

Power contactor, AC-3 38 A, 18.5 kW / 400 V 2 NO + 2 NC, 24 V AC 50/60 Hz, 3-pole Size S0, Spring-type terminals Removable auxiliary switch



|   |                           |
|---|---------------------------|
| <b>Product brand name</b>                             | SIRIUS                    |
| <b>Product designation</b>                            | Power contactor           |
| <b>Product type designation</b>                       | 3RT2                      |
| <b>General technical data</b>                         |                           |
| <b>Size of contactor</b>                              | S0                        |
| <b>Product extension</b>                              |                           |
| • function module for communication                   | No                        |
| • Auxiliary switch                                    | No                        |
| <b>Surge voltage resistance</b>                       |                           |
| • of main circuit rated value                         | 6 kV                      |
| • of auxiliary circuit rated value                    | 6 kV                      |
| <b>maximum permissible voltage for safe isolation</b> |                           |
| • between coil and main contacts acc. to EN 60947-1   | 400 V                     |
| <b>Protection class IP</b>                            |                           |
| • on the front  | IP20                      |
| • of the terminal                                     | IP20                      |
| <b>Shock resistance at rectangular impulse</b>        |                           |
| • at AC   | 8,3g / 5 ms, 5,3g / 10 ms |

|   |                            |
|---|----------------------------|
| <b>Shock resistance with sine pulse</b>   |                            |
| • at AC   | 13,5g / 5 ms, 8,3g / 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 40719 extended according to IEC 204-2 acc. to IEC 750</b> | K                          |
| <b>Reference code acc. to DIN EN 81346-2</b>  | Q                          |

#### Ambient conditions

|  |                |
|--|----------------|
| <b>Installation altitude at height above sea level</b> |                |
| • 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             | 50 A   |
| • at AC-1  |        |
| — up to 690 V at ambient temperature 40 °C rated value | 50 A   |
| — up to 690 V at ambient temperature 60 °C rated value | 42 A   |
| • at AC-2 at 400 V rated value                         | 38 A   |
| • at AC-3  |        |
| — at 400 V rated value                                 | 38 A   |
| — at 500 V rated value                                 | 32 A   |
| — at 690 V rated value                                 | 21 A   |
| • at AC-4 at 400 V rated value                         | 22 A   |
| • at AC-5a up to 690 V rated value                     | 44 A   |
| • at AC-5b up to 400 V rated value                     | 31.5 A |
| • at AC-6a   |        |
| — up to 230 V for current peak value n=20 rated value  | 30.8 A |

|  |                    |
|--|--------------------|
| — up to 400 V for current peak value n=20 rated value                | 30.8 A             |
| — up to 500 V for current peak value n=20 rated value                | 30.8 A             |
| — up to 690 V for current peak value n=20 rated value                | 21 A               |
| • at AC-6a   |                    |
| — up to 230 V for current peak value n=30 rated value                | 20.5 A             |
| — up to 400 V for current peak value n=30 rated value                | 20.5 A             |
| — up to 500 V for current peak value n=30 rated value                | 21.4 A             |
| — up to 690 V for current peak value n=30 rated value                | 21 A               |
| <b>Minimum cross-section in main circuit</b>                         |                    |
| • at maximum AC-1 rated value  | 10 mm <sup>2</sup> |
| <b>Operating current for approx. 200000 operating cycles at AC-4</b> |                    |
| • at 400 V rated value   | 12 A               |
| • at 690 V rated value   | 12 A               |
| <b>Operating current</b>   |                    |
| • at 1 current path at DC-1  |                    |
| — at 24 V rated value  | 35 A               |
| — at 110 V rated value   | 4.5 A              |
| — at 220 V rated value   | 1 A                |
| — at 440 V rated value   | 0.4 A              |
| — at 600 V rated value   | 0.25 A             |
| • with 2 current paths in series at DC-1                             |                    |
| — at 24 V rated value  | 35 A               |
| — at 110 V rated value   | 35 A               |
| — at 220 V rated value   | 5 A                |
| — at 440 V rated value   | 1 A                |
| — at 600 V rated value   | 0.8 A              |
| • with 3 current paths in series at DC-1                             |                    |
| — at 24 V rated value  | 35 A               |
| — at 110 V rated value   | 35 A               |
| — at 220 V rated value   | 35 A               |
| — at 440 V rated value   | 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-1   |           |
| — at 230 V rated value  | 16 kW     |
| — at 230 V at 60 °C rated value   | 15.5 kW   |
| — at 400 V rated value  | 28 kW     |
| — at 400 V at 60 °C rated value   | 27.5 kW   |
| — at 690 V rated value  | 48 kW     |
| — at 690 V at 60 °C rated value   | 47.5 kW   |
| • at AC-2 at 400 V rated value  | 18.5 kW   |
| • at AC-3   |           |
| — at 230 V rated value  | 11 kW     |
| — at 400 V rated value  | 18.5 kW   |
| — at 500 V rated value  | 18.5 kW   |
| — at 690 V rated value  | 18.5 kW   |
| <b>Operating power for approx. 200000 operating cycles at AC-4</b>                            |           |
| • at 400 V rated value  | 6 kW      |
| • at 690 V rated value  | 10.3 kW   |
| <b>Thermal short-time current limited to 10 s</b>   | 304 A     |
| <b>Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor</b> | 3.8 W     |
| <b>No-load switching frequency</b>  |           |
| • at AC   | 5 000 1/h |
| <b>Operating frequency</b>  |           |
| • at AC-1 maximum   | 1 000 1/h |
| • at AC-2 maximum   | 750 1/h   |

