

CONTACTOR, AC-3, 4KW/400V, 1NC, AC 230V, 50/60 HZ, 3-POLE, SZ S00 SPRING-LOADED TERMINAL



|                                                     |                |
|-----------------------------------------------------|----------------|
| product brand name                                  | SIRIUS         |
| Product designation                                 | 3RT2 contactor |
| General technical data                              |                |
| Size of contactor                                   | S00            |
| 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                            |                |

|                                                                                     |                            |
|-------------------------------------------------------------------------------------|----------------------------|
| — at AC                                                                             | 6,7g / 5 ms, 4,2g / 10 ms  |
| • with sine pulse                                                                   |                            |
| — at AC                                                                             | 10,5g / 5 ms, 6,6g / 10 ms |
| <b>Mechanical service life (switching cycles)</b>                                   |                            |
| • of contactor typical                                                              | 30 000 000                 |
| • of the contactor with added electronics-compatible auxiliary switch block typical | 5 000 000                  |
| • of the contactor with added auxiliary switch block typical                        | 10 000 000                 |

|                                                                |                |
|----------------------------------------------------------------|----------------|
| <b>Ambient conditions</b>                                      |                |
| <b>Installation altitude at height above sea level maximum</b> | 2 000 m        |
| <b>Ambient temperature</b>                                     |                |
| • during operation                                             | -25 ... +60 °C |
| • during storage                                               | -55 ... +80 °C |

|                                                                      |                     |
|----------------------------------------------------------------------|---------------------|
| <b>Main circuit</b>                                                  |                     |
| <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>                                             |                     |
| • at AC-3 rated value maximum                                        | 690 V               |
| <b>Operating current</b>                                             |                     |
| • at AC-1 at 400 V                                                   |                     |
| — at ambient temperature 40 °C rated value                           | 22 A                |
| • at AC-1                                                            |                     |
| — up to 690 V at ambient temperature 40 °C rated value               | 22 A                |
| — up to 690 V at ambient temperature 60 °C rated value               | 20 A                |
| • at AC-2 at 400 V rated value                                       | 9 A                 |
| • at AC-3                                                            |                     |
| — at 400 V rated value                                               | 9 A                 |
| — at 500 V rated value                                               | 7.7 A               |
| — at 690 V rated value                                               | 6.7 A               |
| <b>Connectable conductor cross-section in main circuit at AC-1</b>   |                     |
| • at 60 °C minimum permissible                                       | 2.5 mm <sup>2</sup> |
| • at 40 °C minimum permissible                                       | 4 mm <sup>2</sup>   |
| <b>Operating current for approx. 200000 operating cycles at AC-4</b> |                     |
| • at 400 V rated value                                               | 4.1 A               |
| • at 690 V rated value                                               | 3.3 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> | 20 A<br>2.1 A<br>0.8 A<br>0.6 A<br>0.6 A<br><br>20 A<br>12 A<br>1.6 A<br>0.8 A<br>0.7 A<br><br>20 A<br>20 A<br>20 A<br>1.3 A<br>1 A |
| <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> </ul> </li> <li>• with 2 current paths in series at DC-3 at DC-5 <ul style="list-style-type: none"> <li>— at 110 V rated value</li> <li>— at 24 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 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 24 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> </ul>                                                                                                                                                                         | 20 A<br>0.1 A<br><br>0.35 A<br>20 A<br><br>20 A<br>1.5 A<br>20 A<br>0.2 A<br>0.2 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 rated value</li> <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> </ul> </li> <li>• at AC-2 at 400 V rated value</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                     | 7.5 kW<br>7.5 kW<br>13 kW<br>13 kW<br>22 kW<br>22 kW<br><br>4 kW                                                                    |

