

power contactor, AC-3 17 A, 7.5 kW / 400 V 1 NO + 1 NC, AC (50-60 Hz) DC operation 95-130 V AC/DC, 3-pole, Size S0, screw terminal



|   |                 |
|---|-----------------|
| Product brand name  | SIRIUS          |
| Product designation   | Power contactor |
| Product type designation  | 3RT2            |
| <b>General technical data</b>   |                 |
| Size of contactor   | S0              |
| 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             |
| Power loss [W] for rated value of the current   |                 |
| <ul style="list-style-type: none"> <li>at AC in hot operating state</li> </ul>                      | 2.7 W           |
| <ul style="list-style-type: none"> <li>at AC in hot operating state per pole</li> </ul>             | 0.9 W           |
| Power loss [W] for rated value of the current without load current share typical                    | 1.8 W           |
| Surge voltage resistance  |                 |
| <ul style="list-style-type: none"> <li>of main circuit rated value</li> </ul>                       | 6 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> | 400 V           |

|   |                            |
|---|----------------------------|
| <b>Protection class IP</b>  |                            |
| • on the front  | IP20                       |
| • of the terminal   | IP20                       |
| <b>Shock resistance at rectangular impulse</b>                                      |                            |
| • at AC   | 7,5g / 5 ms, 4,7g / 10 ms  |
| • at DC   | 10g / 5 ms, 7,5g / 10 ms   |
| <b>Shock resistance with sine pulse</b>   |                            |
| • at AC   | 11,8g / 5 ms, 7,4g / 10 ms |
| • at DC   | 15g / 5 ms, 10g / 10 ms    |
| <b>Mechanical service life (switching cycles)</b>                                   |                            |
| • of contactor typical  | 10 000 000                 |
| • 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>Reference code acc. to DIN EN 81346-2</b>  | Q                          |

### Ambient conditions

|  |                |
|--|----------------|
| <b>Installation altitude at height above sea level</b> |                |
| • maximum  | 2 000 m        |
| <b>Ambient temperature</b>                             |                |
| • during operation                                     | -25 ... +60 °C |
| • during storage                                       | -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>                               |        |
| • 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             | 40 A   |
| • at AC-1  |        |
| — up to 690 V at ambient temperature 40 °C rated value | 40 A   |
| — up to 690 V at ambient temperature 60 °C rated value | 35 A   |
| • at AC-2 at 400 V rated value                         | 17 A   |
| • at AC-3  |        |
| — at 400 V rated value                                 | 17 A   |
| — at 500 V rated value                                 | 17 A   |
| — at 690 V rated value                                 | 13 A   |
| • at AC-4 at 400 V rated value                         | 15.5 A |
| • at AC-5a up to 690 V rated value                     | 35.2 A |

|  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• at AC-5b up to 400 V rated value</li> </ul>   | 14.1 A  |
| <ul style="list-style-type: none"> <li>• at AC-6a <ul style="list-style-type: none"> <li>— up to 230 V for current peak value n=20 rated value</li> <li>— up to 400 V for current peak value n=20 rated value</li> <li>— up to 500 V for current peak value n=20 rated value</li> <li>— up to 690 V for current peak value n=20 rated value</li> </ul> </li> </ul>   | 11.4 A<br>11.4 A<br>11.4 A<br>11.3 A  |
| <ul style="list-style-type: none"> <li>• at AC-6a <ul style="list-style-type: none"> <li>— up to 230 V for current peak value n=30 rated value</li> <li>— up to 400 V for current peak value n=30 rated value</li> <li>— up to 500 V for current peak value n=30 rated value</li> <li>— up to 690 V for current peak value n=30 rated value</li> </ul> </li> </ul>   | 7.6 A<br>7.6 A<br>7.6 A<br>7.6 A  |
| <b>Minimum cross-section in main circuit</b>   |   |
| <ul style="list-style-type: none"> <li>• at maximum AC-1 rated value</li> </ul>  | 10 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> <li>• at 690 V rated value</li> </ul>   | 7.7 A<br>7.7 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> </ul> </li> </ul> | 35 A<br>4.5 A<br>1 A<br>0.4 A<br>0.25 A<br><br>35 A<br>35 A<br>5 A<br>1 A<br>0.8 A<br><br>35 A<br>35 A<br>35 A<br>2.9 A |

