SIEMENS

Data sheet

3RT2028-1AF00



power contactor, AC-3e/AC-3, 38 A, 18.5 kW / 400 V, 3-pole, 110 V AC, 50 Hz, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S0

6/13	
product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	SO
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 	2.5 W
type of calculation of power loss depending on pole	quadratic
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	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 (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
Weight	0.426 kg
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 %

Environmental footprint	
Environmental Product Declaration(EPD)	Yes
global warming potential [CO2 eq] total	74.2 kg
global warming potential [CO2 eq] during manufacturing	1.9 kg
global warming potential [CO2 eq] during operation	72.4 kg
global warming potential [CO2 eq] after end of life	-0.117 kg
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 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	38 A
— at 500 V rated value	32 A
- at 690 V rated value	21 A
• at AC-3e	29.4
— at 400 V rated value	38 A 32 A
— at 500 V rated value — at 690 V rated value	21 A
at AC-4 at 400 V rated value	21 A 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	01.077
— 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	30.8 A
 up to 690 V for current peak value n=20 rated value 	21 A
• at AC-6a	
 — 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	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 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 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 	
	-	35 A
 - al 400 Vraids value - al 600 Vraids value - al 20 Vraids value		
 - af 60 V rater value - af 61 V rater value - af 60 V rater value - a		
• at learned path all C-3 at DC-3- at 32V Yated value5 A- at 22V Yated value0.90 A- at 22V Yated value0.90 A- at 23V Yated value0.90 A- at 24V Yated value0.97 A- at 24V Yated value1.96 A- at 24V Yated value1.96 A- at 24V Yated value1.95 AW- at 24V Yat		
	-	20 A
- at 220 V rade value1 A- at 240 V rade value0.09 A- at 240 V rade value0.09 A- at 240 V rade value35 A- at 240 V rade value35 A- at 250 V rade value36 A- at 260 V rade value37 A- at 220 V rade value0.16 A- at 240 V rade value0.16 A- at 250 V rade value0.16 A- at 260 V rade value0.16 A- at 200 V rade value1.16 W- at 200 V rade value1.16 W </td <td></td> <td></td>		
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	-	35 A
	— at 60 V rated value	35 A
	— at 110 V rated value	15 A
	— at 220 V rated value	3 A
with 3 current paths in series at DC-3 at DC-5		
	— 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
operating powerat AC-3- at 230 V rated value11 kW- at 400 V rated value18.5 kW- at 500 V rated value18.5 kW- at 600 V rated value18.5 kW- at 230 V rated value18.5 kW- at 230 V rated value11 kW- at 400 V rated value18.5 kW- at 230 V rated value18.5 kW- at 600 V rated value10.5 kWoperating power for approx. 200000 operating cycles at AC-4• at 400 V rated value6 kW• at 400 V rated value10.3 kWoperating apparent power at AC-6a• up to 400 V for current peak value n=20 rated value26.6 kVA• up to 500 V for current peak value n=20 rated value26.6 kVA• up to 600 V for current peak value n=20 rated value25 kVAoperating apparent power at AC-6a8.1 kVA• up to 400 V for current peak value n=30 rated value8.1 kVA• up to 500 V for current peak value n=30 rated value25 kVAoperating apparent power at AC-6a8.1 kVA• up to 600 V for current peak value n=30 rated value25 kVAoperating apparent power at AC-6a8.1 kVA• up to 600 V for current peak value n=30 rated value25 kVAoperating apparent power at AC-6a8.1 kVA• up to 600 V for current peak value n=30 rated value14.2 kVA•	— at 440 V rated value	0.6 A
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	• at AC-3	
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Imited to 60 s switching at zero current maximum 162 A; Use minimum cross-section acc. to AC-1 rated value no-load switching frequency	 limited to 10 s switching at zero current maximum 	260 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	 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
• at AC 5 000 1/h	no-load switching frequency	
	• at AC	5 000 1/h

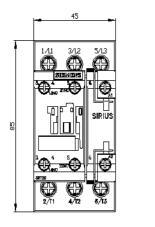
	-
operating frequency	
• at AC-1 maximum	1 000 1/h
• at AC-2 maximum	750 1/h
• at AC-3 maximum	750 1/h
• at AC-3e maximum	750 1/h
• at AC-4 maximum	250 1/h
Control circuit/ Control	250 1/11
	40
type of voltage of the control supply voltage	AC
control supply voltage at AC	
at 50 Hz rated value	110 V
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz	0.8 1.1
	0.0 1.1
apparent pick-up power of magnet coil at AC	77.\/A
• at 50 Hz	77 VA
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 VA
inductive power factor with the holding power of the coil	
• at 50 Hz	0.25
closing delay	
• at AC	8 40 ms
opening delay	
• 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	1
contact	
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 24 V rated value at 48 V rated value	2 A
at 40 V rated value at 60 V rated value	2 A 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 	

