SIEMENS

Data sheet

3RT2024-1AB00



power contactor, AC-3e/AC-3, 12 A, 5.5 kW / 400 V, 3-pole, 24 V AC, 50 Hz, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S0

product brand name SIRIUS product designation Power contactor optiduct designation SRT2 Central technical data State of contactor size of contactor S0 optiduct designation module for communication No • auxiliary switch Yes • auxiliary switch Yes • 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 1.9 W insultation voltage 600 V • of main circuit with degree of pollution 3 rated value 600 V • of auxiliary circuit with degree of pollution 3 rated value 600 V • of auxiliary circuit with degree of pollution 3 rated value 600 V • of auxiliary circuit rated value 6 kV • of auxiliary circuit rated value 6 kV • of auxiliary circuit rated value 6 kV • of auxiliary circuit rated value 8 kV • of auxiliary circuit rated value 10 V • of auxiliary circuit rated value 5 kV • of auxiliary circuit rated value 10 000 000 <	4/13	
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 per pole 0.3 W • without load current share typical 1.9 W Insulation voltage 690 V • of main circuit with degree of pollution 3 rated value 690 V • of main circuit with degree of pollution 3 rated value 690 V • of main circuit with degree of pollution 3 rated value 690 V • of auxiliary circuit rated value 64 V • of contactor typical 100 V • at AC 7.5g / 5 ms, 4.7g / 10 ms mechanical service life (operating cycles) 10 000 000 • of the contactor with added actertonically optimized auxiliary switch block typical 10 000 000 • of the contactor with added actertonically optimized auxiliary switch block typical 1000 000 • of	product designation	Power contactor
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• of main circuit rated value 6 kV • of auxiliary circuit rated value 6 kV • of auxiliary circuit rated value 6 kV maximum permissible voltage for protective separation between coll and main contacts according to EN 60947-1 400 V shock resistance at rectangular impulse 400 V • at AC 7,5g / 5 ms, 4,7g / 10 ms shock resistance with sine pulse 7,5g / 5 ms, 7,4g / 10 ms • at AC 11.8g / 5 ms, 7,4g / 10 ms mechanical service life (operating cycles) 0 000 • of the contactor typical 10 000 000 • of the contactor with added electronically optimized auxiliary switch block typical 10 000 000 • 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 Ambient conditions 2000 m ambient temperature -55 +60 °C • during operation -25 +60 °C • during storage -55 +80 °C relative humidity minum 10 % 95 % 95 %	 of auxiliary circuit with degree of pollution 3 rated value 	690 V
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Substance Prohibitance (Date) 10/01/2009 Ambient conditions 10/01/2009 installation altitude at height above sea level maximum 2 000 m ambient temperature 2 000 m • 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
Ambient conditions 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 % Main circuit	reference code according to IEC 81346-2	Q
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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	ambient temperature	
relative humidity minimum 10 % relative humidity at 55 °C according to IEC 60068-2-30 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
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 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
 at AC-5b up to 400 V rated value at AC-6a 	9.9 A
	44.4.4
— up to 230 V for current peak value n=20 rated value	11.4 A 11.4 A
 — up to 400 V for current peak value n=20 rated value — 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	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 ²
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
 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	24.1/
at 50 Hz rated value	24 V
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz	0.8 1.1
apparent pick-up power of magnet coil at AC	
• at 50 Hz	65 VA
inductive power factor with closing power of the coil	
• at 50 Hz	0.82
apparent holding power of magnet coil at AC	0.02
• at 50 Hz	7.6 VA
inductive power factor with the holding power of the coil	
• at 50 Hz	0.25
closing delay	0.20
• 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	
	1
number of NC contacts for auxiliary contacts instantaneous contact	1
number of NO contacts for auxiliary contacts instantaneous	1
contact	
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
yielded mechanical performance [hp]	
 for single-phase AC motor 	
— 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	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 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 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
	10 mm
— upwards	
— 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 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 mm ²
 finely stranded with core end processing 	
	1 10 mm ²
	1 10 mm²
connectable conductor cross-section for auxiliary contacts	
connectable conductor cross-section for auxiliary contacts • solid or stranded	0.5 2.5 mm²
 connectable conductor cross-section for auxiliary contacts solid or stranded finely stranded with core end processing 	
connectable conductor cross-section for auxiliary contacts solid or stranded finely stranded with core end processing type of connectable conductor cross-sections	0.5 2.5 mm²
connectable conductor cross-section for auxiliary contacts solid or stranded finely stranded with core end processing type of connectable conductor cross-sections for auxiliary contacts 	0.5 2.5 mm² 0.5 2.5 mm²
connectable conductor cross-section for auxiliary contacts solid or stranded finely stranded with core end processing type of connectable conductor cross-sections for auxiliary contacts solid or stranded 	0.5 2.5 mm² 0.5 2.5 mm² 2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
connectable conductor cross-section for auxiliary contacts solid or stranded finely stranded with core end processing type of connectable conductor cross-sections for auxiliary contacts solid or stranded finely stranded with core end processing 	0.5 2.5 mm ² 0.5 2.5 mm ² 2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²) 2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²)
connectable conductor cross-section for auxiliary contacts solid or stranded finely stranded with core end processing type of connectable conductor cross-sections for auxiliary contacts solid or stranded 	0.5 2.5 mm² 0.5 2.5 mm² 2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
connectable conductor cross-section for auxiliary contacts solid or stranded finely stranded with core end processing type of connectable conductor cross-sections for auxiliary contacts solid or stranded finely stranded with core end processing for AWG cables for auxiliary contacts AWG number as coded connectable conductor cross section	0.5 2.5 mm ² 0.5 2.5 mm ² 2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²) 2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²) 2x (20 16), 2x (18 14)
connectable conductor cross-section for auxiliary contacts solid or stranded finely stranded with core end processing type of connectable conductor cross-sections for auxiliary contacts solid or stranded finely stranded with core end processing for AWG cables for auxiliary contacts AWG number as coded connectable conductor cross	0.5 2.5 mm ² 0.5 2.5 mm ² 2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²) 2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²)
connectable conductor cross-section for auxiliary contacts solid or stranded finely stranded with core end processing type of connectable conductor cross-sections for auxiliary contacts solid or stranded finely stranded with core end processing for AWG cables for auxiliary contacts AWG number as coded connectable conductor cross section	0.5 2.5 mm ² 0.5 2.5 mm ² 2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²) 2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²) 2x (20 16), 2x (18 14)
connectable conductor cross-section for auxiliary contacts solid or stranded finely stranded with core end processing type of connectable conductor cross-sections for auxiliary contacts solid or stranded solid or stranded finely stranded with core end processing for AWG cables for auxiliary contacts AWG number as coded connectable conductor cross section for main contacts for auxiliary contacts 	0.5 2.5 mm ² 0.5 2.5 mm ² 2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²) 2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²) 2x (20 16), 2x (18 14) 16 8
connectable conductor cross-section for auxiliary contacts solid or stranded finely stranded with core end processing type of connectable conductor cross-sections for auxiliary contacts solid or stranded solid or stranded finely stranded with core end processing for AWG cables for auxiliary contacts AWG number as coded connectable conductor cross section for main contacts for auxiliary contacts 	0.5 2.5 mm ² 0.5 2.5 mm ² 2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²) 2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²) 2x (20 16), 2x (18 14) 16 8
connectable conductor cross-section for auxiliary contacts solid or stranded finely stranded with core end processing type of connectable conductor cross-sections for auxiliary contacts solid or stranded finely stranded with core end processing for AWG cables for auxiliary contacts AWG number as coded connectable conductor cross section for main contacts for auxiliary contacts 	0.5 2.5 mm ² 0.5 2.5 mm ² 2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²) 2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²) 2x (20 16), 2x (18 14) 16 8
connectable conductor cross-section for auxiliary contacts solid or stranded finely stranded with core end processing type of connectable conductor cross-sections for auxiliary contacts solid or stranded finely stranded with core end processing for AWG cables for auxiliary contacts AWG number as coded connectable conductor cross section for main contacts for auxiliary contacts Safety related data	0.5 2.5 mm ² 0.5 2.5 mm ² 2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²) 2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²) 2x (20 16), 2x (18 14) 16 8 20 14

