SIEMENS

Data sheet

3RT2024-2BB40



power contactor, AC-3e/AC-3, 12 A, 5.5 kW / 400 V, 3-pole, 24 V DC, auxiliary contacts: 1 NO + 1 NC, spring-loaded terminal, size: S0

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 	0.9 W
 at AC in hot operating state per pole 	0.3 W
 without load current share typical 	5.9 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 DC	10g / 5 ms, 7,5g / 10 ms
shock resistance with sine pulse	
• at DC	15g / 5 ms, 10g / 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	0.634 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 %

Yes
221 kg
2.65 kg
219 kg
-0.639 kg
3
3
690 V
690 V
40 A
40 A
35 A
10.4
12 A 12 A
9 A
12 A
12 A 12 A
9 A
12.5 A
35.2 A
9.9 A
11.4 A
11.4 A
11.3 A
9 A
7.6 A
7.6 A
7.6 A
7.6 A
10 mm²
5.5 A
5.5 A
35 A
20 A
4.5 A
1 A 0.4 A
0.4 A 0.25 A
35 A
35 A 35 A
35 A 35 A
5 A
1 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 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 60 V rated value	35 A				
— at 110 V rated value	15 A				
— at 220 V rated value	3A				
— 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	0.1074				
- 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	3 kW				
- at 400 V rated value	5.5 kW				
— at 500 V rated value	5.5 kW 7.5 kW				
 — at 690 V rated value at AC-3e 	7.5 KVV				
	2 1444				
— at 230 V rated value	3 kW				
— at 400 V rated value	5.5 kW				
— at 500 V rated value	5.5 kW				
— at 690 V rated value	7.5 kW				
operating power for approx. 200000 operating cycles at AC- 4					
• at 400 V rated value	2.6 kW				
at 690 V rated value	4.6 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	9.8 kVA				
 up to 690 V for current peak value n=20 rated value 	10.7 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	6.5 kVA				
• up to 690 V for current peak value n=30 rated value	9 kVA				
short-time withstand current in cold operating state up to					
40 °C					
 limited to 1 s switching at zero current maximum 	210 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 5 s switching at zero current maximum 	210 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 10 s switching at zero current maximum 	170 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 30 s switching at zero current maximum 	126 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 60 s switching at zero current maximum 	105 A; Use minimum cross-section acc. to AC-1 rated value				
no-load switching frequency					

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				
• at AC-3e maximum	1 000 1/h				
• at AC-4 maximum	300 1/h				
Control circuit/ Control					
type of voltage of the control supply voltage	DC				
control supply voltage at DC rated value	24 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 18 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	11 A				
at 600 V rated value	11 A				
vielded mechanical performance [hp]					
yielded mechanical performance [hp] • for single-phase AC motor					
for single-phase AC motor	1 hp				
• for single-phase AC motor — at 110/120 V rated value	1 hp 2 hp				
 for single-phase AC motor — at 110/120 V rated value — at 230 V rated value 	1 hp 2 hp				
 for single-phase AC motor — at 110/120 V rated value — at 230 V rated value for 3-phase AC motor 	2 hp				
 for single-phase AC motor — at 110/120 V rated value — at 230 V rated value 					

