Data sheet 3RT2047-1XF40-0LA2



traction contactor, AC-3e/AC-3, 110 A, 55 kW / 400 V, 3-pole, 110 V DC, 0.7-1.25 * Us, electronic drive, with integrated varistor, auxiliary contacts: 1 NO + 1 NC, screw terminal, size: S3

product brand name	SIRIUS
product designation	Power contactor
design of the product	With extended operating range
product type designation	3RT2
General technical data	
size of contactor	S3
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 	23.7 W
 at AC in hot operating state per pole 	7.9 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 	690 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 DC	6.7 g / 5 ms, 4g / 10 ms
shock resistance with sine pulse	
• at DC	10.6 g / 5 ms, 6.3 g / 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)	03/01/2017
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
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 	130 A
value	
• at AC-1	
 up to 690 V at ambient temperature 40 °C rated value 	130 A
— up to 690 V at ambient temperature 60 °C rated	110 A
value	HUA
• at AC-2 at 400 V rated value	110 A
• at AC-3	
— at 400 V rated value	110 A
— at 500 V rated value	110 A
— at 690 V rated value	98 A
— at 1000 V rated value	30 A
• at AC-3e	
— at 400 V rated value	110 A
— at 500 V rated value	110 A
— at 690 V rated value — at 690 V rated value	98 A
— at 1000 V rated value	30 A
at AC-4 at 400 V rated value minimum areas section in main circuit	97 A
minimum cross-section in main circuit	50
at maximum AC-1 rated value	50 mm²
at maximum Ith rated value	50 mm ²
operational current for approx. 200000 operating cycles at AC-4	
at 400 V rated value	46 A
at 690 V rated value	36 A
operational current	
at 1 current path at DC-1	
— at 24 V rated value	100 A
— at 110 V rated value	9 A
— at 220 V rated value	2 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.4 A
with 2 current paths in series at DC-1	400 A
— at 24 V rated value	100 A
— at 110 V rated value	100 A
— at 220 V rated value	10 A
— at 440 V rated value	1.8 A
— at 600 V rated value	1 A
with 3 current paths in series at DC-1	
— at 24 V rated value	100 A
— at 110 V rated value	100 A
— at 220 V rated value	80 A
— at 440 V rated value	4.5 A
— at 600 V rated value	2.6 A
• at 1 current path at DC-3 at DC-5	
— at 24 V rated value	40 A
— at 110 V rated value	2.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.15 A
— at 600 V rated value	0.06 A
• with 2 current paths in series at DC-3 at DC-5	
— at 24 V rated value	100 A
— at 24 v rated value	
— at 24 v rated value — at 110 V rated value	100 A
	100 A 7 A
— at 110 V rated value	

with 3 current paths in series at DC-3 at DC-5	
— at 24 V rated value	100 A
— at 110 V rated value	100 A
— at 220 V rated value	35 A
— at 440 V rated value	0.8 A
— at 600 V rated value	0.35 A
operating power	
 at AC-2 at 400 V rated value 	55 kW
• at AC-3	
— at 230 V rated value	30 kW
— at 400 V rated value	55 kW
— at 500 V rated value	75 kW
— at 690 V rated value	90 kW
— at 1000 V rated value	37 kW
• at AC-3e	
— at 230 V rated value	30 kW
— at 400 V rated value	55 kW
— at 500 V rated value	75 kW
— at 690 V rated value	90 kW
— at 1000 V rated value	37 kW
operating power for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	24.3 kW
at 690 V rated value	32.9 kW
short-time withstand current in cold operating state up to	
40 °C	
 limited to 1 s switching at zero current maximum 	1 960 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	1 502 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	1 095 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 30 s switching at zero current maximum 	707 A; Use minimum cross-section acc. to AC-1 rated value
Iimited to 60 s switching at zero current maximum	562 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-2 at AC-3e maximum	350 1/h
at AC-4 maximum	200 1/h
Ratings for railway applications	
thermal current (Ith) up to 690 V	
 up to 40 °C according to IEC 60077 rated value 	130 A
up to 70 °C according to IEC 60077 rated value	95 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
operating range factor control supply voltage rated value of magnet coil at DC	
• initial value	0.7
• full-scale value	1.25
design of the surge suppressor	with varistor
inrush current peak	1.5 A
duration of inrush current peak	50 µs
locked-rotor current mean value	1.1 A
locked-rotor current peak	2.7 A
duration of locked-rotor current	150 ms
holding current mean value	15 mA
closing power of magnet coil at DC	64 W
holding power of magnet coil at DC	1 W
closing delay	
	50 70 ms
• at DC	50 70 ms

