SIEMENS

Data sheet

3RT1054-1XB46-0LA2



power contactor, AC-3e/AC-3 115 A, 55 kW / 400 V, Uc: 24 V DC x (0.7-1.25) PLC input 24-110 V DC 3-pole, auxiliary contacts 2 NO + 2 NC drive: electronic main circuit: box terminal control and auxiliary circuit: screw terminal

product brand name					
product designation	SIRIUS				
design of the product	With extended operating range				
product type designation	viilin extended operating range				
General technical data					
	50				
product extension					
tunction module for communication	No				
auxiliary switch	Yes				
power loss [W] for rated value of the current					
at AC in hot operating state	21 W				
at AC in hot operating state per pole	7 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 for railway applications according to EN 61373	Category 1, Class B				
shock resistance at rectangular impulse					
• at DC	8,5g / 5 ms, 4,2g / 10 ms				
shock resistance with sine pulse					
• 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)	09/06/2016				
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7 Melamine - 108-78-1 Perfluorobutane sulfonic acid (PFBS) and its salts				
Weight	3.649 kg				
Ambient conditions					
installation altitude at height above sea level maximum	2 000 m				
ambient temperature					

 during operation 	-40 +70 °C	
during storage	-55 +80 °C	
relative humidity minimum	10 %	
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %	
Main circuit		
number of poles for main current circuit	3	
number of NO contacts for main contacts	3	
number of NC contacts for main contacts	0	
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 	160 A	
value ● at AC-1		
— up to 690 V at ambient temperature 40 °C rated value	160 A	
— up to 690 V at ambient temperature 60 °C rated value	140 A	
— up to 1000 V at ambient temperature 60 °C rated value	A 08	
• at AC-2 at 400 V rated value	115 A	
• at AC-3		
— at 400 V rated value	115 A	
— at 500 V rated value	115 A	
— at 690 V rated value	115 A	
— at 1000 V rated value	53 A	
● at AC-3e		
— at 400 V rated value	115 A	
— at 500 V rated value	115 A	
— at 690 V rated value	115 A	
— at 1000 V rated value	53 A	
• at AC-4 at 400 V rated value	97 A	
minimum cross-section in main circuit		
 at maximum AC-1 rated value 	70 mm²	
 at maximum Ith rated value 	70 mm ²	
operational current for approx. 200000 operating cycles at AC-4		
• at 400 V rated value	54 A	
● at 690 V rated value	48 A	
operational current		
 at 1 current path at DC-1 		
— at 24 V rated value	160 A	
— at 110 V rated value	18 A	
— at 220 V rated value	3.4 A	
— at 440 V rated value	0.8 A	
— at 600 V rated value	0.5 A	
 with 2 current paths in series at DC-1 		
— at 24 V rated value	160 A	
— at 110 V rated value	160 A	
— at 220 V rated value	20 A	
- at 440 v rated value	3.2 A	
- at out v rated value	1.0 A	
with 3 current paths in series at DC-1	160 A	
- at 24 v rated value	100 A	
- at 110 v rated value	160 A	
- at 220 v rated value	11.5.0	
- at 440 V rated value		
- at 000 v rated value		
- at 24 V rated value	160 A	

— at 110 V rated value	2.5 A				
— at 220 V rated value	0.6 A				
— at 440 V rated value	0.17 A				
— at 600 V rated value	0.12 A				
 with 2 current paths in series at DC-3 at DC-5 					
— at 24 V rated value	160 A				
— at 110 V rated value	160 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	160 A				
— at 110 V rated value	160 A				
— at 220 V rated value	160 A				
— at 440 V rated value	14 A				
— at 600 V rated value	0.75 Δ				
• at AC-2 at 400 V rated value	55 k/M				
	55 KW				
• at AC-3	27 140/				
- at 250 V fated value					
- at 400 V rated value					
- at 500 V rated value	75 KW				
- at 690 V rated value	110 KW				
	75 KVV				
• at AC-3e					
- at 230 V rated value	37 KW				
- at 400 V rated value	55 KW				
— at 500 V rated value	75 KW				
— at 690 V rated value	110 kW				
— at 1000 V rated value	75 KW				
operating power for approx. 200000 operating cycles at AC-					
• at 400 V rated value	29 kW				
at 690 V rated value	48 kW				
short-time withstand current in cold operating state up to					
40 °C					
 limited to 1 s switching at zero current maximum 	2 565 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 5 s switching at zero current maximum 	1 654 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 10 s switching at zero current maximum 	1 170 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 30 s switching at zero current maximum 	729 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 60 s switching at zero current maximum 	572 A; Use minimum cross-section acc. to AC-1 rated value				
no-load switching frequency					
• at DC	1 000 1/h				
operating frequency					
 at AC-1 maximum 	800 1/h				
• at AC-2 maximum	400 1/h				
• at AC-3 maximum	1 000 1/h				
• at AC-3e maximum	1 000 1/h				
• at AC-2 at AC-3e maximum	400 1/h				
• at AC-4 maximum	130 1/h				
operating frequency					
● at DC-1 maximum	400 1/h				
• at DC-3 maximum	500 1/h				
● at DC-5 maximum	500 1/h				
Ratings for railway applications					
thermal current (Ith) up to 690 V					
• up to 40 °C according to IEC 60077 rated value	160 A				
• up to 70 °C according to IEC 60077 rated value	120 A				
Control circuit/ Control					
type of voltage	DC				
type of voltage of the control supply voltage	DC				
Spe Strende et ale control cuppin foldage					

