



Traction contactor, AC-3 12 A, 5.5 kW / 400 V 1 NC, 24-34 V DC, 0.7-1.25\*US with integrated varistor Size S00, screw terminal suitable for PLC outputs

<b>product brand name</b>	SIRIUS
<b>product designation</b>	Contacteur
<b>design of the product</b>	With extended operating range
<b>product type designation</b>	3RT2
<b>General technical data</b>	
<b>size of contactor</b>	S00
<b>product extension</b>	
• function module for communication	No
• auxiliary switch	Yes
<b>power loss [W] for rated value of the current</b>	
• at AC in hot operating state	3.6 W
• at AC in hot operating state per pole	1.2 W
• without load current share typical	0.7 W
<b>insulation voltage</b>	
• of main circuit with degree of pollution 3 rated value	690 V
• of auxiliary circuit with degree of pollution 3 rated value	690 V
<b>surge voltage resistance</b>	
• 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
<b>shock resistance at rectangular impulse</b>	
• at DC	6,7g / 5 ms, 4,2g / 10 ms
<b>shock resistance with sine pulse</b>	
• at DC	10,5g / 5 ms, 6,6g / 10 ms
<b>mechanical service life (switching cycles)</b>	
• of contactor typical	30 000 000
• 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
<b>reference code according to IEC 81346-2</b>	Q
<b>Substance Prohibitance (Date)</b>	10/01/2009
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	2 000 m
<b>ambient temperature</b>	
• during operation	-40 ... +70 °C
• during storage	-55 ... +80 °C
<b>relative humidity minimum</b>	10 %

relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %
<b>Main circuit</b>	
number of poles for main current circuit	3
number of NO contacts for main contacts	3
number of NC contacts for main contacts	0
<b>operating voltage</b>	
• at AC-3 rated value maximum	690 V
• at AC-3e rated value maximum	690 V
<b>operational current</b>	
• at AC-1 at 400 V at ambient temperature 40 °C rated value	22 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	22 A
— up to 690 V at ambient temperature 60 °C rated value	20 A
• at AC-2 at 400 V rated value	12 A
• at AC-3	
— at 400 V rated value	12 A
— at 500 V rated value	9.2 A
— at 690 V rated value	6.7 A
• at AC-3e	
— at 400 V rated value	12 A
— at 500 V rated value	9.2 A
— at 690 V rated value	6.7 A
• at AC-4 at 400 V rated value	8.5 A
<b>minimum cross-section in main circuit</b>	
• at maximum AC-1 rated value	4 mm <sup>2</sup>
• at maximum I <sub>th</sub> rated value	4 mm <sup>2</sup>
<b>operational current for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	4.1 A
• at 690 V rated value	3.3 A
<b>operating power</b>	
• at AC-2 at 400 V rated value	5.5 kW
• at AC-3	
— at 230 V rated value	3 kW
— at 400 V rated value	5.5 kW
— at 500 V rated value	5.5 kW
— at 690 V rated value	5.5 kW
• at AC-3e	
— at 230 V rated value	3 kW
— at 400 V rated value	5.5 kW
— at 500 V rated value	5.5 kW
— at 690 V rated value	5.5 kW
<b>operating power for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	2 kW
• at 690 V rated value	2.5 kW
<b>short-time withstand current in cold operating state up to 40 °C</b>	
• limited to 1 s switching at zero current maximum	200 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 5 s switching at zero current maximum	123 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 10 s switching at zero current maximum	96 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 30 s switching at zero current maximum	74 A; Use minimum cross-section acc. to AC-1 rated value
• limited to 60 s switching at zero current maximum	61 A; Use minimum cross-section acc. to AC-1 rated value
<b>no-load switching frequency</b>	
• at DC	1 500 1/h
<b>operating frequency</b>	
• at AC-2 at AC-3e maximum	750 1/h
• at AC-4 maximum	250 1/h

## Ratings for railway applications

<b>thermal current (I<sub>th</sub>) up to 690 V</b>	
• up to 40 °C according to IEC 60077 rated value	22 A
• up to 70 °C according to IEC 60077 rated value	18 A

