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Introduction

Overview





Type		3RU61	3RU51	3RU5156	3RU5166	3RU5176
SIRIUS overload relays						
Applications						
• System protection		✓[1]	✓[1]	✓[1]	✓[1]	✓[1]
• Motor protection		✓	✓	✓	✓	✓
• Alternating current, three-phase		✓	✓	✓	✓	✓
• Alternating current, single-phase		✓	✓	✓	✓	✓
• Direct current		✓	✓	✓	--	--
Size contactor		S00, S0	S2, S3	S6	S10	S12
Rated operational current I_e						
• Size S00	A	Up to 16	--	--	--	--
• Size S0	A	Up to 40	--	--	--	--
• Size S2	A	--	Up to 50	--	--	--
• Size S3	A	--	Up to 100	--	--	--
• Size S6	A	--	--	Up to 205	--	--
• Size S10	A	--	--	--	Up to 320	--
• Size S12	A	--	--	--	--	Up to 500
Rated operational voltage U_e	V	690 AC	690/1 000 AC[2]	1 000	1 000	1 000
Rated frequency	Hz	50/60	50/60	50/60	50/60	50/60
Trip class		CLASS 10	CLASS 10	CLASS 10	CLASS 10	CLASS 10
Thermal overload releases	A A	0.11 ... 0.16 up to 34 ... 40	5.5 ... 8 up to 80 ... 100	55 ... 205	140 ... 320	280 ... 500
Rating for three-phase motor at 400 V AC	kW	0.04 ... 18.5	3 ... 45	55 ... 90	110 ... 160	200 ... 250
Pages		2/23	2/24			

Accessories							
For sizes	S00	S0	S2	S3	S6	S10	S12
Terminal supports for stand-alone installation	✓	✓	✓	✓	✓	✓	✓
Mechanical RESET	✓	✓	✓	✓	✓	✓	✓
Cable releases for RESET	✓	✓	✓	✓	✓	✓	✓
Electrical remote RESET	✓	✓	✓	✓	--	--	--
Terminal covers	✓	✓	✓	✓			
• Three-pole					--	✓	✓
• Single-pole					✓[2]	✓[2]	✓[2]
Sealable covers for setting knobs	✓	✓	Integrated in the unit		--	--	--
Connecting busbars							
• Ribbon cable					✓[2]	--	--
• Busbars					✓	✓	✓
Pages	2/25						

✓ Has this function or can use this accessory

-- Does not have this function or cannot use this accessory

[1] The units are responsible in the main circuit for overload protection of the assigned electrical loads (e.g. motors), feeder cable, and other switching and protection devices in the respective load feeder.

[2] Not for 3RU5156-3NB2.

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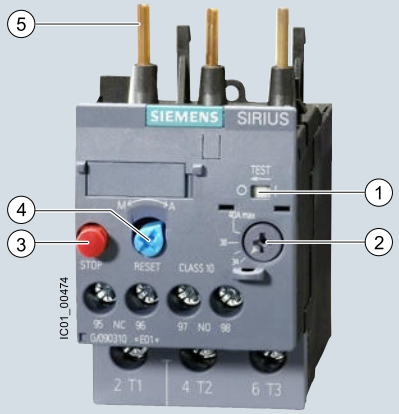
Overview



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. 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.
4. 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.
5. Connection for mounting onto contactors:
   Optimally adapted in electrical, mechanical and design terms to the contactors. The overload relay can be connected directly to the contactor using these pins. Stand-alone installation is possible as an alternative (in conjunction with a terminal bracket for stand-alone installation).

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

SIRIUS 3RU6126-4FB0 thermal overload relay

The 3RU61 thermal overload relays up to 40 A have been designed for inverse-time delayed protection of loads with normal starting against excessive 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 current setting I_e and is stored in the form of a long-term stable tripping characteristic.

The "tripped" status is signaled by means of a switch position indicator. Resetting takes place either manually or automatically after a recovery time has elapsed.

Article No. scheme

Digit of the Article No.	1st - 3rd	4th	5th	6th	7th		8th	9th	10th	11th
	□□□	□	□	□	□	–	□	□	□	□
Thermal overload relays	**3 R U**									
SIRIUS		**6**								
Device series			**1**							
Size, rated operational current and power				□	□					
Setting range of the overload release							□	□		
Connection methods									**B**	
Installation type										□
Example	**3 R U**	**6**	**1**	**1**	**6**	**–**	**0**	**A**	**B**	**0**

Note:

The Article No. scheme is presented here merely for information purposes and for better understanding of the logic behind the article numbers.

