SIEMENS

Data sheet

3RT1076-6AP36



power contactor, AC-3e/AC-3 500 A, 250 kW / 400 V AC (50-60 Hz) / DC Uc: 220-240 V 3-pole, auxiliary contacts 2 NO + 2 NC drive: conventional main circuit: busbar control and auxiliary circuit: screw terminal

10	
product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT1
General technical data	
size of contactor	\$12
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 	165 W
 at AC in hot operating state per pole 	55 W
 without load current share typical 	10 W
type of calculation of power loss depending on pole	quadratic
insulation voltage	
 of main circuit with degree of pollution 3 rated value 	1 000 V
 of auxiliary circuit with degree of pollution 3 rated value 	500 V
surge voltage resistance	
 of main circuit rated value 	8 kV
 of auxiliary circuit rated value 	6 kV
maximum permissible voltage for protective separation between coil and main contacts according to EN 60947-1	690 V
shock resistance at rectangular impulse	
• at AC	8,5g / 5 ms, 4,2g / 10 ms
• at DC	8,5g / 5 ms, 4,2g / 10 ms
shock resistance with sine pulse	
• at AC	13,4g / 5 ms, 6,5g / 10 ms
• at DC	13,4g / 5 ms, 6,5g / 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)	05/01/2012
SVHC substance name	Lead - 7439-92-1
Weight	10.4 kg
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m

ambient temperature	
during operation	-25 +60 °C
during operation orrage	-55 +80 °C
relative humidity minimum	
relative humidity at 55 °C according to IEC 60068-2-30	95 %
maximum	
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 	1 000 V
 at AC-3e rated value maximum 	1 000 V
operational current	
• at AC-1 at 400 V at ambient temperature 40 °C rated	610 A
value	
• at AC-1	C40 A
— up to 690 V at ambient temperature 40 °C rated value	610 A
— up to 690 V at ambient temperature 60 °C rated value	550 A
— up to 1000 V at ambient temperature 40 °C rated value	200 A
— up to 1000 V at ambient temperature 60 °C rated value	200 A
• at AC-3	
— at 400 V rated value	500 A
— at 500 V rated value	500 A
— at 690 V rated value	450 A
— at 1000 V rated value	180 A
• at AC-3e	500 A
— at 400 V rated value	500 A
— at 500 V rated value	500 A
— at 690 V rated value — at 1000 V rated value	450 A 180 A
at AC-4 at 400 V rated value	430 A
 at AC-5a up to 690 V rated value 	430 A 536 A
 at AC-5a up to 690 v rated value at AC-5b up to 400 V rated value 	415 A
• at AC-6a	107
— up to 230 V for current peak value n=20 rated value	414 A
— up to 400 V for current peak value n=20 rated value	414 A
— up to 500 V for current peak value n=20 rated value	414 A
— up to 500 V for current peak value n=20 rated value	414 A 414 A
— up to 1000 V for current peak value n=20 rated value	180 A
value	
● at AC-6a	
— up to 230 V for current peak value n=30 rated value	276 A
— up to 400 V for current peak value n=30 rated value	276 A
— up to 500 V for current peak value n=30 rated value	276 A
— up to 690 V for current peak value n=30 rated value	276 A
 — up to 1000 V for current peak value n=30 rated value 	180 A
minimum cross-section in main circuit at maximum AC-1 rated value	370 mm²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	175 A
• at 690 V rated value	150 A
operational current	
• at 1 current path at DC-1	
— at 24 V rated value	400 A
— at 60 V rated value	330 A
— at 110 V rated value	33 A
— at 220 V rated value	3.8 A
— at 440 V rated value	0.9 A

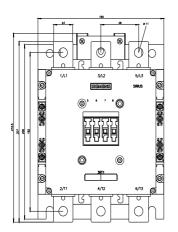
— at 600 V rated value	0.6 A
• with 2 current paths in series at DC-1	400.4
— at 24 V rated value	400 A
— at 60 V rated value	400 A
— at 110 V rated value	400 A
— at 220 V rated value	400 A
— at 440 V rated value	4 A
— at 600 V rated value	2 A
with 3 current paths in series at DC-1	400 A
— at 24 V rated value	400 A
— at 60 V rated value	400 A
— at 110 V rated value	400 A
— at 220 V rated value	400 A
— at 440 V rated value	11 A
 — at 600 V rated value at 1 current path at DC-3 at DC-5 	5.2 A
	400 A
— at 24 V rated value — at 60 V rated value	11 A
— at 220 V rated value	0.6 A
— at 440 V rated value	0.18 A
— at 600 V rated value	0.125 A
with 2 current paths in series at DC-3 at DC-5	V. 14V A
- at 24 V rated value	400 A
— at 60 V rated value	400 A
— at 110 V rated value	400 A
— at 220 V rated value	2.5 A
— at 440 V rated value	0.65 A
— at 600 V rated value	0.37 A
• with 3 current paths in series at DC-3 at DC-5	
- at 24 V rated value	400 A
— at 60 V rated value	400 A
— at 110 V rated value	400 A
— at 220 V rated value	400 A
— at 440 V rated value	1.4 A
— at 600 V rated value	0.75 A
operating power	
• at AC-3	
— at 230 V rated value	160 kW
— at 400 V rated value	250 kW
— at 500 V rated value	315 kW
— at 690 V rated value	400 kW
— at 1000 V rated value	250 kW
• at AC-3e	
— at 230 V rated value	160 kW
— at 400 V rated value	250 kW
— at 500 V rated value	315 kW
— at 690 V rated value	400 kW
— at 1000 V rated value	250 kW
operating power for approx. 200000 operating cycles at AC-	
 4 ● at 400 V rated value 	00.144
at 400 V rated value at 690 V rated value	98 kW 148 kW
operating apparent power at AC-6a	
up to 230 V for current peak value n=20 rated value	160 000 kVA
• up to 400 V for current peak value n=20 rated value	280 000 VA
• up to 500 V for current peak value n=20 rated value	350 000 VA
• up to 690 V for current peak value n=20 rated value	490 000 VA
• up to 1000 V for current peak value n=20 rated value	310 000 VA
operating apparent power at AC-6a	
• up to 230 V for current peak value n=30 rated value	110 000 VA
 up to 400 V for current peak value n=30 rated value 	190 000 VA

