SIEMENS

Data sheet

3RT2024-1AG20



power contactor, AC-3e/AC-3, 12 A, 5.5 kW / 400 V, 3-pole, 110 V AC, 50/60 Hz, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S0

product brand name SIRIUS product designation Power contactor ornal tachnical data SRT2 Size of contactor S0 product speakersion S0 • function module for communication No • auxiliary switch Yes power loss [W] for rated value of the current 0.9 W • at AC in hot operating state 0.9 W • at AC in hot operating state per pole 0.3 W • of main circul with degree of pollution 3 rated value 600 V • of main circul with degree of pollution 3 rated value 600 V • of auxiliary circul value 6 kV • of auxiliary circul rated value 6 kV • of contactor typical 10 000 000 • of contactor with sine pulse 10 000 000 • of the contactor with added auxiliary switch biokc typical 100 000 000	7°** 6/13	
product type designation 3RT2 General technical data	product brand name	SIRIUS
General technical data S0 size of contactor S0 product extension • function module for communication No • auxiliary switch Yes power loss [W] for rated value of the current 0.9 W • at AC in hot operating state 0.9 W • at AC in hot operating state prole 0.3 W • without load current share typical 7.9 W Insulation voltage 680 V • of main circuit with degree of pollution 3 rated value 690 V • of auxiliary circuit with degree of pollution 3 rated value 690 V • of auxiliary circuit rated value 68 V • of auxiliary circuit rated value 64 V • at AC 7.5g / 5 ms, 4.7g / 10 ms mechanical service life (operating cycles) 10 000 000 • of the contactor with added electronically optimized auxiliary switch block typical 5000 000 • of the contactor with added auxiliary switch block typical 10000 000 • of the contactor with added auxiliary switch block typical 10000 000 • of the c	product designation	Power contactor
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of main circuit with degree of pollution 3 rated value of auxiliary circuit with degree of pollution 3 rated value of auxiliary circuit with degree of pollution 3 rated value surge voltage resistance of main circuit rated value of auxiliary circuit rated value of the contacts according to EN 60947-1 shock resistance with sine pulse oat AC 7.5g / 5 ms, 4,7g / 10 ms shock resistance life (operating cycles) of contactor typical 10 000 000 of the contactor with added electronically optimized auxiliary switch block typical of the contactor with added electronically optimized auxiliary switch block typical of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical for of the contactor with added auxiliary switch block typical of the contactor with added auxiliary switch block typical for of the contactor with added auxiliary switch block typical for of the contactor with added auxiliary switch block typical for of the contactor with added auxiliary switch block typical for of the contactor with added auxiliary switch block typical for of the contactor with added auxiliary switch block typical for of the contactor with added auxiliary switch block typical for of the contactor with added auxiliary switch block typical for of the contactor with added auxiliary switch block typical for of the contactor with added auxiliary switch block typical for of the contactor with added auxiliary switch block typical for of the contactor wit	 without load current share typical 	7.9 W
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Substance Prohibitance (Date) 10/01/2009 Ambient conditions 2 000 m installation altitude at height above sea level maximum 2 000 m ambient temperature -25 +60 °C • 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 %	 of the contactor with added auxiliary switch block typical 	10 000 000
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• during storage -55 +80 °C relative humidity minimum 10 % relative humidity at 55 °C according to IEC 60068-2-30 maximum 95 % Main circuit 10 %	ambient temperature	
relative humidity minimum 10 % relative humidity at 55 °C according to IEC 60068-2-30 maximum 95 % Main circuit 95 %	 during operation 	-25 +60 °C
relative humidity at 55 °C according to IEC 60068-2-30 95 % Main circuit	during storage	-55 +80 °C
maximum Main circuit	relative humidity minimum	10 %
		95 %
number of poles for main current circuit 3	Main circuit	
	number of poles for main current circuit	3