- at AC-3 maximum
- at AC-4 maximum

750 1/h

250 1/h

### Control circuit/ Control

|   |                  |
|---|------------------|
| <b>Type of voltage of the control supply voltage</b>                                  | AC               |
| <b>Control supply voltage at AC</b>   |                  |
| • at 50 Hz rated value  | 24 V             |
| • at 60 Hz rated value  | 24 V             |
| <b>Operating range factor control supply voltage rated value of magnet coil at AC</b> |                  |
| • at 50 Hz  | 0.8 ... 1.1      |
| • at 60 Hz  | 0.85 ... 1.1     |
| <b>Apparent pick-up power of magnet coil at AC</b>                                    |                  |
| • at 50 Hz  | 81 V·A           |
| • at 60 Hz  | 79 V·A           |
| <b>Inductive power factor with closing power of the coil</b>                          |                  |
| • at 50 Hz  | 0.72             |
| • at 60 Hz  | 0.74             |
| <b>Apparent holding power of magnet coil at AC</b>                                    |                  |
| • at 50 Hz  | 10.5 V·A         |
| • at 60 Hz  | 8.5 V·A          |
| <b>Inductive power factor with the holding power of the coil</b>                      |                  |
| • at 50 Hz  | 0.25             |
| • at 60 Hz  | 0.28             |
| <b>Closing delay</b>  |                  |
| • at AC   | 8 ... 40 ms      |
| <b>Opening delay</b>  |                  |
| • at AC   | 4 ... 16 ms      |
| <b>Arcing time</b>  | 10 ... 10 ms     |
| <b>Control version of the switch operating mechanism</b>                              | Standard A1 - A2 |

### Auxiliary circuit

|   |      |
|---|------|
| <b>Number of NC contacts for auxiliary contacts</b> |      |
| • instantaneous contact                             | 2    |
| <b>Number of NO contacts for auxiliary contacts</b> |      |
| • instantaneous contact                             | 2    |
| <b>Operating current at AC-12 maximum</b>           | 10 A |
| <b>Operating current at AC-15</b>                   |      |
| • at 230 V rated value                              | 6 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>                   |      |

|   |  |
|---|--|
| <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>6 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>34 A</p> <p>27 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>3 hp</p> <p>5 hp</p> <p>10 hp</p> <p>10 hp</p> <p>25 hp</p> <p>25 hp</p> |
| <b>Contact rating of auxiliary contacts according to UL</b>   | A600 / Q600   |