• at DC	38 57 ms
arcing time	10 20 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
number of NC contacts for auxiliary contacts	1
instantaneous contact	1
number of NO contacts for auxiliary contacts	1
• instantaneous contact	1
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	
• at 24 V rated value	10 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	96 A
at 600 V rated value	99 A
yielded mechanical performance [hp]	
 for single-phase AC motor 	
— at 110/120 V rated value	10 hp
— at 230 V rated value	20 hp
• for 3-phase AC motor	
— at 200/208 V rated value	30 hp
— at 220/230 V rated value	40 hp
— at 460/480 V rated value	75 hp
— at 575/600 V rated value	100 hp
contact rating of auxiliary contacts according to UL	A600 / P600
Short-circuit protection	
product function short circuit protection	No
design of the fuse link	
for short-circuit protection of the main circuit	~C. 050 A (000 V 400 kA) ~A4 400 A (000 V 400 kA) D000 000 A (417 V 00
 — with type of coordination 1 required 	gG: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA)
— with type of assignment 2 required	gG: 200A (690V,100kA), aM: 100A (690V,100kA), BS88: 160A (415V,80kA)
for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)
Installation/ mounting/ dimensions	
mounting position	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
side-by-side mounting	Yes
height	140 mm
width	70 mm
depth	152 mm
required spacing	

with side-by-side mounting — forwards — upwards — upwards — downwards — at the side o mm for grounded parts — forwards — upwards — upwards — upwards — upwards — at the side — to mm — at the side — to mm — downwards — to mm — downwards 10 mm o for live parts — forwards — upwards — upwards — to mm o for live parts — forwards — upwards — to mm — odornwards — to mm — at the side — for main current circuit — at the side Sorew-type terminals • of magnet coil Screw-type terminals • of magnet coil Screw-type terminals Screw-type terminals • of magnet coil
- upwards 10 mm - downwards 0 mm - at the side 0 mm • for grounded parts - forwards 20 mm - upwards 10 mm - at the side 10 mm - at the side 10 mm - downwards 10 mm • for live parts - for wards 20 mm - upwards 10 mm • for live parts - forwards 20 mm - upwards 10 mm - at the side 10 mm - downwards 10 mm - downwards 10 mm - downwards 10 mm - downwards 10 mm - at the side 10 mm - at the side 50 mm - at the
- downwards
- at the side 0 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 at the side 10 mm odwnwards 10 mm downwards 10 mm downwards 10 mm downwards 10 mm at the side 10 mm at the side 5 crew-type terminals • for auxiliary and control circuit screw-type terminals • at contactor for auxiliary contacts Screw-type terminals
for grounded parts — forwards — upwards — at the side — downwards • for live parts — forwards — upwards — upwards — forwards — upwards — upwards — upwards — upwards — upwards — downwards — at the side — at the side — at the side — or main current circuit • for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts • Screw-type terminals • at contactor for auxiliary contacts
- forwards 20 mm - upwards 10 mm - at the side 10 mm - downwards 10 mm - for live parts - forwards 20 mm - upwards 10 mm - upwards 10 mm - downwards 10 mm - downwards 10 mm - at the side 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 • at contactor for auxiliary contacts Screw-type terminals
- upwards - at the side - at the side 10 mm - downwards 10 mm • for live parts - forwards - upwards - upwards 10 mm - downwards 10 mm - downwards 10 mm - at the side 10 mm Connections/ Terminals type of electrical connection • for main current circuit • for auxiliary and control circuit • at contactor for auxiliary contacts 10 mm Screw-type terminals \$crew-type terminals \$crew-type terminals \$crew-type terminals \$crew-type terminals \$crew-type terminals
- 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 - 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 • at contactor for auxiliary contacts Screw-type terminals
 — downwards ● for live parts — forwards — upwards — downwards — at the side 10 mm — at the side 10 mm Connections/ Terminals type of electrical connection ● for main current circuit ● for auxiliary and control circuit ● at contactor for auxiliary contacts 10 mm Screw-type terminals ● at contactor for auxiliary contacts Screw-type terminals Screw-type terminals
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- 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 • at contactor for auxiliary contacts Screw-type terminals
- 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 • at contactor for auxiliary contacts Screw-type terminals
— 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 • at contactor for auxiliary contacts Screw-type terminals
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 for main current circuit for auxiliary and control circuit at contactor for auxiliary contacts Screw-type terminals Screw-type terminals
 for auxiliary and control circuit at contactor for auxiliary contacts Screw-type terminals
at contactor for auxiliary contacts Screw-type terminals
of magnet coil Screw-type terminals
· · ·
type of connectable conductor cross-sections for main contacts
• finely stranded with core end processing 2x (2.5 35 mm²), 1x (2.5 50 mm²)
type of connectable conductor cross-sections
• for auxiliary contacts
— solid or stranded 2x (0.5 1.5 mm²), 2x (0.75 2.5 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)
AWG number as coded connectable conductor cross section
• for main contacts 10 2
• for auxiliary contacts 20 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
B10 value with high demand rate according to SN 31920 1 000 000
proportion of dangerous failures
• with low demand rate according to SN 31920 40 %
• with high demand rate according to SN 31920 73 %
failure rate [FIT] with low demand rate according to SN 31920 100 FIT
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 IP20
touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front
Communication/ Protocol
product function bus communication No
Certificates/ approvals

