

CONTACTOR, AC-3, 7.5KW/400V, 1NO+1NC, DC 24V, 3-POLE, SZ  
S0 SCREW TERMINAL



|   |                |
|---|----------------|
| product brand name                                  | SIRIUS         |
| Product designation                                 | 3RT2 contactor |
| <b>General technical data:</b>                      |                |
| Size of contactor                                   | S0             |
| Product extension                                   |                |
| • function module for communication                 | No             |
| • Auxiliary switch                                  | Yes            |
| Insulation voltage                                  |                |
| • rated value                                       | 690 V          |
| Degree of pollution                                 | 3              |
| Surge voltage resistance rated value                | 6 kV           |
| maximum permissible voltage for safe isolation      |                |
| • between coil and main contacts acc. to EN 60947-1 | 400 V          |
| Protection class IP                                 |                |
| • on the front                                      | IP20           |
| • of the terminal                                   | IP20           |
| Shock resistance                                    |                |
| • at rectangular impulse                            |                |

|   |  |
|---|--|
| <ul style="list-style-type: none"> <li>— at DC</li> <li>• with sine pulse</li> <li>— at DC</li> </ul>   | <p>10g / 5 ms, 7,5g / 10 ms</p> <p>15g / 5 ms, 10g / 10 ms</p> |
| <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> | <p>10 000 000</p> <p>5 000 000</p> <p>10 000 000</p>           |

#### Ambient conditions:

|   |   |
|---|---|
| <b>Installation altitude at height above sea level maximum</b>  | 2 000 m                                     |
| <b>Ambient temperature</b> <ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage</li> </ul> | <p>-25 ... +60 °C</p> <p>-55 ... +80 °C</p> |

#### Main circuit:

|   |   |
|---|---|
| <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>  | 690 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> <li>• at AC-1 up to 690 V <ul style="list-style-type: none"> <li>— at ambient temperature 40 °C rated value</li> <li>— 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> </ul> </li> </ul> | <p>40 A</p> <p>40 A</p> <p>35 A</p> <p>17 A</p> <p>17 A</p> <p>17 A</p> <p>13 A</p> |
| <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> <li>• at 40 °C minimum permissible</li> </ul>   | <p>10 mm<sup>2</sup></p> <p>10 mm<sup>2</sup></p>                                   |
| <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>   | <p>7.7 A</p> <p>7.7 A</p>   |
| <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> </ul> </li> </ul>   | 35 A  |

|  |         |
|--|---------|
| — at 110 V rated value                           | 4.5 A   |
| — at 220 V rated value                           | 1 A     |
| — at 440 V rated value                           | 0.4 A   |
| — at 600 V rated value                           | 0.25 A  |
| • with 2 current paths in series at DC-1         |         |
| — at 24 V rated value                            | 35 A    |
| — at 110 V rated value                           | 35 A    |
| — at 220 V rated value                           | 5 A     |
| — at 440 V rated value                           | 1 A     |
| — at 600 V rated value                           | 0.8 A   |
| • with 3 current paths in series at DC-1         |         |
| — at 24 V rated value                            | 35 A    |
| — at 110 V rated value                           | 35 A    |
| — at 220 V rated value                           | 35 A    |
| — at 440 V rated value                           | 2.9 A   |
| — at 600 V rated value                           | 1.4 A   |
| <b>Operating current</b>                         |         |
| • at 1 current path at DC-3 at DC-5              |         |
| — at 24 V rated value                            | 20 A    |
| — at 110 V rated value                           | 2.5 A   |
| — at 220 V rated value                           | 1 A     |
| — at 440 V rated value                           | 0.09 A  |
| — at 600 V rated value                           | 0.06 A  |
| • with 2 current paths in series at DC-3 at DC-5 |         |
| — at 110 V rated value                           | 15 A    |
| — at 220 V rated value                           | 3 A     |
| — at 24 V rated value                            | 35 A    |
| — at 440 V rated value                           | 0.27 A  |
| — at 600 V rated value                           | 0.16 A  |
| • with 3 current paths in series at DC-3 at DC-5 |         |
| — at 110 V rated value                           | 35 A    |
| — at 220 V rated value                           | 10 A    |
| — at 24 V rated value                            | 35 A    |
| — at 440 V rated value                           | 0.6 A   |
| — at 600 V rated value                           | 0.6 A   |
| <b>Operating power</b>                           |         |
| • at AC-1  |         |
| — at 230 V rated value                           | 13.3 kW |
| — at 230 V at 60 °C rated value                  | 13.3 kW |
| — at 400 V rated value                           | 23 kW   |
| — at 400 V at 60 °C rated value                  | 23 kW   |

