SIEMENS

Data sheet

3RT2027-1AP00



Power contactor, AC-3 32 A, 15 kW / 400 V 1 NO + 1 NC, 230 V AC, 50 Hz 3-pole, size S0 screw terminals

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S0
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	8.1 W
per pole	2.7 W
power loss [W] for rated value of the current without load current share typical	9.8 W
surge voltage resistance	
 of main circuit rated value 	6 kV
of auxiliary circuit rated value	6 kV
maximum permissible voltage for safe isolation between coil and main contacts acc. to EN 60947-1	400 V
shock resistance at rectangular impulse	
● at AC	8,3g / 5 ms, 5,3g / 10 ms
shock resistance with sine pulse	
• at AC	13,5g / 5 ms, 8,3g / 10 ms
mechanical service life (switching cycles)	
 of contactor typical 	10 000 000
 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 acc. to IEC 81346-2	Q
Substance Prohibitance (Date)	01.10.2009
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 acc. 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
operational current	
at AC-1 at 400 V at ambient temperature 40 °C rated value	50 A
● at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	50 A
— up to 690 V at ambient temperature 60 °C rated value	42 A
• at AC-3	
— at 400 V rated value	32 A
— at 500 V rated value	32 A
— at 690 V rated value	21 A
 at AC-4 at 400 V rated value 	22 A
 at AC-5a up to 690 V rated value 	44 A
• at AC-5b up to 400 V rated value	26.5 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	30.8 A
— up to 400 V for current peak value n=20 rated value	30.8 A
 up to 500 V for current peak value n=20 rated value 	27 A
 up to 690 V for current peak value n=20 rated value at AC-6a 	21 A
 at AC-ba — up to 230 V for current peak value n=30 rated value 	20.5 A
— up to 400 V for current peak value n=30 rated value	20.5 A
 — up to 500 V for current peak value n=30 rated value 	18 A
 up to 690 V for current peak value n=30 rated value 	18 A
minimum cross-section in main circuit at maximum AC-1 rated value	10 mm ²
operational current for approx. 200000 operating cycles at AC-4	-
 at 400 V rated value 	12 A
 at 690 V rated value 	12 A
operational current	
 at 1 current path at DC-1 	
— at 24 V rated value	35 A
— at 110 V rated value	4.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.4 A
— at 600 V rated value	0.25 A
 with 2 current paths in series at DC-1 	
— at 24 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	5 A
— at 440 V rated value	1 A
— at 600 V rated value	0.8 A
 with 3 current paths in series at DC-1 	
— at 24 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	35 A
— at 440 V rated value	2.9 A
— at 600 V rated value	1.4 A
at 1 current path at DC-3 at DC-5	
- at 24 V rated value	20 A
— at 110 V rated value	2.5 A
— at 220 V rated value	
	1 A

	0.00 A
— at 440 V rated value	0.09 A
 — at 600 V rated value • with 2 current paths in series at DC-3 at DC-5 	0.06 A
with 2 current paths in series at DC-3 at DC-5 — at 24 V rated value	35 A
— at 110 V rated value	15 A
— at 220 V rated value	3A
— at 440 V rated value	0.27 A
— at 600 V rated value	0.16 A
 with 3 current paths in series at DC-3 at DC-5 	0.10 A
- at 24 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	10 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.6 A
operating power	
• at AC-3	
— at 230 V rated value	7.5 kW
— at 400 V rated value	15 kW
— at 500 V rated value	15 kW
— at 690 V rated value	18.5 kW
operating power for approx. 200000 operating cycles at AC-4	
at 400 V rated value	6 kW
at 690 V rated value	10.3 kW
operating apparent power at AC-6a	
• up to 230 V for current peak value n=20 rated value	12.2 kV·A
• up to 400 V for current peak value n=20 rated value	21.3 kV·A
 up to 500 V for current peak value n=20 rated value 	23.3 kV·A
• up to 690 V for current peak value n=20 rated value	25 kV·A
operating apparent power at AC-6a	
 up to 230 V for current peak value n=30 rated value 	8.1 kV·A
 up to 400 V for current peak value n=30 rated value 	14.2 kV·A
 up to 500 V for current peak value n=30 rated value 	15.5 kV·A
 up to 690 V for current peak value n=30 rated value 	21.5 kV·A
short-time withstand current in cold operating state up to 40 °C	
 limited to 1 s switching at zero current maximum 	499 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	395 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	260 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 30 s switching at zero current maximum 	186 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 60 s switching at zero current maximum 	152 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
• at AC	5 000 1/h
operating frequency	
• at AC-1 maximum	1 000 1/h
• at AC-2 maximum	750 1/h
at AC-3 maximum	750 1/h
at AC-4 maximum	250 1/h
Control circuit/ Control	AC
type of voltage of the control supply voltage control supply voltage at AC	
at 50 Hz rated value	230 V
operating range factor control supply voltage rated	
value of magnet coil at AC • at 50 Hz	0.8 1.1
at 50 Hz apparent pick-up power of magnet coil at AC	0.0 1.1
apparent pick-up power of magnet con at AC o at 50 Hz	77 V·A
inductive power factor with closing power of the coil	
• at 50 Hz	0.82
apparent holding power of magnet coil at AC	
• at 50 Hz	9.8 V·A

