

Contactor AC3: 160 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 S10  
busbar connections coil terminals: screw type



Figure similar

|   |   |
|---|---|
| <b>Product brand name</b>                             | SIRIUS  |
| <b>Product designation</b>                            | Power contactor                                   |
| <b>Product type designation</b>                       | 3RT1  |
| <b>General technical data</b>                         |   |
| <b>Size of contactor</b>                              | S10   |
| <b>Product extension</b>                              |   |
| • Auxiliary switch                                    | Yes   |
| <b>Surge voltage resistance rated value</b>           | 8 kV  |
| <b>maximum permissible voltage for safe isolation</b> |   |
| • between coil and main contacts acc. to EN 60947-1   | 690 V   |
| <b>Protection class IP</b>                            |   |
| • on the front  | IP00; IP20 on the front with cover / box terminal |
| • of the terminal                                     | IP00  |
| <b>Shock resistance</b>                               |   |
| • for railway applications acc. to DIN EN 61373       | 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                 |

### 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>    | 330 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> | 330 A               |
| <ul style="list-style-type: none"> <li>— up to 690 V at ambient temperature 60 °C rated value</li> </ul>  | 300 A               |
| <ul style="list-style-type: none"> <li>• at AC-2 at 400 V rated value</li> </ul>  | 300 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>                                 | 300 A               |
| <ul style="list-style-type: none"> <li>— at 500 V rated value</li> </ul>  | 300 A               |
| <ul style="list-style-type: none"> <li>— at 690 V rated value</li> </ul>  | 280 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>  | 185 mm <sup>2</sup> |
| <ul style="list-style-type: none"> <li>• at 40 °C minimum permissible</li> </ul>  | 185 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>  | 125 A               |
| <ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>  | 115 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>300 A</p> <p>33 A</p> <p>3.8 A</p> <p>0.9 A</p> <p>0.6 A</p> <p>300 A</p> <p>300 A</p> <p>300 A</p> <p>4 A</p> <p>2 A</p> <p>300 A</p> <p>300 A</p> <p>300 A</p> <p>11 A</p> <p>5.2 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>300 A</p> <p>3 A</p> <p>0.6 A</p> <p>0.18 A</p> <p>0.125 A</p> <p>300 A</p> <p>300 A</p> <p>2.5 A</p> <p>0.65 A</p> <p>0.37 A</p> <p>300 A</p> <p>300 A</p> <p>300 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>113 kW</p>  |

|   |                     |
|---|---------------------|
| — at 400 V rated value  | 197 kW              |
| — at 400 V at 60 °C rated value   | 197 kW              |
| — at 690 V rated value  | 340 kW              |
| — at 690 V at 60 °C rated value   | 340 kW              |
| • at AC-2 at 400 V rated value  | 160 kW              |
| • at AC-3   |                     |
| — at 230 V rated value  | 97 kW               |
| — at 400 V rated value  | 160 kW              |
| — at 500 V rated value  | 200 kW              |
| — at 690 V rated value  | 250 kW              |
| <b>Operating power for approx. 200000 operating cycles at AC-4</b>                            |                     |
| • at 400 V rated value  | 71 kW               |
| • at 690 V rated value  | 112 kW              |
| <b>Thermal short-time current limited to 10 s</b>   | 2.4 kA              |
| <b>Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor</b> | 22 W                |
| <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  | 330 A               |
| • up to 70 °C according to IEC 60077 rated value  | 265 A               |
| <b>Connectable conductor cross-section in main circuit</b>                                    |                     |
| • up to 40 °C according to IEC 60077 rated value minimum permissible                          | 185 mm <sup>2</sup> |
| • up to 70 °C according to IEC 60077 rated value minimum permissible                          | 185 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>   | 580 W                                   |
| <b>Holding power of magnet coil at DC</b>   | 3.4 W                                   |
| <b>Closing delay</b>  |   |
| • at DC   | 45 ... 80 ms                            |
| <b>Opening delay</b>  |   |
| • at DC   | 80 ... 100 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>302 A</p> <p>289 A</p>                               |
| <b>Yielded mechanical performance [hp]</b>   |   |
| <ul style="list-style-type: none"> <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>100 hp</p> <p>125 hp</p> <p>250 hp</p> <p>300 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: 500 A</p> <p>Fuse gG: 400 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>  | 210 mm   |
| <b>Width</b>   | 145 mm   |
| <b>Depth</b>   | 202 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> <li>• for live parts <ul style="list-style-type: none"> <li>— forwards</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> <p>10 mm</p> |

|               |       |
|---------------|-------|
| — Backwards   | 0 mm  |
| — upwards     | 10 mm |
| — downwards   | 10 mm |
| — at the side | 10 mm |







### Connections/Terminals

|  |  |
|--|--|
| <b>Type of electrical connection</b> <ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for auxiliary and control current circuit</li> </ul>   | screw-type terminals<br>screw-type terminals   |
| <b>Type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>• for main contacts             <ul style="list-style-type: none"> <li>— stranded</li> <li>— single or multi-stranded</li> </ul> </li> <li>• at AWG conductors for main contacts</li> </ul>   | 2x (70 ... 240 mm <sup>2</sup> )<br>2x (70 ... 240 mm <sup>2</sup> )<br>2/0 ... 500 kcmil  |
| <b>Type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>• for auxiliary contacts             <ul style="list-style-type: none"> <li>— single or multi-stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• at AWG conductors for auxiliary contacts</li> </ul> | 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> )<br>2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> )<br>2x (20 ... 16), 2x (18 ... 14), 1x 12 |

