SIEMENS

Data sheet 3RT2028-1AB00



Power contactor, AC-3 38 A, 18.5 kW / 400 V 1 NO + 1 NC, 24 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	11.4 W
• per pole	3.8 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 00:00:00
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
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	50 A
rated value	
— up to 690 V at ambient temperature 60 °C	42 A
rated value • at AC-3	
■ 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-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	
 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 at AC-6a 	21 A
— up to 230 V for current peak value n=30 rated value 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 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
operational current	
 at 1 current path at DC-3 at DC-5 at 24 V rated value 	20 A
— at 27 v rateu value	LUT

— 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 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 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 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	
 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 	26.6 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 	18.5 kV·A
• up to 690 V for current peak value n=30 rated value	25 kV·A
short-time withstand current in cold operating state	
up to 40 °C	
Iimited to 1 s switching at zero current maximum	593 A; Use minimum cross-section acc. to AC-1 rated value
Iimited to 5 s switching at zero current maximum	395 A; Use minimum cross-section acc. to AC-1 rated value
Iimited to 10 s switching at zero current maximum	260 A; Use minimum cross-section acc. to AC-1 rated value
Iimited to 30 s switching at zero current maximum	186 A; Use minimum cross-section acc. to AC-1 rated value
Iimited to 60 s switching at zero current maximum	152 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	5 000 1/b
• at AC	5 000 1/h
operating frequency	1,000,1/b
at AC-1 maximum at AC-2 maximum	1 000 1/h
at AC-2 maximum at AC-3 maximum	750 1/h
at AC-3 maximum at AC-4 maximum	750 1/h
at AC-4 maximum Control circuit Control	250 1/h
Control circuit/ Control	40
type of voltage of the control supply voltage	AC
control supply voltage at AC	24.1/
at 50 Hz rated value appraising range factor control supply voltage rated.	24 V
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz	0.8 1.1
apparent pick-up power of magnet coil at AC	
• 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
	0.25
closing delay	0 40
• at AC	8 40 ms
opening delay • at AC	4 16 ms
	10 10 ms
arcing time	Standard A1 - A2
control version of the switch operating mechanism	Standard AT - AZ
Auxiliary circuit	4
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
••	

	(445)(00) (1)
with the of a signer and O as with d	(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	gG: 10 A (500 V, 1 kA)
required Installation/ mounting/ dimensions	
· · · · · · · · · · · · · · · · · · ·	1/4000
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	
Connections/ Terminals type of electrical connection	
type of electrical connection	screw-type terminals
type of electrical connection • for main current circuit	screw-type terminals screw-type terminals
 type of electrical connection for main current circuit for auxiliary and control circuit 	screw-type terminals
type of electrical connection • for main current circuit	screw-type terminals Screw-type terminals
type of electrical connection	screw-type terminals
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type of electrical connection	screw-type terminals Screw-type terminals Screw-type terminals 2x (1 2.5 mm²), 2x (2.5 10 mm²)
type of electrical connection • for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts • of magnet coil type of connectable conductor cross-sections • for main contacts — solid — solid or stranded	screw-type terminals Screw-type terminals Screw-type terminals 2x (1 2.5 mm²), 2x (2.5 10 mm²) 2x (1 2,5 mm²), 2x (2,5 10 mm²)
type of electrical connection • for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts • of magnet coil type of connectable conductor cross-sections • for main contacts — solid	screw-type terminals Screw-type terminals Screw-type terminals 2x (1 2.5 mm²), 2x (2.5 10 mm²) 2x (1 2,5 mm²), 2x (2,5 10 mm²) 2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²
type of electrical connection • for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts • of magnet coil type of connectable conductor cross-sections • for main contacts — solid — solid or stranded — finely stranded with core end processing	screw-type terminals Screw-type terminals Screw-type terminals 2x (1 2.5 mm²), 2x (2.5 10 mm²) 2x (1 2,5 mm²), 2x (2,5 10 mm²)
type of electrical connection • for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts • of magnet coil type of connectable conductor cross-sections • for main contacts — solid — solid or stranded — finely stranded with core end processing • at AWG cables for main contacts connectable conductor cross-section for main	screw-type terminals Screw-type terminals Screw-type terminals 2x (1 2.5 mm²), 2x (2.5 10 mm²) 2x (1 2,5 mm²), 2x (2,5 10 mm²) 2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²
type of electrical connection	screw-type terminals Screw-type terminals 2x (1 2.5 mm²), 2x (2.5 10 mm²) 2x (1 2,5 mm²), 2x (2,5 10 mm²) 2x (1 2,5 mm²), 2x (2,5 10 mm²) 2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm² 2x (16 12), 2x (14 8)
type of electrical connection • for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts • of magnet coil type of connectable conductor cross-sections • for main contacts — solid — solid or stranded — finely stranded with core end processing • at AWG cables for main contacts connectable conductor cross-section for main contacts • solid • stranded	screw-type terminals Screw-type terminals 2x (1 2.5 mm²), 2x (2.5 10 mm²) 2x (1 2,5 mm²), 2x (2,5 10 mm²) 2x (1 2.5 mm²), 2x (2,5 10 mm²) 2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm² 2x (16 12), 2x (14 8)
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type of electrical connection	screw-type terminals Screw-type terminals 2x (1 2.5 mm²), 2x (2.5 10 mm²) 2x (1 2,5 mm²), 2x (2,5 10 mm²) 2x (1 2,5 mm²), 2x (2,5 10 mm²) 2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm² 2x (16 12), 2x (14 8) 1 10 mm² 1 10 mm² 1 10 mm² 2
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Safety related data	
product function mirror contact acc. to IEC 60947-4-1	Yes
B10 value with high demand rate acc. to SN 31920	450 000
proportion of dangerous failures	
 with low demand rate acc. to SN 31920 	40 %
 with high demand rate acc. to SN 31920 	73 %
failure rate [FIT] with low demand rate acc. to SN 31920	100 FIT
T1 value for proof test interval or service life acc. to IEC 61508	20 y
protection class IP on the front acc. to IEC 60529	IP20
touch protection on the front acc. to IEC 60529	finger-safe, for vertical contact from the front
suitability for use	
 safety-related switching OFF 	Yes
0	

