

Contactor AC3: 90 kW / 400 V Coil DC 110 V x (0,7...1,25) PLC input  
 DC 24...110 V auxiliary contacts: 2 NO + 2 NC 3-pole Size S6 busbar  
 connections coil terminals: spring loaded



Figure similar

Product brand name	SIRIUS
Product designation	Power contactor
Product type designation	3RT1

General technical data	
Size of contactor	S6
Product extension	Yes
• Auxiliary switch	
Surge voltage resistance rated value	8 kV
maximum permissible voltage for safe isolation	
• between coil and main contacts acc. to EN 60947-1	690 V
Protection class IP	
• on the front	IP00; IP20 on the front with cover / box terminal
• of the terminal	IP00
Shock resistance	
• for railway applications acc. to DIN EN 61373	Category 1, Class B
Shock resistance at rectangular impulse	

<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

### Ambient conditions

<b>Installation altitude at height above sea level</b>	
<ul style="list-style-type: none"> <li>• maximum</li> </ul>	2 000 m
<b>Ambient temperature</b>	
<ul style="list-style-type: none"> <li>• during operation</li> </ul>	-40 ... +70 °C
<ul style="list-style-type: none"> <li>• during storage</li> </ul>	-55 ... +80 °C

### 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>— at ambient temperature 40 °C rated value</li> </ul> </li> </ul>	215 A
<ul style="list-style-type: none"> <li>• at AC-1 <ul style="list-style-type: none"> <li>— up to 690 V at ambient temperature 40 °C rated value</li> </ul> </li> </ul>	215 A
<ul style="list-style-type: none"> <li>— up to 690 V at ambient temperature 60 °C rated value</li> </ul>	185 A
<ul style="list-style-type: none"> <li>• at AC-2 at 400 V rated value</li> </ul>	185 A
<ul style="list-style-type: none"> <li>• at AC-3 <ul style="list-style-type: none"> <li>— at 400 V rated value</li> </ul> </li> </ul>	185 A
<ul style="list-style-type: none"> <li>— at 500 V rated value</li> </ul>	185 A
<ul style="list-style-type: none"> <li>— at 690 V rated value</li> </ul>	170 A
<b>Connectable conductor cross-section in main circuit at AC-1</b>	
<ul style="list-style-type: none"> <li>• at 60 °C minimum permissible</li> </ul>	95 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• at 40 °C minimum permissible</li> </ul>	95 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>	81 A
<ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>	65 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>	<p>160 A</p> <p>18 A</p> <p>3.4 A</p> <p>0.8 A</p> <p>0.5 A</p> <p>160 A</p> <p>160 A</p> <p>20 A</p> <p>3.2 A</p> <p>1.6 A</p> <p>160 A</p> <p>160 A</p> <p>160 A</p> <p>11.5 A</p> <p>4 A</p>
<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> <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-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>	<p>160 A</p> <p>2.5 A</p> <p>0.6 A</p> <p>0.17 A</p> <p>0.12 A</p> <p>160 A</p> <p>160 A</p> <p>2.5 A</p> <p>0.65 A</p> <p>0.37 A</p> <p>160 A</p> <p>160 A</p> <p>160 A</p> <p>1.4 A</p> <p>0.75 A</p>
<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> </ul> </li> </ul>	<p>70 kW</p>

