SIEMENS

Data sheet

3RT2016-1AH02



power contactor, AC-3e/AC-3, 9 A, 4 kW / 400 V, 3-pole, 48 V AC, 50/60 Hz, auxiliary contacts: 1 NC, screw terminal, size: S00

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S00
product extension	
 function module for communication 	No
auxiliary switch	Yes
power loss [W] for rated value of the current	
 at AC in hot operating state 	0.9 W
 at AC in hot operating state per pole 	0.3 W
 without load current share typical 	1.1 W
insulation voltage	
 of main circuit with degree of pollution 3 rated value 	690 V
 of auxiliary circuit with degree of pollution 3 rated value 	690 V
surge voltage resistance	
 of main circuit rated value 	6 kV
 of auxiliary circuit rated value 	6 kV
maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1	400 V
shock resistance at rectangular impulse	
• at AC	6,7g / 5 ms, 4,2g / 10 ms
shock resistance with sine pulse	
• at AC	10,5g / 5 ms, 6,6g / 10 ms
mechanical service life (operating cycles)	
 of contactor typical 	30 000 000
 of the contactor with added electronically optimized auxiliary switch block typical 	5 000 000
 of the contactor with added auxiliary switch block typical 	10 000 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	10/01/2009
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	
 during operation 	-25 +60 °C
during storage	-55 +80 °C
relative humidity minimum	10 %
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %
Main circuit	
number of poles for main current circuit	3

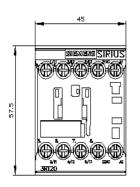
number of NO contacts for main contacts	3
operating voltage	
at AC-3 rated value maximum	690 V
 at AC-3e rated value maximum 	690 V
operational current	
• at AC-1 at 400 V at ambient temperature 40 °C rated	22 A
value	
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	22 A
— up to 690 V at ambient temperature 60 °C rated	20 A
value	
• at AC-3	
— at 400 V rated value	9 A
— at 500 V rated value	7.7 A
— at 690 V rated value	6.7 A
• at AC-3e	
— at 400 V rated value	9 A
— at 500 V rated value	7.7 A
— at 690 V rated value	6.7 A
at AC-4 at 400 V rated value	8.5 A
at AC-5a up to 690 V rated value	19.4 A
• at AC-5b up to 400 V rated value	7.4 A
• at AC-6a	504
— up to 230 V for current peak value n=20 rated value	5.3 A
— up to 400 V for current peak value n=20 rated value	5.3 A
 up to 500 V for current peak value n=20 rated value up to 690 V for current peak value n=20 rated value 	5.3 A 5 A
at AC-6a	54
 up to 230 V for current peak value n=30 rated value 	3.5 A
— up to 400 V for current peak value n=30 rated value	3.5 A
— up to 500 V for current peak value n=30 rated value	3.6 A
— up to 500 V for current peak value n=30 rated value	3.3 A
minimum cross-section in main circuit at maximum AC-1 rated	4 mm ²
value operational current for approx. 200000 operating cycles at AC-4	
at 400 V rated value	4.1 A
at 690 V rated value	3.3 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	20 A
— at 60 V rated value	20 A
— at 110 V rated value	2.1 A
— at 220 V rated value	0.8 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.6 A
 with 2 current paths in series at DC-1 	
— at 24 V rated value	20 A
— at 60 V rated value	20 A
— at 110 V rated value	12 A
— at 220 V rated value	1.6 A
— at 440 V rated value	0.8 A
— at 600 V rated value	0.7 A
 with 3 current paths in series at DC-1 	
— at 24 V rated value	20 A
— at 60 V rated value	20 A
— at 110 V rated value	20 A
— at 220 V rated value	20 A
— at 440 V rated value	1.3 A
— at 600 V rated value	1 A
 at 1 current path at DC-3 at DC-5 	

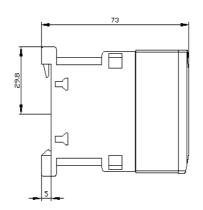
	— at 24 V rated value	20 A
• with 2 current paths in space at DC-3 at DC-3U- at 20 V rated valueDA- at 20 V rated valueDA- at 10 V rated valueDA- at 24 V rated valueDA- at 240 V rated valueDA- at 250 V rated valueDA- at 250 V rated valueS5 kW- at 250 V rated valueS5 kW- at 250 V rated valueS5 kW- at 250 V rated valueDA- at 250 V rated valueS5 kW- at 250 V rated valueS5 kW- at 250 V rated valueDA- at 250 V rated valueDA- at 250 V rated valueS5 kW- at 250 V rated valueDA- at 250 V rated valueDA- at 250 V rated valueDA- at 250 V rated value => 25 kW- at 250 V rated value => 25 kW- at 250 V for current pask value => 25 kW- at 250 V for current pask value => 26 kVA- at 250 V for current pask value => 26 kVA- at 250 V for current pask value => 26 kVA- at 250 V for current pask value => 26 kVA- at 250 V for current pask value => 26 kVA- at 250 V for current pask value => 26 kVA <tr< td=""><td></td><td></td></tr<>		