|  |            |
|--|------------|
| — at 600 V rated value   | 1.4 A      |
| <b>Operating current</b>   |            |
| • at 1 current path at DC-3 at DC-5                                |            |
| — at 24 V rated value  | 20 A       |
| — at 110 V rated value   | 2.5 A      |
| — at 220 V rated value   | 1 A        |
| — at 440 V rated value   | 0.09 A     |
| — at 600 V rated value   | 0.06 A     |
| • with 2 current paths in series at DC-3 at DC-5                   |            |
| — at 24 V rated value  | 35 A       |
| — at 110 V rated value   | 15 A       |
| — at 220 V rated value   | 3 A        |
| — at 440 V rated value   | 0.27 A     |
| — at 600 V rated value   | 0.16 A     |
| • with 3 current paths in series at DC-3 at DC-5                   |            |
| — at 24 V rated value  | 35 A       |
| — at 110 V rated value   | 35 A       |
| — at 220 V rated value   | 10 A       |
| — at 440 V rated value   | 0.6 A      |
| — at 600 V rated value   | 0.6 A      |
| <b>Operating power</b>   |            |
| • at AC-2 at 400 V rated value                                     | 7.5 kW     |
| • at AC-3  |            |
| — at 230 V rated value   | 4 kW       |
| — at 400 V rated value   | 7.5 kW     |
| — at 500 V rated value   | 7.5 kW     |
| — at 690 V rated value   | 11 kW      |
| <b>Operating power for approx. 200000 operating cycles at AC-4</b> |            |
| • at 400 V rated value   | 3.5 kW     |
| • at 690 V rated value   | 6 kW       |
| <b>Operating apparent output at AC-6a</b>                          |            |
| • up to 230 V for current peak value n=20 rated value              | 4 500 V·A  |
| • up to 400 V for current peak value n=20 rated value              | 7 800 V·A  |
| • up to 500 V for current peak value n=20 rated value              | 9 900 V·A  |
| • up to 690 V for current peak value n=20 rated value              | 13 600 V·A |
| <b>Operating apparent output at AC-6a</b>                          |            |

|   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• up to 230 V for current peak value n=30 rated value</li> <li>• up to 400 V for current peak value n=30 rated value</li> <li>• up to 500 V for current peak value n=30 rated value</li> <li>• up to 690 V for current peak value n=30 rated value</li> </ul>  | <p>3 000 V·A</p> <p>5 200 V·A</p> <p>6 600 V·A</p> <p>9 100 V·A</p>   |
| <b>Short-time withstand current in cold operating state up to 40 °C</b> <ul style="list-style-type: none"> <li>• limited to 1 s switching at zero current maximum</li> <li>• limited to 5 s switching at zero current maximum</li> <li>• limited to 10 s switching at zero current maximum</li> <li>• limited to 30 s switching at zero current maximum</li> <li>• limited to 60 s switching at zero current maximum</li> </ul> | <p>225 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>225 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>180 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>115 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>96 A; Use minimum cross-section acc. to AC-1 rated value</p> |
| <b>No-load switching frequency</b> <ul style="list-style-type: none"> <li>• at AC</li> <li>• at DC</li> </ul>   | <p>1 500 1/h</p> <p>1 500 1/h</p>   |
| <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>1 000 1/h</p> <p>1 000 1/h</p> <p>300 1/h</p>   |
| <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> <li>• at 60 Hz rated value</li> </ul>  | <p>95 ... 130 V</p> <p>95 ... 130 V</p>   |
| <b>Control supply voltage at DC</b> <ul style="list-style-type: none"> <li>• rated value</li> </ul>   | 95 ... 130 V  |
| <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>   | <p>0.7</p> <p>1.3</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>0.7 ... 1.3</p> <p>0.7 ... 1.3</p>   |

