

Traction contactor, AC-3 115 A, 55 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 S6 Busbar connections Coil connection: Spring-type terminal



Product brand name	SIRIUS
Product designation	Contacteur
Product type designation	3RT1
General technical data	
Size of contactor	S6
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	21 W
• at AC in hot operating state per pole	7 W
Power loss [W] for rated value of the current without load current share typical	2.8 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	

<ul style="list-style-type: none"> <li>• of main circuit rated value</li> <li>• of auxiliary circuit rated value</li> </ul>	8 kV 6 kV
<b>maximum permissible voltage for safe isolation</b>	
<ul style="list-style-type: none"> <li>• between coil and main contacts acc. to EN 60947-1</li> </ul>	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> <li>• of the contactor with added electronics-compatible auxiliary switch block typical</li> <li>• of the contactor with added auxiliary switch block typical</li> </ul>	10 000 000 5 000 000 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> </ul>	160 A 160 A  160 A 140 A 80 A  115 A

<ul style="list-style-type: none"> <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> <li>• at AC-4 at 400 V rated value</li> </ul>	115 A 115 A 115 A 53 A 97 A
<b>Minimum cross-section in main circuit</b> <ul style="list-style-type: none"> <li>• at maximum AC-1 rated value</li> <li>• at maximum Ith rated value</li> </ul>	70 mm <sup>2</sup> 70 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> <li>• at 690 V rated value</li> </ul>	54 A 48 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> <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> <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>	160 A 18 A 3.4 A 0.8 A 0.5 A  160 A 160 A 20 A 3.2 A 1.6 A  160 A 160 A 160 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> <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> </ul> </li> </ul>	160 A 2.5 A 0.6 A 0.17 A 0.12 A  160 A

<ul style="list-style-type: none"> <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> <li>• with 3 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>	160 A 2.5 A 0.65 A 0.37 A  160 A 160 A 160 A 1.4 A 0.75 A
<b>Operating power</b> <ul style="list-style-type: none"> <li>• at AC-1 <ul style="list-style-type: none"> <li>— at 230 V at 60 °C rated value</li> <li>— at 400 V rated value</li> <li>— at 400 V at 60 °C rated value</li> <li>— at 690 V at 60 °C rated value</li> <li>— at 1000 V at 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 230 V rated value</li> <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>	53 kW 92 kW 92 kW 159 kW 131 kW  55 kW  37 kW 55 kW 75 kW 110 kW 75 kW
<b>Operating power for approx. 200000 operating cycles at AC-4</b> <ul style="list-style-type: none"> <li>• at 400 V rated value</li> <li>• at 690 V rated value</li> </ul>	29 kW 48 kW
<b>Short-time withstand current in cold operating state up to 40 °C</b> <ul style="list-style-type: none"> <li>• limited to 1 s switching at zero current maximum</li> <li>• limited to 5 s switching at zero current maximum</li> <li>• limited to 10 s switching at zero current maximum</li> <li>• limited to 30 s switching at zero current maximum</li> <li>• limited to 60 s switching at zero current maximum</li> </ul>	2 565 A; Use minimum cross-section acc. to AC-1 rated value  1 654 A; Use minimum cross-section acc. to AC-1 rated value  1 170 A; Use minimum cross-section acc. to AC-1 rated value  729 A; Use minimum cross-section acc. to AC-1 rated value  572 A; Use minimum cross-section acc. to AC-1 rated value
<b>No-load switching frequency</b> <ul style="list-style-type: none"> <li>• at DC</li> </ul>	1 000 1/h
<b>Operating frequency</b>	

• at AC-1 maximum	800 1/h
• at AC-2 maximum	400 1/h
• at AC-3 maximum	1 000 1/h
• at AC-4 maximum	130 1/h
<b>Operating frequency</b>	
• at DC-1 maximum	400 1/s
• at DC-3 maximum	500 1/s
• at DC-5 maximum	500 1/s

