SIEMENS

Data sheet

3RT2027-1BF40



power contactor, AC-3e/AC-3, 32 A, 15 kW / 400 V, 3-pole, 110 V DC, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S0

6/13	
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 	6.3 W
 at AC in hot operating state per pole 	2.3 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 ∨
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	0.603 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	50 A
 at AC-1 — up to 690 V at ambient temperature 40 °C rated 	50 A
value — up to 690 V at ambient temperature 60 °C rated value	42 A
• at AC-3	
— at 400 V rated value	32 A
— at 500 V rated value	32 A
— at 690 V rated value	21 A
• at AC-3e	
— at 400 V rated value	32 A
— at 500 V rated value	32 A
— at 690 V rated value	21 A
• at AC-4 at 400 V rated value	22 A
• at AC-5a up to 690 V rated value	44 A
• at AC-5b up to 400 V rated value	26.5 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	30.8 A
— up to 400 V for current peak value n=20 rated value	30.8 A
 up to 500 V for current peak value n=20 rated value up to 690 V for current peak value n=20 rated value 	27 A 21 A
 — up to 690 V for current peak value n=20 rated value at AC-6a 	21 A
— up to 230 V for current peak value n=30 rated value	20.5 A
— up to 400 V for current peak value n=30 rated value	20.5 A
— up to 500 V for current peak value n=30 rated value	18 A
— up to 690 V for current peak value n=30 rated value	18 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	12 A
• at 690 V rated value	12 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 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	1A
— 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-3	
— at 230 V rated value	7.5 kW
— at 400 V rated value	15 kW
— at 500 V rated value	15 kW
— at 690 V rated value	18.5 kW
• at AC-3e	
— at 230 V rated value	7.5 kW
— at 400 V rated value	15 kW
— at 500 V rated value	15 kW
— at 690 V rated value	18.5 kW
operating power for approx. 200000 operating cycles at AC-	
	C IANI
at 400 V rated value	6 kW
• at 690 V rated value	10.3 kW
operating apparent power at AC-6a	12.2 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 up to 500 V for current peak value n=20 rated value	21.3 kVA
up to 500 V for current peak value n=20 rated value up to 600 V for current peak value n=20 rated value	23.3 kVA 25 kVA
up to 690 V for current peak value n=20 rated value	23 KVA
 operating apparent power at AC-6a up to 230 V for current peak value n=30 rated value 	8.1 kVA
 up to 400 V for current peak value n=30 rated value up to 500 V for current peak value n=30 rated value 	14.2 kVA 15.5 kVA
 up to 500 V for current peak value n=30 rated value up to 690 V for current peak value n=30 rated value 	21.5 kVA
short-time withstand current in cold operating state up to	
40 °C	
 limited to 1 s switching at zero current maximum 	499 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	341 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	260 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 30 s switching at zero current maximum 	199 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 60 s switching at zero current maximum 	162 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	

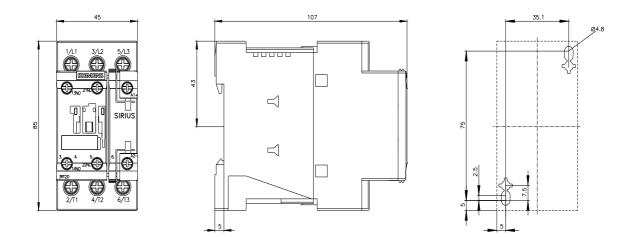
no-load switching frequency

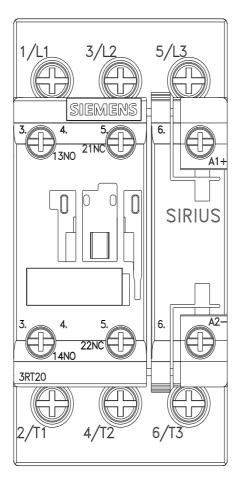
● at DC	1 500 1/h
operating frequency	
• at AC-1 maximum	1 000 1/h
• at AC-2 maximum	750 1/h
• at AC-3 maximum	750 1/h
• at AC-3e maximum	750 1/h
• at AC-4 maximum	250 1/h
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage at DC rated value	110 V
operating 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	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	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	1A
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	27 A
at 600 V rated value	27 A
yielded mechanical performance [hp]	
• for single-phase AC motor	
- at 110/120 V rated value	2 hp
— at 230 V rated value	5 hp
for 3-phase AC motor	p
— at 200/208 \/ rated value	10 hp
— at 200/208 V rated value — at 220/230 V rated value	10 hp 10 hp

