product function
Analog output — **A T**
Thermistor motor protection

Control supply voltage
24 V AC/DC — **0 1**
110 ... 250 V AC

[1] 3RW52 soft starter with screw terminals for operational voltage up to 600 V: Standard delivery time SD = 2 days (d).

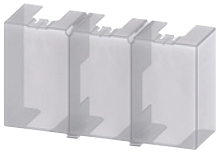
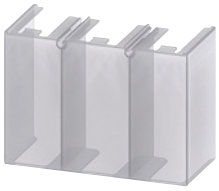
Note:

For the constraints for the motor outputs specified here, see page 6/7.

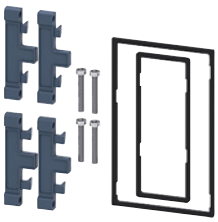
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Accessories NEW

Selection and ordering data

	Product designation	Manufacturer's Article No. of the soft starter	Type of product	Application	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Fan covers										
 3RW5983-0FC00	**Fan cover**	3RW5216/17 (1x), 3RW5226/27, 3RW523 (2x)	--	--	1	**3RW5983-0FC00**		1	1 unit	42S
		3RW524	--	--	1	**3RW5984-0FC00**		1	1 unit	42S
Terminal covers										
 3RW5983-0TC20	**Terminal cover**	3RW522, 3RW523 (2x)	--	--	1	**3RW5983-0TC20**		1	1 unit	42S
 3RW5984-0TC20		3RW524 (2x)	--	--	1	**3RW5984-0TC20**		1	1 unit	42S
Enclosure components										
 3RW5950-0GL30	**Hinged cover**	3RW52	With cutout for HMI module High Feature	--	1	**3RW5950-0GL30**		1	1 unit	42S
 3RW5950-0GL40			With cutout for HMI module Standard	--	1	**3RW5950-0GL40**		1	1 unit	42S
Communication modules										
 3RW5980-0CS00	**Communication module**	3RW52	PROFINET Standard	--	1	**3RW5980-0CS00**		1	1 unit	42S
			PROFIBUS	--	1	**3RW5980-0CP00**		1	1 unit	42S
			Modbus TCP	--	1	**3RW5980-0CT00**		1	1 unit	42S

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

	Product designation	Manufacturer's Article No. of the soft starter	Type of product	Application	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
					d					
HMI modules										
 3RW5980-0HF00	**HMI module**	3RW52	High Feature	--	1	**3RW5980-0HF00**		1	1 unit	42S
 3RW5980-0HS00			Standard	--	1	**3RW5980-0HS00**		1	1 unit	42S
 3RW5980-0HD00	**Door mounting kit**	3RW52	IP65	For HMI modules	1	**3RW5980-0HD00**		1	1 unit	42S
Connection cables										
 3UF793.-0BA00-0	**HMI connection cable**	3RW52	5 m, round	For door mounting	1	**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	--	2	**3ZY1311-0AA00**		1	10 units	41L

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

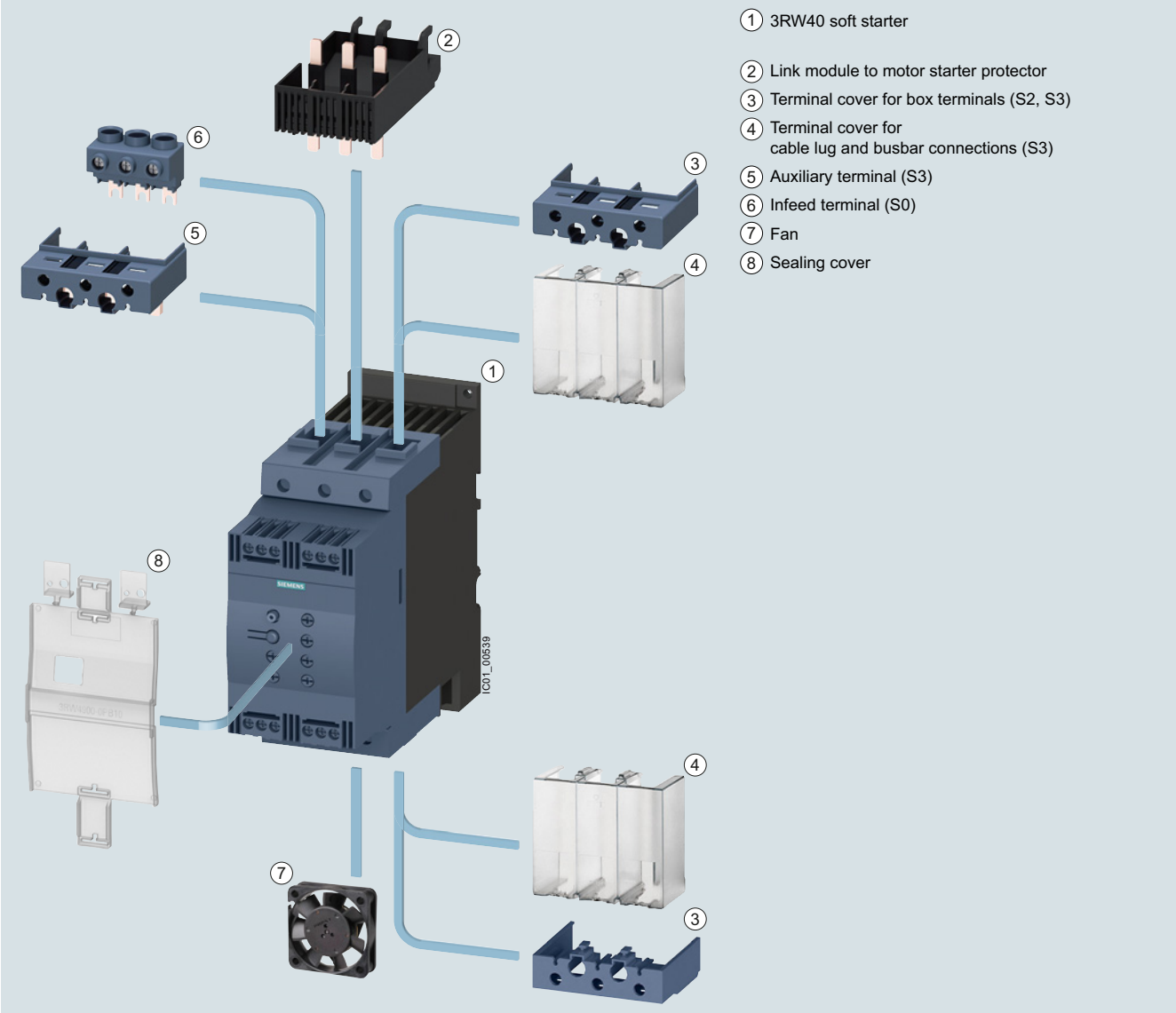
Overview

More information	
Homepage, see www.siemens.com/soft-starter Industry Mall, see www.siemens.com/product?3RW	TIA Selection Tool Cloud (TST Cloud), see https://mall.industry.siemens.com/spice/tstweb/?KMAT=3rw40 Simulation Tool for Soft Starters (STS), see page 6/7 or https://support.industry.siemens.com/cs/ww/en/view/101494917

The SIRIUS 3RW40 Basic Performance soft starters are suitable for soft starting and stopping of three-phase asynchronous motors.

Due to two-phase control, the current is kept at minimum values in all three phases throughout the entire start-up time and disturbing direct current components are eliminated in addition. This not only enables the two-phase starting of motors up to 250 kW (at 400 V) but also avoids the current and torque peaks which occur e.g. with wye-delta starters.

The SIRIUS 3RW40 soft starters are suitable for the starting of explosion-proof motors with "increased safety" type of protection EEx e according to ATEX Directive 94/9/EC.



3RW40 Basic Performance soft starter with accessories (see page 6/68)

Benefits


3RW402.


3RW403.


3RW404.


3RW405.

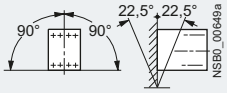
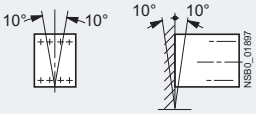
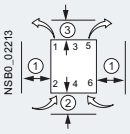
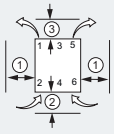

3RW407.

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 bypass contact system	Reduction of power loss during operation
Certified according to ATEX Directive 94/9/EC	Suitable for the starting of explosion-proof motors with "increased safety" type of protection EEx e.
Optional thermistor motor protection up to a rating of 55 kW	Full motor protection

General data

Technical specifications

More information	
Manual "SIRIUS 3RW30/3RW40 Soft Starters", see https://support.industry.siemens.com/cs/ww/en/view/38752095 FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/25251/faq	Catalog LV 10, see www.siemens.com/lowvoltage/lv10

Type		3RW402.	3RW403.	3RW404.	3RW405.	3RW407.
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	120 x 198 x 250	160 x 230 x 278
• Spring-type terminals	mm	45 x 150 x 154	55 x 144 x 170	70 x 160 x 188	120 x 198 x 250	160 x 230 x 278
Permissible ambient temperature						
During operation	°C	-25 ... +60; (derating from +40)				
During storage	°C	-40 ... +80				
Weight	kg	0.77	1.35	1.9	4.9 (3RW4055) 6.9 (3RW4056)	8.9
Permissible mounting position[1]						
• With auxiliary fan (for 3RW402. ... 3RW404.)						
• Without auxiliary fan (for 3RW402. ... 3RW404.)					-- (fan integrated in the soft starter)	
Installation type[1] Stand-alone installation		3RW402.  ① ≥ 15 mm (≥ 0.59 in) ② ≥ 40 mm (≥ 1.56 in) ③ ≥ 60 mm (≥ 2.36 in)			3RW405., 3RW407. ① ≥ 5 mm (≥ 0.2 in) ② ≥ 75 mm (≥ 3 in) ③ ≥ 100 mm (≥ 4 in)	
		3RW403., 3RW404.  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 6/7)				
Degree of protection		IP20 for 3RW402.; all others IP00				

[1] In the case of deviations, please observe derating, see Manual in the chapter "Configuring".

Type	Terminal		3RW402., 3RW403., 3RW404.		3RW405., 3RW407.	
Control electronics						
Rated values						
Rated control supply voltage	A1/A2	V	24 AC/DC	110 ... 230 AC/DC	115 AC	230 AC
• 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	3RW405.-.BB.4, 3RW407.-.BB.4	3RW405.-.BB.5, 3RW407.-.BB.5
Power electronics					
Rated operational voltage Tolerance	V AC %	200 ... 480 -15/+10	400 ... 600	200 ... 460	400 ... 600
Maximum blocking voltage (thyristor)	V AC	1 600		1 400	1 800
Rated frequency Tolerance	Hz %	50/60 ± 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			

Type		3RW4024	3RW4026	3RW4027	3RW4028
Power electronics					
Load rating with rated operational current I_e • According to IEC and UL/CSA[1], for individual mounting, AC-53a					
- At 40 °C	A	12.5	25.3	32.2	38
- At 50 °C	A	11	23	29	34
- At 60 °C	A	10	21	26	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 limit set to 300% I_M (40 °C)	W	68	188	220	256
Permissible rated motor current and starts per hour at 40 / 50 °C					
• **For normal starting (CLASS 10)**					
- 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

[1] Measurement at 60 °C according to UL/CSA not required.

[2] Current limit 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 Manual in the chapter "Configuring".

General data

Type		3RW4036	3RW4037	3RW4038	3RW4046	3RW4047
Power electronics						
Load rating with rated operational current I_e						
• According to IEC and UL/CSA[1], for individual mounting, AC-53a						
- At 40 °C	A	45	63	72	80	106
- At 50 °C	A	42	58	62.1	73	98
- At 60 °C	A	39	53	60	66	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 limit set to 300% I_M (40 °C)	W	316	444	500	576	768
Permissible rated motor current and starts per hour at 40 / 50 °C						
• **For normal starting (CLASS 10)**						
- 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

[1] Measurement at 60 °C according to UL/CSA not required.

[2] Current limit 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 Manual in the chapter "Configuring".

Type		3RW4055	3RW4056	3RW4073	3RW4074	3RW4075	3RW4076
Power electronics							
Load rating with rated operational current I_e							
• According to IEC and UL/CSA[1], for individual mounting, AC-53a							
- At 40 °C	A	134	162	230	280	356	432
- At 50 °C	A	117	145	205	248	315	385
- At 60 °C	A	100	125	180	215	280	335
Smallest adjustable rated motor current I_M For the motor overload protection	A	59	87	80	130	131	207
Power loss							
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	60	75		90	125	165
• During starting with current limit set to 350%[2] I_M (40 °C)	W	1 043	1 355	2 448	3 257	3 277	3 600
Permissible rated motor current and starts per hour at 40 / 50 °C							
• **For normal starting (CLASS 10)**							
- Rated motor current I_M[2], start-up time 10 s	A	134/117	162/145	230/205	280/248	356/315	432/385
- Starts per hour[3]	1/h	20/20	8/8	14/14	20/20	16/16	17/17
- Rated motor current I_M[2], start-up time 20 s	A	134/117	162/145	230/205	280/248	356/315	432/385
- Starts per hour[3]	1/h	7/7	1.4/1.4	3/3	8/8	5/5	5/5

[1] Measurement at 60 °C according to UL/CSA not required.

[2] Current limit on soft starter set to 350% 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 = 70%, T_u = 40 / 50 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

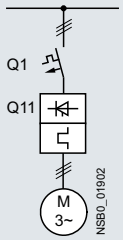
Motor feeders according to IEC with 3RV2/3VA motor starter protectors/circuit breakers

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 6/9.



Soft starters	**Motor starter protectors/circuit breakers**			
	for 400 V systems		for 500 V systems[1]	
Q11	Q1	I_q	Q1	I_q
Type	Type	kA	Type	kA
Type of coordination "1" ToC 1	**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	3RV2041-4RA10	5
3RW4047	3RV2041-4MA10	11	3RV2041-4MA10	5
3RW4055	3VA2216-5MN32	55	3VL3720-1DC36	12
3RW4056	3VA2220-5MN32	55	3VL3720-1DC36	12
3RW4073	3VA2325-7MN32	100	3VL5731-3DC36	35
3RW4074	3VA2440-7MN32	110	3VL5740-3DC36	35
3RW4075	3VA2450-7MN32	110	3VL5740-3DC36	35
3RW4076	3VA2450-7MN32	110	3VL5040-3DC36	35

[1] For 3RW405 and 3RW407 for systems up to 600 V.

General data

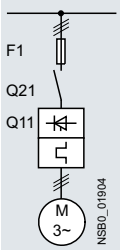
Motor feeders according to IEC with 3NA3 fuses

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 6/9.



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	**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
3RW4055	3NA3244-6	3RT1055	3RT1055	3RT1055
3RW4056	3NA3244-6	3RT1056	3RT1056	3RT1056
3RW4073	2 x 3NA3354-6	3RT1065	3RT1065	3RT1065
3RW4074	2 x 3NA3354-6	3RT1066	3RT1066	3RT1066
3RW4075	2 x 3NA3365-6	3RT1075	3RT1075	3RT1075
3RW4076	2 x 3NA3365-6	3RT1076	3RT1076	3RT1076

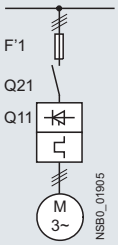
Motor feeders to IEC with 3NE1 SITOR fuses

gR class full-range fuses for semiconductor protection, cable and line 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 6/9.



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	F'1	Q21	Q21	Q21
Type	Type	Type	Type	Type
Type of coordination "2" ToC 2	**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
3RW4055	3NE1227-2	3RT1055	3RT1055	3RT1055
3RW4056	3NE1227-2	3RT1056	3RT1056	3RT1056
3RW4073	3NE1331-2	3RT1065	3RT1065	3RT1065
3RW4074	3NE1333-2	3RT1066	3RT1066	3RT1066
3RW4075	3NE1334-2	3RT1075	3RT1075	3RT1075
3RW4076	3NE1435-2	3RT1076	3RT1076	3RT1076

General data

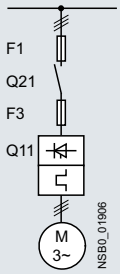
Motor feeders according to IEC with 3NE8 / 3NE4 / 3NE3 / 3NC fuses

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 6/9.



Soft starters	gG class fuse	aR class fuse			Cylindrical fuses	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	**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
3RW4055	3NA3244-6	3NE3227	--	--	--	3RT1055	3RT1055	3RT1055
3RW4056	3NA3244-6	3NE3227	--	--	--	3RT1056	3RT1056	3RT1056
3RW4073	2 x 3NA3354-6	3NE3232-0B	--	--	--	3RT1065	3RT1065	3RT1065
3RW4074	2 x 3NA3354-6	3NE3233	--	--	--	3RT1066	3RT1066	3RT1066
3RW4075	2 x 3NA3365-6	3NE3335	--	--	--	3RT1075	3RT1075	3RT1075
3RW4076	2 x 3NA3365-6	3NE3337-8	--	--	--	3RT1076	3RT1076	3RT1076

Note:

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2/3VA motor starter protectors/circuit breakers can also be used, possibly with reduced short-circuit breaking capacity (see page 6/61). In these cases, optional line contactors can be dispensed with.

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	SD[1]	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		d					
Rated operational voltage U_e 200 ... 480 V															
12.5	3	**5.5**	--	11	3	3	**7.5**	--	**S0**	2	**3RW4024-□BB□4**		1	1 unit	42G
25	5.5	**11**	--	23	5	5	**15**	--	**S0**	2	**3RW4026-□BB□4**		1	1 unit	42G
32	7.5	**15**	--	29	7.5	7.5	**20**	--	**S0**	2	**3RW4027-□BB□4**		1	1 unit	42G
38	11	**18.5**	--	34	10	10	**25**	--	**S0**	2	**3RW4028-□BB□4**		1	1 unit	42G
45	11	**22**	--	42	10	15	**30**	--	**S2**	2	**3RW4036-□BB□4**		1	1 unit	42G
63	18.5	**30**	--	58	15	20	**40**	--	**S2**	2	**3RW4037-□BB□4**		1	1 unit	42G
72	22	**37**	--	62	20	20	**40**	--	**S2**	2	**3RW4038-□BB□4**		1	1 unit	42G
80	22	**45**	--	73	20	25	**50**	--	**S3**	2	**3RW4046-□BB□4**		1	1 unit	42G
106	30	**55**	--	98	30	30	**75**	--	**S3**	2	**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**	5	**3RW4024-□BB□5**		1	1 unit	42G
25	--	11	**15**	23	--	--	15	**20**	**S0**	5	**3RW4026-□BB□5**		1	1 unit	42G
32	--	15	**18.5**	29	--	--	20	**25**	**S0**	5	**3RW4027-□BB□5**		1	1 unit	42G
38	--	18.5	**22**	34	--	--	25	**30**	**S0**	5	**3RW4028-□BB□5**		1	1 unit	42G
45	--	22	**30**	42	--	--	30	**40**	**S2**	5	**3RW4036-□BB□5**		1	1 unit	42G
63	--	30	**37**	58	--	--	40	**50**	**S2**	5	**3RW4037-□BB□5**		1	1 unit	42G
72	--	37	**45**	62	--	--	40	**60**	**S2**	5	**3RW4038-□BB□5**		1	1 unit	42G
80	--	45	**55**	73	--	--	50	**60**	**S3**	5	**3RW4046-□BB□5**		1	1 unit	42G
106	--	55	**75**	98	--	--	75	**75**	**S3**	5	**3RW4047-□BB□5**		1	1 unit	42G

Article No. supplement for connection types

- With screw terminals **1**
- With spring-type terminals[2] **2**

Article No. supplement for rated control supply voltage U_s

- 24 V AC/DC **0**
- 110 ... 230 V AC/DC **1**

[1] Soft starter U_e 200 to 480 V with screw terminals: Standard delivery time SD = 1 day (d).

[2] Main connection from size S2: screw terminals.

Note:

For the constraints for the motor outputs specified here, see page 6/7.

