

CONTACTOR, AC-3, 3KW/400V, 2NO+2NC AC110V 50HZ/120V  
60HZ 3-POLE, SZ S00 SCREW TERMINAL PERMANENT AUX.  
SWITCH FOR SUVA APPLICATIONS



|  |                           |
|--|---------------------------|
| product brand name   | SIRIUS                    |
| Product designation  | 3RT2 contactor            |
| <b>General technical data:</b>   |                           |
| Size of contactor  | S00                       |
| Product expansion  |                           |
| • function module for communication  | No                        |
| • Auxiliary switch   | No                        |
| Insulation voltage   |                           |
| • rated value  | 690 V                     |
| 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                      |
| Degree of pollution  | 3                         |
| Shock resistance   |                           |
| • at rectangular impulse   |                           |
| — at AC  | 6,7g / 5 ms, 4,2g / 10 ms |

|   |                            |
|---|----------------------------|
| <ul style="list-style-type: none"> <li>• with sine pulse               <ul style="list-style-type: none"> <li>— at AC</li> </ul> </li> </ul>  | 10,5g / 5 ms, 6,6g / 10 ms |
| <b>Mechanical service life (switching cycles)</b>   |                            |
| <ul style="list-style-type: none"> <li>• of contactor typical</li> </ul>  | 30 000 000                 |
| <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                 |
| <b>Ambient conditions:</b>  |                            |
| <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> </ul>  | -25 ... +60 °C             |
| <ul style="list-style-type: none"> <li>• during storage</li> </ul>  | -55 ... +80 °C             |
| <b>Main circuit:</b>  |                            |
| <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> </ul>  | 18 A                       |
| <ul style="list-style-type: none"> <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> </ul> | 18 A<br>16 A               |
| <ul style="list-style-type: none"> <li>• at AC-2 at 400 V rated value</li> </ul>  | 7 A                        |
| <ul style="list-style-type: none"> <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>                     | 7 A<br>6 A<br>4.9 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>  | 2.5 mm <sup>2</sup>        |
| <ul style="list-style-type: none"> <li>• at 40 °C minimum permissible</li> </ul>  | 2.5 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>  | 2.6 A                      |
| <ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>  | 1.8 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> </ul> </li> </ul>                                    | 15 A<br>1.5 A              |

|  |         |
|--|---------|
| — at 220 V rated value                           | 0.6 A   |
| — at 440 V rated value                           | 0.42 A  |
| — at 600 V rated value                           | 0.42 A  |
| • with 2 current paths in series at DC-1         |         |
| — at 24 V rated value                            | 15 A    |
| — at 110 V rated value                           | 8.4 A   |
| — at 220 V rated value                           | 1.2 A   |
| — at 440 V rated value                           | 0.6 A   |
| — at 600 V rated value                           | 0.5 A   |
| • with 3 current paths in series at DC-1         |         |
| — at 24 V rated value                            | 15 A    |
| — at 110 V rated value                           | 15 A    |
| — at 220 V rated value                           | 15 A    |
| — at 440 V rated value                           | 0.9 A   |
| — at 600 V rated value                           | 0.7 A   |
| <b>Operating current</b>                         |         |
| • at 1 current path at DC-3 at DC-5              |         |
| — at 24 V rated value                            | 15 A    |
| — at 110 V rated value                           | 0.1 A   |
| • with 2 current paths in series at DC-3 at DC-5 |         |
| — at 110 V rated value                           | 0.25 A  |
| — at 24 V rated value                            | 15 A    |
| • with 3 current paths in series at DC-3 at DC-5 |         |
| — at 110 V rated value                           | 15 A    |
| — at 220 V rated value                           | 1.2 A   |
| — at 24 V rated value                            | 15 A    |
| — at 440 V rated value                           | 0.14 A  |
| — at 600 V rated value                           | 0.14 A  |
| <b>Operating power</b>                           |         |
| • at AC-1  |         |
| — at 230 V rated value                           | 6.3 kW  |
| — at 230 V at 60 °C rated value                  | 6 kW    |
| — at 400 V rated value                           | 11 kW   |
| — at 400 V at 60 °C rated value                  | 10.5 kW |
| — at 690 V rated value                           | 19 kW   |
| — at 690 V at 60 °C rated value                  | 18 kW   |
| • at AC-2 at 400 V rated value                   | 3 kW    |
| • at AC-3  |         |
| — at 230 V rated value                           | 1.5 kW  |
| — at 400 V rated value                           | 3 kW    |
| — at 690 V rated value                           | 4 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>   | <p>1.15 kW</p> <p>1.15 kW</p>                                 |
| <b>Thermal short-time current limited to 10 s</b>  | 56 A  |
| <b>Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor</b>  | 0.4 W   |
| <b>No-load switching frequency</b>   |   |
| <ul style="list-style-type: none"> <li>• at AC</li> </ul>  | 10 000 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> | <p>1 000 1/h</p> <p>750 1/h</p> <p>750 1/h</p> <p>250 1/h</p> |