	— at 110 V rated value	0.15 A
	 with 2 current paths in series at DC-3 at DC-5 	
	— at 24 V rated value	20 A
• with 3 current path in series at DC-3 at DC-5- at 24 V rated value20 A- at 100 V rated value20 A- at 110 V rated value20 A- at 240 V rated value20 A- at 240 V rated value0.2 A- at 240 V rated value0.2 A- at 250 V rated value2.2 A- at 250 V rated value2.2 W- at 250 V rated value4 W- at 250 V rated value4 W- at 250 V rated value2.2 W- at 250 V rated value4 W- at 250 V rated value5 S W- at 250 V rated value4 W- at 250 V rated value2.2 W- at 260 V rated value2.2 W- at 260 V rated value2.8 W- at 260 V rated value = 20 rated value3.6 WA- at 260 V rated value = 20 rated value3.6 WA- at 260 V rated value = 20 rated value3.6 WA- at 260 V rated value = 20 rated value3.6 WA- at 260 V rated value = 20 rated value3.6 WA- at 260 V rated value = 20 rated value3.6 WA- at 260 V for current pask value = 7.8 rated value3.6 WA <tr< td=""><td>— at 60 V rated value</td><td>5 A</td></tr<>	— at 60 V rated value	5 A
	— at 110 V rated value	0.35 A
	 with 3 current paths in series at DC-3 at DC-5 	
	— at 24 V rated value	20 A
	— at 60 V rated value	20 A
	— at 110 V rated value	20 A
→ at 800 V rated value 0.2 Å oparating power → at 230 V rated value 2.2 kW → at 230 V rated value 4 kW → at 600 V rated value 4 kW → at 600 V rated value 5 kW → at 600 V rated value 2.2 kW → at 600 V rated value 5 kW → at 600 V rated value 2.0 kW → at 600 V rated value 4 kW → at 600 V rated value 2.0 kW → at 600 V rated value = 2.0 rated value 2.0 kW → at 600 V rated value = 2.0 rated value 2.0 kW → at 600 V rated value = 2.0 rated value 2.0 kW → at 600 V fracturet pack value = 70 rated value 3.0 kVA → up to 500 V for current pack value = 70 rated value 3.0 kW → at 600 V for current pack value = 70 rated value 3.1 kVA	— at 220 V rated value	1.5 A
operating power • at AC3 22 kW • at 230 V rated value • at 230 V rated value • at 600 V for current pack value n=20 rated value • at 600 V for current pack value n=20 rated value • at 600 V for current pack value n=20 rated value • at 600 V for current pack value n=20 rated value • at 600 V for current pack value n=20 rated value • at 600 V for current pack value n=30 rated value • at 600 V for current pack value n=30 rated value • at 600 V for current pack value n=30 rated value • at 600 V for current pack value n=30 rated value • at 600 V for current pack value n=30 rated value • at 600 V for current pack value n=30 rated value • at 600 V for current pack value n=30 rated value • at 600 • at 600 V for	— at 440 V rated value	0.2 A
• at 2C-3 22 kW - at 230 V rated value 4 kW - at 500 V rated value 4 kW - at 500 V rated value 5 kW - at 230 V rated value 5 kW - at 230 V rated value 2 kW - at 200 V rated value 4 kW - at 200 V rated value 2 kW - at 200 V rated value 4 kW - at 200 V rated value 2 kW - at 600 V rated value 3 kVA - at 600 V rated value = 20 rated value 3 kVA - up to 500 V for current pack value n=20 rated value 3 kVA - up to 500 V for current pack value n=20 rated value 3 kVA - up to 500 V for current pack value n=30 rated value 2 kWA - up to 500 V for current pack value n=30 rated value 3 kVA - up to 500 V for current pack value n=30 rated value 3 kVA - up to 500 V for current pack value n=30 rated value 4 kWA - up to 500 V for current pack value n=30 rated value 3 kVA - up	— at 600 V rated value	0.2 A
	operating power	
	● at AC-3	
- at 500 V rated value 4 kW - at 200 V rated value 55 kW - at 200 V rated value 22 kW - at 400 V rated value 4 kW - at 600 V rated value 4 kW - at 600 V rated value 55 kW - at 600 V rated value 55 kW - at 600 V rated value 55 kW operating power for approx. 20000 operating cycles at AC-4 2 kW - at 600 V rated value 2 kW - at 400 V rated value 2 kW - at 600 V rated value 2 kW operating apparent power at AC-6a 2 kW - up to 200 V for current peak value n=20 rated value 3 kVA - up to 400 V for current peak value n=20 rated value 3 kVA - up to 500 V for current peak value n=30 rated value 5 kW operating apparent power at AC-6a 1 kVA - up to 500 V for current peak value n=30 rated value 3 kVA - up to 500 V for current peak value n=30 rated value 3 kVA - up to 500 V for current peak value n=30 rated value 3 kVA - up to 500 V for current peak value n=30 rated value 3 kVA - up to 500 V for current peak value n=30 rated value 3 kVA - up to 500 V for current peak value n=30 rated value 3 kVA - up to 500 V for current peak value n=30 rated value 4 kVA <tr< td=""><td>— at 230 V rated value</td><td>2.2 kW</td></tr<>	— at 230 V rated value	2.2 kW
