SIEMENS

Data sheet 3RT2025-1BB40



power contactor, AC-3 17 A, 7.5 kW / 400 V 1 NO + 1 NC, 24 V DC 3-pole, Size S0 screw terminal

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 	2.7 W	
 at AC in hot operating state per pole 	0.9 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 safe isolation between coil and main contacts acc. 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 (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	
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 acc. to IEC 60068-2-30 maximum	95 %	

ain circuit	3	
number of poles for main current circuit	3	
number of NO contacts for main contacts	3	
operating voltage	600.1/	
at AC-3 rated value maximum	690 V	
at AC-3e rated value maximum	690 V	
operational current	40.4	
at AC-1 at 400 V at ambient temperature 40 °C	40 A	
rated value		
• at AC-1	40.4	
 up to 690 V at ambient temperature 40 °C rated value 	40 A	
— up to 690 V at ambient temperature 60 °C	35 A	
rated value	0071	
• at AC-3		
— at 400 V rated value	17 A	
— at 500 V rated value	17 A	
— at 690 V rated value	13 A	
• at AC-3e		
— at 400 V rated value	17 A	
— at 500 V rated value	17 A	
— at 690 V rated value	13 A	
at AC-4 at 400 V rated value	15.5 A	
• at AC-5a up to 690 V rated value	35.2 A	
at AC-5a up to 690 V rated value at AC-5b up to 400 V rated value	14.1 A	
	14.1 A	
• at AC-6a	44.4.0	
 up to 230 V for current peak value n=20 rated value 	11.4 A	
— up to 400 V for current peak value n=20 rated	11.4 A	
value	11.40	
— up to 500 V for current peak value n=20 rated	11.4 A	
value		
— up to 690 V for current peak value n=20 rated	11.3 A	
value		
• at AC-6a		
 up to 230 V for current peak value n=30 rated 	7.6 A	
value		
 up to 400 V for current peak value n=30 rated value 	7.6 A	
	7.6 A	
 up to 500 V for current peak value n=30 rated value 	1.0 A	
— up to 690 V for current peak value n=30 rated	7.6 A	
value		
minimum cross-section in main circuit at maximum AC-1	10 mm²	
rated value		
operational current for approx. 200000 operating		
cycles at AC-4		
• at 400 V rated value	7.7 A	
at 690 V rated value	7.7 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 110 v lated value		
— at 220 V rated value	5 A	
	1 A	
— at 220 V rated value		

— at 24 V rated value	35 A		
— at 110 V rated value	35 A		
— at 220 V rated value	35 A 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	LTA		
— at 24 V rated value	20 A		
— at 110 V rated value	2.5 A		
— at 220 V rated value	2.5 A 1 A		
— at 440 V rated value			
— at 600 V rated value	0.09 A		
	0.06 A		
with 2 current paths in series at DC-3 at DC-5 at 24 V rated value.	35 A		
— at 24 V rated value	15 A		
— at 110 V rated value			
— 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	25 A		
— 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	4 kW		
— at 400 V rated value	7.5 kW		
— at 500 V rated value	7.5 kW		
— at 690 V rated value	11 kW		
• at AC-3e			
— at 230 V rated value	4 kW		
— at 400 V rated value	4.5 kW		
— at 500 V rated value	7.5 kW		
— at 690 V rated value	11 kW		
operating power for approx. 200000 operating cycles at AC-4			
 at 400 V rated value 	3.5 kW		
at 690 V rated value	6 kW		
operating apparent power at AC-6a			
 up to 230 V for current peak value n=20 rated value 	4.5 kVA		
• up to 400 V for current peak value n=20 rated value	7.8 kVA		
• up to 500 V for current peak value n=20 rated value	9.9 kVA		
• up to 690 V for current peak value n=20 rated value	13.6 kVA		
operating apparent power at AC-6a			
• up to 230 V for current peak value n=30 rated value	3 kVA		
• up to 400 V for current peak value n=30 rated value	5.2 kVA		
• up to 500 V for current peak value n=30 rated value	6.6 kVA		
• up to 690 V for current peak value n=30 rated value	9.1 kVA		
short-time withstand current in cold operating state up to 40 °C			
 limited to 1 s switching at zero current maximum 	225 A; Use minimum cross-section acc. to AC-1 rated value		
 limited to 5 s switching at zero current maximum 	225 A; Use minimum cross-section acc. to AC-1 rated value		
 limited to 10 s switching at zero current maximum 	180 A; Use minimum cross-section acc. to AC-1 rated value		
 limited to 30 s switching at zero current maximum 	115 A; Use minimum cross-section acc. to AC-1 rated value		
 limited to 60 s switching at zero current maximum 	96 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	1 000 1/h		
• at AC-3 maximum	1 000 1/h		
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at AC-3e maximum	1 000 1/h
at AC-3e maximum at AC-4 maximum	300 1/h
Control circuit/ Control	000 1/11
	DC
type of voltage of the control supply voltage control supply voltage at DC	DC
rated value	24 V
operating range factor control supply voltage rated	∠т v
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
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 at 600 V rated value	1 A
at 600 V rated value	0.15 A
operational current at DC-13	10.4
 at 24 V rated value at 48 V rated value 	10 A 2 A
at 40 V rated value at 60 V rated value	2 A
at 110 V rated value at 110 V rated value	1A
at 110 V rated value 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	14 A
at 600 V rated value	17 A
yielded mechanical performance [hp]	
 for single-phase AC motor 	
— at 110/120 V rated value	1 hp
— at 230 V rated value	3 hp
• for 3-phase AC motor	
— at 200/208 V rated value	3 hp
— at 220/230 V rated value	5 hp
— at 460/480 V rated value	10 hp
— at 575/600 V rated value	15 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: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA)	
— with type of assignment 2 required	gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)	
 for short-circuit protection of the auxiliary switch required 	gG: 10 A (500 V, 1 kA)	
nstallation/ mounting/ dimensions		
mounting position	+/-180° rotation possible on vertical mounting surface; can be tilted	
g poolie.	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	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	
at 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	
<u> </u>		
type of connectable conductor cross-sections		
type of connectable conductor cross-sections • for auxiliary contacts		
	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)	
for auxiliary contacts	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²) 2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)	
for auxiliary contacts — solid or stranded		
 for auxiliary contacts — solid or stranded — finely stranded with core end processing at AWG cables for auxiliary contacts AWG number as coded connectable conductor cross	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)	
 for auxiliary contacts — solid or stranded — finely stranded with core end processing at AWG cables for auxiliary contacts 	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)	

