



Traction contactor, AC-3 38 A, 18.5 kW / 400 V 1 NO + 1 NC with solid-state operating mechanism 125 V DC, 0.7-1.25* Us with integrated varistor 3-pole Size S0, Spring-type terminals

product brand name	SIRIUS
product designation	Contactor
design of the product	With extended operating range
product type designation	3RT2
General technical data	
size of contactor	S0
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	11.4 W
• at AC in hot operating state per pole	3.8 W
• without load current share typical	1.6 W
insulation voltage	
• of main circuit with degree of pollution 3 rated value	690 V
• of auxiliary circuit with degree of pollution 3 rated value	690 V
surge voltage resistance	
• of main circuit rated value	6 kV
• of auxiliary circuit rated value	6 kV
maximum permissible voltage for safe isolation between coil and main contacts according to EN 60947-1	400 V
shock resistance at rectangular impulse	
• at DC	10g / 5 ms, 7,5g / 10 ms
shock resistance with sine pulse	
• at DC	15g / 5 ms, 10g / 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)	10/01/2009
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	690 V
• at AC-3e rated value maximum	690 V
operational current	
• at AC-1 at 400 V at ambient temperature 40 °C rated value	50 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	50 A
— up to 690 V at ambient temperature 60 °C rated value	42 A
• at AC-2 at 400 V rated value	38 A
• at AC-3	
— at 400 V rated value	38 A
— at 500 V rated value	32 A
— at 690 V rated value	21 A
• at AC-3e	
— at 400 V rated value	38 A
— at 500 V rated value	32 A
— at 690 V rated value	21 A
• at AC-4 at 400 V rated value	22 A
minimum cross-section in main circuit	
• at maximum AC-1 rated value	10 mm ²
• at maximum Ith rated value	10 mm ²
operational current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	12 A
• at 690 V rated value	12 A
operating power	
• at AC-2 at 400 V rated value	18.5 kW
• at AC-3	
— at 230 V rated value	11 kW
— at 400 V rated value	18.5 kW
— at 500 V rated value	18.5 kW
— at 690 V rated value	18.5 kW
• at AC-3e	
— at 230 V rated value	11 kW
— at 400 V rated value	18.5 kW
— at 500 V rated value	18.5 kW
— at 690 V rated value	18.5 kW
operating power for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	6 kW
• at 690 V rated value	10.3 kW
short-time withstand current in cold operating state up to 40 °C	
• limited to 1 s switching at zero current maximum	593 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 5 s switching at zero current maximum	395 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 10 s switching at zero current maximum	260 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 30 s switching at zero current maximum	186 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 60 s switching at zero current maximum	152 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
• at DC	1 500 1/h
operating frequency	
• at AC-1 maximum	750 1/h
• at AC-2 maximum	750 1/h
• at AC-3 maximum	750 1/h

- at AC-3e maximum 750 1/h
- at AC-2 at AC-3e maximum 750 1/h
- at AC-4 maximum 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 50 A
- up to 70 °C according to IEC 60077 rated value 38 A

Control circuit/ Control

type of voltage

DC

type of voltage of the control supply voltage

DC

control supply voltage at DC

- rated value 72 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

duration of locked-rotor current

180 ms

closing power of magnet coil at DC

13.2 W

holding power of magnet coil at DC

1.3 W

closing delay

- at DC 50 ... 75 ms

opening delay

- at DC 30 ... 50 ms

arcing time

10 ... 10 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 10 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 34 A
- at 600 V rated value 27 A

yielded mechanical performance [hp]

- for single-phase AC motor
— at 110/120 V rated value 3 hp

<ul style="list-style-type: none"> — at 230 V rated value ● for 3-phase AC motor <ul style="list-style-type: none"> — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value 	<p>5 hp</p> <p>10 hp</p> <p>10 hp</p> <p>25 hp</p> <p>25 hp</p>
contact rating of auxiliary contacts according to UL	A600 / Q600
Short-circuit protection	
product function short circuit protection	No
design of the fuse link	
<ul style="list-style-type: none"> ● for short-circuit protection of the main circuit <ul style="list-style-type: none"> — with type of coordination 1 required — with type of assignment 2 required ● for short-circuit protection of the auxiliary switch required 	<p>gG: 125A (690V,100kA), aM: 50A (690V,100kA), BS88: 125A (415V,80kA)</p> <p>gG: 50A (690V,100kA), aM: 25A (690V, 100kA), BS88: 50A (415V, 80kA)</p> <p>gG: 10 A (500 V, 1 kA)</p>
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 standard mounting rail according to DIN EN 60715
<ul style="list-style-type: none"> ● side-by-side mounting 	Yes
height	102 mm
width	45 mm
depth	107 mm
required spacing	
<ul style="list-style-type: none"> ● with side-by-side mounting <ul style="list-style-type: none"> — forwards — upwards — downwards — at the side ● for grounded parts <ul style="list-style-type: none"> — forwards — upwards — at the side — downwards ● for live parts <ul style="list-style-type: none"> — forwards — upwards — downwards — at the side 	<p>10 mm</p> <p>10 mm</p> <p>10 mm</p> <p>0 mm</p> <p>10 mm</p> <p>10 mm</p> <p>6 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 mm</p> <p>6 mm</p>
Connections/ Terminals	
type of electrical connection	
<ul style="list-style-type: none"> ● for main current circuit ● for auxiliary and control circuit ● at contactor for auxiliary contacts ● of magnet coil 	<p>spring-loaded terminals</p> <p>spring-loaded terminals</p> <p>Spring-type terminals</p> <p>Spring-type terminals</p>
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> ● for main contacts <ul style="list-style-type: none"> — solid — solid or stranded — finely stranded with core end processing — finely stranded without core end processing ● at AWG cables for main contacts 	<p>2x (1 ... 10 mm²)</p> <p>2x (1 ... 10 mm²)</p> <p>2x (1 ... 6 mm²)</p> <p>2x (1 ... 6 mm²)</p> <p>2x (18 ... 8)</p>
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> ● for auxiliary contacts <ul style="list-style-type: none"> — solid or stranded — finely stranded with core end processing — finely stranded without core end processing ● at AWG cables for auxiliary contacts 	<p>2x (0.5 ... 2.5 mm²)</p> <p>2x (0.5 ... 1.5 mm²)</p> <p>2x (0.5 ... 2.5 mm²)</p> <p>2x (20 ... 14)</p>

AWG number as coded connectable conductor cross section	
<ul style="list-style-type: none"> • for main contacts • for auxiliary contacts 	18 ... 8 20 ... 14

Safety related data

product function	
<ul style="list-style-type: none"> • mirror contact according to IEC 60947-4-1 • positively driven operation according to IEC 60947-5-1 	Yes No
B10 value with high demand rate according to SN 31920	450 000
proportion of dangerous failures	
<ul style="list-style-type: none"> • with low demand rate according to SN 31920 • with high demand rate according to SN 31920 	40 % 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 y
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
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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.



[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

Marine / Shipping



Marine / Shipping	other	Railway
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[Confirmation](#)



[Special Test Certificate](#)

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[Transport Information](#)

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=3RT2028-2XJ40-0LA2>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2028-2XJ40-0LA2>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-2XJ40-0LA2>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2028-2XJ40-0LA2&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-2XJ40-0LA2/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2028-2XJ40-0LA2&objecttype=14&gridview=view1>

last modified:

2/1/2022 