

Power contactor, AC-3 16 A, 7.5 kW / 400 V 1 NO, 24 V DC with diode integrated, 3-pole, Size S00, screw terminals



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

### General technical data

|  |   |
|--|---|
| Size of contactor  | S00   |
| Product extension  | <ul style="list-style-type: none"> <li>• function module for communication No</li> <li>• Auxiliary switch Yes</li> </ul>                      |
| Power loss [W] for rated value of the current                                    | <ul style="list-style-type: none"> <li>• at AC in hot operating state 6.6 W</li> <li>• at AC in hot operating state per pole 2.2 W</li> </ul> |
| Power loss [W] for rated value of the current without load current share typical | 4 W   |
| Surge voltage resistance   | <ul style="list-style-type: none"> <li>• of main circuit rated value 6 kV</li> <li>• of auxiliary circuit rated value 6 kV</li> </ul>         |
| maximum permissible voltage for safe isolation                                   | <ul style="list-style-type: none"> <li>• between coil and main contacts acc. to EN 60947-1 400 V</li> </ul>                                   |

|   |                            |
|---|----------------------------|
| <b>Protection class IP</b>  |                            |
| • on the front  | IP20                       |
| • of the terminal   | IP20                       |
| <b>Shock resistance at rectangular impulse</b>                                      |                            |
| • at DC   | 7.3g / 5 ms, 4.7g / 10 ms  |
| <b>Shock resistance with sine pulse</b>   |                            |
| • at DC   | 11,4g / 5 ms, 7,3g / 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>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             | 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                         | 16 A   |
| • at AC-3  |        |
| — at 400 V rated value                                 | 16 A   |
| — at 500 V rated value                                 | 12.4 A |
| — at 690 V rated value                                 | 8.9 A  |
| • at AC-4 at 400 V rated value                         | 11.5 A |
| • at AC-5a up to 690 V rated value                     | 19.4 A |
| • at AC-5b up to 400 V rated value                     | 13.2 A |
| • at AC-6a   |        |

|  |                   |
|--|-------------------|
| — up to 230 V for current peak value n=20 rated value                | 9.6 A             |
| — up to 400 V for current peak value n=20 rated value                | 9.6 A             |
| — up to 500 V for current peak value n=20 rated value                | 9.6 A             |
| — up to 690 V for current peak value n=20 rated value                | 8.9 A             |
| • at AC-6a   |                   |
| — up to 230 V for current peak value n=30 rated value                | 6.6 A             |
| — up to 400 V for current peak value n=30 rated value                | 6.4 A             |
| — up to 500 V for current peak value n=30 rated value                | 6.4 A             |
| — up to 690 V for current peak value n=30 rated value                | 6.4 A             |
| <b>Minimum cross-section in main circuit</b>                         |                   |
| • at maximum AC-1 rated value  | 4 mm <sup>2</sup> |
| <b>Operating current for approx. 200000 operating cycles at AC-4</b> |                   |
| • at 400 V rated value   | 5.5 A             |
| • at 690 V rated value   | 4.4 A             |
| <b>Operating current</b>   |                   |
| • at 1 current path at DC-1  |                   |
| — at 24 V rated value  | 20 A              |
| — at 110 V rated value   | 2.1 A             |
| — at 220 V rated value   | 0.8 A             |
| — at 440 V rated value   | 0.6 A             |
| — at 600 V rated value   | 0.6 A             |
| • with 2 current paths in series at DC-1                             |                   |
| — at 24 V rated value  | 20 A              |
| — at 110 V rated value   | 12 A              |
| — at 220 V rated value   | 1.6 A             |
| — at 440 V rated value   | 0.8 A             |
| — at 600 V rated value   | 0.7 A             |
| • with 3 current paths in series at DC-1                             |                   |
| — at 24 V rated value  | 20 A              |
| — at 110 V rated value   | 20 A              |
| — at 220 V rated value   | 20 A              |
| — at 440 V rated value   | 1.3 A             |
| — at 600 V rated value   | 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 24 V rated value</li> <li>— at 110 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 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> | <p>20 A</p> <p>0.1 A</p> <p>20 A</p> <p>0.35 A</p> <p>20 A</p> <p>20 A</p> <p>1.5 A</p> <p>0.2 A</p> <p>0.2 A</p> |
| <p><b>Operating power</b></p> <ul style="list-style-type: none"> <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> </ul> </li> </ul>  | <p>7.5 kW</p> <p>4 kW</p> <p>7.5 kW</p> <p>7.5 kW</p> <p>7.5 kW</p>   |
| <p><b>Operating power for approx. 200000 operating cycles at AC-4</b></p> <ul style="list-style-type: none"> <li>• at 400 V rated value</li> <li>• at 690 V rated value</li> </ul>   | <p>2.5 kW</p> <p>3.5 kW</p>   |
| <p><b>Operating apparent output at AC-6a</b></p> <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>  | <p>3 800 V·A</p> <p>6 600 V·A</p> <p>8 300 V·A</p> <p>10 600 V·A</p>  |
| <p><b>Operating apparent output at AC-6a</b></p> <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>2 500 V·A</p> <p>4 400 V·A</p> <p>5 500 V·A</p> <p>7 600 V·A</p>   |
| <p><b>Short-time withstand current in cold operating state up to 40 °C</b></p>   |   |

