3RT1055-6XB46-0LA2

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: screw 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
 without load current share typical 	2.8 W
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
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 %

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	185 A
 at AC-1 up to 690 V at ambient temperature 40 °C rated value 	185 A
— up to 690 V at ambient temperature 60 °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 valueat AC-3	150 A
— 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 • at AC-3e	65 A
— 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	052
at maximum AC-1 rated value	95 mm²
at maximum Ith rated value	95 mm ²
operational current for approx. 200000 operating cycles at	
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 rated value	160 A
— at 27 v rated value	160 A
— at 110 V rated value	10071
— at 110 V rated value	160 A
— at 220 V rated value	160 A
— at 220 V rated value— at 440 V rated value	11.5 A
at 220 V rated valueat 440 V rated valueat 600 V rated value	
 at 220 V rated value at 440 V rated value at 600 V rated value at 1 current path at DC-3 at DC-5 	11.5 A 4 A
 at 220 V rated value at 440 V rated value at 600 V rated value at 1 current path at DC-3 at DC-5 at 24 V rated value 	11.5 A 4 A 160 A
 at 220 V rated value at 440 V rated value at 600 V rated value at 1 current path at DC-3 at DC-5 at 24 V rated value at 110 V rated value 	11.5 A 4 A 160 A 2.5 A
 at 220 V rated value at 440 V rated value at 600 V rated value at 1 current path at DC-3 at DC-5 at 24 V rated value at 110 V rated value at 220 V rated value 	11.5 A 4 A 160 A 2.5 A 0.6 A
 at 220 V rated value at 440 V rated value at 600 V rated value at 1 current path at DC-3 at DC-5 at 24 V rated value at 110 V rated value 	11.5 A 4 A 160 A 2.5 A

— 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 — at 690 V rated value	132 kW
— at 1000 V rated value — at 1000 V rated value	90 kW
operating power for approx. 200000 operating cycles at AC-	90 KVV
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	
• at DC-5 maximum	350 1/h
	350 1/h 350 1/h
Ratings for railway applications	
thermal current (Ith) up to 690 V	350 1/h
thermal current (Ith) up to 690 V • up to 40 °C according to IEC 60077 rated value	350 1/h 185 A
thermal current (Ith) up to 690 V up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value	350 1/h
thermal current (Ith) up to 690 V up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control	350 1/h 185 A 140 A
thermal current (Ith) up to 690 V up to 40 °C according to IEC 60077 rated value up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage	350 1/h 185 A 140 A DC
thermal current (Ith) up to 690 V • up to 40 °C according to IEC 60077 rated value • up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage	350 1/h 185 A 140 A
thermal current (Ith) up to 690 V • up to 40 °C according to IEC 60077 rated value • up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC	350 1/h 185 A 140 A DC DC
thermal current (Ith) up to 690 V • up to 40 °C according to IEC 60077 rated value • up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC • rated value	350 1/h 185 A 140 A DC
thermal current (Ith) up to 690 V • up to 40 °C according to IEC 60077 rated value • up to 70 °C according to IEC 60077 rated value Control circuit/ Control type of voltage type of voltage of the control supply voltage control supply voltage at DC	350 1/h 185 A 140 A DC DC

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 at 400 V rated value	3 A
• at 500 V rated value	2 A
operational current at DC-12	40.4
• 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	
product function short circuit protection	No
design of the fuse link	
for short-circuit protection of the main circuit	
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: 315 A (415 V, 50 kA)
• for short-circuit protection of the auxiliary switch required Installation/ mounting/ dimensions	gG: 10 A (500 V, 1 kA)
mstanation/ mounting/ unitensions	

mounting position	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
fastening method	screw fixing
side-by-side mounting	Yes
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
onnections/ 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	
solid or stranded	2x (25 120 mm²)
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 auxiliary contacts	18 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
B10 value with high demand rate according to SN 31920	1 000 000
T1 value for proof test interval or service life according to IEC 61508	20 a
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
ommunication/ Protocol	
ommunication/ Protocol product function bus communication	No



Confirmation





<u>KC</u>



EMC

Functional Safety/Safety of Machinery

Declaration of Conformity

Test Certificates



Type Examination Certificate





Type Test Certificates/Test Report

Special Test Certificate

other Railway

<u>Miscellaneous</u> <u>Confirmation</u> <u>Miscellaneous</u> <u>Vibration and Shock</u> <u>Type Test Certificates/Test Report</u> <u>Special Test Certificates/Test Report</u> <u>ate</u>

Further information

Siemens has decided to exit the Russian market (see here).

https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

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=3RT1055-6XB46-0LA2

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1055-6XB46-0LA2

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT1055-6XB46-0LA2

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

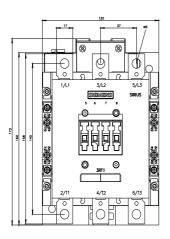
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1055-6XB46-0LA2&lang=en

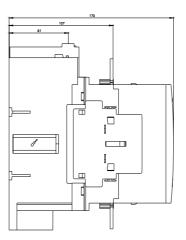
Characteristic: Tripping characteristics, I2t, Let-through current

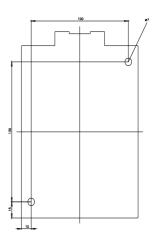
https://support.industry.siemens.com/cs/ww/en/ps/3RT1055-6XB46-0LA2/char

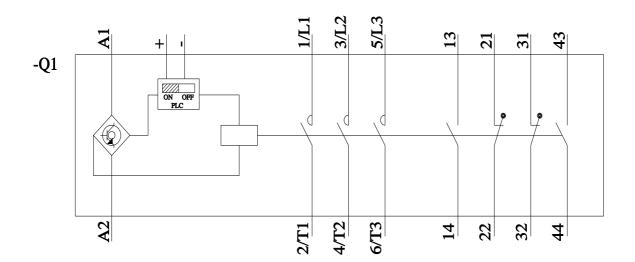
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1055-6XB46-0LA2&objecttype=14&gridview=view1









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