|   |                  |
|---|------------------|
| Design of the surge suppressor                            | with varistor    |
| Inrush current peak                                       | 15 A             |
| Duration of inrush current peak                           | 30 $\mu$ s       |
| starting current average value                            | 0.13 A           |
| Peak starting current                                     | 0.19 A           |
| Duration of starting current                              | 180 ms           |
| Holding current average value                             | 0.019 A          |
| Apparent pick-up power of magnet coil at AC               |                  |
| • at 50 Hz  | 11.9 V·A         |
| • at 60 Hz  | 12 V·A           |
| Inductive power factor with closing power of the coil     |                  |
| • at 50 Hz  | 0.98             |
| • at 60 Hz  | 0.98             |
| Apparent holding power of magnet coil at AC               |                  |
| • at 50 Hz  | 1.6 V·A          |
| • at 60 Hz  | 1.8 V·A          |
| Inductive power factor with the holding power of the coil |                  |
| • at 50 Hz  | 0.79             |
| • at 60 Hz  | 0.74             |
| Closing power of magnet coil at DC                        | 10.2 W           |
| Holding power of magnet coil at DC                        | 1.3 W            |
| Closing delay   |                  |
| • at AC   | 50 ... 70 ms     |
| • at DC   | 50 ... 70 ms     |
| Opening delay   |                  |
| • at AC   | 35 ... 45 ms     |
| • at DC   | 35 ... 45 ms     |
| Arcing time   | 10 ... 10 ms     |
| Control version of the switch operating mechanism         | Standard A1 - A2 |

#### Auxiliary circuit

|  |      |
|--|------|
| Number of NC contacts for auxiliary contacts |      |
| • instantaneous contact                      | 1    |
| Number of NO contacts for auxiliary contacts |      |
| • instantaneous contact                      | 1    |
| Operating current at AC-12 maximum           | 10 A |
| Operating current at AC-15                   |      |
| • 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  |
| Operating current at DC-12                   |      |

|   |   |
|---|---|
| <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>14 A</p> <p>17 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>1 hp</p> <p>3 hp</p> <p>3 hp</p> <p>5 hp</p> <p>10 hp</p> <p>15 hp</p> |
| <b>Contact rating of auxiliary contacts according to UL</b>   | A600 / P600   |

### 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: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA)</p> <p>gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)</p> <p>gG: 10 A (500 V, 1 kA)</p> |

### 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 60715   |
| <ul style="list-style-type: none"> <li>• Side-by-side mounting</li> </ul>   | Yes  |
| <b>Height</b>   | 85 mm  |
| <b>Width</b>  | 45 mm  |
| <b>Depth</b>  | 107 mm   |
| <b>Required spacing</b>   |  |
| <ul style="list-style-type: none"> <li>• with side-by-side mounting <ul style="list-style-type: none"> <li>— forwards</li> <li>— 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>— upwards</li> <li>— at the side</li> <li>— downwards</li> </ul> </li> <li>• for live parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> </ul> | 10 mm<br>10 mm<br>10 mm<br>0 mm<br><br>10 mm<br>10 mm<br>6 mm<br>10 mm<br><br>10 mm<br>10 mm<br>10 mm<br>6 mm                        |

## Connections/ Terminals

|   |  |
|---|--|
| <b>Type of electrical connection</b>  |  |
| <ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for auxiliary and control current circuit</li> <li>• at contactor for auxiliary contacts</li> <li>• of magnet coil</li> </ul>  | screw-type terminals<br>screw-type terminals<br>Screw-type terminals<br>Screw-type terminals   |
| <b>Type of connectable conductor cross-sections</b>   |  |
| <ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— solid</li> <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 (1 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 10 mm <sup>2</sup> )<br>2x (1 ... 2,5 mm <sup>2</sup> ), 2x (2,5 ... 10 mm <sup>2</sup> )<br>2x (1 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> ), 1x 10 mm <sup>2</sup><br>2x (16 ... 12), 2x (14 ... 8) |
| <b>Connectable conductor cross-section for main contacts</b>  |  |
| <ul style="list-style-type: none"> <li>• solid</li> <li>• stranded</li> <li>• finely stranded with core end processing</li> </ul>   | 1 ... 10 mm <sup>2</sup><br>1 ... 10 mm <sup>2</sup><br>1 ... 10 mm <sup>2</sup>   |

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

|  |             |
|--|-------------|
| <b>Safety related data</b>   |             |
| <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>Proportion of dangerous failures</b>  |             |
| <ul style="list-style-type: none"> <li>• with low demand rate acc. to SN 31920</li> </ul>  | 40 %        |
| <ul style="list-style-type: none"> <li>• with high demand rate acc. to SN 31920</li> </ul> | 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> </ul>   | Yes         |
| <b>T1 value for proof test interval or service life acc. to IEC 61508</b>                  | 20 y        |
| <b>Protection against electrical shock</b>   | finger-safe |
| Suitability for use safety-related switching OFF   | Yes         |