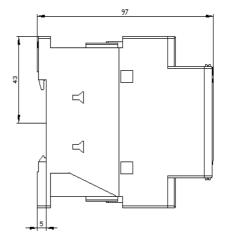
at 110/120 \/ rated value	2 hn
— at 110/120 V rated value	3 hp
— at 230 V rated value	5 hp
• for 3-phase AC motor	
— at 200/208 V rated value	10 hp
— at 220/230 V rated value	10 hp
— at 460/480 V rated value	25 hp
— at 575/600 V rated value	25 hp
contact rating of auxiliary contacts according to UL	A600 / P600
Short-circuit protection	
design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V	C characteristic: 10 A; 0.4 kA
design of the fuse link	
 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 side-by-side mounting	Yes
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
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	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 (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
 for 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 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)
 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)
•	

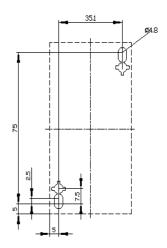
AWG number as code section	ed connectable conduct	or cross				
 for main contact 	s		16 8			
 for auxiliary con 			20 14			
Safety related data			20 11			
product function						
•	ccording to IEC 60947-4-	1	Yes			
	operation according to IE		No			
 suitable for safe 		00947-0-1	Yes			
	-		Yes			
service life maximum	y-related switching OFF		20 a			
			Yes			
test wear-related serv			res			
proportion of danger		020	40.0/			
	d rate according to SN 31		40 %			
	nd rate according to SN 3		73 %	0		
	demand rate according t		1 000 000	0		
31920	low demand rate accord	aing to SN	100 FIT			
ISO 13849						
device type accordin	g to ISO 13849-1		3			
overdimensioning ac	cording to ISO 13849-2	necessary	Yes			
IEC 61508						
safety device type ac	cording to IEC 61508-2		Type A			
Electrical Safety						
	n the front according to	IEC 60529	IP20			
-	the front according to IE		finger-sat	fe, for vertical contac	t from the front	
Approvals Certificates	÷		<u> </u>			
General Product App						
	CE EG-Konf.	UK CA		(ال س	KC	EAC
	CE EG-Konf.	UK CA			KC	EHC
CCC	EG-Konf. Test Certificates	UK CA		UL Narine / Shipping	KC	EAC
EMV ECM		UK CA Special Test Ce ate	I	Aarine / Shipping		ERC LANK
EMV EMV ECM RCM	Test Certificates	Special Test Ce	Pertific-	Aarine / Shipping		ERC
RCM	Test Certificates	Special Test Ce	Pertific-	ABS	KC WINNER WINNER Confirmation	Effic Confirmation
RCM	Test Certificates	Special Test Ce	Pertific-	ABS	BUREAU VERITAS	
Marine / Shipping	Test Certificates Type Test Certific- ates/Test Report	Special Test Ce	ertific- o Con-	ABS	BUREAU VERITAS	
Marine / Shipping Use Use Use Railway Special Test Certificate ate	Test Certificates Type Test Certific- ates/Test Report	Special Test Ce ate	ertific- o Con-	ABS	BUREAU VERITAS	
Karine / Shipping Marine / Shipping Locks Railway Special Test Certific- ate Eurther information Information on the pa https://support.industry Information - and Dow https://support.industry Information - and Dow https://www.siemens.cc Industry Mall (Online	Test Certificates Type Test Test Test Test Test Test Test Tes	Special Test Ce ate	Con-	ther Miscellaneous	BUREAU VERITAS	

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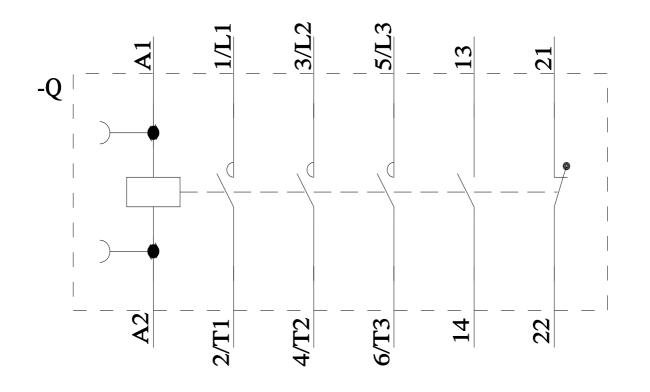
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