SIEMENS

Data sheet

3RT2023-1BM40



power contactor, AC-3e/AC-3, 9 A, 4 kW / 400 V, 3-pole, 220 V DC, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S0

product brand name	SIRIUS		
product designation	Power contactor		
product type designation	3RT2		
General technical data			
size of contactor	S0		
product extension			
 function module for communication 	No		
auxiliary switch	Yes		
power loss [W] for rated value of the current			
 at AC in hot operating state 	0.6 W		
 at AC in hot operating state per pole 	0.2 W		
 without load current share typical 	5.9 W		
type of calculation of power loss depending on pole	quadratic		
insulation voltage			
 of main circuit with degree of pollution 3 rated value 	690 V		
 of auxiliary circuit with degree of pollution 3 rated value 	690 V		
surge voltage resistance			
 of main circuit rated value 	6 kV		
 of auxiliary circuit rated value 	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 DC	10g / 5 ms, 7,5g / 10 ms		
shock resistance with sine pulse			
• at DC	15g / 5 ms, 10g / 10 ms		
mechanical service life (operating cycles)			
 of contactor typical 	10 000 000		
 of the contactor with added electronically optimized auxiliary switch block typical 	5 000 000		
 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		
Weight	0.594 kg		
Ambient conditions			
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 %		
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %		

Environmental footprint				
Environmental Product Declaration(EPD)	Yes			
global warming potential [CO2 eq] total	221 kg			
global warming potential [CO2 eq] during manufacturing	2.65 kg			
global warming potential [CO2 eq] during operation	219 kg			
global warming potential [CO2 eq] after end of life	-0.639 kg			
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 value	40 A			
• at AC-1	40.4			
— up to 690 V at ambient temperature 40 °C rated value	40 A			
 up to 690 V at ambient temperature 60 °C rated value at AC-3 	35 A			
• at AC-3 — at 400 V rated value	9 A			
— at 500 V rated value	9 A 9 A			
— at 690 V rated value	9 A			
• at AC-3e				
- 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			
— 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	9.1 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	6.1 A			
— up to 690 V for current peak value n=30 rated value	6.1 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	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	1A			
— 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 \/ rated value	35 A			
— at 24 V rated value — at 60 V rated value	35 A 35 A			
— at 50 V rated value — at 110 V rated value	35 A 35 A			
— at 110 V rated value — at 220 V rated value	35 A 5 A			
— at 440 V rated value	1A			
— at 600 V rated value	0.8 A			

a with 2 autrent notion in carian at DC 1					
with 3 current paths in series at DC-1 — at 24 V rated value	35 A				
— at 24 v rated value — 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 	4 kW				
• 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-					
• at 400 V rated value	2 1404				
 at 400 V rated value at 690 V rated value 	2 kW				
	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 0 s switching at zero current maximum 	140 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 10 s switching at zero current maximum 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				
- mined to be a switching at zero cullent maximum	our, ose minimum cross-section acc. to AC-1 rated value				

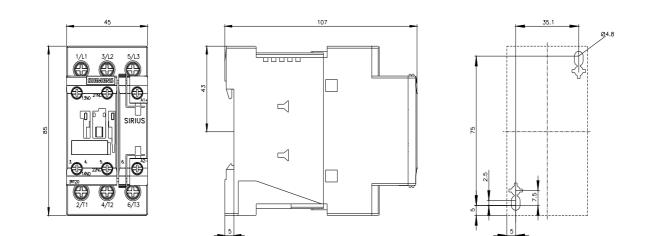
no-load switching frequency				
• at DC	1 500 1/h			
operating frequency				
• at AC-1 maximum	1 000 1/b			
• at AC-1 maximum	1 000 1/h 1 000 1/h			
• at AC-2 maximum • at AC-3 maximum	1 000 1/h 1 000 1/h			
at AC-3 maximum at AC-3e maximum				
• at AC-3e maximum • at AC-4 maximum	1 000 1/h			
• at AC-4 maximum Control circuit/ Control	300 1/h			
type of voltage of the control supply voltage	DC			
control supply voltage at DC rated value	220 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			
design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V	C characteristic: 10 A; 0.4 kA			
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 3-phase AC motor 				

