SIEMENS

Data sheet

3RT2016-1BF42



power contactor, AC-3e/AC-3, 9 A, 4 kW / 400 V, 3-pole, 110 V DC, 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 	4 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 DC	6,7g / 5 ms, 4,2g / 10 ms
shock resistance with sine pulse	
• at DC	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	5.2.4
— 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 — up to 500 V for current peak value n=20 rated value 	5.3 A 5.3 A
— up to 500 V for current peak value n=20 rated value	5.5 A
• at AC-6a	54
 up to 230 V for current peak value n=30 rated value 	3.5 A
— up to 200 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 690 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				
+vih 2 current paths in series at DC-3 at DC-5 - at 24 V relativation - at 100 V relativation - at 110 V relativation - at 110 V relativation - at 110 V relativation - at 24 V relativation - at 25 V relativation - at 26 V relat	— at 60 V rated value	0.5 A				
	— 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 Y rado value -at 24 Y rado value 20 A -at 310 V rado value 20 A -at 320 V rado value 20 A -at 320 V rado value 20 A -at 320 V rado value 40 V rado value 20 V rado value	— 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 220 V rated value	1.5 A				
operating power at AC3 cl 230 V rated value cl 230 V rated value cl 240 V rated value cl 240 V rated value cl 250 V rated value cl 22 kW cl 230 V rated value cl 24 kW cl 400 V rated value cl 4 kW cl 4 cl 20 V for current pack value n=20 rated value cl 4 kW cl 4 cl 20 V for current pack value n=20 rated value cl 4 kVA cl 4 cl 20 V for current pack value n=20 rated value cl 4 kVA cl 4 cl 20 V for current pack value n=20 rated value cl 4 kVA cl b 0 kO V for current pack value n=20 rated value cl 4 kVA cl b 0 kO V for current pack value n=30 rated value cl 4 kVA cl b 0 kO V for current pack value n=30 rated value cl kVA cl b 0 kO V for current pack value n=30 rated value cl kVA cl 13 kVA cl 14 kV	— at 440 V rated value	0.2 A				
er at AC-3	— at 600 V rated value	0.2 A				
	operating power					
	• at AC-3					
	— at 230 V rated value	2.2 kW				
• at AC-3e - at 230 V rated value 2.2 kW at 230 V rated value 4 kW at 690 V rated value 4 kW at 690 V rated value 4 kW at 690 V rated value 5 kW operating power for approx. 20000 operating cycles at AC-4 2 kW • at 600 V rated value 2 kW • at 600 V rated value 2 kW • at 600 V rated value 2 kW • at 600 V for current peak value n=20 rated value 3 kVA • up to 200 V for current peak value n=20 rated value 3 kVA • up to 600 V for current peak value n=20 rated value 5 kVA • up to 600 V for current peak value n=20 rated value 5 kVA • up to 600 V for current peak value n=30 rated value 1 kVA • up to 600 V for current peak value n=30 rated value 3 kVA • up to 600 V for current peak value n=30 rated value 3 kVA • up to 600 V for current peak value n=30 rated value 4 kVA • up to 600 V for current maximum 155 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 1						
		2.2 kW				
operating power for approx. 200000 operating cycles at AC-4 2 4 e at 400 V rated value 2 kW e. et 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 560 V for current peak value n=20 rated value 3.6 kVA • up to 560 V for current peak value n=30 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 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 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 4.6 kVA • up to 500 V for current peak value n=30 rated value 5.9 kVA • up to 500 V for current peak value n=30 rated value 5.4 kVA • up to 500 V for current peak value n=30 rated value 4.6 kVA • up to 500 V for current peak value n=30 rated value 5.4 kVA • up to 500 V for current peak value n=30 rated value 111 A; Use minimum cross-section acc. to AC-1 rated value • imited to 10 s switching at zero current maximum						
• at 660 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 5.9 kVA operating apparent power at AC-6a 5.9 kVA • up to 500 V for current peak value n=20 rated value 5.9 kVA operating apparent power at AC-6a - • 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 4.1 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 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 not od operating state up to 40 *C 6.1 kVA • inimide to 15 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 56 A; Use minimum cross-section acc. to AC-1 rated value • at AC-1 maxim						
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 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 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 4.4 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 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 55 A; Use minimum cross-section acc. to AC-1 rated value • at AC-1 maximum 100 000 1/h • at AC-3 maximum 100 000 1/h • at AC-3 maximum 750 1/h • at AC-3 maximum 750 1/h • at AC-3 maximum 750 1/h	• at 400 V rated value	2 kW				
 up to 230 V for current peak value n=20 rated value 2 kVA up to 400 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 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 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 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 1s switching at zero current maximum limited to 10 s switching at zero current maximum limited to 30 s switching at zero current maximum limited to 30 s switching at zero current maximum elimited to 68 switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 86 A; Use minimum cross-section acc. to AC-1 rated value 87 A; Use minimum cross-section acc. to AC-1 rated	• at 690 V rated value	2.5 kW				