Inline circuit ***IE3/IE4 ready***

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	SD[1]	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		d					
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**	5	**3RW4024-□TB04**		1	1 unit	42G
25	5.5	**11**	--	23	5	5	**15**	--	**S0**	5	**3RW4026-□TB04**		1	1 unit	42G
32	7.5	**15**	--	29	7.5	7.5	**20**	--	**S0**	5	**3RW4027-□TB04**		1	1 unit	42G
38	11	**18.5**	--	34	10	10	**25**	--	**S0**	5	**3RW4028-□TB04**		1	1 unit	42G
45	11	**22**	--	42	10	15	**30**	--	**S2**	5	**3RW4036-□TB04**		1	1 unit	42G
63	18.5	**30**	--	58	15	20	**40**	--	**S2**	5	**3RW4037-□TB04**		1	1 unit	42G
72	22	**37**	--	62	20	20	**40**	--	**S2**	5	**3RW4038-□TB04**		1	1 unit	42G
80	22	**45**	--	73	20	25	**50**	--	**S3**	5	**3RW4046-□TB04**		1	1 unit	42G
106	30	**55**	--	98	30	30	**75**	--	**S3**	5	**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**	5	**3RW4024-□TB05**		1	1 unit	42G
25	--	11	**15**	23	--	--	15	**20**	**S0**	5	**3RW4026-□TB05**		1	1 unit	42G
32	--	15	**18.5**	29	--	--	20	**25**	**S0**	5	**3RW4027-□TB05**		1	1 unit	42G
38	--	18.5	**22**	34	--	--	25	**30**	**S0**	5	**3RW4028-□TB05**		1	1 unit	42G
45	--	22	**30**	42	--	--	30	**40**	**S2**	5	**3RW4036-□TB05**		1	1 unit	42G
63	--	30	**37**	58	--	--	40	**50**	**S2**	5	**3RW4037-□TB05**		1	1 unit	42G
72	--	37	**45**	62	--	--	40	**60**	**S2**	5	**3RW4038-□TB05**		1	1 unit	42G
80	--	45	**55**	73	--	--	50	**60**	**S3**	5	**3RW4046-□TB05**		1	1 unit	42G
106	--	55	**75**	98	--	--	75	**75**	**S3**	5	**3RW4047-□TB05**		1	1 unit	42G

Article No. supplement for connection types

- With screw terminals **1**
- With spring-type terminals[2] **2**

[1] Soft starter U_e 200 to 480 V with screw terminals: Standard delivery time SD = 1 day (d).
[2] Main connection from size S2: screw terminals.

Note:

For the constraints for the motor outputs specified here, see page 6/7.

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

For normal starting (CLASS 10)

3RW405.

3RW407.

3RW ambient temperature 40 °C Rated values of three-phase motors				3RW ambient temperature 50 °C Rated values of three-phase motors					Size	SD[1]	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		d					
Rated operational voltage U_e 200 ... 460 V															
134	37	**75**	--	117	30	40	**75**	--	**S6**	5	**3RW4055-□BB□4**		1	1 unit	42G
162	45	**90**	--	145	40	50	**100**	--		5	**3RW4056-□BB□4**		1	1 unit	42G
230	75	**132**	--	205	60	75	**150**	--	**S12**	5	**3RW4073-□BB□4**		1	1 unit	42G
280	90	**160**	--	248	75	100	**200**	--		5	**3RW4074-□BB□4**		1	1 unit	42G
356	110	**200**	--	315	100	125	**250**	--		5	**3RW4075-□BB□4**		1	1 unit	42G
432	132	**250**	--	385	125	150	**300**	--		5	**3RW4076-□BB□4**		1	1 unit	42G
Rated operational voltage U_e 400 ... 600 V															
134	--	75	**90**	117	--	--	75	**100**	**S6**	5	**3RW4055-□BB□5**		1	1 unit	42G
162	--	90	**110**	145	--	--	100	**150**		5	**3RW4056-□BB□5**		1	1 unit	42G
230	--	132	**160**	205	--	--	150	**200**	**S12**	5	**3RW4073-□BB□5**		1	1 unit	42G
280	--	160	**200**	248	--	--	200	**250**		5	**3RW4074-□BB□5**		1	1 unit	42G
356	--	200	**250**	315	--	--	250	**300**		5	**3RW4075-□BB□5**		1	1 unit	42G
432	--	250	**315**	385	--	--	300	**400**		5	**3RW4076-□BB□5**		1	1 unit	42G

Article No. supplement for connection types[2]

- With spring-type terminals **2**
- With screw terminals **6**

Article No. supplement for rated control supply voltage U_s[3]

- 115 V AC **3**
- 230 V AC **4**

1) Soft starter U_e 200 to 460 V with screw terminals:
Standard delivery time SD = 1 day (d),
soft starter U_e 400 to 600 V with screw terminals:
Standard delivery time SD = 2 days (d).

2) Main circuit connection: busbar connection.

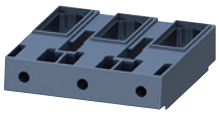
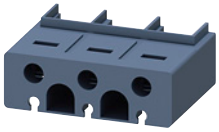
3) Control by way of the internal 24 V DC supply and direct control via PLC possible.

Note:

For the constraints for the motor outputs specified here, see page 6/7.

Selection and ordering data

	Conductor cross-section Solid or stranded	Finely stranded with end sleeve	AWG cables, solid or stranded	Tightening torque	For soft starters size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm²	mm²	AWG	Nm		d					
Three-phase infeed terminals											
 3RV2925-5AB	2.5 … 25	2.5 … 16	10 ... 4	3 ... 4	**S0** (3RW402.)	▶	**3RV2925-5AB**		1	1 unit	41E

	For soft starters Type	Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Box terminal blocks for soft starters									
 3RT1956-4G	**For round and ribbon cables** (2 units required for each device)								
	3RW405.	**S6**	• Up to 70 mm²	▶	**3RT1955-4G**		1	1 unit	41B
			• Up to 120 mm²	▶	**3RT1956-4G**		1	1 unit	41B
			Auxiliary conductor connection for box terminals	5	**3TX7500-0A**		1	1 unit	41B
	3RW407.	**S12**	• Up to 240 mm² (with auxiliary conductor connection)	▶	**3RT1966-4G**		1	1 unit	41B
Auxiliary terminals									
 3RT2946-4F	**Auxiliary terminals, 3-pole**								
	3RW404.	**S3**		5	**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 (2 units required per device)								
	3RW403.	**S2**		▶	**3RT2936-4EA2**		1	1 unit	41B
	3RW404.	**S3**		▶	**3RT2946-4EA2**		1	1 unit	41B
	3RW405.	**S6**		▶	**3RT1956-4EA2**		1	1 unit	41B
	3RW407.	**S12**		2	**3RT1966-4EA2**		1	1 unit	41B
 3RT1946-4EA1	**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 (2 units required per device)	5	**3RT1946-4EA1**		1	1 unit	41B
	3RW405.	**S6**		▶	**3RT1956-4EA1**		1	1 unit	41B
	3RW407.	**S12**		2	**3RT1966-4EA1**		1	1 unit	41B
	Also fits in case of S6 and S12 on mounted box terminals								
 3RW4900-0PB10	**Sealing covers**								
	3RW402. to 3RW404.	**S0, S2, S3**		5	**3RW4900-0PB10**		1	1 unit	42G
	3RW405. and 3RW407.	**S6, S12**		5	**3RW4900-0PB00**		1	1 unit	42G

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

Standard mounting rail adapters

For motor starter protectors Size	For soft starters Size	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		For mechanical fixing of motor starter protector and soft starter; for snapping onto standard mounting rail or for screw fixing						
S2	**S2**	**Single-unit packaging**	2	**3RA2932-1CA00**		1	1 unit	41B

3RA2932-1CA00

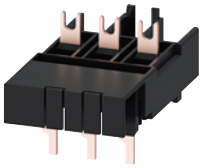
Fans (to increase switching frequency and for device mounting in positions different to the standard position)

For soft starters Type	Size	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RW402.	**S0**	▶	**3RW4928-8VB00**		1	1 unit	42G
3RW403., 3RW404.	**S2, S3**	▶	**3RW4947-8VB00**		1	1 unit	42G

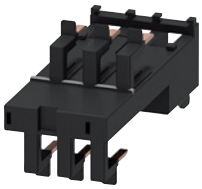
3RW4928-8VB00,
3RW4947-8VB00

Link modules to motor starter protectors[1)]

For soft starters Type	Size	Motor starter protectors Size	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				Screw terminals				
3RW402.	**S0**	**S00/S0**	2	**3RA2921-1BA00**		1	1 unit	41B
3RW4036.	**S2**	**S2**	▶	**3RA2931-1AA00**		1	1 unit	41B
3RW4046., 3RW4047.	**S3**	**S3**	▶	**3RA1941-1AA00**		1	1 unit	41B
				Spring-type terminals				
3RW402.	**S0**	**S0**	2	**3RA2921-2GA00**		1	1 unit	41B



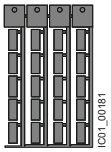
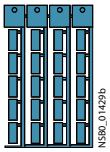
3RA2921-1BA00



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 standard mounting rail adapter (specially for soft starters).
Can be used in size S3 only with mounting plate.

Accessories

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Tools for opening spring-type terminals in sizes S00 and S0							
			Spring-type terminals				
 3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-type terminals Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	2	**3RA2908-1A**		1	1 unit	41B
Blank labels							
 3RT2900-1SB20	**Unit labeling plates**[1] For SIRIUS devices • 20 mm x 7 mm, titanium gray	20	**3RT2900-1SB20**		100	340 units	41B
 3RT1900-1SB20	• 20 mm x 7 mm, pastel turquoise	20	**3RT1900-1SB20**		100	340 units	41B

[1] PC labeling systems for individual inscription of unit labeling plates are available from: murrplastik Systemtechnik GmbH, see page 16/16.

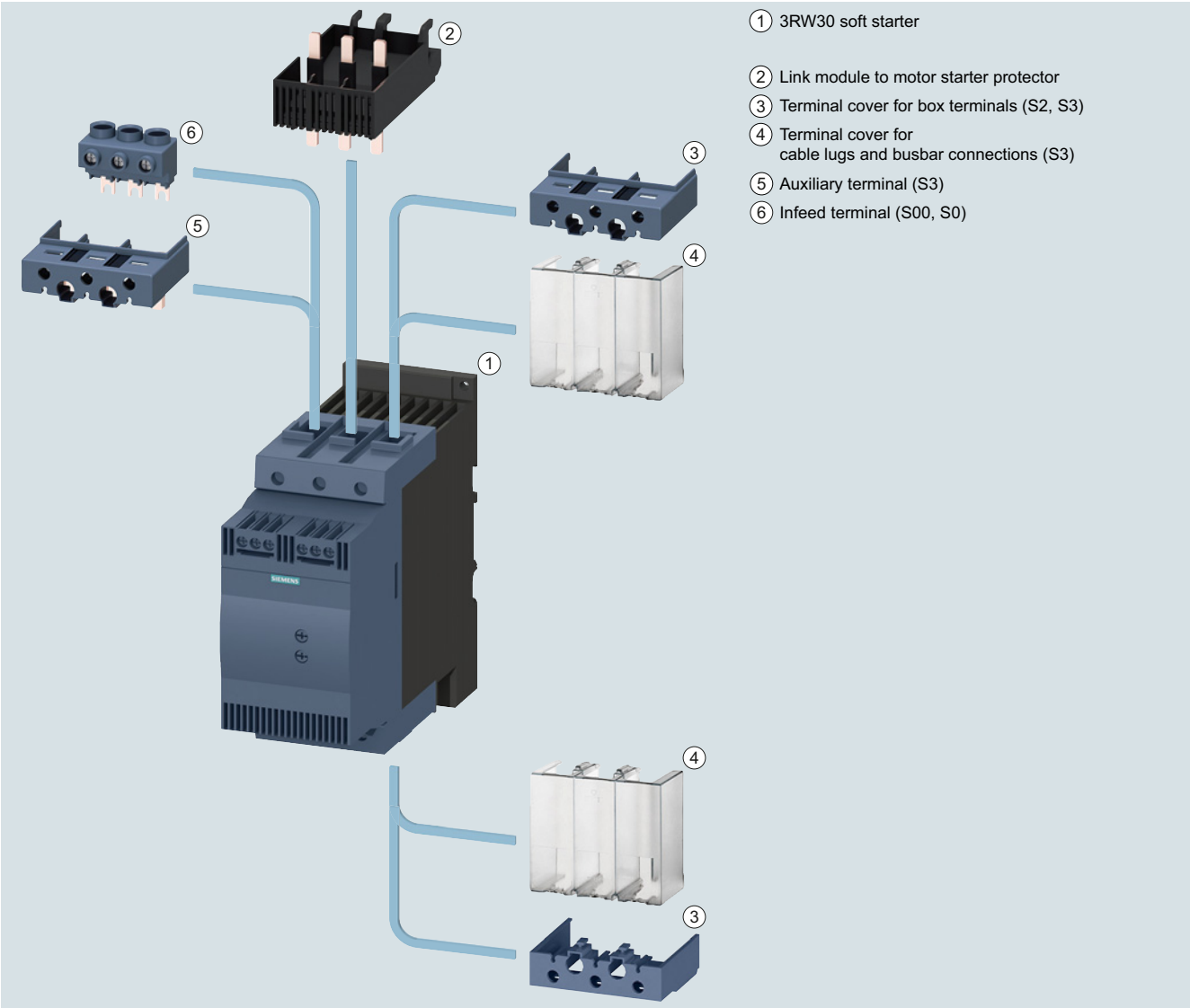
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Overview

More information	
Homepage, see www.siemens.com/soft-starter Industry Mall, see www.siemens.com/product?3RW	TIA Selection Tool Cloud (TST Cloud), see https://mall.industry.siemens.com/spice/tstweb/?KMAT=3rw30 Simulation Tool for Soft Starters (STS), see page 6/7 or https://support.industry.siemens.com/cs/ww/en/view/101494917

The SIRIUS 3RW30 Basic Performance soft starters are suitable for soft starting of three-phase asynchronous motors.

Due to two-phase control, the current is kept at minimum values in all three phases throughout the entire start-up time and disturbing direct current components are eliminated in addition. This not only enables the two-phase starting of motors up to 55 kW (at 400 V) but also avoids the current and torque peaks which occur e.g. with 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 terminal (S3)
6. Infeed terminal (S00, S0)

3RW30 Basic Performance soft starter with accessories (see page 6/81)

Benefits


3RW301.


3RW302.


3RW303.

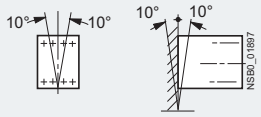
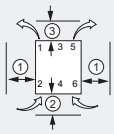
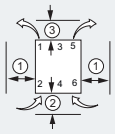

3RW304.


3RW3003-2CB54

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 bypass contact system	Reduction of power loss during operation
"Polarity Balancing" control method	Avoidance of direct current components in two-phase controlled soft starters.

Technical specifications

More information	
Manual "SIRIUS 3RW30/3RW40 Soft Starters", 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-type 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 available)					
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 6/7)			
Degree of protection		IP20 for 3RW301. and 3RW302.; IP00 for 3RW303. and 3RW304.			

1) In the case of deviations, please observe derating, see Manual in the chapter "Configuring".

Type	Terminal		3RW301., 3RW302.		3RW303., 3RW304.	
Control electronics						
Rated values Rated control supply voltage • Tolerance	 A1/A2	 V %	 24 ± 20	 110 ... 230 -15/+10	 24 ± 20	 110 ... 230 -15/+10
Rated frequency • Tolerance		Hz %	50/60 ± 10			

Type		3RW301.	3RW302.	3RW303.	3RW304.
Power electronics					
Rated operational voltage Tolerance	V AC %	200 ... 480 -15/+10			
Rated frequency Tolerance	Hz %	50/60 ± 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			

General data

Type		3RW3013	3RW3014	3RW3016	3RW3017	3RW3018
Power electronics						
Load rating with rated operational current I_e						
• According to IEC and UL/CSA[1], for individual mounting, AC-53a						
- At 40 °C	A	3.6	6.5	9	12.5	17.6
- At 50 °C	A	3.3	6	8	12	17
- At 60 °C	A	3	5.5	7	11	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], for individual mounting, AC-53a				
- At 40 °C	A	25.3	32.2	38
- At 50 °C	A	23	29	34
- At 60 °C	A	21	26	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.

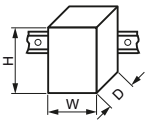
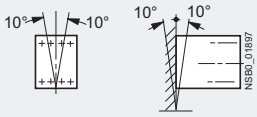
3) For intermittent duty S4 with ON period = 30%, T_u = 40 / 50 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode. Factors for permissible switching frequency with deviating mounting position, direct mounting, side-by-side mounting, see Manual in the chapter "Configuring".

Type		3RW3036	3RW3037	3RW3038	3RW3046	3RW3047
Power electronics						
Load rating with rated operational current I_e						
• According to IEC and UL/CSA[1], for individual mounting, AC-53a						
- At 40 °C	A	45	65	72	80	106
- At 50 °C	A	42	58	62.1	73	98
- At 60 °C	A	39	53	60	66	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.

Type		3RW3003-1CB54	3RW3003-2CB54
Mechanics and environment			
Mounting dimensions (W x H x D) 			
• Screw terminals	mm	22.5 x 100 x 120	--
• Spring-type terminals	mm	--	22.5 x 101.6 x 120
Permissible ambient temperature			
During operation	°C	-25 ... +60; (derating from +40)	
During storage	°C	-40 ... +80	
Weight	kg	0.207	0.188
Permissible mounting position			
Permissible installation altitude	m	5 000 (Derating from 1 000, see characteristic curve on page 6/7)	
Degree of protection acc. to IEC 60529		IP20 (IP00 terminal compartment)	
Control electronics			
Rated values			
Rated control supply voltage	V	24 ... 230 AC/DC	
• Tolerance	%	± 10	
Rated frequency at AC	Hz	50/60	
• Tolerance	%	± 10	
Power electronics			
Rated operational voltage	V AC	200 ... 400	
Tolerance	%	± 10	
Rated frequency	Hz	50/60	
Tolerance	%	± 10	
Uninterrupted duty (% of I_e)	%	100	
Minimum load[1] (% of I_e); at 40 °C	%	9	
Maximum conductor length between soft starter and motor	m	100[2]	
Load rating with rated operational current I_e			
• According to IEC and UL/CSA for individual mounting at 40/50/60 °C, AC-53a	A	3/2.6/2.2	
• According to IEC and UL/CSA for side-by-side-mounting at 40/50/60 °C, AC-53a	A	2.6/2.2 /1.8	
Power loss			
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	6.5	
• With utilization of maximum switching frequency	W	3	
Permissible starts per hour (cannot be increased by using a fan)			
• For intermittent duty S4 T_u = 40 °C, stand-alone installation vertical	1/h	1 500	
• ON period = 70% for 300% I_e	1/s	0.2	
Dead time after uninterrupted duty with I_e before restart	s	0	

1) The rated motor current (specified on the motor's name plate) should at least amount to the specified percentage of the SIRIUS soft starter unit's rated operational current I_e.

2) If this value is exceeded, problems with line capacities may arise, which can result in false firing.

General data

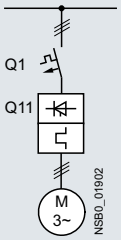
Motor feeders according to IEC with 3RV2 motor starter protectors

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 6/9.



Soft starters	Motor starter protectors/circuit breakers for 400 V systems	
Q11 Type	Q1 Type	I_q kA
Type of coordination "1" ToC 1		
3RW3003	3RV2011-1EA10	50
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

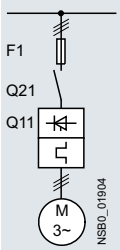
Motor feeders according to IEC with 3NA3 fuses

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 6/9.



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	**Inline circuit**		
3RW3003[1]	3NA3805[2]	3RT2015	3RT2015
3RW3013 **3RW3014**	3NA3803-6 3NA3805-6	3RT2015 3RT2015	3RT2015 3RT2016
3RW3016 **3RW3017** **3RW3018**	3NA3807-6 3NA3810-6 3NA3814-6	3RT2016 3RT2018 3RT2026	3RT2017 3RT2025 3RT2026
3RW3026 **3RW3027** **3RW3028**	3NA3822-6 3NA3824-6 3NA3824-6	3RT2026 3RT2027 3RT2028	3RT2027 3RT2028 3RT2035
3RW3036 **3RW3037** **3RW3038**	3NA3130-6 3NA3132-6 3NA3132-6	3RT2036 3RT2037 3RT2038	3RT2036 3RT2037 3RT2038
3RW3046 **3RW3047**	3NA3136-6 3NA3136-6	3RT2045 3RT2047	3RT2045 3RT2047

1) I_q = 50 kA at 400 V.
2) 3NA3805-1 (NH00), 5SB261 (DIAZED), 5SE2201-6 (NEOZED).

General data

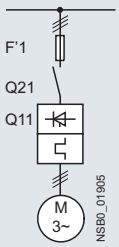
Motor feeders according to IEC with 3NE1 SITOR fuses

gR class full-range fuses for semiconductor protection,
cable and line 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 6/9.



Soft starters Q11 Type	gG class fuse for systems up to 480 V F'1 Type	Line contactor (optional) for systems up to 400 V Q21 Type	for systems up to 480 V Q21 Type
Type of coordination "2" ToC 2	**Inline circuit**		
3RW3003[1]	3NE1813-0[2]	3RT2015	3RT2015
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

1) I_q = 50 kA at 400 V.
2) No SITOR fuse required!
Alternatively: 3NA3803 (NH00), 5SB221 (DIAZED), 5SE2206 (NEOZED).

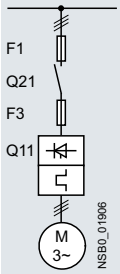
Motor feeders according to IEC with 3NE8 / 3NE4 / 3NE3 / 3NC fuses

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 6/9.



Soft starters	gG class fuse	aR class fuse			Cylindrical fuses	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	**Inline circuit**						
3RW3003[1]	3NA3805[2]	--		3NE8015-1	3NC1010	3RT2015	3RT2015
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

[1] I_q = 50 kA at 400 V.
[2] 3NA3805-1 (NH00), 5SB261 (DIAZED).

Note:

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2/3VA motor starter protectors/circuit breakers can also be used, possibly with reduced short-circuit breaking capacity (see page 6/76). In these cases, optional line contactors can be dispensed with.

