## 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	
<ul> <li>function module for communication</li> </ul>	No
<ul> <li>auxiliary switch</li> </ul>	Yes
power loss [W] for rated value of the current	
<ul> <li>at AC in hot operating state</li> </ul>	0.9 W
<ul> <li>at AC in hot operating state per pole</li> </ul>	0.3 W
<ul> <li>without load current share typical</li> </ul>	5.9 W
type of calculation of power loss depending on pole	quadratic
insulation voltage	
<ul> <li>of main circuit with degree of pollution 3 rated value</li> </ul>	690 V
of auxiliary circuit with degree of pollution 3 rated value	690 V
surge voltage resistance	
<ul> <li>of main circuit rated value</li> </ul>	6 kV
<ul> <li>of auxiliary circuit rated value</li> </ul>	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)	
<ul> <li>of contactor typical</li> </ul>	10 000 000
<ul> <li>of the contactor with added electronically optimized auxiliary switch block typical</li> </ul>	5 000 000
<ul> <li>of the contactor with added auxiliary switch block typical</li> </ul>	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	
<ul> <li>during operation</li> </ul>	-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

<ul> <li>with 3 current paths in series at DC-1</li> </ul>					
— 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				
<ul> <li>at 1 current path at DC-3 at DC-5</li> </ul>					
— 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				
<ul> <li>with 2 current paths in series at DC-3 at DC-5</li> </ul>					
— 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				
<ul> <li>— at 690 V rated value</li> <li>at AC-3e</li> </ul>	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				
<ul> <li>up to 690 V for current peak value n=20 rated value</li> </ul>	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					
<ul> <li>limited to 1 s switching at zero current maximum</li> </ul>	210 A; Use minimum cross-section acc. to AC-1 rated value				
<ul> <li>limited to 5 s switching at zero current maximum</li> </ul>	210 A; Use minimum cross-section acc. to AC-1 rated value				
<ul> <li>limited to 10 s switching at zero current maximum</li> </ul>	170 A; Use minimum cross-section acc. to AC-1 rated value				
<ul> <li>limited to 30 s switching at zero current maximum</li> </ul>	126 A; Use minimum cross-section acc. to AC-1 rated value				
<ul> <li>limited to 60 s switching at zero current maximum</li> </ul>	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					
<ul> <li>at 24 V rated value</li> </ul>	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				
<ul> <li>for single-phase AC motor</li> <li>— at 110/120 V rated value</li> <li>— at 230 V rated value</li> </ul>	1 hp 2 hp				
<ul> <li>for single-phase AC motor</li> <li>— at 110/120 V rated value</li> <li>— at 230 V rated value</li> <li>for 3-phase AC motor</li> </ul>	2 hp				
<ul> <li>for single-phase AC motor</li> <li>— at 110/120 V rated value</li> <li>— at 230 V rated value</li> </ul>					

— 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				
<ul> <li>for short-circuit protection of the main circuit</li> </ul>				
<ul> <li>— with type of coordination 1 required</li> </ul>	gG: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA)			
<ul> <li>— with type of assignment 2 required</li> </ul>	gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)			
<ul> <li>for short-circuit protection of the auxiliary switch required</li> </ul>	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				
<ul> <li>with side-by-side mounting</li> <li>— forwards</li> </ul>	10 mm			
— upwards	10 mm			
— downwards	10 mm			
— at the side	0 mm			
<ul> <li>for grounded parts</li> </ul>				
— 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				
<ul> <li>for main current circuit</li> </ul>	spring-loaded terminals			
<ul> <li>for auxiliary and control circuit</li> </ul>	spring-loaded terminals			
<ul> <li>at contactor for auxiliary contacts</li> </ul>	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 <sup>2</sup> )			
<ul> <li>— solid or stranded</li> <li>finally stranded with core and processing</li> </ul>	2x (1 10 mm <sup>2</sup> )			
<ul> <li>finely stranded with core end processing</li> <li>finely stranded without core end processing</li> </ul>	2x (1 6 mm²) 2x (1 6 mm²)			
for AWG cables for main contacts	2x (1 6 mm <sup>-</sup> ) 2x (18 8)			
connectable conductor cross-section for main contacts				
solid	1 10 mm²			
stranded	1 10 mm <sup>2</sup>			
<ul> <li>finely stranded with core end processing</li> </ul>	1 6 mm <sup>2</sup>			
<ul> <li>finely stranded without core end processing</li> </ul>	1 6 mm <sup>2</sup>			
connectable conductor cross-section for auxiliary contacts				
<ul> <li>solid or stranded</li> </ul>	0.5 2.5 mm²			
<ul> <li>finely stranded with core end processing</li> </ul>	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)			

<ul> <li>finely stranded without core end processing</li> </ul>	2x (0.5 2.5 mm²)				
<ul> <li>for AWG cables for auxiliary contacts</li> </ul>	2x (20 14)				
AWG number as coded connectable conductor cross section					
for main contacts	18 8				
<ul> <li>for auxiliary contacts</li> </ul>	20 14				
Safety related data					
product function					
<ul> <li>mirror contact according to IEC 60947-4-1</li> </ul>	Yes				
<ul> <li>positively driven operation according to IEC 60947-5-1</li> </ul>	No				
<ul> <li>suitable for safety function</li> </ul>	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					
<ul> <li>with low demand rate according to SN 31920</li> </ul>	40 %				
<ul> <li>with high demand rate according to SN 31920</li> </ul>	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	<b>KARS</b>	<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,...) <a href="https://www.siemens.com/ic10">https://www.siemens.com/ic10</a>

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, ...)

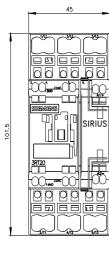
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2024-2BB40&lang=en

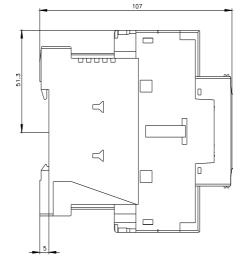
Characteristic: Tripping characteristics, I2t, Let-through current

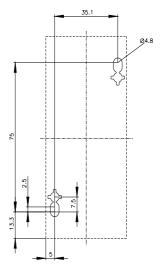
https://support.industry.siemens.com/cs/ww/en/ps/3RT2024-2BB40/char

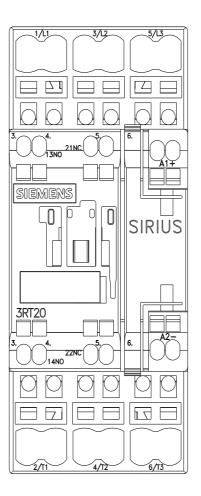
Further characteristics (e.g. electrical endurance, switching frequency)

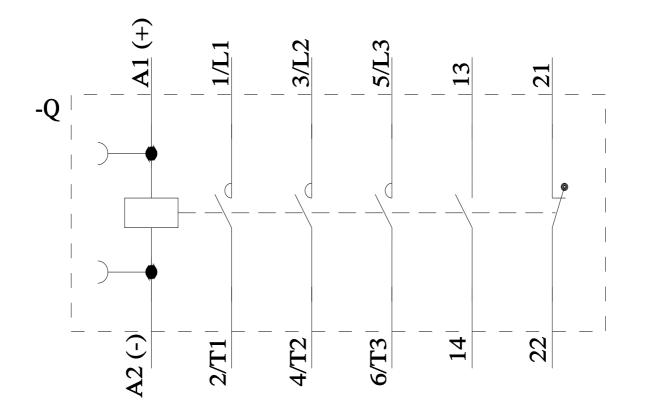
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