

Overview

More information

Homepage, see www.siemens.com/sirius-control

SiePortal, see

- www.siemens.com/product?3RU2
- www.siemens.com/product?3RB

TIA Selection Tool Cloud (TST Cloud) for

- 3RU2 thermal overload relays, see www.siemens.com/tstcloud/?node=ThermalOverloadRelay
- 3RB electronic overload relays, see www.siemens.com/tstcloud/?node=ElectronicOverloadRelay

Digital Configuration Manual for load feeders, see <https://imp.siemens.com/digital-engineering-manual/dem>

Configuration Manual for load feeders, see <https://support.industry.siemens.com/cs/ww/en/view/39714188>

Conversion tool, see www.siemens.com/conversion-tool



Features

3RU2

3RB3

3RB2

Benefits

General data

Sizes	S00 ... S3	S00 ... S3	S6 ... S12	
				• Are coordinated with the dimensions, connections and technical characteristics of the other devices in the SIRIUS modular system (contactors, etc.) • Permit the mounting of slim-line and compact load feeders in widths of 45 mm (S00, S0), 55 mm (S2), 70 mm (S3), 120 mm (S6) and 145 mm (S10/S12) • Simplify configuration
Seamless current range	0.11 ... 100 A	0.1 ... 115 A	50 ... 630 A	• Allows easy and consistent configuration with one series of overload relays (for small to large loads)

Protection functions

Tripping due to overload	✓	✓	✓	• Provides optimum inverse-time delayed protection of loads against excessive temperature rises due to overload
Tripping due to phase asymmetry	✓	✓	✓	• Provides optimum inverse-time delayed protection of loads against excessive temperature rises due to phase asymmetry
Tripping due to phase failure	✓	✓	✓	• Minimizes heating of three-phase motors during phase failure
Protection of 1-phase loads	✓	--	--	• Enables the protection of 1-phase loads
Tripping due to overtemperature	-- ¹⁾	-- ¹⁾	-- ¹⁾	• Provides optimum temperature-dependent protection of loads against excessive temperature rises, e.g. for stator-critical motors or in the event of insufficient coolant flow, contamination of the motor surface or long starting or braking operations
Tripping in the event of a ground fault through internal ground fault detection (can be activated)	--	✓ (only 3RB31)	✓ (only 3RB21)	• Provides optimum protection of loads against incomplete ground faults due to moisture, condensed water, damage to the insulation material, etc. • Eliminates the need for additional special equipment • Saves space in the control cabinet • Reduces wiring outlay and costs

Features

RESET function	✓	✓	✓	• Allows manual or automatic resetting of the device
Remote RESET function	✓ (by means of separate module)	✓ (only with 3RB31 and external auxiliary voltage 24 V DC)	✓ (only with 3RB21 and external auxiliary voltage 24 V DC)	• Allows the remote resetting of the device
TEST function for auxiliary contacts	✓	✓	✓	• Allows easy checking of the function and wiring
TEST function for electronics	--	✓	✓	• Allows checking of the electronics
Status display	✓	✓	✓	• Displays the current operating state
Large current adjustment button	✓	✓	✓	• Makes it easier to set the relay exactly to the correct current value
Integrated auxiliary contacts (1 NO + 1 NC)	✓	✓	✓	• Allow the load to be switched off if necessary • Can be used to output signals

✓ Available

-- Not available

¹⁾ The SIRIUS 3RN thermistor motor protection devices can be used to provide additional temperature-dependent protection.

Protection equipment

Overload relays

General data



Features	3RU2	3RB3	3RB2	Benefits
Design of load feeders				
Short-circuit strength up to 100 kA at 690 V (in conjunction with the corresponding fuses or the corresponding motor starter protector)	✓	✓	✓	Provides optimum protection of the loads and operating personnel in the event of short circuits due to insulation faults or faulty switching operations
Electrical and mechanical matching to 3RT contactors	✓	✓	✓	- Simplifies configuration - Reduces wiring outlay and costs - Enables stand-alone installation as well as space-saving direct mounting
Straight-through transformers for main circuit¹⁾ (in this case the cables are routed through the feed-through openings of the overload relay and connected directly to the box terminals of the contactor)	--	✓ (S2, S3)	✓ (S6)	- Reduce the contact resistance (only one point of contact) - Save wiring costs (easy, no need for tools, and fast) - Save material costs - Reduce installation costs
Spring-loaded terminals for main circuit¹⁾	✓ (S00, S0)	✓ (S00, S0)	--	- Enable fast connections - Permit vibration-resistant connections - Enable maintenance-free connections
Spring-loaded terminals for auxiliary circuits¹⁾	✓	✓	✓	- Enable fast connections - Permit vibration-resistant connections - Enable maintenance-free connections
Other features				
Temperature compensation	✓	✓	✓	- Allows the use of the relays even at high temperatures without derating - Prevents premature tripping - Allows compact installation of the control cabinet without distance between the devices/load feeders - Simplifies configuration - Enables space to be saved in the control cabinet
Very high long-term stability	✓	✓	✓	Provides safe protection for the loads even after years of use in harsh operating conditions
Wide setting ranges	--	✓ (1:4)	✓ (1:4)	- Minimize the configuring outlay and costs - Minimize storage overhead, storage costs, and tied-up capital
Fixed trip class	CLASS 10, CLASS 10A	3RB30: CLASS 10E or CLASS 20E	3RB20: CLASS 10E or CLASS 20E	Optimum motor protection for standard starts
CLASS 5E, 10E, 20E, 30E trip classes adjustable on the device	--	✓ (only 3RB31)	✓ (only 3RB21)	- Enable solutions for very fast starting motors requiring special protection (e.g. Ex motors) - Enable heavy starting solutions - Reduce the number of versions - Minimize the configuring outlay and costs - Minimize storage overhead, storage costs, and tied-up capital
Low power loss	--	✓	✓	- Reduces power consumption and energy costs (up to 98% less power is used than for thermal overload relays) - Minimizes temperature rises of the contactor and control cabinet – in some cases this may eliminate the need for control cabinet cooling - Direct mounting to contactor saves space, even for high motor currents (i.e. no heat decoupling is required)
Internal power supply	-- ²⁾	✓	✓	Eliminates the need for configuration and connecting an additional control circuit

✓ Available

-- Not available

¹⁾ Available as an alternative to screw terminals.²⁾ SIRIUS 3RU2 thermal overload relays use a bimetal contactor and therefore do not require a control supply voltage.

Overview of overload relays – matching contactors

Overload relays	Current measurement	Current range	Contactors (type, size, operating power in kW)							
			3RT201.	3RT202.	3RT203.	3RT204.	3RT105.	3RT106.	3RT107.	3TF68/3TF69
			S00	S0	S2	S3	S6	S10	S12	14
Type		A	3/4/5.5/7.5	5.5/7.5/11/15/18.5	15/18.5/22/30/37	37/45/55	55/75/90	110/132/160	200/250	375/450
SIRIUS 3RU2 thermal overload relays										
	3RU211	Integrated	0.11 ... 16	✓	--	--	--	--	--	--
	3RU212	Integrated	1.8 ... 40	--	✓	--	--	--	--	--
	3RU213	Integrated	11 ... 80	--	--	✓	--	--	--	--
	3RU214	Integrated	28 ... 100	--	--	--	✓	--	--	--
SIRIUS 3RB30 electronic overload relays¹⁾										
	3RB301	Integrated	0.1 ... 16	✓	--	--	--	--	--	--
	3RB302	Integrated	0.1 ... 40	--	✓	--	--	--	--	--
	3RB303	Integrated	12.5 ... 80	--	--	✓	--	--	--	--
	3RB304	Integrated	32 ... 115	--	--	--	✓	--	--	--
SIRIUS 3RB31 electronic overload relays¹⁾										
	3RB311	Integrated	0.1 ... 16	✓	--	--	--	--	--	--
	3RB312	Integrated	0.1 ... 40	--	✓	--	--	--	--	--
	3RB313	Integrated	12.5 ... 80	--	--	✓	--	--	--	--
	3RB314	Integrated	32 ... 115	--	--	--	✓	--	--	--
SIRIUS 3RB20 electronic overload relays¹⁾										
	3RB205	Integrated	50 ... 200	--	--	--	✓	--	--	--
	3RB206	Integrated	55 ... 630	--	--	--	--	✓	✓	✓
	3RB201 + 3UF18	Integrated	630 ... 820	--	--	--	--	--	--	✓
SIRIUS 3RB21 electronic overload relays¹⁾										
	3RB215	Integrated	50 ... 200	--	--	--	✓	--	--	--
	3RB216	Integrated	55 ... 630	--	--	--	--	✓	✓	✓
	3RB211 + 3UF18	Integrated	630 ... 820	--	--	--	--	--	--	✓

✓ Can be used

-- Cannot be used

¹⁾ Technical specifications for the use of overload relays with trip class $\geq$ CLASS 20E, see [Short-circuit protection with fuses for motor feeders](#)

- Digital Configuration Manual for load feeders,
- Configuration Manual for load feeders.

Protection equipment

Overload relays

General data

Connection methods

3RU2 thermal overload relays

- Sizes S00 and S0:
 - Main and auxiliary circuit: Either screw or spring-loaded terminals
- Sizes S2 and S3:
 - Main circuit: Screw terminals with box terminal
 - Auxiliary circuit: Either screw or spring-loaded terminals

3RB3 electronic overload relays

- Sizes S00 and S0:
 - Main and auxiliary circuit: Either screw or spring-loaded terminals
- Sizes S2 and S3:
 - Main circuit: Screw terminals with box terminal or as straight-through transformer
 - Auxiliary circuit: Either screw or spring-loaded terminals

3RB2 electronic overload relays

- Size S6:
 - Main circuit: With busbar connection or as straight-through transformer
 - Auxiliary circuit: Either screw or spring-loaded terminals
- Sizes S10/S12:
 - Main circuit: With busbar connection
 - Auxiliary circuit: Either screw or spring-loaded terminals



Screw terminals



Spring-loaded terminals



Busbar connections

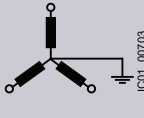
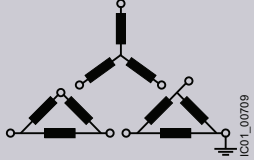


Straight-through transformers

The various connection methods and straight-through transformers are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Voltage data

The data for 3-phase power systems according to IEC 60947-4-1 are valid for the following line system configurations:

Voltage U_e	Line system configurations	
	Three-phase four-wire systems	Three-phase three-wire systems
		
V	V	V
230	--	230
400	230/400	400
440	260/440	440
500	--	500
690	400/690	690 (only from size S3)
1 000	--	1 000

