SIEMENS

Data sheet

3RT2028-1BE40



power contactor, AC-3e/AC-3, 38 A, 18.5 kW / 400 V, 3-pole, 60 V DC, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S0

8/13	
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 	9.6 W
 at AC in hot operating state per pole 	3.2 W
 without load current share typical 	5.9 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	10g / 5 ms, 7,5g / 10 ms
shock resistance with sine pulse	
• at DC	15g / 5 ms, 10g / 10 ms
mechanical service life (operating 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 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	50 A
value	
• 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	42 A
value	
• at AC-3	
— at 400 V rated value	38 A
— at 500 V rated value	32 A
— at 690 V rated value	21 A
• at AC-3e	
— at 400 V rated value	38 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	31.5 A
• at AC-6a	30.8 A
— up to 230 V for current peak value n=20 rated value	
— up to 400 V for current peak value n=20 rated value	30.8 A 30.8 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 	21 A
at AC-6a	21A
 up to 230 V for current peak value n=30 rated value 	20.5 A
— up to 200 V for current peak value n=30 rated value	20.5 A
— up to 500 V for current peak value n=30 rated value	21.4 A
— up to 690 V for current peak value n=30 rated value	21 A
minimum cross-section in main circuit at maximum AC-1 rated	10 mm ²
value	
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 60 V rated value	20 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 60 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 60 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 60 V rated value	5 A				
— at 110 V rated value	2.5 A				
— at 220 V rated value	1 A				
— at 440 V rated value	0.09 A				
— at 600 V rated value	0.06 A				
 with 2 current paths in series at DC-3 at DC-5 					
— at 24 V rated value	35 A				
— at 60 V rated value	35 A				
— at 110 V rated value	15 A				
— at 220 V rated value	3 A				
— 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 					
— at 24 V rated value	35 A				
— at 60 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-2 at 400 V rated value	18.5 kW				
• at AC-3					
— at 230 V rated value	11 kW				
— at 400 V rated value	18.5 kW				
— at 500 V rated value	18.5 kW				
— at 690 V rated value	18.5 kW				
• at AC-3e					
— at 230 V rated value	11 kW				
— at 400 V rated value	18.5 kW				
— at 500 V rated value	18.5 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	12.2 1/1/1				
up to 230 V for current peak value n=20 rated value	12.2 kVA				
up to 400 V for current peak value n=20 rated value	21.3 KVA				
up to 500 V for current peak value n=20 rated value	26.6 kVA				
• up to 690 V for current peak value n=20 rated value	25 kVA				
operating apparent power at AC-6a	8.1 kVA				
 up to 230 V for current peak value n=30 rated value up to 400 V for current peak value n=30 rated value 	6. I KVA 14.2 kVA				
 up to 400 V for current peak value n=30 rated value up to 500 V for current peak value n=30 rated value 	14.2 KVA 18.5 kVA				
	25 kVA				
up to 690 V for current peak value n=30 rated value short-time withstand current in cold operating state up to					
40 °C					
 limited to 1 s switching at zero current maximum 	593 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 5 s switching at zero current maximum 	341 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 	199 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 60 s switching at zero current maximum 	162 A; Use minimum cross-section acc. to AC-1 rated value				
no-load switching frequency					
● at DC	1 500 1/h				
operating frequency					
• at AC-1 maximum	1 000 1/h				
	750.44				
• at AC-2 maximum	750 1/h				
• at AC-3 maximum	750 1/h				

Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage at DC	
rated value	60 V
operating range factor control supply voltage rated value of	00 V
magnet coil at DC	
• initial value	0.8
full-scale value	1.1
closing power of magnet coil at DC	5.9 W
holding power of magnet coil at DC	5.9 W
closing delay	
at DC	50 170 ms
opening delay	
at DC	15 18 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 	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 	34 A
• at 600 V rated value	27 A
yielded mechanical performance [hp]	
 for single-phase AC motor 	
— at 110/120 V rated value	3 hp
— at 230 V rated value	5 hp
 for 3-phase AC motor 	
— at 200/208 V rated value	10 hp
— at 220/230 V rated value	10 hp
— at 460/480 V rated value	25 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 	