General Product Approval





Confirmation



<u>KC</u>





Type Examination Certificate





Special Test Certificate

Type Test Certificates/Test Report

Marine / Shipping

other











Confirmation

Railway

Environment

Vibration and Shock

Special Test Certificate

Type Test Certificates/Test Report

Environmental Confirmations

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=3RT2047-1XF40-0LA2

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2047-1XF40-0LA2

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2047-1XF40-0LA2

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

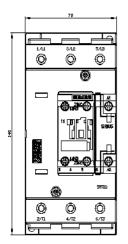
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2047-1XF40-0LA2&lang=en

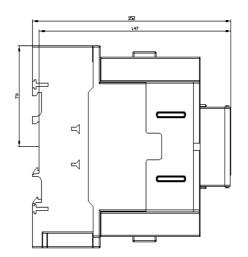
Characteristic: Tripping characteristics, I2t, Let-through current

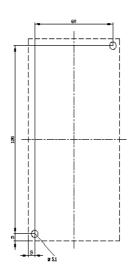
https://support.industry.siemens.com/cs/ww/en/ps/3RT2047-1XF40-0LA2/char

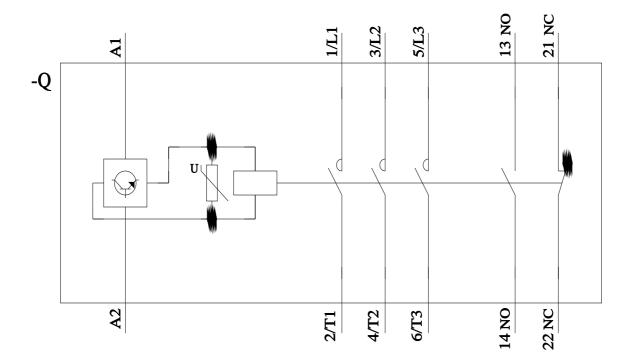
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2047-1XF40-0LA2&objecttype=14&gridview=view1









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