|   |  |
|---|--|
| <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>300 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>169 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>128 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>92 A; Use minimum cross-section acc. to AC-1 rated value</p> <p>74 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 DC</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>  |

#### Control circuit/ Control

|   |                       |
|---|-----------------------|
| <b>Type of voltage of the control supply voltage</b>  | DC                    |
| <b>Control supply voltage at DC</b>   |                       |
| <ul style="list-style-type: none"> <li>• rated value</li> </ul>                               | 24 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>0.8</p> <p>1.1</p> |
| <b>Design of the surge suppressor</b>   | with diode            |
| <b>Closing power of magnet coil at DC</b>   | 4 W                   |
| <b>Holding power of magnet coil at DC</b>   | 4 W                   |
| <b>Closing delay</b>  |                       |
| <ul style="list-style-type: none"> <li>• at DC</li> </ul>                                     | 30 ... 100 ms         |
| <b>Opening delay</b>  |                       |
| <ul style="list-style-type: none"> <li>• at DC</li> </ul>                                     | 7 ... 13 ms           |
| <b>Arcing time</b>  | 10 ... 15 ms          |
| <b>Control version of the switch operating mechanism</b>                                      | Standard A1 - A2      |

#### Auxiliary circuit

|  |                                   |
|--|-----------------------------------|
| <b>Number of NO contacts for auxiliary contacts</b>  |                                   |
| <ul style="list-style-type: none"> <li>• instantaneous contact</li> </ul>  | 1                                 |
| <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> <li>• at 500 V rated value</li> </ul> | <p>10 A</p> <p>3 A</p> <p>2 A</p> |

|   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>  | 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> | 10 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>  | 14 A<br>11 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> | 1 hp<br>2 hp<br>3 hp<br>5 hp<br>10 hp<br>10 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> | gG: 50A (690V,100kA), aM: 25A (690V,100kA), BS88: 50A (415V,80kA)<br>gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)<br>gG: 10 A (500 V, 1 kA) |

## 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>   | 58 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>— 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 (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> ), 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>Connectable conductor cross-section for main contacts</b>  |  |
| <ul style="list-style-type: none"> <li>• solid</li> <li>• stranded</li> </ul>   | 0.5 ... 4 mm <sup>2</sup><br>0.5 ... 4 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>Connectable conductor cross-section for auxiliary contacts</b>  |   |
| <ul style="list-style-type: none"> <li>single or multi-stranded</li> </ul>   | 0.5 ... 4 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> <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 |
| <b>AWG number as coded connectable conductor cross section</b>   |   |
| <ul style="list-style-type: none"> <li>for main contacts</li> <li>for auxiliary contacts</li> </ul>  | 20 ... 12<br>20 ... 12  |

### 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>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> </ul>  | Yes; with 3RH29 |
| <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 | Marine / Shipping |
|---------------------------------------|---------------------------|-------------------|-------------------|

[Type Examination Certificate](#)



[Miscellaneous](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



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



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

[Confirmation](#)



|                     |
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| 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=3RT2018-1FB41>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2018-1FB41>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2018-1FB41>

