



power contactor, AC-3e/AC-3 300 A, 160 kW / 400 V, U_c : 110 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	S10
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	66 W
• at AC in hot operating state per pole	22 W
• without load current share typical	3.4 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 safe isolation 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 (switching 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	95 %

maximum

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	330 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	330 A
— up to 690 V at ambient temperature 60 °C rated value	300 A
— up to 1000 V at ambient temperature 60 °C rated value	150 A
• at AC-2 at 400 V rated value	300 A
• at AC-3	
— at 400 V rated value	300 A
— at 500 V rated value	300 A
— at 690 V rated value	280 A
— at 1000 V rated value	95 A
• at AC-3e	
— at 400 V rated value	300 A
— at 500 V rated value	300 A
— at 1000 V rated value	95 A
• at AC-4 at 400 V rated value	280 A
minimum cross-section in main circuit	
• at maximum AC-1 rated value	185 mm ²
• at maximum Ith rated value	185 mm ²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	125 A
• at 690 V rated value	115 A
operating power	
• at AC-2 at 400 V rated value	160 kW
• at AC-3	
— at 230 V rated value	97 kW
— at 400 V rated value	160 kW
— at 500 V rated value	200 kW
— at 690 V rated value	250 kW
— at 1000 V rated value	132 kW
• at AC-3e	
— at 230 V rated value	97 kW
— at 400 V rated value	160 kW
— at 500 V rated value	200 kW
— at 1000 V rated value	132 kW
operating power for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	71 kW
• at 690 V rated value	112 kW
short-time withstand current in cold operating state up to 40 °C	
• limited to 1 s switching at zero current maximum	5 524 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 5 s switching at zero current maximum	4 579 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 10 s switching at zero current maximum	3 153 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 30 s switching at zero current maximum	1 883 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 60 s switching at zero current maximum	1 445 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
• at DC	700 1/h
operating frequency	
• at AC-1 maximum	700 1/h
• at AC-2 maximum	250 1/h

• at AC-3 maximum • at AC-3e maximum • at AC-2 at AC-3e maximum • at AC-4 maximum	500 1/h 500 1/h 250 1/h 130 1/h
operating frequency	
• at DC-1 maximum • at DC-3 maximum • at DC-5 maximum	350 1/h 250 1/h 250 1/h
Ratings for railway applications	
thermal current (I_{th}) up to 690 V	
• up to 40 °C according to IEC 60077 rated value • up to 70 °C according to IEC 60077 rated value	330 A 265 A
Control circuit/ Control	
type of voltage	DC
type of voltage of the control supply voltage	DC
control supply voltage at DC	
• rated value	110 V
consumed current at PLC-control input according to IEC 60947-1 maximum	2 mA
voltage at PLC-control input rated value	24 V
operating range factor control supply voltage rated value of magnet coil at DC	
• initial value • full-scale value	0.7 1.25
design of the surge suppressor	with varistor
closing power of magnet coil at DC	580 W
holding power of magnet coil at DC	3.4 W
closing delay	
• at DC	45 ... 80 ms
opening delay	
• at DC	80 ... 100 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 • at 400 V rated value • at 500 V rated value	6 A 3 A 2 A
operational current at DC-12	
• at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value	10 A 6 A 6 A 3 A 2 A 1 A 0.15 A
operational current at DC-13	
• at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value	6 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 A
UL/CSA ratings	
full-load current (FLA) for 3-phase AC motor	
• at 480 V rated value • at 600 V rated value	302 A 289 A

yielded mechanical performance [hp] - for 3-phase AC motor - at 200/208 V rated value - at 220/230 V rated value - at 460/480 V rated value - at 575/600 V rated value contact rating of auxiliary contacts according to UL	100 hp 125 hp 250 hp 300 hp A600 / Q600
Short-circuit protection	
product function short circuit protection design of the fuse link - for short-circuit protection of the main circuit - with type of coordination 1 required - with type of assignment 2 required - for short-circuit protection of the auxiliary switch required	No gG: 500 A (690 V, 100 kA) gG: 400 A (690 V, 100 kA), aM: 315 A (690 V, 50 kA), BS88: 400 A (415 V, 50 kA) gG: 10 A (500 V, 1 kA)
Installation/ mounting/ dimensions	
mounting position fastening method - side-by-side mounting height width depth required spacing - with side-by-side mounting - forwards - upwards - downwards - at the side - for grounded parts - forwards - upwards - at the side - downwards - for live parts - forwards - upwards - downwards - at the side	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back screw fixing Yes 210 mm 145 mm 202 mm 20 mm 10 mm 10 mm 10 mm 20 mm 10 mm 10 mm 10 mm 20 mm 10 mm 10 mm 10 mm
Connections/ Terminals	
type of electrical connection - for main current circuit - for auxiliary and control circuit width of connection bar thickness of connection bar diameter of holes number of holes type of connectable conductor cross-sections - for main contacts - solid or stranded - at AWG cables for main contacts type of connectable conductor cross-sections - for auxiliary contacts - solid - solid or stranded - finely stranded with core end processing - at AWG cables for auxiliary contacts AWG number as coded connectable conductor cross section - for auxiliary contacts	screw-type terminals screw-type terminals 25 mm 6 mm 11 mm 1 2x (70 ... 240 mm²) 2/0 ... 500 kcmil 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²), max. 2x (0.75 ... 4 mm²) 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²), max. 2x (0.75 ... 4 mm²) 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²) 2x (20 ... 16), 2x (18 ... 14), 1x 12 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

B10 value with high demand rate according to SN 31920
T1 value for proof test interval or service life according to IEC 61508

protection class IP on the front according to IEC 60529

touch protection on the front according to IEC 60529

No

1 000 000

20 y

IP00; IP20 with box terminal/cover

finger-safe, for vertical contact from the front with box terminal/cover

Communication/ Protocol

product function bus communication

No

Certificates/ approvals

General Product Approval



[Confirmation](#)



[KC](#)



EMC	Functional Safety/Safety of Machinery	Declaration of Conformity	Test Certificates
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[Type Examination Certificate](#)



EG-Konf.

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)

other	Railway
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[Confirmation](#)

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[Miscellaneous](#)

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[Vibration and Shock](#)

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Further information

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=3RT1066-6XF46-0LA2>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1066-6XF46-0LA2>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1066-6XF46-0LA2>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1066-6XF46-0LA2&lang=en

Characteristic: Tripping characteristics, I_{ft}, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1066-6XF46-0LA2/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1066-6XF46-0LA2&objecttype=14&gridview=view1>