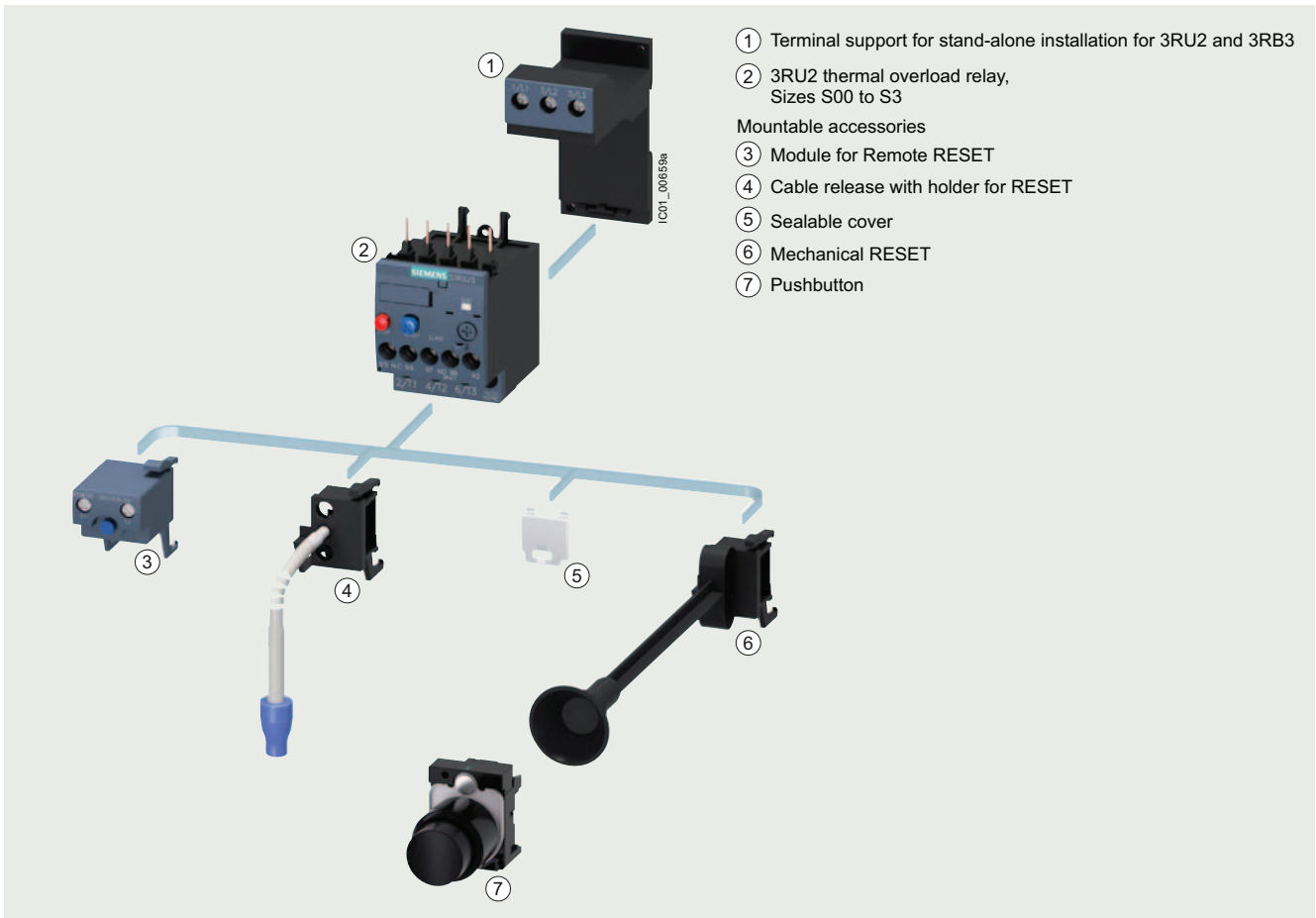
-- Not specified

Overview

More information

Homepage, see www.siemens.com/sirius-control
 SiePortal, see www.siemens.com/product?3RU2
 TIA Selection Tool Cloud (TST Cloud), see
www.siemens.com/tstcloud/?node=ThermalOverloadRelay
 Conversion tool, see www.siemens.com/conversion-tool

Equipment Manual, see
<https://support.industry.siemens.com/cs/ww/en/view/60298164>
 Characteristics and certificates, see
<https://support.industry.siemens.com/cs/ww/en/ps/16270>

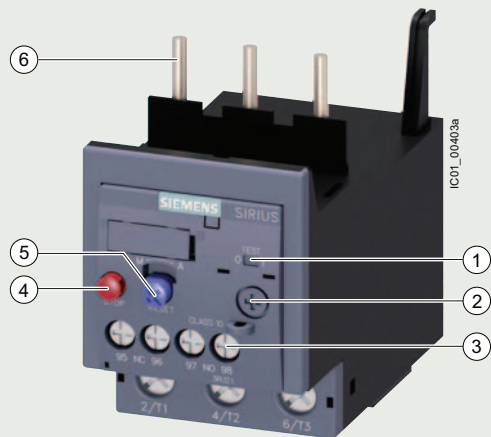


Mountable accessories for 3RU2 thermal overload relay

Protection equipment

Overload relays

SIRIUS 3RU2 thermal overload relays



- ① Switch position indicator and TEST function of the wiring:
Indicates a trip and enables the wiring test.
- ② Motor current setting:
Setting the device to the rated motor current is easy with the large rotary knob.
- ③ Connecting terminals:
Depending on the device version, the connecting terminals are screw terminals or spring-loaded terminals for the main and auxiliary circuits.
- ④ STOP button:
If the STOP button is pressed, the NC contact is opened. This switches off the contactor downstream. The NC contact is closed again when the button is released.
- ⑤ Selector switch for Manual/Automatic RESEt and RESEt button:
With this switch you can choose between Manual and Automatic RESEt. A device set to Manual RESEt can be reset locally by pressing the RESEt button. A Remote RESEt is possible using the RESEt modules (accessories), which are independent of size.
- ⑥ Connector for mounting on contactors:
Optimally adapted in electrical, mechanical and design terms to the contactors. The overload relay can be connected directly using these connector pins. Stand-alone installation is possible as an alternative (in conjunction with a terminal support for stand-alone installation).

A sealable transparent cover can be optionally mounted (accessory). It secures the motor current setting against adjustment.

3RU2 thermal overload relays up to 100 A have been designed to provide inverse-time delayed protection for loads with normal starting against impermissibly high temperature rises due to overload or phase failure.

An overload or phase failure results in an increase of the motor current beyond the set rated motor current. Via heating elements, this current rise heats up the bimetal strips inside the device which then bend and as a result trigger the auxiliary contacts by means of a tripping mechanism. The auxiliary contacts then switch off the load by means of a contactor. The break time depends on the ratio between the tripping current and the current setting I_e and is stored in the form of a long-term stable tripping characteristic curve, see [Characteristic curves](#).

The "tripped" status is signaled by means of a switch position indicator. The relay is reset manually or automatically after a recovery time has elapsed.

The 3RU2 thermal overload relays are suitable for operation with frequency converters.

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials. They comply with all important worldwide standards and approvals.

Use in hazardous areas

The 3RU2 overload relays are certified in accordance with both the European Explosion Protection Directive (ATEX) and the International Explosion Protection Standard (IECEx), see [Certificates](#).

SIRIUS 3RU2136-4.B0 thermal overload relay

Article number scheme

Product versions		Article number	
Thermal overload relay		3RU2	☐ ☐ ☐ ☐ - ☐ ☐ ☐ ☐
Device type	e.g. 1 = CLASS 10, 1 NO + 1 NC	☐	☐
Size, rated operational current and power	e.g. 16 = 16 A (7.5 kW) for size S00	☐ ☐	☐
Setting range for overload release	e.g. 0A = 0.11 ... 0.16 A	☐ ☐	☐
Connection methods	e.g. B = screw terminals	☐	☐
Installation type	e.g. 0 = mounting on contactors	☐	☐
Example		3RU2 1 1 6 - 0 A B 0	

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

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

Benefits

The most important features and benefits of the 3RU2 thermal overload relays are listed in the overview table (see [General data, page 7/77 onwards](#)).

Application**Industries**

The 3RU2 thermal overload relays are suitable for customers from all industries who want to guarantee optimum inverse-time delayed protection of their electrical loads (e.g. motors) under normal starting conditions (CLASS 10, 10A).

Application

The 3RU2 thermal overload relays have been designed for the protection of three-phase and single-phase AC and DC motors.

If single-phase AC or DC loads are to be protected by the 3RU2 thermal overload relays, all three bimetal strips must be heated. For this purpose, all main conducting paths of the relay must be connected in series.

Ambient conditions

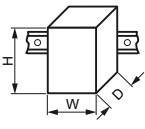
3RU2 thermal overload relays compensate temperature in the temperature range from -40 °C to +60 °C according to IEC 60947-4-1. At temperatures from +60 to +70 °C, the upper set value of the setting range has to be reduced by a specific factor.

Technical specifications**More information**

Digital Configuration Manual for load feeders, see <https://imp.siemens.com/digital-engineering-manual/dem>
Configuration Manual for load feeders, see <https://support.industry.siemens.com/cs/ww/en/view/39714188>

Equipment Manual, see <https://support.industry.siemens.com/cs/ww/en/view/60298164>
Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16270/td>

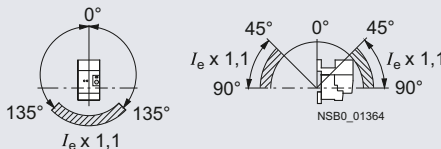
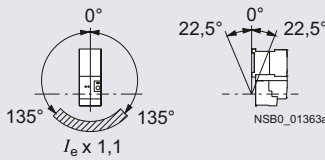
The following technical information is intended to provide an initial overview of the various device versions and functions.

Type		3RU2116	3RU2126	3RU2136	3RU2146
Size		S00	S0	S2	S3
Dimensions (W x H x D) (overload relay with terminal support for stand-alone assembly)					
• Screw terminals	mm	45 x 89 x 80	45 x 97 x 95	55 x 105 x 117	70 x 106 x 124
• Spring-loaded terminals	mm	45 x 102 x 79	45 x 114 x 95	55 x 105 x 117	70 x 106 x 124
General data					
Tripping in the event of		Overload and phase failure			
Trip class according to IEC 60947-4-1	CLASS	10		10, 10A	
Phase failure sensitivity		Yes			
Overload warning		No			
Reset and recovery		Manual, automatic and remote RESET (Remote RESET in conjunction with the appropriate accessories)			
• Reset options after tripping					
• Recovery time					
- For automatic RESET	min.	Depends on the strength of the tripping current and characteristic			
- For manual RESET	min.	Depends on the strength of the tripping current and characteristic			
- For remote RESET	min.	Depends on the strength of the tripping current and characteristic			
Features		Yes, by means of TEST function/switch position indicator slide			
• Display of operating state on device		Yes			
• TEST function		Yes			
• RESET button		Yes			
• STOP button		Yes			
Protection of motors in hazardous environments		DMT 98 ATEX G 001/  II (2) GD			
• Certificate of suitability/explosion protection type according to ATEX Product Directive 2014/34/EU		IECEx BVS 15.0046,			
• According to international standard IECEx		see https://support.industry.siemens.com/cs/ww/en/ps/16270/cert			

Protection equipment

Overload relays

SIRIUS 3RU2 thermal overload relays

Type					
Size					
Dimensions (W x H x D) (overload relay with terminal support for stand-alone assembly)					
• Screw terminals					
• Spring-loaded terminals					
General data (continued)					
Ambient temperature					
• Storage/transport	°C		-55 ... +80		
• Operation	°C		-40 ... +70		
• Temperature compensation	°C		Up to +60		
• Permissible rated current at					
- Temperature inside control cabinet 60 °C	%		100 (current reduction is required above +60 °C)		
- Temperature inside control cabinet 70 °C	%		87		
Repeat terminals					
• Coil repeat terminals		Yes		Not required	
• Auxiliary contact repeat terminals		Yes		Not required	
Degree of protection IP on the front according to IEC 60529		IP20 (screw terminals and spring-loaded terminals)			
Touch protection on the front according to IEC 60529		Finger-safe for vertical touching from the front (screw and spring-loaded terminals)			
Shock resistance with sine according to IEC 60068-2-27		g/ms	15/11 (auxiliary contacts 95/96 and 97/98: 8 g/11 ms)		
Electromagnetic compatibility (EMC)					
• Interference immunity			Not relevant		
• Emitted interference			Not relevant		
Installation altitude above sea level		m	Up to 2 000		
Mounting position			The diagrams show the permissible mounting positions for mounting on contactors and stand-alone installation. For mounting position in the hatched area, a setting correction of 10% must be implemented. Stand-alone installation:  Contactor + overload relay: 		
Type of mounting		For mounting on contactors or stand-alone installation with terminal support, screw and snap-on mounting on DIN rail.			