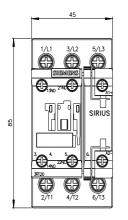
- with type of coordination 1 required	gG: 125A (690V,100kA), aM: 50A (690V,100kA), BS88: 125A (415V,80kA)			
— with type of assignment 2 required	gG: 50A (690V,100kA), aM: 25A (690V, 100kA), BS88: 50A (415V, 80kA)			
 for short-circuit protection of the auxiliary switch required 	gG: 10 A (500 V, 1 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 DIN rail according to DIN EN 60715			
 side-by-side mounting 	Yes			
height	85 mm			
width	45 mm			
depth	107 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			
connectable conductor cross-section for main contacts				
• solid	1 10 mm ²			
stranded	1 10 mm ²			
 finely stranded with core end processing 	1 10 mm ²			
connectable conductor cross-section for auxiliary contacts				
solid or stranded	0.5 2.5 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 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)			
for 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				
product function				
	Yes			
mirror contact according to IEC 60947-4-1 B10 value with high demand rate according to SN 31920	450 000			
B10 value with high demand rate according to SN 31920				
	40 %			
-				
 proportion of dangerous failures with low demand rate according to SN 31920 with high demand rate according to SN 31920 failure rate [FIT] with low demand rate according to SN 31920 	40 % 73 % 100 FIT			

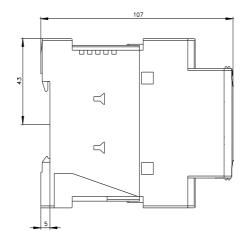
	t interval or service life acco	ording to IEC 20 a				
61508	on the front according to I	EC 60529 IP20				
•	the front according to IEC		r-safe, for vertical contact	from the front		
suitability for use	the field according to inc					
 safety-related s 	switching OFF	Yes				
Certificates/ approvals	s					
General Product Ap	proval					
()	<u>Confirmation</u>		Ű	KC	EHC	
EMC	Functional Safety/Safety of Ma- chinery	Declaration of Confor	rmity	Test Certificates		
RCM	<u>Type Examination Cer-</u> tificate	UK CA	CE EG-Konf.	<u>Special Test Certific-</u> <u>ate</u>	<u>Type Test Certific-</u> ates/Test Report	
Marine / Shipping						
ABS	BUREAU VERITAS		Lloyd's Register uis	RINA	RMRS	
other		Railway	Dangerous Good	Environment		
<u>Confirmation</u>		Vibration and Shock	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 https://mall.industry.si Cax online generato	e ordering system) iemens.com/mall/en/en/Cata or					
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2028-1BE40 Service&Support (Manuals, Certificates, Characteristics, FAQs,) https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-1BE40						
Image database (pro	Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros,) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2028-1BE40⟨=en					

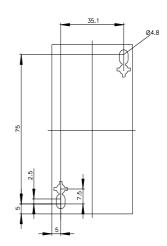
http://www.automation.siemens.com/bilddb/cax_de.aspx/mitb=ort12 Characteristic: Tripping characteristics, 1²t, Let-through current

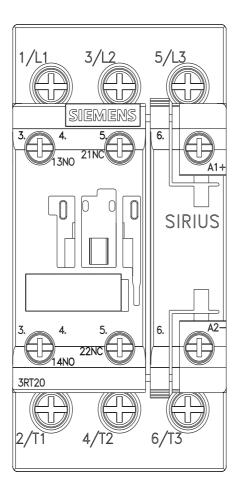
https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-1BE40/char

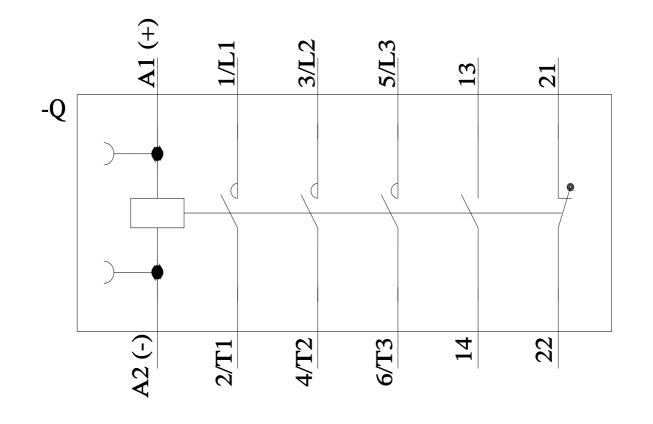
Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2028-1BE40&objecttype=14&gridview=view1











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