	— at 400 V rated value	4 kW
• at AC-3e 2 kW at 230 V rated value 4 kW at 600 V rated value 4 kW at 600 V rated value 4 kW at 600 V rated value 5 kW operating power for approx. 200000 operating cycles at AC-5 2 kW • at 400 V rated value 2 kW • at 400 V rated value 2 kW • at 600 V rated value 2 kW • at 600 V rated value 2 kW • up to 200 V for current pack value n=20 rated value 3 kVA • up to 500 V for current pack value n=20 rated value 3 kVA • up to 630 V for current pack value n=20 rated value 5 kVA • up to 630 V for current pack value n=20 rated value 4 kVA • up to 630 V for current pack value n=30 rated value 3 kVA • up to 630 V for current pack value n=30 rated value 3 kVA • up to 630 V for current pack value n=30 rated value 3 kVA • up to 500 V for current pack value n=30 rated value 3 kVA • up to 500 V for current pack value n=30 rated value 4 kVA ehort-time withstand current in cold operating state up to 60 V for current pack value n=30 rated value 4 kVA • limited to 1 s switching at zero current maximum 115 X. Use minimum cross-section acc. to AC-1 rated value • limited to 1 s switching at zero current maximum 56 A. Use minimum cross-section	— at 500 V rated value	4 kW
	— at 690 V rated value	5.5 kW
	● at AC-3e	
	— at 230 V rated value	2.2 kW
	— at 400 V rated value	4 kW
operating power for approx. 200000 operating cycles at AC- 4 2 i at 400 V rated value 2 kW i et 600 V rated value 2.5 kW operating apparent power at AC-6a 2 kVA i up to 230 V for current peak value n=20 rated value 3.6 kVA i up to 500 V for current peak value n=20 rated value 5.8 kVA i up to 500 V for current peak value n=30 rated value 5.8 kVA operating apparent power at AC-6a 1.3 kVA i up to 500 V for current peak value n=30 rated value 1.3 kVA i up to 500 V for current peak value n=30 rated value 1.3 kVA i up to 500 V for current peak value n=30 rated value 3.1 kVA i up to 500 V for current peak value n=30 rated value 3.1 kVA i up to 500 V for current peak value n=30 rated value 4.0 kVA i up to 500 V for current peak value n=30 rated value 4.0 kVA i limited to 15 switching at zero current maximum 115 A: Use minimum cross-section acc. to AC-1 rated value i limited to 5 switching at zero current maximum 11 A: Use minimum cross-section acc. to AC-1 rated value i limited to 60 s switching at zero current maximum 10 000 1/h i limited to 60 s switching at zero current maximum 10 000 1/h e tAC 10000 1/h </td <td>— at 500 V rated value</td> <td>4 kW</td>	— at 500 V rated value	4 kW
A to be the set of the set o	— at 690 V rated value	5.5 kW
• at 400 V rated value 2 kW • at 690 V rated value 2.5 kW operating apparent power at AC-6a 2 kVA • up to 230 V for current peak value n=20 rated value 3.6 kVA • up to 500 V for current peak value n=20 rated value 3.6 kVA • up to 500 V for current peak value n=20 rated value 4.6 kVA • up to 500 V for current peak value n=20 rated value 5.9 kVA operating apparent power at AC-6a 1.3 kVA • up to 500 V for current peak value n=30 rated value 2.4 kVA • up to 500 V for current peak value n=30 rated value 2.4 kVA • up to 500 V for current peak value n=30 rated value 3.1 kVA • up to 500 V for current peak value n=30 rated value 3.1 kVA • up to 500 V for current peak value n=30 rated value 4.1 kVA • up to 500 V for current peak value n=30 rated value 4.1 kVA • up to 500 V for current neaximum 115 A: Use minimum cross-section acc. to AC-1 rated value • limited to 1 s switching at zero current maximum 16 A: Use minimum cross-section acc. to AC-1 rated value • limited to 5 s switching at zero current maximum 66 A: Use minimum cross-section acc. to AC-1 rated value • limited to 10 s switching at zero current maximum 65 A: Use minimum cross-section acc. to AC-1 r		
