SIEMENS

Data sheet

3RT2025-1BA40



power contactor, AC-3e/AC-3, 17 A, 7.5 kW / 400 V, 3-pole, 12 V DC, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S0

product brand name SIRIUS product vipe designation Power contactor optiduct type designation SR12 General technical data S0 size of contactor No of unction module for communication No auxiliary switch Yes optiduct extension 1.8 W at AC in hot operating state 1.8 W at AC in hot operating state per pole 0.6 W 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 with degree of pollution 3 rated value 690 V of auxiliary circuit rated value 6 kV of auxiliary circuit rated value 6 kV or auxiliary circuit rated value 100 00 000	6/13	
product type designation 3RT2 General technical data	product brand name	SIRIUS
General technical data S0 size of contactor S0 product extension No • function module for communication No • auxiliary switch Yes power loss [W] for rated value of the current 1.8 W • at AC in hot operating state 1.8 W • at AC in hot operating state 5.9 W insulation voltage 690 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 with degree of pollution 3 rated value 690 V • of auxiliary circuit rated value 6 kV • of contactor scitas according to EN 60947-1 400 V sthock resistance with sine pulse 10g / 5 ms, 7,5g / 10 ms • at DC 10g / 5 ms, 7,5g / 10 ms shock resistance with sine pulse 10000 000 • of the contactor with added auxiliary swi	product designation	Power contactor
size of contactor S0 product extension No • function module for communication No • auxiliary switch Yes power loss [W] for rated value of the current 1.8 W • at AC in hot operating state per pole 0.6 W • without load current share typical 5.9 W Insulation voltage 690 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 with degree of pollution 3 rated value 680 V surge voltage resistance 6kV • of auxiliary circuit rated value 6 kV • of auxiliary surverb holes for protective separation between 10g / 5 ms, 7,5g / 10 ms shock resistance with sine pulse 10g / 5 ms, 7,5g / 10 ms • at DC 15g / 5 ms, 10g / 10 ms mechanical service life (operating cycles) 10 000 000 • of the contactor with added electronically optimized auxiliary switch block typical 10 000 000 reference code according to IEC 81346-2 Q Substance Prohibi	product type designation	3RT2
product extension No • function module for communication No • auxiliary switch Yes • auxiliary switch Yes • at AC in hot operating state 1.8 W • at AC in hot operating state pole 0.6 W • without load current share typical 5.9 W Insulation voltage 690 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 with degree of pollution 3 rated value 64 V • of main circuit rated value 6 kV • of main circuit rated value 6 kV • of main circuit rated value 6 kV • of auxiliary circuit rated value 1000 V • al DC 10g / 5 ms, 7.5g / 10 ms <tr< th=""><th>General technical data</th><th></th></tr<>	General technical data	
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• auxiliary switchYespower loss [W] for rated value of the current	product extension	
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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 %	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 %	ambient temperature	
relative humidity minimum 10 % relative humidity at 55 °C according to IEC 60068-2-30 maximum 95 %	during operation	-25 +60 °C
relative humidity at 55 °C according to IEC 60068-2-30 95 %	during storage	-55 +80 °C
maximum	relative humidity minimum	10 %
Main circuit		95 %
	Main circuit	
number of poles for main current circuit 3	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	17 A
— at 500 V rated value	17 A
— at 690 V rated value	13 A
• at AC-3e	
— at 400 V rated value	17 A
— at 500 V rated value	17 A
— at 690 V rated value	13 A
• at AC-4 at 400 V rated value	15.5 A
at AC-5a up to 690 V rated value	35.2 A
• at AC-5b up to 400 V rated value	14.1 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	11.4 A
 up to 690 V for current peak value n=20 rated value at AC-6a 	11.3 A
	7.6 A
 — up to 230 V for current peak value n=30 rated value — 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	7.7 A
at 690 V rated value	7.7 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 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	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-2 at 400 V rated value	7.5 kW				
• at AC-2 at 400 v lated value					
- at 230 V rated value	4 kW				
	7.5 kW				
— at 400 V rated value					
— at 500 V rated value	7.5 kW				
— at 690 V rated value	11 kW				
• at AC-3e					
— at 230 V rated value	4 kW				
— at 400 V rated value	7.5 kW				
— at 500 V rated value	7.5 kW				
— at 690 V rated value	11 kW				
operating power for approx. 200000 operating cycles at AC- 4					
at 400 V rated value	3.5 kW				
at 400 V rated value at 690 V rated value	6 kW				
operating apparent power at AC-6a					
	4.5 kVA				
 up to 230 V for current peak value n=20 rated value up to 400 V for current peak value n=20 rated value 	4.5 KVA 7.8 kVA				
• up to 500 V for current peak value n=20 rated value	9.9 kVA				
up to 690 V for current peak value n=20 rated value	13.6 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	6.6 kVA				
• up to 690 V for current peak value n=30 rated value	9.1 kVA				
short-time withstand current in cold operating state up to 40 °C					
	225 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 1 s switching at zero current maximum limited to 5 s switching at zero current maximum 	225 A, Use minimum cross-section acc. to AC-1 rated value 225 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 5 s switching at zero current maximum limited to 10 s switching at zero surrent maximum 					
 limited to 10 s switching at zero current maximum limited to 20 a switching at zero surrent maximum 	189 A; Use minimum cross-section acc. to AC-1 rated value				
Imited to 30 s switching at zero current maximum	140 A; Use minimum cross-section acc. to AC-1 rated value				
Imited to 60 s switching at zero current maximum	115 A; Use minimum cross-section acc. to AC-1 rated value				
no-load switching frequency	4 500 4/h				
• 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	
	12 V
rated value	12 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	14 A
• at 600 V rated value	17 A
yielded mechanical performance [hp]	
for single-phase AC motor	
— at 110/120 V rated value	1 hp
— at 230 V rated value	3 hp
• for 3-phase AC motor	
— at 200/208 V rated value	3 hp
— at 220/230 V rated value	5 hp
— at 460/480 V rated value	10 hp
— at 575/600 V rated value	15 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), alv. 32A (690V,100kA), BS88: 25A (415V,80kA) 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	107 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 or stranded 	2x (1 2.5 mm²), 2x (2.5 10 mm²)			
 finely stranded with core end processing 	2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²			
connectable conductor cross-section for main contacts				
• solid	1 10 mm ²			
• stranded	1 10 mm ²			
finely stranded with core end processing	1 10 mm²			
connectable conductor cross-section for auxiliary contacts				
• solid or stranded	0.5 2.5 mm ²			
finely stranded with core end processing	0.5 2.5 mm²			
type of connectable conductor cross-sections				
for auxiliary contacts				
— solid or stranded	2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²)			
— finely stranded with core end processing	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 contacts	20 14			
afety related data				
product function				
-	Vec			
mirror contact according to IEC 60947-4-1	Yes			
suitability for use safety-related switching OFF	Yes			
B10 value with high demand rate according to SN 31920	450 000			
proportion of dangerous failures	40.9/			
with low demand rate according to SN 31920	40 %			
 with high demand rate according to SN 31920 	73 %			

