

Traction contactor, AC-3 225 A, 110 kW / 400 V Coil 24 V DC x (0.7-1.25) PLC input 24-110 V DC Auxiliary contacts 2 NO + 2 NC 3-pole size S10 Busbar connections Coil connection: screw terminal



Product brand name	SIRIUS
Product designation	Power contactor
Product type designation	3RT1
General technical data	
Size of contactor	S10
Product extension	
• function module for communication	No
• Auxiliary switch	Yes
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 acc. to EN 60947-1	690 V

<b>Protection class IP</b>	
<ul style="list-style-type: none"> <li>• on the front</li> <li>• of the terminal</li> </ul>	IP00; IP20 on the front with cover / box terminal IP00
<b>Shock resistance</b>	
<ul style="list-style-type: none"> <li>• for railway applications acc. to DIN EN 61373</li> </ul>	Category 1, Class B
<b>Shock resistance at rectangular impulse</b>	
<ul style="list-style-type: none"> <li>• at DC</li> </ul>	8,5g / 5 ms, 4,2g / 10 ms
<b>Shock resistance with sine pulse</b>	
<ul style="list-style-type: none"> <li>• at DC</li> </ul>	13,4g / 5 ms, 6,5g / 10 ms
<b>Mechanical service life (switching cycles)</b>	
<ul style="list-style-type: none"> <li>• of contactor typical</li> </ul>	10 000 000
<ul style="list-style-type: none"> <li>• of the contactor with added electronics-compatible auxiliary switch block typical</li> </ul>	5 000 000
<ul style="list-style-type: none"> <li>• of the contactor with added auxiliary switch block typical</li> </ul>	10 000 000
<b>Reference code acc. to DIN EN 81346-2</b>	Q

#### Ambient conditions

<b>Installation altitude at height above sea level</b>	
<ul style="list-style-type: none"> <li>• maximum</li> </ul>	2 000 m

#### Main circuit

<b>Number of poles for main current circuit</b>	3
<b>Number of NO contacts for main contacts</b>	3
<b>Number of NC contacts for main contacts</b>	0
<b>Operating voltage</b>	
<ul style="list-style-type: none"> <li>• at AC-3 rated value maximum</li> </ul>	1 000 V
<b>Operating current</b>	
<ul style="list-style-type: none"> <li>• at AC-1 at 400 V <ul style="list-style-type: none"> <li>— rated value</li> <li>— at ambient temperature 40 °C rated value</li> </ul> </li> <li>• at AC-1 <ul style="list-style-type: none"> <li>— up to 690 V at ambient temperature 40 °C rated value</li> <li>— up to 690 V at ambient temperature 60 °C rated value</li> <li>— up to 1000 V at ambient temperature 60 °C rated value</li> </ul> </li> <li>• at AC-2 at 400 V rated value</li> <li>• at AC-3 <ul style="list-style-type: none"> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> <li>— at 1000 V rated value</li> </ul> </li> </ul>	275 A 275 A 275 A 250 A 100 A 225 A 225 A 225 A 225 A 68 A

<ul style="list-style-type: none"> <li>• at AC-4 at 400 V rated value</li> </ul>	195 A
<b>Minimum cross-section in main circuit</b>	
<ul style="list-style-type: none"> <li>• at maximum AC-1 rated value</li> </ul>	150 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• at maximum Ith rated value</li> </ul>	150 mm <sup>2</sup>
<b>Operating current for approx. 200000 operating cycles at AC-4</b>	
<ul style="list-style-type: none"> <li>• at 400 V rated value</li> </ul>	96 A
<ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>	85 A
<b>Operating current</b>	
<ul style="list-style-type: none"> <li>• at 1 current path at DC-1 <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> </ul>	200 A 18 A 3.4 A 0.8 A 0.5 A
<ul style="list-style-type: none"> <li>• with 2 current paths in series at DC-1 <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> </ul>	200 A 200 A 20 A 3.2 A 1.6 A
<ul style="list-style-type: none"> <li>• with 3 current paths in series at DC-1 <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> </ul>	200 A 200 A 200 A 11.5 A 4 A
<b>Operating current</b>	
<ul style="list-style-type: none"> <li>• at 1 current path at DC-3 at DC-5 <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> </ul>	200 A 2.5 A 0.6 A 0.17 A 0.12 A
<ul style="list-style-type: none"> <li>• with 2 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> </ul>	200 A 200 A 2.5 A 0.65 A 0.37 A
<ul style="list-style-type: none"> <li>• with 3 current paths in series at DC-3 at DC-5</li> </ul>	