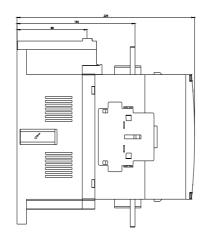
 up to 500 V for current peak value n=30 rated value 	230 000 VA			
 up to 690 V for current peak value n=30 rated value 	330 000 VA			
 up to 1000 V for current peak value n=30 rated value 	310 000 VA			
short-time withstand current in cold operating state up to 40 $^\circ\mathrm{C}$				
 limited to 1 s switching at zero current maximum 	7 484 A; Use minimum cross-section acc. to AC-1 rated value			
 limited to 5 s switching at zero current maximum 	7 484 A; Use minimum cross-section acc. to AC-1 rated value			
 limited to 10 s switching at zero current maximum 	5 978 A; Use minimum cross-section acc. to AC-1 rated value			
 limited to 30 s switching at zero current maximum 	3 765 A; Use minimum cross-section acc. to AC-1 rated value			
 limited to 60 s switching at zero current maximum 	2 887 A; Use minimum cross-section acc. to AC-1 rated value			
no-load switching frequency				
• at AC	2 000 1/h			
• at DC	2 000 1/h			
	2 000 1/11			
operating frequency	500 4 lb			
• at AC-1 maximum	500 1/h			
• at AC-2 maximum	170 1/h			
• at AC-3 maximum	420 1/h			
 at AC-3e maximum 	420 1/h			
● at AC-4 maximum	130 1/h			
Control circuit/ Control				
type of voltage of the control supply voltage	AC/DC			
control supply voltage at AC				
• at 50 Hz rated value	220 240 V			
• at 60 Hz rated value	220 240 V			
control supply voltage at DC rated value	220 240 V			
operating range factor control supply voltage rated value of magnet coil at DC				
 initial value 	0.8			
• full-scale value	1.1			
operating range factor control supply voltage rated value of				
magnet coil at AC				
• at 50 Hz	0.8 1.1			
• at 60 Hz	0.8 1.1			
design of the surge suppressor	with varistor			
apparent pick-up power				
 at minimum rated control supply voltage at AC 				
— at 50 Hz	700 VA			
— at 60 Hz	700 VA			
 at maximum rated control supply voltage at AC 				
— at 60 Hz	830 VA			
— at 50 Hz	830 VA			
apparent pick-up power of magnet coil at AC				
• at 50 Hz	830 VA			
• at 50 Hz	830 VA			
inductive power factor with closing power of the coil	0.0			
• at 50 Hz	0.9			
• at 60 Hz	0.9			
apparent holding power	0.51/4			
at minimum rated control supply voltage at DC	8.5 VA			
at maximum rated control supply voltage at DC	10 VA			
apparent holding power				
 at minimum rated control supply voltage at AC 				
— at 50 Hz	7.6 VA			
— at 60 Hz	7.6 VA			
 at maximum rated control supply voltage at AC 				
— at 50 Hz				
— at 60 Hz	9.2 VA			
inductive power factor with the holding power of the coil	9.2 VA			
inductive power factor with the holding power of the coil • at 50 Hz	9.2 VA			
	9.2 VA 9.2 VA			
• at 50 Hz	9.2 VA 9.2 VA 0.9			

