Technical data according to IEC 60 947-4-1 and IEC 60 947-5-1

Type			**3RU11 16-....**	**3RU11 26-....**	**3RU11 36-....**	**3RU11 46-....**
Size			**S00**	**S0**	**S2**	**S3**
Trip class	acc. to IEC 60 947-4-1	CLASS	10			
Phase failure sensitivity			yes			
Increased safety EEx e			KEMA test certificate No.EX-97.Y.3235 DMT 98 ATEX G001			
Adjustable to automatic reset			yes			
RESET button with trip-free feature			yes			
Permissible ambient temperature (above +60 °C current reduction)	Storage/transport operation	°C °C	–55 to +80 –20 to +70			
	Permissible rated current at • temperature inside cubicle 60 °C • temperature inside cubicle 70 °C	 % %	 100 87			
Temperature compensation		°C	up to 60			
Switch position indicator **Test function** **STOP button**			yes yes yes			
Terminal for contactor coil **Terminal for contactor coil auxiliary contacts**			yes yes	not required not required		
Degree of protection	acc. to IEC 60 529/DIN VDE 0470 Part 1		IP 20		IP 20[1])	
Shock-hazard protection	acc. to DIN VDE 0106 Part 100		Safe from finger touch			
Shock resistance with sine	acc. to IEC 60 068 Part 2-27	*g*/ms	8/10			
Main circuit						
Rated insulation voltage U_i (pollution degree 3)		V	690			1000
Rated impulse withstand voltage U_{imp}		kV	6			8
Type of current			DC, AC			
Current setting		A	0.11– 0.16 up to 9 – 12	1.8 – 2.5 up to 20 – 25	5..5 – 8 up to 40 – 50	18 – 25 up to 80 – 100
Power losses per unit (max.)		W	3.9 to 6.6	3.9 to 6	6 to 9	10 to 16.5
Short-circuit protection with fuses	overload relays alone together with contactor		[2]) [3])			
Conductor cross-section main circuit						
• Type of connection			Screw connection		Box terminal	
• Terminal screw			Pozidriv size 2		Pozidriv size 2	4 mm Allen screw
• Conductor cross-sections	solid	mm^2 mm^2	2 x (0.5 to 1..5) 2 x(0.75 to 2.5)	2 x (1 to 2.5) 2 x (2.5 to 6)	2 x (0.75 to 16) –	2 x (2.5 to 16) –
	stranded	mm^2 mm^2	2 x (0.5 to 1.5) 2 x(0.75 to 2.5)	2 x (1 to 2.5) 2 x (2.5 to 6)	2 x (0.75 to 25) 1 x (0.75 to 35)	2 x (10 to 50) 1 x (10 to 70)
	finely stranded with end sleeve	mm^2 mm^2	2 x (0.5 to 1.5) 2 x(0.75 to 2.5)	2 x (1 to 2.5) 2 x (2.5 to 6)	2 x (0.75 to 16) 1 x (0.75 to 25)	2 x (2.5 to 35) 1 x (2.5 to 50)
	AWG conductor connections solid or stranded	AWG AWG	2 x (18 to 14) –	2 x (14 to 10) –	2 x (18 to 3) 1 x (18 to 2)	2 x (10 to 1/0) 2 x (10 to 2/0)
• Removable box terminal	busbar connection	mm	–	–	–	18 x 10
• with cable lug connection		mm^2	–	–	–	to 2 x 70

1) Terminal department: degree of protection IP 00.
2) Depending on setting current.
3) See tables below.

Technical data according to IEC 60 947-4-1 and IEC 60 947-5-1

Type				3RU11 16-....	3RU11 26-....	3RU11 36-....	3RU11 46-....
Size				**S00**	**S0**	**S2**	**S3**
Auxiliary circuit							
Auxiliary contacts				1 NO + 1 NC			
Contact rating							
NC at AC, AC-14/AC-15	Rated operational current I_e at U_e:						
	• 24 V		A	4			
	• 230 V		A	3			
	• 400 V		A	1.5			
	• 600		A	0.6			
NO at AC, AC-14/AC-15	Rated operational current I_e at U_e:						
	• 24 V		A	3			
	• 230 V		A	2			
	• 400 V		A	1			
	• 600		A	0.6			
NC, NO at DC, DC-13	Rated operational current I_e at U_e:						
	• 24 V		A	1			
	• 110 V		A	0,15			
	• 220 V		A	0.1			
Conventional thermal current I_{th}			A	6			
Contact reliability (suitability for PLC control; 17 V, 5 mA)				yes			
Short-circuit protection							
Fuse links	Utilization category	gL/gG	A	6			
		fast	A	10			
Miniature circuit-breakers, C-characteristics			A	6[1])			
Rated insulation voltage U_i (pollution degree 3)			V	690			
Rated impulse withstand voltage U_{imp}			kV	6			
Conductor cross-sections of auxiliary circuit							
Type of connection				Screw connection		Cage Clamp connection[2])	
Terminal screw				Pozidriv size 2		–	
Min./max. conductor cross-sections	solid		mm^2	2 x (0.5 to 1.5)/ 2 x (0.75 to 2.5)		2 x (0.5 to 2.5)	
	stranded		mm^2	2 x (0.5 to 1.5)/ 2 x (0.75 to 2.5)		2 x (0.5 to 2.5)	
	finely stranded with end sleeve		mm^2	2 x (0.5 to 1.5)/ 2 x (0.75 to 2.5)		2 x (0.5 to 1.5)	
	AWG cond. connect., solid or stranded		AWG	2 x (18 to 14)		2 x (18 to 14)	