— at 24 V rated value	200 A
— at 110 V rated value	200 A
— at 220 V rated value	200 A
— at 440 V rated value	1.4 A
— at 600 V rated value	0.75 A
<b>Operating power</b>	
• at AC-1	
— at 230 V at 60 °C rated value	94 kW
— at 400 V rated value	164 kW
— at 400 V at 60 °C rated value	164 kW
— at 690 V at 60 °C rated value	283 kW
— at 1000 V at 60 °C rated value	164 kW
• at AC-2 at 400 V rated value	110 kW
• at AC-3	
— at 230 V rated value	73 kW
— at 400 V rated value	110 kW
— at 500 V rated value	160 kW
— at 690 V rated value	200 kW
— at 1000 V rated value	90 kW
<b>Operating power for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	54 kW
• at 690 V rated value	82 kW
<b>Thermal short-time current limited to 10 s</b>	
	1.8 kA
<b>No-load switching frequency</b>	
• at DC	700 1/h
<b>Operating frequency</b>	
• at AC-1 maximum	700 1/h
• at AC-2 maximum	250 1/h
• at AC-3 maximum	500 1/h
• at AC-4 maximum	130 1/h
<b>Operating frequency</b>	
• at DC-1 maximum	350 1/s
• at DC-3 maximum	250 1/s
• at DC-5 maximum	250 1/s
<b>Ratings for railway applications</b>	
<b>Thermal current (I<sub>th</sub>) up to 690 V</b>	
• up to 40 °C according to IEC 60077 rated value	275 A
• up to 70 °C according to IEC 60077 rated value	215 A
<b>Control circuit/ Control</b>	
<b>Type of voltage</b>	DC

Type of voltage of the control supply voltage	DC
Control supply voltage at DC <ul style="list-style-type: none"> <li>• rated value</li> </ul>	24 V
Consumed current at PLC-control input acc. 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 <ul style="list-style-type: none"> <li>• initial value</li> <li>• Full-scale value</li> </ul>	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 <ul style="list-style-type: none"> <li>• at DC</li> </ul>	45 ... 80 ms
Opening delay <ul style="list-style-type: none"> <li>• at DC</li> </ul>	80 ... 100 ms
Arcing time	10 ... 15 ms
Control version of the switch operating mechanism	PLC-IN or Standard A1 - A2 (adjustable)

<b>Auxiliary circuit</b>	
Number of NC contacts for auxiliary contacts <ul style="list-style-type: none"> <li>• instantaneous contact</li> </ul>	2 2
Number of NO contacts for auxiliary contacts <ul style="list-style-type: none"> <li>• instantaneous contact</li> </ul>	2 2
Operating current at AC-12 maximum	10 A
Operating current at AC-15 <ul style="list-style-type: none"> <li>• at 230 V rated value</li> <li>• at 400 V rated value</li> <li>• at 500 V rated value</li> </ul>	6 A 3 A 2 A
Operating current at DC-12 <ul style="list-style-type: none"> <li>• at 24 V rated value</li> <li>• at 48 V rated value</li> <li>• at 60 V rated value</li> <li>• at 110 V rated value</li> <li>• at 125 V rated value</li> <li>• at 220 V rated value</li> <li>• at 600 V rated value</li> </ul>	10 A 6 A 6 A 3 A 2 A 1 A 0.15 A
Operating current at DC-13 <ul style="list-style-type: none"> <li>• at 24 V rated value</li> <li>• at 48 V rated value</li> <li>• at 60 V rated value</li> <li>• at 110 V rated value</li> </ul>	6 A 2 A 2 A 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
<b>Contact reliability of auxiliary contacts</b>	1 faulty switching per 100 million (17 V, 1 mA)