Selection and ordering data

For simple starting conditions


3RW301.


3RW302.


3RW303.


3RW304.


3RW3003-2CB54

3RW ambient temperature 40 °C Rated values of three-phase motors				3RW ambient temperature 50 °C Rated values of three-phase motors					Size	SD[1]	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		d					
Rated operational voltage U_e 200 ... 480 V															
3.6	0.75	**1.5**	--	3	0.5	0.5	**1.5**	--	**S00**	2	**3RW3013-□BB□4**		1	1 unit	42G
6.5	1.5	**3**	--	6	1	1	**3**	--	**S00**	2	**3RW3014-□BB□4**		1	1 unit	42G
9	2.2	**4**	--	8	2	2	**5**	--	**S00**	2	**3RW3016-□BB□4**		1	1 unit	42G
12.5	3	**5.5**	--	12	3	3	**7.5**	--	**S00**	2	**3RW3017-□BB□4**		1	1 unit	42G
17.6	4	**7.5**	--	17	3	3	**10**	--	**S00**	2	**3RW3018-□BB□4**		1	1 unit	42G
25	5.5	**11**	--	23	5	5	**15**	--	**S0**	2	**3RW3026-□BB□4**		1	1 unit	42G
32	7.5	**15**	--	29	7.5	7.5	**20**	--	**S0**	2	**3RW3027-□BB□4**		1	1 unit	42G
38	11	**18.5**	--	34	10	10	**25**	--	**S0**	2	**3RW3028-□BB□4**		1	1 unit	42G
45	11	**22**	--	42	10	15	**30**	--	**S2**	2	**3RW3036-□BB□4**		1	1 unit	42G
63	18.5	**30**	--	58	15	20	**40**	--	**S2**	2	**3RW3037-□BB□4**		1	1 unit	42G
72	22	**37**	--	62	20	20	**40**	--	**S2**	2	**3RW3038-□BB□4**		1	1 unit	42G
80	22	**45**	--	73	20	25	**50**	--	**S3**	2	**3RW3046-□BB□4**		1	1 unit	42G
106	30	**55**	--	98	30	30	**75**	--	**S3**	2	**3RW3047-□BB□4**		1	1 unit	42G

Article No. supplement for connection types

- With screw terminals **1**
- With spring-type terminals[2] **2**

Article No. supplement for rated control supply voltage U_s

- 24 V AC/DC **0**
- 110 ... 230 V AC/DC **1**

Soft starters for simple starting conditions and high switching frequency, rated operational voltage U_e 200 ... 400 V, rated control supply voltage U_s 24 ... 230 V AC/DC															
3	0.55	**1.1**	--	A	0.5	**0.5**	--	--	22.5 mm						
• With screw terminals										▶	**3RW3003-1CB54**		1	1 unit	42G
• With spring-type terminals										▶	**3RW3003-2CB54**		1	1 unit	42G

[1] Soft starter U_e 200 to 480 V with screw terminals: Standard delivery time SD = 1 day (d).

[2] Main connection from size S2: screw terminals.

Note:

For the constraints for the motor outputs specified here, see page 6/7.

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

Accessories

More information

Manual "SIRIUS 3RW30/3RW40 Soft Starters", see
https://support.industry.siemens.com/cs/ww/en/view/38752095

	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 soft starters size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm²	mm²	AWG	Nm		d					
Three-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

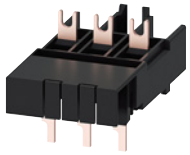
	For soft starters: Type	For soft starters: Size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					
Auxiliary terminals								
 3RT2946-4F	**Auxiliary terminals, 3-pole**							
	3RW304.	**S3**	5	**3RT2946-4F**		1	1 unit	41B
Covers for soft starters								
 3RT2936-4EA2	**Terminal covers for box terminals** Additional touch protection to be fitted at the box terminals (2 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 (2 units required per device)							
	3RW304.	**S3**	5	**3RT1946-4EA1**		1	1 unit	41B

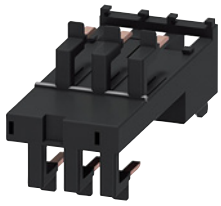
	For motor starter protectors: Size	For soft starters: Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Mounting rails for mounting contactors for the customer assembly of 3RA21 load feeders with busbar adapters for 60 mm systems									
 8US1998-7CB45	--	**S0**	For the discrete 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. For pushing onto the device adapter, including fixing screws	2	**8US1998-7CB45**		1	10 units	14O
Standard mounting rail adapters									
 3RA2932-1CA00	**S2**	**S2**	For mechanical fixing of motor starter protector and soft starter; for snapping onto standard mounting rail or for screw fixing **Single-unit packaging**	2	**3RA2932-1CA00**		1	1 unit	41B

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

Accessories

Link modules to motor starter protectors[1)]


3RA2921-1BA00


3RA2921-2GA00

For soft starters Type	Size	Motor starter protectors Size	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				Screw terminals				
3RW301.	**S00**	**S00**	2	**3RA2921-1BA00**		1	1 unit	41B
3RW302.	**S0**	**S00/S0**	2	**3RA2921-1BA00**		1	1 unit	41B
3RW3036.	**S2**	**S2**	▶	**3RA2931-1AA00**		1	1 unit	41B
3RW3046., 3RW3047.	**S3**	**S3**	▶	**3RA1941-1AA00**		1	1 unit	41B
				Spring-type terminals				
3RW301.	**S00**	**S00**	2	**3RA2911-2GA00**		1	1 unit	41B
3RW302.	**S0**	**S0**	2	**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 standard mounting rail adapter (specially for soft starters). Can be used in size S3 only on mounting plate.

Covers and push-in lugs (only for 3RW3003)


3RP1902


3RP1903

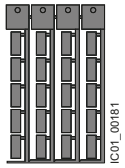
Version	Functionality Functions	Use	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Sealable covers	For securing against unauthorized adjustment of setting knobs	For devices with 1 or 2 CO contacts	5	**3RP1902**		1	5 units	41H
Push-in lugs for screw fixing	--	For devices with 1 or 2 CO contacts	5	**3RP1903**		1	10 units	41H

Tools for opening spring-type terminals in sizes S00 and S0

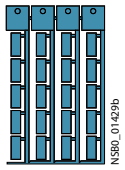

3RA2908-1A

Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		Spring-type terminals				
Screwdrivers For all SIRIUS devices with spring-type terminals Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	2	**3RA2908-1A**		1	1 unit	41B

Blank labels



3RT2900-1SB20



3RT1900-1SB20

	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Unit labeling plates[1)] For SIRIUS devices						
• 20 mm x 7 mm, titanium gray	20	**3RT2900-1SB20**		100	340 units	41B
• 20 mm x 7 mm, pastel turquoise	20	**3RT1900-1SB20**		100	340 units	41B

1) PC labeling systems for individual inscription of unit labeling plates are available from: murrplastik Systemtechnik GmbH, see page 16/16.

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

Overview

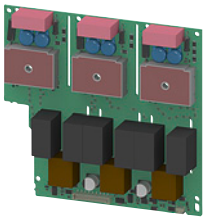
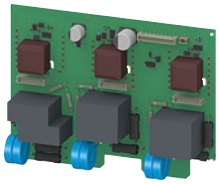
More information	
Homepage, see www.siemens.com/soft-starter Industry Mall, see www.siemens.com/product?3RW	Industry Online Support (SIOS), see https://support.industry.siemens.com/cs/ww/en/view/109747404

Selection and ordering data

	Product designation	Manufacturer's Article No. of the soft starter	Type of product	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Power semiconductor modules									
 3RW5952-0SF04	**Power semiconductor module**	3RW5524-.HA.4 (3x)	480 V, 47 A	1	**3RW5952-0SF04**		1	1 unit	42S
		3RW5525-.HA.4, 3RW5526-.HA.4 (3x)	480 V, 77 A	1	**3RW5952-0SH04**		1	1 unit	42S
		3RW5527-.HA.4 (3x)	480 V, 93 A	1	**3RW5952-0SJ04**		1	1 unit	42S
		3RW5534-.HA.4, 3RW5535-.HA.4 (3x)	480 V, 143 A	1	**3RW5953-0SL04**		1	1 unit	42S
		3RW5536-.HA.4 (3x)	480 V, 171 A	1	**3RW5953-0SM04**		1	1 unit	42S
		3RW5543-.HA.4 (3x)	480 V, 210 A	1	**3RW5954-0SN04**		1	1 unit	42S
		3RW5544-.HA.4 (3x)	480 V, 250 A	1	**3RW5954-0SP04**		1	1 unit	42S
		3RW5545-.HA.4, 3RW5546-.HA.4 (3x)	480 V, 370 A	1	**3RW5954-0SR04**		1	1 unit	42S
		3RW5547-.HA.4, 3RW5548-.HA.4 (3x)	480 V, 570 A	1	**3RW5954-0ST04**		1	1 unit	42S
 3RW5953-0SM06		3RW5521-.HA.6, 3RW5524-.HA.6 (3x)	690 V, 47 A	1	**3RW5952-0SF06**		1	1 unit	42S
		3RW5525-.HA.6, 3RW5526-.HA.6 (3x)	690 V, 77 A	1	**3RW5952-0SH06**		1	1 unit	42S
		3RW5527-.HA.6 (3x)	690 V, 93 A	1	**3RW5952-0SJ06**		1	1 unit	42S
		3RW5534-.HA.6, 3RW5535-.HA.6 (3x)	690 V, 143 A	1	**3RW5953-0SL06**		1	1 unit	42S
		3RW5536-.HA.6 (3x)	690 V, 171 A	1	**3RW5953-0SM06**		1	1 unit	42S
 3RW5954-0ST06		3RW5543-.HA.6 (3x)	690 V, 210 A	1	**3RW5954-0SN06**		1	1 unit	42S
		3RW5544-.HA.6 (3x)	690 V, 250 A	1	**3RW5954-0SP06**		1	1 unit	42S
		3RW5545-.HA.6, 3RW5546-.HA.6 (3x)	690 V, 370 A	1	**3RW5954-0SR06**		1	1 unit	42S
		3RW5547-.HA.6, 3RW5548-.HA.6 (3x)	690 V, 570 A	1	**3RW5954-0ST06**		1	1 unit	42S
Bypass units									
 3RW5953-0BY00	**Bypass unit**	3RW552, 3RW553	--	1	**3RW5953-0BY00**		1	1 unit	42S
		3RW5543, 3RW5544, 3RW5545	210 A to 315 A	1	**3RW5954-0BP00**		1	1 unit	42S
		3RW5546, 3RW5547, 3RW5548	370 A to 570 A	1	**3RW5954-0BT00**		1	1 unit	42S
Control units									
 3RW5950-1UY00	**Control unit**	3RW55..-.HA0.	24 V	1	**3RW5950-1UY00**		1	1 unit	42S
		3RW55..-.HA1.	110 - 250 V	1	**3RW5950-1UY10**		1	1 unit	42S

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

for 3RW55 NEW

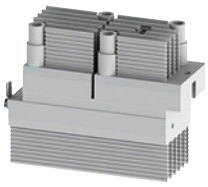
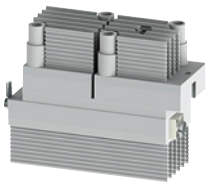
	Product designation	Manufacturer's Article No. of the soft starter	Type of product	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Printed circuit boards									
 3RW5951-0PA04	**Printed circuit board**	3RW5513-.HA.4	480 V, 13 A	1	**3RW5951-0PA04**		1	1 unit	42S
		3RW5514-.HA.4	480 V, 18 A	1	**3RW5951-0PB04**		1	1 unit	42S
		3RW5515-.HA.4	480 V, 25 A	1	**3RW5951-0PC04**		1	1 unit	42S
		3RW5516-.HA.4	480 V, 32 A	1	**3RW5951-0PD04**		1	1 unit	42S
		3RW5517-.HA.4	480 V, 38 A	1	**3RW5951-0PE04**		1	1 unit	42S
		3RW552.-.HA.4, 3RW553.-.HA.4	480 V	1	**3RW5953-0PY04**		1	1 unit	42S
		3RW554.-.HA.4	480 V	1	**3RW5954-0PY04**		1	1 unit	42S
		3RW5513-.HA.5	600 V, 13 A	1	**3RW5951-0PA05**		1	1 unit	42S
		3RW5514-.HA.5	600 V, 18 A	1	**3RW5951-0PB05**		1	1 unit	42S
		3RW5515-.HA.5	600 V, 25 A	1	**3RW5951-0PC05**		1	1 unit	42S
		3RW5516-.HA.5	600 V, 32 A	1	**3RW5951-0PD05**		1	1 unit	42S
		3RW5517-.HA.5	600 V, 38 A	1	**3RW5951-0PE05**		1	1 unit	42S
 3RW5954-0PY06		3RW552.-.HA.6, 3RW553.-.HA.6	690 V	1	**3RW5953-0PY06**		1	1 unit	42S
		3RW554.-.HA.6	690 V	1	**3RW5954-0PY06**		1	1 unit	42S
Fans									
 3RW5983-0FF00	**Fan**	3RW551 (1x), 3RW552, 3RW553 (2x)	--	1	**3RW5983-0FF00**		1	1 unit	42S
		3RW554	--	1	**3RW5984-0FF00**		1	1 unit	42S
Terminals									
 3RW5982-0TB00	**Box terminal block**	3RW552 (2x)	--	1	**3RW5982-0TB00**		1	1 unit	42S
					Screw terminals				
 3RW5980-1TR00	**Removable control terminals**	3RW551.-1HA.., 3RW552.-1HA.., 3RW553.-6HA.., 3RW554.-6HA.. (2x)	contains 2 blocks each with 6 terminals	1	**3RW5980-1TR00**		1	1 unit	42S
					Spring-type terminals				
		3RW551.-3HA.., 3RW552.-3HA.., 3RW553.-2HA.., 3RW554.-2HA.. (2x)	contains 2 blocks each with 6 terminals	1	**3RW5980-2TR00**		1	1 unit	42S
Enclosure components									
 3RW5953-0GB00	**Enclosure base**	3RW552, 3RW553	--	1	**3RW5953-0GB00**		1	1 unit	42S
		3RW554		1	**3RW5954-0GB00**		1	1 unit	42S
 3RW5950-0GD20	**Cover for control cable duct**	3RW55	Titanium gray	1	**3RW5950-0GD20**		1	1 unit	42S

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

	Product designation	Manufacturer's Article No. of the soft starter	Type of product	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosure components (continued)									
 3RW5954-0GF00	**Front cover**	3RW554	--	1	**3RW5954-0GF00**		1	1 unit	42S
 3RW5950-0GL30	**Hinged cover**	3RW55	With cutout for HMI module High Feature	1	**3RW5950-0GL30**		1	1 unit	42S
HMI modules									
 3RW5980-0HF00	**HMI module**	3RW55	High Feature	1	**3RW5980-0HF00**		1	1 unit	42S
 3RW5980-0HL00	**Interface cover**	3RW55	--	1	**3RW5980-0HL00**		1	1 unit	42S
Connection cables for HMI									
 3UF7931-0AA00-0	**Connection cables**	--	0.1 m, flat	▶	**3UF7931-0AA00-0**		1	1 unit	42J
Transport packaging									
 3RW5953-0VY00	**Transport packaging**	3RW551	--	1	**3RW5951-0VY00**		1	1 unit	42S
		3RW552, 3RW553	--	1	**3RW5953-0VY00**		1	1 unit	42S
		3RW554	--	1	**3RW5954-0VY00**		1	1 unit	42S

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

Selection and ordering data

	For soft starters Type	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Power semiconductor modules								
 3RW4743-0LC00	3RW4443	690 V, 203 A (2 units required per device)	1	**3RW4743-0LC00**		1	1 unit	42H
	3RW4444, 3RW4445	690 V, 313 A (2 units required per device)	1	**3RW4745-0LC00**		1	1 unit	42H
	3RW4446	690 V, 356 A (2 units required per device)	1	**3RW4746-0LC00**		1	1 unit	42H
	3RW4447	690 V, 432 A (2 units required per device)	1	**3RW4747-0LC00**		1	1 unit	42H
	3RW4453, 3RW4454, 3RW4455	690 V, 693 A (2 units required per device)	3	**3RW4755-0LC00**		1	1 unit	42H
	3RW4456, 3RW4457, 3RW4458	690 V, 970 A (2 units required per device)	3	**3RW4758-0LC00**		1	1 unit	42H
	3RW4465, 3RW4466	690 V, 1 214 A (2 units required per device)	3	**3RW4766-0LC00**		1	1 unit	42H
NTC power semiconductor modules								
 3RW4743-0NC00	3RW4443	690 V, 203 A	1	**3RW4743-0NC00**		1	1 unit	42H
	3RW4444, 3RW4445	690 V, 313 A	1	**3RW4745-0NC00**		1	1 unit	42H
	3RW4446	690 V, 356 A	1	**3RW4746-0NC00**		1	1 unit	42H
	3RW4447	690 V, 432 A	1	**3RW4747-0NC00**		1	1 unit	42H
	3RW4453, 3RW4454, 3RW4455	690 V, 693 A	3	**3RW4755-0NC00**		1	1 unit	42H
	3RW4456, 3RW4457, 3RW4458	690 V, 970 A	3	**3RW4758-0NC00**		1	1 unit	42H
	3RW4465, 3RW4466	690 V, 1 214 A	3	**3RW4766-0NC00**		1	1 unit	42H
Bypass units								
 3RW4755-0KC00	3RW4453, 3RW4454, 3RW4455	--	2	**3RW4755-0KC00**		1	1 unit	42H
	3RW4456, 3RW4457	--	2	**3RW4766-0KC00**		1	1 unit	42H
	3RW4458, 3RW4465, 3RW4466	--	2	**3RW4766-0KC01**		1	1 unit	42H
Control units with screw terminals								
 3RW4722-1SC44	3RW4422-.BC4.	230 V	1	**3RW4722-1SC44**		1	1 unit	42H
	3RW4423-.BC4.	230 V	1	**3RW4723-1SC44**		1	1 unit	42H
	3RW4424-.BC4.	230 V	1	**3RW4724-1SC44**		1	1 unit	42H
	3RW4425-.BC4.	230 V	1	**3RW4725-1SC44**		1	1 unit	42H
	3RW4426-.BC4.	230 V	1	**3RW4726-1SC44**		1	1 unit	42H
	3RW4427-.BC4.	230 V	1	**3RW4727-1SC44**		1	1 unit	42H
	3RW4434-.BC4.	230 V	1	**3RW4734-6SC44**		1	1 unit	42H
	3RW4435-.BC4.	230 V	1	**3RW4735-6SC44**		1	1 unit	42H
	3RW4436-.BC4.	230 V	1	**3RW4736-6SC44**		1	1 unit	42H
	3RW4443-.BC4.	230 V	1	**3RW4743-6SC44**		1	1 unit	42H
	3RW4444-.BC4.	230 V	1	**3RW4744-6SC44**		1	1 unit	42H
	3RW4445-.BC4.	230 V	1	**3RW4745-6SC44**		1	1 unit	42H
	3RW4446-.BC4.	230 V	1	**3RW4746-6SC44**		1	1 unit	42H
	3RW4447-.BC4.	230 V	1	**3RW4747-6SC44**		1	1 unit	42H
	3RW4453-.BC4.	230 V	1	**3RW4753-6SC44**		1	1 unit	42H
	3RW4454-.BC4.	230 V	1	**3RW4754-6SC44**		1	1 unit	42H
	3RW4455-.BC4.	230 V	1	**3RW4755-6SC44**		1	1 unit	42H
	3RW4456-.BC4.	230 V	1	**3RW4756-6SC44**		1	1 unit	42H
	3RW4457-.BC4.	230 V	1	**3RW4757-6SC44**		1	1 unit	42H
	3RW4458-.BC4.	230 V	1	**3RW4758-6SC44**		1	1 unit	42H
	3RW4465-.BC4.	230 V	1	**3RW4765-6SC44**		1	1 unit	42H
	3RW4466-.BC4.	230 V	1	**3RW4766-6SC44**		1	1 unit	42H

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

	For soft starters Type	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
TSE printed circuit boards								
 3RW4756-0WC70	3RW4453.-.BC.4, 3RW4454.-.BC.4, 3RW4455.-.BC.4, 3RW4456.-.BC.4	460 V	2	**3RW4756-0WC70**		1	1 unit	42H
	3RW4457.-.BC.4, 3RW4458.-.BC.4, 3RW4465.-.BC.4, 3RW4466.-.BC.4	460 V	2	**3RW4766-0WC70**		1	1 unit	42H
	3RW4453.-.BC.5, 3RW4453.-.BC.6, 3RW4454.-.BC.5, 3RW4454.-.BC.6, 3RW4455.-.BC.5, 3RW4455.-.BC.6, 3RW4456.-.BC.5, 3RW4456.-.BC.6	690 V	2	**3RW4756-0WC50**		1	1 unit	42H
	3RW4457-.BC.5, 3RW4457-.BC.6, 3RW4458-.BC.5, 3RW4458-.BC.6, 3RW4465-.BC.5, 3RW4465-.BC.6, 3RW4466-.BC.5, 3RW4466-.BC.6	690 V	2	**3RW4766-0WC50**		1	1 unit	42H
Firing printed circuit boards								
 3RW4727-0VC70	3RW442.-.BC.4	460 V	2	**3RW4727-0VC70**		1	1 unit	42H
	3RW443.-.BC.4, 3RW4443-.BC.4	460 V	2	**3RW4743-0VC70**		1	1 unit	42H
	3RW4444-.BC.4, 3RW4445-.BC.4	460 V	2	**3RW4745-0VC70**		1	1 unit	42H
	3RW4446-.BC.4, 3RW4447-.BC.4	460 V	2	**3RW4747-0VC70**		1	1 unit	42H
	3RW445.-.BC.4, 3RW446.-.BC.4	460 V	2	**3RW4766-0VC70**		1	1 unit	42H
	3RW442.-.BC.5	600 V	2	**3RW4727-0VC80**		1	1 unit	42H
	3RW443.-.BC.5, 3RW4443-.BC.5	600 V	2	**3RW4743-0VC80**		1	1 unit	42H
	3RW442.-.BC.6	690 V	2	**3RW4727-0VC50**		1	1 unit	42H
	3RW443.-.BC.6, 3RW4444-.BC.5, 3RW4445-.BC.5	690 V	2	**3RW4745-0VC50**		1	1 unit	42H
	3RW4443-.BC.6, 3RW4446-.BC.5, 3RW4447-.BC.5, 3RW4447-.BC.6	690 V	2	**3RW4746-0VC50**		1	1 unit	42H
	3RW4444-.BC.6, 3RW4445-.BC.6, 3RW4446-.BC.6	690 V	2	**3RW4747-0VC50**		1	1 unit	42H
	3RW445.-.BC.5, 3RW445.-.BC.6, 3RW446.-.BC.5, 3RW446.-.BC.6	690 V	2	**3RW4766-0VC50**		1	1 unit	42H
Fans								
 3RW4957-8VX.0, 3RW4966-8VX.0	3RW442.-.BC3.[1], 3RW443.-.BC3.	115 V	▶	**3RW4936-8VX30**		1	1 unit	42G
	3RW442.-.BC4.[1], 3RW443.-.BC4.	230 V	▶	**3RW4936-8VX40**		1	1 unit	42G
	3RW444.-.BC3.	115 V	▶	**3RW4947-8VX30**		1	1 unit	42G
	3RW444.-.BC4.	230 V	▶	**3RW4947-8VX40**		1	1 unit	42G
	3RW445.-.BC3., 3RW446.-.BC3.[2]	115 V	▶	**3RW4957-8VX30**		1	1 unit	42H
	3RW445.-.BC4., 3RW446.-.BC4.[2]	230 V	▶	**3RW4957-8VX40**		1	1 unit	42H
	3RW446.-.BC3.[3]	115 V	▶	**3RW4966-8VX30**		1	1 unit	42H
	3RW446.-.BC4.[3]	230 V	▶	**3RW4966-8VX40**		1	1 unit	42H

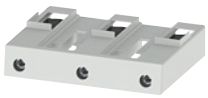
[1] The 3RW4422 and 3RW4423 soft starters do not need fans.
These devices are adequately designed for natural convection.