|                                                                                                                                                                                                       |                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| <ul style="list-style-type: none"> <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 690 V rated value</li> </ul> </li> </ul> | 2.2 kW<br>4 kW<br>5.5 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>                                                                                              | 2 kW<br>2.5 kW                             |
| <b>Thermal short-time current limited to 10 s</b>                                                                                                                                                     | 72 A                                       |
| <b>Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor</b>                                                                                                         | 0.7 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>                                                  | 1 000 1/h<br>750 1/h<br>750 1/h<br>250 1/h |
| <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>                                                                                              | 230 V<br>230 V                             |
| <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>0.85 ... 1.1                |
| <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>                                                                                                                      | 27 V·A<br>31.7 V·A                         |
| <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>                                                                                                                      | 0.8<br>0.81                                |
| <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>                                                                                                                      | 4.2 V·A<br>4.8 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> <li>• at 60 Hz</li> </ul>                                                                                                                      | 0.25<br>0.25                               |
| <b>Closing delay</b>                                                                                                                                                                                  |                                            |
| <ul style="list-style-type: none"> <li>• at AC</li> </ul>                                                                                                                                             | 9 ... 35 ms                                |

|                                                                              |               |
|------------------------------------------------------------------------------|---------------|
| <b>Opening delay</b>                                                         |               |
| • at AC                                                                      | 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                                         | 3 mA          |
| • at DC at 24 V maximum permissible                                          | 10 mA         |

#### Auxiliary circuit

|                                                  |                                                 |
|--------------------------------------------------|-------------------------------------------------|
| <b>Number of NC contacts</b>                     |                                                 |
| • for auxiliary contacts                         |                                                 |
| — instantaneous contact                          | 1                                               |
| <b>Number of NO contacts</b>                     |                                                 |
| • for auxiliary contacts                         |                                                 |
| — instantaneous contact                          | 0                                               |
| Operating current at AC-12 maximum               | 10 A                                            |
| <b>Operating current at AC-15</b>                |                                                 |
| • at 230 V rated value                           | 10 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                                             |
| • 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                            | 10 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> |       |
| • at 480 V rated value                                  | 7.6 A |
| • at 600 V rated value                                  | 9 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> | 0.33 hp<br>1 hp<br>2 hp<br>3 hp<br>5 hp<br>7.5 hp |
| <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> | gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 35 A<br>gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 20 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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 70 mm                                                                                                                                |
| <b>Width</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 45 mm                                                                                                                                |
| <b>Depth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 73 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> | 0 mm<br>0 mm<br>0 mm<br>0 mm<br>0 mm<br>0 mm<br>0 mm<br>0 mm<br>0 mm<br>0 mm<br>0 mm<br>0 mm                                         |

|               |      |
|---------------|------|
| — Backwards   | 0 mm |
| — upwards     | 0 mm |
| — downwards   | 0 mm |
| — at the side | 6 mm |

## Connections/Terminals

|                                                     |                                   |
|-----------------------------------------------------|-----------------------------------|
| <b>Type of electrical connection</b>                |                                   |
| • for main current circuit                          | spring-loaded terminals           |
| • for auxiliary and control current circuit         | spring-loaded terminals           |
| <b>Type of connectable conductor cross-sections</b> |                                   |
| • for main contacts                                 |                                   |
| — solid                                             | 2x (0.5 ... 4 mm <sup>2</sup> )   |
| — single or multi-stranded                          | 2x (0,5 ... 4 mm <sup>2</sup> )   |
| — finely stranded with core end processing          | 2x (0.5 ... 2.5 mm <sup>2</sup> ) |
| — finely stranded without core end processing       | 2x (0.5 ... 2.5 mm <sup>2</sup> ) |
| • at AWG conductors for main contacts               | 2x (20 ... 12)                    |
| <b>Type of connectable conductor cross-sections</b> |                                   |
| • for auxiliary contacts                            |                                   |
| — single or multi-stranded                          | 2x (0,5 ... 4 mm <sup>2</sup> )   |
| — finely stranded with core end processing          | 2x (0.5 ... 2.5 mm <sup>2</sup> ) |
| — finely stranded without core end processing       | 2x (0.5 ... 2.5 mm <sup>2</sup> ) |
| • at AWG conductors for auxiliary contacts          | 2x (20 ... 12)                    |