#### 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	160 A
• up to 70 °C according to IEC 60077 rated value	120 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 V
<b>Consumed current at PLC-control input acc. to IEC 60947-1 maximum</b>	2 mA
<b>Voltage at PLC-control input rated value</b>	24 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>Closing power of magnet coil at DC</b>	320 W
<b>Holding power of magnet coil at DC</b>	2.8 W
<b>Closing delay</b>	
• at DC	35 ... 75 ms
<b>Opening delay</b>	
• at DC	80 ... 90 ms
<b>Arcing time</b>	10 ... 15 ms
<b>Control version of the switch operating mechanism</b>	PLC-IN or Standard A1 - A2 (adjustable)

#### Auxiliary circuit

<b>Number of NC contacts for auxiliary contacts</b>	2
• instantaneous contact	2
<b>Number of NO contacts for auxiliary contacts</b>	2
• instantaneous contact	2
<b>Operating current at AC-12 maximum</b>	10 A
<b>Operating current at AC-15</b>	
• at 230 V rated value	6 A

• at 400 V rated value	3 A
• at 500 V rated value	2 A
<b>Operating 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>Operating current at DC-13</b>	
• at 24 V rated value	6 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
<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	124 A
• at 600 V rated value	125 A
<b>Yielded mechanical performance [hp]</b>	
• for single-phase AC motor — at 230 V rated value	25 hp
• for three-phase AC motor — at 200/208 V rated value	40 hp
— at 220/230 V rated value	50 hp
— at 460/480 V rated value	100 hp
— at 575/600 V rated value	125 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: 355 A (690 V, 100 kA)
— with type of assignment 2 required	gG: 315 A (690 V, 100 kA), aM: 200 A (690 V, 50 kA), BS88: 250 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>	172 mm
<b>Width</b>	120 mm
<b>Depth</b>	170 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>Width of connection bar</b>	17 mm
<b>Thickness of connection bar</b>	3 mm
<b>Diameter of holes</b>	9 mm
<b>Number of holes</b>	1
<b>Type of electrical connection</b>	
• for main current circuit	screw-type terminals
• for auxiliary and control current circuit	spring-loaded terminals
<b>Type of connectable conductor cross-sections</b>	
• for main contacts	
— single or multi-stranded	2x (25 ... 120 mm²)
• at AWG conductors for main contacts	4 ... 250 kcmil
<b>Type of connectable conductor cross-sections</b>	
• for auxiliary contacts	
— solid	2x (0.25 ... 2.5 mm²)
— single or multi-stranded	2x (0,25 ... 2,5 mm²)
— finely stranded with core end processing	2x (0.25 ... 1.5 mm²)

— finely stranded without core end processing	2x (0.25 ... 2.5 mm <sup>2</sup> )
• at AWG conductors for auxiliary contacts	2x (24 ... 14)
<b>AWG number as coded connectable conductor cross section</b>	
• for auxiliary contacts	24 ... 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
 CCC	 EAC	 RCM
 UL		<a href="#">Type Examination Certificate</a>
 CSA		

Declaration of Conformity	Test Certificates	other
 EG-Konf.	<a href="#">Miscellaneous</a> <a href="#">Special Test Certificate</a> <a href="#">Type Test Certificates/Test Report</a>	<a href="#">Confirmation</a> <a href="#">Miscellaneous</a>

#### Railway

[Special Test Certificate](#)  
[Type Test Certificates/Test Report](#)

#### 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=3RT1054-2XB46-0LA2>



### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1054-2XB46-0LA2>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-2XB46-0LA2>