[2] 3RW446. mounting on output side.

[3] For mounting on front side.

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

for 3RW44

	For soft starters Type	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Removable control terminals								
				Screw terminals				
 3RW4766-6HC00	3RW44	4 blocks each with 6 terminals	1	**3RW4766-6HC00**		1	1 unit	42H
				Spring-type terminals				
	3RW44	4 blocks each with 6 terminals	1	**3RW4766-2HC00**		1	1 unit	42H
Box terminal block								
 3RW4727-0RC00	3RW442.	--	5	**3RW4727-0RC00**		1	10 units	42H
Enclosure base								
 3RW4747-0UC00	3RW444.	--	2	**3RW4747-0UC00**		1	1 unit	42H

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

Overview

More information	
Homepage, see www.siemens.com/soft-starter Industry Mall, see www.siemens.com/product?3RW	Industry Online Support (SIOS), see https://support.industry.siemens.com/cs/ww/en/view/109747404

Selection and ordering data

	Product designation	Manufacturer's Article No. of the soft starter	Type of product	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Power semiconductor modules									
 3RW5952-0SF04	**Power semiconductor module**	3RW5224-..C.4 (3x)	480 V, 47 A	1	**3RW5952-0SF04**		1	1 unit	42S
		3RW5225-..C.4, 3RW5226-..C.4 (3x)	480 V, 77 A	1	**3RW5952-0SH04**		1	1 unit	42S
		3RW5227-..C.4 (3x)	480 V, 93 A	1	**3RW5952-0SJ04**		1	1 unit	42S
		3RW5234-..C.4, 3RW5235-..C.4 (3x)	480 V, 143 A	1	**3RW5953-0SL04**		1	1 unit	42S
		3RW5236-..C.4 (3x)	480 V, 171 A	1	**3RW5953-0SM04**		1	1 unit	42S
		3RW5224-..C.5 (3x)	600 V, 47 A	1	**3RW5952-0SF05**		1	1 unit	42S
		3RW5225-..C.5, 3RW5226-..C.5 (3x)	600 V, 77 A	1	**3RW5952-0SH05**		1	1 unit	42S
 3RW5953-0SM05		3RW5227-..C.5 (3x)	600 V, 93 A	1	**3RW5952-0SJ05**		1	1 unit	42S
		3RW5234-..C.5, 3RW5235-..C.5 (3x)	600 V, 143 A	1	**3RW5953-0SL05**		1	1 unit	42S
		3RW5236-..C.5 (3x)	600 V, 171 A	1	**3RW5953-0SM05**		1	1 unit	42S
		3RW5243 (3x)	600 V, 210 A	1	**3RW5924-0SN05**		1	1 unit	42S
		3RW5244, 3RW5245 (3x)	600 V, 315 A	1	**3RW5924-0SQ05**		1	1 unit	42S
		3RW5246, 3RW5247 (3x)	600 V, 470 A	1	**3RW5924-0SS05**		1	1 unit	42S
		3RW5248 (3x)	600 V, 570 A	1	**3RW5924-0ST05**		1	1 unit	42S
 3RW5924-0ST05									
Bypass units									
 3RW5953-0BY00	**Bypass unit**	3RW522, 3RW523	--	1	**3RW5953-0BY00**		1	1 unit	42S
		3RW5243, 3RW5244, 3RW5245	210 A to 315 A	1	**3RW5954-0BP00**		1	1 unit	42S
		3RW5246, 3RW5247, 3RW5248	370 A to 570 A	1	**3RW5954-0BT00**		1	1 unit	42S
Control units									
 3RW5920-1UA00	**Control unit**	3RW52..-.AC0.	24 V analog output	1	**3RW5920-1UA00**		1	1 unit	42S
		3RW52..-.AC1.	110 - 250 V analog output	1	**3RW5920-1UA10**		1	1 unit	42S
		3RW52..-.TC0.	24 V thermistor input	1	**3RW5920-1UT00**		1	1 unit	42S
		3RW52..-.TC1.	110 - 250 V thermistor input	1	**3RW5920-1UT10**		1	1 unit	42S

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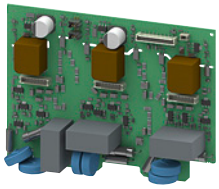
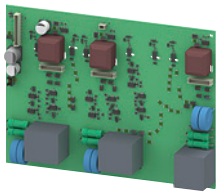
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

for 3RW52 NEW

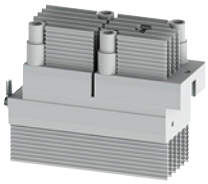
	Product designation	Manufacturer's Article No. of the soft starter	Type of product	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Printed circuit boards									
 3RW5923-0PY04	**Printed circuit board**	3RW5213-..C.4	480 V, 13 A	1	**3RW5921-0PA04**		1	1 unit	42S
		3RW5214-..C.4	480 V, 18 A	1	**3RW5921-0PB04**		1	1 unit	42S
		3RW5215-..C.4	480 V, 25 A	1	**3RW5921-0PC04**		1	1 unit	42S
		3RW5216-..C.4	480 V, 32 A	1	**3RW5921-0PD04**		1	1 unit	42S
		3RW5217-..C.4	480 V, 38 A	1	**3RW5921-0PE04**		1	1 unit	42S
		3RW522.-..C.4, 3RW523.-..C.4	480 V	1	**3RW5923-0PY04**		1	1 unit	42S
		3RW524.-..C.4	480 V	1	**3RW5924-0PY04**		1	1 unit	42S
 3RW5924-0PY05		3RW5213-..C.5	600 V, 13 A	1	**3RW5921-0PA05**		1	1 unit	42S
		3RW5214-..C.5	600 V, 18 A	1	**3RW5921-0PB05**		1	1 unit	42S
		3RW5215-..C.5	600 V, 25 A	1	**3RW5921-0PC05**		1	1 unit	42S
		3RW5216-..C.5	600 V, 32 A	1	**3RW5921-0PD05**		1	1 unit	42S
		3RW5217-..C.5	600 V, 38 A	1	**3RW5921-0PE05**		1	1 unit	42S
		3RW522.-..C.5, 3RW523.-..C.5	600 V	1	**3RW5923-0PY05**		1	1 unit	42S
		3RW524.-..C.5	600 V	1	**3RW5924-0PY05**		1	1 unit	42S
Fans									
 3RW5983-0FF00	**Fans**	3RW5216/17 (1x), 3RW5526/27, 3RW553 (2x)	--	1	**3RW5983-0FF00**		1	1 unit	42S
		3RW524	--	1	**3RW5984-0FF00**		1	1 unit	42S
Terminals									
 3RW5982-0TB00	**Box terminal block**	3RW522 (2x)	--	1	**3RW5982-0TB00**		1	1 unit	42S
					Screw terminals				
 3RW5980-1TR00	**Removable control terminals**	3RW521.-1.C.., 3RW522.-1.C.., 3RW523.-6.C.., 3RW524.-6.C..	contains 2 blocks each with 6 terminals	1	**3RW5980-1TR00**		1	1 unit	42S
					Spring-type terminals				
		3RW521.-3.C.., 3RW522.-3.C.., 3RW523.-2.C.., 3RW524.-2.C..	contains 2 blocks each with 6 terminals	1	**3RW5980-2TR00**		1	1 unit	42S
Enclosure components									
 3RW5953-0GB00	**Enclosure base**	3RW552, 3RW553	--	1	**3RW5953-0GB00**		1	1 unit	42S
		3RW554	--	1	**3RW5954-0GB00**		1	1 unit	42S
 3RW5950-0GD20	**Cover for control cable duct**	3RW52	Titanium gray	1	**3RW5950-0GD20**		1	1 unit	42S

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

	Product designation	Manufacturer's Article No. of the soft starter	Type of product	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
Enclosure components									
 3RW5954-0GF00	**Front cover**	3RW524	--	1	**3RW5954-0GF00**		1	1 unit	42S
 3RW5950-0GL20	**Hinged cover**	3RW52	Without cutout	1	**3RW5950-0GL20**		1	1 unit	42S
Transport packaging									
 3RW5953-0VY00	**Transport packaging**	3RW521	--	1	**3RW5951-0VY00**		1	1 unit	42S
		3RW522, 3RW523	--	1	**3RW5953-0VY00**		1	1 unit	42S
		3RW524	--	1	**3RW5954-0VY00**		1	1 unit	42S

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

Selection and ordering data

	For soft starters Type	Size	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Power semiconductor modules									
 3RW4773-0LB00	3RW4073	S12	600 V, 230 A	1	**3RW4773-0LB00**		1	1 unit	42G
	3RW4074	S12	600 V, 280 A	1	**3RW4774-0LB00**		1	1 unit	42G
	3RW4075	S12	600 V, 356 A	1	**3RW4775-0LB00**		1	1 unit	42G
	3RW4076	S12	600 V, 432 A	1	**3RW4776-0LB00**		1	1 unit	42G
NTC power semiconductor modules									
 3RW4773-0NB00	3RW4073	S12	600 V, 230 A	1	**3RW4773-0NB00**		1	1 unit	42G
	3RW4074	S12	600 V, 280 A	1	**3RW4774-0NB00**		1	1 unit	42G
	3RW4075	S12	600 V, 356 A	1	**3RW4775-0NB00**		1	1 unit	42G
	3RW4076	S12	600 V, 432 A	1	**3RW4776-0NB00**		1	1 unit	42G
Control units with screw terminals									
 3RW4755-6SB40	3RW4055-.BB3.	S6	115 V	1	**3RW4755-6SB30**		1	1 unit	42G
	3RW4055-.BB4.	S6	230 V	1	**3RW4755-6SB40**		1	1 unit	42G
	3RW4056-.BB3.	S6	115 V	1	**3RW4756-6SB30**		1	1 unit	42G
	3RW4056-.BB4.	S6	230 V	1	**3RW4756-6SB40**		1	1 unit	42G
	3RW4073-.BB3.	S12	115 V	1	**3RW4773-6SB30**		1	1 unit	42G
	3RW4073-.BB4.	S12	230 V	1	**3RW4773-6SB40**		1	1 unit	42G
	3RW4074-.BB3.	S12	115 V	1	**3RW4774-6SB30**		1	1 unit	42G
	3RW4074-.BB4.	S12	230 V	1	**3RW4774-6SB40**		1	1 unit	42G
	3RW4075-.BB3.	S12	115 V	1	**3RW4775-6SB30**		1	1 unit	42G
	3RW4075-.BB4.	S12	230 V	1	**3RW4775-6SB40**		1	1 unit	42G
	3RW4076-.BB3.	S12	115 V	1	**3RW4776-6SB30**		1	1 unit	42G
	3RW4076-.BB4.	S12	230 V	1	**3RW4776-6SB40**		1	1 unit	42G
Firing printed circuit boards									
 3RW4756-0VB70	3RW405-.BB.4	S6	460 V	2	**3RW4756-0VB70**		1	1 unit	42G
	3RW405-.BB.5	S6	600 V	2	**3RW4756-0VB80**		1	1 unit	42G
	3RW407-.BB.4	S12	460 V	2	**3RW4776-0VB70**		1	1 unit	42G
	3RW407-.BB.5	S12	600 V	2	**3RW4776-0VB80**		1	1 unit	42G
Fans									
 3RW4936-8VX.0, 3RW4947-8VX.0	3RW405.-.BB3.	S6	115 V	▶	**3RW4936-8VX30**		1	1 unit	42G
	3RW405.-.BB4.	S6	230 V	▶	**3RW4936-8VX40**		1	1 unit	42G
	3RW407.-.BB3.	S12	115 V	▶	**3RW4947-8VX30**		1	1 unit	42G
	3RW407.-.BB4.	S12	230 V	▶	**3RW4947-8VX40**		1	1 unit	42G
Removable control terminals									
 3RW4776-6HB00					**Spring-type terminals**				
	3RW40	S6/S12	2 blocks each with 6 terminals	1	**3RW4776-2HB00**		1	1 unit	42G
					Screw terminals				
	3RW40	S6/S12	2 blocks each with 6 terminals	1	**3RW4776-6HB00**		1	1 unit	42G
Enclosure base									
 3RW4776-0UB00	3RW407.	S12	--	3	**3RW4776-0UB00**		1	1 unit	42G

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

Overview

More information	
Homepage, see www.siemens.com/solid-state-switching-devices Industry Mall, see www.siemens.com/product?3RF	Online configurator, see www.siemens.com/sirius/configurators

SIRIUS 3RF solid-state switching devices

Three-phase solid-state contactor and single-phase solid-state relay

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 switching devices are 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 load, 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 switching devices, 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 switching devices 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 commissioning, you save not only time but also expenses.

Also for switching motors
(see page 6/138)

In order to achieve higher productivity, the switching frequency is continuously increased. It is no problem for our SIRIUS solid-state contactors for switching motors. With induction 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-type terminals or ring terminal lugs.

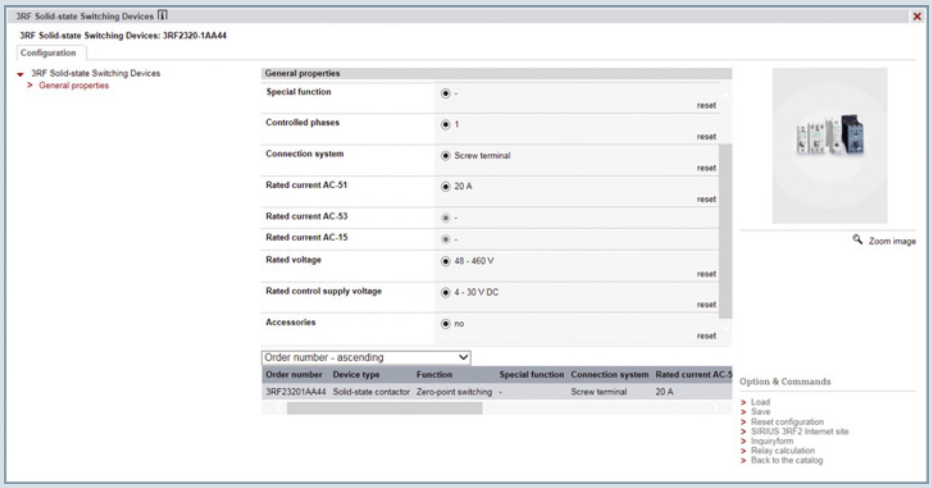
⊕	Screw terminals
⊟	Spring-type terminals
⊕	Ring terminal lug connection
	The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

General data

Online Configurator

- Simple selection of individual solid-state switching devices by means of technical characteristics (e.g. zero-point switching, spring-type terminal and rated current)
- Once configuration is complete, you receive the article numbers corresponding to the products.

see
www.siemens.com/sirius/configurators



Article No. scheme

Product versions		Article number								
Device type	**Solid-state relays**	**3RF20**	□	□	–	□	□	□	□	Single-phase, 45-mm width
		3RF21	□	□	–	□	□	□	□	Single-phase, 22.5-mm width
		3RF22	□	□	–	□	□	□	□	Three-phase, 45-mm width
	Solid-state contactors	**3RF23**	□	□	–	□	□	□	□	Single-phase
		3RF24	□	□	–	□	□	□	□	Three-phase
Type current	e.g. 20 = 20 A		□	□						
Connection type	Screw terminals					**1**				
	Spring-type terminals					**2**				
	Ring terminal 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
Single-phase or number of controlled phases	Single-phase							**A**		
	Two-phase							**B**		
	Three-phase							**C**		
	Reversing contactor							**D**		
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**
	48 ... 600 V AC									**6** Blocking voltage 1 600 V
Example		**3RF21**	**2**	**0**	**–**	**1**	**A**	**A**	**0**	**6**

Note:

The Article No. 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.

Overview of the SIRIUS 3RF2 solid-state switching devices

Type	Solid-state relays			Solid-state contactors		Function modules					
	Single-phase		Three-phase	Single-phase	Three-phase	Converters	Load monitoring		Heating current monitoring	Power controllers	Power regulators
	22.5 mm	45 mm	45 mm				Basic	Extended			
Usage											
Simple use 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 loads and solid-state relays/solid-state contactors	--	--	--	--	--	--	✓	✓	✓	✓	✓
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	--	--	--	--	--	--	--	--	--	--	✓
Commissioning											
Easy setting of setpoint values with "Teach" button	--	--	--	--	--	--	✓	✓	--	✓	✓
"Remote Teach" input for setting setpoints	--	--	--	--	--	--	--	--	✓	--	--
Mounting											
Mounting onto 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 controlgear	✓	--	✓	✓	✓	--	✓	✓	✓	✓	✓
Connection of load circuit from above	--	✓	--	--	--	--	--	--	--	--	--

✓ Function available

❑ Function possible

-- Function not possible

1) The converter can also be used with three-phase devices.

General data

Benefits

Features

- Considerable space savings thanks to a width of only 22.5 mm
- Variety of connection methods: Screw terminal, spring-type terminal or ring terminal 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 start-up 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 life-long, vibration-resistant and shock-resistant spring-type terminal connection method even under tough conditions

Application

Application areas

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.

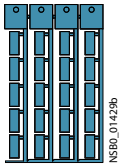
Use in fuseless load feeders

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.

Selection and ordering data

Inscription labels for 3RF2 series

	Designation	Labeling area (W x H)	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		mm x mm		d					
Blank labels									
 3RT1900-1SB20 (1 frame = 20 units)	**Unit labeling plates for "SIRIUS"[1)]**	10 x 7	Pastel turquoise	15	**3RT1900-1SB10**		100	816 units	41B
		20 x 7	Pastel turquoise	20	**3RT1900-1SB20**		100	340 units	41B
	Adhesive labels for SIRIUS	19 x 6	Pastel turquoise	15	**3RT1900-1SB60**		100	3 060 units	41B
		19 x 6	Zinc yellow	15	**3RT1900-1SD60**		100	3 060 units	41B

[1)] PC labeling systems for individual inscription of unit labeling plates are available from: murrplastik Systemtechnik GmbH, see page 16/16.

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

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. Detailed information in relation to solid-state contactors, e.g. on minimum spacing, and in relation to solid-state relays on the choice of heat sink can be found in the technical specifications and in the product data sheets, see 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 16/16.