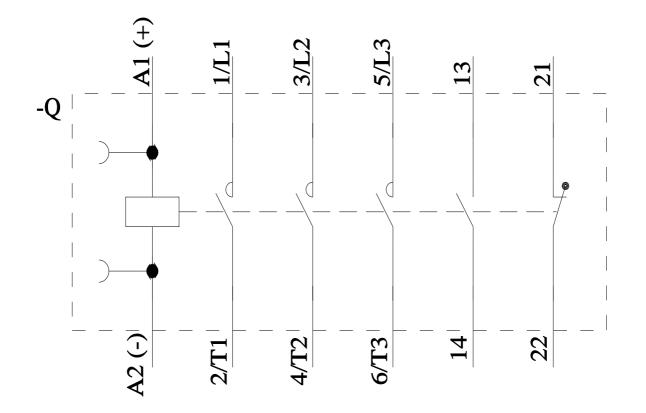
— at 460/480 V rated value	20 hp
— at 575/600 V rated value	25 hp
contact rating of auxiliary contacts according to UL	A600 / P600
Short-circuit protection	
design of the fuse link	
 for short-circuit protection of the main circuit 	
 — with type of coordination 1 required 	gG: 125A (690V,100kA), aM: 50A (690V,100kA), BS88: 125A (415V,80kA)
 — with type of assignment 2 required 	gG: 50A (690V,100kA), aM: 25A (690V, 100kA), BS88: 50A (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 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
— upwarus — 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 mm²
• 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	$0 \times (0 = -4 = mm^2) 0 \times (0 = -2 = -2 = mm^2)$
— 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

product function					
-					
 mirror contact ad 	ccording to IEC 60947-4-1		Yes		
 positively driven 	operation according to IE	C 60947-5-1	No		
 suitable for safe 	ty function		Yes		
	y-related switching OFF		Yes		
service life maximum			20 a		
test wear-related serv			Yes		
proportion of danger					
	d rate according to SN 319	20	40 %		
	•		73 %		
	nd rate according to SN 31				
	lemand rate according to		1 000 000		
31920	low demand rate accord	ing to SN	100 FIT		
ISO 13849					
device type according	g to ISO 13849-1		3		
overdimensioning ac	cording to ISO 13849-2 n	ecessary	Yes		
IEC 61508	- -				
	cording to IEC 61508-2		Туре А		
Electrical Safety					
	n the front according to I	EC 60529	IP20		
-			finger-safe, for vertical conta	act from the front	
•	he front according to IEC		inger-sale, for vertical conta		
pprovals Certificates					
General Product App	proval				
		<u>Confirmation</u>	UK CA	CE EG-Konf.	Ű
General Product App	proval	EMV	Test Certificates		Marine / Shipping
<u>KC</u>	FAL	Â	<u>Type Test Certific-</u> ates/Test Report	Special Test Certific- ate	and the second s
	LIIL	RCM			ABS
Marine / Shipping	LIIL	RCM			ABS
Marine / Shipping		RCM RCM	RINA	RMRS	other <u>Miscellaneous</u>
Marine / Shipping	LIIL	RCM RCM RCM Register URS	RINA Environment	RMRS	
BUREAU VERITAS				Environmental Con- firmations	
other Confirmation Information on the pa https://support.industry Information- and Dow https://www.siemens.cc Industry Mall (Online https://mall.industry.sie Cax online generator	Railway Special Test Certific- ate ackaging /.siemens.com/cs/ww/en/vi vnloadcenter (Catalogs, E om/ic10 ordering system) emens.com/mall/en/en/Cat	Dangerous good Transport Informa iew/109813875 Brochures,) alog/product?mlfb=3	tion	Environmental Con- firmations	

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2027-1BF40&lang=en Characteristic: Tripping characteristics, I²t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RT2027-1BF40/char Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2027-1BF40&objecttype=14&gridview=view1







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