control supply voltage at DC rated value	24 V			
operating range factor control supply voltage rated value of magnet coil at DC				
initial value	0.7			
• full-scale value	1.25			
consumed current at PLC-control input according to IEC 60947-1 maximum	2 mA			
voltage at PLC-control input	24 110 V			
design of the surge suppressor	with varistor			
closing power of magnet coil at DC	320 W			
holding power of magnet coil at DC	2.8 W			
closing delay				
● at DC	35 75 ms			
opening delay				
• at DC	80 90 ms			
arcing time	10 15 ms			
control version of the switch operating mechanism	PLC-IN or Standard A1 - A2 (adjustable)			
Auxiliary circuit				
number of NC contacts for auxiliary contacts	2			
instantaneous contact	2			
number of NO contacts for auxiliary contacts	2			
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			
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				
• at 600 V rated value	0.15 A			
operational current at DC-13				
at 24 V rated value	6 A			
at 48 V rated value	2.4			
• at 60 V fated value				
• at 125 V rated value				
	0.9 A			
	0.1 A			
design of the miniature circuit breaker for short-circuit protection	C characteristic: 10 A: 0.4 kA			
of the auxiliary crucit up to 230 V				
full load automate (FLA) for 0 minutes AO				
iuii-iuau current (FLA) for 3-phase AC motor	104 A			
at 480 V rated value	124 A			
• at 600 v lated value	125 A			
s for single phase AC motor				
 Initiate AC Intition at 230 V rated value 	25 hn			
for 3-phase AC motor	2011			
- at 200/208 V rated value	40 hn			
- at 200/200 V rated value	50 hp			
- at 460/480 V rated value	100 hp			
- at 575/600 V rated value	125 hn			
contact rating of auxiliary contacts according to III	A600 / Q600			
Short-circuit protection				
design of the fuse link				

 — with type of coordination 1 required 	gG: 355 A (690 V, 100 kA)				
— with type of assignment 2 required	gG: 315 A (690 V, 100 kA), aM: 200 A (690 V, 50 kA), BS88: 250 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	172 mm				
width	120 mm				
depth	170 mm				
required spacing					
 with side-by-side mounting 					
— forwards	20 mm				
— upwards	10 mm				
— downwards	10 mm				
— at the side	10 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	screw-type terminals				
 for auxiliary and control circuit 	screw-type terminals				
width of connection bar	17 mm				
thickness of connection bar	3 mm				
diameter of holes	9 mm				
number of holes	1				
type of connectable conductor cross-sections for main contacts					
● stranded	max. 2x 70 mm ²				
 solid or stranded 	max. 1x 50, 1x 70 mm ²				
 finely stranded with core end processing 	max. 1x 50, 1x 70 mm ²				
 finely stranded without core end processing 	max. 1x 50, 1x 70 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 mm²), 2x (0.75 2.5 mm²)				
 for AWG cables for auxiliary contacts 	2x (20 16), 2x (18 14), 1x 12				
AWG number as coded connectable conductor cross section					
 for main contacts 	6				
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; safety-related disconnection via A1 A2				
service life maximum	20 a				
test wear-related service life necessary	Yes				
proportion of dangerous failures					

• 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	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						
safety device type ac	cording to IEC 61508-2		Туре А			
Electrical Safety						
protection class IP or	n the front according to I	EC 60529	IP20			
touch protection on t	he front according to IEC	60529	finger-safe	e, for vertical cor	tact from the front	
Communication/ Proto	col					
product function bus	communication		No			
Approvals Certificates						
General Product App	roval					
CCC	UK CA	CE EG-Konf.		(ال س	KC	EHC
EMV	Functional Saftey	Test Certificate	es	other		
RCM	<u>Type Examination Cer-</u> <u>tificate</u>	Special Test Certific- ate		ype Test Certific ates/Test Report	<u>Confirmation</u>	<u>Miscellaneous</u>
other	Railway		Er	nvironment		
<u>Miscellaneous</u>	Type Test Certific- ates/Test Report	Special Test Ce ate	ertific- E	nvironmental Co firmations	<u>D-</u>	
Further information						
Information on the pa https://support.industry Information- and Dow https://www.siemens.cc Industry Mall (Online	ckaging .siemens.com/cs/ww/en/vio mloadcenter (Catalogs, E om/ic10	ew/109813875 Brochures,)				

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http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1054-1XB46-0LA2

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-1XB46-0LA2

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1054-1XB46-0LA2&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-1XB46-0LA2/char

Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1054-1XB46-0LA2&objecttype=14&gridview=view1









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