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 additional information, please enter the article number of the required device under the tab "Product List".

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 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 single-phase solid-state relay with a width of 22.5 mm
- 3RF20 single-phase solid-state relay with a width of 45 mm
- 3RF22 three-phase solid-state relay with a width of 45 mm

The 3RF21 and 3RF22 solid-state relays can be expanded with various function modules to adapt them to individual applications.

Version for resistive loads "zero-point switching"

This standard version is often used for switching space heaters on and off.

Version for inductive loads "instantaneous switching"

In this version the solid-state relay 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.

Single-phase solid-state relays with a width of 22.5 mm

With its compact design and a width of just 22.5 mm, which stays the same even at 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.

Single-phase solid-state relays 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.

Three-phase solid-state relays with a width of 45 mm

With its compact design and a width of just 45 mm, which stays the same even at currents of up to 55 A, the 3RF22 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.

The three-phase solid-state relays are available with

- Two-phase control (suitable in particular for circuits without connection to the neutral conductor) and
- Three-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 1600 V is recommended

Overview

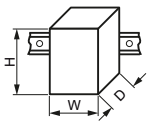
Single-phase solid-state relays (without heat sink) with a width of 22.5 mm

With its compact design and a width of just 22.5 mm, which stays the same even at 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.

Technical specifications

More information	
System Manual "SIRIUS Modular System – System Overview", see https://support.industry.siemens.com/cs/ww/en/view/60311318	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16224/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 acc. to IEC 60068-2-27	*g*/ms	15/11		
Vibration resistance acc. to IEC 60068-2-6	*g*	2		
Degree of protection		IP20		IP00 (IP20 when using the terminal cover 3RA2900-3PA88)
Electromagnetic compatibility (EMC)				
• Emitted interference				
- Conducted interference voltage acc. to IEC 60947-4-3		Class A for industrial applications		
- Emitted, high-frequency interference voltage acc. to IEC 60947-4-3		Class B for residential, business and commercial applications		
• Interference immunity				
- Electrostatic discharge acc. 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 acc. to IEC 61000-4-4	kV	2/5.0 kHz; behavior criterion 2		
- Surge acc. 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-type terminals**	**Ring terminal 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 lb.in	2 ... 2.5 7 ... 10.3	-- --	2.5 ... 2 10.3 ... 7
• 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 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	Nm lb.in	0.5 ... 0.6 4.5 ... 5.3	-- --	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.

SIRIUS 3RF21 solid-state relays, single-phase, 22.5 mm

Type	I_{max} [1] at R_{thha}/T_u = 40 °C		I_e acc. to IEC 60947-4-3 at R_{thha}/T_u = 40 °C		I_e acc. 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	2.0	20	1.7	20	1.3	28.6	0.1	10
3RF2130-1....	30	1.1	30	0.79	30	0.56	44.2	0.5	10
3RF2150-1....	50	0.68	50	0.48	50	0.33	66	0.5	10
3RF2150-2....	50	0.68	20	2.6	20	2.9	66	0.5	10
3RF2150-3....	50	0.68	50	0.48	50	0.33	66	0.5	10
3RF2170-1....	70	0.40	50	0.77	50	0.6	94	0.5	10
3RF2190-1....	88	0.33	50	0.94	50	0.85	118	0.5	10
3RF2190-2....	88	0.33	20	2.8	20	3.5	118	0.5	10
3RF2190-3....	88	0.33	88	0.22	83	0.19	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 6/97, "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			
• 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	110 ... 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	20 / Low Power: 6.5[1]	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 3RF21..-.AA..-**0KN0**.
[2] Only for zero-point switching devices.

Selection and ordering data

Single-phase solid-state relays (without heat sink) with a width of 22.5 mm

	Type current/ performance capacity[1]	Rated control supply voltage U_s	SD	**Screw terminals**[2] Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	V	d					
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC								
 3RF2120-1AA02	20	24 DC	2	**3RF2120-1AA02**		1	1 unit	41C
	30		2	**3RF2130-1AA02**		1	1 unit	41C
	50		2	**3RF2150-1AA02**		1	1 unit	41C
	70		2	**3RF2170-1AA02**		1	1 unit	41C
	90		5	**3RF2190-1AA02**		1	1 unit	41C
	20	110 ... 230 AC	2	**3RF2120-1AA22**		1	1 unit	41C
	30		2	**3RF2130-1AA22**		1	1 unit	41C
	50		5	**3RF2150-1AA22**		1	1 unit	41C
	70		5	**3RF2170-1AA22**		1	1 unit	41C
	90		5	**3RF2190-1AA22**		1	1 unit	41C
	20	4 ... 30 DC	2	**3RF2120-1AA42**		1	1 unit	41C
	30		2	**3RF2130-1AA42**		1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 460 V AC								
	20	24 DC	2	**3RF2120-1AA04**		1	1 unit	41C
	30		2	**3RF2130-1AA04**		1	1 unit	41C
	50		2	**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	5	**3RF2150-1AA14**		1	1 unit	41C
	20	110 ... 230 AC	2	**3RF2120-1AA24**		1	1 unit	41C
	30		2	**3RF2130-1AA24**		1	1 unit	41C
	50		5	**3RF2150-1AA24**		1	1 unit	41C
	70		2	**3RF2170-1AA24**		1	1 unit	41C
	90		5	**3RF2190-1AA24**		1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 600 V AC								
	70	24 DC Low Power	5	**3RF2170-1AA05-0KN0**		1	1 unit	41C
	20	4 ... 30 DC	5	**3RF2120-1AA45**		1	1 unit	41C
	30		5	**3RF2130-1AA45**		1	1 unit	41C
	50		5	**3RF2150-1AA45**		1	1 unit	41C
	70		2	**3RF2170-1AA45**		1	1 unit	41C
	90		5	**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	2	**3RF2130-1AA06**		1	1 unit	41C
	50		2	**3RF2150-1AA06**		1	1 unit	41C
	70		5	**3RF2170-1AA06**		1	1 unit	41C
	90		5	**3RF2190-1AA06**		1	1 unit	41C
	30	110 ... 230 AC	5	**3RF2130-1AA26**		1	1 unit	41C
	50		5	**3RF2150-1AA26**		1	1 unit	41C
	70		5	**3RF2170-1AA26**		1	1 unit	41C
	90		5	**3RF2190-1AA26**		1	1 unit	41C

Other rated control supply voltages on request.

[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 can only be used for a rated current of up to approx. 50 A and a conductor cross-section of 10 mm^2.

SIRIUS 3RF21 solid-state relays, single-phase, 22.5 mm

Type current/ performance capacity[1]	Rated control supply voltage U_s	SD	**Screw terminals**[2] Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V	d					
Instantaneous switching, rated operational voltage U_e 24 ... 230 V AC							
50	110 ... 230 AC	5	**3RF2150-1BA22**		1	1 unit	41C
Instantaneous switching, rated operational voltage U_e 48 ... 460 V AC							
20	24 DC	5	**3RF2120-1BA04**		1	1 unit	41C
30		5	**3RF2130-1BA04**		1	1 unit	41C
50		5	**3RF2150-1BA04**		1	1 unit	41C
70		5	**3RF2170-1BA04**		1	1 unit	41C
90		5	**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	5	**3RF2150-1BA06**		1	1 unit	41C
Low Noise[3] · Zero-point switching, rated operational voltage U_e 48 ... 460 V AC							
70	24 DC	5	**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 can only be used for a rated current of up to approx. 50 A and a conductor cross-section of 10 mm².

3) See page 6/98.

Other rated control supply voltages on request.

3RF2120-2AA02

Type current/ performance capacity[1]	Rated control supply voltage U_s	SD	**Spring-type terminals**[2] Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V	d					
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC							
20	24 DC	2	**3RF2120-2AA02**		1	1 unit	41C
50		5	**3RF2150-2AA02**		1	1 unit	41C
90		5	**3RF2190-2AA02**		1	1 unit	41C
20	110 ... 230 AC	5	**3RF2120-2AA22**		1	1 unit	41C
50		5	**3RF2150-2AA22**		1	1 unit	41C
90		5	**3RF2190-2AA22**		1	1 unit	41C
20	4 ... 30 DC	5	**3RF2120-2AA42**		1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 460 V AC							
20	24 DC	2	**3RF2120-2AA04**		1	1 unit	41C
50		5	**3RF2150-2AA04**		1	1 unit	41C
90		5	**3RF2190-2AA04**		1	1 unit	41C
50	24 AC/DC	5	**3RF2150-2AA14**		1	1 unit	41C
20	110 ... 230 AC	5	**3RF2120-2AA24**		1	1 unit	41C
50		5	**3RF2150-2AA24**		1	1 unit	41C
90		5	**3RF2190-2AA24**		1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 600 V AC							
20	4 ... 30 DC	5	**3RF2120-2AA45**		1	1 unit	41C
Zero-point switching · Blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC							
50	24 DC	5	**3RF2150-2AA06**		1	1 unit	41C
90		5	**3RF2190-2AA06**		1	1 unit	41C
50	110 ... 230 AC	5	**3RF2150-2AA26**		1	1 unit	41C
90		5	**3RF2190-2AA26**		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 the version with spring-type terminals can only be used for a rated current of up to approx. 20 A and a conductor cross-section of 2.5 mm². Higher currents can be achieved by connecting two conductors per terminal.

Other rated control supply voltages on request.

SIRIUS 3RF21 solid-state relays, single-phase, 22.5 mm

	Type current/ performance capacity[1]	Rated control supply voltage U_s	SD	Ring terminal lug connection		PU (UNIT, SET, M)	PS*	PG
	A	V	d	Article No.	Price per PU			
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC								
 3RF2120-3AA02	20	24 DC	5	**3RF2120-3AA02**		1	1 unit	41C
	50		5	**3RF2150-3AA02**		1	1 unit	41C
	90		5	**3RF2190-3AA02**		1	1 unit	41C
	20	110 ... 230 AC	5	**3RF2120-3AA22**		1	1 unit	41C
	50		5	**3RF2150-3AA22**		1	1 unit	41C
	90		5	**3RF2190-3AA22**		1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 460 V AC								
	20	24 DC	5	**3RF2120-3AA04**		1	1 unit	41C
	50		5	**3RF2150-3AA04**		1	1 unit	41C
	90		5	**3RF2190-3AA04**		1	1 unit	41C
	20	110 ... 230 AC	5	**3RF2120-3AA24**		1	1 unit	41C
	50		5	**3RF2150-3AA24**		1	1 unit	41C
	90		5	**3RF2190-3AA24**		1	1 unit	41C
	90	4 ... 30 DC	5	**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	5	**3RF2150-3AA06**		1	1 unit	41C
	90		5	**3RF2190-3AA06**		1	1 unit	41C
	50	110 ... 230 AC	5	**3RF2150-3AA26**		1	1 unit	41C
	90		5	**3RF2190-3AA26**		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.

Other rated control supply voltages on request.

Accessories

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Optional accessories							
			Spring-type terminals				
 3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-type terminals Length approx. 200 mm, size 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	2	**3RA2908-1A**		1	1 unit	41B
			Ring terminal lug connection				
 3RF2900-3PA88	**Terminal covers** For 3RF21 solid-state relays in ring terminal lug connection (With this terminal cover, degree of protection IP20 can be achieved in the terminal compartment in the case of ring terminal lug connections. It can also be used for screw terminals after simple adaptation)	2	**3RF2900-3PA88**		1	10 units	41C
	Control connectors						
			Screw terminals				
	Replacement control connectors For 3RF20/21/22 Screw terminals	5	**3RF2900-1TA88**		1	50 units	41C
			Spring-type terminals				
	Replacement control connectors For 3RF20/21/22 Spring-type terminals	5	**3RF2900-2TA88**		1	50 units	41C
	Control connectors For 3RF20/21/22 Spring-type terminals with two clamping points per contact	5	**3RF2900-2TB88**		1	10 units	41C

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

Overview

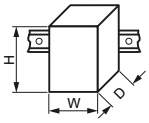
Single-phase solid-state relays (without heat sink) with a width of 45 mm

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.

Technical specifications

More information	
System Manual "SIRIUS Modular System – System Overview", see https://support.industry.siemens.com/cs/ww/en/view/60311318	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16225/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 acc. to IEC 60068-2-27	*g*/ms	15 /11	
Vibration resistance acc. to IEC 60068-2-6	*g*	2	
Degree of protection		IP20	
Electromagnetic compatibility (EMC)			
• Emitted interference			
- Conducted interference voltage acc. to IEC 60947-4-3		Class A for industrial applications	
- Emitted, high-frequency interference voltage acc. to IEC 60947-4-3		Class B for residential, business and commercial applications	
• Interference immunity			
- Electrostatic discharge acc. 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 acc. to IEC 61000-4-4	kV	2/5.0 kHz; behavior criterion 2	
- Surge acc. 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-type 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.

Type	I_{max} [1] at R_{thha}/T_u = 40 °C		I_e acc. to IEC 60947-4-3 at R_{thha}/T_u = 40 °C		I_e acc. 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	2.0	20	1.7	20	1.3	28.6	0.1	10
3RF2030-1.A..	30	1.1	30	0.79	30	0.56	44.2	0.5	10
3RF2050-1.A..	50	0.68	50	0.48	50	0.33	66	0.5	10
3RF2070-1.A..	70	0.40	50	0.77	50	0.6	94	0.5	10
3RF2090-1.A..	88	0.33	50	0.94	50	0.85	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 6/97, "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 **3RF2030-1.A.4** **3RF2030-1.A.6**	300 300 400	450 450 800
3RF2050-1.A..	600	1 800
3RF2070-1.A.2 **3RF2070-1.A.4** **3RF2070-1.A.5** **3RF2070-1.A.6**	1 200 1 200 1 200 1 150	7 200 7 200 7 200 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	20	15	20
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.

Selection and ordering data

Single-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	SD	Screw terminals[2] Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	V	d					
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC								
	20	24 DC	2	**3RF2020-1AA02**		1	1 unit	41C
	30		2	**3RF2030-1AA02**		1	1 unit	41C
	50		2	**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	2	**3RF2020-1AA22**		1	1 unit	41C
	30		2	**3RF2030-1AA22**		1	1 unit	41C
	50		5	**3RF2050-1AA22**		1	1 unit	41C
	70		5	**3RF2070-1AA22**		1	1 unit	41C
	90		5	**3RF2090-1AA22**		1	1 unit	41C
	20	4 ... 30 DC	5	**3RF2020-1AA42**		1	1 unit	41C
	30		5	**3RF2030-1AA42**		1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 460 V AC								
	20	24 DC	2	**3RF2020-1AA04**		1	1 unit	41C
	30		2	**3RF2030-1AA04**		1	1 unit	41C
	50		2	**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	5	**3RF2020-1AA24**		1	1 unit	41C
	30		5	**3RF2030-1AA24**		1	1 unit	41C
	50		5	**3RF2050-1AA24**		1	1 unit	41C
	70		5	**3RF2070-1AA24**		1	1 unit	41C
	90		5	**3RF2090-1AA24**		1	1 unit	41C
	50	4 ... 30 DC	2	**3RF2050-1AA44**		1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 600 V AC								
	20	4 ... 30 DC	5	**3RF2020-1AA45**		1	1 unit	41C
	50		5	**3RF2050-1AA45**		1	1 unit	41C
	70		2	**3RF2070-1AA45**		1	1 unit	41C
	90		5	**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	5	**3RF2030-1AA06**		1	1 unit	41C
	50		5	**3RF2050-1AA06**		1	1 unit	41C
	70		5	**3RF2070-1AA06**		1	1 unit	41C
	90		5	**3RF2090-1AA06**		1	1 unit	41C
	30	110 ... 230 AC	5	**3RF2030-1AA26**		1	1 unit	41C
	50		5	**3RF2050-1AA26**		1	1 unit	41C
	70		5	**3RF2070-1AA26**		1	1 unit	41C
	90		5	**3RF2090-1AA26**		1	1 unit	41C
Instantaneous switching, rated operational voltage U_e 48 ... 460 V AC								
	30	24 DC	5	**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 can only be used for a rated current of up to approx. 50 A and a conductor cross-section of 10 mm^2.

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

	Type current/ performance capacity[1]	Rated control supply voltage U_s	SD	**Screw terminals + spring-type terminals** (control current side)		PU (UNIT, SET, M)	PS*	PG
	A	V	d	Article No.	Price per PU			
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC								
 3RF2050-4AA02	50	24 DC	5	**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.

For accessories, see page 6/103.

SIRIUS 3RF22 solid-state relays, three-phase, 45 mm

Overview

Three-phase solid-state relays (without heat sink) with a width of 45 mm

With its compact design and a width of just 45 mm, which stays the same even at currents of up to 55 A, the 3RF22 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.

Important features:
- LED display
- Variety of connection methods
- Plug-in control connection
- Degree of protection IP20 (with ring terminal lug connection IP00)
- Zero-point switching, two- or three-phase controlled

Technical specifications

More information	
System Manual "SIRIUS Modular System – System Overview", see https://support.industry.siemens.com/cs/ww/en/view/60311318	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16226/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 acc. to IEC 60068-2-27	*g*/ms	15/11		
Vibration resistance acc. to IEC 60068-2-6	*g*	2		
Degree of protection		IP20		IP00
Insulation strength at 50/60 Hz (main/control circuit to floor)	V rms	4 000		
Electromagnetic compatibility (EMC)				
• Emitted interference				
- Conducted interference voltage acc. to IEC 60947-4-3		Class A for industrial applications[1]		
• Interference immunity				
- Electrostatic discharge acc. 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 acc. to IEC 61000-4-4	kV	2/5.0 kHz; behavior criterion 2		
- Surge acc. 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-type terminals**	**Ring terminal 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, Ø 5 ... 6 mm, PZ 2	Nm lb.in	2 ... 2.5 18 ... 22		2.5 ... 2 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, Ø 3.5, 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 the user 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.

Type	I_{max} [1] at R_{thha}/T_u = 40 °C		I_e acc. to IEC 60947-4-3 at R_{thha}/T_u = 40 °C		I_e acc. 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	0.57	30	0.57	30	0.44	81	0.5	10
3RF2230-2AB..			20	1.36	20	1.15			
3RF2230-3AB..			30	0.57	30	0.44			
3RF2255-1AB..	55	0.18	50	0.27	50	0.19	151	0.5	10
3RF2255-2AB..			20	1.83	20	1.58			
3RF2255-3AB..			50	0.27	50	0.19			
3RF2230-1AC..	30	0.33	30	0.33	30	0.25	122	0.5	10
3RF2230-2AC..			20	0.86	20	0.72			
3RF2230-3AC..			30	0.33	30	0.25			
3RF2255-1AC..	55	0.09	50	0.15	50	0.1	226	0.5	10
3RF2255-2AC..			20	1.19	20	1.02			
3RF2255-3AC..			50	0.15	50	0.1			

[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 6/97, "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		Two-phase	Three-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

Selection and ordering data

Type current/ performance capacity[1]	Rated control supply voltage U_s	SD	**Screw terminals**[2] Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V	d					
Zero-point switching, rated operational voltage U_e 48 ... 600 V AC							
Two-phase controlled							
30	110 AC	5	**3RF2230-1AB35**		1	1 unit	41C
55		5	**3RF2255-1AB35**		1	1 unit	41C
30	4 ... 30 DC	5	**3RF2230-1AB45**		1	1 unit	41C
55		5	**3RF2255-1AB45**		1	1 unit	41C
Three-phase controlled							
30	110 AC	5	**3RF2230-1AC35**		1	1 unit	41C
55		5	**3RF2255-1AC35**		1	1 unit	41C
30	4 ... 30 DC	2	**3RF2230-1AC45**		1	1 unit	41C
55		5	**3RF2255-1AC45**		1	1 unit	41C


3RF2230-1AB45

[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 mm².

Type current/ performance capacity[1]	Rated control supply voltage U_s	SD	**Spring-type terminals**[2] Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V	d					
Zero-point switching, rated operational voltage U_e 48 ... 600 V AC							
Two-phase controlled							
30	4 ... 30 DC	5	**3RF2230-2AB45**		1	1 unit	41C
55		5	**3RF2255-2AB45**		1	1 unit	41C
Three-phase controlled							
30	4 ... 30 DC	5	**3RF2230-2AC45**		1	1 unit	41C
55		5	**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-type terminals can only be used for a rated current of up to approx. 20 A and a conductor cross-section of 2.5 mm². Higher currents can be achieved by connecting two conductors per terminal.

Type current/ performance capacity[1]	Rated control supply voltage U_s	SD	**Ring terminal lug connection** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V	d					
Zero-point switching, rated operational voltage U_e 48 ... 600 V AC							
Two-phase controlled							
30	4 ... 30 DC	5	**3RF2230-3AB45**		1	1 unit	41C
55		5	**3RF2255-3AB45**		1	1 unit	41C
Three-phase controlled							
30	4 ... 30 DC	5	**3RF2230-3AC45**		1	1 unit	41C
55		5	**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.

For accessories, see page 6/103.

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

Overview

Solid-state contactors (with integrated heat sink)

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. Depending on the version, current strengths of up to 70 A are achieved. Like all of our solid-state switching devices, one of their particular advantages is their compact and space-saving design.