### Safety related data

|   |           |
|---|-----------|
| <b>Product function</b> <ul style="list-style-type: none"> <li>• Mirror contact acc. to IEC 60947-4-1</li> <li>• positively driven operation acc. to IEC 60947-5-1</li> </ul> | Yes<br>No |
|---|-----------|

### Certificates/approvals

|  |   |   |   |   |
|--|---|---|---|---|
| General Product Approval   |   |   | Functional Safety/Safety of Machinery   | Declaration of Conformity   |
| <br>CCC | <br>CSA  | <br>UL |  | <a href="#">Type Examination Certificate</a><br><br>EG-Konf. |
| <b>Test Certificates</b><br><a href="#">Special Test Certificate</a>                       | <b>Marine / Shipping</b><br><br>DNV-GL<br>DNVGL.COM/AF | <b>other</b><br><a href="#">Confirmation</a>  | <b>Railway</b><br><a href="#">Miscellaneous</a>                                     | <a href="#">Vibration and Shock</a><br><a href="#">Confirmation</a>   |

### 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=3RT1066-6XF46-0LA2>

**Cax online generator**

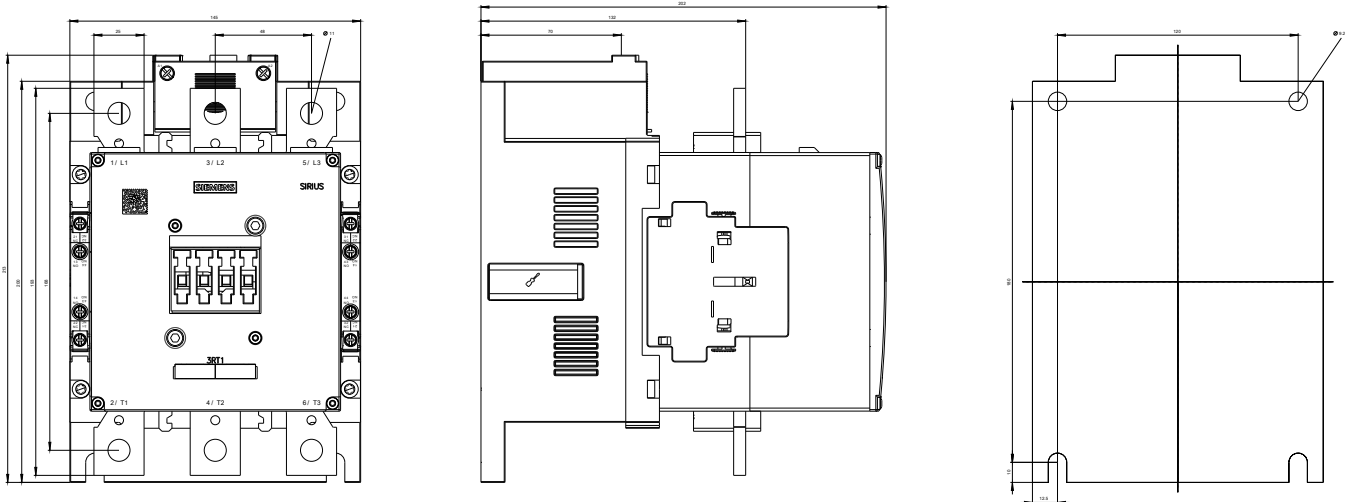
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1066-6XF46-0LA2>

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

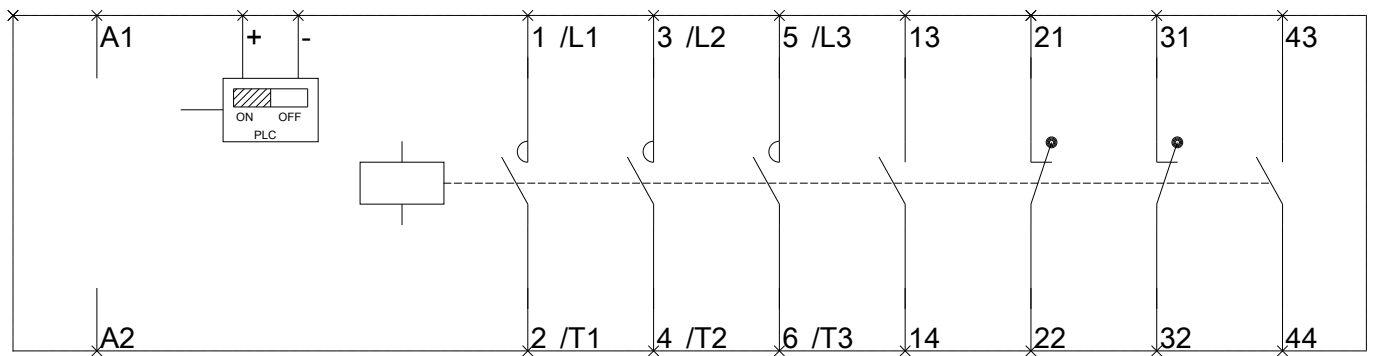
<https://support.industry.siemens.com/cs/ww/en/ps/3RT1066-6XF46-0LA2>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT1066-6XF46-0LA2&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1066-6XF46-0LA2&lang=en)







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