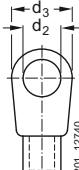
SIRIUS 3RU2 thermal overload relays

Type		3RU2116	3RU2126	3RU2136	3RU2146
Size		S00	S0	S2	S3
Main circuit					
Rated insulation voltage U_i (pollution degree 3)	V	690			1 000
Rated impulse withstand voltage U_{imp}	kV	6			8
Rated operational voltage U_e	V	690			
Type of current		Yes			
• Direct current		Yes, frequency range up to 400 Hz			
• Alternating current					
Current setting	A	0.11 ... 0.16	1.8 ... 2.5	11 ... 16	28 ... 40
	A	to 11 ... 16	to 34 ... 40	to 70 ... 80	to 80 ... 100
Power loss per unit (max.)	W	4.8 ... 7.5	5.7 ... 9.6	10.5 ... 18.9	13.5 ... 21
Short-circuit protection					
• With fuse without contactor		See Selection and ordering data, pages 7/87 ... 7/90			
• With fuse and contactor		Short-circuit protection with fuses/motor starter protectors for motor feeders, see			
		• Digital Configuration Manual for load feeders			
		• Configuration Manual for load feeders			
Protective separation between main and auxiliary conducting paths according to IEC 60947-1					
• Screw terminals or ring cable lug connections	V	440	690: Setting range ≤ 25 A	690	
• Spring-loaded terminals	V	440	440: Setting range > 25 A	690	
Auxiliary circuit					
Number of NO contacts		1			
Number of NC contacts		1			
Auxiliary contacts – Assignment		1 NO for the signal "tripped"; 1 NC for disconnecting the contactor			
Rated insulation voltage U_i (pollution degree 3)	V	690			
Rated impulse withstand voltage U_{imp}	kV	6			
Contact rating of the auxiliary contacts					
• NC, NO contacts with alternating current AC-15, rated operational current I_e at U_e					
- 24 V	A	3			
- 120 V	A	3			
- 125 V	A	3			
- 230 V	A	2			
- 400 V	A	1			
- 600 V	A	0.75			
- 690 V	A	0.75			
• NC, NO contacts with direct current DC-13, rated operational current I_e at U_e					
- 24 V	A	1			
- 110 V	A	0.22			
- 125 V	A	0.22			
- 220 V	A	0.11			
• Contact reliability (suitability for PLC control; 17 V, 5 mA)		Yes			
Short-circuit protection					
• With fuse					
- Operational class gG	A	6			
- Quick	A	10			
• With miniature circuit breaker (C characteristic)	A	6 (up to $I_k \leq 0.5$ kA; $U \leq 260$ V)			
Reliable operational voltage for protective separation between auxiliary conducting paths according to IEC 60947-1	V	440			
CSA, UL and UR rated data					
Auxiliary circuit – Switching capacity		B600, R300			

Protection equipment

Overload relays

SIRIUS 3RU2 thermal overload relays

Type		3RU2116	3RU2126	3RU2136	3RU2146
Size		S00	S0	S2	S3
Conductor cross-sections of main circuit					
Connection type		Screw terminals			Screw terminals with box terminal
Terminal screw		M3, Pozidriv size 2	M4, Pozidriv size 2	M6, Pozidriv size 2	4 mm Allen screw
Operating tools	mm	Ø 5 ... 6	Ø 5 ... 6	Ø 5 ... 6	4 mm Allen screw
Prescribed tightening torque	Nm	0.8 ... 1.2	2 ... 2.5	3 ... 4.5	4.5 ... 6
Conductor cross-sections (min./max.), one or two conductors can be connected					
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾ , max. 2 x 4	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 10) ¹⁾	2 x (1 ... 35) ¹⁾ , 1 x (1 ... 50) ¹⁾	2 x (2.5 ... 16) ¹⁾ , 2 x (10 ... 50) ¹⁾ , 1 x (10 ... 70) ¹⁾
• Finely stranded with end sleeve (DIN 46228)	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 6) ¹⁾ , max. 1 x 10	2 x (1 ... 25) ¹⁾ , 1 x (1 ... 35) ¹⁾	2 x (2.5 ... 35) ¹⁾ , 1 x (2.5 ... 50) ¹⁾
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ , 2 x (18 ... 14) ¹⁾ , 2 x 12	2 x (16 ... 12) ¹⁾ , 2 x (14 ... 8) ¹⁾	2 x (18 ... 2) ¹⁾ , 1 x (18 ... 1) ¹⁾	2 x (10 ... 1/0) ¹⁾ , 1 x (10 ... 2/0) ¹⁾
Removable box terminals ²⁾					
• With copper bars ³⁾	mm	--			2 x 12 x 4
• With cable lugs ⁴⁾					
- Terminal screw		--			M6
- Prescribed tightening torque	Nm	--			4.5 ... 6
- Usable ring cable lugs	mm	--			d ₂ = min. 6.3 d ₃ = max. 19
					
Connection type					
		Spring-loaded terminals			
Operating tools	mm	3.0 x 0.5 and 3.5 x 0.5			
Conductor cross-sections (min./max.), one conductor can be connected					
• Solid or stranded	mm ²	1 x (0.5 ... 4)	1 x (1 ... 10)	--	
• Finely stranded without end sleeve	mm ²	1 x (0.5 ... 2.5)	1 x (1 ... 6)	--	
• Finely stranded with end sleeve (DIN 46228)	mm ²	1 x (0.5 ... 2.5)	1 x (1 ... 6)	--	
• AWG cables, solid or stranded	AWG	1 x (20 ... 12)	1 x (18 ... 8)	--	
• Max. outer diameter of the conductor insulation	mm	3.6	6.4	--	
Conductor cross-sections for auxiliary circuit					
Connection type					
		Screw terminals			
Terminal screw		M3, Pozidriv size 2			
Operating tools	mm	Ø 5 ... 6			
Prescribed tightening torque	Nm	0.8 ... 1.2			
Conductor cross-sections (min./max.), one or two conductors can be connected					
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾			
• Finely stranded with end sleeve (DIN 46228)	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾			
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ , 2 x (18 ... 14) ¹⁾			
Connection type					
		Spring-loaded terminals			
Operating tools	mm	3.0 x 0.5 and 3.5 x 0.5			
Conductor cross-sections (min./max.), one or two conductors can be connected					
• Solid or stranded	mm ²	2 x (0.5 ... 2.5)			
• Finely stranded without end sleeve	mm ²	2 x (0.5 ... 2.5)			
• Finely stranded with end sleeve (DIN 46228)	mm ²	2 x (0.5 ... 1.5)			
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)			
• Max. outer diameter of the conductor insulation	mm	3.6			

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

²⁾ Cable lug and busbar connection possible after removing the box terminals.

³⁾ If bars larger than 12 mm x 10 mm are connected, a 3RT2946-4EA2 cover is needed to maintain the required phase clearance, [see page 7/106](#).

⁴⁾ If conductors larger than 25 mm² are connected, the 3RT2946-4EA2 cover is needed to maintain the required phase clearance, [see page 7/106](#).

Selection and ordering data

3RU2 thermal overload relays for mounting on contactors¹⁾, sizes S00 and S0, CLASS 10

Features and technical specifications:

- Connection methods
Main and auxiliary circuit: Either screw or spring-loaded terminals
- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator

- TEST function
- STOP button
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41F



3RU2116-..B0



3RU2116-..C0



3RU2126-..B0



3RU2126-..C0

Size contact- tor	Trip class	Rated power for three-phase motors, rated value ²⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ³⁾	Screw terminals		Spring-loaded terminals	
					Article No.	Price per PU	Article No.	Price per PU
CLASS kW								

¹⁾ With the appropriate terminal supports (see page 7/105), the 3RU2 overload relays for mounting on contactors can also be installed as stand-alone units.

²⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

³⁾ Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see - Digital Configuration Manual for load feeders, - Configuration Manual for load feeders.

Protection equipment

Overload relays

SIRIUS 3RU2 thermal overload relays **IE3/IE4 ready**

3RU2 thermal overload relays for mounting on contactors¹⁾, sizes S2 and S3, CLASS 10 or 10A

Features and technical specifications:

- Connection methods
 - Main circuit: Screw terminals with box terminal
 - Auxiliary circuit: Either screw or spring-loaded terminals
- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator

- TEST function
- STOP button
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41F



3RU2136-...B0



3RU2136-...D0



3RU2146-4.B0



3RU2146-4.D0

Size contactor	Trip class	Rated power for three-phase motors, rated value ²⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ³⁾	Screw terminals		Spring-loaded terminals (on auxiliary current side)	
					Article No.	Price per PU	Article No.	Price per PU
Size S2								
S2	10	3	5.5 ... 8	25	3RU2136-1HB0		3RU2136-1HD0	
	10	4	7 ... 10	35	3RU2136-1JB0		3RU2136-1JD0	
	10	5.5	9 ... 12.5	35	3RU2136-1KB0		3RU2136-1KD0	
	10	7.5	11 ... 16	40	3RU2136-4AB0		3RU2136-4AD0	
	10	7.5	14 ... 20	50	3RU2136-4BB0		3RU2136-4BD0	
	10	11	18 ... 25	63	3RU2136-4DB0		3RU2136-4DD0	
	10	15	22 ... 32	80	3RU2136-4EB0		3RU2136-4ED0	
	10	18.5	28 ... 40	80	3RU2136-4FB0		3RU2136-4FD0	
	10	22	36 ... 45	100	3RU2136-4GB0		3RU2136-4GD0	
	10	22	40 ... 50	100	3RU2136-4HB0		3RU2136-4HD0	
	10	30	47 ... 57	100	3RU2136-4QB0		3RU2136-4QD0	
	10	30	54 ... 65	125	3RU2136-4JB0		3RU2136-4JD0	
	10A	37	62 ... 73	160	3RU2136-4KB0		3RU2136-4KD0	
	10A	37	70 ... 80	160	3RU2136-4RB0		3RU2136-4RD0	
Size S3								
S3	10	18.5	28 ... 40	80	3RU2146-4FB0		3RU2146-4FD0	
	10	22	36 ... 50	125	3RU2146-4HB0		3RU2146-4HD0	
	10	30	45 ... 63	125	3RU2146-4JB0		3RU2146-4JD0	
	10	37	57 ... 75	160	3RU2146-4KB0		3RU2146-4KD0	
	10	45	70 ... 90	160	3RU2146-4LB0		3RU2146-4LD0	
	10	45	80 ... 100 ⁴⁾	200	3RU2146-4MB0		3RU2146-4MD0	

¹⁾ With the appropriate terminal supports (see page 7/105), the 3RU2 overload relays for mounting on contactors can also be installed as stand-alone units.

²⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

³⁾ Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see - Digital Configuration Manual for load feeders, - Configuration Manual for load feeders.

⁴⁾ For overload relays > 100 A, see 3RB2 electronic overload relays, page 7/91 onwards.