— at 460/480 V rated value	7.5 hp			
— at 575/600 V rated value	10 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 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)			
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 102 mm			
height width	45 mm			
	43 mm 107 mm			
depth required spacing				
with side-by-side mounting				
 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 	spring-loaded terminals			
 for auxiliary and control 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	0v (4 40 mm²)			
— solid	2x (1 10 mm ²)			
 — solid or stranded finally stranded with core and processing 	2x (1 10 mm ²)			
 finely stranded with core end processing finely stranded without core end processing 	2x (1 6 mm²) 2x (1 6 mm²)			
for AWG cables for main contacts	2x (1 6 mm ⁻) 2x (18 8)			
connectable conductor cross-section for main contacts				
solid	1 10 mm²			
stranded	1 10 mm ²			
 finely stranded with core end processing 	1 6 mm ²			
 finely stranded without core end processing 	1 6 mm ²			
connectable conductor cross-section for auxiliary contacts				
 solid or 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				
— solid or 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)				
 for AWG cables 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					
product function					
 mirror contact according to IEC 60947-4-1 	Yes				
 positively driven operation according to IEC 60947-5-1 	No				
 suitable for safety function 	Yes				
suitability for use safety-related switching OFF	Yes				
service life maximum	20 a				
test wear-related service life necessary	Yes				
proportion of dangerous failures					
 with low demand rate according to SN 31920 	40 %				
 with high demand rate according to SN 31920 	73 %				
B10 value with high demand rate according to SN 31920	1 000 000				
failure rate [FIT] with low demand rate according to SN 31920	100 FIT				
ISO 13849					
device type according to ISO 13849-1	3				
overdimensioning according to ISO 13849-2 necessary	Yes				
IEC 61508					
safety device type according to IEC 61508-2	Туре А				
Electrical Safety					
protection class IP on the front according to IEC 60529	IP20				
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front				
Approvals Certificates					
General Product Approval					
	Confirmation KC				

General Product Approval	EMV	Test Certificates		Marine / Shipping	
EAC	RCM	<u>Special Test Certific-</u> <u>ate</u>	Type Test Certific- ates/Test Report	ABS	BUREAU VERITAS
Marine / Shipping					other
	Llovd's Register us	PRS	RINA	KARS	<u>Miscellaneous</u>

 DNV
 LNS
 PRS
 NNA
 RMRS

 other
 Railway
 Dangerous goods
 Environment

 Confirmation ate
 Special Test Certificate
 Transport Information ate
 Environmental Confirmations

Further information

Information on the packaging https://support.industry.siemens.com/cs/ww/en/view/109813875 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=3RT2024-2BB40

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2024-2BB40

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2024-2BB40

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

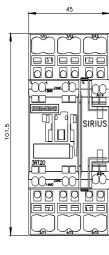
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2024-2BB40&lang=en

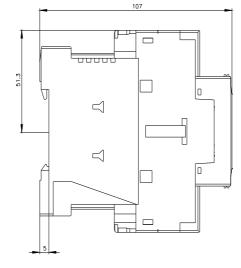
Characteristic: Tripping characteristics, I2t, Let-through current

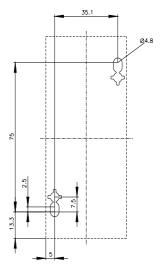
https://support.industry.siemens.com/cs/ww/en/ps/3RT2024-2BB40/char

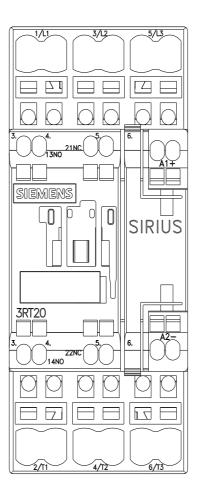
Further characteristics (e.g. electrical endurance, switching frequency)

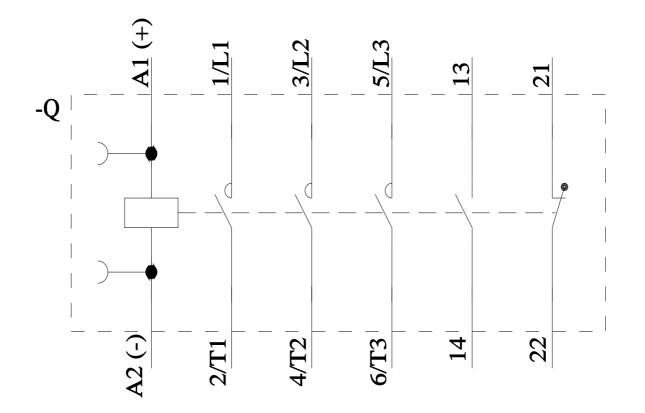
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2024-2BB40&objecttype=14&gridview=view1











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