• at 680 V rated value 2.5 kW operating apparent power at AC-5a 2 kVA • up to 200 V for current peak value n=20 rated value 3.6 kVA • up to 500 V for current peak value n=20 rated value 4.6 kVA • up to 200 V for current peak value n=20 rated value 5.9 kVA operating apparent power at AC-5a 5.9 kVA • up to 500 V for current peak value n=30 rated value 2.4 kVA • up to 500 V for current peak value n=30 rated value 3.1 kVA • up to 500 V for current peak value n=30 rated value 3.1 kVA • up to 500 V for current peak value n=30 rated value 3.1 kVA • up to 600 V for current peak value n=30 rated value 3.1 kVA • up to 600 V for current peak value n=30 rated value 3.1 kVA • up to 600 V for current peak value n=30 rated value 4.VA short-time withstand current in cold operating state up to 040 °C 4.VA • limited to 1 s switching at zero current maximum 115 A: Use minimum cross-section acc. to AC-1 rated value • limited to 10 s switching at zero current maximum 6A ; Use minimum cross-section acc. to AC-1 rated value • limited to 60 s switching at zero current maximum 5A ; Use minimum cross-section acc. to AC-1 rated value • at AC-1 10000 1/h 0000 1/		
operating apparent power at AC-6a 2 kVA • up to 230 V for current peak value n=20 rated value 2 kVA • up to 500 V for current peak value n=20 rated value 3.6 kVA • up to 6500 V for current peak value n=20 rated value 5.9 kVA operating apparent power at AC-6a 1.3 kVA • up to 500 V for current peak value n=30 rated value 1.3 kVA • up to 500 V for current peak value n=30 rated value 2.4 kVA • up to 500 V for current peak value n=30 rated value 3.1 kVA • up to 500 V for current peak value n=30 rated value 3.1 kVA • up to 500 V for current peak value n=30 rated value 4. kVA • up to 500 V for current peak value n=30 rated value 4. kVA • up to 600 V for current peak value n=30 rated value 4. kVA • up to 600 V for current peak value n=30 rated value 4. kVA • up to 600 V for current peak value n=30 rated value 4. kVA • up to 600 V for current peak value n=30 rated value 4. kVA • up to 600 V for current peak value n=30 rated value 4. kVA • imited to 1 s switching at zero current maximum 115 A; Use minimum cross-section acc. to AC-1 rated value • imited to 10 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value		
up to 230 V for current peak value n=20 rated value up to 400 V for current peak value n=20 rated value up to 500 V for current peak value n=20 rated value 3.6 KVA up to 500 V for current peak value n=20 rated value 5.9 KVA operating apparent power at AC-6a up to 230 V for current peak value n=30 rated value 1.3 KVA up to 400 V for current peak value n=30 rated value 1.3 KVA up to 690 V for current peak value n=30 rated value 1.3 KVA up to 690 V for current peak value n=30 rated value 1.3 KVA up to 690 V for current peak value n=30 rated value 3.1 KVA up to 690 V for current peak value n=30 rated value 4 KVA sub to 500 V for current peak value n=30 rated value 4 KVA sub to 500 V for current neak value n=30 rated value 11 X Use minimum cross-section acc. to AC-1 rated value ilmited to 1s switching at zero current maximum ilmited to 3s switching at zero current maximum ilmited to 4s switching frequency illow 1s short to stope tot to supply voltage if to 2s switching at zero current ma		2.5 KW
• up to 400 V for current peak value n=20 rated value • up to 500 V for current peak value n=20 rated value • up to 500 V for current peak value n=20 rated value • up to 500 V for current peak value n=20 rated value • up to 230 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • up to 500 V for current peak value n=30 rated value • limited to 1s switching at zero current maximum • limited to 1s switching at zero current maximum • limited to 10 s switching at zero current maximum • limited to 50 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 61 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 60 s switching at zero current maximum • limited to 60 s switching at zero current maximum • at AC-1 maximum • at AC-2 maximum • at AC-3 maximum • at AC-3 maximum • at AC-3 maximum • at AC-3 maximum • at AC-4 maximum • at AC-4 maximum • at AC-4 maximum • at AC-4 m		011/4
• up to 500 V for current peak value n=20 rated value 4.6 kVA • up to 590 V for current peak value n=20 rated value 5.9 kVA operating apparent power at AC-6a 1.3 kVA • up to 230 V for current peak value n=30 rated value 2.4 kVA • up to 500 V for current peak value n=30 rated value 3.1 kVA • up to 500 V for current peak value n=30 rated value 3.1 kVA • up to 500 V for current peak value n=30 rated value 4.VA Short-time withstand current in cold operating state up to 40° C 4.VA • limited to 1 s witching at zero current maximum 155 A; Use minimum cross-section acc. to AC-1 rated value • limited to 1 s witching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value • limited to 30 s witching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value • limited to 60 s switching at zero current maximum 5 A; Use minimum cross-section acc. to AC-1 rated value • at AC 10 000 1/h operating frequency 66 A; Use minimum cross-section acc. to AC-1 rated value • at AC 10 000 1/h operating frequency 5 A; Use minimum cross-section acc. to AC-1 rated value • at AC-1 maximum 10000 1/h		