#### UL/CSA ratings

<b>Full-load current (FLA) for three-phase AC motor</b>	
• at 480 V rated value	180 A
• at 600 V rated value	182 A
<b>Yielded mechanical performance [hp]</b>	
• for three-phase AC motor	
— at 200/208 V rated value	60 hp
— at 220/230 V rated value	75 hp
— at 460/480 V rated value	150 hp
— at 575/600 V rated value	200 hp
<b>Contact rating of auxiliary contacts according to UL</b>	A600 / Q600

#### Short-circuit protection

<b>Product function Short circuit protection</b>	No
<b>Design of the fuse link</b>	
• for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 500 A (690 V, 100 kA)
— with type of assignment 2 required	gG: 400 A (690 V, 100 kA), aM: 315 A (690 V, 50 kA), BS88: 400 A (415 V, 50 kA)
• for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)

#### Installation/ mounting/ dimensions

<b>Mounting position</b>	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
<b>Mounting type</b>	screw fixing
• Side-by-side mounting	Yes
<b>Height</b>	210 mm
<b>Width</b>	145 mm
<b>Depth</b>	202 mm
<b>Required spacing</b>	
• with side-by-side mounting	
— forwards	20 mm
— upwards	10 mm
— downwards	10 mm
— at the side	10 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

## Connections/ Terminals

<b>Type of electrical connection</b>	
• for main current circuit	screw-type terminals
• for auxiliary and control current circuit	screw-type terminals
<b>Type of connectable conductor cross-sections</b>	
• for main contacts	
— single or multi-stranded	2x (70 ... 240 mm <sup>2</sup> )
• at AWG conductors for main contacts	2/0 ... 500 kcmil
<b>Type of connectable conductor cross-sections</b>	
• for auxiliary contacts	
— solid	2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ), max. 2x (0.75 ... 4 mm <sup>2</sup> )
— single or multi-stranded	2x (0,5 ... 1,5 mm <sup>2</sup> ), 2x (0,75 ... 2,5 mm <sup>2</sup> ), max. 2x (0,75 ... 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 conductors for auxiliary contacts	2x (20 ... 16), 2x (18 ... 14), 1x 12
<b>AWG number as coded connectable conductor cross section</b>	
• for auxiliary contacts	18 ... 14

## Safety related data

<b>B10 value</b>	
• with high demand rate acc. to SN 31920	1 000 000
<b>Product function</b>	
• Mirror contact acc. to IEC 60947-4-1	Yes
• positively driven operation acc. to IEC 60947-5-1	No
<b>Protection against electrical shock</b>	finger-safe when touched vertically from front acc. to IEC 60529

## Communication/ Protocol

<b>Product function Bus communication</b>	No
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## Certificates/ approvals

General Product Approval	EMC	Functional Safety/Safety of Machinery
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CCC



CSA



UL



RCM

[Type Examination Certificate](#)

Declaration of Conformity	Test Certificates	other
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EG-Konf.

[Miscellaneous](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

[Confirmation](#)

[Miscellaneous](#)

Railway
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[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

## Further information

### Information- and Downloadcenter (Catalogs, Brochures,...)

[www.siemens.com/sirius/catalogs](http://www.siemens.com/sirius/catalogs)

### Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT1064-6XB46-0LA2>

### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1064-6XB46-0LA2>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1064-6XB46-0LA2>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT1064-6XB46-0LA2&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1064-6XB46-0LA2&lang=en)

