3RT1055-2XB46-0LA2

Data sheet



power contactor, AC-3e/AC-3 150 A, 75 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: busbar control and auxiliary circuit: spring-loaded terminal extended rated condition railroad IEC 60077

product brand name	SIRIUS
product designation	Power contactor
design of the product	With extended operating range
product type designation	3RT1
General technical data	
size of contactor	S6
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 	27 W
at AC in hot operating state per pole	9 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	3.411 kg
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
ambient temperature	

during operation	-40 +70 °C
during operation during storage	-55 +80 °C
relative humidity minimum	10 %
relative humidity at 55 °C according to IEC 60068-2-30	95 %
maximum	33 /8
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 value at AC-1 	185 A
— up to 690 V at ambient temperature 40 $^{\circ}\text{C}$ rated value	185 A
— up to 690 V at ambient temperature 60 $^{\circ}\text{C}$ rated value	160 A
— up to 1000 V at ambient temperature 60 $^{\circ}\text{C}$ rated value	90 A
• at AC-2 at 400 V rated value	150 A
• at AC-3	
— at 400 V rated value	150 A
— at 500 V rated value	150 A
— at 690 V rated value	150 A
— at 1000 V rated value	65 A
• at AC-3e	
— at 400 V rated value	150 A
— at 500 V rated value	150 A 150 A
— at 690 V rated value — at 1000 V rated value	65 A
at AC-4 at 400 V rated value	132 A
minimum cross-section in main circuit	
at maximum AC-1 rated value	95 mm²
at maximum Ith rated value	95 mm²
operational current for approx. 200000 operating cycles at AC-4	
at 400 V rated value	68 A
• at 690 V rated value	57 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 600 V rated value	1.6 A
with 3 current paths in series at DC-1 at 24 V roted value.	160 A
— at 24 V rated value	160 A 160 A
— at 110 V rated value— at 220 V rated value	160 A
— at 440 V rated value	11.5 A
— at 440 V rated value — at 600 V rated value	4 A
at 1 current path at DC-3 at DC-5	7.1
— at 24 V rated value	160 A

1440.77	0.5.4
— 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	1.4 A
— at 600 V rated value	0.75 A
operating power	
• at AC-2 at 400 V rated value	75 kW
• at AC-3	
— at 230 V rated value	50 kW
— at 400 V rated value	75 kW
— at 500 V rated value	90 kW
— at 690 V rated value	132 kW
— at 1000 V rated value	90 kW
• at AC-3e	
— at 230 V rated value	50 kW
— at 400 V rated value	75 kW
— at 500 V rated value	90 kW
— at 690 V rated value	132 kW
— at 1000 V rated value	90 kW
operating power for approx. 200000 operating cycles at AC-	
4	
at 400 V rated value	38 kW
at 690 V rated value	55 kW
short-time withstand current in cold operating state up to 40 °C	
 limited to 1 s switching at zero current maximum 	2 727 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	1 831 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	1 300 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 30 s switching at zero current maximum 	850 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 60 s switching at zero current maximum 	703 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	300 1/h
• at AC-3 maximum	750 1/h
• at AC-3e maximum	750 1/h
• at AC-2 at AC-3e maximum	300 1/h
• at AC-4 maximum	130 1/h
operating frequency	
• at DC-1 maximum	400 1/h
• at DC-3 maximum	350 1/h
• at DC-5 maximum	350 1/h
Ratings for railway applications	
thermal current (Ith) up to 690 V	
• up to 40 °C according to IEC 60077 rated value	185 A
• up to 70 °C according to IEC 60077 rated value	140 A
Control circuit/ Control	
type of voltage	DC
type of voltage of the control supply voltage	DC
No company of the control of the con	

