## 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	
<ul> <li>function module for communication</li> </ul>	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	
<ul> <li>of main circuit rated value</li> </ul>	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)	
<ul> <li>of contactor typical</li> </ul>	10 000 000
<ul> <li>of the contactor with added electronically optimized auxiliary switch block typical</li> </ul>	5 000 000
<ul> <li>of the contactor with added auxiliary switch block typical</li> </ul>	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	
<ul> <li>during operation</li> </ul>	-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
<ul> <li>at AC-4 at 400 V rated value</li> </ul>	22 A
<ul> <li>at AC-5a up to 690 V rated value</li> </ul>	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
<ul> <li>up to 500 V for current peak value n=20 rated value</li> </ul>	27 A
<ul> <li>up to 690 V for current peak value n=20 rated value</li> <li>at AC-6a</li> </ul>	21 A
<ul> <li>at AC-ba</li> <li>— up to 230 V for current peak value n=30 rated value</li> </ul>	20.5 A
— up to 400 V for current peak value n=30 rated value	20.5 A
<ul> <li>— up to 500 V for current peak value n=30 rated value</li> </ul>	18 A
<ul> <li>up to 690 V for current peak value n=30 rated value</li> </ul>	18 A
minimum cross-section in main circuit at maximum AC-1 rated value	10 mm <sup>2</sup>
operational current for approx. 200000 operating cycles at AC-4	-
<ul> <li>at 400 V rated value</li> </ul>	12 A
<ul> <li>at 690 V rated value</li> </ul>	12 A
operational current	
<ul> <li>at 1 current path at DC-1</li> </ul>	
— 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
<ul> <li>with 2 current paths in series at DC-1</li> </ul>	
— 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
<ul> <li>with 3 current paths in series at DC-1</li> </ul>	
— 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
<ul> <li>— at 600 V rated value</li> <li>• with 2 current paths in series at DC-3 at DC-5</li> </ul>	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
<ul> <li>with 3 current paths in series at DC-3 at DC-5</li> </ul>	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
<ul> <li>up to 500 V for current peak value n=20 rated value</li> </ul>	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	
<ul> <li>up to 230 V for current peak value n=30 rated value</li> </ul>	8.1 kV·A
<ul> <li>up to 400 V for current peak value n=30 rated value</li> </ul>	14.2 kV·A
<ul> <li>up to 500 V for current peak value n=30 rated value</li> </ul>	15.5 kV·A
<ul> <li>up to 690 V for current peak value n=30 rated value</li> </ul>	21.5 kV·A
short-time withstand current in cold operating state up to 40 °C	
<ul> <li>limited to 1 s switching at zero current maximum</li> </ul>	499 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 5 s switching at zero current maximum</li> </ul>	395 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 10 s switching at zero current maximum</li> </ul>	260 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 30 s switching at zero current maximum</li> </ul>	186 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>limited to 60 s switching at zero current maximum</li> </ul>	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	
<ul> <li>for 3-phase AC motor</li> </ul>	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	
<ul> <li>— with type of coordination 1 required</li> </ul>	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)
<ul> <li>for short-circuit protection of the auxiliary switch required</li> </ul>	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				
<ul> <li>with side-by-side mounting</li> </ul>				
— forwards	10 mm			
— upwards	10 mm			
— downwards	10 mm			
— at the side	0 mm			
<ul> <li>for grounded parts</li> </ul>				
— 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				
<ul> <li>for main current circuit</li> </ul>	screw-type terminals			
<ul> <li>for auxiliary and control circuit</li> </ul>	screw-type terminals			
<ul> <li>at contactor for auxiliary contacts</li> </ul>	Screw-type terminals			
of magnet coil	Screw-type terminals			
type of connectable conductor cross-sections				
<ul> <li>for main contacts</li> </ul>				
— solid	2x (1 2.5 mm²), 2x (2.5 10 mm²)			
— solid or stranded	2x (1 2.5 mm²), 2x (2.5 10 mm²)			
<ul> <li>finely stranded with core end processing</li> </ul>	2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²			
<ul> <li>at AWG cables for main contacts</li> </ul>	2x (16 12), 2x (14 8)			
connectable conductor cross-section for main contacts				
• solid	1 10 mm²			
stranded	1 10 mm²			
<ul> <li>finely stranded with core end processing</li> </ul>	1 10 mm²			
connectable conductor cross-section for auxiliary contacts				
solid or stranded	0.5 2.5 mm <sup>2</sup>			
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 <sup>2</sup> ), 2x (0.75 2.5 mm <sup>2</sup> )			
— finely stranded with core end processing	2x (0.5 1.5 mm <sup>2</sup> ), 2x (0.75 2.5 mm <sup>2</sup> )			
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			
<ul> <li>for auxiliary contacts</li> </ul>	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			
<ul> <li>proportion of dangerous failures</li> <li>with low demand rate acc. to SN 31920</li> </ul>	40 %			
• with low demand rate acc. to SN 31920	40 %			

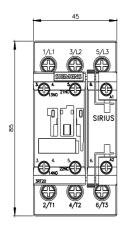
IEC 61508						
protection class IP	on the front acc. to IEC	60529	IP20			
touch protection of	n the front acc. to IEC 6	0529	finger-safe, for vertica	al contact from the front		
suitability for use						
<ul> <li>safety-related</li> </ul>			Yes			
Certificates/ approva	als					
General Product A	pproval					
	<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,)						

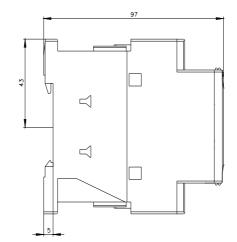
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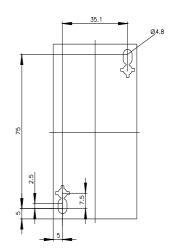
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2027-1AP00&lang=en

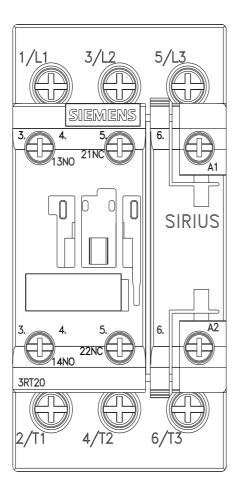
Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RT2027-1AP00/char

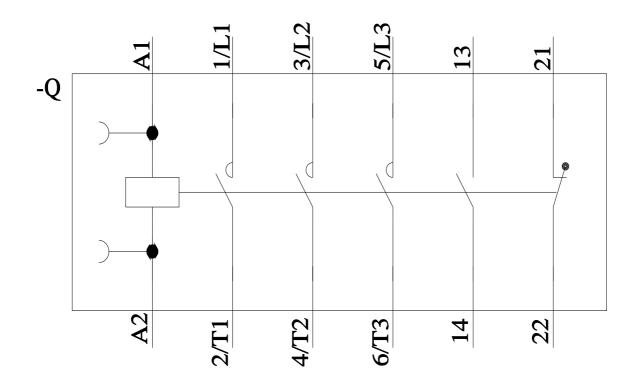
Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2027-1AP00&objecttype=14&gridview=view1











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