— at 400 V rated value	121 kW
— at 400 V at 60 °C rated value	121 kW
— at 690 V rated value	210 kW
— at 690 V at 60 °C rated value	210 kW
• at AC-2 at 400 V rated value	90 kW
• at AC-3	
— at 230 V rated value	61 kW
— at 400 V rated value	90 kW
— at 500 V rated value	132 kW
— at 690 V rated value	160 kW
<b>Operating power for approx. 200000 operating cycles at AC-4</b>	
• at 400 V rated value	45 kW
• at 690 V rated value	65 kW
<b>Thermal short-time current limited to 10 s</b>	1.48 kA
<b>Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor</b>	13 W
<b>No-load switching frequency</b>	
• at DC	1 000 1/h
<b>Operating frequency</b>	
• at AC-1 maximum	800 1/h
• at AC-2 maximum	300 1/h
• at AC-3 maximum	750 1/h
• at AC-4 maximum	130 1/h
<b>Operating frequency</b>	
• at DC-1 maximum	400 1/s
• at DC-3 maximum	350 1/s
• at DC-5 maximum	350 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	215 A
• up to 70 °C according to IEC 60077 rated value	145 A
<b>Connectable conductor cross-section in main circuit</b>	
• up to 40 °C according to IEC 60077 rated value minimum permissible	95 mm <sup>2</sup>
• up to 70 °C according to IEC 60077 rated value minimum permissible	95 mm <sup>2</sup>
<b>Control circuit/ Control</b>	
<b>Type of voltage of the control supply voltage</b>	DC
<b>Control supply voltage at DC</b>	
• rated value	110 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</b>	
• for auxiliary contacts	
— instantaneous contact	2
<b>Number of NO contacts</b>	
• for auxiliary contacts	
— 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>	
<ul style="list-style-type: none"> <li>• at 480 V rated value</li> <li>• at 600 V rated value</li> </ul>	<p>180 A</p> <p>192 A</p>
<b>Yielded mechanical performance [hp]</b>	
<ul style="list-style-type: none"> <li>• for single-phase AC motor <ul style="list-style-type: none"> <li>— at 230 V rated value</li> </ul> </li> <li>• for three-phase AC motor <ul style="list-style-type: none"> <li>— at 200/208 V rated value</li> <li>— at 220/230 V rated value</li> <li>— at 460/480 V rated value</li> <li>— at 575/600 V rated value</li> </ul> </li> </ul>	<p>230 hp</p> <p>60 hp</p> <p>75 hp</p> <p>150 hp</p> <p>200 hp</p>
<b>Contact rating of auxiliary contacts according to UL</b>	A600 / Q600

## Short-circuit protection

<b>Design of the fuse link</b>	
<ul style="list-style-type: none"> <li>• for short-circuit protection of the main circuit <ul style="list-style-type: none"> <li>— with type of coordination 1 required</li> <li>— with type of assignment 2 required</li> </ul> </li> <li>• for short-circuit protection of the auxiliary switch required</li> </ul>	<p>Fuse gG: 355 A</p> <p>Fuse gG: 315 A</p> <p>fuse gG: 10 A</p>

## 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
<ul style="list-style-type: none"> <li>• Side-by-side mounting</li> </ul>	Yes
<b>Height</b>	172 mm
<b>Width</b>	120 mm
<b>Depth</b>	170 mm
<b>Required spacing</b>	
<ul style="list-style-type: none"> <li>• with side-by-side mounting <ul style="list-style-type: none"> <li>— forwards</li> <li>— Backwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> <li>• for grounded parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— Backwards</li> <li>— upwards</li> <li>— at the side</li> <li>— downwards</li> </ul> </li> </ul>	<p>20 mm</p> <p>0 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 mm</p> <p>20 mm</p> <p>0 mm</p> <p>10 mm</p> <p>10 mm</p> <p>10 mm</p>

• for live parts	
— forwards	10 mm
— Backwards	0 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	spring-loaded terminals
<b>Type of connectable conductor cross-sections</b>	
• for main contacts	
— stranded	2x (25 ... 120 mm <sup>2</sup> )
— single or multi-stranded	2x (25 ... 120 mm <sup>2</sup> )
• at AWG conductors for main contacts	4 ... 250 kcmil
<b>Type of connectable conductor cross-sections</b>	
• for auxiliary contacts	
— single or multi-stranded	2x (0,25 ... 2,5 mm <sup>2</sup> )
— finely stranded with core end processing	2x (0.25 ... 1.5 mm <sup>2</sup> )
— finely stranded without core end processing	2x (0.25 ... 2.5 mm <sup>2</sup> )
• at AWG conductors for auxiliary contacts	2x (24 ... 14)

### Safety related data

<b>Product function</b>	
• Mirror contact acc. to IEC 60947-4-1	Yes
• positively driven operation acc. to IEC 60947-5-1	No