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

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Application

Industries

The 3RU61 and 3RU51 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).

Application

The 3RU 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 3RU thermal overload relays, all three bimetal strips must be heated. For this purpose, all main current paths of the relay must be connected in series.

Ambient conditions

The 3RU thermal overload relays have temperature compensation according to IEC 60947-4-1 for the temperature range of -40 to +60 °C[1]. For temperatures from +60 to +70 °C, the upper set value of the setting range must be reduced by the factor listed in the table below.

Ambient temperature	Derating factor for the upper set value Current ranges			
°C	0.11 ... 20 A	17 ... 40 A	55 … 205 A	140 … 320 A/ 280 … 500 A
+55	--	--	1.0	--
+60	1.0	1.0	0.94	1.0
+65	0.94	0.97	0.88	0.94
+70	0.87	0.94	0.82	0.87

[1] 55 °C for 3RU5156...

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Selection and ordering data

3RU61 thermal overload relays for mounting onto contactor or for stand-alone installation, CLASS 10

Features and technical specifications:

- Screw terminals
- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function
- STOP button

3RU6116-..B0

3RU6116-..B1

3RU6126-..B0

3RU6126-4.B1

Size contactor[1]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG[2]	For mounting onto contactor Article No.	For stand-alone installation Article No.
	A	A		
Size S00				
S00	0.11 ... 0.16	0.5	**3RU6116-0AB0**	**3RU6116-0AB1**
	0.14 ... 0.2	1	**3RU6116-0BB0**	**3RU6116-0BB1**
	0.18 ... 0.25	1	**3RU6116-0CB0**	**3RU6116-0CB1**
	0.22 ... 0.32	1.6	**3RU6116-0DB0**	**3RU6116-0DB1**
	0.28 ... 0.4	2	**3RU6116-0EB0**	**3RU6116-0EB1**
	0.35 ... 0.5	2	**3RU6116-0FB0**	**3RU6116-0FB1**
	0.45 ... 0.63	2	**3RU6116-0GB0**	**3RU6116-0GB1**
	0.55 ... 0.8	4	**3RU6116-0HB0**	**3RU6116-0HB1**
	0.7 ... 1	4	**3RU6116-0JB0**	**3RU6116-0JB1**
	0.9 ... 1.25	4	**3RU6116-0KB0**	**3RU6116-0KB1**
	1.1 ... 1.6	6	**3RU6116-1AB0**	**3RU6116-1AB1**
	1.4 ... 2	6	**3RU6116-1BB0**	**3RU6116-1BB1**
	1.8 ... 2.5	10	**3RU6116-1CB0**	**3RU6116-1CB1**
	2.2 ... 3.2	10	**3RU6116-1DB0**	**3RU6116-1DB1**
	2.8 ... 4	16	**3RU6116-1EB0**	**3RU6116-1EB1**
	3.5 ... 5	20	**3RU6116-1FB0**	**3RU6116-1FB1**
	4.5 ... 6.3	20	**3RU6116-1GB0**	**3RU6116-1GB1**
	5.5 ... 8	25	**3RU6116-1HB0**	**3RU6116-1HB1**
	7 ... 10	35	**3RU6116-1JB0**	**3RU6116-1JB1**
	9 ... 12.5	35	**3RU6116-1KB0**	**3RU6116-1KB1**
	11 ... 16	40	**3RU6116-4AB0**	**3RU6116-4AB1**
Size S0				
S0	1.8 ... 2.5	10	**3RU6126-1CB0**	**--**
	2.2 ... 3.2	10	**3RU6126-1DB0**	**--**
	2.8 ... 4	16	**3RU6126-1EB0**	**--**
	3.5 ... 5	20	**3RU6126-1FB0**	**--**
	4.5 ... 6.3	20	**3RU6126-1GB0**	**--**
	5.5 ... 8	25	**3RU6126-1HB0**	**--**
	7 ... 10	35	**3RU6126-1JB0**	**--**
	9 ... 12.5	35	**3RU6126-1KB0**	**--**
	11 ... 16	40	**3RU6126-4AB0**	**--**
	14 ... 20	50	**3RU6126-4BB0**	**3RU6126-4BB1**
	17 ... 22	63	**3RU6126-4CB0**	**3RU6126-4CB1**
	20 ... 25	63	**3RU6126-4DB0**	**3RU6126-4DB1**
	23 ... 28	63	**3RU6126-4NB0**	**3RU6126-4NB1**
	27 ... 32	80	**3RU6126-4EB0**	**3RU6126-4EB1**
	30 ... 36	80	**3RU6126-4PB0**	**3RU6126-4PB1**
	34 ... 40	80	**3RU6126-4FB0**	**3RU6126-4FB1**

[1] Observe maximum rated operational current of the devices.

