

Power contactor, AC-3 300 A, 160 kW / 400 V AC (50-60 Hz) / DC operation 21-27 UC, 3 V Auxiliary contacts 2 NO + 2 NC 3-pole, Size S10 Busbar connections Drive: electronic with PLC interface 24 V DC screw terminal



Figure similar

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

| General technical data  |   |
|---|---|
| Size of contactor   | S10   |
| 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   |
| Surge voltage resistance  |   |
| <ul style="list-style-type: none"> <li>of main circuit rated value</li> </ul>                       | 8 kV  |
| <ul style="list-style-type: none"> <li>of auxiliary circuit rated value</li> </ul>                  | 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>                                      | IP00; IP20 on the front with cover / box terminal |
| <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>  | 8,5g / 5 ms, 4,2g / 10 ms<br>8,5g / 5 ms, 4,2g / 10 ms   |
| <b>Shock resistance with sine pulse</b>   |  |
| <ul style="list-style-type: none"> <li>• at AC</li> <li>• at DC</li> </ul>  | 13,4g / 5 ms, 6,5g / 10 ms<br>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<br>5 000 000<br>10 000 000                    |
| <b>Reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750</b>   | K  |
| <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                          |
| <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> <li>— up to 1000 V at ambient temperature 40 °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> <li>• at AC-3 <ul style="list-style-type: none"> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> </ul> </li> </ul> | 330 A<br>330 A<br>300 A<br>150 A<br>150 A<br>300 A<br>300 A<br>300 A |

|  |                     |
|--|---------------------|
| — at 690 V rated value   | 280 A               |
| — at 1000 V rated value  | 95 A                |
| • at AC-4 at 400 V rated value                                       | 280 A               |
| <b>Connectable conductor cross-section in main circuit at AC-1</b>   |                     |
| • at 60 °C minimum permissible                                       | 185 mm <sup>2</sup> |
| • at 40 °C minimum permissible                                       | 185 mm <sup>2</sup> |
| <b>Operating current for approx. 200000 operating cycles at AC-4</b> |                     |
| • at 400 V rated value   | 125 A               |
| • at 690 V rated value   | 115 A               |
| <b>Operating current</b>   |                     |
| • at 1 current path at DC-1  |                     |
| — at 24 V rated value  | 300 A               |
| — at 110 V rated value   | 33 A                |
| — at 220 V rated value   | 3.8 A               |
| — at 440 V rated value   | 0.9 A               |
| — at 600 V rated value   | 0.6 A               |
| • with 2 current paths in series at DC-1                             |                     |
| — at 24 V rated value  | 300 A               |
| — at 110 V rated value   | 300 A               |
| — at 220 V rated value   | 300 A               |
| — at 440 V rated value   | 4 A                 |
| — at 600 V rated value   | 2 A                 |
| • with 3 current paths in series at DC-1                             |                     |
| — at 24 V rated value  | 300 A               |
| — at 110 V rated value   | 300 A               |
| — at 220 V rated value   | 300 A               |
| — at 440 V rated value   | 11 A                |
| — at 600 V rated value   | 5.2 A               |
| <b>Operating current</b>   |                     |
| • at 1 current path at DC-3 at DC-5                                  |                     |
| — at 24 V rated value  | 300 A               |
| — at 110 V rated value   | 3 A                 |
| — at 220 V rated value   | 0.6 A               |
| — at 440 V rated value   | 0.18 A              |
| — at 600 V rated value   | 0.125 A             |
| • with 2 current paths in series at DC-3 at DC-5                     |                     |
| — at 24 V rated value  | 300 A               |
| — at 110 V rated value   | 300 A               |
| — at 220 V rated value   | 2.5 A               |
| — at 440 V rated value   | 0.65 A              |

|  |   |
|--|---|
| <ul style="list-style-type: none"> <li>— at 600 V rated value</li> </ul>   | 0.37 A  |
| <ul style="list-style-type: none"> <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>  | 300 A<br>300 A<br>300 A<br>1.4 A<br>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 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> | 113 kW<br>197 kW<br>197 kW<br>340 kW<br>340 kW<br>246 kW<br>160 kW<br>90 kW<br>160 kW<br>200 kW<br>250 kW<br>132 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>   | 71 kW<br>112 kW   |
| <b>Thermal short-time current limited to 10 s</b>  | 2 400 A   |
| <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>   |   |
| <ul style="list-style-type: none"> <li>• at AC</li> <li>• at DC</li> </ul>   | 1 000 1/h<br>1 000 1/h  |
| <b>Operating frequency</b>   |   |
| <ul style="list-style-type: none"> <li>• at AC-1 maximum</li> <li>• at AC-2 maximum</li> <li>• at AC-3 maximum</li> <li>• at AC-4 maximum</li> </ul>   | 750 1/h<br>250 1/h<br>500 1/h<br>130 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>  |   |
| <ul style="list-style-type: none"> <li>• at 50 Hz rated value</li> </ul>   | 21 ... 27.3 V   |

