SIEMENS

Data sheet

3RT2023-1AL20



power contactor, AC-3e/AC-3, 9 A, 4 kW / 400 V, 3-pole, 230 V AC, 50/60 Hz, auxiliary contacts: 1 NO + 1 NC, screw terminal

size of contactor S0 product extension S0 • function module for communication No • auxiliary switch Yes power loss [W] for rated value of the current • at AC in hot operating state per pole 0.2 W • without load current share typical 7.9 W insulation voltage • 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 • of auxiliary circuit vith degree of pollution 3 rated value • of auxiliary circuit vith degree of pollution 3 rated value • of auxiliary circuit rated value • at AC • at AC • at AC • at AC • at AC • of contactor typical • of the contactor with added electronically optimized auxiliary switch block typical • of the contactor with added auxiliary switch block typical • during operation • during storage • otawit addex auxiliary switch block typical • of auxiliary switch block typical • of uning operation • during operation • operation • operation • during operation • opera	4/12 6/13			
product designation Power contactor product type designation 3R12 size of contactor S0 product extension S0 • function module for communication No • auxiliary switch Yes out AC in hot operating state 0.6 W • at AC in hot operating state per pole 0.2 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 main circuit with degree of pollution 3 rated value 61 KV • of main circuit rated value 61 KV • of auxiliary circuit rated value 61 KV • of contactor typical 7.5g / 5 ms, 4,7g	product brand name	SIRIUS		
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installation altitude at height above sea level maximum 2 000 m ambient temperature • during operation -25 +60 °C • during storage -55 +80 °C relative humidity minimum 10 %	Substance Prohibitance (Date)	10/01/2009		
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 during operation during storage -25 +60 °C -55 +80 °C relative humidity minimum 10 % 	installation altitude at height above sea level maximum	2 000 m		
• during storage -55 +80 °C relative humidity minimum 10 %	ambient temperature			
relative humidity minimum 10 %	during operation	-25 +60 °C		
	 during storage 	-55 +80 °C		
relative humidity at 55 °C according to IEC 60068-2-30 95 %	relative humidity minimum	10 %		
maximum	relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %		
lain circuit	Main circuit			

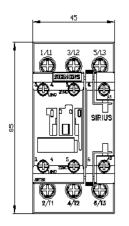
number of poles for main current circuit	3			
number of NO contacts for main contacts	3			
operating voltage				
 at AC-3 rated value maximum 	690 V			
 at AC-3e rated value maximum 				
operational current				
 at AC-1 at 400 V at ambient temperature 40 °C 	40 A			
rated value				
• at AC-1				
— up to 690 V at ambient temperature 40 °C	40 A			
rated value				
— up to 690 V at ambient temperature 60 °C	35 A			
rated value • at AC-3				
	0.4			
— at 400 V rated value	9 A			
— at 500 V rated value	9 A			
— at 690 V rated value	9 A			
• at AC-3e	0.4			
— at 400 V rated value	9 A			
— at 500 V rated value	9 A			
— at 690 V rated value	9 A			
• at AC-4 at 400 V rated value	8.5 A			
• at AC-5a up to 690 V rated value	35.2 A			
• at AC-5b up to 400 V rated value	7.4 A			
• at AC-6a				
 — 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 	11.4 A			
— up to 500 V for current peak value n=20 rated	9.1 A			
value				
— up to 690 V for current peak value n=20 rated	9 A			
value				
• at AC-6a				
 — up to 230 V for current peak value n=30 rated 	7.6 A			
value				
— up to 400 V for current peak value n=30 rated	7.6 A			
value	C 1 A			
 — up to 500 V for current peak value n=30 rated value 	6.1 A			
— up to 690 V for current peak value n=30 rated	6.1 A			
value	0.170			
minimum cross-section in main circuit at maximum AC-1	10 mm²			
rated value				
operational current for approx. 200000 operating				
cycles at AC-4				
 at 400 V rated value 	4.1 A			
 at 690 V rated value 	3.3 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			

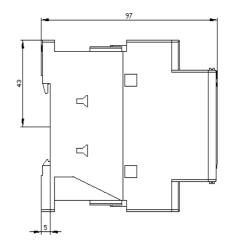
— at 110 V rated value	35 A
— at 220 V rated value	35 A
— at 440 V rated value	2.9 A
— at 600 V rated value	1.4 A
• at 1 current path at DC-3 at DC-5	1. 7 / 1
•	20 4
— at 24 V rated value	20 A
— at 60 V rated value	5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.09 A
— at 600 V rated value	0.06 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	2.2 kW
— at 400 V rated value	4 kW
— at 500 V rated value	4 kW
— at 690 V rated value	7.5 kW
● at AC-3e	
— at 230 V rated value	2.2 kW
— at 400 V rated value	4 kW
— at 500 V rated value	4 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 kW
• at 690 V rated value	2.5 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	7.8 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 	5.2 kVA
 up to 690 V for current peak value n=30 rated value 	7.2 kVA
short-time withstand current in cold operating state up to 40 °C	
 limited to 1 s switching at zero current maximum 	170 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	170 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	140 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 30 s switching at zero current maximum 	104 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 60 s switching at zero current maximum 	88 A; Use minimum cross-section acc. to AC-1 rated value
-	oo A, ose minimum cross-section acc. to AC-1 fated value
no-load switching frequency	E 000 4/h
• at AC	5 000 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