IE3/IE4 ready

SIRIUS 3RU2 thermal overload relays

3RU2 thermal overload relays for stand-alone installation, sizes S00 and S0, CLASS 10

Features and technical specifications:

- Connection methods
Main and auxiliary circuit: Either screw or spring-loaded terminals
- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator

- TEST function
- STOP button
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41F



3RU2116-..B1



3RU2116-..C1



3RU2126-4.B1



3RU2126-4.C1

Size contactor	Trip class	Rated power for three-phase motors, rated value ¹⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ²⁾	Screw terminals 	Spring-loaded terminals 		
					Article No.	Price per PU	Article No.	Price per PU
Size S00								
S00	10	0.04	0.11 ... 0.16	0.5	3RU2116-0AB1		3RU2116-0AC1	
	10	0.06	0.14 ... 0.2	1	3RU2116-0BB1		3RU2116-0BC1	
	10	0.06	0.18 ... 0.25	1	3RU2116-0CB1		3RU2116-0CC1	
	10	0.09	0.22 ... 0.32	1.6	3RU2116-0DB1		3RU2116-0DC1	
	10	0.09	0.28 ... 0.4	2	3RU2116-0EB1		3RU2116-0EC1	
	10	0.12	0.35 ... 0.5	2	3RU2116-0FB1		3RU2116-0FC1	
	10	0.18	0.45 ... 0.63	2	3RU2116-0GB1		3RU2116-0GC1	
	10	0.18	0.55 ... 0.8	4	3RU2116-0HB1		3RU2116-0HC1	
	10	0.25	0.7 ... 1	4	3RU2116-0JB1		3RU2116-0JC1	
	10	0.37	0.9 ... 1.25	4	3RU2116-0KB1		3RU2116-0KC1	
	10	0.55	1.1 ... 1.6	6	3RU2116-1AB1		3RU2116-1AC1	
	10	0.75	1.4 ... 2	6	3RU2116-1BB1		3RU2116-1BC1	
	10	0.75	1.8 ... 2.5	10	3RU2116-1CB1		3RU2116-1CC1	
	10	1.1	2.2 ... 3.2	10	3RU2116-1DB1		3RU2116-1DC1	
	10	1.5	2.8 ... 4	16	3RU2116-1EB1		3RU2116-1EC1	
	10	1.5	3.5 ... 5	20	3RU2116-1FB1		3RU2116-1FC1	
	10	2.2	4.5 ... 6.3	20	3RU2116-1GB1		3RU2116-1GC1	
	10	3	5.5 ... 8	25	3RU2116-1HB1		3RU2116-1HC1	
	10	4	7 ... 10	35	3RU2116-1JB1		3RU2116-1JC1	
	10	5.5	9 ... 12.5	35	3RU2116-1KB1		3RU2116-1KC1	
10	7.5	11 ... 16	40	3RU2116-4AB1		3RU2116-4AC1		
Size S0								
S0	10	7.5	14 ... 20	50	3RU2126-4BB1		3RU2126-4BC1	
	10	11	17 ... 22	63	3RU2126-4CB1		3RU2126-4CC1	
	10	11	20 ... 25	63	3RU2126-4DB1		3RU2126-4DC1	
	10	15	23 ... 28	63	3RU2126-4NB1		3RU2126-4NC1	
	10	15	27 ... 32	80	3RU2126-4EB1		3RU2126-4EC1	
	10	18.5	30 ... 36	80	3RU2126-4PB1		3RU2126-4PC1	
	10	18.5	34 ... 40	80	3RU2126-4FB1		3RU2126-4FC1	

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see
 - Digital Configuration Manual for load feeders,
 - Configuration Manual for load feeders.

Protection equipment

Overload relays

SIRIUS 3RU2 thermal overload relays **IE3/IE4 ready**

3RU2 thermal overload relays for stand-alone installation, sizes S2 and S3, CLASS 10 or 10A

Features and technical specifications:

- Connection methods
 - Main circuit: Screw terminals with box terminal
 - Auxiliary circuit: Either screw or spring-loaded terminals
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator

- TEST function
- STOP button
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41F



3RU2136-4.B1



3RU2136-4.D1



3RU2146-4.B1



3RU2146-4.D1

Size contact- tor	Trip class	Rated power for three-phase motors, rated value ¹⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ²⁾	Screw terminals 		Spring-loaded terminals 	
					Article No.	Price per PU	Article No.	Price per PU
CLASS kW								

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see
- [Digital Configuration Manual for load feeders](#),
- [Configuration Manual for load feeders](#).

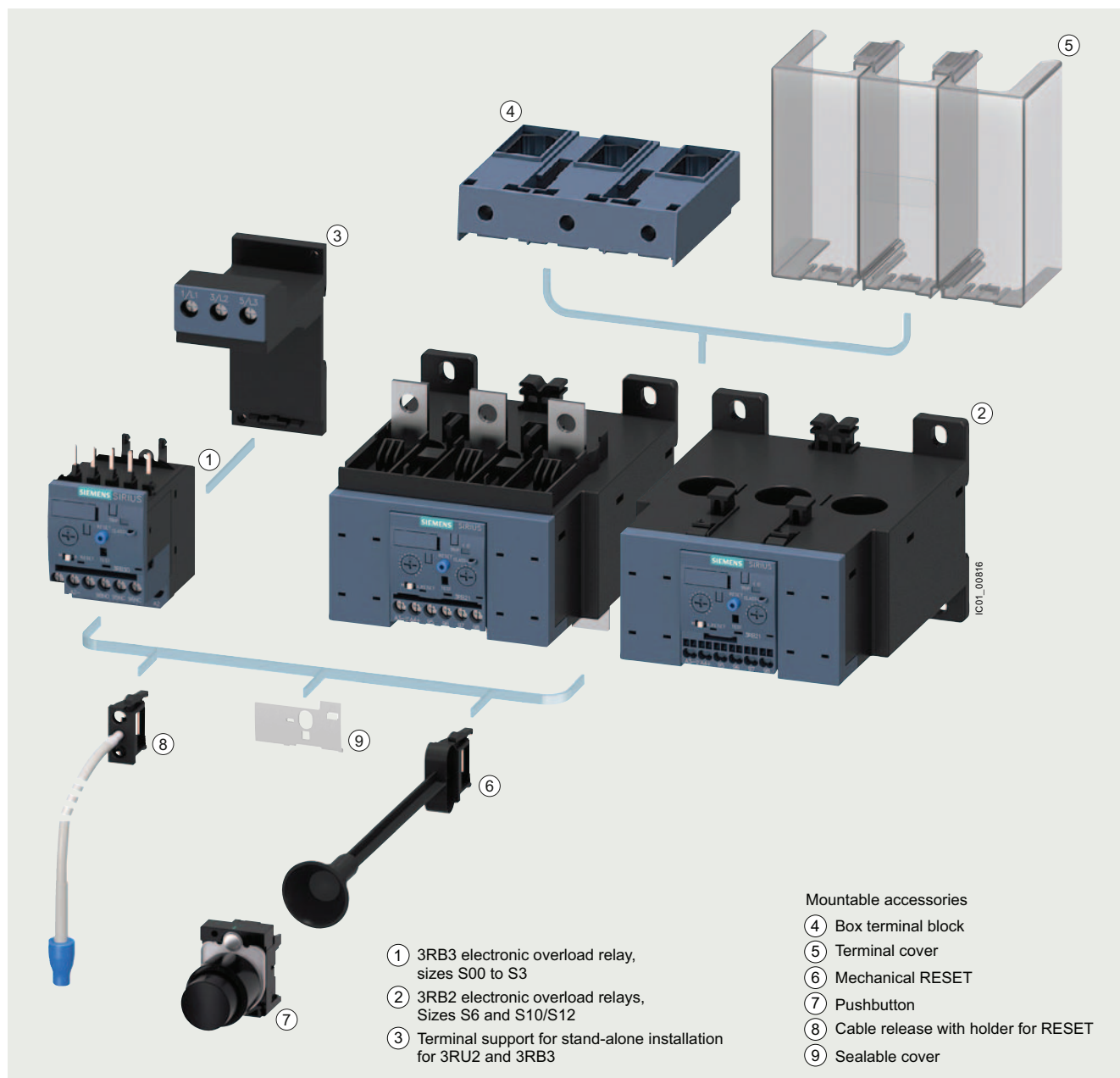
³⁾ For overload relays > 100 A, see 3RB2 electronic overload relays, page 7/91 onwards.

Overview

More information

Homepage, see www.siemens.com/sirius-control
 SiePortal, see www.siemens.com/product?3RB
 TIA Selection Tool Cloud (TST Cloud), see
www.siemens.com/tstcloud/?node=ElectronicOverloadRelay

Conversion tool, see www.siemens.com/conversion-tool
 Equipment Manual, see
<https://support.industry.siemens.com/cs/ww/en/view/60298164>
 Characteristics and certificates, see
<https://support.industry.siemens.com/cs/ww/en/ps/29662>

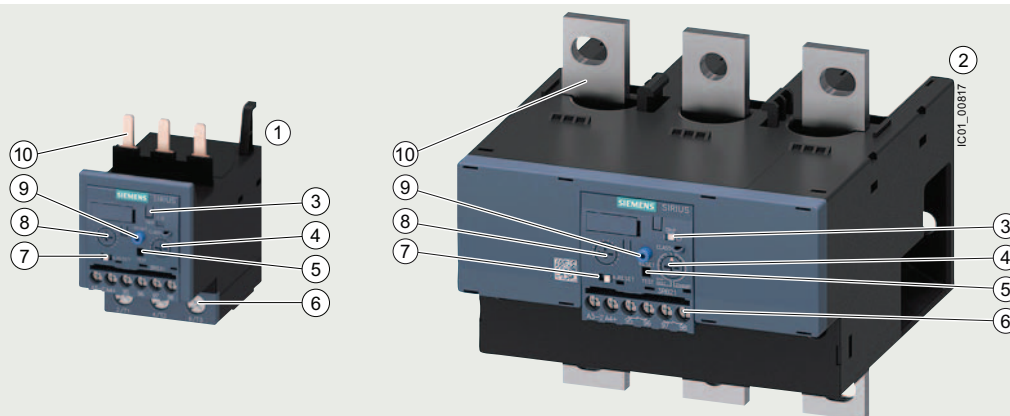


Mountable accessories for 3RB3 and 3RB2 electronic overload relays (see pages 7/105 to 7/107)

Protection equipment

Overload relays

SIRIUS 3RB electronic overload relays



① 3RB3133-4.B0 overload relay, size S2

② 3RB2153-4FW2 overload relay, size S6

③ Switch position indicator and TEST function of the wiring:
Indicates a trip and enables the wiring test.

④ Trip class setting/internal ground fault detection
(only 3RB31 and 3RB21):
The rotary switch can be used to set the required trip class and activate the internal ground fault detection, depending on the starting conditions.

⑤ Solid-state test (device test):
Enables a test of all important device components and functions.

⑥ Connecting terminals (removable terminal block for auxiliary circuits):
Depending on the device version, the connecting terminals are screw terminals or spring-loaded terminals for the main and auxiliary circuits.

⑦ Selector switch for Manual/Automatic RESET:
With the slide switch you can choose between Manual and Automatic RESET.

⑧ Motor current setting:

Setting the device to the rated motor current is easy with the large rotary knob.

⑨ A device set to Manual RESET can be reset locally by pressing the RESET button. On 3RB31 and 3RB21 overload relays an electrical Remote RESET is integrated.

⑩ Connection for mounting on contactors:
Optimally adapted in electrical, mechanical and design terms to the 3RT contactors. The overload relay can be connected directly using these connector pins. Stand-alone installation is possible as an alternative (in conjunction with a terminal support for stand-alone installation).

A sealable transparent cover can be optionally mounted (accessory). It secures the motor current setting against adjustment.