[2] Maximum protection by fuse only for overload relay, type of coordination "2". Fuse values in connection with contactors.

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Selection and ordering data

3RU51 thermal overload relays with screw terminals on the auxiliary current side for mounting onto contactor or for stand-alone installation, CLASS 10

Features and technical specifications:

- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function
- STOP button
- Sealable cover

3RU5136-..B0

3RU5146-4.B0

3RU5156-2.B2

3RU5166-5.B1

3RU5176-5.B1

Size contactor[1]	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG	For mounting onto contactor Article No.	For stand-alone installation Article No.
	A	A		
Size S2				
	5.5 ... 8	25	**3RU5136-1HB0**	--
	7 ... 10	35	**3RU5136-1JB0**	--
	9 ... 12.5	35	**3RU5136-1KB0**	--
	11 ... 16	40	**3RU5136-4AB0**	--
	14 ... 20	50	**3RU5136-4BB0**	--
	18 ... 25	63	**3RU5136-4DB0**	--
	22 ... 32	80	**3RU5136-4EB0**	--
	28 ... 40	80	**3RU5136-4FB0**	--
	36 ... 45	100	**3RU5136-4GB0**	**3RU5136-4GB1**
	40 ... 50	100	**3RU5136-4HB0**	**3RU5136-4HB1**
Size S3				
	18 ... 25	63	**3RU5146-4DB0**	--
	22 ... 32	80	**3RU5146-4EB0**	--
	28 ... 40	80	**3RU5146-4FB0**	--
	36 ... 50	125	**3RU5146-4HB0**	--
	45 ... 63	125	**3RU5146-4JB0**	**3RU5146-4JB1**
	57 ... 75	160	**3RU5146-4KB0**	**3RU5146-4KB1**
	70 ... 90	160	**3RU5146-4LB0**	**3RU5146-4LB1**
	80 ... 100	200	**3RU5146-4MB0**	**3RU5146-4MB1**
Size S6				
	55 ... 80	160	--	**3RU5156-2HB2** [2]
	63 ... 90	160	--	**3RU5156-2WB2** [2]
	80 ... 110	200	--	**3RU5156-2XB2** [2]
	90 ... 120	224	--	**3RU5156-3HB2** [2]
	110 ... 135	224	--	**3RU5156-3JB2** [2]
	120 ... 150	250	--	**3RU5156-3KB2** [2]
	135 ... 160	250	--	**3RU5156-3LB2** [2]
	150 ... 180	250	--	**3RU5156-3MB2** [2]
	170 ... 205	250	--	**3RU5156-3NB2** [2]
Size S10				
	140 ... 200	400	--	**3RU5166-5EB1**
	180 ... 250	400	--	**3RU5166-5FB1**
	220 ... 320	400	--	**3RU5166-5GB1**
Size S12				
	280 ... 400	500	--	**3RU5176-5HB1**
	350 ... 500	500	--	**3RU5176-5JB1**

[1] Observe maximum rated operational current of the devices.

[2] For contactor mounting use auxiliary part 3RU5956-3AA01.

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Overview

The following optional accessories are available for the 3RU6/3RU5 thermal overload relays:

- Terminal support for stand-alone installation with screw terminals for every size
- Mechanical RESET (for all sizes)
- Cable release for resetting devices which are difficult to access (for all sizes)

Selection and ordering data

	Version	Size	Article No.
Terminal supports for stand-alone installation			
 3RU6926-3AA01	For stand-alone mounting of the overload relays; screw and snap-on mounting onto TH 35 standard mounting rail; size S3 also for TH 75 standard mounting rail	S00 S0 S2 S3	**3RU6916-3AA01** **3RU6926-3AA01** **3RU5936-3AA01** **3RU5946-3AA01**
Mechanical RESET			
 3RU6900-1A with pushbutton and extension plunger	**Resetting plungers, holders and formers**	S00, S0, S6, S10, S12 S2, S3	**3RU6900-1A** **3RU5900-1A**
	Pushbuttons with extended stroke (12 mm), IP65, ⌀ 22 mm	S00, S0, S2, S3, S6, S10, S12	**3SB3000-0EA11**
	Extension plungers For compensation of the distance between the pushbutton and the unlatching button of the relay	S00, S0, S2, S3, S6, S10, S12	**3SX1335**
Cable releases with holder for RESET			
 3RU6900-1.	For ⌀ 6.5 mm holes in the control panel; max. control panel thickness 8 mm		
	• Length 400 mm	S00, S0, S6, S10, S12 S2, S3	**3RU6900-1B** **3RU5900-1B**
	• Length 600 mm	S00, S0, S6, S10, S12 S2, S3	**3RU6900-1C** **3RU5900-1C**
Terminal covers			
 3RT5966-4EA1	Terminal covers for cable lugs and busbar connection	S10/S12	**3RT5966-4EA1**
 3TX6526-3B		S6[1)]	**3TX6526-3B**

