## 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	
<ul> <li>function module for communication</li> </ul>	No
auxiliary switch	Yes
power loss [W] for rated value of the current	
<ul> <li>at AC in hot operating state</li> </ul>	165 W
<ul> <li>at AC in hot operating state per pole</li> </ul>	55 W
<ul> <li>without load current share typical</li> </ul>	10 W
type of calculation of power loss depending on pole	quadratic
insulation voltage	
<ul> <li>of main circuit with degree of pollution 3 rated value</li> </ul>	1 000 V
<ul> <li>of auxiliary circuit with degree of pollution 3 rated value</li> </ul>	500 V
surge voltage resistance	
<ul> <li>of main circuit rated value</li> </ul>	8 kV
<ul> <li>of auxiliary circuit rated value</li> </ul>	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)	
<ul> <li>of contactor typical</li> </ul>	10 000 000
<ul> <li>of the contactor with added electronically optimized auxiliary switch block typical</li> </ul>	5 000 000
<ul> <li>of the contactor with added auxiliary switch block typical</li> </ul>	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	
<ul> <li>at AC-3 rated value maximum</li> </ul>	1 000 V
<ul> <li>at AC-3e rated value maximum</li> </ul>	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
<ul> <li>at AC-5a up to 690 V rated value</li> </ul>	430 A 536 A
<ul> <li>at AC-5a up to 690 v rated value</li> <li>at AC-5b up to 400 V rated value</li> </ul>	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
<ul> <li>— up to 1000 V for current peak value n=30 rated value</li> </ul>	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

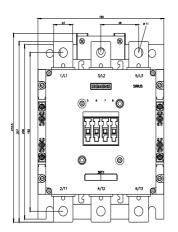
— at 600 V rated value	0.6 A
• with 2 current paths in series at DC-1	400.4
— at 24 V rated value	400 A
— at 60 V rated value	400 A
— at 110 V rated value	400 A
— at 220 V rated value	400 A
— at 440 V rated value	4 A
— at 600 V rated value	2 A
with 3 current paths in series at DC-1	400 A
— at 24 V rated 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
<ul> <li>— at 600 V rated value</li> <li>at 1 current path at DC-3 at DC-5</li> </ul>	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-	
<ul> <li>4</li> <li>● at 400 V rated value</li> </ul>	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
<ul> <li>up to 400 V for current peak value n=30 rated value</li> </ul>	190 000 VA

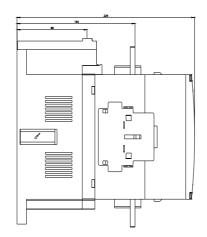
<ul> <li>up to 500 V for current peak value n=30 rated value</li> </ul>	230 000 VA			
<ul> <li>up to 690 V for current peak value n=30 rated value</li> </ul>	330 000 VA			
<ul> <li>up to 1000 V for current peak value n=30 rated value</li> </ul>	310 000 VA			
short-time withstand current in cold operating state up to 40 $^\circ\mathrm{C}$				
<ul> <li>limited to 1 s switching at zero current maximum</li> </ul>	7 484 A; Use minimum cross-section acc. to AC-1 rated value			
<ul> <li>limited to 5 s switching at zero current maximum</li> </ul>	7 484 A; Use minimum cross-section acc. to AC-1 rated value			
<ul> <li>limited to 10 s switching at zero current maximum</li> </ul>	5 978 A; Use minimum cross-section acc. to AC-1 rated value			
<ul> <li>limited to 30 s switching at zero current maximum</li> </ul>	3 765 A; Use minimum cross-section acc. to AC-1 rated value			
<ul> <li>limited to 60 s switching at zero current maximum</li> </ul>	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			
<ul> <li>at AC-3e maximum</li> </ul>	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				
<ul> <li>initial value</li> </ul>	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				
<ul> <li>at minimum rated control supply voltage at AC</li> </ul>				
— at 50 Hz	700 VA			
— at 60 Hz	700 VA			
<ul> <li>at maximum rated control supply voltage at AC</li> </ul>				
— 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				
<ul> <li>at minimum rated control supply voltage at AC</li> </ul>				
— at 50 Hz	7.6 VA			
— at 60 Hz	7.6 VA			
<ul> <li>at maximum rated control supply voltage at AC</li> </ul>				
— 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			