proportion of danger						
	d rate according to SN 3192					
-	d rate according to SN 319					
	w demand rate according t		FIT			
T1 value for proof test 61508	interval or service life acco	rding to IEC 20 a	20 a			
protection class IP or	n the front according to I	EC 60529 IP2	0			
touch protection on t	he front according to IEC	60529 fing	er-safe, for vertical contact	from the front		
ertificates/ approvals						
General Product App	oroval					
(SP)		<u>Confirmation</u>	(U) u	KC	EAC	
EMC	Functional Safety/Safety of Ma- chinery	Declaration of Confe	ormity	Test Certificates		
RCM	<u>Type Examination Cer-</u> tificate	CE EG-Konf.	UK CA	Type Test Certific- ates/Test Report	Special Test Certific- ate	
Marine / Shipping						
ABS	B UREAU VERITAS		Llovds Register urs	RINA	RMRS	
other			Railway	Environment		
Confirmation		<u>Confirmation</u>	Vibration and Shock	Environmental Con- firmations		
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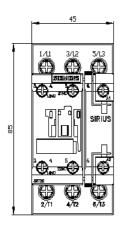
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

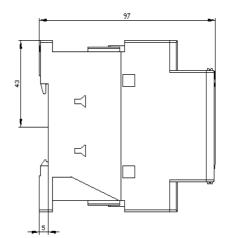
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2024-1AB00&lang=en

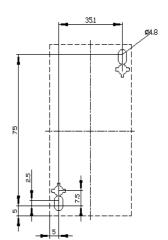
Characteristic: Tripping characteristics, I²t, Let-through current

https://support.industry.siemens.com/cs/ww/en/ps/3RT2024-1AB00/char

Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2024-1AB00&objecttype=14&gridview=view1











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