## Control circuit/ Control

<b>type of voltage</b>	DC
<b>type of voltage of the control supply voltage</b>	DC
<b>control supply voltage at DC</b>	
• rated value	24 ... 34 V
<b>operating range factor control supply voltage rated value of magnet coil at DC</b>	
• initial value	0.7
• full-scale value	1.25
<b>design of the surge suppressor</b>	with varistor
<b>inrush current peak</b>	2.3 A
<b>duration of inrush current peak</b>	50 µs
<b>locked-rotor current mean value</b>	0.18 A
<b>locked-rotor current peak</b>	0.18 A
<b>duration of locked-rotor current</b>	250 ms
<b>holding current mean value</b>	40 mA
<b>closing power of magnet coil at DC</b>	4 W
<b>holding power of magnet coil at DC</b>	0.95 W
<b>closing delay</b>	
• at DC	30 ... 70 ms
<b>opening delay</b>	
• at DC	25 ... 45 ms
<b>arcing time</b>	10 ... 15 ms
<b>control version of the switch operating mechanism</b>	Standard A1 - A2

## Auxiliary circuit

<b>number of NC contacts for auxiliary contacts</b>	1
• instantaneous contact	1
<b>operational current at AC-12 maximum</b>	10 A
<b>operational current at AC-15</b>	
• 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
<b>operational current at DC-12</b>	
• 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
<b>operational current at DC-13</b>	
• 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

<b>full-load current (FLA) for 3-phase AC motor</b>	
• at 480 V rated value	11 A
• at 600 V rated value	11 A
<b>yielded mechanical performance [hp]</b>	
• for single-phase AC motor	
— at 110/120 V rated value	0.5 hp

— at 230 V rated value	2 hp
• for 3-phase AC motor	
— at 200/208 V rated value	3 hp
— at 220/230 V rated value	3 hp
— at 460/480 V rated value	7.5 hp
— at 575/600 V rated value	10 hp

<b>contact rating of auxiliary contacts according to UL</b>	A600 / Q600
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### Short-circuit protection

<b>product function short circuit protection</b>	No
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<b>design of the fuse link</b>	
• for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 35 A
— with type of assignment 2 required	gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 20 A
• for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)

### Installation/ mounting/ dimensions

<b>mounting position</b>	+/-180° rotation possible on vertical mounting surface, can be tilted forward and backward by +/- 22.5° on vertical mounting surface, standing, on horizontal mounting surface
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<b>fastening method</b>	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 50022
• side-by-side mounting	Yes

<b>height</b>	58 mm
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<b>width</b>	45 mm
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<b>depth</b>	73 mm
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<b>required spacing</b>	
• with side-by-side mounting	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	0 mm
• for grounded parts	
— forwards	10 mm
— upwards	10 mm
— at the side	6 mm
— downwards	10 mm
• for live parts	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	6 mm

### Connections/ Terminals

<b>type of electrical connection</b>	
• for main current circuit	screw-type terminals
• for auxiliary and control circuit	screw-type terminals
• at contactor for auxiliary contacts	Screw-type terminals
• of magnet coil	Screw-type terminals

<b>type of connectable conductor cross-sections</b>	
• for main contacts	
— solid	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup>
— solid or stranded	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup>
— finely stranded with core end processing	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> )
• at AWG cables for main contacts	2x (20 ... 16), 2x (18 ... 14), 2x 12

<b>type of connectable conductor cross-sections</b>	
• for auxiliary contacts	
— solid or stranded	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup>
— finely stranded with core end processing	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> )
• at AWG cables for auxiliary contacts	2x (20 ... 16), 2x (18 ... 14), 1x 12

<b>AWG number as coded connectable conductor cross section</b>	
• for main contacts	20 ... 12

• for auxiliary contacts

20 ... 12

**Safety related data**

<b>product function</b>	
• 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
<b>proportion of dangerous failures</b>	
• 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 y
<b>protection class IP on the front according to IEC 60529</b>	IP20
<b>touch protection on the front according to IEC 60529</b>	finger-safe, for vertical contact from the front

**Communication/ Protocol**

<b>product function bus communication</b>	No
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**Certificates/ approvals**

**General Product Approval**



[Confirmation](#)



[KC](#)



<b>EMC</b>	<b>Functional Safety/Safety of Machinery</b>	<b>Declaration of Conformity</b>	<b>Test Certificates</b>
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**Marine / Shipping**



<b>Marine / Shipping</b>	<b>other</b>	<b>Railway</b>	<b>Dangerous Good</b>
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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?mfb=3RT2017-1XB42-0LA2>

Cax online generator

<http://support.automation.siemens.com/WWW/CAXorder/default.aspx?lang=en&mfb=3RT2017-1XB42-0LA2>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-1XB42-0LA2>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2017-1XB42-0LA2&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2017-1XB42-0LA2&lang=en)

**Characteristic: Tripping characteristics, I<sup>t</sup>, Let-through current**

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-1XB42-0LA2/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2017-1XB42-0LA2&objecttype=14&gridview=view1>

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