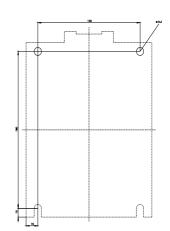
closing delay			
• at AC	45 100 ms		
• at DC	45 100 ms		
opening delay			
• at AC	60 100 ms		
• at DC	60 100 ms		
arcing time	10 15 ms		
control version of the switch operating mechanism	Standard A1 - A2		
Auxiliary circuit			
number of NC contacts for auxiliary contacts instantaneous contact	2		
number of NO contacts for auxiliary contacts instantaneous contact	2		
operational current at AC-12 maximum	10 A		
operational current at AC-15			
<ul> <li>at 230 V rated value</li> </ul>	6 A		
<ul> <li>at 400 V rated value</li> </ul>	3 A		
<ul> <li>at 500 V rated value</li> </ul>	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		
<ul> <li>at 125 V rated value</li> </ul>	2 A		
<ul> <li>at 220 V rated value</li> </ul>	1 A		
• at 600 V rated value	0.15 A		
operational current at DC-13			
<ul> <li>at 24 V rated value</li> </ul>	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			
<ul> <li>for short-circuit protection of the main circuit</li> </ul>			
— 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)		
<ul> <li>for short-circuit protection of the auxiliary switch required</li> </ul>	gG: 10 A (500 V, 1 kA)		
Installation/ mounting/ dimensions			
mounting position	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- $22.5^\circ$ 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		

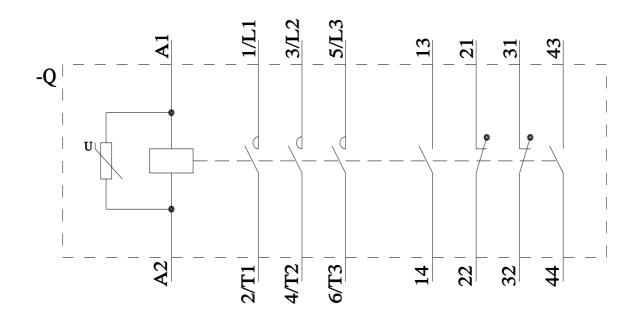
required spacing				
• with side-by-side mounting				
— forwards	20 mm			
— upwards	10 mm			
— downwards	10 mm			
— at the side	0 mm			
<ul> <li>for grounded parts</li> </ul>				
— forwards	20 mm			
— upwards	10 mm			
— at the side	10 mm			
— downwards	10 mm			
for live parts				
— forwards	20 mm			
— upwards	10 mm			
— downwards	10 mm			
— at the side	10 mm			
Connections/ Terminals				
type of electrical connection				
for main current circuit	Connection bar			
<ul> <li>for auxiliary and control circuit</li> </ul>	screw-type terminals			
<ul> <li>at contactor for auxiliary contacts</li> </ul>	Screw-type terminals			
<ul> <li>of magnet coil</li> </ul>	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				
<ul> <li>for AWG cables for main contacts</li> </ul>	2/0 500 kcmil			
connectable conductor cross-section for main contacts				
stranded	70 240 mm²			
connectable conductor cross-section for auxiliary contacts				
<ul> <li>solid or stranded</li> </ul>	0.5 4 mm²			
<ul> <li>finely stranded with core end processing</li> </ul>	0.5 2.5 mm <sup>2</sup>			
type of connectable conductor cross-sections				
<ul> <li>for auxiliary contacts</li> </ul>				
— 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)			
<ul> <li>— finely stranded with core end processing</li> </ul>	2x (0.5 1.5 mm <sup>2</sup> ), 2x (0.75 2.5 mm <sup>2</sup> )			
<ul> <li>for AWG cables for auxiliary contacts</li> </ul>	2x (20 16), 2x (18 14), 1x 12			
AWG number as coded connectable conductor cross				
section				
<ul> <li>for auxiliary contacts</li> </ul>	18 14			
Safety related data				
product function				
<ul> <li>mirror contact according to IEC 60947-4-1</li> </ul>	Yes			
<ul> <li>positively driven operation according to IEC 60947-5-1</li> </ul>	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	<b>; 60529</b> 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	
	Lloyd's Register uis	PRS	RMRS	<u>Miscellaneous</u>	<u>Confirmation</u>
other		Railway	Environment		
<u>Confirmation</u>	<u>Miscellaneous</u>	<u>Special Test Certific</u> <u>ate</u>	Siemens EcoTech	EPD	Environmental Con firmations
rther information					
	<u>siemens.com/cs/ww/en/vi</u> nloadcenter (Catalogs, E				
ndustry Mall (Online		alog/product?mlfb=3R	<u> </u>		
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mage database (prod		on drawings, 3D mod	els, device circuit diagram 6-6AP36⟨=en	ns, EPLAN macros,)	
	ng characteristics, I <sup>2</sup> t, Le siemens.com/cs/ww/en/ps		<u>r</u>		
unther characteristi-	s (e.g. electrical endurar		noul		









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