**Certificates/ approvals**

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



[KC](#)



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

[Type Examination Certificate](#)



[Miscellaneous](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)

[Miscellaneous](#)

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



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

[Confirmation](#)



|                     |
|---------------------|
| Further information |
|---------------------|

**Information- and Downloadcenter (Catalogs, Brochures,...)**

<https://www.siemens.com/ic10>

**Industry Mall (Online ordering system)**

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2025-1NF30>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2025-1NF30>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-1NF30>

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

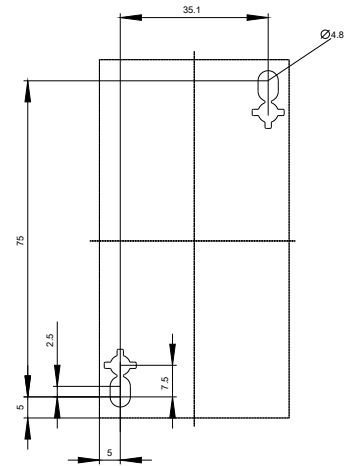
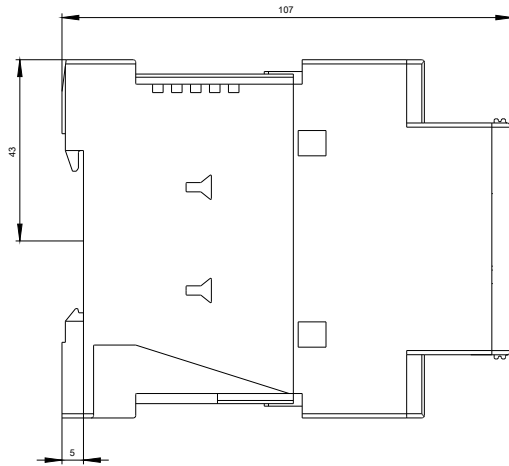
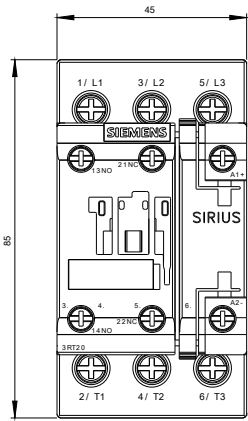
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2025-1NF30&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2025-1NF30&lang=en)

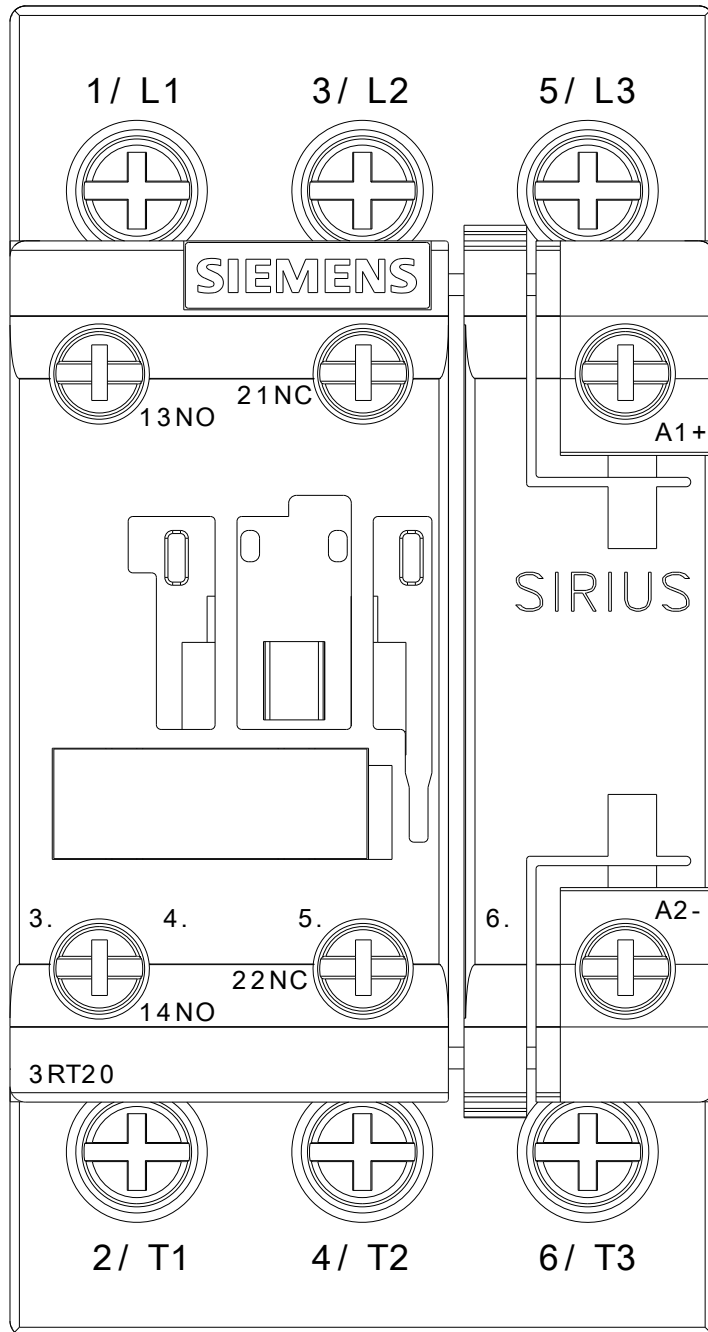
**Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current**