• up to 400 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 690 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 1.3 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 3.1 kVA • up to 500 V for current peak value n=30 rated value 1.5 A; Use minimum cross-section acc. to AC-1 rated value short-time withstand current in cold operating state up to 40°C 111 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 30 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 10 000 1/h • doff requency 10 000 1/h • at AC-3 maximum 1000 1/h • at AC-3 maximum 750 1/h • at AC-4 maximum 250 1/h	operating apparent power at AC-6a					
• up to 500 V for current peak value n=20 rated value 4.6 kVA • 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 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.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 5 s switching at zero current maximum 66 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 5 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 5 A; Use minimum cross-section acc. to AC-1 rated value • at DC 10 000 1/h • at AC-3 maximum 1000 1/h • at AC-3 maximum 750 1/h • at AC-3 maximum 750 1/h • at AC-4 maximum 250 1/h <	 up to 230 V for current peak value n=20 rated value 	2 kVA				
• 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 2.4 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 • 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 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 66 A; Use minimum cross-section acc. to AC-1 rated value • limited to 0 s switching at zero current maximum 65 A; Use minimum cross-section acc. to AC-1 rated value • limited to 0 s switching at zero current maximum 65 A; Use minimum cross-section acc. to AC-1 rated value • limited to 0 s switching at zero current maximum 65 A; Use minimum cross-section acc. to AC-1 rated value • limited to 0 s switching at zero current maximum 55 A; Use minimum cross-section acc. to AC-1 rated value • limited to 0 S switching at zero current maximum 50 A; Use minimum cross-section acc. to AC-1 rated value <	 up to 400 V for current peak value n=20 rated value 	3.6 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 2.4 kVA up to 590 V for current peak value n=30 rated value 4 kVA in the form of current peak value n=30 rated value 3.1 kVA in to 590 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 il innited to 1 s switching at zero current maximum 155 A; Use minimum cross-section acc. to AC-1 rated value il innited to 10 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value il innited to 60 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value il innited to 60 s switching at zero current maximum 66 A; Use minimum cross-section acc. to AC-1 rated value il innited to 60 s switching at zero current maximum 56 A; Use minimum cross-section acc. to AC-1 rated value no-load switching frequency 10 000 1/h e at DC 10 000 1/h operating frequency 1000 1/h e at AC-3 maximum 750 1/h e at AC-3 maximum 750 1/h e at AC-3 maximum	 up to 500 V for current peak value n=20 rated value 	4.6 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 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 155 A; Use minimum cross-section acc. to AC-1 rated value • limited to 10 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 66 A; Use minimum cross-section acc. to AC-1 rated value • limited to 60 s switching at zero current maximum 10 000 1/h • at AC-1 maximum 1000 01/h • at AC-1 maximum 1000 1/h • at AC-1 maximum 750 1/h • at AC-3 maximum 750 1/h • at AC-3 maximum 750 1/h • at AC-3 maximum 200 1/h • at AC-4 maximum 200 1/h • at AC-3 maximum 750 1/h • at AC-4 maximum 200 1/h • at AC-4 maximum 200 1/h • a	 up to 690 V for current peak value n=20 rated value 	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 500 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 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 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 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 DC 10 000 1/h operating frequency • • at AC-1 maximum 1000 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 250 1/h • at AC-4 maximum <	operating apparent power at AC-6a					
• 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 4 kVA short-time withstand current in cold operating state up to 40 °C 155 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 30 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 80 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 55 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 80 s switching at zero current maximum 50 A; Use minimum cross-section acc. to AC-1 rated value • at DC 10 0000 1/h operating frequency • • at AC-3 maximum 750 1/h • at AC-3 maximum 750 1/h • at AC-4 maximum 250 1/h Control circult/ Control	 up to 230 V for current peak value n=30 rated value 	1.3 kVA				
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• 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 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 maximum10 000 1/h• at DC10 000 1/h• at AC-1 maximum1 000 1/h• at AC-2 maximum750 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• control supply voltage at DCDC• rated value110 V• operating fractor control supply voltage rated value of magnet coll at DC110 V• operating range factor control supply voltage rated value of the control supply voltage rated value of magnet coll at DC• initial value0.8	 up to 500 V for current peak value n=30 rated value 	3.1 kVA				