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

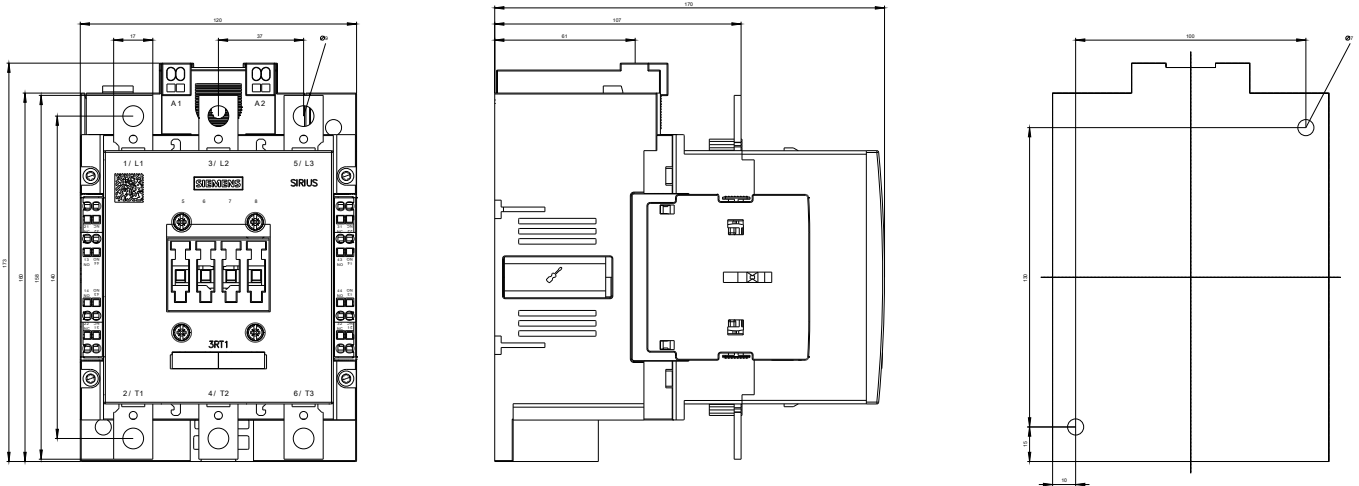
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT1054-2XB46-0LA2&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1054-2XB46-0LA2&lang=en)

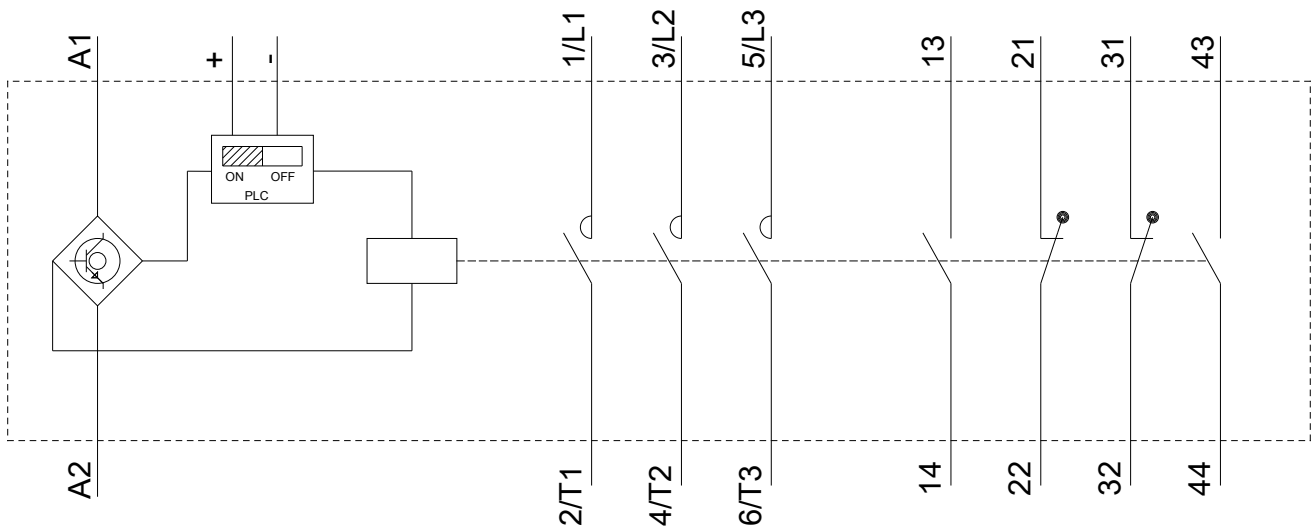
### Characteristic: Tripping characteristics, $I^2t$ , Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1054-2XB46-0LA2/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1054-2XB46-0LA2&objecttype=14&gridview=view1>





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