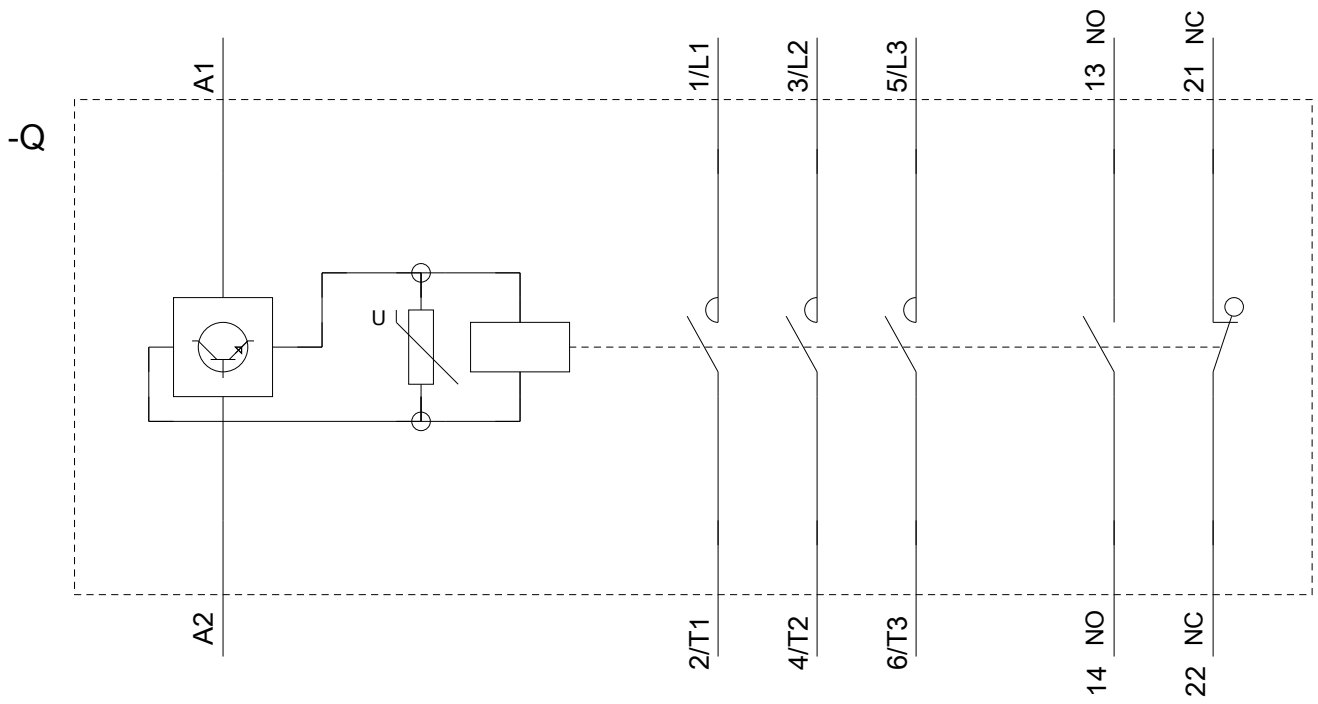
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-1NF30/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2025-1NF30&objecttype=14&gridview=view1>







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