Adapter for installing as a single unit

for screw and snap-on mounting onto 35 mm standard mounting rail, Size S3 also for 75 mm standard mounting rail

Type				3RU19 16-3AA01	3RU19 26-3AA01	3RU19 36-3AA01	3RU19 46-3AA01
For overload relays				**3RU11 16-....**	**3RU11 26-....**	**3RU11 36-....**	**3RU11 46-....**
Conductor cross-sections of main circuit							
Type of connection				Screw connection		Box terminal	
Terminal screw				Pozidriv size 2	Pozidriv size 2	Pozidriv size 2	4 mm Allen screw
Minimum/maximum conductor cross-sections	finely stranded with end sleeve	1 concuctor	mm^2	0.5 to 2.5	1 to 6	0.75 to 25	2.5 to 50
	solid or stranded	1 conductor	mm^2	0.5 to 4[3])	1 to 6	0.75 to 35	2.5 to 70
	AWG conductor connections, solid or stranded	1 x AWG		18 to 14	14 to 10	18 to 2	10 to 1/0

cULus-Ratings

Auxiliary circuit	Switching capacity	B600. R300

1) Up to $I_K \leq 0.5$ kA; ≤ 260 V.
2) See page 6 for notes on Cage Clamp connection.
3) Not acc. to IEC.

Technical data

Short-circuit protection with fuses for motor feeders with short-circuit currents up to 70 kA at AC 50/60 Hz 690 V
Permissible short-circuit fuses for motor starters comprising overload relay and contactor, type of coordination “2”

Current setting range	Size S00									UL-fuse	Circuit-breaker for starter protection at
	3 kW ≙ 3RT10 15 $I_{e\ max}$ = 7 A (at AC 50 Hz 400 V)			4 kW ≙ 3RT10 16 $I_{e\ max}$ = 9 A (at AC 50 Hz 400 V)			5.5 kW ≙ 3RT10 17 $I_{e\ max}$ = 12 A (at AC 50 Hz 400 V)			RK5	I_q = 50 kA / AC 400 V
A	gL/gG	aM	BS88T	gL/gG	aM	BS88T	gL/gG	aM	BS88T	A	
0.11 to 0.16	0.5	–	–	0.5	–	–	0.5	–	–	1	–
0.14 to 0.2	1	–	–	1	–	–	1	–	–	1	3RV1321-0BC10
0.18 to 0.25	1	–	–	1	–	–	1	–	–	1	3RV1321-0CC10
0.22 to 0.32	1.6	–	2	1.6	–	2	1.6	–	2	1	3RV1321-0DC10
0.28 to 0.4	2	–	2	2	–	2	2	–	2	1.6	3RV1321-0EC10
0.35 to 0.5	2	–	2	2	–	2	2	–	2	2	3RV1321-0FC10
0.45 to 0.63	2	–	4	2	–	4	2	–	4	2.5	3RV1321-0GC10
0.55 to 0.8	4	–	4	4	–	4	4	–	4	3	3RV1321-0HC10
0.7 to 1	4	–	6	4	–	6	4	–	6	4	3RV1321-0JC10
0.9 to 1.25	4	–	6	4	–	6	4	–	6	5	3RV1321-0KC10
1.1 to 1.6	6	–	10	6	–	10	6	–	10	6	3RV1321-1AC10
1.4 to 2	6	–	10	6	–	10	6	–	10	8	3RV1321-1BC10
1.8 to 2.5	10	–	10	10	–	10	10	–	10	10	–
2.2 to 3.2	10	–	16	10	–	16	10	–	16	12	–
2.8 to 4	16	–	16	16	–	16	16	–	16	16	–
3.5 to 5	20	6	20	20	6	20	20	6	20	20	–
4.5 to 6.3	20	6	20	20	6	20	20	6	20	25	–
5.5 to 8	20	10	20	20	10	20	20	10	20	30	–
7 to 10				20	16	20	20	16	20	40	–
9 to 12							20	16	20	45	–