|   |           |
|---|-----------|
| — at 690 V rated value  | 40 kW     |
| — at 690 V at 60 °C rated value   | 40 kW     |
| • at AC-2 at 400 V rated value  | 7.5 kW    |
| • at AC-3   |           |
| — at 230 V rated value  | 4 kW      |
| — at 400 V rated value  | 7.5 kW    |
| — at 690 V rated value  | 11 kW     |
| <b>Operating power for approx. 200000 operating cycles at AC-4</b>                            |           |
| • at 400 V rated value  | 3.5 kW    |
| • at 690 V rated value  | 6 kW      |
| <b>Thermal short-time current limited to 10 s</b>   | 150 A     |
| <b>Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor</b> | 0.9 W     |
| <b>No-load switching frequency</b>  |           |
| • at DC   | 1 500 1/h |
| <b>Operating frequency</b>  |           |
| • at AC-1 maximum   | 1 000 1/h |
| • at AC-2 maximum   | 1 000 1/h |
| • at AC-3 maximum   | 1 000 1/h |
| • at AC-4 maximum   | 300 1/h   |

#### Control circuit/ Control:

|   |                |
|---|----------------|
| <b>Type of voltage of the control supply voltage</b>                                  | DC             |
| <b>Control supply voltage at DC</b>   |                |
| • rated value   | 24 V           |
| <b>Operating range factor control supply voltage rated value of magnet coil at DC</b> | 0.8 ... 1.1    |
| <b>Closing power of magnet coil at DC</b>   | 5.9 W          |
| <b>Holding power of magnet coil at DC</b>   | 5.9 W          |
| <b>Closing delay</b>  |                |
| • at DC   | 50 ... 170 ms  |
| <b>Opening delay</b>  |                |
| • at DC   | 15 ... 17.5 ms |
| <b>Arcing time</b>  | 10 ... 10 ms   |
| <b>Residual current of the electronics for control with signal &lt;0&gt;</b>          |                |
| • at AC at 230 V maximum permissible  | 6 mA           |
| • at DC at 24 V maximum permissible   | 16 mA          |

#### Auxiliary circuit:

|                              |   |
|------------------------------|---|
| <b>Number of NC contacts</b> |   |
| • for auxiliary contacts     |   |
| — instantaneous contact      | 1 |

|   |  |
|---|--|
| <b>Number of NO contacts</b>  |  |
| <ul style="list-style-type: none"> <li>• for auxiliary contacts <ul style="list-style-type: none"> <li>— instantaneous contact</li> </ul> </li> </ul>   | 1  |
| Operating current at AC-12 maximum  | 10 A   |
| <b>Operating current at AC-15</b>   |  |
| <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> </ul>  | 10 A<br>3 A<br>2 A<br>1 A                            |
| <b>Operating current at DC-12</b>   |  |
| <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<br>6 A<br>6 A<br>3 A<br>2 A<br>1 A<br>0.15 A    |
| <b>Operating current at DC-13</b>   |  |
| <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<br>2 A<br>2 A<br>1 A<br>0.9 A<br>0.3 A<br>0.1 A |
| <b>Contact reliability of auxiliary contacts</b>  | 1 faulty switching per 100 million (17 V, 1 mA)      |
| <b>UL/CSA ratings:</b>  |  |
| <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>  | 14 A<br>17 A   |
| <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 110/120 V rated value</li> <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> | 1 hp<br>3 hp<br>3 hp<br>5 hp<br>10 hp<br>15 hp       |
| <b>Contact rating of auxiliary contacts according to UL</b>   | A600 / Q600  |
| <b>Short-circuit protection</b>   |  |

|  |  |
|--|--|
| <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> | gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 63 A<br>gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 25 A<br>fuse gL/gG: 10 A |
|--|--|