• up to 690 V for current peak value n=20 rated value 5.9 kVA operating apparent power at AC-6a 1.3 kVA • up to 230 V for current peak value n=30 rated value 2.4 kVA • up to 500 V for current peak value n=30 rated value 3.1 kVA • up to 690 V for current peak value n=30 rated value 3.1 kVA • up to 690 V for current peak value n=30 rated value 4.kVA short-time withstand current in cold operating state up to 40 °C 4 kVA • limited to 1 s switching at zero current maximum 115 A; Use minimum cross-section acc. to AC-1 rated value • limited to 1 s switching at zero current maximum 86 A; Use minimum cross-section acc. to AC-1 rated value • limited to 50 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value • limited to 60 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value • limited to 60 s switching at zero current maximum 55 A; Use minimum cross-section acc. to AC-1 rated value • at AC 10 000 1/h • at AC-1 maximum 1 000 1/h • at AC-3 maximum 750 1/h • at AC-3 maximum 750 1/h • at AC-4 maximum 250 1/h • at AC-4 maximum 250 1/h • at AC-4 maximum		
operating apparent power at AC-6a 1.3 kVA • up to 230 V for current peak value n=30 rated value 1.3 kVA • up to 400 V for current peak value n=30 rated value 2.4 kVA • up to 500 V for current peak value n=30 rated value 3.1 kVA • up to 500 V for current peak value n=30 rated value 3.1 kVA • up to 500 V for current peak value n=30 rated value 4.VA short-time withstand current in cold operating state up to 40 °C 4 kVA • limited to 1 s switching at zero current maximum 155 A; Use minimum cross-section acc. to AC-1 rated value • limited to 30 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value • limited to 50 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value • limited to 50 s switching at zero current maximum 56 A; Use minimum cross-section acc. to AC-1 rated value • limited to 50 s switching at zero current maximum 56 A; Use minimum cross-section acc. to AC-1 rated value • at AC 10 000 1/h • at AC-1 maximum 1 000 1/h • at AC-3 maximum 1 000 1/h • at AC-3 maximum 750 1/h • at AC-3 maximum 250 1/h Control supply voltage at AC AC • at 50 H		
 up to 230 V for current peak value n=30 rated value 1.3 kVA up to 600 V for current peak value n=30 rated value 2.4 kVA up to 500 V for current peak value n=30 rated value 3.1 kVA up to 690 V for current peak value n=30 rated value 3.1 kVA up to 690 V for current peak value n=30 rated value 4 kVA short-time withstand current in cold operating state up to 40 °C limited to 1 s switching at zero current maximum limited to 15 s switching at zero current maximum limited to 10 s switching at zero current maximum limited to 10 s switching at zero current maximum limited to 10 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value limited to 60 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value limited to 60 s switching at zero current maximum 55 A; Use minimum cross-section acc. to AC-1 rated value at AC-1 maximum at AC-1 maximum at AC-3 maximum at AC-3 maximum at AC-4 maximu	· · · · · · · · · · · · · · · · · · ·	5.9 KVA
• up to 400 V for current peak value n=30 rated value 2.4 kVA • up to 500 V for current peak value n=30 rated value 3.1 kVA • up to 690 V for current peak value n=30 rated value 4 kVA short-time withstand current in cold operating state up to 40 °C ilmited to 1 s switching at zero current maximum • limited to 1 s switching at zero current maximum 155 A; Use minimum cross-section acc. to AC-1 rated value • limited to 10 s switching at zero current maximum 86 A; Use minimum cross-section acc. to AC-1 rated value • limited to 3 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value • limited to 60 s switching at zero current maximum 65 A; Use minimum cross-section acc. to AC-1 rated value • limited to 60 s switching at zero current maximum 67 A; Use minimum cross-section acc. to AC-1 rated value • limited to 60 s switching at zero current maximum 67 A; Use minimum cross-section acc. to AC-1 rated value • at AC 10 000 1/h operating frequency - • at AC-3 maximum 750 1/h • at AC-4 maximum 250 1/h Control circuit/ Control XC type of voltage of the control supply voltage AC • at 60 Hz rated value 48 V • at 60 Hz rated value		
