SIEMENS

Data sheet

3RT2028-1AP60



power contactor, AC-3e/AC-3, 38 A, 18.5 kW / 400 V, 3-pole, 220 V AC, 50 Hz / 240 V, 60 Hz, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S0

product brand name SIRIUS product designation Power contactor product type designation 3RT2 General technical data S0 size of contactor S0 product extension No	
product type designation 3RT2 General technical data size of contactor size of contactor S0 product extension • function module for communication No	
General technical data size of contactor S0 product extension • function module for communication No	
size of contactor S0 product extension No	
product extension • function module for communication No	
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 2.7 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 400 V 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 5 000 000 auxiliary switch block typical	
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 95 % 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 	

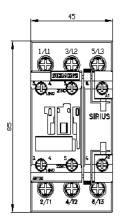
— at 24 V rated value	20 A
— at 60 V rated value	5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.09 A
— at 600 V rated value	0.06 A
 with 2 current paths in series at DC-3 at DC-5 	
— at 24 V rated value	35 A
— at 60 V rated value	35 A
— at 110 V rated value	15 A
— at 220 V rated value	3 A
— 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-3	
- at 230 V rated value	11 kW
— at 200 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	10.5 KW
- 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	
4	
 at 400 V rated value 	6 kW
	6 kW 10.3 kW
• at 400 V rated value	
at 400 V rated valueat 690 V rated value	
at 400 V rated value at 690 V rated value operating apparent power at AC-6a	10.3 kW
 at 400 V rated value at 690 V rated value operating apparent power at AC-6a up to 230 V for current peak value n=20 rated value up to 400 V for current peak value n=20 rated value 	10.3 kW 12.2 kVA
 at 400 V rated value at 690 V rated value operating apparent power at AC-6a up to 230 V for current peak value n=20 rated value up to 400 V for current peak value n=20 rated value up to 500 V for current peak value n=20 rated value 	10.3 kW 12.2 kVA 21.3 kVA 26.6 kVA
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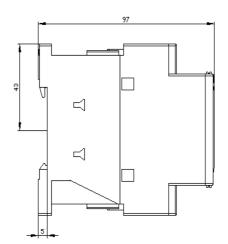
control supply voltage at AC	
• at 50 Hz rated value	220 V
at 60 Hz rated value	240 V
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz	0.8 1.1
• at 60 Hz	0.8 1.1
apparent pick-up power of magnet coil at AC	
● at 50 Hz	81 VA
• at 60 Hz	79 VA
inductive power factor with closing power of the coil	
● at 50 Hz	0.72
• at 60 Hz	0.74
apparent holding power of magnet coil at AC	
• at 50 Hz	10.5 VA
• at 60 Hz	8.5 VA
inductive power factor with the holding power of the coil	
• at 50 Hz	0.25
• at 60 Hz	0.28
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 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

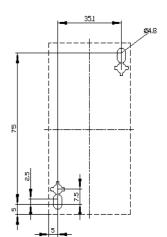
 for 3-phase AC motor 	
— at 200/208 V rated value	10 hp
— at 220/230 V rated value	10 hp
— at 460/480 V rated value	25 hp
— at 575/600 V rated value	25 hp
contact rating of auxiliary contacts according to UL	A600 / P600
Short-circuit protection	
design of the fuse link	
 for short-circuit protection 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	97 mm
required spacing	
with side-by-side mounting forwards	10 mm
— forwards	10 mm 10 mm
— upwards	
— downwards	10 mm
— at the side	0 mm
for grounded parts	10 mm
— forwards	10 mm
— upwards	10 mm
— at the side	6 mm
— downwards	10 mm
 for live parts forwards 	10 mm
	10 mm
— upwards — 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 mm ²), 2x (2.5 10 mm ²)
 finely stranded with core end processing 	2x (1 2.5 mm ²), 2x (2.5 6 mm ²), 1x 10 mm ²
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 mm²), 2x (0.75 2.5 mm²)
 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 co 	ontacts		20 14		
Safety related data					
product function					
 mirror contact 	according to IEC 60947-4-1		Yes		
suitability for use saf	ety-related switching OFF		Yes		
B10 value with high demand rate according to SN 31920		N 31920	450 000		
proportion of dange					
 with low dema 	and rate according to SN 319	20	40 %		
 with high dem 	and rate according to SN 319	920	73 %		
failure rate [FIT] with	low demand rate according	to SN 31920	100 FIT		
T1 value for proof te	st interval or service life acco	rding to IEC	20 a		
61508					
protection class IP on the front according to IEC 60529 IP20		IP20			
•	n the front according to IEC	60529	finger-safe, for vertical contact	t from the front	
Certificates/ approva					
General Product A	pproval				
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