|  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• at 60 Hz rated value</li> </ul>                                 | 21 ... 27.3 V                           |
| <b>Control supply voltage at DC</b>  |   |
| <ul style="list-style-type: none"> <li>• rated value</li> </ul>  | 21 ... 27.3 V                           |
| <b>Type of PLC-control input acc. to IEC 60947-1</b>   | Type 1                                  |
| <b>Consumed current at PLC-control input acc. to IEC 60947-1 maximum</b>                                 | 20 mA                                   |
| <b>Operating range factor control supply voltage rated value of magnet coil at DC</b>                    |   |
| <ul style="list-style-type: none"> <li>• initial value</li> <li>• Full-scale value</li> </ul>            | 0.8<br>1.1                              |
| <b>Operating range factor control supply voltage rated value of magnet coil at AC</b>                    |   |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>                         | 0.8 ... 1.1<br>0.8 ... 1.1              |
| <b>Design of the surge suppressor</b>  | with varistor                           |
| <b>Apparent pick-up power of magnet coil at AC</b>   |   |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> </ul>   | 530 V·A                                 |
| <b>Inductive power factor with closing power of the coil</b>   |   |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> </ul>   | 0.8                                     |
| <b>Apparent holding power of magnet coil at AC</b>   |   |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> </ul>   | 5 V·A                                   |
| <b>Inductive power factor with the holding power of the coil</b>   |   |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> </ul>   | 0.5                                     |
| <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>   |   |
| <ul style="list-style-type: none"> <li>• at AC</li> <li>• at DC</li> </ul>                               | 45 ... 80 ms<br>45 ... 80 ms            |
| <b>Opening delay</b>   |   |
| <ul style="list-style-type: none"> <li>• at AC</li> <li>• at DC</li> </ul>                               | 80 ... 100 ms<br>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) |
| <b>Auxiliary circuit</b>   |   |
| <b>Number of NC contacts for auxiliary contacts</b>  |   |
| <ul style="list-style-type: none"> <li>• instantaneous contact</li> </ul>                                | 2                                       |
| <b>Number of NO contacts for auxiliary contacts</b>  |   |
| <ul style="list-style-type: none"> <li>• instantaneous contact</li> </ul>                                | 2                                       |
| <b>Operating current at AC-12 maximum</b>  | 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> </ul> | 6 A<br>3 A                              |

|   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• at 500 V rated value</li> <li>• at 690 V rated value</li> </ul>  | <p>2 A</p> <p>1 A</p>   |
| <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> | <p>10 A</p> <p>6 A</p> <p>6 A</p> <p>3 A</p> <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>10 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>  | 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>gG: 500 A (690 V, 100 kA)</p> <p>gG: 400 A (690 V, 100 kA), aM: 315 A (690 V, 50 kA), BS88: 400 A (415 V, 50 kA)</p> <p>gG: 10 A (500 V, 1 kA)</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 |
| • Side-by-side mounting      | Yes          |
| <b>Height</b>                | 210 mm       |
| <b>Width</b>                 | 145 mm       |
| <b>Depth</b>                 | 202 mm       |
| <b>Required spacing</b>      |              |
| • with side-by-side mounting |              |
| — forwards                   | 20 mm        |
| — upwards                    | 10 mm        |
| — downwards                  | 10 mm        |
| — at the side                | 0 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>Type of electrical connection</b>                              |  |
| • for main current circuit  | Connection bar   |
| • for auxiliary and control current circuit                       | screw-type terminals   |
| <b>Type of connectable conductor cross-sections</b>               |  |
| • at AWG conductors for main contacts                             | 2/0 ... 500 kcmil  |
| <b>Connectable conductor cross-section for main contacts</b>      |  |
| • stranded  | 70 ... 240 mm <sup>2</sup>   |
| <b>Connectable conductor cross-section for auxiliary contacts</b> |  |
| • single or multi-stranded  | 0.5 ... 4 mm <sup>2</sup>  |
| • finely stranded with core end processing                        | 0.5 ... 2.5 mm <sup>2</sup>  |
| <b>Type of connectable conductor cross-sections</b>               |  |
| • for auxiliary contacts  |  |
| — solid   | 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> ) |
| — single or multi-stranded  | 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> ) |
| — finely stranded with core end processing                        | 2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> )  |
| • at AWG conductors for auxiliary contacts                        | 2x (20 ... 16), 2x (18 ... 14), 1x 12  |
| <b>AWG number as coded connectable conductor cross section</b>    |  |

- for auxiliary contacts

18 ... 14

## Safety related data

|   |  |
|---|--|
| <b>B10 value</b>  |  |
| <ul style="list-style-type: none"> <li>• with high demand rate acc. to SN 31920</li> </ul>  | 1 000 000  |
| <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  |
| <b>Protection against electrical shock</b>  | finger-safe when touched vertically from front acc. to IEC 60529 |

## Certificates/approvals

|                                 |  |                                  |
|---------------------------------|--|----------------------------------|
| <b>General Product Approval</b> | <b>Functional Safety/Safety of Machinery</b> | <b>Declaration of Conformity</b> |
|---------------------------------|--|----------------------------------|



CCC



CSA



UL



[Type Examination Certificate](#)



EG-Konf.

|                          |                          |              |
|--------------------------|--------------------------|--------------|
| <b>Test Certificates</b> | <b>Marine / Shipping</b> | <b>other</b> |
|--------------------------|--------------------------|--------------|

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



ABS



RMRS



DNVGL.COM/AF

[Confirmation](#)

|              |
|--------------|
| <b>other</b> |
|--------------|

[Miscellaneous](#)

## 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=3RT1066-6NB36>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1066-6NB36>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1066-6NB36>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT1066-6NB36&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1066-6NB36&lang=en)

**Characteristic: Tripping characteristics, I<sup>t</sup>, Let-through current**

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1066-6NB36/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1066-6NB36&objecttype=14&gridview=view1>







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