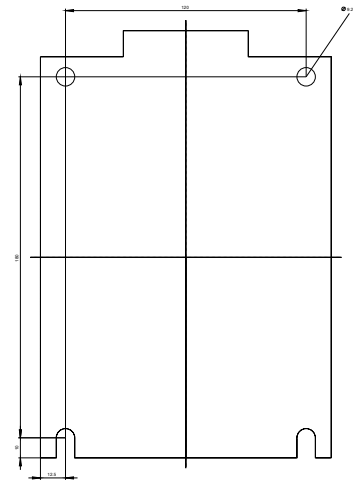
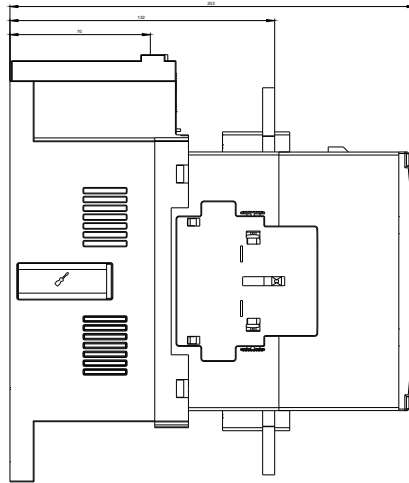
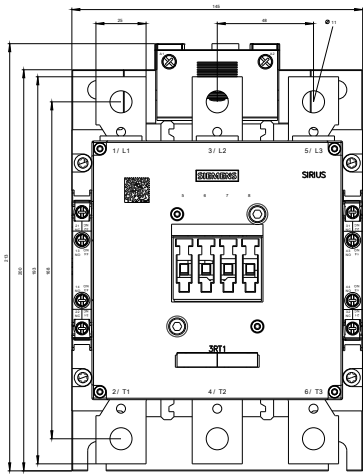
### Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

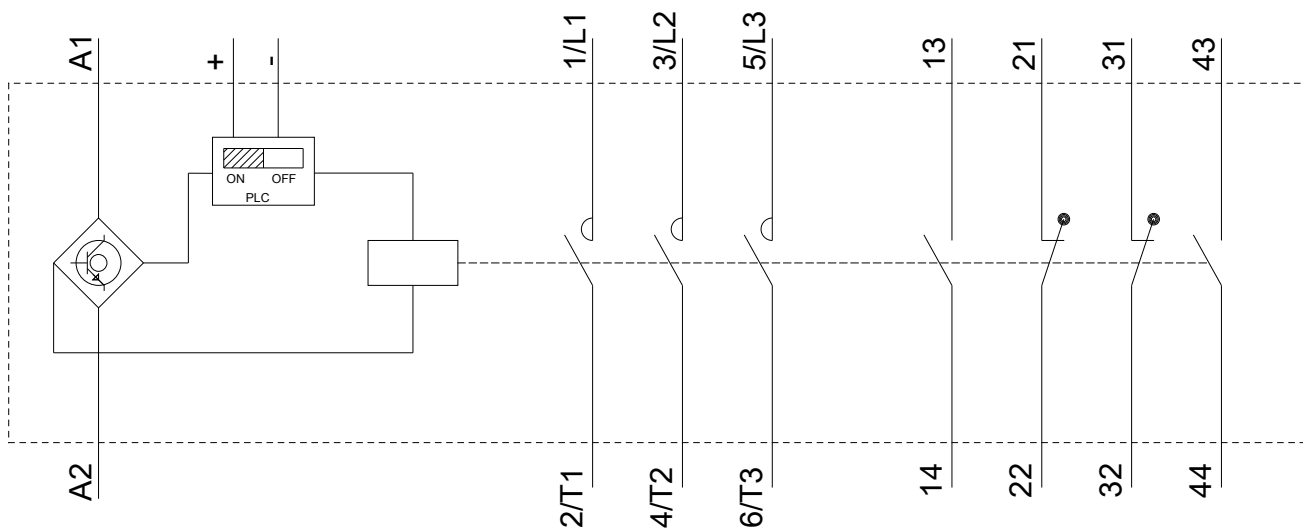
<https://support.industry.siemens.com/cs/ww/en/ps/3RT1064-6XB46-0LA2/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1064-6XB46-0LA2&objecttype=14&gridview=view1>







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