SIEMENS

Data sheet

3RT2047-3XF40-0LA2



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, main circuit: screw terminal, control and auxiliary circuit: spring-loaded terminal

product brand name product designation design of the product SIRIUS

Power contactor

With extended operating range

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	
 without load current share typical 	1 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 safe isolation 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	

maximum

• during storage

relative humidity minimum

relative humidity at 55 °C according to IEC 60068-2-30

95 %

-55 ... +80 °C 10 %

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	130 A
rated value	
• at AC-1	120 A
— up to 690 V at ambient temperature 40 °C rated value	130 A
— up to 690 V at ambient temperature 60 °C	110 A
rated value	
 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	98 A
— at 1000 V rated value	30 A
at AC-4 at 400 V rated value minimum cross-section in main circuit	97 A
minimum cross-section in main circuit • at maximum AC-1 rated value	50 mm ²
at maximum AC-1 rated value at maximum Ith rated value	50 mm ²
operational current for approx. 200000 operating cycles at AC-4	50 11111
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 24 V rated value — at 110 V rated value	100 A 100 A
— at 110 V rated value — 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 110 V rated value	100 A
— at 220 V rated value	7 A
— at 440 V rated value	0.42 A
	0.16 A

 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 400 V rated value 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	
Iimited 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 Included a switching for 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	1 000 1/11	
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	0.7	
• initial value	0.7	
• full-scale value	1.25	
design of the surge suppressor	with varistor 1.5 A	
inrush current peak duration of inrush current peak		
locked-rotor current mean value	50 µs 1.1 A	
locked-rotor current mean value	2.7 A	
duration of locked-rotor current	150 ms	
holding current mean value	150 ms 15 mA	
closing power of magnet coil at DC	64 W	
holding power of magnet coil at DC	0 4 VV	
	1 W	
Closing delay		
closing delay ● at DC		
	1 W	
• at DC	1 W	
at DC opening delay	1 W 50 70 ms	

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 at 230 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	10.4	
at 24 V rated value at 48 V rated value	10 A 2 A	
 at 48 V rated value at 60 V rated value 	2 A 2 A	
at 60 V rated value at 110 V rated value	1 A	
at 125 V rated value at 125 V rated value	0.9 A	
at 125 V rated value at 220 V rated value	0.9 A 0.3 A	
at 600 V rated value	0.5 A 0.1 A	
UL/CSA ratings	V.171	
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	No	
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: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A	
 — 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	
fastening method	forward and backward by +/- 22.5° on vertical mounting surface 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	20 mm	
— upwards	10 mm	

— downwards	10 mm
— 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
— downwards	10 mm
— at the side	10 mm
nections/ Terminals	

type of electrical connection

• for main current circuit screw-type terminals • for auxiliary and control circuit spring-loaded terminals • at contactor for auxiliary contacts Spring-type terminals Spring-type terminals of magnet coil

type of connectable conductor cross-sections for main contacts

• finely stranded with core end processing

type of connectable conductor cross-sections

• for auxiliary contacts

- solid or stranded 2x (0.5 ... 2.5 mm²) - finely stranded with core end processing 2x (0.5 ... 1.5 mm²) - finely stranded without core end processing 2x (0.5 ... 2.5 mm²) 2x (20 ... 16)

• at AWG cables for auxiliary contacts 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-

B10 value with high demand rate according to SN 31920 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 100 FIT

T1 value for proof test interval or service life according to IEC 61508

protection class IP on the front according to IEC

touch protection on the front according to IEC 60529

2x (2.5 ... 35 mm²), 1x (2.5 ... 50 mm²)

No

1 000 000

20 a

IP20

finger-safe, for vertical contact from the front

product function bus communication

No

Certificates/ approvals

General Product Approval





Confirmation



<u>KC</u>



EMC Functional Safety/Safe Machinery	ty of Declaration of Conformity	Test Certificates
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Type Examination Certificate





Special Test Certificate

Type Test Certificates/Test Report

Marine / Shipping

other











Confirmation

Railway

Vibration and Shock

Type Test Certificates/Test Report

Special Test Certificate

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=3RT2047-3XF40-0LA2

Cax online generator

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RT2047-3XF40-0LA2}$

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

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

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

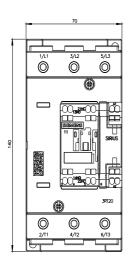
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2047-3XF40-0LA2&lang=en

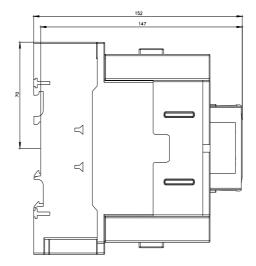
Characteristic: Tripping characteristics, I2t, Let-through current

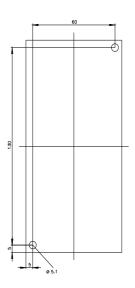
https://support.industry.siemens.com/cs/ww/en/ps/3RT2047-3XF40-0LA2/char

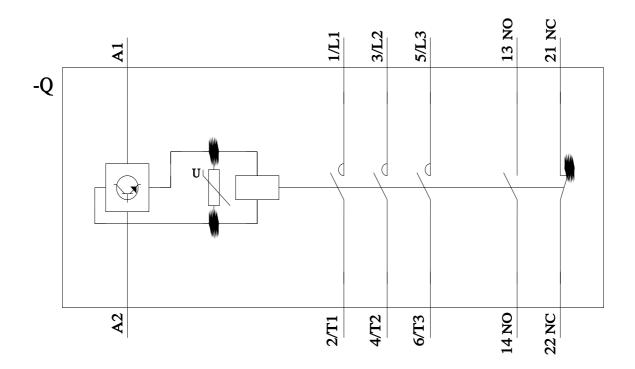
Further characteristics (e.g. electrical endurance, switching frequency)

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









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