number of NO contacts for main contacts	3
	3
 operating voltage at AC-3 rated value maximum 	690 V
at AC-3e rated value maximum	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	40 A
value	
— up to 690 V at ambient temperature 60 °C rated value	35 A
• 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
at AC-4 at 400 V rated value	12.5 A
• at AC-5a up to 690 V rated value	35.2 A
• at AC-5b up to 400 V rated value	9.9 A
● at AC-6a	
— 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 value	11.4 A
— up to 500 V for current peak value n=20 rated value	11.3 A
— up to 690 V for current peak value n=20 rated value	9 A
● 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 value	10 mm ²
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
• with 2 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	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
 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 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	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 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	
 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	
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
 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
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	110 V
at 60 Hz rated value	110 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	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 100 V rated value	3 A
at 125 V rated value	2 A
at 220 V rated value	1A
at 600 V rated value	0.15 A
operational current at DC-13	
• at 24 V rated value	10 A
at 24 V rated value at 48 V rated value	2 A
 at 60 V rated value 	2 4
at 60 V rated value at 110 V rated value	2 A 1 A
• at 110 V rated value	1 A
at 110 V rated valueat 125 V rated value	1 A 0.9 A
 at 110 V rated value at 125 V rated value at 220 V rated value 	1 A 0.9 A 0.3 A
 at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value 	1 A 0.9 A 0.3 A 0.1 A
 at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value contact reliability of auxiliary contacts 	1 A 0.9 A 0.3 A
at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value contact reliability of auxiliary contacts UL/CSA ratings	1 A 0.9 A 0.3 A 0.1 A
at 110 V rated value at 125 V rated value at 220 V rated value at 220 V rated value at 600 V rated value contact reliability of auxiliary contacts UL/CSA ratings full-load current (FLA) for 3-phase AC motor	1 A 0.9 A 0.3 A 0.1 A 1 faulty switching per 100 million (17 V, 1 mA)
 at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value contact reliability of auxiliary contacts UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value 	1 A 0.9 A 0.3 A 0.1 A 1 faulty switching per 100 million (17 V, 1 mA) 11 A
 at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value Contact reliability of auxiliary contacts UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value 	1 A 0.9 A 0.3 A 0.1 A 1 faulty switching per 100 million (17 V, 1 mA)
 at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value contact reliability of auxiliary contacts UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value at 600 V rated value 	1 A 0.9 A 0.3 A 0.1 A 1 faulty switching per 100 million (17 V, 1 mA) 11 A
 at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value contact reliability of auxiliary contacts UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value at 600 V rated value for 3-phase AC motor 	1 A 0.9 A 0.3 A 0.1 A 1 faulty switching per 100 million (17 V, 1 mA) 11 A 11 A
 at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value contact reliability of auxiliary contacts UL/CSA ratings full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value at 600 V rated value 	1 A 0.9 A 0.3 A 0.1 A 1 faulty switching per 100 million (17 V, 1 mA) 11 A

• for 3-phase AC motor				
- at 200/208 V rated value	3 hp			
— at 220/230 V rated value	•			
- at 460/480 V rated value	3 hp 7.5 hp			
— at 575/600 V rated value	10 hp			
contact rating of auxiliary contacts according to UL	A600 / P600			
Short-circuit protection	A000 / F000			
design of the fuse link				
5				
for short-circuit protection of the main circuit with time of coordination 1 required	gG: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA)			
 — with type of coordination 1 required — 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	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	97 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 solid or stranded	2x (1 2.5 mm ²), 2x (2.5 10 mm ²)			
 finely stranded with core end processing 	2x (1 2.5 mm ²), 2x (2.5 6 mm ²), 1x 10 mm ²			
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 mm ²			
type of connectable conductor cross-sections				
for auxiliary contacts				
- solid or stranded	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)			
 finely stranded with core end processing for AWG cables for auxiliary contacts 	2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²)			
for AWG cables for auxiliary contacts	2x (20 16), 2x (18 14)			
AWG number as coded connectable conductor cross section				
for main contacts	16 8			
· · · ·····				

 for auxiliary cor 	ntacts		20 ?	14			
Safety related data							
product function							
 mirror contact a 	according to IEC 60947-4-1		Yes				
B10 value with high d	B10 value with high demand rate according to SN 31920		450 00	00			
proportion of dange	rous failures						
 with low deman 	nd rate according to SN 319	20	40 %				
 with high dema 	nd rate according to SN 319	920	73 %				
failure rate [FIT] with	ow demand rate according	to SN 31920	100 FI	Т			
	t interval or service life acco	rding to IEC	20 a				
61508			1500				
-	on the front according to I			IP20			
	the front according to IEC	60529	tinger-	safe, for vertical contact	from the front		
suitability for use			Vaa				
 safety-related s 	•		Yes				
Certificates/ approval							
General Product Ap	proval						
SP Car		<u>Confirmatio</u>	n		KC	EHC	
EMC	Functional Safety/Safety of Ma- chinery	Declaration of	Conform	nity	Test Certificates		
RCM	<u>Type Examination Cer-</u> <u>tificate</u>	CE EG-Konf.		UK CA	<u>Type Test Certific-</u> ates/Test Report	<u>Special Test Certific-</u> <u>ate</u>	
Marine / Shipping							
ABS	BUREAU YERITAS			Lloyd's Register us	RINA	KMRS RMRS	
other				Railway	Environment		
<u>Confirmation</u>		<u>Confirmation</u>	<u>n</u>	Vibration and Shock	Environmental Con- firmations		
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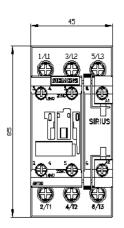
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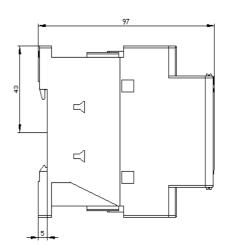
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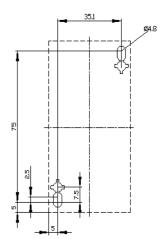
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Characteristic: Tripping characteristics, I²t, Let-through current

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