control cumply voltage at DC rated value	24 \/
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	2 mA
60947-1 maximum	ZIIIA
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-12 maximum	ivit
at 230 V rated value	6 A
at 400 V rated value	3 A
	2 A
at 500 V rated value	ZA
operational current at DC-12	40 A
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	6 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
UL/CSA ratings	
full-load current (FLA) for 3-phase AC motor	
• at 480 V rated value	156 A
at 600 V rated value	144 A
yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 230 V rated value	30 hp
• for 3-phase AC motor	
— at 200/208 V rated value	50 hp
— at 220/230 V rated value	60 hp
— at 460/480 V rated value	125 hp
— at 575/600 V rated value	150 hp
contact rating of auxiliary contacts according to UL	A600 / Q600
Short-circuit protection	
design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V	C characteristic: 10 A; 0.4 kA
design of the fuse link	
for short-circuit protection of the main circuit	
,	

with type of coordination 1 required	aG: 355 A (600 \/ 100 kA)
— with type of coordination 1 required— with type of assignment 2 required	gG: 355 A (690 V, 100 kA) gG: 315 A (690 V, 100 kA), aM: 200 A (690 V, 50 kA), BS88: 315 A (415 V, 50
— with type of assignment 2 required	gG. 315 A (690 V, 100 KA), am. 200 A (690 V, 50 KA), BS88. 315 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 depth	120 mm 170 mm
required spacing	170 111111
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	spring-loaded 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	0., (05 400 mm²)
solid or stranded tune of connectable conductor cross sections	2x (25 120 mm²)
type of connectable conductor cross-sections	
for auxiliary contacts solid	2v (0.25 2.5 mm²)
— solid — solid or stranded	2x (0.25 2.5 mm²) 2x (0,25 2,5 mm²)
— solid or stranded — finely stranded with core end processing	2x (0,25 2,5 mm²) 2x (0.25 1.5 mm²)
— finely stranded with core end processing — finely stranded without core end processing	2x (0.25 1.5 mm²) 2x (0.25 2.5 mm²)
for AWG cables for auxiliary contacts	2x (0.23 2.3 mm) 2x (24 14)
AWG number as coded connectable conductor cross	<u></u>
section	
for auxiliary contacts	24 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
	00
service life maximum	20 a
service life maximum test wear-related service life necessary	20 a Yes
test wear-related service life necessary	
test wear-related service life necessary proportion of dangerous failures • with low demand rate according to SN 31920 • with high demand rate according to SN 31920	Yes
test wear-related service life necessary proportion of dangerous failures • with low demand rate according to SN 31920	Yes 40 %

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	
Communication/ Protocol		
product function bus communication	No	
Approvals Certificates		

General Product Approval









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EMV Functional Saftey Test Certificates other



Type Examination Certificate Special Test Certificate Type Test Certificates/Test Report

Confirmation

Miscellaneous

other Railway Environment

 Miscellaneous
 Special Test Certificate
 Type Test Certificate
 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=3RT1055-2XB46-0LA2

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1055-2XB46-0LA2

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT1055-2XB46-0LA2

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

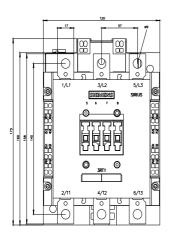
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1055-2XB46-0LA2&lang=en

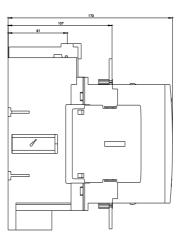
Characteristic: Tripping characteristics, I2t, Let-through current

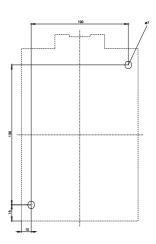
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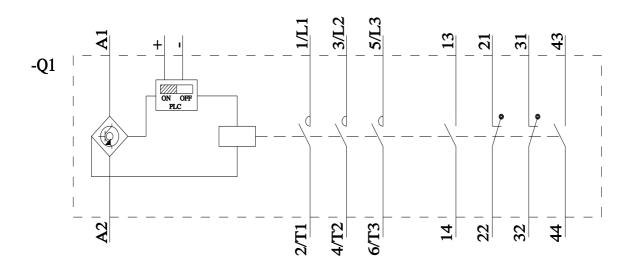
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1055-2XB46-0LA2&objecttype=14&gridview=view1









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