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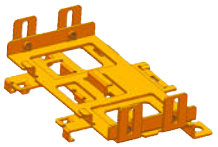
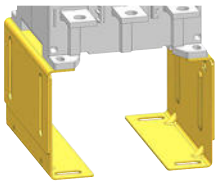
Accessories

	Version	Size	Article No.
Busbars			
 3UX1210	For contactor connecting	S6[1)]	**3UX1210**
 3RU5956-5AA01		S6	**3RU5956-5AA01**
 3RU5966-5AA01		S10/S12	**3RU5966-5AA01**
Overload relay adaptor bracket			
 3RU5956-3AA01	Adjustable base for device	S6	**3RU5956-3AA01**
 3RU5966-3AA01		S10/S12	**3RU5966-3AA01**

[1)] Not applicable for 3RU5156-3NB2.

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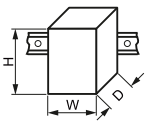
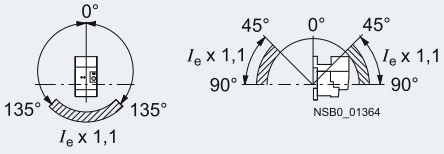
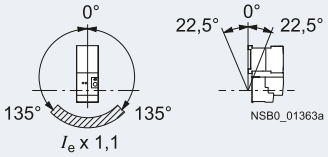
Technical specifications

Type			**3RU6116**	**3RU6126**	**3RU5136**	**3RU5146**
Size			S00	S0	S2	S3
Dimensions (W x H x D) (overload relay with stand-alone installation support)		mm	45 x 89 x 80	45 x 97 x 95	55 x 105 x 118	70 x 120 x 140
General data						
Trips in the event of			Overload and phase failure			
Trip class acc. to IEC 60947-4-1		CLASS	10			
Reset and recovery						
• Reset options after tripping			Manual, Automatic			
• 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			
Features						
• Display of operating state on device			Yes, by means of TEST function/switch position indicator slide			
• TEST function			Yes			
• RESET button			Yes			
• STOP button			Yes			
Ambient temperature						
• Storage/transport		°C	-55 ... +80			
• Operation		°C	-40 ... +70		-20 ... +70	
• Temperature compensation		°C	Up to 60			
• Permissible rated current at						
- Temperature inside control cabinet 60 °C		%	100 (over +60 °C current reduction is not required)			
- Temperature inside control cabinet 70 °C		%	87			
Repeat terminals						
• Coil repeat terminals			Yes	Not required		
• Auxiliary contact repeat terminal			Yes	Not required		
Degree of protection acc. to IEC 60529			IP20		IP20 (terminal compartment: IP00 degree of protection)	
Touch protection acc. to IEC 61140			Finger-safe for vertical contact from the front			
Shock resistance with sine acc. to IEC 60068-2-27		*g*/ms	15/11 (auxiliary contacts 95/96 and 97/98: 8 *g*/11 ms)		8/10	
Resistance to extreme climates – air humidity		%	90		100	
Installation altitude above sea level		m	Up to 2 000; above this on request			
Mounting position			The diagrams show the permissible mounting positions for mounting onto 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			Mounting onto contactor/stand-alone installation with terminal support For screw and snap-on mounting onto TH 35 standard mounting rail.		Direct mounting/stand-alone installation with terminal support For screw and snap-on mounting onto TH 35 standard mounting rail; size S3 also for TH 75 standard mounting rail.	

