## SIEMENS

## Data sheet

## 3RT2024-1AN24



power contactor, AC-3e/AC-3, 12 A, 5.5 kW / 400 V, 3-pole, 220 V AC, 50/60 Hz, auxiliary contacts: 2 NO + 2 NC, screw terminal, size: S0, removable auxiliary switch

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	SO
product extension	
<ul> <li>function module for communication</li> </ul>	No
auxiliary switch	No
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>	7.9 W
insulation voltage	
<ul> <li>of main circuit with degree of pollution 3 rated value</li> </ul>	690 V
<ul> <li>of auxiliary circuit with degree of pollution 3 rated value</li> </ul>	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 AC	7,5g / 5 ms, 4,7g / 10 ms
shock resistance with sine pulse	
• at AC	11,8g / 5 ms, 7,4g / 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
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 %
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
<ul> <li>at AC-3e rated value maximum</li> </ul>	690 V
operational current	
• at AC-1 at 400 V at ambient temperature 40 °C rated	40 A
value	
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	40 A
— up to 690 V at ambient temperature 60 °C rated	35 A
value	
• at AC-3	
— at 400 V rated value	12 A
— at 500 V rated value	12 A
— at 690 V rated value	9 A
• at AC-3e	
— at 400 V rated value	12 A
— at 500 V rated value	12 A
— at 690 V rated value	9 A 10 5 A
at AC-4 at 400 V rated value	12.5 A
• at AC-5a up to 690 V rated value	35.2 A
<ul> <li>at AC-5b up to 400 V rated value</li> <li>at AC-6a</li> </ul>	9.9 A
	44.4.4
— up to 230 V for current peak value n=20 rated value	11.4 A 11.4 A
<ul> <li>— up to 400 V for current peak value n=20 rated value</li> <li>— up to 500 V for current peak value n=20 rated value</li> </ul>	11.3 A
— up to 690 V for current peak value n=20 rated value	9A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	7.6 A
— up to 400 V for current peak value n=30 rated value	7.6 A
— up to 500 V for current peak value n=30 rated value	7.6 A
— up to 690 V for current peak value n=30 rated value	7.6 A
minimum cross-section in main circuit at maximum AC-1 rated	10 mm <sup>2</sup>
value	
operational current for approx. 200000 operating cycles at AC-4	
at 400 V rated value	5.5 A
at 690 V rated value	5.5 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	35 A
— at 60 V rated value	20 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
<ul> <li>with 2 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	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 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 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	3 A
— at 440 V rated value	0.27 A
— at 600 V rated value	0.16 A
<ul> <li>with 3 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	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
— at 690 V rated value	7.5 kW
• at AC-3e	
— 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	
<ul> <li>up to 230 V for current peak value n=20 rated value</li> </ul>	4.5 kVA
<ul> <li>up to 400 V for current peak value n=20 rated value</li> </ul>	7.8 kVA
<ul> <li>up to 500 V for current peak value n=20 rated value</li> </ul>	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	
<ul> <li>up to 230 V for current peak value n=30 rated value</li> </ul>	3 kVA
<ul> <li>up to 400 V for current peak value n=30 rated value</li> </ul>	5.2 kVA
<ul> <li>up to 500 V for current peak value n=30 rated value</li> </ul>	6.5 kVA
<ul> <li>up to 690 V for current peak value n=30 rated value</li> </ul>	9 kVA
short-time withstand current in cold operating state up to	
40 °C	
Imited to 1 s switching at zero current maximum	210 A; Use minimum cross-section acc. to AC-1 rated value
Imited to 5 s switching at zero current maximum	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
Imited to 60 s switching at zero current maximum	105 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	5 000 4/h
• at AC	5 000 1/h
operating frequency	1 000 1/b
• 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 Control circuit/ Control	300 1/h
type of voltage of the control supply voltage	AC

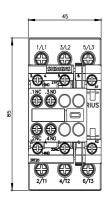
control supply voltage at AC	
• at 50 Hz rated value	220 V
at 60 Hz rated value	220 V
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz	0.8 1.1
• at 60 Hz	0.85 1.1
apparent pick-up power of magnet coil at AC	
● at 50 Hz	68 VA
• at 60 Hz	67 VA
inductive power factor with closing power of the coil	
• at 50 Hz	0.72
• at 60 Hz	0.74
apparent holding power of magnet coil at AC	
• at 50 Hz	7.9 VA
• at 60 Hz	6.5 VA
inductive power factor with the holding power of the coil	
• at 50 Hz	0.25
• at 60 Hz	0.28
closing delay	
• at AC	8 40 ms
opening delay	
• at AC	4 16 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	2
number of NO contacts for auxiliary contacts instantaneous contact	2
operational current at AC-12 maximum	10 A
operational current at AC-15	
at 230 V rated value	6 A
• at 400 V rated value	3 A
• at 500 V rated value	2 A
at 690 V rated value	1A
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	1A
at 220 V rated value     at 600 V rated value	0.15 A
operational current at DC-13	
at 24 V rated value	6 A
at 24 V rated value     at 48 V rated value	2 A
at 60 V rated value	2 A 1 A
<ul> <li>at 110 V rated value</li> <li>at 125 V rated value</li> </ul>	1A
	0.9 A
at 220 V rated value	0.3 A
at 600 V rated value	
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
yielded mechanical performance [hp]	
<ul> <li>for single-phase AC motor</li> </ul>	
— at 110/120 V rated value	1 hp
— at 230 V rated value	2 hp