With their insulated mounting foot they can easily be snapped onto a standard mounting rail, or they can be mounted on support plates with fixing screws. The heat sink can be grounded through a screw terminal.

The solid-state contactors are available in 2 different versions:

- 3RF23 single-phase solid-state contactors
- 3RF24 three-phase solid-state contactors

Single-phase versions

The 3RF23 solid-state contactors can be expanded with various function modules to adapt them to individual applications.

Version for resistive loads "zero-point switching"

This standard version is often used for switching space 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-type MCB or a conventional line protection fuse, the result is a short-circuit proof feeder.

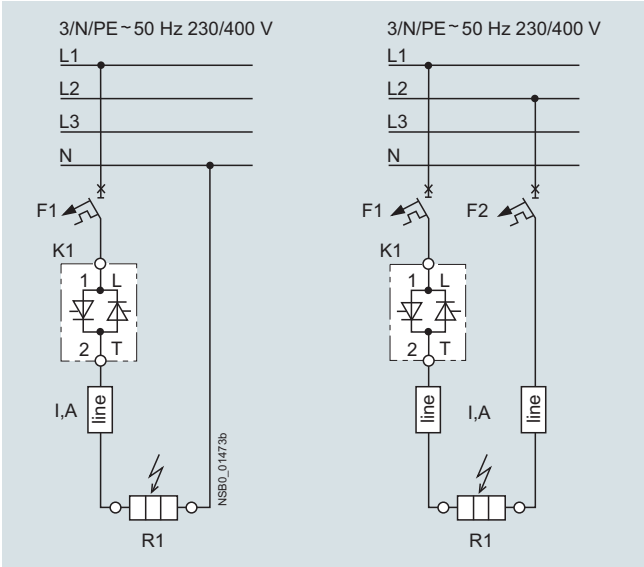
In order to achieve problem-free short-circuit protection by means of miniature circuit breakers, however, certain constraints must be observed. As the magnitude and duration of the short-circuit current are determined not only by the short-circuit breaking response of the miniature circuit breaker but also the properties of the wiring system, such as the internal resistance of the input to the network and damping by controls 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 table below.

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.

Three-phase versions

The three-phase solid-state contactors for resistive loads up to 50 A are available with

- Two-phase control (suitable in particular for circuits without connection to the neutral conductor) and
- Three-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 AC loads by means of analog signals.

- Check the correct contactor size with the aid of the rated current diagram, taking account of the installation conditions

SIRIUS 3RF23 solid-state contactors, single-phase

Overview

Single-phase solid-state contactors with heat sink

Their compact design with optimized heat sink enables small complete units with currents up to 70 A. They also offer all the special features of the solid-state relay in terms of time and space savings.

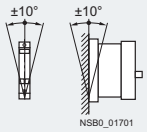
Technical specifications

More information	
System Manual "SIRIUS – System Overview", see https://support.industry.siemens.com/cs/ww/en/view/60311318	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16228/faq

Type		3RF23..-.A...	3RF23..-.B...	3RF23..-.C...	3RF23..-.D...
Dimensions (W x H x D)		See page 6/113			
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 acc. to IEC 60068-2-27	*g*/ms	15/11			
Vibration resistance acc. to IEC 60068-2-6	*g*	2			
Degree of protection		IP20 (for ring terminal lug connection when using the terminal cover 3RA2900-3PA88, otherwise IP00)			
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 acc. 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 acc. to IEC 61000-4-4	kV	2/5.0 kHz; behavior criterion 2			
- Surge acc. 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-type terminals	Ring terminal 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 lb.in	2 ... 2.5 7 ... 10.3	-- --	2 ... 2.5 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 AWG	1 x (0.5 ... 2.5)[1], 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	Nm lb.in	0.5 ... 0.6 4.5 ... 5.3	-- --	0.5 ... 0.6 4.5 ... 5.3

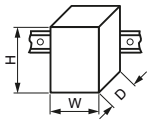
[1] If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

Type	3RF23..-1....	3RF23..-2....	3RF23..-3....
General data			
Connection type	**Screw terminals**	**Spring-type terminals**	**Ring terminal lug connection**
Grounding screw (not included in the scope of supply)			
• 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	20 / Low Power: <10[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 Product version E06 and later 
	A	mm
Main circuit		
3RF2310-.AA..	10.5	22.5 x 100 x 86
3RF2320-.AA.. **3RF2320-.CA..** **3RF2320-.DA..**	20	22.5 x 100 x 118.5
3RF2330-.AA.. **3RF2330-.CA..**	30	45 x 100 x 133.5
3RF2330-.DA..		22.5 x 100 x 118.5
3RF2340-.AA..	40	67.5 x 100 x 137
3RF2350-.AA..	50	67.5 x 100 x 137
3RF2370-.AA..	70	80 x 100 x 149.5

[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.

SIRIUS 3RF23 solid-state contactors, single-phase

Type	Type current AC-51/performance capacity[1] at I_{max} at 40 °C	Acc. to IEC 60947-4-3 at 40 °C	Acc. to UL/CSA at 50 °C	Power loss at I_{max}	Minimum load current	Off-state current	Rated peak withstand current I_{tsm}	I^2t value
	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
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 connection method and installation conditions.

Type	Type current AC-51/performance capacity[1] at I_{max} at 40 °C	Acc. to IEC 60947-4-3 at 40 °C	Acc. to UL/CSA at 50 °C	Type current AC-15/performance capacity[1] 10 x I_e for 60 ms	Parameters	Power loss at I_{max}	Minimum load current	Off-state current	Rated peak withstand current I_{tsm}	I^2t value
	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 connection method and installation conditions.

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	SD	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
	A	V	d	Article No. / Price per PU			
Zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC							
 3RF2310-1	10.5	24 DC	2	**3RF2310-1AA02**	1	1 unit	41C
	20		2	**3RF2320-1AA02**	1	1 unit	41C
	30		2	**3RF2330-1AA02**	1	1 unit	41C
	40		2	**3RF2340-1AA02**	1	1 unit	41C
	50		2	**3RF2350-1AA02**	1	1 unit	41C
	20	24 DC Low Power	2	**3RF2320-1AA02-0KN0**	1	1 unit	41C
	10.5	24 AC/DC	2	**3RF2310-1AA12**	1	1 unit	41C
	10.5	110 ... 230 AC	2	**3RF2310-1AA22**	1	1 unit	41C
	20		2	**3RF2320-1AA22**	1	1 unit	41C
	30		2	**3RF2330-1AA22**	1	1 unit	41C
	40		5	**3RF2340-1AA22**	1	1 unit	41C
	50		2	**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	2	**3RF2310-1AA04**	1	1 unit	41C
	20		2	**3RF2320-1AA04**	1	1 unit	41C
	30		2	**3RF2330-1AA04**	1	1 unit	41C
	40		2	**3RF2340-1AA04**	1	1 unit	41C
	50		2	**3RF2350-1AA04**	1	1 unit	41C
	10.5	24 DC Low Power	2	**3RF2310-1AA04-0KN0**	1	1 unit	41C
	10.5	24 AC/DC	2	**3RF2310-1AA14**	1	1 unit	41C
	20		5	**3RF2320-1AA14**	1	1 unit	41C
	30		2	**3RF2330-1AA14**	1	1 unit	41C
	40		5	**3RF2340-1AA14**	1	1 unit	41C
	50		5	**3RF2350-1AA14**	1	1 unit	41C
	10.5	110 ... 230 AC	2	**3RF2310-1AA24**	1	1 unit	41C
	20		2	**3RF2320-1AA24**	1	1 unit	41C
	30		2	**3RF2330-1AA24**	1	1 unit	41C
	40		2	**3RF2340-1AA24**	1	1 unit	41C
	50		2	**3RF2350-1AA24**	1	1 unit	41C
	10.5	4 ... 30 DC	2	**3RF2310-1AA44**	1	1 unit	41C
	20		2	**3RF2320-1AA44**	1	1 unit	41C
	30		2	**3RF2330-1AA44**	1	1 unit	41C

[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 6/97, "More information".

Other rated control supply voltages on request.

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

SIRIUS 3RF23 solid-state contactors, single-phase

	Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	SD	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
	A	V	d	Article No. / Price per PU			
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 600 V AC							
	30	110 ... 230 AC	5	**3RF2330-1AA25**	1	1 unit	41C
	10.5	4 ... 30 DC	5	**3RF2310-1AA45**	1	1 unit	41C
	20		2	**3RF2320-1AA45**	1	1 unit	41C
	30		2	**3RF2330-1AA45**	1	1 unit	41C
	40		2	**3RF2340-1AA45**	1	1 unit	41C
	50		2	**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							
 3RF2340-1	10.5	24 DC	5	**3RF2310-1AA06**	1	1 unit	41C
	20		2	**3RF2320-1AA06**	1	1 unit	41C
	30		2	**3RF2330-1AA06**	1	1 unit	41C
	40		5	**3RF2340-1AA06**	1	1 unit	41C
	50		5	**3RF2350-1AA06**	1	1 unit	41C
	10.5	110 ... 230 AC	5	**3RF2310-1AA26**	1	1 unit	41C
	20		5	**3RF2320-1AA26**	1	1 unit	41C
	30		5	**3RF2330-1AA26**	1	1 unit	41C
	40		5	**3RF2340-1AA26**	1	1 unit	41C
	50		5	**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	5	**3RF2320-1CA02**	1	1 unit	41C
	30		5	**3RF2330-1CA02**	1	1 unit	41C
	20	110 ... 230 AC	5	**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	5	**3RF2320-1CA04**	1	1 unit	41C
	20	110 ... 230 AC	5	**3RF2320-1CA24**	1	1 unit	41C
	20	4 ... 30 DC	2	**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	2	**3RF2320-1DA02**	1	1 unit	41C
	20	110 ... 230 AC	5	**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							
 3RF2320-1	20	24 DC	2	**3RF2320-1DA04**	1	1 unit	41C
	20	110 ... 230 AC	5	**3RF2320-1DA24**	1	1 unit	41C
	20	4 ... 30 DC	2	**3RF2320-1DA44**	1	1 unit	41C
	30		2	**3RF2330-1DA44**	1	1 unit	41C

[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 6/97, "More information".

[2] See page 6/111.

Other rated control supply voltages on request.

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

	Type current/ performance capacity[1] I_{max}	Operational current I_e/AC-15[2]	Rated control supply voltage U_s	SD	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	A	V	d					
Instantaneous switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC									
 3RF2310-1	10.5	6	24 DC	2	**3RF2310-1BA02**		1	1 unit	41C
	20	12		2	**3RF2320-1BA02**		1	1 unit	41C
	30	15		5	**3RF2330-1BA02**		1	1 unit	41C
	40	20		5	**3RF2340-1BA02**		1	1 unit	41C
	50	25		5	**3RF2350-1BA02**		1	1 unit	41C
	50	27.5		5	**3RF2370-1BA02**		1	1 unit	41C
	10.5	6	110 ... 230 AC	5	**3RF2310-1BA22**		1	1 unit	41C
	20	12		5	**3RF2320-1BA22**		1	1 unit	41C
	30	15		5	**3RF2330-1BA22**		1	1 unit	41C
	40	20		5	**3RF2340-1BA22**		1	1 unit	41C
	50	25		5	**3RF2350-1BA22**		1	1 unit	41C
	50	27.5		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	2	**3RF2310-1BA04**		1	1 unit	41C
	20	12		2	**3RF2320-1BA04**		1	1 unit	41C
	30	15		2	**3RF2330-1BA04**		1	1 unit	41C
	40	20		5	**3RF2340-1BA04**		1	1 unit	41C
	50	25		5	**3RF2350-1BA04**		1	1 unit	41C
	50	27.5		5	**3RF2370-1BA04**		1	1 unit	41C
	10.5	6	110 ... 230 AC	5	**3RF2310-1BA24**		1	1 unit	41C
	20	12		5	**3RF2320-1BA24**		1	1 unit	41C
	30	15		5	**3RF2330-1BA24**		1	1 unit	41C
	40	20		5	**3RF2340-1BA24**		1	1 unit	41C
	50	25		5	**3RF2350-1BA24**		1	1 unit	41C
	50	27.5		5	**3RF2370-1BA24**		1	1 unit	41C
	20	12	4 ... 30 DC	5	**3RF2320-1BA44**		1	1 unit	41C
	30	15		5	**3RF2330-1BA44**		1	1 unit	41C
	50	25		5	**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									
 3RF2340-1	10.5	6	24 DC	5	**3RF2310-1BA06**		1	1 unit	41C
	20	12		2	**3RF2320-1BA06**		1	1 unit	41C
	30	15		5	**3RF2330-1BA06**		1	1 unit	41C
	40	20		5	**3RF2340-1BA06**		1	1 unit	41C
	50	25		5	**3RF2350-1BA06**		1	1 unit	41C
	50	27.5		5	**3RF2370-1BA06**		1	1 unit	41C
	10.5	6	110 ... 230 AC	5	**3RF2310-1BA26**		1	1 unit	41C
	20	12		5	**3RF2320-1BA26**		1	1 unit	41C
	30	15		5	**3RF2330-1BA26**		1	1 unit	41C
	40	20		5	**3RF2340-1BA26**		1	1 unit	41C
	50	25		5	**3RF2350-1BA26**		1	1 unit	41C
	50	27.5		5	**3RF2370-1BA26**		1	1 unit	41C

[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 6/97, "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.

SIRIUS 3RF23 solid-state contactors, single-phase


3RF2320-2

Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	SD	Spring-type terminals	PU (UNIT, SET, M)	PS*	PG
A	V	d	Article No. / Price per PU			
Zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC						
10.5	24 DC	5	**3RF2310-2AA02**	1	1 unit	41C
20		2	**3RF2320-2AA02**	1	1 unit	41C
10.5	110 ... 230 AC	5	**3RF2310-2AA22**	1	1 unit	41C
20		5	**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	2	**3RF2310-2AA04**	1	1 unit	41C
20		2	**3RF2320-2AA04**	1	1 unit	41C
10.5	110 ... 230 AC	5	**3RF2310-2AA24**	1	1 unit	41C
20		5	**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	5	**3RF2310-2AA06**	1	1 unit	41C
20		2	**3RF2320-2AA06**	1	1 unit	41C
10.5	110 ... 230 AC	5	**3RF2310-2AA26**	1	1 unit	41C
20		5	**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	5	**3RF2320-2CA02**	1	1 unit	41C
20	110 ... 230 AC	5	**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	5	**3RF2320-2CA04**	1	1 unit	41C
20	110 ... 230 AC	5	**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	5	**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	5	**3RF2320-2DA04**	1	1 unit	41C
20	110 ... 230 AC	5	**3RF2320-2DA24**	1	1 unit	41C

[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 6/97, "More information".

[2] See page 6/111.

Other rated control supply voltages on request.

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

	Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	SD	**Ring terminal lug connection** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	V	d					
Zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC								
 3RF2350-3	10.5	24 DC	5	**3RF2310-3AA02**		1	1 unit	41C
	20		5	**3RF2320-3AA02**		1	1 unit	41C
	30		5	**3RF2330-3AA02**		1	1 unit	41C
	40		5	**3RF2340-3AA02**		1	1 unit	41C
	50		5	**3RF2350-3AA02**		1	1 unit	41C
	70		2	**3RF2370-3AA02**		1	1 unit	41C
	10.5	110 ... 230 AC	5	**3RF2310-3AA22**		1	1 unit	41C
	20		5	**3RF2320-3AA22**		1	1 unit	41C
	30		5	**3RF2330-3AA22**		1	1 unit	41C
	40		5	**3RF2340-3AA22**		1	1 unit	41C
	50		5	**3RF2350-3AA22**		1	1 unit	41C
	70		5	**3RF2370-3AA22**		1	1 unit	41C
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC								
 3RF2330-3, Covers optional	10.5	24 DC	5	**3RF2310-3AA04**		1	1 unit	41C
	20		5	**3RF2320-3AA04**		1	1 unit	41C
	30		2	**3RF2330-3AA04**		1	1 unit	41C
	40		5	**3RF2340-3AA04**		1	1 unit	41C
	50		2	**3RF2350-3AA04**		1	1 unit	41C
	70		2	**3RF2370-3AA04**		1	1 unit	41C
	10.5	110 ... 230 AC	5	**3RF2310-3AA24**		1	1 unit	41C
	20		5	**3RF2320-3AA24**		1	1 unit	41C
	30		5	**3RF2330-3AA24**		1	1 unit	41C
	40		5	**3RF2340-3AA24**		1	1 unit	41C
	50		5	**3RF2350-3AA24**		1	1 unit	41C
	70		5	**3RF2370-3AA24**		1	1 unit	41C
	20	4 ... 30 DC	5	**3RF2320-3AA44**		1	1 unit	41C
	30		5	**3RF2330-3AA44**		1	1 unit	41C
	50		5	**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	5	**3RF2340-3AA45**		1	1 unit	41C
	70		2	**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	5	**3RF2310-3AA06**		1	1 unit	41C
	20		5	**3RF2320-3AA06**		1	1 unit	41C
	30		5	**3RF2330-3AA06**		1	1 unit	41C
	40		5	**3RF2340-3AA06**		1	1 unit	41C
	50		5	**3RF2350-3AA06**		1	1 unit	41C
	70		5	**3RF2370-3AA06**		1	1 unit	41C
	10.5	110 ... 230 AC	5	**3RF2310-3AA26**		1	1 unit	41C
	20		5	**3RF2320-3AA26**		1	1 unit	41C
	30		5	**3RF2330-3AA26**		1	1 unit	41C
	40		5	**3RF2340-3AA26**		1	1 unit	41C
	50		5	**3RF2350-3AA26**		1	1 unit	41C
	70		5	**3RF2370-3AA26**		1	1 unit	41C

[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 6/97, "More information".

Other rated control supply voltages on request.

SIRIUS 3RF23 solid-state contactors, single-phase

Type current/ performance capacity[1] I_{max}	Operational current I_e/AC-15[2]	Rated control supply voltage U_s	SD	**Ring terminal lug connection** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	A	V	d					
Instantaneous switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC								
70	27.5	24 DC	5	**3RF2370-3BA02**		1	1 unit	41C
70	27.5	110 ... 230 AC	5	**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	5	**3RF2370-3BA04**		1	1 unit	41C
70	27.5	110 ... 230 AC	5	**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	5	**3RF2370-3BA06**		1	1 unit	41C
70	27.5	110 ... 230 AC	5	**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								
20	--	24 DC	5	**3RF2320-3DA02**		1	1 unit	41C
20	--	110 ... 230 AC	5	**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	5	**3RF2320-3DA04**		1	1 unit	41C
20	--	110 ... 230 AC	5	**3RF2320-3DA24**		1	1 unit	41C

[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 6/97, "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

	Version	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Optional accessories							
			Spring-type terminals				
 3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-type terminals Length approx. 200 mm, size 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	2	**3RA2908-1A**		1	1 unit	41B
			Ring terminal lug connection				
 3RF2900-3PA88	**Terminal covers** For 3RF23 solid-state contactors with ring terminal lug connection (With this terminal cover, degree of protection IP20 can be achieved in the terminal compartment in the case of ring terminal lug connections. It can also be used for screw terminals after simple adaptation)	2	**3RF2900-3PA88**		1	10 units	41C
	Control connectors						
			Screw terminals				
	Replacement control connectors For 3RF23/24 Screw terminals	5	**3RF2900-1TA88**		1	50 units	41C
			Spring-type terminals				
	Replacement control connectors For 3RF23/24 Spring-type terminals	5	**3RF2900-2TA88**		1	50 units	41C
	Control connector For 3RF23/24 Spring-type terminals with two clamping points per contact	5	**3RF2900-2TB88**		1	10 units	41C

SIRIUS 3RF24 solid-state contactors, three-phase

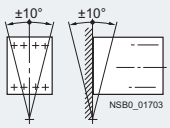
Overview

Three-phase solid-state contactors with heat sink

Their compact design with optimized heat sink enables small complete units with currents up to 50 A. They also offer all the special features of the solid-state relay in terms of time and space savings.

Technical specifications

More information	
System Manual "SIRIUS Modular System – System Overview", see https://support.industry.siemens.com/cs/ww/en/view/60311318	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16230/faq

Type		3RF24..-1....	3RF24..-2....	3RF24..-3....
Dimensions (W x H x D)		See page 6/123		
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 acc. to IEC 60068-2-27	*g*/ms	15/11		
Vibration resistance acc. to IEC 60068-2-6	*g*	2		
Degree of protection		IP20		IP00
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 acc. 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 acc. to IEC 61000-4-4	kV	2/5.0 kHz; behavior criterion 2		
- Surge acc. to IEC 61000-4-5	kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2		
Connection type		**Screw terminals**	**Spring-type terminals**	**Ring terminal 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, Ø 3.5, PZ 1	Nm	0.5 ... 0.6	--	0.5 ... 0.6
	lb.in	4.5 ... 5.3	--	4.5 ... 5.3
Grounding screw		Not included in the scope of supply		
• Size (standard screw)		M5		
Permissible mounting position				

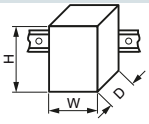
[1] These products were built as Class A devices. The use of these devices in residential areas could result in radio interference. In this case the user may be required to introduce additional interference suppression measures. The versions 3RF24..-1AC55 comply with Class B for residential, business 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.