**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 |
| <b>Mounting type</b> <ul style="list-style-type: none"> <li>• Side-by-side mounting</li> </ul>   | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 50022<br>Yes  |
| <b>Height</b>  | 85 mm  |
| <b>Width</b>   | 45 mm  |
| <b>Depth</b>   | 107 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> <li>— Backwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> </ul> | 0 mm<br>0 mm<br>0 mm<br>0 mm<br>0 mm<br><br>0 mm<br>0 mm<br>0 mm<br>6 mm<br>0 mm<br><br>0 mm<br>0 mm<br>0 mm<br>0 mm<br>6 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>— solid</li> </ul> </li> </ul> | 2x (1 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 10 mm <sup>2</sup> ) |

|   |   |
|---|---|
| <ul style="list-style-type: none"> <li>— single or multi-stranded</li> <li>— finely stranded with core end processing</li> <li>• at AWG conductors for main contacts</li> </ul>   | <p>2x (1 ... 2,5 mm<sup>2</sup>), 2x (2,5 ... 10 mm<sup>2</sup>)</p> <p>2x (1 ... 2.5 mm<sup>2</sup>), 2x (2.5 ... 6 mm<sup>2</sup>), 1x 10 mm<sup>2</sup></p> <p>2x (16 ... 12), 2x (14 ... 8)</p> |
| <p><b>Type of connectable conductor cross-sections</b></p> <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> | <p>2x (0,5 ... 1,5 mm<sup>2</sup>), 2x (0,75 ... 2,5 mm<sup>2</sup>)</p> <p>2x (0.5 ... 1.5 mm<sup>2</sup>), 2x (0.75 ... 2.5 mm<sup>2</sup>)</p> <p>2x (20 ... 16), 2x (18 ... 14)</p>             |

**Safety related data:**

|  |                         |
|--|-------------------------|
| <p><b>B10 value</b></p> <ul style="list-style-type: none"> <li>• with high demand rate acc. to SN 31920</li> </ul>   | <p>1 000 000</p>        |
| <p><b>Proportion of dangerous failures</b></p> <ul style="list-style-type: none"> <li>• with low demand rate acc. to SN 31920</li> <li>• with high demand rate acc. to SN 31920</li> </ul> | <p>40 %</p> <p>73 %</p> |
| <p><b>Failure rate [FIT]</b></p> <ul style="list-style-type: none"> <li>• with low demand rate acc. to SN 31920</li> </ul>   | <p>100 FIT</p>          |
| <p><b>Product function</b></p> <ul style="list-style-type: none"> <li>• Mirror contact acc. to IEC 60947-4-1</li> </ul>  | <p>Yes</p>              |
| <p><b>T1 value for proof test interval or service life acc. to IEC 61508</b></p>   | <p>20 y</p>             |

**Certificates/approvals**

|                          |     |
|--------------------------|-----|
| General Product Approval | EMC |
|--------------------------|-----|



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|                                       |                           |                   |                   |
|---------------------------------------|---------------------------|-------------------|-------------------|
| Functional Safety/Safety of Machinery | Declaration of Conformity | Test Certificates | Shipping Approval |
|---------------------------------------|---------------------------|-------------------|-------------------|

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|-------------------|-------|



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**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=3RT20251BB40>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT20251BB40>

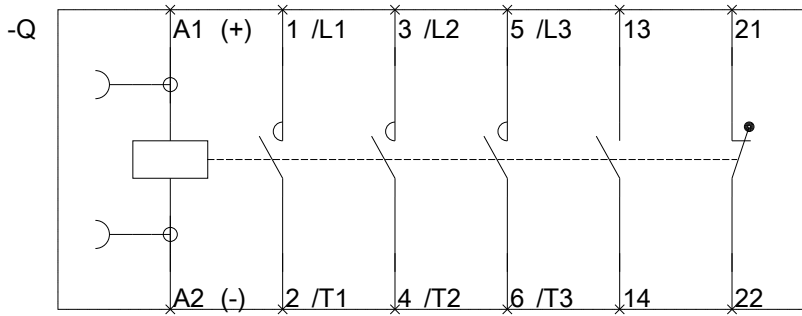
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

<https://support.industry.siemens.com/cs/ww/en/ps/3RT20251BB40>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT20251BB40&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT20251BB40&lang=en)





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