|  |  |
|--|--|
| <b>Control circuit/ Control:</b>   |  |
| <b>Type of voltage of the control supply voltage</b>   | AC                                     |
| <b>Control supply voltage at AC</b>  |  |
| <ul style="list-style-type: none"> <li>• at 50 Hz rated value</li> <li>• at 60 Hz rated value</li> </ul> | <p>110 V</p> <p>120 V</p>              |
| <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>                         | <p>0.8 ... 1.1</p> <p>0.85 ... 1.1</p> |
| <b>Apparent pick-up power of magnet coil at AC</b>   |  |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>                         | <p>27 V·A</p> <p>24.3 V·A</p>          |
| <b>Inductive power factor with closing power of the coil</b>   |  |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>                         | <p>0.8</p> <p>0.75</p>                 |
| <b>Apparent holding power of magnet coil at AC</b>   |  |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>                         | <p>4.2 V·A</p> <p>3.3 V·A</p>          |
| <b>Inductive power factor with the holding power of the coil</b>   |  |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>                         | <p>0.25</p> <p>0.25</p>                |
| <b>Closing delay</b>   |  |
| <ul style="list-style-type: none"> <li>• at AC</li> </ul>  | 9 ... 35 ms                            |
| <b>Opening delay</b>   |  |
| <ul style="list-style-type: none"> <li>• at AC</li> </ul>  | 3.5 ... 14 ms                          |
| <b>Arcing time</b>   | 10 ... 15 ms                           |
| <b>Residual current of the electronics for control with signal &lt;0&gt;</b>                             |  |

- at AC at 230 V maximum permissible
- at DC at 24 V maximum permissible

3 mA  
10 mA

#### Auxiliary circuit:

|   |   |
|---|---|
| <b>Number of NC 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>   | 2   |
| <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>   | 2   |
| 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>  | 6 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> | 6 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)     |

#### 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>  | 4.8 A<br>6.1 A     |
| <ul style="list-style-type: none"> <li>• yielded mechanical performance [hp] 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> </ul> | 0.25 hp<br>0.75 hp |

- Yielded mechanical performance [hp] for three-phase AC motor
  - at 200/208 V rated value 1.5 hp
  - at 220/230 V rated value 2 hp
  - at 460/480 V rated value 3 hp
  - at 575/600 V rated value 5 hp

**Contact rating of auxiliary contacts according to UL** A600 / Q600

### Short-circuit protection

#### Design of the fuse link

- for short-circuit protection of the main circuit
  - with type of assignment 1 required gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 35 A
  - with type of assignment 2 required gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 20 A
- for short-circuit protection of the auxiliary switch required 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>  | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 50022   |
| <ul style="list-style-type: none"> <li>• Side-by-side mounting</li> </ul>   | Yes  |
| <b>Height</b>   | 58 mm  |
| <b>Width</b>  | 45 mm  |
| <b>Depth</b>  | 117 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 0 mm</li> <li>— at the side 6 mm</li> <li>— downwards 0 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 0 mm</li> <li>— downwards 0 mm</li> </ul> </li> </ul> |  |