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 5 s switching at zero current maximum 111 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 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 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 • at DC 10 000 1/h • at DC 10 000 1/h • at AC-1 maximum 1 000 1/h • at AC-2 maximum 750 1/h • at AC-3 maximum 250 1/h Control circuit/ Control Use the control supply voltage type of voltage of the control supply voltage DC • rate	 up to 690 V for current peak value n=30 rated value 	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• 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 DC10 000 1/h• at DC10 000 1/h• at AC-2 maximum1000 1/h• at AC-3 maximum750 1/h• at AC-3 maximum250 1/h• at AC-4 maximum250 1/h• at AC-4 maximum250 1/h• at AC-4 maximum10 V• operating range factor control supply voltage rated value of magnet coil at DC110 V• initial value0.8 <td>short-time withstand current in cold operating state up to</td> <td></td>	short-time withstand current in cold operating state up to					
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 limited to 10 s switching at zero current maximum 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 at DC 10 000 1/h operating frequency at AC-1 maximum 1000 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 type of voltage of the control supply voltage control supply voltage at DC at AC-1 at AC-1 at AC-1 at AC-4 at	 limited to 1 s switching at zero current maximum 	155 A; Use minimum cross-section acc. to AC-1 rated value				
 Iimited to 30 s switching at zero current maximum Iimited to 60 s switching at zero current maximum S5 A; Use minimum cross-section acc. to AC-1 rated value no-load switching frequency at DC 10 000 1/h operating frequency at AC-1 maximum 1000 1/h at AC-2 maximum 50 1/h at AC-3 maximum 50 1/h at AC-3 maximum 50 1/h at AC-4 maximum 250 1/h Control circuit/ Control type of voltage of the control supply voltage Control supply voltage at DC rated value 100 V operating range factor control supply voltage rated value of magnet coil at DC initial value 0.8 description at DC at DC at DC at DC at AC-3 maximum at AC-4 maximum bC control circuit/ Control DC control supply voltage at DC initial value DC at DC	 limited to 5 s switching at zero current maximum 	111 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 DC 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-3 maximum 750 1/h • at AC-4 maximum 250 1/h • at AC-4 maximum 250 1/h • at AC-4 maximum DC control circuit/ Control DC type of voltage of the control supply voltage DC • rated value 110 V operating range factor control supply voltage rated value of magnet coil at DC 0.8	 limited to 10 s switching at zero current maximum 	86 A; Use minimum cross-section acc. to AC-1 rated value				
no-load switching frequency 10 000 1/h operating frequency - • at AC-1 maximum 1 000 1/h • at AC-2 maximum 750 1/h • at AC-3 maximum 250 1/h • at AC-4 maximum 250 1/h • at AC-4 maximum 250 1/h • at AC-4 maximum DC control circuit/ Control DC • rated value 110 V • operating range factor control supply voltage rated value of magnet coil at DC 0.8	 limited to 30 s switching at zero current maximum 	66 A; Use minimum cross-section acc. to AC-1 rated value				
• at DC10 000 1/hoperating frequency• at AC-1 maximum1 000 1/h• at AC-2 maximum750 1/h• at AC-3 maximum750 1/h• at AC-3 maximum750 1/h• at AC-3 maximum250 1/h• at AC-4 maximum250 1/h• at AC-4 maximum250 1/h• at AC-4 maximumDCcontrol circuit/ ControlDC• rated value110 V• rated value0.8	 limited to 60 s switching at zero current maximum 	55 A; Use minimum cross-section acc. to AC-1 rated value				
operating frequencyI• at AC-1 maximum1 000 1/h• at AC-2 maximum750 1/h• at AC-3 maximum750 1/h• at AC-3e maximum750 1/h• at AC-3e maximum750 1/h• at AC-4 maximum250 1/h• at AC-4 maximum250 1/h• control circuit/ ControlDCControl supply voltage at DCI10 V• rated value110 V• initial value0.8	no-load switching frequency					
• at AC-1 maximum1 000 1/h• at AC-2 maximum750 1/h• at AC-3 maximum750 1/h• at AC-3e maximum750 1/h• at AC-4 maximum250 1/h• at AC-4 maximum250 1/h• at AC-4 maximum250 1/h• at AC-4 maximumDC• control circuit/ ControlDC• rated value110 V• rated value0.8	• at DC	10 000 1/h				
• at AC-2 maximum750 1/h• at AC-3 maximum750 1/h• at AC-3 maximum750 1/h• at AC-3e maximum750 1/h• at AC-4 maximum250 1/h• at AC-4 maximum250 1/hControl circuit/ ControlDCControl supply voltage at DCDC• rated value110 V• perating range factor control supply voltage rated value of magnet coil at DC0.8	operating frequency					
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• at AC-3e maximum750 1/h• at AC-4 maximum250 1/hControl circuit/ ControlDCtype of voltage of the control supply voltageDCcontrol supply voltage at DC110 V• rated value110 Voperating range factor control supply voltage rated value of magnet coil at DC0.8	• at AC-2 maximum	750 1/h				
• at AC-4 maximum250 1/hControl circuit/ Controltype of voltage of the control supply voltageDCcontrol supply voltage at DC110 V• rated value110 Voperating range factor control supply voltage rated value of magnet coil at DC0.8	• at AC-3 maximum	750 1/h				
Control circuit/ Control type of voltage of the control supply voltage DC control supply voltage at DC Into V • rated value 110 V operating range factor control supply voltage rated value of magnet coil at DC 0.8	• at AC-3e maximum	750 1/h				
type of voltage of the control supply voltage DC control supply voltage at DC 110 V • rated value 110 V operating range factor control supply voltage rated value of magnet coil at DC 0.8	• at AC-4 maximum	250 1/h				
control supply voltage at DC 110 V • rated value 110 V operating range factor control supply voltage rated value of magnet coil at DC 0.8	Control circuit/ Control					
control supply voltage at DC 110 V • rated value 110 V operating range factor control supply voltage rated value of magnet coil at DC 0.8	type of voltage of the control supply voltage	DC				
• rated value 110 V operating range factor control supply voltage rated value of magnet coil at DC 0.8						
operating range factor control supply voltage rated value of magnet coil at DC 0.8		110 V				
	operating range factor control supply voltage rated value of					
• full-scale value 1.1	• initial value	0.8				
	full-scale value	1.1				

