

CONTACTOR, AC3: 45KW/400V, 2NO+2NC, 20-33VAC/DC, 3-POLE, 3NO, SIZE: S3, SCREW TERMINALS, INTEGRATED VARISTOR, PERM. MOUNT. AUX. SWITCH



Figure similar

|                          |                 |
|--------------------------|-----------------|
| Product brand name       | SIRIUS          |
| Product designation      | Power contactor |
| Product type designation | 3RT2            |

| General technical data  |         |
|---|---------|
| Size of contactor   | S3      |
| Product extension   |         |
| <ul style="list-style-type: none"> <li>function module for communication</li> </ul>                 | No      |
| <ul style="list-style-type: none"> <li>Auxiliary switch</li> </ul>                                  | Yes     |
| Insulation voltage  |         |
| <ul style="list-style-type: none"> <li>rated value</li> </ul>                                       | 1 000 V |
| Degree of pollution   | 3       |
| Surge voltage resistance rated value  | 6 kV    |
| maximum permissible voltage for safe isolation  |         |
| <ul style="list-style-type: none"> <li>between coil and main contacts acc. to EN 60947-1</li> </ul> | 690 V   |
| Protection class IP   |         |
| <ul style="list-style-type: none"> <li>on the front</li> </ul>                                      | IP20    |

|   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• of the terminal</li> </ul>   | IP00   |
| <b>Shock resistance at rectangular impulse</b> <ul style="list-style-type: none"> <li>• at AC</li> <li>• at DC</li> </ul>   | 6.7 g / 5 ms, 4.0 g / 10 ms<br>6.7 g / 5 ms, 4.0 g / 10 ms   |
| <b>Shock resistance with sine pulse</b> <ul style="list-style-type: none"> <li>• at AC</li> <li>• at DC</li> </ul>  | 10.6 g / 5 ms, 6.3 g / 10 ms<br>10.6 g / 5 ms, 6.3 g / 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<br>5 000 000<br>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> <li>• during storage</li> </ul> | -25 ... +60 °C<br>-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>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> <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> </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> | 130 A<br>130 A<br>110 A<br>95 A<br>95 A<br>95 A<br>78 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> <li>• at 40 °C minimum permissible</li> </ul>   | 35 mm <sup>2</sup><br>50 mm <sup>2</sup>                |

|  |        |
|--|--------|
| <b>Operating current for approx. 200000 operating cycles at AC-4</b> |        |
| • at 400 V rated value   | 42 A   |
| • at 690 V rated value   | 30 A   |
| <b>Operating current</b>   |        |
| • at 1 current path at DC-1  |        |
| — at 24 V rated value  | 100 A  |
| — at 110 V rated value   | 9 A    |
| — at 220 V rated value   | 2 A    |
| — at 440 V rated value   | 0.6 A  |
| — at 600 V rated value   | 0.4 A  |
| • with 2 current paths in series at DC-1                             |        |
| — at 24 V rated value  | 100 A  |
| — at 110 V rated value   | 100 A  |
| — at 220 V rated value   | 10 A   |
| — at 440 V rated value   | 1.8 A  |
| — at 600 V rated value   | 1 A    |
| • with 3 current paths in series at DC-1                             |        |
| — at 24 V rated value  | 100 A  |
| — at 110 V rated value   | 100 A  |
| — at 220 V rated value   | 80 A   |
| — at 440 V rated value   | 4.5 A  |
| — at 600 V rated value   | 2.6 A  |
| <b>Operating current</b>   |        |
| • at 1 current path at DC-3 at DC-5                                  |        |
| — at 24 V rated value  | 40 A   |
| — at 110 V rated value   | 2.5 A  |
| — at 220 V rated value   | 1 A    |
| — at 440 V rated value   | 0.15 A |
| — at 600 V rated value   | 0.06 A |
| • with 2 current paths in series at DC-3 at DC-5                     |        |
| — at 24 V rated value  | 100 A  |
| — at 110 V rated value   | 100 A  |
| — at 220 V rated value   | 7 A    |
| — at 440 V rated value   | 0.42 A |
| — at 600 V rated value   | 0.16 A |
| • with 3 current paths in series at DC-3 at DC-5                     |        |
| — at 24 V rated value  | 100 A  |
| — at 110 V rated value   | 100 A  |
| — at 220 V rated value   | 35 A   |
| — at 440 V rated value   | 0.8 A  |