• up to 500 V for current peak value n=30 rated value 3.1 kVA • up to 690 V for current peak value n=30 rated value 4 kVA short-time withstand current in cold operating state up to 40 °C 5 A: Use minimum cross-section acc. to AC-1 rated value • limited to 1 s switching at zero current maximum 115 A; Use minimum cross-section acc. to AC-1 rated value • limited to 10 s switching at zero current maximum 86 A; Use minimum cross-section acc. to AC-1 rated value • limited to 30 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value • limited to 60 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value • limited to 80 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value • limited to 60 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value • limited to 60 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value • at AC 0 0000 1/h operating frequency - • at AC-1 maximum 1 000 1/h • at AC-3 maximum 750 1/h • at AC-4 maximum 250 1/h Control circuit/ Control - type of voltage of the control supply voltage AC <td></td> <td></td>		
• up to 690 V for current peak value n=30 rated value4 kVAshort-time withstand current in cold operating state up to 40 °C4 kVA• limited to 1s switching at zero current maximum155 A; Use minimum cross-section acc. to AC-1 rated value• limited to 1s switching at zero current maximum111 A; Use minimum cross-section acc. to AC-1 rated value• limited to 30 switching at zero current maximum86 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum66 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• at AC0 000 1/hoperating frequency10000 1/h• at AC-1 maximum1000 1/h• at AC-3 maximum750 1/h• at AC-3 maximum750 1/h• at AC-4 maximum250 1/h• at AC-4 maximum250 1/h• at AC-4 maximum250 1/h• at AC-4 maximum250 1/h• at AC-4 maximum48 V• at AC value48 V• at 60 Hz rated value48 V		
short-time withstand current in cold operating state up to 40 °C ilimited to 1 s switching at zero current maximum Iimited to 5 s switching at zero current maximum 155 A; Use minimum cross-section acc. to AC-1 rated value Iimited to 1 s switching at zero current maximum 86 A; Use minimum cross-section acc. to AC-1 rated value Iimited to 3 s switching at zero current maximum 86 A; Use minimum cross-section acc. to AC-1 rated value Iimited to 60 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value Iimited to 60 s switching at zero current maximum 55 A; Use minimum cross-section acc. to AC-1 rated value no-load switching frequency 10 000 1/h e at AC 10 000 1/h operating frequency 1000 1/h e at AC-3 maximum 750 1/h e at AC-4 maximum 250 1/h control circuit/ Control AC type of voltage of the control supply voltage AC control supply voltage at AC 48 V e at 60 Hz rated value 48 V e at 60 Hz rated value 48 V		
40 °C • limited to 1 s switching at zero current maximum 155 A; Use minimum cross-section acc. to AC-1 rated value • limited to 1 s switching at zero current maximum 111 A; Use minimum cross-section acc. to AC-1 rated value • limited to 1 0 s switching at zero current maximum 86 A; Use minimum cross-section acc. to AC-1 rated value • limited to 30 s switching at zero current maximum 86 A; Use minimum cross-section acc. to AC-1 rated value • limited to 60 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value • limited to 60 s switching at zero current maximum 55 A; Use minimum cross-section acc. to AC-1 rated value • limited to 60 s switching at zero current maximum 56 A; Use minimum cross-section acc. to AC-1 rated value • limited to 60 s switching at zero current maximum 56 A; Use minimum cross-section acc. to AC-1 rated value • limited to 60 s switching at zero current maximum 56 A; Use minimum cross-section acc. to AC-1 rated value • limited to 60 s switching at zero current maximum 56 A; Use minimum cross-section acc. to AC-1 rated value • at AC 0 s switching at zero current maximum 56 A; Use minimum cross-section acc. to AC-1 rated value • at AC 10 000 1/h 10 000 1/h • at AC-2 maximum 1000 1/h 1000 1/h • at AC-3 maximum 250 1/h	· · ·	4 KVA