inductive power factor with the holding power of the coil	
• at 50 Hz	0.25
	0.23
closing delay • at AC	8 40 ms
	o 40 ms
opening delay	4 40 mg
• at AC	4 16 ms
arcing time	10 10 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
number of NC contacts for auxiliary contacts instantaneous contact	1
number of NO contacts for auxiliary contacts instantaneous contact	1
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	1A
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 40 V rated value at 60 V rated value	2 A
at 100 V rated value	1A
at 125 V rated value	0.9 A
• at 220 V rated value	0.3 A
at 220 V rated value 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	27 A
at 600 V rated value	27 A
yielded mechanical performance [hp]	
for single-phase AC motor	
- at 110/120 V rated value	2 hp
— at 230 V rated value	
 for 3-phase AC motor 	5 hp
	10 bp
— at 200/208 V rated value	10 hp
- at 220/230 V rated value	10 hp
- at 460/480 V rated value	20 hp
— at 575/600 V rated value	25 hp
contact rating of auxiliary contacts according to UL	A600 / P600
Short-circuit protection	
design of the fuse link	
for short-circuit protection of the main circuit	
 — with type of coordination 1 required 	gG: 125A (690V,100kA), aM: 50A (690V,100kA), BS88: 125A (415V,80kA)
— with type of assignment 2 required	gG: 50A (690V,100kA), aM: 25A (690V, 100kA), BS88: 50A (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 standard mounting rail according to DIN EN 60715			
side-by-side mounting	Yes			
height	85 mm			
width	45 mm			
depth	97 mm			
required spacing				
 with side-by-side mounting 				
— forwards	10 mm			
— upwards	10 mm			
— downwards	10 mm			
— at the side	0 mm			
 for grounded parts 				
— forwards	10 mm			
— upwards	10 mm			
— at the side	6 mm			
— downwards	10 mm			
• for live parts				
— 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 (1 2.5 mm²), 2x (2.5 10 mm²)			
— solid or stranded	2x (1 2.5 mm²), 2x (2.5 10 mm²)			
 finely stranded with core end processing 	2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²			
 at AWG cables for main contacts 	2x (16 12), 2x (14 8)			
connectable conductor cross-section for main contacts				
• solid	1 10 mm²			
stranded	1 10 mm²			
 finely stranded with core end processing 	1 10 mm²			
connectable conductor cross-section for auxiliary contacts				
solid or stranded	0.5 2.5 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 mm ²), 2x (0.75 2.5 mm ²)			
— finely stranded with core end processing	2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²)			
at AWG cables for auxiliary contacts	2x (20 16), 2x (18 14)			
AWG number as coded connectable conductor cross section				
for main contacts	16 8			
 for auxiliary contacts 	20 14			
Safety related data				
B10 value with high demand rate acc. to SN 31920	450 000			
	450 000			
proportion of dangerous failures	450 000			
 proportion of dangerous failures with low demand rate acc. to SN 31920 	40 %			
• with low demand rate acc. to SN 31920	40 %			

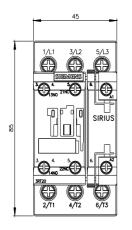
IEC 61508						
protection class IP	on the front acc. to IEC	60529	IP20			
touch protection of	n the front acc. to IEC 6	0529	finger-safe, for vertica	al contact from the front		
suitability for use						
 safety-related 			Yes			
Certificates/ approva	als					
General Product A	pproval					
	<u>Confirmation</u>		(U) u	<u>KC</u>	EHC	
EMC	Functional Safety/Safety of Machinery	Declaration of	Conformity	Test Certificates		
RCM	<u>Type Examination</u> <u>Certificate</u>	<u>UK Declaration</u> <u>Conformity</u>	of EG-Konf.	Special Test Certific- ate	Type Test Certific- ates/Test Report	
Marine / Shipping						
ABS	BUREAU VERITAS		Lloyd's Register uis	RINA	RMRS	
other						
<u>Confirmation</u>		Confirmation				
Further information						
Information- and Downloadcenter (Catalogs, Brochures,) https://www.siemens.com/ic10						
Industry Mall (Online ordering system) https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2027-1AP00						
Cax online generator http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2027-1AP00 Service&Support (Manuals, Certificates, Characteristics, FAQs,) https://support.industry.siemens.com/cs/ww/en/ps/3RT2027-1AP00						
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros,)						

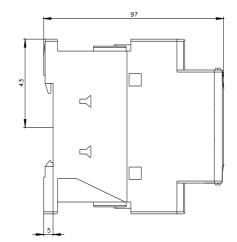
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

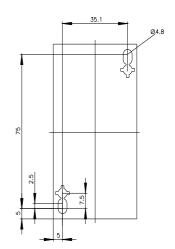
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2027-1AP00&lang=en

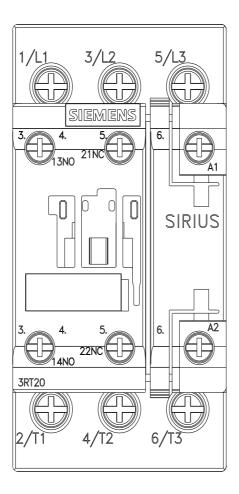
Characteristic: Tripping characteristics, I²t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RT2027-1AP00/char

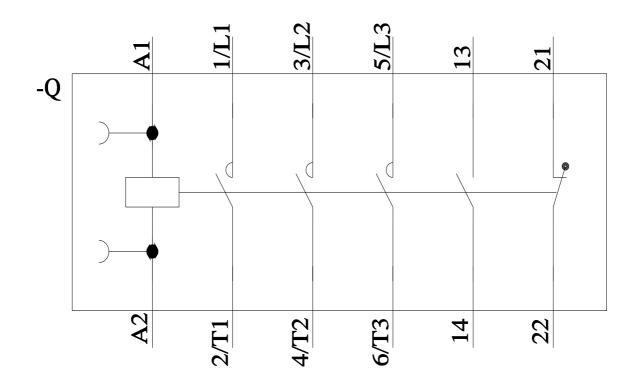
Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2027-1AP00&objecttype=14&gridview=view1











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