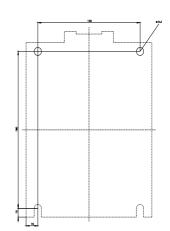
closing delay			
• at AC	45 100 ms		
• at DC	45 100 ms		
opening delay			
• at AC	60 100 ms		
• at DC	60 100 ms		
arcing time	10 15 ms		
control version of the switch operating mechanism	Standard A1 - A2		
Auxiliary circuit			
number of NC contacts for auxiliary contacts instantaneous contact	2		
number of NO contacts for auxiliary contacts instantaneous contact	2		
operational current at AC-12 maximum	10 A		
operational current at AC-15			
 at 230 V rated value 	6 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	477 A		
• at 600 V rated value	472 A		
yielded mechanical performance [hp]			
• for 3-phase AC motor			
— at 200/208 V rated value	150 hp		
— at 220/230 V rated value	200 hp		
— at 460/480 V rated value	400 hp		
— at 575/600 V rated value	500 hp		
contact rating of auxiliary contacts according to UL	A600 / Q600		
Short-circuit protection			
design of the fuse link			
 for short-circuit protection of the main circuit 			
— with type of coordination 1 required	gG: 630 A (690 V, 100 kA)		
— with type of assignment 2 required	gG: 500 A (690 V, 100 kA), aM: 500 A (690 V, 50 kA), BS88: 500 A (415 V, 50 kA)		
 for short-circuit protection of the auxiliary switch required 	gG: 10 A (500 V, 1 kA)		
Installation/ mounting/ dimensions			
mounting position	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back		
fastening method side-by-side mounting	Yes		
fastening method	screw fixing		
height	214 mm		
width	160 mm		
depth	225 mm		
uopui	LEV mill		

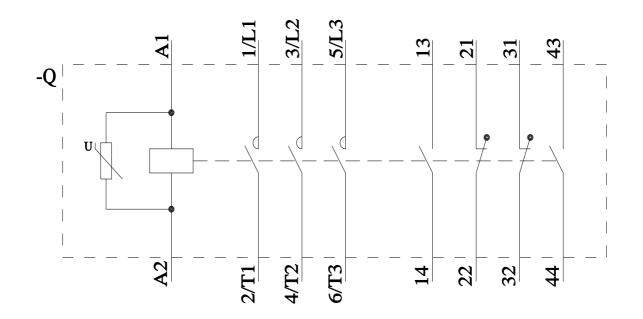
required spacing				
• with side-by-side mounting				
— forwards	20 mm			
— upwards	10 mm			
— downwards	10 mm			
— at the side	0 mm			
 for grounded parts 				
— forwards	20 mm			
— upwards	10 mm			
— at the side	10 mm			
— downwards	10 mm			
for live parts				
— forwards	20 mm			
— upwards	10 mm			
— downwards	10 mm			
— at the side	10 mm			
Connections/ Terminals				
type of electrical connection				
for main current circuit	Connection bar			
 for auxiliary and control circuit 	screw-type terminals			
 at contactor for auxiliary contacts 	Screw-type terminals			
 of magnet coil 	Screw-type terminals			
width of connection bar	25 mm			
thickness of connection bar	6 mm			
diameter of holes	11 mm			
number of holes	1			
type of connectable conductor cross-sections				
 for AWG cables for main contacts 	2/0 500 kcmil			
connectable conductor cross-section for main contacts				
stranded	70 240 mm²			
connectable conductor cross-section for auxiliary contacts				
 solid or stranded 	0.5 4 mm²			
 finely stranded with core end processing 	0.5 2.5 mm ²			
type of connectable conductor cross-sections				
 for auxiliary contacts 				
— solid	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²), max. 2x (0.75 4 mm²)			
— solid or stranded	2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²), max. 2x (0,75 4 mm²)			
 — 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), 1x 12			
AWG number as coded connectable conductor cross				
section				
 for auxiliary contacts 	18 14			
Safety related data				
product function				
 mirror contact according to IEC 60947-4-1 	Yes			
 positively driven operation according to IEC 60947-5-1 	No			
suitable for safety function	Yes			
suitability for use safety-related switching OFF	Yes			
service life maximum	20 a			
test wear-related service life necessary	Yes			
proportion of dangerous failures				
• with low demand rate according to SN 31920	40 %			
• with high demand rate according to SN 31920	73 %			
B10 value with high demand rate according to SN 31920	1 000 000			
failure rate [FIT] with low demand rate according to SN	100 FIT			
31920				
ISO 13849				
device type according to ISO 13849-1	3			
overdimensioning according to ISO 13849-2 necessary	Yes			
IEC 61508				
safety device type according to IEC 61508-2	Туре А			

Electrical Safety					
protection class IP on the front according to IEC 60529		EC 60529	00; IP20 with box terminal/c	over	
ouch protection on th	ne front according to IEC	; 60529 fir	ger-safe, for vertical contac	t from the front with box te	erminal/cover
provals Certificates					
General Product App	roval				
			Confirmation	-	
	CE EG-Konf.	UK CA	Commation		EHC
EMV	Functional Saftey	Test Certificates			Marine / Shipping
RCM	Type Examination Cer- tificate	<u>Special Test Certific</u> <u>ate</u>	<u>- Type Test Certific-</u> ates/Test Report	<u>Miscellaneous</u>	ABS
Marine / Shipping				other	
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