SIEMENS

Data sheet 3RT2028-2BM40

Power contactor, AC-3 38 A, 18.5 kW / 400 V 1 NO + 1 NC, 220 V DC 3-pole, size S0 Spring-type 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	
 at AC in hot operating state per pole 	3.8 W	
power loss [W] for rated value of the current without	5.9 W	
load current share typical		
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	
00011		

protection class IP	
• on the front	IP20
of the terminal	IP20
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 (switching cycles)	
of contactor typical	10 000 000
 of the contactor with added electronics- 	5 000 000
compatible auxiliary switch block typical	
of the contactor with added auxiliary switch	10 000 000
block typical	
reference code acc. to DIN EN 81346-2	Q
Ambient conditions	
• installation altitude at height above sea level	2 000 m
maximum	
ambient temperature	05 400 00
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
operating current	
operating current ● at AC-1 at 400 V	
	50 A
● at AC-1 at 400 V	50 A
at AC-1 at 400 V— at ambient temperature 40 °C rated value	50 A 50 A
 at AC-1 at 400 V — at ambient temperature 40 °C rated value at AC-1 — up to 690 V at ambient temperature 40 °C 	
 at AC-1 at 400 V at ambient temperature 40 °C rated value at AC-1 up to 690 V at ambient temperature 40 °C rated value up to 690 V at ambient temperature 60 °C 	50 A
 at AC-1 at 400 V — at ambient temperature 40 °C rated value at AC-1 — up to 690 V at ambient temperature 40 °C rated value — up to 690 V at ambient temperature 60 °C rated value 	50 A
 at AC-1 at 400 V at ambient temperature 40 °C rated value at AC-1 up to 690 V at ambient temperature 40 °C rated value up to 690 V at ambient temperature 60 °C rated value at AC-3 	50 A 42 A
 at AC-1 at 400 V at ambient temperature 40 °C rated value at AC-1 up to 690 V at ambient temperature 40 °C rated value up to 690 V at ambient temperature 60 °C rated value at AC-3 at 400 V rated value 	50 A 42 A 38 A
 at AC-1 at 400 V at ambient temperature 40 °C rated value at AC-1 up to 690 V at ambient temperature 40 °C rated value up to 690 V at ambient temperature 60 °C rated value at AC-3 at 400 V rated value at 500 V rated value 	50 A 42 A 38 A 32 A
 at AC-1 at 400 V at ambient temperature 40 °C rated value at AC-1 up to 690 V at ambient temperature 40 °C rated value up to 690 V at ambient temperature 60 °C rated value at AC-3 at 400 V rated value at 500 V rated value at 690 V rated value 	50 A 42 A 38 A 32 A 21 A
 at AC-1 at 400 V at ambient temperature 40 °C rated value at AC-1 up to 690 V at ambient temperature 40 °C rated value up to 690 V at ambient temperature 60 °C rated value at AC-3 at 400 V rated value at 500 V rated value at 690 V rated value at AC-4 at 400 V rated value 	50 A 42 A 38 A 32 A 21 A 22 A

 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 mm²
operating current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	12 A
• at 690 V rated value	12 A
operating 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
operating current	

 at 1 current path at DC-3 at DC-5 	
- at 1 current path at BO o at BO o	
— at 24 V rated value	20 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 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-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
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 output 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 output 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	
 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 	395 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 	186 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 60 s switching at zero current maximum 	152 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
• at AC-2 maximum	750 1/h
• at AC-3 maximum	750 1/h
• at AC-4 maximum	250 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage at DC	
• rated value	220 V
operating range factor control supply voltage rated value of 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 17.5 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
operating current at AC-12 maximum	10 A
operating 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
operating 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
operating 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 three-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 three-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)

mounting position	+/-180° rotation possible on vertical mounting surface; can be
	tilted forward and backward by +/- 22.5° on vertical mounting
	surface
mounting type	screw and snap-on mounting onto 35 mm standard mounting rail
	according to DIN EN 60715
side-by-side mounting	Yes
height	102 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
dominaldo	6 mm