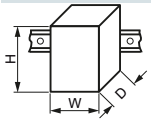
Type	**Type current/ performance capacity**[1] I_{AC-51} at 40 °C	**Rated operational current I_e** Acc. to IEC 60947-4-3 at 40 °C	Acc. to UL/CSA at 50 °C	**Power loss** at I_{AC-51}	**Minimum load current**	**Max. off-state current**	**Rated peak withstand current I_{tsm}**	**I^2t value**
	A	A	A	W	A	mA	A	A^2s
Main circuit								
3RF2410-.AB.5	10.5	7		23	0.1	10	200	200
3RF2420-.AB.5	22	15		44	0.5	10	600	1 800
3RF2430-.AB.5	30	22		61	0.5	10	1 200	7 200
3RF2440-.AB.5	40	30		80	0.5	10	1 150	6 600
3RF2450-.AB.5	50	38		107	0.5	10	1 150	6 600
3RF2410-.AC.5	10.5	7		31	0.5	10	300	450
3RF2420-.AC.5	22	15		66	0.5	10	600	1 800
3RF2430-.AC.5	30	22		91	0.5	10	1 200	7 200
3RF2440-.AC.5	40	30		121	0.5	10	1 150	6 600
3RF2450-.AC.5	50	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 100 x 105
3RF2410-.AC..		
3RF2420-.AB..	22	67 x 100 x 112.5
3RF2420-.AC..	22	89.5 x 100 x 112.5
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	113.5 x 100 x 121
3RF2440-.AB..	40	
3RF2440-.AC..	40	157.5 x 100 x 121
3RF2450-.AB..	50	
3RF2450-.AC..	50	157.5 x 180 x 121



Type		**3RF24..-.AB.5**	**3RF24..-.AC.5**
Main circuit			
Controlled phases		Two-phase	Three-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

SIRIUS 3RF24 solid-state contactors, three-phase

Selection and ordering data

	Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	A	V	d	Article No. / Price per PU			
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 600 V AC							
	Two-phase controlled						
 3RF2420-1AB45	10.5	4 ... 30 DC	2	**3RF2410-1AB45**	1	1 unit	41C
	20		2	**3RF2420-1AB45**	1	1 unit	41C
	30		2	**3RF2430-1AB45**	1	1 unit	41C
	40		5	**3RF2440-1AB45**	1	1 unit	41C
	50		2	**3RF2450-1AB45**	1	1 unit	41C
	10.5	110 AC	5	**3RF2410-1AB35**	1	1 unit	41C
	20		5	**3RF2420-1AB35**	1	1 unit	41C
	30		5	**3RF2430-1AB35**	1	1 unit	41C
	40		5	**3RF2440-1AB35**	1	1 unit	41C
	50		5	**3RF2450-1AB35**	1	1 unit	41C
	10.5	230 AC	5	**3RF2410-1AB55**	1	1 unit	41C
	20		5	**3RF2420-1AB55**	1	1 unit	41C
	30		2	**3RF2430-1AB55**	1	1 unit	41C
	40		5	**3RF2440-1AB55**	1	1 unit	41C
	50		5	**3RF2450-1AB55**	1	1 unit	41C
	Three-phase controlled						
 3RF2410-1AC45	10.5	4 ... 30 DC	2	**3RF2410-1AC45**	1	1 unit	41C
	20		2	**3RF2420-1AC45**	1	1 unit	41C
	30		2	**3RF2430-1AC45**	1	1 unit	41C
	40		2	**3RF2440-1AC45**	1	1 unit	41C
	50		2	**3RF2450-1AC45**	1	1 unit	41C
	10.5	110 AC	5	**3RF2410-1AC35**	1	1 unit	41C
	20		5	**3RF2420-1AC35**	1	1 unit	41C
	30		5	**3RF2430-1AC35**	1	1 unit	41C
	40		5	**3RF2440-1AC35**	1	1 unit	41C
	50		5	**3RF2450-1AC35**	1	1 unit	41C
	10.5	230 AC	5	**3RF2410-1AC55**	1	1 unit	41C
	20		5	**3RF2420-1AC55**	1	1 unit	41C
	30		5	**3RF2430-1AC55**	1	1 unit	41C
	40		5	**3RF2440-1AC55**	1	1 unit	41C
	50		5	**3RF2450-1AC55**	1	1 unit	41C

[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 6/97, "More information".

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


3RF2410-2AB45

Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	SD	**Spring-type terminals** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V	d					
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 600 V AC							
Two-phase controlled							
10	4 ... 30 DC	5	**3RF2410-2AB45**		1	1 unit	41C
20		5	**3RF2420-2AB45**		1	1 unit	41C
10	230 AC	5	**3RF2410-2AB55**		1	1 unit	41C
20		5	**3RF2420-2AB55**		1	1 unit	41C
Three-phase controlled							
10	4 ... 30 DC	5	**3RF2410-2AC45**		1	1 unit	41C
20		5	**3RF2420-2AC45**		1	1 unit	41C
10	230 AC	5	**3RF2410-2AC55**		1	1 unit	41C
20		5	**3RF2420-2AC55**		1	1 unit	41C

Type current/ performance capacity[1] I_{max}	Rated control supply voltage U_s	SD	**Ring terminal lug connection** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	V	d					
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 600 V AC							
Two-phase controlled							
50	4 ... 30 DC	5	**3RF2450-3AB45**		1	1 unit	41C
50	230 AC	5	**3RF2450-3AB55**		1	1 unit	41C
Three-phase controlled							
50	4 ... 30 DC	5	**3RF2450-3AC45**		1	1 unit	41C
50	230 AC	5	**3RF2450-3AC55**		1	1 unit	41C

[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 6/97, "More information".

For accessories, see page 6/121.

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.

The following function modules are available:

- Converters
- Load monitoring
- Heating current monitoring
- Power controllers
- Power regulators

With the exception of the converter, the function modules can be used only with single-phase solid-state switching devices.

Recommended assignment of the function modules to the 3RF21 single-phase solid-state relays

Type	**Accessories**					
	Converters	Load monitoring		Heating current monitoring[1]	Power controllers[1]	Power regulators[1]
		Basic	Extended[1]			
Type current = 20 A						
3RF2120-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2120-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2120-1A.22	--	--	3RF2920-0GA33	--	--	--
3RF2120-1A.24	--	--	3RF2920-0GA36	--	--	--
3RF2120-1A.42	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2120-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2120-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2120-2A.02	3RF2900-0EA18	--	--	--	--	--
3RF2120-2A.04	3RF2900-0EA18	--	--	--	--	--
3RF2120-2A.22	--	--	--	--	--	--
3RF2120-2A.24	--	--	--	--	--	--
3RF2120-2A.42	3RF2900-0EA18	--	--	--	--	--
3RF2120-2A.45	3RF2900-0EA18	--	--	--	--	--
3RF2120-3A.02	3RF2900-0EA18	--	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2120-3A.04	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2120-3A.22	--	--	3RF2920-0GA33	--	3RF2920-0KA13	3RF2920-0HA13
3RF2120-3A.24	--	--	3RF2920-0GA36	--	3RF2920-0KA16	3RF2920-0HA16
Type current = 30 A						
3RF2130-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2130-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2130-1A.06	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2130-1A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2130-1A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2130-1A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2130-1A.42	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2130-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2130-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
Type current = 50 A						
3RF2150-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2150-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-1A.06	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-1A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2150-1A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2150-1A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2150-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-1B.06	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-1B.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2150-2A.02	3RF2900-0EA18	--	--	--	--	--
3RF2150-2A.04	3RF2900-0EA18	--	--	--	--	--
3RF2150-2A.06	3RF2900-0EA18	--	--	--	--	--
3RF2150-2A.14	3RF2900-0EA18	--	--	--	--	--
3RF2150-2A.22	--	--	--	--	--	--
3RF2150-2A.24	--	--	--	--	--	--
3RF2150-2A.26	--	--	--	--	--	--
3RF2150-3A.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2150-3A.04	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-3A.06	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-3A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2150-3A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2150-3A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36

[1] For line voltages in the range from 110 to 230 V, the versions of the 3RF29..-0.A13 function modules can also be combined with more voltage-resistant versions of the solid-state relays (3RF21..-....4, -....5 or -....6).

Type	**Accessories**					
	Converters	Load monitoring		Heating current monitoring[1]	Power controllers[1]	Power regulators[1]
		Basic	Extended[1]			
Type current = 70 A						
3RF2170-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2170-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2170-1A.05	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2170-1A.06	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2170-1A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2170-1A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2170-1A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2170-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2170-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2170-1C.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
Type current = 90 A						
3RF2190-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2190-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2190-1A.06	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2190-1A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2190-1A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2190-1A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2190-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2190-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2190-2A.02	3RF2900-0EA18	--	--	--	--	--
3RF2190-2A.04	3RF2900-0EA18	--	--	--	--	--
3RF2190-2A.06	3RF2900-0EA18	--	--	--	--	--
3RF2190-2A.22	--	--	--	--	--	--
3RF2190-2A.24	--	--	--	--	--	--
3RF2190-2A.26	--	--	--	--	--	--
3RF2190-3A.02	3RF2900-0EA18	--	3RF2990-0GA13	--	3RF2990-0KA13	3RF2990-0HA13
3RF2190-3A.04	3RF2900-0EA18	--	3RF2990-0GA16	3RF2932-0JA16	3RF2990-0KA16	3RF2990-0HA16
3RF2190-3A.06	3RF2900-0EA18	--	3RF2990-0GA16	3RF2932-0JA16	3RF2990-0KA16	3RF2990-0HA16
3RF2190-3A.22	--	--	3RF2990-0GA33	--	--	3RF2990-0HA33
3RF2190-3A.24	--	--	3RF2990-0GA36	--	--	3RF2990-0HA36
3RF2190-3A.26	--	--	3RF2990-0GA36	--	--	3RF2990-0HA36
3RF2190-3A.44	3RF2900-0EA18	--	3RF2990-0GA16	3RF2932-0JA16	3RF2990-0KA16	3RF2990-0HA16

[1] For line voltages in the range from 110 to 230 V, the versions of the 3RF29..-0.A13 function modules can also be combined with more voltage-resistant versions of the solid-state relays (3RF21..-....4, -....5 or -....6).

Recommended assignment of the function modules to the 3RF22 three-phase solid-state relays

Type	**Accessories**					
	Converters	Load monitoring		Heating current monitoring	Power controllers	Power regulators
		Basic	Extended			
Type current up to 55 A						
3RF22..-1A...	3RF2900-0EA18	--	--	--	--	--
3RF22..-2A...	3RF2900-0EA18	--	--	--	--	--
3RF22..-3A...	3RF2900-0EA18	--	--	--	--	--

Recommended assignment of the function modules to the 3RF23 single-phase solid-state contactors

Type	**Accessories**					
	Converters	Load monitoring		Heating current monitoring[1]	Power controllers[1]	Power regulators[1]
		Basic	Extended[1]			
Type current = 10.5 A						
3RF2310-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	3RF2916-0JA13	3RF2920-0KA13	3RF2920-0HA13
3RF2310-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-1A.06	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-1A.12	3RF2900-0EA18	--	3RF2920-0GA13	3RF2916-0JA13	3RF2920-0KA13	3RF2920-0HA13
3RF2310-1A.14	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-1A.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2310-1A.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2310-1A.26	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2310-1A.44	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16

[1] For line voltages in the range from 110 to 230 V, the versions of the 3RF29..-0.A13 function modules can also be combined with more voltage-resistant versions of the solid-state contactors (3RF23..-....4, -....5 or -....6).

General data

Type	Accessories					
	Converters	Load monitoring		Heating current monitoring[1]	Power controllers[1]	Power regulators[1]
		Basic	Extended[1]			
Type current = 10.5 A						
3RF2310-1B.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	3RF2916-0JA13	3RF2920-0KA13	3RF2920-0HA13
3RF2310-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-1B.06	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-1B.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2310-1B.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2310-1B.26	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2310-2A.02	3RF2900-0EA18	--	--	--	--	--
3RF2310-2A.04	3RF2900-0EA18	--	--	--	--	--
3RF2310-2A.06	3RF2900-0EA18	--	--	--	--	--
3RF2310-2A.22	--	--	--	--	--	--
3RF2310-2A.24	--	--	--	--	--	--
3RF2310-2A.26	--	--	--	--	--	--
3RF2310-3A.02	3RF2900-0EA18	--	3RF2920-0GA13	3RF2916-0JA13	3RF2920-0KA13	3RF2920-0HA13
3RF2310-3A.04	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-3A.06	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-3A.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2310-3A.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2310-3A.26	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
Type current = 20 A						
3RF2320-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2320-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1A.06	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1A.14	3RF2900-0EA18	--	3RF2920-0GA16	--	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1A.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2320-1A.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-1A.26	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-1A.44	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1B.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2320-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1B.06	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1B.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2320-1B.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-1B.26	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-1B.44	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1C.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2320-1C.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1C.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2320-1C.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-1C.44	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1D.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2320-1D.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1D.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2320-1D.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-1D.44	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-2A.02	3RF2900-0EA18	--	--	--	--	--
3RF2320-2A.04	3RF2900-0EA18	--	--	--	--	--
3RF2320-2A.06	3RF2900-0EA18	--	--	--	--	--
3RF2320-2A.22	--	--	--	--	--	--
3RF2320-2A.24	--	--	--	--	--	--
3RF2320-2A.26	--	--	--	--	--	--
3RF2320-2C.02	3RF2900-0EA18	--	--	--	--	--
3RF2320-2C.04	3RF2900-0EA18	--	--	--	--	--
3RF2320-2C.22	--	--	--	--	--	--
3RF2320-2C.24	--	--	--	--	--	--
3RF2320-2D.22	--	--	--	--	--	--
3RF2320-2D.24	--	--	--	--	--	--
3RF2320-3A.02	3RF2900-0EA18	--	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2320-3A.04	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-3A.06	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-3A.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2320-3A.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-3A.26	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-3A.44	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16

[1] For line voltages in the range from 110 to 230 V, the versions of the 3RF29..-0.A13 function modules can also be combined with more voltage-resistant versions of the solid-state contactors (3RF23..-....4, -....5 or -....6).

Type	Accessories					
	Converters	Load monitoring Basic[1]	Extended[2]	Heating current monitoring[2]	Power controllers[2]	Power regulators[2]
Type current = 20 A						
3RF2320-3D.02	3RF2900-0EA18	--	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2320-3D.04	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-3D.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2320-3D.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
Type current = 30 A						
3RF2330-1A.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2330-1A.04	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1A.06	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1A.14	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2330-1A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-1A.25	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-1A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-1A.44	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1A.45	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1B.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2330-1B.04	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1B.06	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1B.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2330-1B.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-1B.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-1B.44	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1C.02	3RF2900-0EA18	--	3RF2950-0GA13	--	--	3RF2950-0HA13
3RF2330-1D.44	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-3A.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2330-3A.04	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-3A.06	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-3A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2330-3A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-3A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-3A.44	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
Type current = 40 A						
3RF2340-1A.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2340-1A.04	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-1A.06	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-1A.14	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-1A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2340-1A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2340-1A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2340-1A.45	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-1B.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2340-1B.04	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-1B.06	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-1B.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2340-1B.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2340-1B.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2340-3A.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2340-3A.04	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-3A.06	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-3A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2340-3A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2340-3A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2340-3A.45	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
Type current = 50 A						
3RF2350-1A.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2350-1A.04	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-1A.06	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-1A.14	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-1A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2350-1A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2350-1A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2350-1A.45	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16

[1] The technical specifications must be taken into account when selecting the function modules. More combinations may be possible if the solid-state relays and contactors are not fully loaded, e.g. a load monitor for 20 A can also be operated with a solid-state contactor for 30 A if the load current during operation does not exceed 20 A.

[2] For line voltages in the range from 110 to 230 V, the versions of the 3RF29..-0.A13 function modules can also be combined with more voltage-resistant versions of the solid-state contactors (3RF23..-....4, -....5 or -....6).

General data

Type	Accessories					
	Converters	Load monitoring		Heating current monitoring[1]	Power controllers[1]	Power regulators[1]
		Basic	Extended[1]			
Type current = 50 A						
3RF2350-1B.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2350-1B.04	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-1B.06	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-1B.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2350-1B.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2350-1B.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2350-1B.44	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-3A.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2350-3A.04	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-3A.06	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-3A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2350-3A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2350-3A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2350-3A.44	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
Type current = 70 A						
3RF2370-1B.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2370-1B.04	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2370-1B.06	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2370-1B.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2370-1B.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2370-1B.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2370-3A.02	3RF2900-0EA18	--	3RF2990-0GA13	--	3RF2990-0KA13	3RF2990-0HA13
3RF2370-3A.04	3RF2900-0EA18	--	3RF2990-0GA16	--	3RF2990-0KA16	3RF2990-0HA16
3RF2370-3A.06	3RF2900-0EA18	--	3RF2990-0GA16	--	3RF2990-0KA16	3RF2990-0HA16
3RF2370-3A.22	--	--	3RF2990-0GA33	--	--	3RF2990-0HA33
3RF2370-3A.24	--	--	3RF2990-0GA36	--	--	3RF2990-0HA36
3RF2370-3A.26	--	--	3RF2990-0GA36	--	--	3RF2990-0HA36
3RF2370-3A.45	3RF2900-0EA18	--	3RF2990-0GA16	--	3RF2990-0KA16	3RF2990-0HA16
3RF2370-3B.02	3RF2900-0EA18	--	3RF2990-0GA13	--	3RF2990-0KA13	3RF2990-0HA13
3RF2370-3B.04	3RF2900-0EA18	--	3RF2990-0GA16	--	3RF2990-0KA16	3RF2990-0HA16
3RF2370-3B.06	3RF2900-0EA18	--	3RF2990-0GA16	--	3RF2990-0KA16	3RF2990-0HA16
3RF2370-3B.22	--	--	3RF2990-0GA33	--	--	3RF2990-0HA33
3RF2370-3B.24	--	--	3RF2990-0GA36	--	--	3RF2990-0HA36
3RF2370-3B.26	--	--	3RF2990-0GA36	--	--	3RF2990-0HA36

[1] For line voltages in the range from 110 to 230 V, the versions of the 3RF29..-0.A13 function modules can also be combined with more voltage-resistant versions of the solid-state contactors (3RF23..-....4, -....5 or -....6).

Recommended assignment of the function modules to the 3RF24 three-phase solid-state contactors

Type	Accessories					
	Converters	Load monitoring		Heating current monitoring	Power controllers	Power regulators
		Basic	Extended			
Type current up to 50 A						
3RF24..-1..4.	3RF2900-0EA18	--	--	--	--	--
3RF24..-2..4.	--	--	--	--	--	--
3RF24..-3..4.	3RF2900-0EA18	--	--	--	--	--
3RF24..-...5.	--	--	--	--	--	--

Technical specifications

More information	
System Manual "SIRIUS Modular System – System Overview", see https://support.industry.siemens.com/cs/ww/en/view/60311318	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16231/faq

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 acc. to IEC 60068-2-27	*g*/ms	15/11					
Vibration resistance acc. to IEC 60068-2-6	*g*	2					
Degree of protection		IP20					
Electromagnetic compatibility (EMC)							
• Emitted interference							
- Conducted interference voltage acc. to IEC 60947-4-3		Class A for industrial applications[1]					
- Emitted, high-frequency interference voltage acc. to IEC 60947-4-3		Class B for residential, business and commercial applications					
• Interference immunity							
- Electrostatic discharge acc. 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 acc. to IEC 61000-4-4		2 kV/5.0 kHz; behavior criterion 2					
- Surge acc. 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	0.5 ... 0.6					
	lb.in	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 the user may be required to introduce additional interference suppression measures.

Type		3RF29..-0EA18	3RF29..-0FA08	3RF29..-0GA.3	3RF29..-0GA.6
Main circuit					
Rated operational voltage U_e	V AC	--[1]		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			

General data

Type		3RF29..-...0.	3RF29..-...1.	3RF29..-...3.
Control circuit				
Method of operation		DC operation	AC/DC operation	AC operation
Rated control supply voltage U_s Rated actuating current	V mA	24 15		110
Rated frequency of the control supply voltage	Hz	--	50/60	
Actuating voltage, max.	V	30		121
Rated actuating current At maximum voltage	mA	15		
Response voltage • For operating current	V mA	15 2		90
Drop-out voltage	V	5		15

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 • Measuring range • Minimum partial load current	 A A A	 0.25 ... 6 0 ... 6.6 0.25	 0.65 ... 20 0 ... 22 0.65	 0.56 ... 20	 1.62 ... 50 0 … 55 1.6	 2.93 ... 90 0 … 99 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 • Measuring range • Minimum partial load current	 A A A	 4 ... 20 0 ... 22 --	 10 ... 50 0 ... 55	 18 ... 90 4 ... 99	 0.42 ... 16 0 ... 16 0.42	 0.8 ... 32 0 ... 32 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 • Measuring range • Minimum partial load current	 A A A	 0.15 ... 4 0 ... 4 --	 0.65 ... 20 0 ... 22 0.65	 1.6 ... 50 0 ... 55 1.6	 2.9 ... 90 0 ... 99 2.9
Number of partial loads		--	1 ... 6		

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

This function module is used for conversions from an analog input signal to an on/off ratio with time basis 1 s. The module can only be used in conjunction with 3RF21 and 3RF23 single-phase solid-state switching devices or 3RF22 and 3RF24 three-phase devices. It can be used on versions with 24 V DC and 24 V AC/DC control supply voltage.