Current setting range	Size S0									UL-fuse	Circuit-breaker for starter protection at
	5.5 kW ≙ 3RT10 24 $I_{e\ max}$ = 12 A (at AC 50 Hz 400 V)			7.5 kW ≙ 3RT10 25 $I_{e\ max}$ = 17 A (at AC 50 Hz 400 V)			11 kW ≙ 3RT10 26 $I_{e\ max}$ = 25 A (at AC 50 Hz 400 V)			RK5	I_q = 50 kA / AC 400 V
A	gL/gG	aM	BS88T	gL/gG	aM	BS88T	gL/gG	aM	BS88T	A	
1.8 to 2.5	10	–	10	10	–	10	10	–	10	10	3RV1321-1CC10
2.2 to 3.2	10	–	16	10	–	16	10	–	16	12	3RV1321-1DC10
2.8 to 4	16	–	16	16	–	16	16	–	16	16	3RV1321-1EC10
3.5 to 5	20	6	20	20	6	20	20	6	20	20	3RV1321-1FC10
4.5 to 6.3	20	6	25	20	6	25	20	6	25	25	3RV1321-1GC10
5.5 to 8	25	10	25	25	10	25	25	10	25	30	3RV1321-1HC10
7 to 10	25	16	25	25	16	25	32	16	35	40	3RV1321-1JC10
9 to 12.5	25	20	25	25	20	25	35	20	35	45	3RV1321-1KC10
11 to 16	25	20	25	25	20	25	35	20	35	60	3RV1321-4AC10
14 to 20				25	20	25	35	20	35	80	3RV1321-4BC10
17 to 22							35	20	35	80	3RV1321-4CC10
20 to 25							35	20	35	100	

For type of coordination “1” see short-circuit protection of SIRIUS 3RT1 contactors.

Technical data

Short-circuit protection with fuses for motor feeders with short-circuit currents up to 70 kA at AC 50/60 Hz 690 V
Permissible short-circuit fuses for motor starters comprising overload relays and contactor, type of coordination „2"

Current setting range	Size S2									UL-fuse	Circuit-breaker for starter protection at
	15 kW ≙ 3RT10 34 $I_{e\ max}$ = 32 A (at AC 50 Hz 400 V)			18.5 kW ≙ 3RT10 35 $I_{e\ max}$ = 40 A (at AC 50 Hz 400 V)			22 kW ≙ 3RT10 36 $I_{e\ max}$ = 50 A (at AC 50 Hz 400 V)			RK5	I_q = 50 kA / AC 400 V
A	gL/gG	aM	BS88T	gL/gG	aM	BS88T	gL/gG	aM	BS88T	A	
5.5 to 8	25	10	25	25	10	25	25	10	25	30	–
7 to 10	32	16	32	32	16	32	32	16	32	40	–
9 to 12.5	35	16	35	35	16	35	35	16	35	50	–
11 to 16	40	20	40	40	20	40	40	20	40	60	–
14 to 20	50	25	50	50	25	50	50	25	50	80	–
18 to 25	63	32	63	63	32	63	63	32	63	100	3RV1331-4DC10
22 to 32	63	35	63	63	35	63	80	35	80	125	3RV1331-4EC10
28 to 40	63	50	63	63	50	63	80	50	80	150	3RV1331-4FC10
36 to 45				63	50	63	80	50	80	175	3RV1331-4GC10
40 to 50							80	50	80	200	3RV1331-4HC10

Current setting range	Size S3									UL-fuse RK5	Circuit-breaker for starter protection at
	30 kW ≙ 3RT10 44 $I_{e\ max}$ = 65 A (at AC 50 Hz 400 V)			37 kW ≙ 3RT10 45 $I_{e\ max}$ = 80 A (at AC 50 Hz 400 V)			45 kW ≙ 3RT10 46 $I_{e\ max}$ = 95 A (at AC 50 Hz 400 V)				I_q = 50 kA/ AC 400 V
A	gL/gG	aM	BS88T	gL/gG	aM	BS88T	gL/gG	aM	BS88T	A	
18 to 25	63	32	63	63	32	63	63	32	63	100	–
22 to 32	80	35	80	80	35	80	80	35	80	125	–
28 to 40	80	50	80	80	50	80	80	50	80	150	–
36 to 50	125	50	125	125	50	125	125	50	125	200	–
45 to 63	125	63	125	160	63	160	160	63	160	250	3RV1341-4JC10
57 to 75				160	80	160	160	80	160	300	3RV1341-4KC10
70 to 90							160	100	160	350	3RV1341-4LC10
80 to 100							160	100	160	350	3RV1341-4MC10

For type of coordination "1", see short-circuit protection of SIRIUS 3RT1 contactors.

Tripping characteristics

The current-time curves show the relatonship between the tripping time from cold state and multiples of the set current I_e. When the relay is at operating temperature and carrying $1.0 \times I_e$, the tripping times are reduced to approximately 25 %. For single-pole loads the tripping curves lie between the curves shown. For normal operation, all 3 bimetallic strips of the overload relay must be heated.

The 3RU11 overload relays are suitable for protecting motors with phase control.

For protecting single-phase or DC-loads, all three main conducting paths must be connected in series. The release current with a 3-pole symmetrical load is between 105 % and 120 % of the set current.

Trip classes of thermal, delayed magnetic or solid-state overload relays – excerpt from IEC 60 947-4-1

CLASS	Tripping time t_A in seconds at $7.2 \times I_e$ from cold state
10 A	$2 < t_A \leq 10$
10	$4 < t_A \leq 10$
20	$6 < t_A \leq 20$
30	$9 < t_A \leq 30$

Typical time-current characteristic