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Technical specifications

Type		3RU6116	3RU6126	3RU5136	3RU5146
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			1 000
Type of current					
• Direct current		Yes			
• Alternating current		Yes, frequency range up to 400 Hz			
Current setting	A A	0.11 ... 0.16 up to 11 ... 16	1.8 ... 2.5 up to 34 ... 40	5.5 ... 8 up to 40 ... 50	18 ... 25 up to 80 ... 100
Power loss per unit (max.)	W	4.1 ... 6.3	6.2 ... 7.5	6 ... 9	10 ... 16.5
Protective separation between main and auxiliary current paths acc. to IEC 60947-1	V	440	690: Setting ranges ≤ 25 A	500	690
Conductor cross-sections of main circuit					
Connection type		**Screw terminals**			
Terminal screw		M3, Pozidriv size 2	M4, Pozidriv size 2	M6, Pozidriv size 2	M8, 4 mm hexagon socket screw
Operating devices	mm	⌀ 5 ... 6	⌀ 5 ... 6	⌀ 5 ... 6	4 mm hexagon socket screw
Prescribed tightening torque	Nm	0.8 ... 1.2	2 ... 2.5	3 ... 4.5	4 ... 6
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid	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 (0.75 ... 16)	2 x (2.5 ... 16)
• Finely stranded with end sleeves (DIN 46228-1)	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 (0.75 ... 16), 1 x (0.75 ... 25)	2 x (2.5 ... 35), 1 x (2.5 ... 50)
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[1], 2 x (18 ... 14)[1], 2 x 12	2 x (16 ... 12)[1], 2 x (14 ... 8)[1]	2 x (18 ... 3), 1 x (18 ... 1)	2 x (10 ... 1/0), 1 x (10 ... 2/0)
• Ribbon cable conductors (Number x Width x Thickness)	mm	--	--	2 x (6 x 9 x 0.8)	2 x (6 x 9 x 0.8)

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

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Type		**3RU6116**	**3RU6126**	**3RU5136**	**3RU5146**
Size		S00	S0	S2	S3
Auxiliary circuit					
Number of NO contacts		1			
Number of NC contacts		1			
Auxiliary contacts – assignment		1 NO for the signal "tripped"; 1 NC for disconnecting the contactor			
Rated insulation voltage U_i (pollution degree 3)	V	690			
Rated impulse withstand voltage U_{imp}	kV	6			
Contact rating of the auxiliary contacts					
• NC contact with alternating current AC-14/AC-15, rated operational current I_e at U_e:					
- 24 V	A	4			
- 120 V	A	4			
- 125 V	A	4			
- 230 V	A	3			
- 400 V	A	2			
- 600 V	A	0.75			
- 690 V	A	0.75			
• NO contact with alternating current AC-14/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 contact, NO contact with direct current DC-13, rated operational current I_e at U_e:					
- 24 V	A	1			
- 60 V	A	On request			
- 110 V	A	0.22			
- 125 V	A	0.22			
- 220 V	A	0.11			
• Conventional thermal current I_{th}	A	6			
• Contact reliability (suitability for PLC control; 17 V, 5 mA)		Yes			
Protective separation between auxiliary current paths acc. to IEC 60947-1	V	440			
CSA, UL, UR rated data					
Auxiliary circuit – switching capacity		B600, R300			
Conductor cross-sections for auxiliary circuit					
Connection type		**Screw terminals**			
Terminal screw		M3, Pozidriv size 2			
Operating devices	mm	⌀ 5 ... 6			
Prescribed tightening torque	Nm	0.8 ... 1.2			
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid	mm^2	2 x (0.5 ... 1.5)[2], 2 x (0.75 ... 2.5)[2]			
• Finely stranded with end sleeves (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)[2], 2 x (0.75 ... 2.5)[2]			
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)[2], 2 x (18 ... 14)[2]		2 x (18 ... 14)	

[1] Up to $I_k \leq 0.5$ kA; $U \leq 260$ V.

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

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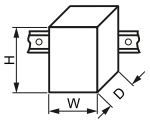
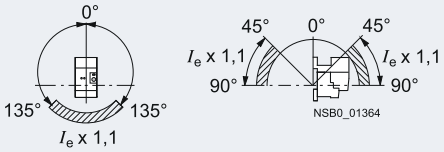
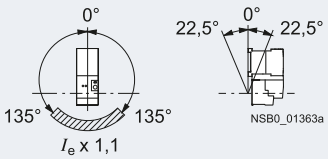
Technical specifications