|   |             |
|---|-------------|
| — at 600 V rated value  | 0.35 A      |
| <b>Operating power</b>  |             |
| • at AC-1   |             |
| — at 230 V rated value  | 49 kW       |
| — at 230 V at 60 °C rated value   | 42 kW       |
| — at 400 V rated value  | 86 kW       |
| — at 400 V at 60 °C rated value   | 72 kW       |
| — at 690 V rated value  | 148 kW      |
| — at 690 V at 60 °C rated value   | 125 kW      |
| • at AC-2 at 400 V rated value  | 45 kW       |
| • at AC-3   |             |
| — at 230 V rated value  | 22 kW       |
| — at 400 V rated value  | 45 kW       |
| — at 500 V rated value  | 55 kW       |
| — at 690 V rated value  | 75 kW       |
| <b>Operating power for approx. 200000 operating cycles at AC-4</b>                            |             |
| • at 400 V rated value  | 22 kW       |
| • at 690 V rated value  | 27.4 kW     |
| <b>Thermal short-time current limited to 10 s</b>   | 760 A       |
| <b>Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor</b> | 6.6 W       |
| <b>No-load switching frequency</b>  |             |
| • at AC   | 1 000 1/h   |
| • at DC   | 1 000 1/h   |
| <b>Operating frequency</b>  |             |
| • at AC-1 maximum   | 900 1/h     |
| • at AC-2 maximum   | 350 1/h     |
| • at AC-3 maximum   | 850 1/h     |
| • at AC-4 maximum   | 250 1/h     |
| <b>Control circuit/ Control</b>   |             |
| <b>Type of voltage of the control supply voltage</b>  | AC/DC       |
| <b>Control supply voltage at AC</b>   |             |
| • at 50 Hz rated value  | 20 ... 33 V |
| • at 60 Hz rated value  | 20 ... 33 V |
| <b>Control supply voltage at DC</b>   |             |
| • rated value   | 20 ... 33 V |
| <b>Operating range factor control supply voltage rated value of magnet coil at DC</b>         |             |
| • initial value   | 0.8         |
| • Full-scale value  | 1.1         |

|   |               |
|---|---------------|
| <b>Operating range factor control supply voltage rated value of magnet coil at AC</b> |               |
| • at 50 Hz  | 0.8 ... 1.1   |
| • at 60 Hz  | 0.8 ... 1.1   |
| <b>Design of the surge suppressor</b>   | with varistor |
| <b>Inrush current peak</b>  |               |
| • at 24 V   | 4.2 A         |
| <b>Apparent pick-up power of magnet coil at AC</b>                                    |               |
| • at 50 Hz  | 163 V·A       |
| • at 60 Hz  | 163 V·A       |
| <b>Apparent holding power of magnet coil at AC</b>                                    |               |
| • at 50 Hz  | 3.5 V·A       |
| • at 60 Hz  | 3.5 V·A       |
| <b>Closing power of magnet coil at DC</b>   | 76 W          |
| <b>Holding power of magnet coil at DC</b>   | 2.7 W         |
| <b>Closing delay</b>  |               |
| • at DC   | 50 ... 70 ms  |
| <b>Opening delay</b>  |               |
| • at DC   | 38 ... 57 ms  |
| <b>Arcing time</b>  | 10 ... 20 ms  |
| <b>Residual current of the electronics for control with signal &lt;0&gt;</b>          |               |
| • at AC at 230 V maximum permissible  | 20 mA         |
| • at DC at 24 V maximum permissible   | 20 mA         |

| 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  |
| • at 690 V rated value                    | 1 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  |

|   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• at 125 V rated value</li> <li>• at 220 V rated value</li> <li>• at 600 V rated value</li> </ul>  | <p>2 A</p> <p>1 A</p> <p>0.15 A</p>  |
| <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> | <p>6 A</p> <p>2 A</p> <p>2 A</p> <p>1 A</p> <p>0.9 A</p> <p>0.3 A</p> <p>0.1 A</p> |
| <b>Contact reliability of auxiliary contacts</b>  | <p>1 faulty switching per 100 million (17 V, 1 mA)</p>                             |