3RB3 and 3RB2 electronic overload relays

The 3RB3 electronic overload relays up to 115 A and the 3RB2 electronic overload relays up to 630 A with internal power supply have been designed for inverse-time delayed protection of loads with normal and heavy starting (see [Equipment Manual](#)) against excessive temperature rises due to overload, phase asymmetry or phase failure.

An overload, phase asymmetry or phase failure result in an increase of the motor current beyond the set rated motor current. This current rise is detected by the current transformers integrated into the devices and evaluated by corresponding solid-state circuits which then output a pulse to the auxiliary contacts. The auxiliary contacts then switch off the load by means of a contactor. The break time depends on the ratio between the tripping current and the current setting I_e and is stored in the form of a long-term stable tripping characteristic curve, see [Characteristics](#).

In addition to inverse-time delayed protection of loads against excessive temperature rises due to overload, phase asymmetry and phase failure, the 3RB31 and 3RB21 electronic overload relays also allow internal ground fault detection (not possible in conjunction with contactor assemblies for star-delta (wye-delta) starting). This provides protection of loads against incomplete ground faults due to damage to the insulation material, moisture, condensed water, etc.

The "tripped" status is signaled by means of a switch position indicator. The relay is reset manually or automatically after the recovery time has elapsed.

The 3RB3 and 3RB2 electronic overload relays are suitable for operation with frequency converters, see [Equipment Manual](#).

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials. They comply with all important worldwide standards and approvals.

Use in hazardous areas

The 3RB electronic overload relays are suitable for the overload protection of motors with the following types of protection:

- Ex II (2) G [Ex e] [Ex d] [Ex px]
- Ex II (2) D [Ex t] [Ex p]

EC type-examination certificate for Group II, Category (2) G/D exists:

- PTB 09 ATEX 3001 for 3RB3
- PTB 06 ATEX 3001 for 3RB2

Article number scheme

Product versions		Article number				
Electronic overload relays		3RB3	☐	☐	☐	Sizes S00 to S3
		3RB2	☐	☐	☐	Sizes S6 and S10/S12, 14
Device type	e.g. 0 = standard device, with internal supply, for three-phase loads	☐				
Size, rated operational current and power	e.g. 1 = 16 A (7.5 kW) for size S00	☐				
Version of the automatic RESET, electrical remote RESET	e.g. 6 = switchable between manual/automatic RESET	☐				
Trip class (CLASS)	e.g. 1 = CLASS 10E			☐		
Setting range of the overload release	e.g. R = 0.1 ... 0.4 A			☐		
Connection methods	e.g. B = screw terminals for main and auxiliary circuits				☐	
Installation type	e.g. 0 = mounting on contactors					☐
Example		3RB3	0	1	6	- 1 R B 0

Note:

The article number scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

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

Benefits

The most important features and benefits of the 3RB3 and 3RB2 electronic overload relays are listed in the overview table (see [General data, page 7/77 onwards](#)).

Application**Industries**

The 3RB3 and 3RB2 electronic overload relays are suitable for customers from all industries who want to guarantee optimum inverse-time delayed protection of their electrical loads (e.g. motors) under normal and heavy starting conditions (CLASS 5E to 30E), minimize project completion times, inventories and energy consumption, and optimize plant availability and maintenance management.

Application

The 3RB3 and 3RB2 electronic overload relays have been designed for the protection of three-phase motors in sinusoidal 50/60 Hz voltage networks. These relays are not suitable for the protection of 1-phase AC or DC loads. The 3RU2 thermal overload relays are recommended for that purpose.

Ambient conditions

The devices are insensitive to external influences such as shocks, corrosive ambient conditions, aging and temperature fluctuations.

For the temperature range from -25 to +60 °C, the 3RB3 and 3RB2 electronic overload relays compensate the temperature in accordance with IEC 60947-4-1.

For the 3RB2 electronic overload relays with the sizes S6 and S10/S12, the upper set value of the setting range must be reduced for ambient temperatures > 50 °C by a certain factor.

Protection equipment

Overload relays

SIRIUS 3RB electronic overload relays

Technical specifications

More information

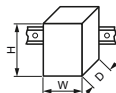
Digital Configuration Manual for load feeders, see
<https://imp.siemens.com/digital-engineering-manual/dem>

Configuration Manual for load feeders, see
<https://support.industry.siemens.com/cs/ww/en/view/39714188>

Equipment Manual, see
<https://support.industry.siemens.com/cs/ww/en/view/60298164>

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/29662/td>

The following technical information is intended to provide an initial overview of the various device versions and functions.

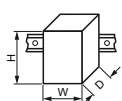
Type			3RB3016, 3RB3113	3RB3026, 3RB3123	3RB3036, 3RB3133	3RB3046, 3RB3143	3RB2056, 3RB2153	3RB2066, 3RB2163
Size			S00	S0	S2	S3	S6	S10/S12
Dimensions (W x H x D) (overload relay with terminal support for stand-alone assembly)								
• Screw terminals	mm		45 x 89 x 80	45 x 97 x 94	55 x 105 x 117	70 x 106 x 124	120 x 119 x 155	145 x 147 x 156
• Spring-loaded terminals	mm		45 x 102 x 80	45 x 116 x 95	55 x 105 x 117	70 x 106 x 124	--	--
General data								
Tripping in the event of		Overload, phase failure, and phase asymmetry + ground fault (for 3RB31 and 3RB21 only)						
Trip class according to IEC 60947-4-1		CLASS	3RB30: 10E, 20E; 3RB31: 5E, 10E, 20E or 30E (adjustable)				3RB20: 10E or 20E; 3RB21: 5E, 10E, 20E and 30E (adjustable)	
Phase failure sensitivity		Yes						
Reset and recovery								
• Reset options after tripping		Manual and automatic RESET, 3RB31 and 3RB21 have an integrated connection for electrical remote RESET (24 V DC)						
• Recovery time		Approx. 3 min						
- For automatic RESET		Immediately						
- For manual RESET		Immediately						
Features								
• Display of operating state on device		Yes, by means of switch position indicator slide						
• TEST function		Yes, test of electronics by pressing the TEST button/ test of auxiliary contacts and wiring of control circuit by actuating the switch position indicator/self-monitoring slide						
• RESET button		Yes						
• STOP button		No						
Protection and operation of explosion-proof motors								
Certificate of suitability/explosion protection type according to ATEX Product Directive 2014/34/EU		PTB 09 ATEX 3001 ⚠ II (2) G [Ex e] [Ex d] [Ex px] ⚠ II (2) G [Ex t] [Ex p] See https://support.industry.siemens.com/cs/ww/en/view/40591327				PTB 06 ATEX 3001 ⚠ II (2) G [Ex e] [Ex d] [Ex px] ⚠ II (2) G [Ex t] [Ex p] See https://support.industry.siemens.com/cs/ww/en/view/23814648		
Ambient temperatures								
• Storage/transport		°C	-40 ... +80					
• Operation		°C	-25 ... +60					
• Temperature compensation		°C	+60					
• Permissible rated current at								
- Temperature inside control cabinet 60 °C, mounted on contactors		%	100				70	
- Temperature inside control cabinet 60 °C, stand-alone installation			100					100 or 90 ¹⁾
- Temperature inside control cabinet 70 °C		%	On request					
Repeat terminals								
• Coil repeat terminal		Yes	Not required				--	
• Auxiliary contact repeat terminal		Yes	Not required				--	
Degree of protection IP on the front according to IEC 60529								
• Screw terminals/spring-loaded terminals		IP20				--		
• Screw terminals/spring-loaded terminals		--				IP00 (IP20 with box terminal/ cover)		
• Straight-through transformers		--				IP20		--

¹⁾ 90% for relay with current setting range 160 to 630 A.

Protection equipment

Overload relays

SIRIUS 3RB electronic overload relays

Type			3RB3016, 3RB3113	3RB3026, 3RB3123	3RB3036, 3RB3133	3RB3046, 3RB3143	3RB2056, 3RB2153	3RB2066, 3RB2163
Size			S00	S0	S2	S3	S6	S10/S12
Dimensions (W x H x D) (overload relay with terminal support for stand-alone assembly)								
• Screw terminals	mm	45 x 89 x 80	45 x 97 x 94	55 x 105 x 117	70 x 106 x 124	120 x 119 x 155	145 x 147 x 156	
• Spring-loaded terminals	mm	45 x 102 x 80	45 x 116 x 95	55 x 105 x 117	70 x 106 x 124			
General data (continued)								
Touch protection on the front according to IEC 60529								
• Screw terminals/spring-loaded terminals			Finger-safe for vertical touching from the front				--	
• Screw terminals/spring-loaded terminals			--				Finger-safe for vertical touching from the front (with box terminal/cover)	
• Straight-through transformers			--				Finger-safe for vertical touching from the front	--
Shock resistance with sine according to IEC 60068-2-27	g/ms	15/11 (signaling contact 97/98 in position "tripped": 9/11)	15/11 (signaling contact 97/98 in position "tripped": 8/11)				15/11 (signaling contact 97/98 in position "tripped": 4/11)	
	g/ms							
Electromagnetic compatibility (EMC) – Interference immunity								
• Conductor-related interference								
- Burst according to IEC 61000-4-4 (corresponds to test level 3)			kV	2 (power ports), 1 (signal port)				
- Surge according to IEC 61000-4-5 (corresponds to test level 3)			kV	2 (line to earth), 1 (line to line)				
• Electrostatic discharge according to IEC 61000-4-2 (corresponds to test level 3)			kV	8 (air discharge), 6 (contact discharge)				
• Field-based interference according to IEC 61000-4-3 (corresponds to test level 3)			V/m	10				
Electromagnetic compatibility (EMC) – Emitted interference			Level B according to EN 55011 (CISPR 11) and EN 55022 (CISPR 22)					
Installation altitude above sea level			m	Up to 2 000				
Mounting position			Any					
Type of mounting			Direct mounting/stand-alone installation with terminal support				Direct mounting/stand-alone installation	