— at the side

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>— single or multi-stranded</li><li>— finely stranded with core end processing</li></ul></li><li>• at AWG conductors for main contacts</li></ul>           | 2x (0,5 ... 1,5 mm <sup>2</sup> ), 2x (0,75 ... 2,5 mm <sup>2</sup> ), 2x 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), 2x 12 |
| <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> ), 2x 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), 2x 12 |

### Safety related data:

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

### Certificates/approvals

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



[KTL](#)

[Baumusterbescheinigung](#)



|                   |                   |
|-------------------|-------------------|
| Test Certificates | Shipping Approval |
|-------------------|-------------------|

[spezielle Prüfbescheinigungen](#)

[Typprüfbescheinigung/Werkszeugnis](#)



|                   |       |
|-------------------|-------|
| Shipping Approval | other |
|-------------------|-------|



[Umweltbestätigung](#)

[Bestätigungen](#)

|       |
|-------|
| other |
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### 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=3RT20151AK643MA0>

**Cax online generator**

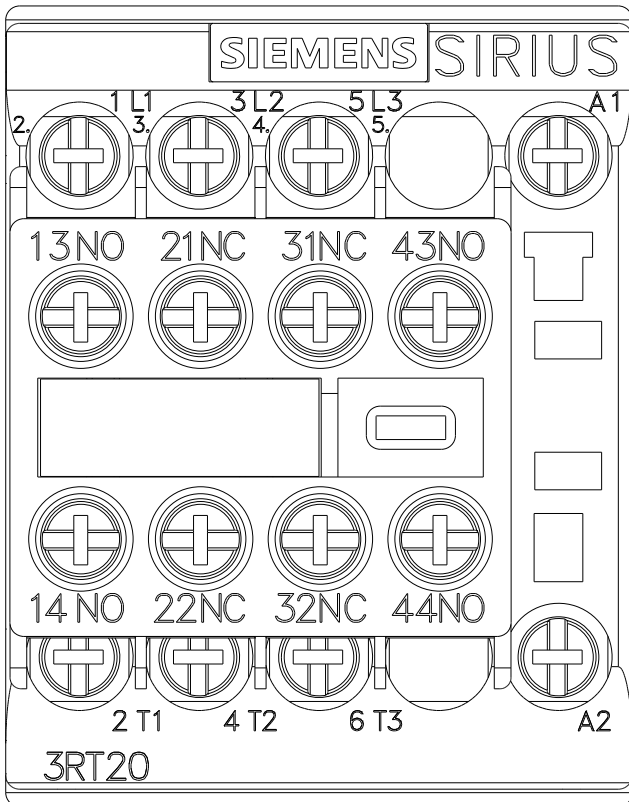
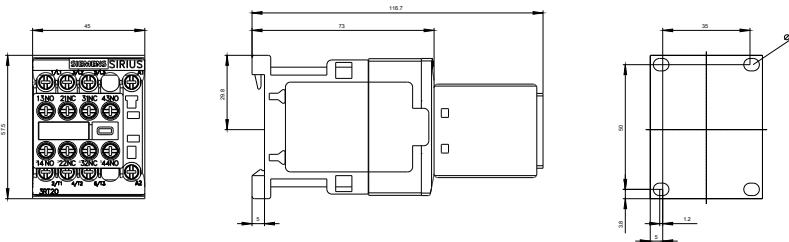
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT20151AK643MA0>

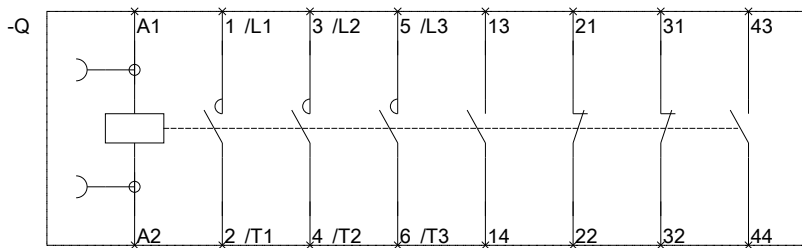
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

<https://support.industry.siemens.com/cs/ww/en/ps/3RT20151AK643MA0>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT20151AK643MA0&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT20151AK643MA0&lang=en)





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