Note:

The use of single-pole solid-state switching devices with converters, power controllers or power regulators on AC loads in full-wave control mode is not recommended. Since the function modules do not synchronize with each other, this may lead to fluctuations in the heating power; optimum compensation can no longer be ensured, especially for setpoints < 50%.

Selection and ordering data

	Rated operational current I_e	Rated operational voltage U_e	SD	**Screw terminals**		PU (UNIT, SET, M)	PS*	PG
	A	V	d	Article No.	Price per PU			
Converters								
	Rated control supply voltage 24 V AC/DC							
 3RF2900-0EA18	--	--	2	**3RF2900-0EA18**		1	1 unit	41C

Overview

Load monitoring for 3RF2 single-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 commissioning 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). The function module can only be used in conjunction with a 3RF21 solid-state relay or a 3RF23 solid-state contactor. The devices with spring-type terminals in the load circuit are not suitable.

Selection and ordering data

	Rated operational current I_e	Rated operational voltage U_e	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	A	V	d	Article No.	Price per PU			
Basic load monitoring								
 3RF2920-0FA08	Rated control supply voltage 24 V DC							
	6	--	2	**3RF2906-0FA08**		1	1 unit	41C
	20	--	2	**3RF2920-0FA08**		1	1 unit	41C
	• With mounted 3RF2900-0RA88 cover							
	6	--	2	**3RF2906-0FA08-0KH0**		1	1 unit	41C
	20	--	2	**3RF2920-0FA08-0KH0**		1	1 unit	41C
Extended load monitoring								
 3RF2920-0GA13	Rated control supply voltage 24 V AC/DC							
	20	110 ... 230	2	**3RF2920-0GA13**		1	1 unit	41C
	20	400 … 600	2	**3RF2920-0GA16**		1	1 unit	41C
	50	110 ... 230	2	**3RF2950-0GA13**		1	1 unit	41C
	50	400 … 600	2	**3RF2950-0GA16**		1	1 unit	41C
	90	110 ... 230	2	**3RF2990-0GA13**		1	1 unit	41C
	90	400 … 600	2	**3RF2990-0GA16**		1	1 unit	41C
	Rated control supply voltage 110 V AC							
	20	110 ... 230	2	**3RF2920-0GA33**		1	1 unit	41C
	20	400 … 600	2	**3RF2920-0GA36**		1	1 unit	41C
	50	110 ... 230	2	**3RF2950-0GA33**		1	1 unit	41C
	50	400 … 600	2	**3RF2950-0GA36**		1	1 unit	41C
	90	110 ... 230	2	**3RF2990-0GA33**		1	1 unit	41C
	90	400 … 600	2	**3RF2990-0GA36**		1	1 unit	41C

Accessories

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Optional accessories							
 3RF2900-0RA88	**Sealable covers for function modules** (not for converters)	5	**3RF2900-0RA88**		1	10 units	41C

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

Overview

Heating current monitoring for 3RF2 single-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 commissioning. 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:
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). The function module can only be used in conjunction with a 3RF21 solid-state relay or a 3RF23 solid-state contactor. The devices with spring-type terminals in the load circuit are not suitable.

Selection and ordering data

	Rated operational current I_e	Rated operational voltage U_e	SD	**Screw terminals**		PU (UNIT, SET, M)	PS*	PG
	A	V	d	Article No.	Price per PU			
Heating current monitoring[1]								
	Rated control supply voltage 24 V AC/DC							
	16	110 ... 230	2	**3RF2916-0JA13**		1	1 unit	41C
	16	110 ... 230	5	**3RF2916-0JA13-1KK0**		1	1 unit	41C
	16	400 … 600	2	**3RF2916-0JA16-1KK0**		1	1 unit	41C
	32	110 ... 230	2	**3RF2932-0JA13-1KK0**		1	1 unit	41C
	32	400 … 600	2	**3RF2932-0JA16**		1	1 unit	41C
	32	400 … 600	2	**3RF2932-0JA16-1KK0**		1	1 unit	41C

3RF2932-0JA13

[1] Supplied without control connector. The control connector can be purchased from Wieland by quoting Article No. 8213 B/6VR (PCB connector), see page 16/16.

Accessories

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Optional accessories							
	Sealable covers for function modules (not for converters)	5	**3RF2900-0RA88**		1	10 units	41C

3RF2900-0RA88

Overview

Power controllers for 3RF2 single-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 limitation
  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 version:
Deviations from the standard version

3RF2904-0KA13-0KC0

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

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

Power control

The power controller adjusts the power in the connected load by means of a solid-state switching device depending on the set-point 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.
See note about AC loads on page 6/133.

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":
https://support.industry.siemens.com/cs/ww/en/view/109751887.

Selection and ordering data

	Rated operational current I_e	Rated operational voltage U_e	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	A	V	d	Article No. / Price per PU			
Power controllers							
 3RF2920-0KA13	Rated control supply voltage 24 V AC/DC						
	4	110 ... 230	2	**3RF2904-0KA13-0KC0**	1	1 unit	41C
	4		2	**3RF2904-0KA13-0KT0**	1	1 unit	41C
	20		2	**3RF2920-0KA13**	1	1 unit	41C
	50		2	**3RF2950-0KA13**	1	1 unit	41C
	90		2	**3RF2990-0KA13**	1	1 unit	41C
	20	400 … 600	2	**3RF2920-0KA16**	1	1 unit	41C
	50		2	**3RF2950-0KA16**	1	1 unit	41C
	50		2	**3RF2950-0KA16-0KT0**	1	1 unit	41C
	90		2	**3RF2990-0KA16**	1	1 unit	41C

	Version	SD	Article No. / Price per PU	PU (UNIT, SET, M)	PS*	PG
		d				
Optional accessories						
 3RF2900-0RA88	**Sealable covers for function modules** (not for converters)	5	**3RF2900-0RA88**	1	10 units	41C

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

Overview

Power regulators for 3RF2 single-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 limitation
  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

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.
See note about AC loads on page 6/133.

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":
https://support.industry.siemens.com/cs/ww/en/view/109751887.

Selection and ordering data

	Rated operational current I_e	Rated operational voltage U_e	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	A	V	d	Article No.	Price per PU			
Power regulators								
 3RF2920-0HA13	Rated control supply voltage 24 V AC/DC							
	20	110 ... 230	2	**3RF2920-0HA13**		1	1 unit	41C
	20	400 … 600	2	**3RF2920-0HA16**		1	1 unit	41C
	50	110 ... 230	2	**3RF2950-0HA13**		1	1 unit	41C
	50	400 … 600	2	**3RF2950-0HA16**		1	1 unit	41C
	90	110 ... 230	2	**3RF2990-0HA13**		1	1 unit	41C
	90	400 … 600	2	**3RF2990-0HA16**		1	1 unit	41C
	Rated control supply voltage 110 V AC							
	20	110 ... 230	2	**3RF2920-0HA33**		1	1 unit	41C
	20	400 … 600	2	**3RF2920-0HA36**		1	1 unit	41C
	50	110 ... 230	2	**3RF2950-0HA33**		1	1 unit	41C
	50	400 … 600	2	**3RF2950-0HA36**		1	1 unit	41C
	90	110 ... 230	2	**3RF2990-0HA33**		1	1 unit	41C
	90	400 … 600	2	**3RF2990-0HA36**		1	1 unit	41C

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Optional accessories							
 3RF2900-0RA88	**Sealable covers for function modules** (not for converters)	5	**3RF2900-0RA88**		1	10 units	41C

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

Overview

More information	
Homepage, see www.siemens.com/solid-state-switching-devices Industry Mall, see www.siemens.com/product?3RF	Online configurator, see www.siemens.com/sirius/configurators

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 three-phase solid-state contactors are equipped with a three-phase control which is particularly suitable for typical motor current circuits without connecting to the neutral conductor.

Important features:

- Insulated enclosure with integrated heat sink
- Degree of protection IP20
- Integrated mounting foot to snap on a standard mounting rail or for assembly onto a support plate
- Variety of connection methods
- Plug-in control connection
- Display via LEDs
- Wide voltage range for AC control supply voltage

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 among 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-type 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 7/98) or a 3RR2 current monitoring relay (see pages 10/62 and 10/70) 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"). To do this, the starting current, the starting time and the motor loaded in 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!

Alternatively, the tool for "Selection of solid-state contactors for switching motors" can be used. The correct device size can be determined by entering the network and motor data along with the application and ambient conditions, see www.siemens.com/solid-state-switching-devices.

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.

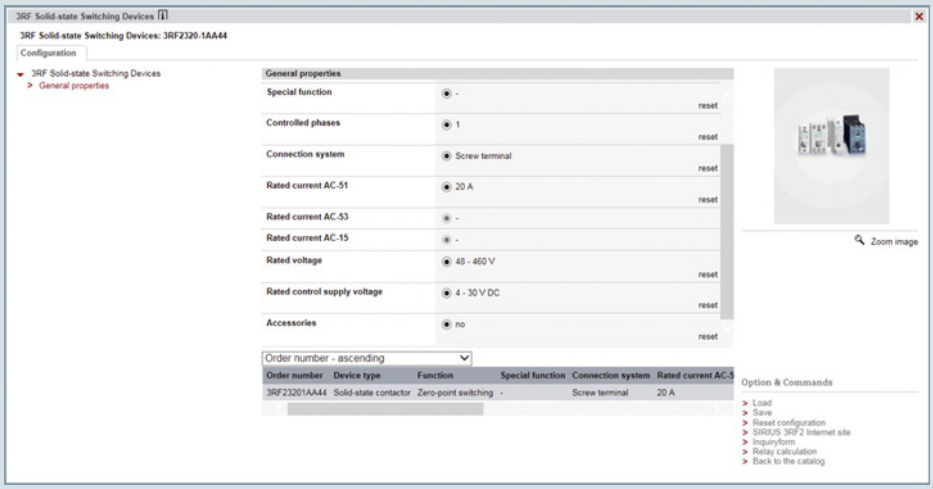
Siemens generally recommends using SITOR semiconductor fuses. These fuses also provide protection against destruction in the event of a short circuit even when the solid-state contactors and solid-state relays are fully utilized.

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.

Online Configurator

- Simple selection of individual solid-state switching devices by means of technical characteristics (e.g. zero-point switching, spring-type terminal and rated current)
- Once configuration is complete, you receive the article numbers corresponding to the products.

see
www.siemens.com/sirius/configurators



Article No. scheme

Product versions		Article number									
Solid-state contactors		**3RF34**	□	□	–	□	□	□	□	□	Three-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-type terminals					**2**					
Switching function	Instantaneous switching						**B**				
Number of controlled phases	Three-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, solid-state contactor only
Example		**3RF34**	**1**	**0**	**–**	**1**	**B**	**B**	**0**	**4**	

Note:

The Article No. 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.

General data

Benefits

- Units with integrated heat sink, "ready to use"
- Compact and space-saving design
- Reversing contactors with integrated interlocking

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.

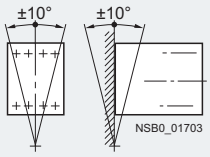
See Configuration Manual "Load Feeders – Configuring the SIRIUS Modular System – Selection Data for Fuseless and Fused Load Feeders", https://support.industry.siemens.com/cs/ww/en/view/39714188.

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.

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 acc. to IEC 60068-2-27	*g*/ms	15/11			
Vibration resistance acc. to IEC 60068-2-6	*g*	2			
Degree of protection		IP20			
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 acc. 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 acc. to IEC 61000-4-4	kV	2; at 5 kHz; behavior criterion 2			
- Surge acc. to IEC 61000-4-5[2]	kV	Conductor - ground: 2; conductor - conductor: 1; behavior criterion 2			
Connection type		**Screw terminals**		**Spring-type 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 the user 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 "SIRIUS – System Overview", https://support.industry.siemens.com/cs/WW/en/view/60311318
- Manual "SIRIUS – 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, dimensional drawings and characteristic curves, see https://support.industry.siemens.com/cs/ww/en/ps/16237.

For additional information, please enter the article number of the required device under the tab "Product List".

Overview

These three-phase controlled, instantaneous switching solid-state contactors in the insulating enclosure are offered in a width of 45 mm up to 5.2 A – and in a width of 90 mm up to 16 A. They allow the operation of motors up to 7.5 kW.[1)]

1) 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 $I/I_e \geq 8$) the data in the manual "SIRIUS – 3RF34 Solid-State Switching Devices" must be taken into account, see https://support.industry.siemens.com/cs/ww/en/view/60298187.

Technical specifications

More information	
System Manual "SIRIUS Modular System – System Overview", see https://support.industry.siemens.com/cs/ww/en/view/60311318	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16239/faq
Manual "SIRIUS – 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 $I_{AC\text{-}53a}$[1)] acc. 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 $I_{AC\text{-}53a}$					
• 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 protector, 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 $I_{AC\text{-}53a}$ acc. 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 $I_{AC\text{-}53a}$							
• 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		Three-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

SIRIUS 3RF34 solid-state contactors, three-phase *IE3/IE4 ready*

Selection and ordering data

More information	
System Manual "SIRIUS Modular System – System Overview", see https://support.industry.siemens.com/cs/ww/en/view/60311318	Manual "SIRIUS – 3RF34 Solid-State Switching Devices", see https://support.industry.siemens.com/cs/ww/en/view/60298187

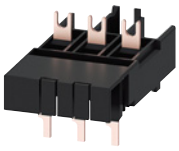
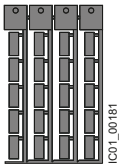
Motor contactors · Instantaneous switching · Three-phase controlled

	Rated operational current I_e	Rated power at I_e and U_e	Rated control supply voltage U_s	SD	**Screw terminals**	PU (UNIT, SET, M)	PS*	PG
	A	400 V kW	V	d	Article No. / Price per PU			
Rated operational voltage U_e 48 ... 480 V AC								
 3RF3405-1BB	5.2	**2.2**	24 DC	2	**3RF3405-1BB04**	1	1 unit	41C
	9.2	**4.0**		5	**3RF3410-1BB04**	1	1 unit	41C
	12.5	**5.5**		5	**3RF3412-1BB04**	1	1 unit	41C
	16	**7.5**		5	**3RF3416-1BB04**	1	1 unit	41C
	5.2	**2.2**	110 ... 230 AC	5	**3RF3405-1BB24**	1	1 unit	41C
	9.2	**4.0**		5	**3RF3410-1BB24**	1	1 unit	41C
	12.5	**5.5**		5	**3RF3412-1BB24**	1	1 unit	41C
	16	**7.5**		5	**3RF3416-1BB24**	1	1 unit	41C
Rated operational voltage U_e 48 ... 600 V AC, blocking voltage 1 600 V								
 3RF3410-1BB	5.2	**2.2**	24 DC	5	**3RF3405-1BB06**	1	1 unit	41C
	9.2	**4.0**		5	**3RF3410-1BB06**	1	1 unit	41C
	12.5	**5.5**		5	**3RF3412-1BB06**	1	1 unit	41C
	16	**7.5**		5	**3RF3416-1BB06**	1	1 unit	41C
	5.2	**2.2**	110 ... 230 AC	5	**3RF3405-1BB26**	1	1 unit	41C
	9.2	**4.0**		5	**3RF3410-1BB26**	1	1 unit	41C
	12.5	**5.5**		5	**3RF3412-1BB26**	1	1 unit	41C
	16	**7.5**		5	**3RF3416-1BB26**	1	1 unit	41C

	Rated operational current I_e	Rated power at I_e and U_e	Rated control supply voltage U_s	SD	**Spring-type terminals**	PU (UNIT, SET, M)	PS*	PG
	A	400 V kW	V	d	Article No. / Price per PU			
Rated operational voltage U_e 48 ... 480 V AC								
 3RF3405-2BB	5.2	**2.2**	24 DC	5	**3RF3405-2BB04**	1	1 unit	41C
	9.2	**4.0**		5	**3RF3410-2BB04**	1	1 unit	41C
	12.5	**5.5**		5	**3RF3412-2BB04**	1	1 unit	41C
	16	**7.5**		5	**3RF3416-2BB04**	1	1 unit	41C
	5.2	**2.2**	110 ... 230 AC	5	**3RF3405-2BB24**	1	1 unit	41C
	9.2	**4.0**		5	**3RF3410-2BB24**	1	1 unit	41C
	12.5	**5.5**		5	**3RF3412-2BB24**	1	1 unit	41C
	16	**7.5**		5	**3RF3416-2BB24**	1	1 unit	41C
Rated operational voltage U_e 48 ... 600 V AC, blocking voltage 1 600 V								
 3RF3410-2BB	5.2	**2.2**	24 DC	5	**3RF3405-2BB06**	1	1 unit	41C
	9.2	**4.0**		5	**3RF3410-2BB06**	1	1 unit	41C
	12.5	**5.5**		5	**3RF3412-2BB06**	1	1 unit	41C
	16	**7.5**		5	**3RF3416-2BB06**	1	1 unit	41C
	5.2	**2.2**	110 ... 230 AC	5	**3RF3405-2BB26**	1	1 unit	41C
	9.2	**4.0**		5	**3RF3410-2BB26**	1	1 unit	41C
	12.5	**5.5**		5	**3RF3412-2BB26**	1	1 unit	41C
	16	**7.5**		5	**3RF3416-2BB26**	1	1 unit	41C

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

Accessories

	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
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	2	**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.	5	**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-type terminals		**Spring-type terminals**				
	Can be inserted in cable entry of the spring-type terminal (no more than 2 strips per contactor required; removable in pairs) For terminals with a conductor cross-section up to 2.5 mm²	5	**3RT2916-4JA02**		1	20 units	41B
Tools for opening spring-type terminals							
 3RA2908-1A	**Screwdrivers** For all SIRIUS devices with spring-type terminals						
	Length approx. 200 mm, size 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	2	**3RA2908-1A**		1	1 unit	41B
Blank labels							
 3SB2900-1SB20	**Unit labeling plates** For SIRIUS devices[1]						
	• 10 mm × 7 mm, titanium gray	20	**3RT2900-1SB10**		100	816 units	41B
	• 20 mm × 7 mm, titanium gray	20	**3RT2900-1SB20**		100	340 units	41B
	Adhesive labels For SIRIUS devices						
	• 19 mm × 6 mm, titanium gray	5	**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 16/16.

Overview

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% in width with the three-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.[1)]

[1)] 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 $I/I_e \geq 8$) the data in the manual "SIRIUS – 3RF34 Solid-State Switching Devices" must be taken into account, see https://support.industry.siemens.com/cs/ww/en/view/60298187.

Technical specifications

More information	
System Manual "SIRIUS Modular System – System Overview", see https://support.industry.siemens.com/cs/ww/en/view/60311318 Manual "SIRIUS – 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/16241/faq

Type		3RF3403-.BD.4	3RF3405-.BD.4	3RF3410-.BD.4
Fuseless design with 3RV2 motor starter protector, CLASS 10				
Rated operational current $I_{AC\text{-}53a}$[1)] acc. 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 $I_{AC\text{-}53a}$				
• 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 protector, 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 $I_{AC\text{-}53a}$ acc. 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 $I_{AC\text{-}53a}$				
• 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		Three-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.

SIRIUS 3RF34 solid-state reversing contactors, three-phase *IE3/IE4 ready*

Selection and ordering data

Reversing contactors · Instantaneous switching · Three-phase controlled

	Rated operational current I_e	Rated power at I_e and U_e	Rated control supply voltage U_s	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	A	400 V kW	V	d	Article No.	Price per PU			
Rated operational voltage U_e 48 ... 480 V AC									
 3RF3403-1BD	3.8	**1.5**	24 DC	2	**3RF3403-1BD04**		1	1 unit	41C
	5.4	**2.2**		5	**3RF3405-1BD04**		1	1 unit	41C
	7.4	**3.0**		5	**3RF3410-1BD04**		1	1 unit	41C
 3RF3410-1BD	3.8	**1.5**	110 ... 230 AC	5	**3RF3403-1BD24**		1	1 unit	41C
	5.4	**2.2**		5	**3RF3405-1BD24**		1	1 unit	41C
	7.4	**3.0**		5	**3RF3410-1BD24**		1	1 unit	41C

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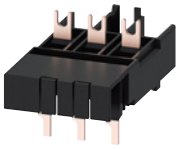 3RA2921-1BA00	**Link modules** Between solid-state reversing contactor and motor starter protector with screw terminals		**Screw terminals**				
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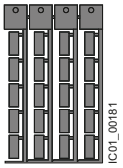
Blank labels							
 3SB2900-1SB20	**Unit labeling plates** For SIRIUS devices[1]						
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	• 20 mm × 7 mm, titanium gray	20	**3RT2900-1SB20**		100	340 units	41B
	Adhesive labels For SIRIUS devices						
	• 19 mm × 6 mm, titanium gray	5	**3RT2900-1SB60**		100	3 060 units	41B

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

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