opening delay • at DC7 13arcing time10 7control version of the switch operating mechanismStandaAuxiliary circuit1number of NC contacts for auxiliary contacts instantaneous contact1operational current at AC-12 maximum10 Aoperational current at AC-15 • at 230 V rated value10 A• at 400 V rated value3 A• at 690 V rated value1 Aoperational current at DC-12 • at 24 V rated value10 A			
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• at DC30 4opening delay7 13• at DC7 13arcing time10 4control version of the switch operating mechanismStandsAuxiliary circuit10 4number of NC contacts for auxiliary contacts instantaneous contact1operational current at AC-12 maximum10 Aoperational current at AC-1510 A• at 230 V rated value10 A• at 400 V rated value10 A• at 690 V rated value1 Aoperational current at DC-1210 A• at 24 V rated value10 A• at 48 V rated value6 A	3 ms 15 ms		
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• at DC 7 13 arcing time 10 7 control version of the switch operating mechanism Stands Auxiliary circuit Image: Stands number of NC contacts for auxiliary contacts instantaneous contact 1 operational current at AC-12 maximum 10 A operational current at AC-15 Image: Stands • 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 Image: Stands • at 24 V rated value 10 A • at 48 V rated value 6 A	15 ms		
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at 24 V rated value 10 A at 48 V rated value 6 A			
• at 48 V rated value 6 A			
a at 60 V rated value			
• 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	1 A		
• at 600 V rated value 0.15 A	4		
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 fault	ty 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 h	q		
— 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)		
	/ Q600		
Short-circuit protection			
design of the fuse link			
for short-circuit protection of the main circuit			
	5A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)		
	0A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V, 80kA)		
	0 A (500 V, 1 kA)		
Installation/ mounting/ dimensions			
	0° rotation possible on vertical mounting surface; can be tilted forward and		
	vard 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	n		
width 45 mm	n		