### 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>96 A</p> <p>77 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 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> | <p>10 hp</p> <p>20 hp</p> <p>30 hp</p> <p>30 hp</p> <p>75 hp</p> <p>75 hp</p> |
| <b>Contact rating of auxiliary contacts according to UL</b>  | <p>A600 / P600</p>  |

### 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>gL/gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 250 A</p> <p>gL/gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 160 A</p> <p>fuse gG: 10 A</p> |
|--|--|

### Installation/ mounting/ dimensions

|  |   |
|--|---|
| <b>Mounting position</b>   | <p>+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface</p> |
| <b>Mounting type</b> <ul style="list-style-type: none"> <li>• Side-by-side mounting</li> </ul> | <p>screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715</p> <p>Yes</p>                                    |
| <b>Height</b>  | <p>140 mm</p>   |

|   |        |
|---|--------|
| <b>Width</b>  | 70 mm  |
| <b>Depth</b>  | 195 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 0 mm</li> <li>— Backwards 0 mm</li> <li>— upwards 0 mm</li> <li>— downwards 0 mm</li> <li>— at the side 0 mm</li> </ul> </li> <li>• for grounded parts <ul style="list-style-type: none"> <li>— forwards 0 mm</li> <li>— Backwards 0 mm</li> <li>— upwards 10 mm</li> <li>— at the side 10 mm</li> <li>— downwards 10 mm</li> </ul> </li> <li>• for live parts <ul style="list-style-type: none"> <li>— forwards 0 mm</li> <li>— Backwards 0 mm</li> <li>— upwards 10 mm</li> <li>— downwards 10 mm</li> <li>— at the side 10 mm</li> </ul> </li> </ul> |        |

### Connections/Terminals

|   |  |
|---|--|
| <b>Type of electrical connection</b>  |  |
| <ul style="list-style-type: none"> <li>• for main current circuit screw-type terminals</li> <li>• for auxiliary and control current circuit screw-type terminals</li> </ul>   |  |
| <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>— finely stranded with core end processing 2x (2.5 ... 35 mm<sup>2</sup>), 1x (2.5 ... 50 mm<sup>2</sup>)</li> </ul> </li> <li>• at AWG conductors for main contacts 2x (10 ... 1/0), 1x (10 ... 2)</li> </ul>  |  |
| <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 2x (0,5 ... 1,5 mm<sup>2</sup>), 2x (0,75 ... 2,5 mm<sup>2</sup>)</li> <li>— finely stranded with core end processing 2x (0.5 ... 1.5 mm<sup>2</sup>), 2x (0.75 ... 2.5 mm<sup>2</sup>)</li> </ul> </li> <li>• at AWG conductors for auxiliary contacts 2x (20 ... 16), 2x (18 ... 14)</li> </ul> |  |

### Safety related data

|   |  |
|---|--|
| <b>B10 value</b>  |  |
| <ul style="list-style-type: none"> <li>• with high demand rate acc. to SN 31920 1 000 000</li> </ul>  |  |
| <b>Proportion of dangerous failures</b>   |  |
| <ul style="list-style-type: none"> <li>• with low demand rate acc. to SN 31920 40 %</li> <li>• with high demand rate acc. to SN 31920 73 %</li> </ul> |  |
| <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  |
| T1 value for proof test interval or service life acc. to IEC 61508  | 20 y   |
| Protection against electrical shock   | finger-safe when touched vertically from front acc. to IEC 60529 |

### Certificates/approvals

| General Product Approval | Declaration of Conformity | Marine / Shipping |
|--------------------------|---------------------------|-------------------|
|--------------------------|---------------------------|-------------------|



| Marine / Shipping | other |
|-------------------|-------|
|-------------------|-------|



[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=3RT2046-1NB34-3MA0>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2046-1NB34-3MA0>