 for auxiliary contacts 	20 14	
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	
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	

Certificates/ approvals

General Product Approval



Confirmation





<u>KC</u>



EMC	Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates
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Type Examination Certificate UK Declaration of Conformity



Type Test Certificates/Test Report

Special Test Certificate

Test Certificates Marine / Shipping

Miscellaneous











Marine / Shipping other Dangerous Good



Confirmation



<u>Transport Information</u>

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=3RT2025-1BB40

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2025-1BB40

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-1BB40

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

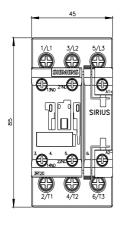
 $\underline{\text{http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2025-1BB40\&lang=en}}$

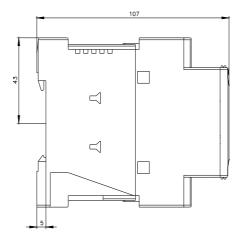
Characteristic: Tripping characteristics, I2t, Let-through current

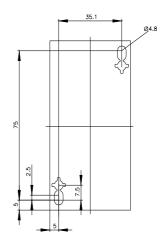
https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-1BB40/char

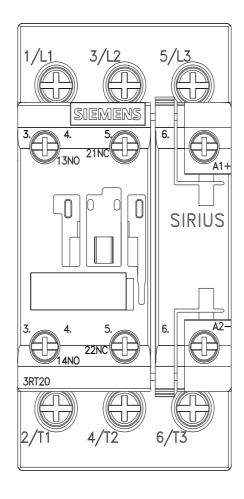
Further characteristics (e.g. electrical endurance, switching frequency)

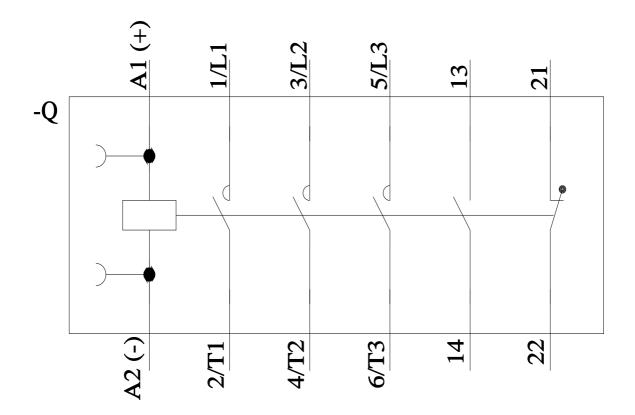
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