Protection equipment

Overload relays

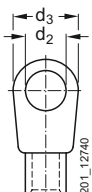
SIRIUS 3RB electronic overload relays

Type		3RB3016, 3RB3113	3RB3026, 3RB3123	3RB3036, 3RB3133	3RB3046, 3RB3143	3RB2056, 3RB2153	3RB2066, 3RB2163
Size		S00	S0	S2	S3	S6	S10/S12
Main circuit							
Rated insulation voltage U_i (pollution degree 3)	V	690		690 1 000 with straight-through transformer	1 000		
Rated impulse withstand voltage U_{imp}	kV	6		6 8 with straight-through transformer	8		
Rated operational voltage U_e	V	690		690 1 000 with straight-through transformer	1 000		
Type of current • Direct current • Alternating current		No Yes, 50/60 Hz $\pm$ 5%					
Current setting	A	0.1 ... 0.4	0.1 ... 0.4	12.5 ... 50	12.5 ... 50	50 ... 200	55 ... 250
	A	4 ... 16	10 ... 40	20 ... 80	32 ... 115		160 ... 630
Heavy starting		See Equipment Manual					
Power loss per unit (max.)	W	0.1 ... 1.1	0.1 ... 4.5	0.5 ... 4.6	0.9 ... 4.6	0.05	
Short-circuit protection • With fuse without contactor • With fuse and contactor		See Selection and ordering data, pages 7/99 ... 7/103 Short-circuit protection with fuses/motor starter protectors for motor feeders, see • Digital Configuration Manual for load feeders • Configuration Manual for load feeders					
Protective separation between main and auxiliary conducting paths according to IEC 60947-1 (pollution degree 2)							
• For systems with grounded neutral point	V	690					
• For systems with ungrounded neutral point	V	600					
Auxiliary circuit							
Number of NO contacts		1					
Number of NC contacts		1					
Auxiliary contacts – Assignment		1 NO for the signal "tripped"; 1 NC for disconnecting the contactor					
Rated insulation voltage U_i (pollution degree 3)	V	300					
Rated impulse withstand voltage U_{imp}	kV	4					
Auxiliary contacts – Contact rating							
• NC, NO contacts with alternating current AC-15, rated operational current I_e at U_e	- 24 V	A	4				
	- 120 V	A	4				
	- 125 V	A	4				
	- 250 V	A	3				
• NC, NO contacts with direct current DC-13, rated operational current I_e at U_e	- 24 V	A	2				
	- 60 V	A	0.55				
	- 110 V	A	0.3				
	- 125 V	A	0.3				
	- 250 V	A	0.11				
• Conventional thermal current I_{th}	A	5					
• Contact reliability (suitability for PLC control; 17 V, 5 mA)		Yes					
Short-circuit protection • With fuse, operational class gG	A	6					
Ground fault protection (only 3RB31/3RB21)		The information refers to sinusoidal residual currents at 50/60 Hz. > $0.75 \times I_{motor}$ Lower current setting < I_{motor} < 3.5 x upper current setting < 1					
• Tripping value I_{Δ}							
• Operating range I							
• Response time t_{trip} (in steady-state condition)	s						
Integrated electrical remote RESET (only 3RB31/3RB21)							
Connecting terminals A3, A4		24 V DC, max. 200 mA for approx. 20 ms, then < 10 mA				24 V DC, 100 mA, 2.4 W short-term	
Protective separation between auxiliary conducting paths according to IEC 60947-1	V	300					
CSA, UL and UR rated data							
Auxiliary circuit – Switching capacity		B600, R300					

Protection equipment

Overload relays

SIRIUS 3RB electronic overload relays

Type		3RB3016, 3RB3113	3RB3026, 3RB3123	3RB3036, 3RB3133	3RB3046, 3RB3143
Size		S00	S0	S2	S3
Conductor cross-sections for main circuit					
Connection type		 Screw terminals			 Screw terminals with box terminal
Terminal screw		M3, Pozidriv size 2	M4, Pozidriv size 2		4 mm Allen screw
Operating tools	mm	∅ 5 ... 6	∅ 5 ... 6		4 mm Allen screw
Prescribed tightening torque	Nm	0.8 ... 1.2	2 ... 2.5		4.5 ... 6
Conductor cross-sections (min./max.), one or two conductors can be connected					
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾ , 2 x (0.5 ... 4) ¹⁾	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 10) ¹⁾	1 x (1 ... 50) ¹⁾ , 2 x (1 ... 35) ¹⁾	2 x (2.5 ... 16) ¹⁾ , 2 x (10 ... 50) ¹⁾ , 1 x (10 ... 70) ¹⁾
• Finely stranded with end sleeve (DIN 46228)	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 6) ¹⁾ , max. 1 x 10	2 x (1 ... 25) ¹⁾ , 1 x (1 ... 35) ¹⁾	2 x (2.5 ... 35) ¹⁾ , 1 x (2.5 ... 50) ¹⁾
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ , 2 x (18 ... 14) ¹⁾ , 2 x 12	2 x (16 ... 12) ¹⁾ , 2 x (14 ... 8) ¹⁾	2 x (18 ... 2) ¹⁾ , 1 x (18 ... 1) ¹⁾	2 x (10 ... 1/0) ¹⁾ , 1 x (10 ... 2/0) ¹⁾
Removable box terminals²⁾					
• With copper bars ³⁾	mm	--			2 x 12 x 4
• With cable lugs ⁴⁾					
- Terminal screw					M6
- Prescribed tightening torque	Nm	--			4.5 ... 6
- Usable ring cable lugs	mm				d ₂ = min. 6.3 d ₃ = max. 19
					
Connection type		 Spring-loaded terminals			
Operating tools	mm	3.0 x 0.5 and 3.5 x 0.5			
Conductor cross-sections (min./max.), one conductor can be connected					
• Solid or stranded	mm ²	1 x (0.5 ... 4)	1 x (1 ... 10)	--	
• Finely stranded without end sleeve	mm ²	1 x (0.5 ... 2.5)	1 x (1 ... 6)	--	
• Finely stranded with end sleeve (DIN 46228)	mm ²	1 x (0.5 ... 2.5)	1 x (1 ... 6)	--	
• AWG cables, solid or stranded	AWG	1 x (20 ... 12)	1 x (18 ... 8)	--	
• Max. outer diameter of the conductor insulation	mm	3.6	6.4	--	
Connection type		 Straight-through transformers			
Diameter of opening	mm	--		15	18
Conductor cross-sections for auxiliary circuit					
Connection type		 Screw terminals			
Terminal screw		M3, Pozidriv size 2			
Operating tools	mm	∅ 5 ... 6			
Prescribed tightening torque	Nm	0.8 ... 1.2			
Conductor cross-sections (min./max.), one or two conductors can be connected					
• Solid or stranded	mm ²	1 x (0.5 ... 4) ¹⁾ , 2 x (0.5 ... 2.5) ¹⁾			
• Finely stranded with end sleeve (DIN 46228)	mm ²	1 x (0.5 ... 2.5) ¹⁾ , 2 x (0.5 ... 1.5) ¹⁾			
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)			
Connection type		 Spring-loaded terminals			
Operating tools	mm	3.0 x 0.5			
Conductor cross-sections (min./max.), one or two conductors can be connected					
• Solid or stranded	mm ²	2 x (0.25 ... 1.5)			
• Finely stranded without end sleeve	mm ²	2 x (0.25 ... 1.5)			
• Finely stranded with end sleeve (DIN 46228)	mm ²	2 x (0.25 ... 1.5)			
• AWG cables, solid or stranded	AWG	2 x (24 ... 16)			

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

²⁾ Cable lug and busbar connection possible after removing the box terminals.

³⁾ If bars larger than 12 mm x 10 mm are connected, a 3RT2946-4EA2 cover is needed to maintain the required phase clearance, [see page 7/106](#).

⁴⁾ If conductors larger than 25 mm² are connected, the 3RT2946-4EA2 cover is needed to maintain the required phase clearance, [see page 7/106](#).

Protection equipment

Overload relays

SIRIUS 3RB electronic overload relays

Type		3RB2056, 3RB2153	3RB2066, 3RB2163
Size		S6	S10/S12
Conductor cross-sections of main circuit			
Connection type		 Screw terminals with box terminal	
Terminal screw	mm	4 mm Allen screw	5 mm Allen screw
Operating tools	mm	4 mm Allen screw	5 mm Allen screw
Prescribed tightening torque	Nm	10 ... 12	20 ... 22
Conductor cross-sections (min./max.), one or two conductors can be connected			
• Solid	mm ²	--	--
• Finely stranded without end sleeve	mm ²	With 3RT1955-4G box terminal: 2 x (1 x max. 50, 1 x max. 70), 1 x (10 ... 70); With 3RT1956-4G box terminal: 2 x (1 x max. 95, 1 x max. 120), 1 x (10 ... 120)	2 x (50 ... 185), Front clamping point only: 1 x (70 ... 240); Rear clamping point only: 1 x (120 ... 185)
• Finely stranded with end sleeve (DIN 46228)	mm ²	With 3RT1955-4G box terminal: 2 x (1 x max. 50, 1 x max. 70), 1 x (10 ... 70); With 3RT1956-4G box terminal: 2 x (1 x max. 95, 1 x max. 120), 1 x (10 ... 120)	2 x (50 ... 185), Front clamping point only: 1 x (70 ... 240); Rear clamping point only: 1 x (120 ... 185)
• Stranded	mm ²	With 3RT1955-4G box terminal: 2 x (max. 70), 1 x (16 ... 70); With 3RT1956-4G box terminal: 2 x (max. 120), 1 x (16 ... 120)	2 x (70 ... 240), Front clamping point only: 1 x (95 ... 300); Rear clamping point only: 1 x (120 ... 240)
• AWG cables, solid or stranded	AWG	With 3RT1955-4G box terminal: 2 x (max. 1/0), 1 x (6 ... 2/0); With 3RT1956-4G box terminal: 2 x (max. 3/0), 1 x (6 ... 250 kcmil)	2 x (2/0 ... 500 kcmil), Front clamping point only: 1 x (3/0 ... 600 kcmil); Rear clamping point only: 1 x (250 ... 500 kcmil)
• Flat ribbon cables (number x width x thickness)	mm	With 3RT1955-4G box terminal: 2 x (6 x 15.5 x 0.8), 1 x (3 x 9 x 0.8 ... 6 x 15.5 x 0.8); With 3RT1956-4G box terminal: 2 x (10 x 15.5 x 0.8), 1 x (3 x 9 x 0.8 ... 10 x 15.5 x 0.8)	2 x (20 x 24 x 0.5), 1 x (6 x 9 x 0.8 ... 20 x 24 x 0.5)
Connection type			
		 Busbar connection	
Terminal screw		M8 x 25	M10 x 30
Prescribed tightening torque	Nm	10 ... 14	14 ... 24
Conductor cross-sections (min./max.)			
• Finely stranded with cable lug	mm ²	16 ... 95 ¹⁾	50 ... 240 ²⁾
• Stranded with cable lug	mm ²	25 ... 120 ¹⁾	70 ... 240 ²⁾
• AWG cables, solid or stranded, with cable lug	AWG	4 ... 250 kcmil	2/0 ... 500 kcmil
• With connecting bars (max. width)	mm	15	25
Connection type			
		 Straight-through transformers	
Diameter of opening	mm	24.5	--
Conductor cross-sections for auxiliary circuit			
Connection type		 Screw terminals	
Terminal screw		M3, Pozidriv size 2	
Operating tools	mm	ø 5 ... 6	
Prescribed tightening torque	Nm	0.8 ... 1.2	
Conductor cross-sections (min./max.), one or two conductors can be connected			
• Solid or stranded	mm ²	1 x (0.5 ... 4) ¹⁾ , 2 x (0.5 ... 2.5) ¹⁾	
• Finely stranded with end sleeve (DIN 46228)	mm ²	1 x (0.5 ... 2.5) ¹⁾ , 2 x (0.5 ... 1.5) ¹⁾	
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)	
Connection type			
		 Spring-loaded terminals	
Operating tools	mm	3.0 x 0.5	
Conductor cross-sections (min./max.), one or two conductors can be connected			
• Solid or stranded	mm ²	2 x (0.25 ... 1.5)	
• Finely stranded without end sleeve	mm ²	2 x (0.25 ... 1.5)	
• Finely stranded with end sleeve (DIN 46228)	mm ²	2 x (0.25 ... 1.5)	
• AWG cables, solid or stranded	AWG	2 x (24 ... 16)	

¹⁾ When connecting cable lugs according to DIN 46235 with conductor cross-sections of 95 mm² and more, the 3RT1956-4EA1 terminal cover must be used to ensure phase clearance, [see page 7/106](#).

²⁾ When connecting cable lugs according to DIN 46234 for conductor cross-sections from 240 mm², as well as DIN 46235 for cable cross-sections from 185 mm², the 3RT1956-4EA1 terminal cover must be used to ensure phase clearance, [see page 7/106](#).