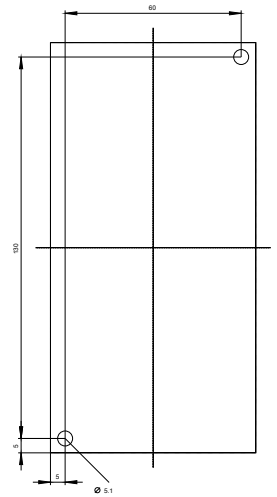
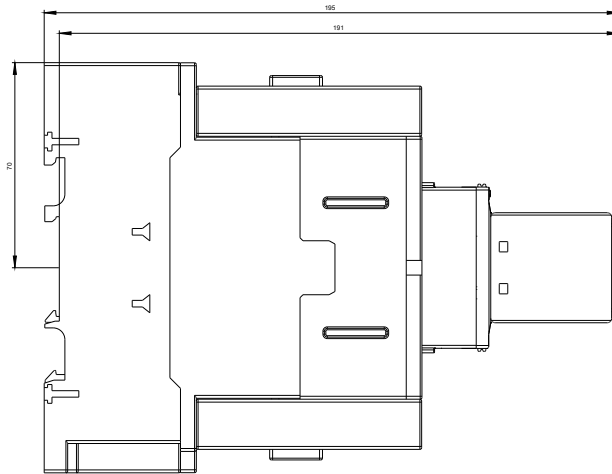
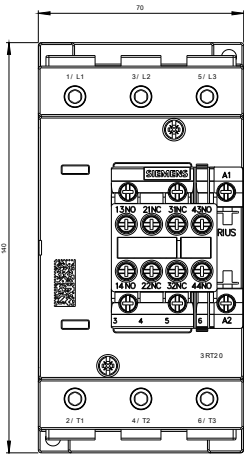
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

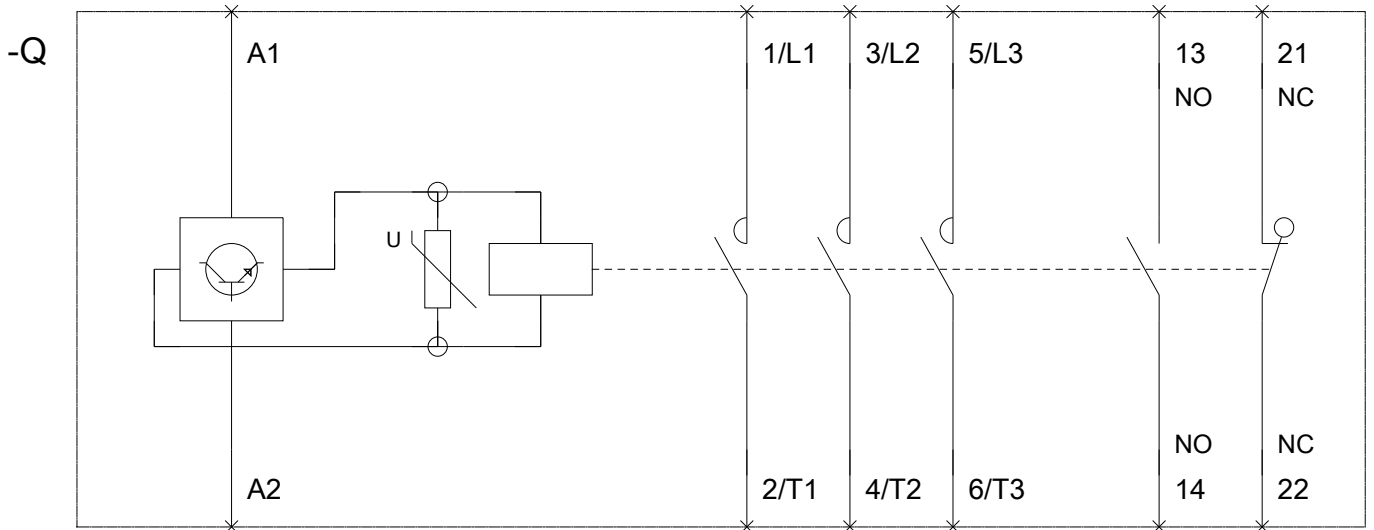
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2046-1NB34-3MA0>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2046-1NB34-3MA0&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2046-1NB34-3MA0&lang=en)







last modified:

10/13/2017