at 200/202 V rated value	2 hz				
— at 200/208 V rated value — at 220/230 V rated value	2 hp				
— at 460/480 V rated value	3 hp				
	5 hp				
at 575/600 V rated value	7.5 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 					
	~C+ 62A (600\/ 100kA) ~M+ 22A (600\/ 100kA) B589+ 62A (415\/ 90kA)				
 — with type of coordination 1 required with type of coordination 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)				
 — with type of assignment 2 required for short-circuit protection of the auxiliary switch required 	gG: 10 A (500 V, 1 kA)				
Installation/ mounting/ dimensions	gg. 10 A (500 V, 1 KA)				
mounting position	+/-180° rotation possible on vertical mounting surface; can be tilted forward and				
mounting position	backward by +/- 22.5° on vertical mounting surface				
fastening method side-by-side mounting	Yes				
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715				
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				
for AWG cables for main contacts	2x (16 12), 2x (14 8)				
connectable conductor cross-section for main contacts					
• solid	1 10 mm ²				
 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 mm²				
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 	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)				
 for AWG cables for auxiliary contacts 	2x (20 16), 2x (18 14)				
AWG number as coded connectable conductor cross					
section					

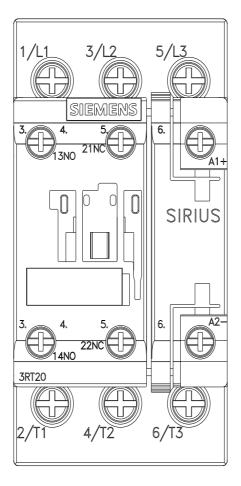
• for main contacts			16	8		
 for auxiliary contact 	for auxiliary contacts		20 14			
Safety related data						
product function						
 mirror contact acco 	rding to IEC 60947-4-1		Yes			
 positively driven op 	eration according to IEC	60947-5-1	No			
 suitable for safety from the safe	unction		Yes			
suitability for use safety-re			Yes			
service life maximum			20 a			
test wear-related service	e life necessary		Yes			
proportion of dangerous						
	te according to SN 3192	20	40 %			
	ate according to SN 319		73 %			
B10 value with high dem			1 000			
failure rate [FIT] with lov			100 F			
31920		ing to on	1001			
ISO 13849						
device type according to	ISO 13849-1		3			
overdimensioning accor	ding to ISO 13849-2 n	ecessary	Yes			
IEC 61508						
safety device type accor	ding to IEC 61508-2		Туре	A		
Electrical Safety	·					
protection class IP on th	e front according to I	EC 60529	IP20			
touch protection on the			finaer	r-safe, for vertical contact	from the front	
Approvals Certificates	J		J •	,		
General Product Approv	(a)					
	EG-Konf.	UK CA	Ì		Ű	
General Product Approval	EMV	Test Certificate	es		Marine / Shipping	
EHC	RCM	<u>Type Test Cert</u> ates/Test Rep		Special Test Certific- ate	ABS	B UREAU VERITAS
Marine / Shipping					other	
Marine / Shipping					other	
	Lloyd's Kegister uis	RINA		RMRS	<u>Miscellaneous</u>	<u>Confirmation</u>
Railway	Dangerous goods	Environment				
Special Test Certific-	Transport Information	EPD		Environmental Con- firmations		
Further information Information on the packaging 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=3RT2023-1BM40 Cax online generator						

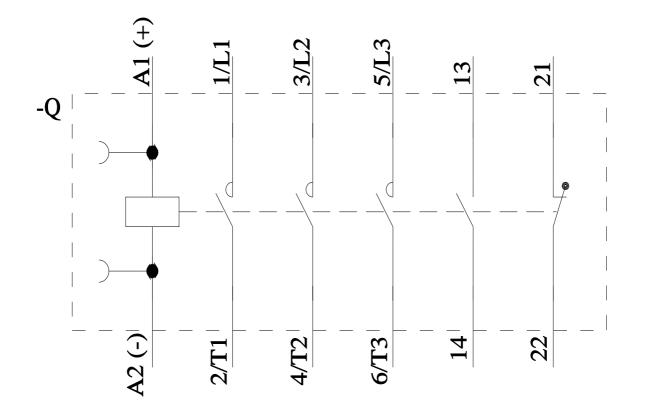
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