• limited to 1 s switching at zero current maximum155 A; Use minimum cross-section acc. to AC-1 rated value• limited to 5 s switching at zero current maximum111 A; Use minimum cross-section acc. to AC-1 rated value• limited to 10 s switching at zero current maximum86 A; Use minimum cross-section acc. to AC-1 rated value• limited to 30 s switching at zero current maximum66 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• at AC10 000 1/h• at AC-1 maximum1000 1/h• at AC-2 maximum750 1/h• at AC-3 maximum750 1/h• at AC-4 maximum250 1/h• at AC-4 maximum250 1/h• at AC-4 maximum250 1/h• control supply voltage at ACAC• at 50 Hz rated value48 V• at 50 Hz rated value48 V• at 60 Hz rated value48 V <td></td> <td></td>		
• limited to 5 s switching at zero current maximum111 A; Use minimum cross-section acc. to AC-1 rated value• limited to 10 s switching at zero current maximum86 A; Use minimum cross-section acc. to AC-1 rated value• limited to 30 s switching at zero current maximum66 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• at AC10 000 1/h• at AC10 000 1/h• at AC-1 maximum1 000 1/h• at AC-2 maximum750 1/h• at AC-3 maximum750 1/h• at AC-4 maximum750 1/h• at AC-4 maximum250 1/h• at AC-4 maximum250 1/h• at AC-4 maximum250 1/h• at 50 Hz rated value48 V• at 60 Hz rated value48 V• at 60 Hz rated value48 V• at 60 Hz rated value48 V		155 A: Use minimum cross-section acc. to AC-1 rated value
• limited to 10 s switching at zero current maximum 86 A; Use minimum cross-section acc. to AC-1 rated value • limited to 30 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value • limited to 60 s switching at zero current maximum 55 A; Use minimum cross-section acc. to AC-1 rated value no-load switching frequency 55 A; Use minimum cross-section acc. to AC-1 rated value • at AC 10 000 1/h operating frequency 1000 1/h • at AC-1 maximum 1 000 1/h • at AC-2 maximum 750 1/h • at AC-3 maximum 750 1/h • at AC-3 maximum 750 1/h • at AC-4 maximum 250 1/h Control circuit/ Control V type of voltage of the control supply voltage AC • at 50 Hz rated value 48 V • at 60 Hz rated value 48 V • at 60 Hz rated value 48 V	-	
• limited to 30 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value • limited to 60 s switching at zero current maximum 55 A; Use minimum cross-section acc. to AC-1 rated value no-load switching frequency 10 000 1/h • at AC 10 000 1/h operating frequency 1 000 1/h • at AC-1 maximum 1 000 1/h • at AC-2 maximum 750 1/h • at AC-3 maximum 750 1/h • at AC-3 maximum 750 1/h • at AC-4 maximum 250 1/h Control circuit/ Control V type of voltage of the control supply voltage AC • at 50 Hz rated value 48 V • at 60 Hz rated value 48 V • at 60 Hz rated value 48 V	-	
• limited to 60 s switching at zero current maximum 55 A; Use minimum cross-section acc. to AC-1 rated value no-load switching frequency 10 000 1/h • at AC 10 000 1/h operating frequency 1 000 1/h • at AC-1 maximum 1 000 1/h • at AC-2 maximum 750 1/h • at AC-3 maximum 750 1/h • at AC-3 maximum 750 1/h • at AC-4 maximum 250 1/h Control circuit/ Control 250 1/h type of voltage of the control supply voltage AC • at 50 Hz rated value 48 V • at 60 Hz rated value 48 V • at 60 Hz rated value 48 V	-	
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• at 50 Hz rated value • at 60 Hz rated value • at 60 Hz rated value 48 V 48 V 48 V 48 V 48 V		
• at 60 Hz rated value 48 V operating range factor control supply voltage rated value of magnet coil at AC		48 V
operating range factor control supply voltage rated value of magnet coil at AC		
	operating range factor control supply voltage rated value of	
	● at 50 Hz	0.81.1

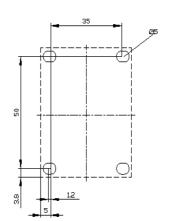
• at 60 Hz	0.85 1.1
apparent pick-up power of magnet coil at AC	
• at 50 Hz	27 VA
• at 60 Hz	24.3 VA
inductive power factor with closing power of the coil	
• at 50 Hz	0.8
• at 60 Hz	0.75
apparent holding power of magnet coil at AC	
• at 50 Hz	4.2 VA
● at 60 Hz	3.3 VA
inductive power factor with the holding power of the coil	
● at 50 Hz	0.25
● at 60 Hz	0.25
closing delay	
• at AC	9 35 ms
opening delay	
• at AC	4 15 ms
arcing time	10 15 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
number of NC contacts for auxiliary contacts instantaneous	1
contact	
operational current at AC-12 maximum	10 A
operational current at AC-15	
• at 230 V rated value	10 A
 at 400 V rated value 	3 A
 at 500 V rated value 	2 A
• at 690 V rated value	1 A
operational current at DC-12	
 at 24 V rated value 	10 A
 at 48 V rated value 	6 A