Type			**3RU5156**	**3RU5166**	**3RU5176**
Size			S6	S10	S12
Dimensions (W x H x D)		mm	104 x 106 x 149	145 x 178 x 152.5	145 x 178 x 152.5
General data					
Trips in the event of			Overload and phase failure		
Trip class acc. to IEC 60947-4-1		CLASS	10		
Reset and recovery					
• Reset options after tripping			Manual, Automatic and Remote RESET (Remote RESET in combination with the corresponding accessories)		
• Recovery time					
- For automatic RESET		min	Depends on the strength of the tripping current and characteristic		
- For manual RESET		min	Depends on the strength of the tripping current and characteristic		
Features					
• Display of operating state on device			Yes		
• TEST function			Yes		
• RESET button			Yes		
• STOP button			Yes		
Ambient temperature					
• Storage/transport		°C	-55 … + 80	-55 … +80	
• Operation		°C	-25 … +55	-20 … +60	
• Temperature compensation		°C	70	80	
• Permissible rated current at					
- Temperature inside control cabinet 60 °C		%	94	100	
- Temperature inside control cabinet 70 °C		%	82	87	
Repeat terminals					
• Coil repeat terminals			--		
• Auxiliary contact repeat terminal			--		
Degree of protection acc. to IEC 60529			IP00(open), IP20 (terminal cover		
Touch protection acc. to IEC 61140			Finger-safe (terminal cover		
Shock resistance with sine acc. to IEC 60068-2-27		g/ms	8/10		
Resistance to extreme climates – air humidity		%	90	100	
Installation altitude above sea level		m	Up to 2 000; above this on request		
Mounting position			The diagrams show the permissible mounting positions for mounting onto 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			Direct mounting/ mounting with contactor	Direct mounting	Direct mounting

1) For 3RU51 56-3NB2, M8 and M10 screw are needed.

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Type		**3RU5156**	**3RU5166**	**3RU5176**
Size		S6	S10	S12
Main circuit				
Rated insulation voltage U_i (pollution degree 3)	V	1000		
Rated impulse withstand voltage U_{imp}	kV	8		
Rated operational voltage U_e	V	1000		
Type of current				
• Direct current		Yes	No	
• Alternating current		Yes, frequency range up to 400 HZ		
Current setting	A	55 … 80 up to 170 … 205	140 … 200 up to 220 … 320	280 … 400 up to 350 … 500
Power loss per unit (max.)	W	24	21	36
Protective separation between main and auxiliary current paths acc. to IEC 60947-1	V	1000		
Conductor cross-sections of main circuit				
Connection type		**Screw terminals**		
Terminal screw		M8 (hexagon socket)[1)]	M10 (hexagon socket)	M10 (hexagon socket)
Prescribed tightening torque	Nm	10…14	14...24	14…24
Conductor cross-sections (min./max.) 1 or 2 conductors can be connected				
• Finely stranded with end sleeve	mm^2	2 × (35…95)	2 × (35…150)	2 × (35…150)
• AWG cables, solid or stranded	AWG	2 × (1/0 to 250) kcmil	2 × (1/0 to 500) kcmil	2 × (1/0 to 500) kcmil
• Ribbon cable conductors/busbar (Number x Width x Thickness)	mm	2 × (20×3)	2 × 25 × 6	2 × 25 × 6
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	8		
Contact rating of the auxiliary contacts				
• NC contact with alternating current AC-14/AC-15, rated operational current I_e at U_e:				
- 24 V	A	4		
- 120 V	A	4		
- 125 V	A	4		
- 230 V	A	3		
- 400 V	A	2		
- 600 V	A	0.75		
- 690 V	A	0.75		
• NO contact with alternating current AC-14/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 contact, NO contact with direct current DC-13, rated operational current I_e at U_e:				
- 24 V	A	1		
- 60 V	A	On request		
- 110 V	A	0.22		
- 125 V	A	0.22		
- 220 V	A	0.11		
• Conventional thermal current I_{th}	A	6		
• Contact reliability		suitability for solid circuit; 17 V, 5 mA		
Protective separation between auxiliary current paths acc. to IEC 60947-1	V	≥ 440		

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Technical specifications

Type		**3RU5156**	**3RU5166**	**3RU5176**
Size		S6	S10	S12
Conductor cross-sections for auxiliary circuit				
Connection type		**Screw terminals**		
Terminal screw		M3, Pozidriv size 2		
Prescribed tightening torque	Nm	0.8…1.2		
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected				
• Solid	mm2	2×(0.5 … 1.5)[1], 2×(0.75 … 2.5)[1]		
• Finely stranded with end sleeve	mm2	2×(0.5 … 1.5)[1], 2×(0.75 … 2.5)[1]		
• AWG cables, solid or stranded	AWG	2×(20 … 16)[1], 2×(18 … 14)[1]		

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