Certificates/ approvals

General Product Approval

EMC













Functional
Safety/Safety of
Machinery

Declaration of Conformity

Test Certificates

Marine / Shipping

Type Examination Certificate UK Declaration of Conformity



Special Test Certificate

Type Test Certificates/Test Report



Marine / Shipping











Confirmation

other

other



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=3RT2028-1AB00

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2028-1AB00

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-1AB00

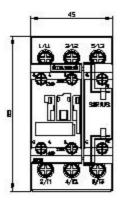
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

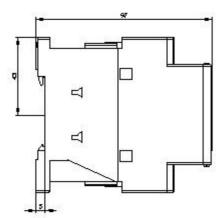
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2028-1AB00&lang=en

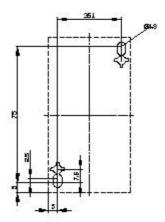
Characteristic: Tripping characteristics, I2t, Let-through current

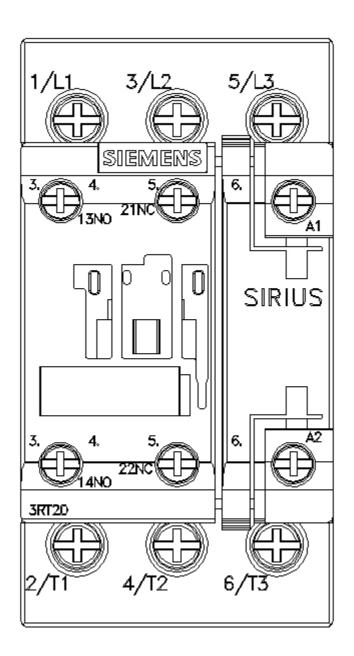
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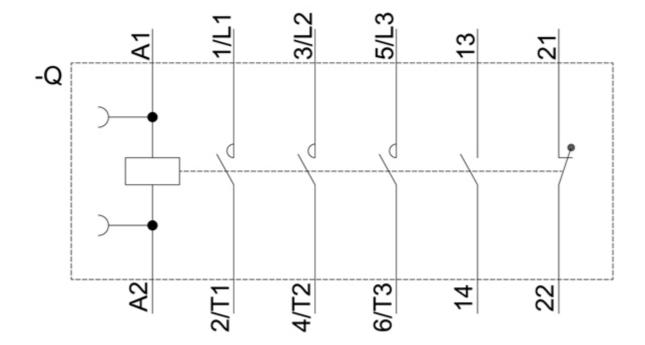
Further characteristics (e.g. electrical endurance, switching frequency)











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