 at 60 V rated value 	6 A
 at 110 V rated value 	3 A
 at 125 V rated value 	2 A
 at 220 V rated value 	1 A
 at 600 V rated value 	0.15 A
operational current at DC-13	
at 24 V rated value	10 A
at 48 V rated value	2 A
• at 60 V rated value	2 A
• at 110 V rated value	1 A
• at 125 V rated value	0.9 A
• at 220 V rated value	0.3 A
• at 600 V rated value	0.1 A
contact reliability of auxiliary contacts	1 faulty switching per 100 million (17 V, 1 mA)
UL/CSA ratings	
full-load current (FLA) for 3-phase AC motor	
• at 480 V rated value	7.6 A
• at 600 V rated value	9 A
yielded mechanical performance [hp]	
 for single-phase AC motor 	
— at 110/120 V rated value	0.33 hp
— at 230 V rated value	1 hp
• for 3-phase AC motor	
— at 200/208 V rated value	2 hp
— at 220/230 V rated value	3 hp
— at 460/480 V rated value	5 hp
— at 575/600 V rated value	7.5 hp
contact rating of auxiliary contacts according to UL	A600 / Q600
Short-circuit protection	
design of the fuse link	
÷	

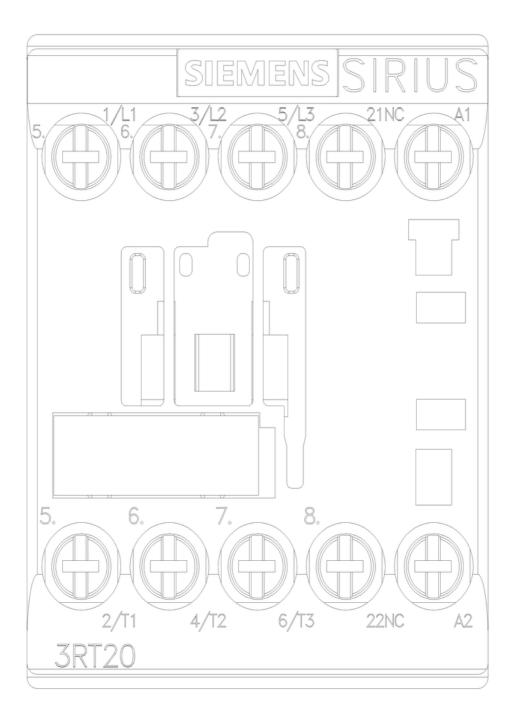
• for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 35A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)
- with type of assignment 2 required	gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V, 80kA)
 for short-circuit protection of the auxiliary switch required 	gG: 10 A (500 V, 1 kA)
Installation/ mounting/ dimensions	
mounting position	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
side-by-side mounting	Yes
height	58 mm
width	45 mm
depth	73 mm
required spacing	
with side-by-side mounting forwards	10
— forwards	10 mm
— upwards	10 mm
- downwards	10 mm
— at the side	0 mm
 for grounded parts forwards 	10 mm
	10 mm
— upwards — at the side	6 mm
— at the side — downwards	o mm 10 mm
for live parts	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	6 mm
Connections/ Terminals	0 mm
type of electrical connection	
for main current circuit	screw-type terminals
for auxiliary and control circuit	screw-type terminals
at contactor for auxiliary contacts	Screw-type terminals
of magnet coil	Screw-type terminals
type of connectable conductor cross-sections for main contacts	
• solid	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²), 2x 4 mm²
solid or stranded	2x (0,5 1,5 mm ²), 2x (0,75 2,5 mm ²), 2x 4 mm ²
 finely stranded with core end processing 	2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²)
connectable conductor cross-section for main contacts	
• solid	0.5 4 mm²
stranded	0.5 4 mm²
 finely stranded with core end processing 	0.5 2.5 mm²
connectable conductor cross-section for auxiliary contacts	
solid or stranded	0.5 4 mm²
 finely stranded with core end processing 	0.5 2.5 mm²
type of connectable conductor cross-sections	
 for auxiliary contacts 	
— solid or stranded	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²), 2x 4 mm²
 finely stranded with core end processing 	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
 for AWG cables for auxiliary contacts 	2x (20 16), 2x (18 14), 2x 12
AWG number as coded connectable conductor cross section	
for main contacts	20 12
 for auxiliary contacts 	20 12
Safety related data	
product function	
 mirror contact according to IEC 60947-4-1 	Yes
suitability for use safety-related switching OFF	Yes
B10 value with high demand rate according to SN 31920	1 000 000
proportion of dangerous failures	
 with low demand rate according to SN 31920 	40 %

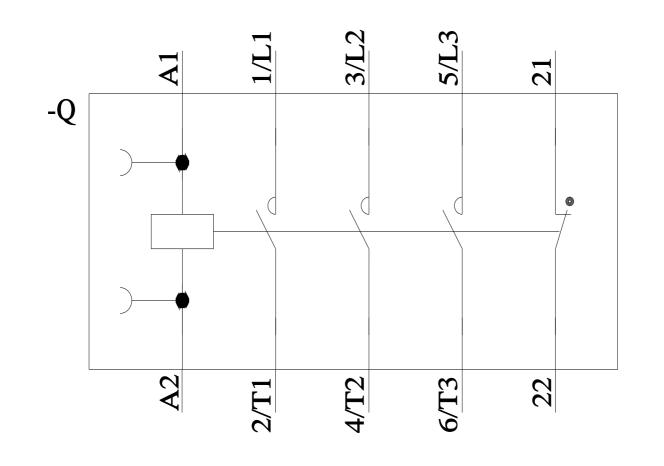
failure rate [FIT] with lo	nd rate according to SN 319	920 73 %				
	w demand rate according	to SN 31920 100 F	ΊΤ			
T1 value for proof test i 61508	interval or service life acco	rding to IEC 20 a				
protection class IP or	n the front according to I	EC 60529 IP20				
touch protection on the front according to IEC 60529			finger-safe, for vertical contact from the front			
ertificates/ approvals						
General Product App	oroval					
SP CAN		<u>Confirmation</u>		KC	EAC	
EMC	Functional Safety/Safety of Ma- chinery	Declaration of Confor	mity	Test Certificates		
RCM	<u>Type Examination Cer-</u> <u>tificate</u>	UK CA	CE EG-Konf.	<u>Type Test Certific-</u> ates/Test Report	Special Test Certific ate	
Marine / Shipping						
ABS	B U REAU VERITAS		Lloyd's Register uis	PRS	RINA	
Marine / Shipping	other			Railway	Environment	
RARS RARS	<u>Confirmation</u>		<u>Confirmation</u>	Vibration and Shock	Environmental Con firmations	
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