### Certificates/approvals

General Product Approval	Functional Safety/Safety of Machinery	Declaration of Conformity
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[Type Examination Certificate](#)



Test Certificates	Marine / Shipping	other	Railway
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[Special Test Certificate](#)



[Confirmation](#)

[Miscellaneous](#)

[Vibration and Shock](#)

[Confirmation](#)

## Further information

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

<http://www.siemens.com/industrial-controls/catalogs>

### Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT1056-2XF46-0LA2>

### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1056-2XF46-0LA2>

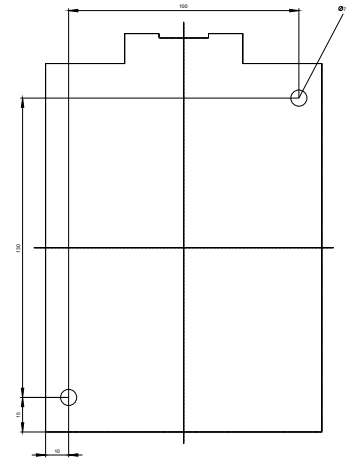
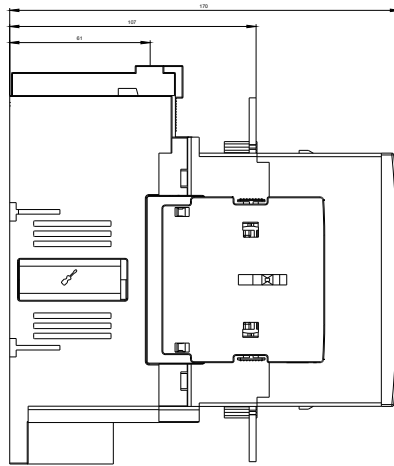
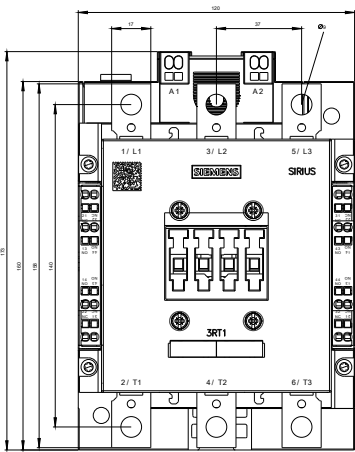
### Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

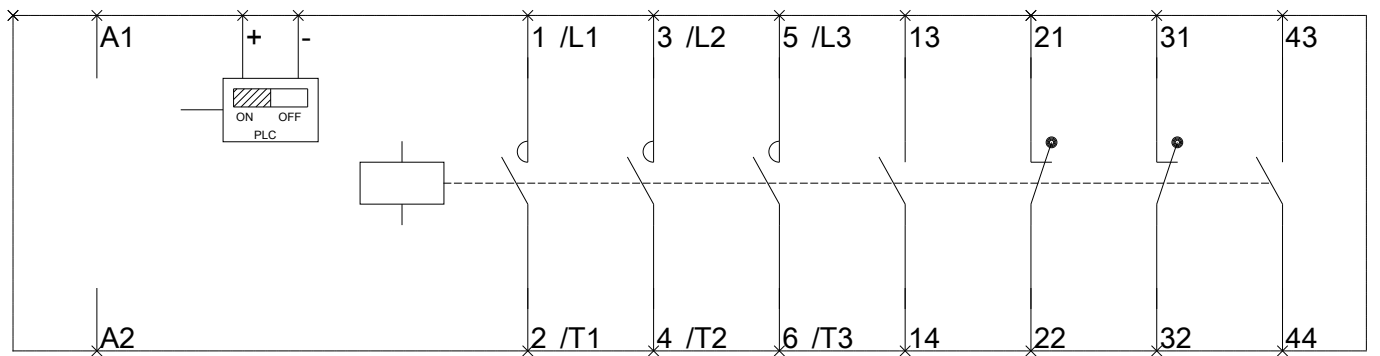
<https://support.industry.siemens.com/cs/ww/en/ps/3RT1056-2XF46-0LA2>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT1056-2XF46-0LA2&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1056-2XF46-0LA2&lang=en)







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