Selection and ordering data

3RB30 electronic overload relays, CLASS 10E

Features and technical specifications:

- Connection methods
 - Sizes S00 and S0
Main and auxiliary circuit: Either screw or spring-loaded terminals
 - Sizes S2 and S3
Main circuit: Screw terminals with box terminal or as straight-through transformer
Auxiliary circuit: Either screw or spring-loaded terminals
- Overload protection, phase failure protection and asymmetry protection
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function and self-monitoring
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41G



Size contactor	Rated power for three-phase motors, rated value ¹⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ²⁾	Screw terminals		Spring-loaded terminals	
	kW	A	A	Article No.	Price per PU	Article No.	Price per PU
Size S00							
S00	Devices for mounting on contactors³⁾						
	0.04 ... 0.09	0.1 ... 0.4	4	3RB3016-1RB0		3RB3016-1RE0	
	0.12 ... 0.37	0.32 ... 1.25	6	3RB3016-1NB0		3RB3016-1NE0	
	0.37 ... 1.5	1 ... 4	20	3RB3016-1PB0		3RB3016-1PE0	
	1.5 ... 5.5	3 ... 12	50	3RB3016-1SB0		3RB3016-1SE0	
	2.2 ... 7.5	4 ... 16	50	3RB3016-1TB0		3RB3016-1TE0	
Size S0							
S0	Devices for mounting on contactors³⁾						
	0.04 ... 0.09	0.1 ... 0.4	4	3RB3026-1RB0		3RB3026-1RE0	
	0.12 ... 0.37	0.32 ... 1.25	6	3RB3026-1NB0		3RB3026-1NE0	
	0.37 ... 1.5	1 ... 4	20	3RB3026-1PB0		3RB3026-1PE0	
	1.5 ... 5.5	3 ... 12	50	3RB3026-1SB0		3RB3026-1SE0	
	3 ... 11	6 ... 25	63	3RB3026-1QB0		3RB3026-1QE0	
	5.5 ... 18.5	10 ... 40	80	3RB3026-1VB0		3RB3026-1VE0	
Size S2							
S2	Devices with screw terminals (main current side) and for mounting on contactors³⁾						
	7.5 ... 22	12.5 ... 50	200	3RB3036-1UB0		3RB3036-1UD0	
	11 ... 37	20 ... 80	250	3RB3036-1WB0		3RB3036-1WD0	
	Devices with straight-through transformer for stand-alone installation						
	7.5 ... 22	12.5 ... 50	200	3RB3036-1UW1		3RB3036-1UX1	
	11 ... 37	20 ... 80	250	3RB3036-1WW1		3RB3036-1WX1	
Size S3							
S3	Devices with screw terminals (main current side) and for mounting on contactors³⁾						
	7.5 ... 22	12.5 ... 50	200	3RB3046-1UB0		3RB3046-1UD0	
	18.5 ... 55	32 ... 115	315	3RB3046-1XB0		3RB3046-1XD0	
	Devices with straight-through transformer for stand-alone installation						
	7.5 ... 22	12.5 ... 50	200	3RB3046-1UW1		3RB3046-1UX1	
	18.5 ... 55	32 ... 115	315	3RB3046-1XW1		3RB3046-1XX1	

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see
 - Digital Configuration Manual for load feeders,
 - Configuration Manual for load feeders.

³⁾ With the appropriate terminal supports (see page 7/105), these overload relays can also be installed as stand-alone units.

Note:

For reliable operational current, note derating information, see Equipment Manual.

Protection equipment

Overload relays

SIRIUS 3RB electronic overload relays **IE3/IE4 ready**

3RB20 electronic overload relays for mounting on contactors and stand-alone installation, CLASS 10E

Features and technical specifications:

- Connection methods
 - Size S6
Main circuit: With busbar connection or as straight-through transformer (an appropriate connection kit with screws, spring washers and nuts is enclosed with the devices with busbar connection),
Auxiliary circuit: Either screw or spring-loaded terminals
 - Sizes S10/S12
Main circuit: With busbar connection (an appropriate connection kit with screws, spring washers and nuts is enclosed),
Auxiliary circuit: Either screw or spring-loaded terminals
- Overload protection, phase failure protection and asymmetry protection
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function and self-monitoring

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41G



3RB2056-1FW2



3RB2066-1MF2

Size contactor	Rated power for three-phase motors, rated value ¹⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ²⁾	Screw terminals (on auxiliary current side)	Spring-loaded terminals (on auxiliary current side)
				Article No.	Article No.
	kW	A	A	Price per PU	Price per PU

Size S6

Devices with busbar connection, for mounting on contactors and stand-alone installation

Size	Rated power (kW)	Current setting (A)	Short-circuit protection (A)
S6	30 ... 90	50 ... 200	315

3RB2056-1FC2

3RB2056-1FF2

Devices with straight-through transformer, for mounting on contactors and stand-alone installation

Size	Rated power (kW)	Current setting (A)	Short-circuit protection (A)
For mounting on S6 contactors with box terminals	30 ... 90	50 ... 200	315

3RB2056-1FW2

3RB2056-1FX2

Size S10/S12

Devices with busbar connection, for mounting on contactors and stand-alone installation

Size	Rated power (kW)	Current setting (A)	Short-circuit protection (A)
S10/S12	30 ... 132	55 ... 250	400
and size 14 (3TF68/3TF69) ³⁾	90 ... 355	160 ... 630	800

3RB2066-1GC2

3RB2066-1GF2

3RB2066-1MC2

3RB2066-1MF2

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see
- Digital Configuration Manual for load feeders,
- Configuration Manual for load feeders.

³⁾ For 3TF68/3TF69 contactors, direct mounting is not possible.

3RB30 electronic overload relays, CLASS 20E

Features and technical specifications:

- Connection methods
 - Sizes S00 and S0
Main and auxiliary circuit: Either screw or spring-loaded terminals
 - Sizes S2 and S3
Main circuit: Screw terminals with box terminal or as straight-through transformer
Auxiliary circuit: Either screw or spring-loaded terminals
- Overload protection, phase failure protection and asymmetry protection
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function and self-monitoring
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41G



Size contactor	Rated power for three-phase motors, rated value ¹⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ²⁾	Screw terminals		Spring-loaded terminals	
	kW	A	A	Article No.	Price per PU	Article No.	Price per PU
Size S00							
S00	Devices for mounting on contactors³⁾						
	0.04 ... 0.09	0.1 ... 0.4	4	3RB3016-2RB0		3RB3016-2RE0	
	0.12 ... 0.37	0.32 ... 1.25	6	3RB3016-2NB0		3RB3016-2NE0	
	0.37 ... 1.5	1 ... 4	20	3RB3016-2PB0		3RB3016-2PE0	
	1.5 ... 5.5	3 ... 12	50	3RB3016-2SB0		3RB3016-2SE0	
	2.2 ... 7.5	4 ... 16	50	3RB3016-2TB0		3RB3016-2TE0	
Size S0							
S0	Devices for mounting on contactors³⁾						
	0.04 ... 0.09	0.1 ... 0.4	4	3RB3026-2RB0		3RB3026-2RE0	
	0.12 ... 0.37	0.32 ... 1.25	6	3RB3026-2NB0		3RB3026-2NE0	
	0.37 ... 1.5	1 ... 4	20	3RB3026-2PB0		3RB3026-2PE0	
	1.5 ... 5.5	3 ... 12	50	3RB3026-2SB0		3RB3026-2SE0	
	3 ... 11	6 ... 25	63	3RB3026-2QB0		3RB3026-2QE0	
	5.5 ... 18.5	10 ... 40	80	3RB3026-2VB0		3RB3026-2VE0	
Size S2							
S2	Devices with screw terminals (main current side) and for mounting on contactors³⁾						
	7.5 ... 22	12.5 ... 50	200	3RB3036-2UB0		3RB3036-2UD0	
	11 ... 37	20 ... 80	250	3RB3036-2WB0		3RB3036-2WD0	
	Devices with straight-through transformer for stand-alone installation						
	7.5 ... 22	12.5 ... 50	200	3RB3036-2UW1		3RB3036-2UX1	
	11 ... 37	20 ... 80	250	3RB3036-2WW1		3RB3036-2WX1	
Size S3							
S3	Devices with screw terminals (main current side) and for mounting on contactors³⁾						
	7.5 ... 22	12.5 ... 50	200	3RB3046-2UB0		3RB3046-2UD0	
	18.5 ... 55	32 ... 115	315	3RB3046-2XB0		3RB3046-2XD0	
	Devices with straight-through transformer for stand-alone installation						
	7.5 ... 22	12.5 ... 50	200	3RB3046-2UW1		3RB3046-2UX1	
	18.5 ... 55	32 ... 115	315	3RB3046-2XW1		3RB3046-2XX1	

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see
 - Digital Configuration Manual for load feeders,
 - Configuration Manual for load feeders.

³⁾ With the appropriate terminal supports (see page 7/105), these overload relays can also be installed as stand-alone units.

Protection equipment

Overload relays

SIRIUS 3RB electronic overload relays **IE3/IE4 ready**

3RB20 electronic overload relays for mounting on contactors and stand-alone installation, CLASS 20E

Features and technical specifications:

- Connection methods
 - Size S6
Main circuit: With busbar connection or as straight-through transformer (an appropriate connection kit with screws, spring washers and nuts is enclosed with the devices with busbar connection),
Auxiliary circuit: Either screw or spring-loaded terminals
 - Sizes S10/S12
Main circuit: With busbar connection (an appropriate connection kit with screws, spring washers and nuts is enclosed),
Auxiliary circuit: Either screw or spring-loaded terminals
 - Overload protection, phase failure protection and asymmetry protection
 - Internal power supply
 - Auxiliary contacts 1 NO + 1 NC
 - Manual and automatic RESET
 - Switch position indicator
 - TEST function and self-monitoring
- PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41G



3RB2056-2FW2



3RB2066-2MF2

Size contactor	Rated power for three-phase motors, rated value ¹⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ²⁾	Screw terminals (on auxiliary current side)	Spring-loaded terminals (on auxiliary current side)
	kW	A	A	Article No.	Article No.
				Price per PU	Price per PU

Size S6

Devices with busbar connection, for mounting on contactors and stand-alone installation

S6	30 ... 90	50 ... 200	315
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3RB2056-2FC2

3RB2056-2FF2

Devices with straight-through transformer, for mounting on contactors and stand-alone installation

For mounting on S6 contactors with box terminals	30 ... 90	50 ... 200	315
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3RB2056-2FW2

3RB2056-2FX2

Size S10/S12²⁾

Devices with busbar connection, for mounting on contactors and stand-alone installation

S10/S12	30 ... 132	55 ... 250	400
and size 14 (3TF68/3TF69) ³⁾	90 ... 355	160 ... 630	800

3RB2066-2GC2

3RB2066-2GF2

3RB2066-2MC2

3RB2066-2MF2

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see
 - Digital Configuration Manual for load feeders,
 - Configuration Manual for load feeders.

³⁾ For 3TF68/3TF69 contactors, direct mounting is not possible.

