SIEMENS

Data sheet 3RT1076-2AF36

SIRIUS





power contactor, AC-3e/AC-3 500 A, 250 kW / 400 V AC (50-60 Hz) / DC Uc: 110-127 V 3-pole, auxiliary contacts 2 NO + 2 NC drive: conventional main circuit: busbar control and auxiliary circuit: spring-loaded terminal



product brand name	SINIUS		
product designation	Power contactor		
product type designation	3RT1		
General technical data			
size of contactor	S12		
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	10.58 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			
Global Warming Potential [CO2 eq] total	769 kg		
Global Warming Potential [CO2 eq] during manufacturing	55.8 kg		
global warming potential [CO2 eq] during sales	2.54 kg		
Global Warming Potential [CO2 eq] during operation	718 kg		
Global Warming Potential [CO2 eq] after end of life	-7.03 kg		
Siemens Eco Profile (SEP)	Siemens EcoTech		
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 value 	610 A		
• at AC-1			
— up to 690 V at ambient temperature 40 $^{\circ}\text{C}$ rated value	610 A		
— up to 690 V at ambient temperature 60 $^{\circ}\text{C}$ 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			
— 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-4 at 400 V rated value	430 A		
at AC-5a up to 690 V rated value	536 A		
at AC-5b up to 400 V rated value	415 A		
• at AC-6a	444.0		
— 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 690 V for current peak value n=20 rated value	414 A		
 up to 1000 V for current peak value n=20 rated value 	180 A		
• 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 areas assting in main singuit at maying up AC 4 rated			
minimum cross-section in main circuit at maximum AC-1 rated value	370 mm²		
	370 mm²		
value operational current for approx. 200000 operating cycles at	370 mm ² 175 A 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	
— 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	
— 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	5.2 A
• at 1 current path at DC-3 at DC-5	
— at 24 V rated value	400 A
— 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 	
— 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-	
• at 400 V rated value	98 kW
• at 690 V rated value	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 °C				
Ilmited 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				
limited to 60 s switching at zero current maximum	3 765 A; Use minimum cross-section acc. to AC-1 rated value 2 887 A; Use minimum cross-section acc. to AC-1 rated value			
no-load switching frequency	2 33.7. 9 300 minimum 3/300 social aco. to 7/0 Trated Value			
• at AC	2 000 1/h			
• at DC	2 000 1/h			
operating frequency				
• 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	110 127 V			
at 60 Hz rated value	110 127 V			
control supply voltage at DC rated value	110 127 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 60 Hz	830 VA			
inductive power factor with closing power of the coil	0.0			
• at 50 Hz	0.9			
at 60 Hz apparent holding power	0.9			
at minimum rated control supply voltage at DC	8.5 VA			
at minimum rated control supply voltage at DC at maximum rated control supply voltage at DC	10 VA			
apparent holding power	IV VA			
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 maximum mass control supply voltage at Ac				

. = 0	0.01/4		
— at 50 Hz	9.2 VA		
— at 60 Hz	9.2 VA		
inductive power factor with the holding power of the coil			
● at 50 Hz	0.9		
● at 60 Hz	0.9		
closing power of magnet coil at DC	920 W		
holding power of magnet coil at DC	10 W		
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	2		
contact			
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	0.1071		
at 24 V rated value	10 A		
• at 48 V rated value	2 A		
	2 A		
at 10 V rated value	1 A		
at 110 V rated value at 125 V rated value			
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)		

nstallation/ 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		
required spacing			
with side-by-side mounting			
— forwards	20 mm		
— upwards	10 mm		
— downwards	10 mm		
— at the side	0 mm		
for grounded parts	V 11111		
— forwards	20 mm		
	10 mm		
— upwards			
— at the side	10 mm		
— downwards	10 mm		
• for live parts	00		
— 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 	spring-loaded terminals		
 at contactor for auxiliary contacts 	Spring-type terminals		
of magnet coil	Spring-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	0.25 2.5 mm²		
finely stranded with core end processing	0.25 1.5 mm ²		
finely stranded without core end processing finely stranded without core end processing	0.25 2.5 mm ²		
type of connectable conductor cross-sections	0.20 2.0 Hilli		
for auxiliary contacts	2v (0.25 2.5 mm²)		
— solid	2x (0.25 2.5 mm²)		
— solid or stranded	2x (0,25 2,5 mm²)		
— finely stranded with core end processing	2x (0.25 1.5 mm²)		
— finely stranded without core end processing	2x (0.25 2.5 mm²)		
for AWG cables for auxiliary contacts	2x (24 14)		
AWG number as coded connectable conductor cross section			
for auxiliary contacts	24 14		
afety 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		
service life maximum test wear-related service life necessary	Yes		

 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 31920	100 FIT			
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	Type A			
Electrical Safety				
protection class IP on the front according to IEC 60529	IP00; IP20 with box terminal/cover			
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front with box terminal/cover			
Approvals Certificates				



General Product Approval

Confirmation









EMV Functional Saftey Test Certificates Marine / Shipping



Type Examination Certificate

Type Test Certificates/Test Report

Special Test Certificate





Marine / Shipping other









Confirmation

Miscellaneous

Confirmation

other Railway Environment

Miscellaneous

Special Test Certificate



Siemens EcoTech



Environmental Confirmations

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=3RT1076-2AF36

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1076-2AF36

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

https://support.industry.siemens.com/cs/ww/en/ps/3RT1076-2AF36

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

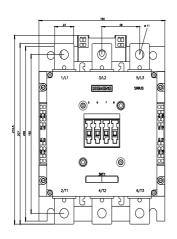
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1076-2AF36&lang=en

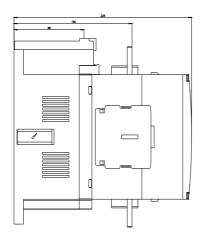
Characteristic: Tripping characteristics, I²t, Let-through current

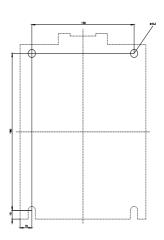
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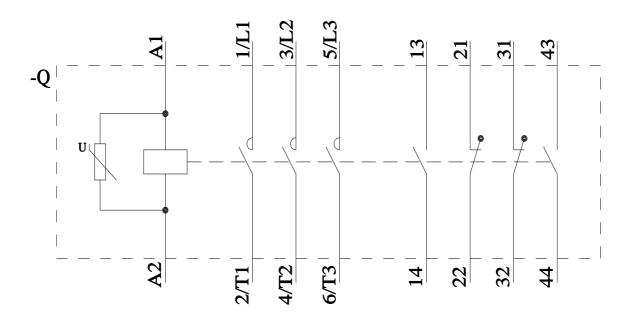
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1076-2AF36&objecttype=14&gridview=view1









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