## Safety related data

|                                                                           |           |
|---------------------------------------------------------------------------|-----------|
| <b>B10 value</b>                                                          |           |
| • with high demand rate acc. to SN 31920                                  | 1 000 000 |
| <b>Proportion of dangerous failures</b>                                   |           |
| • with low demand rate acc. to SN 31920                                   | 40 %      |
| • with high demand rate acc. to SN 31920                                  | 73 %      |
| <b>Failure rate [FIT]</b>                                                 |           |
| • with low demand rate acc. to SN 31920                                   | 100 FIT   |
| <b>Product function</b>                                                   |           |
| • Mirror contact acc. to IEC 60947-4-1                                    | 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 |
|--------------------------|---------------------------------------|



[KTL](#)



[Baumusterbescheinigung](#)

|                           |                   |                   |
|---------------------------|-------------------|-------------------|
| Declaration of Conformity | Test Certificates | Shipping Approval |
|---------------------------|-------------------|-------------------|



[spezielle Prüfbescheinigungen](#)

[Typprüfbescheinigung/Werkszeugnis](#)



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



[Bestätigungen](#)

|       |
|-------|
| other |
|-------|

[Umweltbestätigung](#)



## 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=3RT2016-2AP02>

Cax online generator

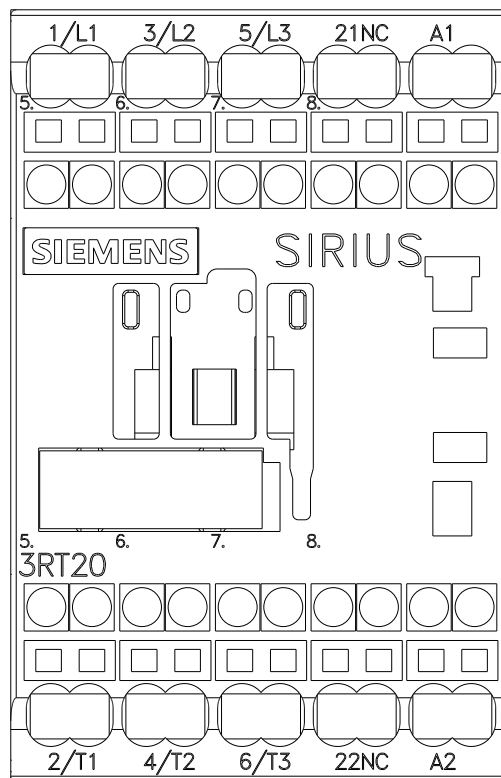
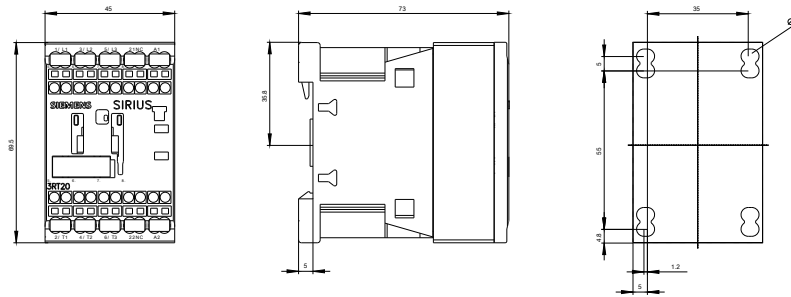
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2016-2AP02>

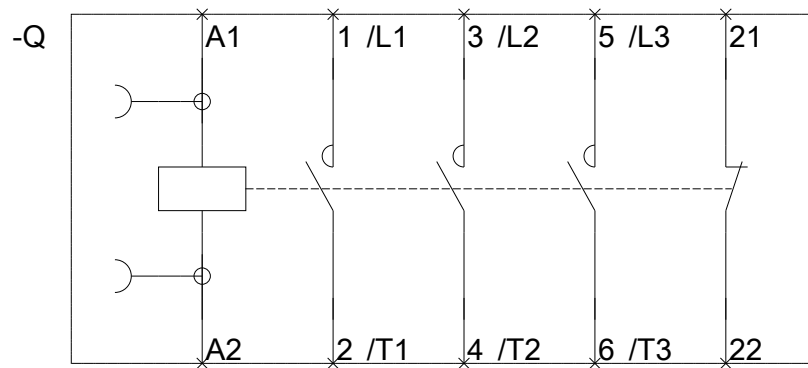
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-2AP02>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2016-2AP02&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2016-2AP02&lang=en)





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