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

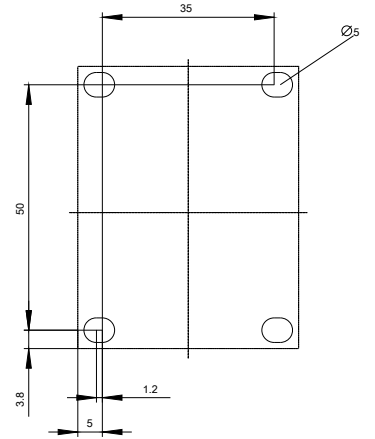
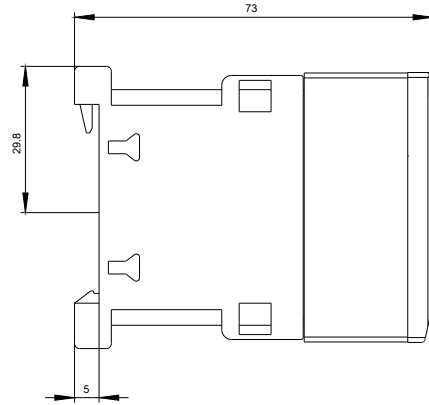
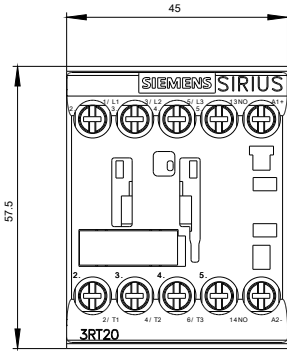
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2018-1FB41&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2018-1FB41&lang=en)

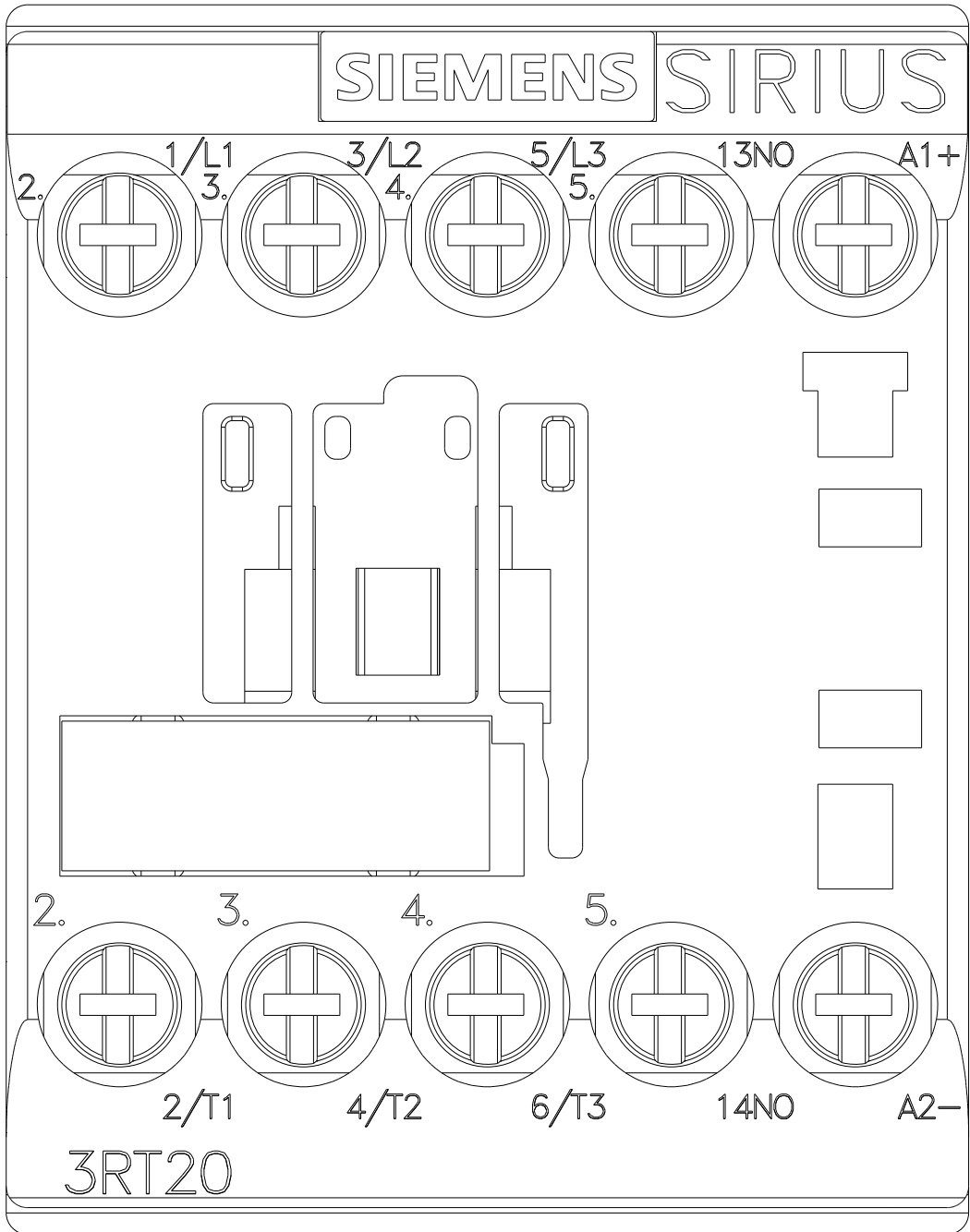
**Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current**