3RB31 electronic overload relays, CLASS 5E, 10E, 20E or 30E (adjustable)

Features and technical specifications:

- Connection methods
 - Sizes S00 and S0
Main and auxiliary circuit: Either screw or spring-loaded terminals
 - Sizes S2 and S3
Main circuit: Screw terminals with box terminal or as straight-through transformer
Auxiliary circuit: Either screw or spring-loaded terminals
- Overload protection, phase failure protection and asymmetry protection
- Internal ground fault detection (activatable)
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Electrical remote RESET integrated
- Switch position indicator
- TEST function and self-monitoring
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41G



Size contactor	Rated power for three-phase motors, rated value ¹⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ²⁾	Screw terminals	Spring-loaded terminals
	kW	A	A	Article No.	Article No.
				Price per PU	Price per PU
Size S00					
S00	Devices for mounting on contactors³⁾				
	0.04 ... 0.09	0.1 ... 0.4	4	3RB3113-4RB0	3RB3113-4RE0
	0.12 ... 0.37	0.32 ... 1.25	6	3RB3113-4NB0	3RB3113-4NE0
	0.37 ... 1.5	1 ... 4	20	3RB3113-4PB0	3RB3113-4PE0
	1.5 ... 5.5	3 ... 12	50	3RB3113-4SB0	3RB3113-4SE0
	2.2 ... 7.5	4 ... 16	50	3RB3113-4TB0	3RB3113-4TE0
Size S0					
S0	Devices for mounting on contactors³⁾				
	0.04 ... 0.09	0.1 ... 0.4	4	3RB3123-4RB0	3RB3123-4RE0
	0.12 ... 0.37	0.32 ... 1.25	6	3RB3123-4NB0	3RB3123-4NE0
	0.37 ... 1.5	1 ... 4	20	3RB3123-4PB0	3RB3123-4PE0
	1.5 ... 5.5	3 ... 12	50	3RB3123-4SB0	3RB3123-4SE0
	3 ... 11	6 ... 25	63	3RB3123-4QB0	3RB3123-4QE0
	5.5 ... 18.5	10 ... 40	80	3RB3123-4VB0	3RB3123-4VE0
Size S2					
S2	Devices with screw terminals (main current side) and for mounting on contactors³⁾				
	7.5 ... 22	12.5 ... 50	200	3RB3133-4UB0	3RB3133-4UD0
	11 ... 37	20 ... 80	250	3RB3133-4WB0	3RB3133-4WD0
	Devices with straight-through transformer for stand-alone installation				
	7.5 ... 22	12.5 ... 50	200	3RB3133-4UW1	3RB3133-4UX1
	11 ... 37	20 ... 80	250	3RB3133-4WW1	3RB3133-4WX1
Size S3					
S3	Devices with screw terminals (main current side) and for mounting on contactors³⁾				
	7.5 ... 22	12.5 ... 50	200	3RB3143-4UB0	3RB3143-4UD0
	18.5 ... 55	32 ... 115	315	3RB3143-4XB0	3RB3143-4XD0
	Devices with straight-through transformer for stand-alone installation				
	7.5 ... 22	12.5 ... 50	200	3RB3143-4UW1	3RB3143-4UX1
	18.5 ... 55	32 ... 115	315	3RB3143-4XW1	3RB3143-4XX1

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Maximum protection by fuse only for overload relays, type of coordination "2".
 For fuse values in connection with contactors, see
 - Digital Configuration Manual for load feeders,
 - Configuration Manual for load feeders.

³⁾ With the appropriate terminal supports (see page 7/105), these overload relays can also be installed as stand-alone units.

Protection equipment

Overload relays

SIRIUS 3RB electronic overload relays **IE3/IE4 ready**

3RB21 electronic overload relays for mounting on contactors and stand-alone installation, CLASS 5E, 10E, 20E and 30E (adjustable)

Features and technical specifications:

- Connection methods
 - Size S6
Main circuit: With busbar connection or as straight-through transformer (an appropriate connection kit with screws, spring washers and nuts is enclosed with the devices with busbar connection),
Auxiliary circuit: Either screw or spring-loaded terminals
 - Sizes S10/S12
Main circuit: With busbar connection (an appropriate connection kit with screws, spring washers and nuts is enclosed),
Auxiliary circuit: Either screw or spring-loaded terminals
- Overload protection, phase failure protection and asymmetry protection
- Internal ground fault detection (activatable)
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Electrical remote RESET integrated
- Switch position indicator
- TEST function and self-monitoring

PU (UNIT, SET, M) = 1

PS* = 1 unit

PG = 41G



3RB2153-4FW2



3RB2163-4MF2

Size contactor	Rated power for three-phase motors, rated value ¹⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ²⁾				
	kW	A	A				
					Screw terminals (on auxiliary current side)		Spring-loaded terminals (on auxiliary current side)
				Article No.	Price per PU	Article No.	Price per PU

Size S6

Devices with busbar connection, for mounting on contactors and stand-alone installation

Size	Rated power (kW)	Current setting (A)	Short-circuit protection (A)
S6	30 ... 90	50 ... 200	315

Devices with straight-through transformer, for mounting on contactors and stand-alone installation

For mounting on S6 contactors with box terminals	Rated power (kW)	Current setting (A)	Short-circuit protection (A)
	30 ... 90	50 ... 200	315

Size S10/S12²⁾

Devices with busbar connection, for mounting on contactors and stand-alone installation

Size	Rated power (kW)	Current setting (A)	Short-circuit protection (A)
S10/S12 and size 14 (3TF68/3TF69) ³⁾	30 ... 132	55 ... 250	400
	90 ... 355	160 ... 630	800

3RB2153-4FC2

3RB2153-4FF2

3RB2153-4FW2

3RB2153-4FX2

3RB2163-4GC2

3RB2163-4MC2

3RB2163-4GF2

3RB2163-4MF2

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see
- Digital Configuration Manual for load feeders,
- Configuration Manual for load feeders.

³⁾ For 3TF68/3TF69 contactors, direct mounting is not possible.

Overview

Depending on the type of overload relay, an extensive range of accessories can be ordered as an option:

- Terminal supports for stand-alone installation
- Mechanical RESET
- Cable releases with holder for RESET to reset devices that are difficult to access
- Electrical remote RESET module
- Sealable covers
- Terminal covers
- Box terminal blocks
- Tools for opening spring-loaded terminals
- Blank labels

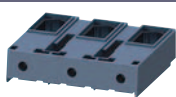
Selection and ordering data

Version	Size	For overload relays	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type							
Terminal supports for stand-alone installation							
		Terminal supports for overload relays with screw terminals For separate mounting of the overload relays; screw and snap-on mounting on DIN rail	S00 S0 S2 S3	3RU2, 3RB3	Screw terminals 		
3RU2916-3AA01	3RU2916-3AC01				3RU2916-3AA01	1	1 unit 41F
					3RU2926-3AA01	1	1 unit 41F
					3RU2936-3AA01	1	1 unit 41F
					3RU2946-3AA01	1	1 unit 41F
		Terminal supports for overload relays with spring-loaded terminals For separate mounting of the overload relays; screw and snap-on mounting on DIN rail	S00 S0	3RU2, 3RB3	Spring-loaded terminals 		
3RU2926-3AA01	3RU2926-3AC01				3RU2916-3AC01	1	1 unit 41F
					3RU2926-3AC01	1	1 unit 41F
							
3RU2936-3AA01							
							
3RU2946-3AA01							
Mechanical RESET							
		Resetting plungers, holders and formers	S00 ... S3 S00 ... S12	3RU2 3RB	3RU2900-1A 3RB3980-0A	1 1	1 unit 41F 1 unit 41F
3RU2900-1A	3RB3980-0A						
		Pushbuttons with extended stroke (12 mm) IP65, ø 22 mm	S00 ... S12	3RU2, 3RB	3SU1200-0FB10-0AA0	1	1 unit 41J
3SU1200-0FB10-0AA0							
		Extension plunger For compensation of the distance between the pushbutton and the resetting plunger of an overload relay	S00 ... S12	3RU2, 3RB	3SU1900-0KG10-0AA0	1	1 unit 41J
3SU1900-0KG10-0AA0							

Protection equipment

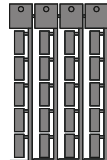
Overload relays

Accessories

Version	Size	For overload relays	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type							
Cable releases with holder for RESET							
 3RU2900-1B 3RB3980-0B	For $\varnothing$ 6.5 mm holes in the control panel; max. control panel thickness 8 mm						
	• Length 400 mm	S00 ... S3	3RU2	3RU2900-1B	1	1 unit	41F
		S00 ... S12	3RB3, 3RB2	3RB3980-0B	1	1 unit	41F
	• Length 600 mm	S00 ... S3	3RU2	3RU2900-1C	1	1 unit	41F
		S00 ... S12	3RB3, 3RB2	3RB3980-0C	1	1 unit	41F
Modules for remote RESET, electrical							
 3RU1900-2A.71 mounted on the overload relay	Operating range 0.85 ... 1.1 x U_N , power consumption 80 VA AC, 70 W DC, ON time 0.2 ... 4 s, switching frequency 60/h						
	• 24 ... 30 V AC/DC	S00 ... S3	3RU2	3RU1900-2AB71	1	1 unit	41F
	• 110 ... 127 V AC/DC	S00 ... S3	3RU2	3RU1900-2AF71	1	1 unit	41F
	• 220 ... 250 V AC/DC	S00 ... S3	3RU2	3RU1900-2AM71	1	1 unit	41F
Sealable covers							
 3RV2908-0P  3RB3984-0	For covering the setting knobs	S00 ... S3	3RU2	3RV2908-0P	100	10 units	41E
	For covering the setting knobs	S00 ... S12	3RB3, 3RB2	3RB3984-0	1	1 unit	41F
Terminal covers							
 3RT1946-4EA1  3RT1956-4EA2  3RT1966-4EA3  3RT2936-4EA2	For complying with the phase clearances and as touch protection if box terminal is removed						
	Covers for cable lugs and busbar connections						
	• Length 100 mm	S3	3RU2, 3RB3	3RT1946-4EA1	1	1 unit	41B
	• Length 100 mm	S6	3RB2	3RT1956-4EA1	1	1 unit	41B
	• Length 120 mm	S10/S12	3RB2	3RT1966-4EA1	1	1 unit	41B
	Covers for devices for box terminals						
	• Length 25 mm	S6	3RB2	3RT1956-4EA2	1	1 unit	41B
	• Length 30 mm	S10/S12	3RB2	3RT1966-4EA2	1	1 unit	41B
	Covers for devices for busbar connections						
	Between contactor and overload relay, without box terminals (1 unit required per combination)	S6	3RB2	3RT1956-4EA3	1	1 unit	41B
		S10/S12	3RB2	3RT1966-4EA3	1	1 unit	41B
	Covers for devices with screw terminals (box terminals)						
	Additional touch protection for fastening to the box terminals						
	• Main current level	S2	3RU2, 3RB3	3RT2936-4EA2	1	1 unit	41B
		S3	3RU2, 3RB3	3RT2946-4EA2	1	1 unit	41B
Box terminal blocks							
 3RT1955-4G	For round and flat ribbon cables						
	• Up to 70 mm ²	S6 ¹⁾	3RB2	3RT1955-4G	1	1 unit	41B
	• Up to 120 mm ²	S6	3RB2	3RT1956-4G	1	1 unit	41B
	• Up to 240 mm ²	S10/S12	3RB2	3RT1966-4G	1	1 unit	41B

¹⁾ In the scope of supply for 3RT1054-1 contactors (55 kW).

General accessories

Version		For overload relays	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type							
Tools for opening spring-loaded terminals							
 3RA2908-1A	Screwdriver For all SIRIUS devices with spring-loaded terminals Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	Main and auxiliary circuit connection: 3RU2, 3RB3, 3RB2	Spring-loaded terminals 		1	1 unit	41B
	3RA2908-1A						
Blank labels							
 3RT2900-1SB20	Unit labeling plates¹⁾ For SIRIUS devices, 20 mm x 7 mm, titanium gray	3RU2, 3RB3, 3RB2	3RT2900-1SB20		100	340 units	41B
	Adhesive labels For SIRIUS devices, 19 mm x 6 mm, titanium gray	3RU2, 3RB3, 3RB2	3RT2900-1SB60		100	3060 units	41B

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