depth	73 mm			
required spacing				
with side-by-side mounting				
— forwards	10 mm			
— upwards	10 mm 10 mm			
— downwards				
— at the side	10 mm 0 mm			
	0 mm			
for grounded parts forwards	10 mm			
— forwards				
— upwards	10 mm			
— at the side	6 mm			
— downwards	10 mm			
for live parts	10			
— forwards	10 mm			
— upwards	10 mm			
— downwards	10 mm			
— at the side	6 mm			
Connections/ Terminals				
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 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)			
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 mm ²			
connectable conductor cross-section for auxiliary contacts				
 solid or stranded 	0.5 4 mm ²			
 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 %			
with high demand rate according to SN 31920	73 %			
failure rate [FIT] with low demand rate according to SN 31920	100 FIT			
T1 value for proof test interval or service life according to IEC 61508	20 a			
protection class IP on the front according to IEC 60529	IP20			
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front			
Certificates/ approvals				
General Product Approval				
outoral i roudot Approval				

SP M		<u>Confirmation</u>	(UL)	KC	EHC
EMC	Functional Safety/Safety of Ma- chinery	Declaration of Conform	nity	Test Certificates	
RCM	<u>Type Examination Cer-</u> tificate	UK CA	CE EG-Konf.	Special Test Certific- ate	Type Test Certific- ates/Test Report
Marine / Shipping					
ABS	B UREAU VERITAS		Llovd's Register us	PRS	RINA
Marine / Shipping	other		Railway	Dangerous Good	Environment
RMRS	<u>Confirmation</u>	VDE	<u>Vibration and Shock</u>	Transport Information	Environmental Con- firmations
Further information					
Siemens has decided to exit the Russian market (see here). https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business Siemens is working on the renewal of the current EAC certificates. Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus). Information on the packaging https://support.industry.siemens.com/cs/ww/en/view/109813875 Information- and Downloadcenter (Catalogs, Brochures,) https://www.siemens.com/ic10 Industry Mall (Online ordering system)					
Industry Mall (Online https://mall.industry.sie	ordering system) emens.com/mall/en/en/Cata	alog/product?mlfb=3RT20	<u>16-1BF42</u>		

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2016-1BF42

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1BF42

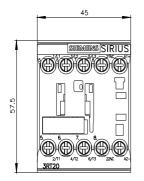
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2016-1BF42&lang=en

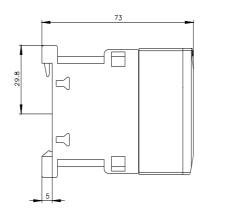
Characteristic: Tripping characteristics, I2t, Let-through current

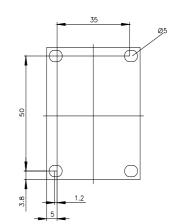
https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1BF42/char

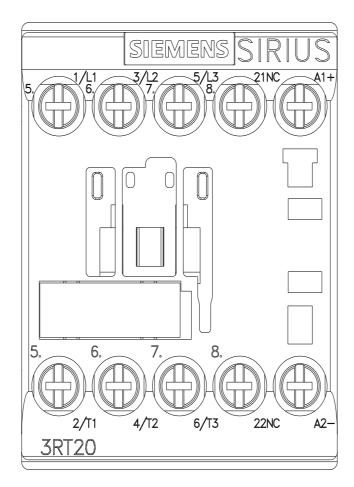
Further characteristics (e.g. electrical endurance, switching frequency)

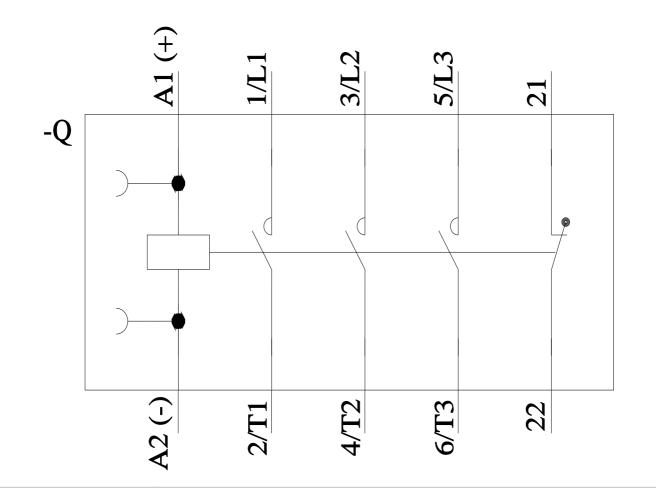
http://www.automation.siem ns.com/bilddb/index.aspx?view= &mlfb











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