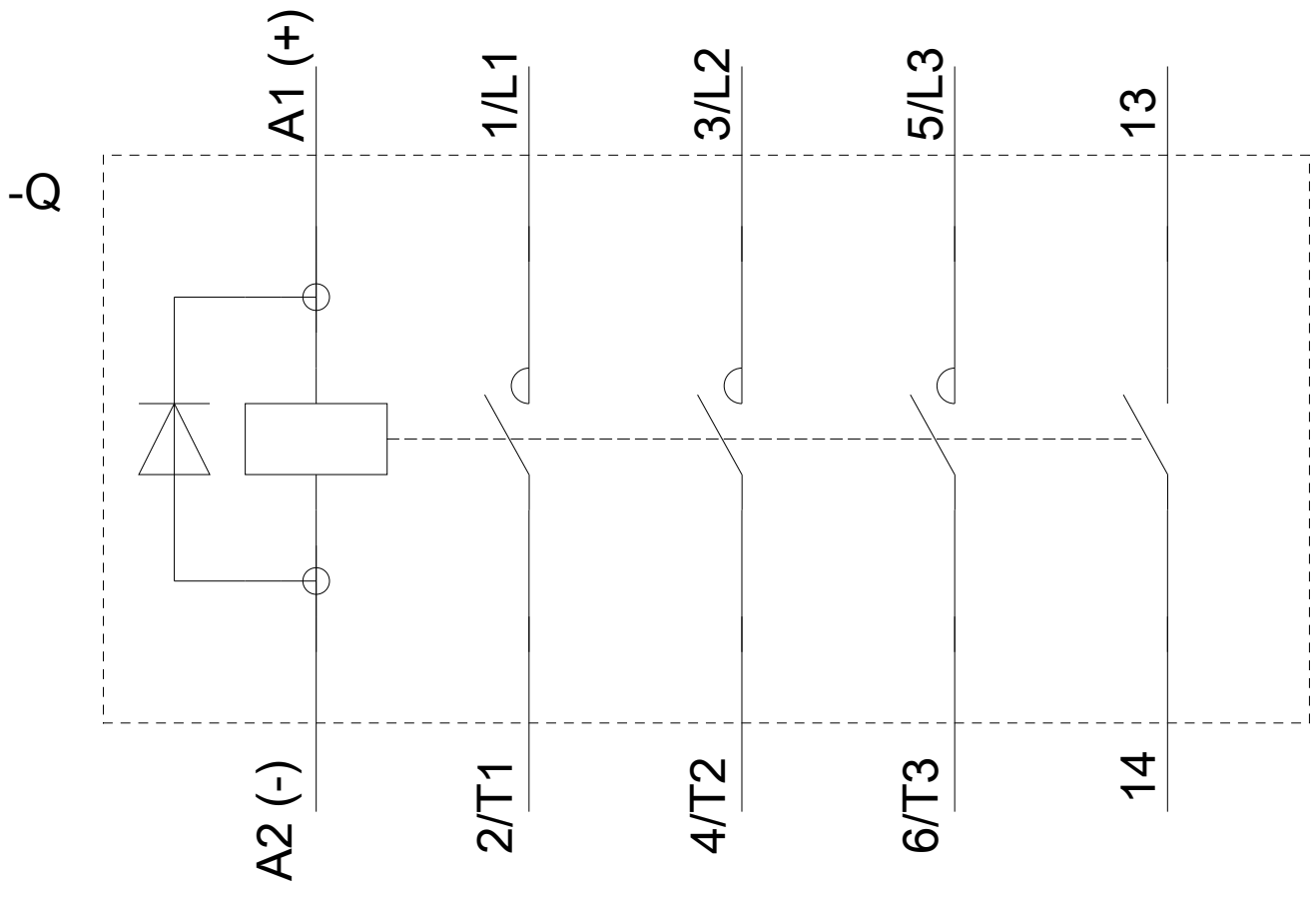
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2018-1FB41/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2018-1FB41&objecttype=14&gridview=view1>







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