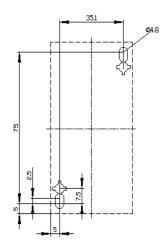
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage at AC	
at 50 Hz rated value	230 V
at 60 Hz rated value	230 V
operating range factor control supply voltage rated	
value of magnet coil at AC	
• at 50 Hz	0.8 1.1
• at 60 Hz	0.85 1.1
apparent pick-up power of magnet coil at AC	20.1/4
• at 50 Hz	68 VA
• at 60 Hz	67 VA
inductive power factor with closing power of the coil	0.70
• at 50 Hz	0.72
• at 60 Hz	0.74
 apparent holding power of magnet coil at AC at 50 Hz 	7.0.1/4
• at 50 Hz	7.9 VA
	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	1
instantaneous contact	10 A
operational current at AC-12 maximum operational current at AC-15	10 A
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	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 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	7.6 A
• at 600 V rated value	9 A
yielded mechanical performance [hp]	
 for single-phase AC motor 	
— at 110/120 V rated value	1 hp
— at 230 V rated value	1 hp

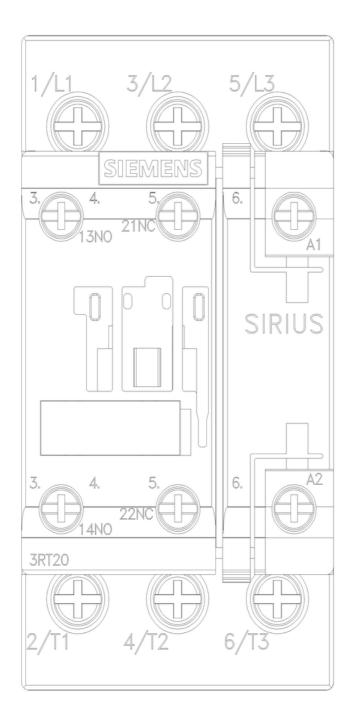
for 0 where AO meter	
 for 3-phase AC motor at 200/208 V reted value 	2 hz
— at 200/208 V rated value	2 hp
- at 220/230 V rated value	3 hp
— at 460/480 V rated value — at 575/600 V rated value	5 hp 7.5 hp
contact rating of auxiliary contacts according to UL	A600 / P600
	A000 / F 000
Short-circuit protection	
design of the fuse link	
 for short-circuit protection of the main circuit — with type of coordination 1 required 	~C+ 624 (600) (100k4) ~M+ 224 (600) (100k4) D500+ 624 (415) (90k4)
— with type of assignment 2 required	gG: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA) gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)
 for short-circuit protection of the auxiliary switch 	gG: 10 A (500 V, 1 kA)
required	90. 10 A (300 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 95 mm
height width	85 mm 45 mm
depth	45 mm 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	aarou tura tarminala
 for main current circuit for auxiliary and control circuit 	screw-type terminals screw-type terminals
 at contactor for auxiliary contacts of magnet coil 	Screw-type terminals 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)
at AWG cables for auxiliary contacts	2x (20 16), 2x (18 14)
AWG number as coded connectable conductor cross	

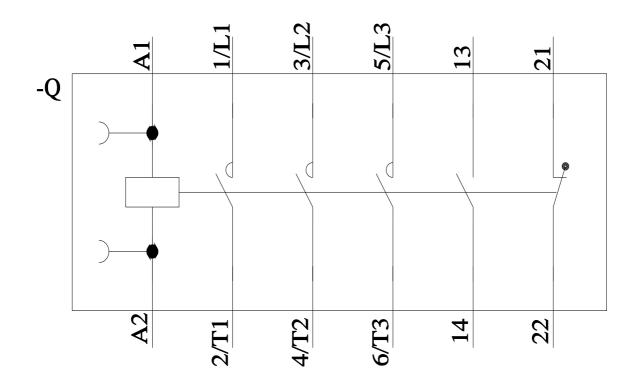
section						
 for main contact 	ts		16 8			
 for auxiliary con 	tacts		20 14			
Safety related data						
product function						
 mirror contact according to IEC 60947-4-1 			Yes			
B10 value with high d	emand rate according t	o SN 31920	450 000			
proportion of dangerous failures						
 with low deman 	d rate according to SN	31920	40 %			
-	nd rate according to SN		73 %			
	ow demand rate accord	ding to SN	100 FIT			
31920 T1 value for proof test IEC 61508	t interval or service life	according to	20 a			
	on the front according	to IEC	IP20			
	the front according to	EC 60529	finger-safe,	for vertical cont	act from the front	
suitability for use			Vee			
 safety-related s 	-		Yes			
Certificates/ approvals			_	_		
General Product Ap	proval					
(S)	<u>Confirmation</u>			UL JL	KC	EAC
ЕМС	Functional Safety/Safety of Machinery	Declaration o	of Conformity	/	Test Certificates	
RCM	<u>Type Examination</u> <u>Certificate</u>	CE EG-Konf.		UK CA	Special Test Certific- ate	<u>Type Test Certific-</u> ates/Test Report
Marine / Shipping						
ABS	BUREAU VERITAS			Lloyd's Kegister uis	RINA	RMARS
other			Rail	way		
				-		
<u>Confirmation</u>		<u>Confirmatic</u>	on <u>Vibra</u>	ition and Shock		











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