failure rate [FIT] with	low demand rate according	to SN 31920 100	FIT		
T1 value for proof tes 61508	t interval or service life acco	rding to IEC 20 a	a		
protection class IP on the front according to IEC 60529		EC 60529 IP20)		
touch protection on	the front according to IEC	60529 finge	er-safe, for vertical contact	from the front	
Certificates/ approval	s				
General Product Ap	proval				
SP Car	<u>Confirmation</u>			KC	EAC
EMC	Functional Safety/Safety of Ma- chinery	Declaration of Confo	ormity	Test Certificates	
RCM	Type Examination Cer- tificate	UK CA	CE EG-Konf.	Type Test Certific- ates/Test Report	Special Test Certific- ate
Marine / Shipping					
ABS	B U R E A U VERITAS		Lloyds Register us	RINA	RMRS RMRS
other		Railway	Dangerous Good	Environment	
<u>Confirmation</u>		Vibration and Shock	Transport Information	Environmental Con- firmations	
	ed to exit the Russian mark		ssian-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 (other than the sanctioned EAEU member states Russia or Belarus).					
Information on the p	backaging	w/109813875			

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=3RT2025-1BA40

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2025-1BA40

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-1BA40

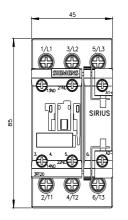
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

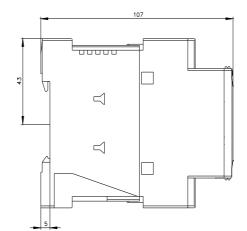
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2025-1BA40&lang=en

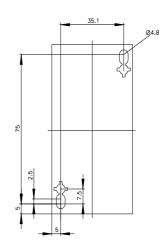
Characteristic: Tripping characteristics, I2t, Let-through current

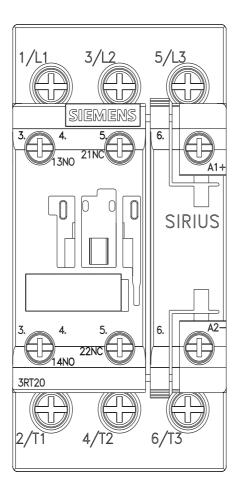
https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-1BA40/char

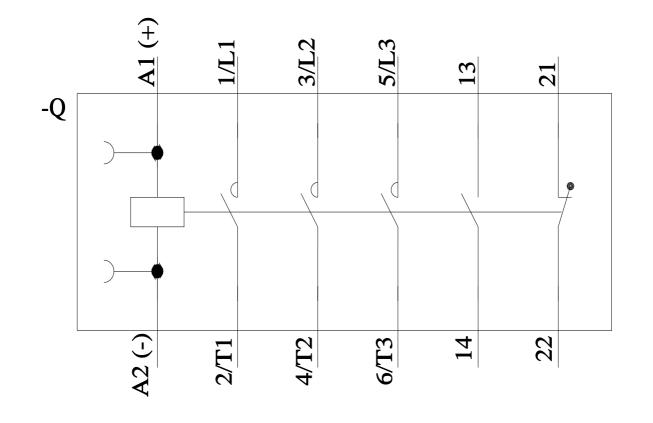
Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2025-1BA40&objecttype=14&gridview=view1











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