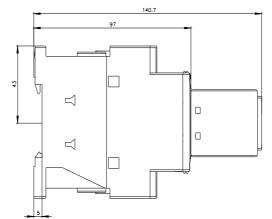
• for 3-phase AC motor			
- at 200/208 V rated value	3 hp		
— at 220/230 V rated value	3 hp		
- at 460/480 V rated value			
- at 575/600 V rated value	7.5 hp 10 hp		
contact rating of auxiliary contacts according to UL	A600 / Q600		
Short-circuit protection	A0007 Q000		
design of the fuse link			
5			
for short-circuit protection of the main circuit	gG: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA)		
<ul> <li>— with type of coordination 1 required</li> <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	gg. 10 A (500 V, 1 KA)		
	1/ 100° rotation possible on vertical mounting surfaces can be tilted ferward and		
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 DIN rail according to DIN EN 60715		
side-by-side mounting	Yes		
height	85 mm		
width	45 mm		
depth	141 mm		
required spacing			
<ul> <li>with side-by-side mounting</li> </ul>			
— forwards	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		
<ul> <li>for live parts</li> </ul>			
— 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>	screw-type terminals		
<ul> <li>for auxiliary and control circuit</li> </ul>	screw-type terminals		
<ul> <li>at contactor for auxiliary contacts</li> </ul>	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)		
<ul> <li>solid or stranded</li> </ul>	2x (1 2.5 mm²), 2x (2.5 10 mm²)		
<ul> <li>finely stranded with core end processing</li> </ul>	2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²		
connectable conductor cross-section for main contacts			
• solid	1 10 mm²		
• stranded	1 10 mm²		
<ul> <li>finely stranded with core end processing</li> </ul>	1 10 mm²		
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 2.5 mm²		
type of connectable conductor cross-sections			
<ul> <li>for auxiliary contacts</li> </ul>			
— solid or stranded	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)		
<ul> <li>finely stranded with core end processing</li> </ul>	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)		
<ul> <li>for AWG cables for auxiliary contacts</li> </ul>	2x (20 16), 2x (18 14)		
AWG number as coded connectable conductor cross			
section	16 0		
<ul> <li>for main contacts</li> </ul>	16 8		

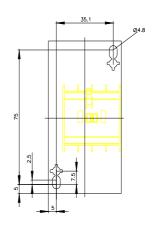
<ul> <li>for auxiliary corr</li> </ul>	ntacts		20 14			
• for adxillary col						
product function						
•	according to IEC 60947-4-1		Yes			
	n operation according to IEC	60947-5-1	No			
B10 value with high demand rate according to SN 31920 proportion of dangerous failures		131920	450 000			
	nd rate according to SN 319	20	40 %			
	and rate according to SN 319		40 % 73 %			
	low demand rate according					
			100 FIT 20 a			
T1 value for proof test interval or service life according to IEC 61508		zu a				
protection class IP of	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			
suitability for use						
<ul> <li>safety-related s</li> </ul>	switching OFF		Yes			
Certificates/ approval	S					
General Product Ap	proval					
SP.	<u>Confirmation</u>			KC	EAC	
ЕМС	Functional Safety/Safety of Ma- chinery	Declaration of C	onformity	Test Certificates		
	<u>Type Examination Cer-</u> <u>tificate</u>	CE EG-Konf.	UK CA	<u>Special Test Certific-</u> <u>ate</u>	<u>Type Test Certific-</u> ates/Test Report	
Marine / Shipping						
ABS	BUREAU VERITAS		Lloyds Register uis	RINA	RMRS	
other			Railway	Environment		
Confirmation		Confirmation	Vibration and Shock	Environmental Con- firmations		
urther information Siemens has decided to exit the Russian market (see here). https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business Siemens is working on the renewal of the current EAC certificates. Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an						
EAC relevant market Information on the p https://support.industr	(other than the sanctioned E backaging ry.siemens.com/cs/ww/en/vi	EAEU member state		na to import or oner to supp	y these products to an	
Information- and Downloadcenter (Catalogs, Brochures,) https://www.siemens.com/ic10 Industry Mall (Online ordering system)						
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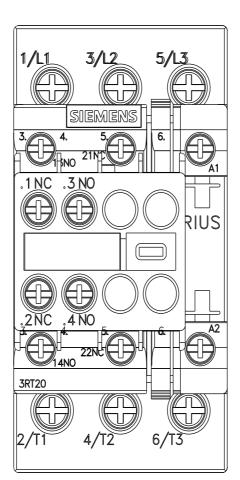
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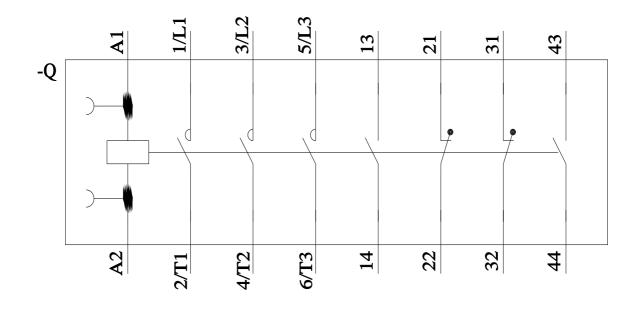
Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RT2024-1AN24/char Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2024-1AN24&objecttype=14&gridview=view1











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