Connections/ Terminals		
type of electrical connection		
• for main current circuit	spring-loaded terminals	
 for auxiliary and control current circuit 	spring-loaded terminals	
 at contactor for auxiliary contacts 	Spring-type terminals	
• of magnet coil	Spring-type terminals	
type of connectable conductor cross-sections		
• for main contacts		
— solid	2x (1 10 mm²)	
— single or multi-stranded	2x (1 10 mm²)	

 finely stranded with core end processing 	2x (1 6 mm²)
finely stranded without core end	2x (1 6 mm²)
processing	
 at AWG conductors for main contacts 	2x (18 8)
connectable conductor cross-section for main	
contacts	
• solid	1 10 mm²
• stranded	1 10 mm²
finely stranded with core end processing	1 6 mm²
 finely stranded without core end processing 	1 6 mm²
connectable conductor cross-section for auxiliary contacts	
• single or multi-stranded	0.5 2.5 mm²
 finely stranded with core end processing 	0.5 1.5 mm²
 finely stranded without core end processing 	0.5 2.5 mm²
 type of connectable conductor cross-sections for auxiliary contacts 	
— single or multi-stranded	2x (0.5 2.5 mm²)
 finely stranded with core end processing 	2x (0.5 1.5 mm²)
 finely stranded without core end processing 	2x (0.5 2.5 mm²)
 type of connectable conductor cross-sections at AWG conductors for auxiliary contacts 	2x (20 14)
AWG number as coded connectable conductor cross	
section	
• for main contacts	18 8
for auxiliary contacts	20 14
Safety related data	
B10 value	
• with high demand rate acc. to SN 31920	1 000 000
proportion of dangerous failures	40.0/
with low demand rate acc. to SN 31920	40 %
• with high demand rate acc. to SN 31920	73 %
failure rate [FIT]	100 FIT
with low demand rate acc. to SN 31920 product function	100 FIT
•	Yes
mirror contact acc. to IEC 60947-4-1 T1 value for proof test interval or service life acc. to	20 y
IEC 61508	
protection against electrical shock	financy and
	finger-safe
suitability for use safety-related switching OFF	Yes

General Product Approval







KC





EMC

Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates	Marine / Ship- ping
Type Examination Certificate	Miscellaneous EG-Konf.	Type Test Certificates/Test Report Special Test Certificate	ABS

Marine / Shipping





LRS









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=3RT2028-2BM40

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2028-2BM40

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-2BM40

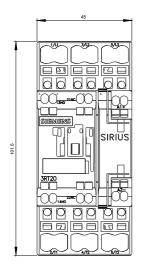
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2028-2BM40&lang=en

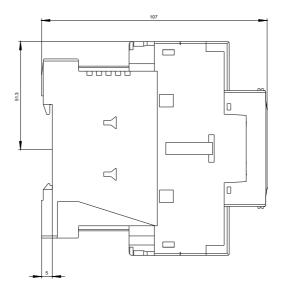
Characteristic: Tripping characteristics, I2t, Let-through current

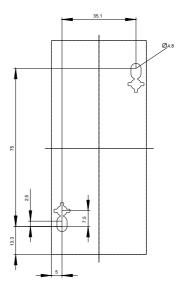
https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-2BM40/char

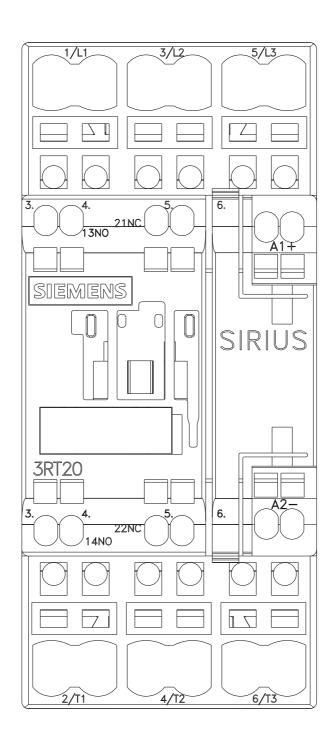
Further characteristics (e.g. electrical endurance, switching frequency)

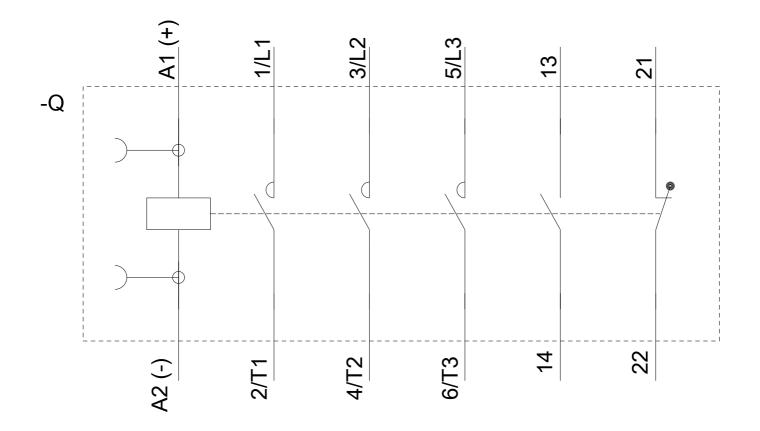
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2028-2BM40&objecttype=14&gridview=view1











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