### Short-circuit protection

|   |   |
|---|---|
| <b>Design of the fuse link</b>  |   |
| <ul style="list-style-type: none"> <li>• for short-circuit protection of the main circuit <ul style="list-style-type: none"> <li>— with type of coordination 1 required</li> <li>— with type of assignment 2 required</li> </ul> </li> <li>• for short-circuit protection of the auxiliary switch required</li> </ul> | <p>gG: 125A (690V,100kA), aM: 50A (690V,100kA), BS88: 125A (415V,80kA)</p> <p>gG: 50A (690V,100kA), aM: 25A (690V, 100kA), BS88: 50A (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>   | 102 mm   |
| <b>Width</b>  | 45 mm  |
| <b>Depth</b>  | 144 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> </ul>  | spring-loaded terminals<br>spring-loaded 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> <li>— finely stranded without core end processing</li> </ul> </li> <li>• at AWG conductors for main contacts</li> </ul> | 2x (1 ... 10 mm <sup>2</sup> )<br>2x (1 ... 10 mm <sup>2</sup> )<br>2x (1 ... 6 mm <sup>2</sup> )<br>2x (1 ... 6 mm <sup>2</sup> )<br><br>2x (18 ... 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 ... 6 mm <sup>2</sup>   |

|   |   |
|---|---|
| <ul style="list-style-type: none"> <li>finely stranded without core end processing</li> </ul>   | 1 ... 6 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 ... 1.5 mm <sup>2</sup>   |
| <ul style="list-style-type: none"> <li>finely stranded without 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> <li>finely stranded without core end processing</li> </ul> </li> <li>at AWG conductors for auxiliary contacts</li> </ul> | 2x (0,5 ... 2,5 mm <sup>2</sup> )<br>2x (0.5 ... 1.5 mm <sup>2</sup> )<br>2x (0.5 ... 2.5 mm <sup>2</sup> )<br><br>2x (20 ... 14) |
| <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>   | 18 ... 8<br>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> <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>No    |
| <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  |

**Certificates/ approvals**

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



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

[Type Examination Certificate](#)



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



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| Further information |
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**Industry Mall (Online ordering system)**

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2028-2AC24>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2028-2AC24>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-2AC24>

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

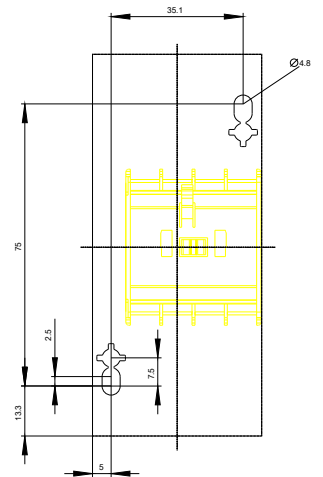
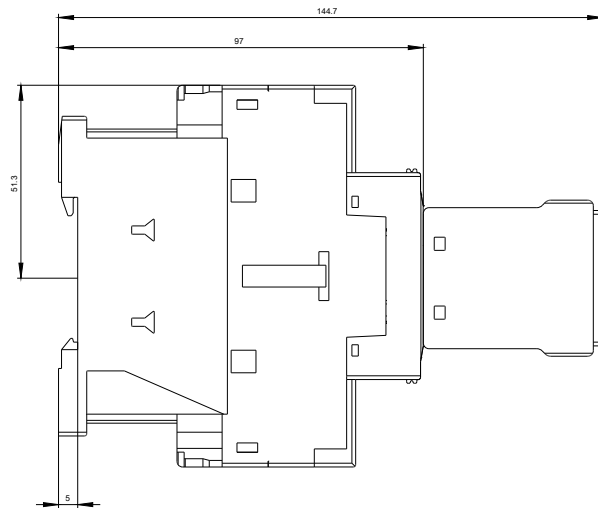
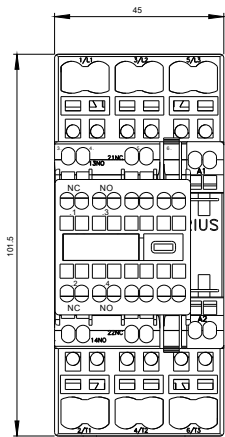
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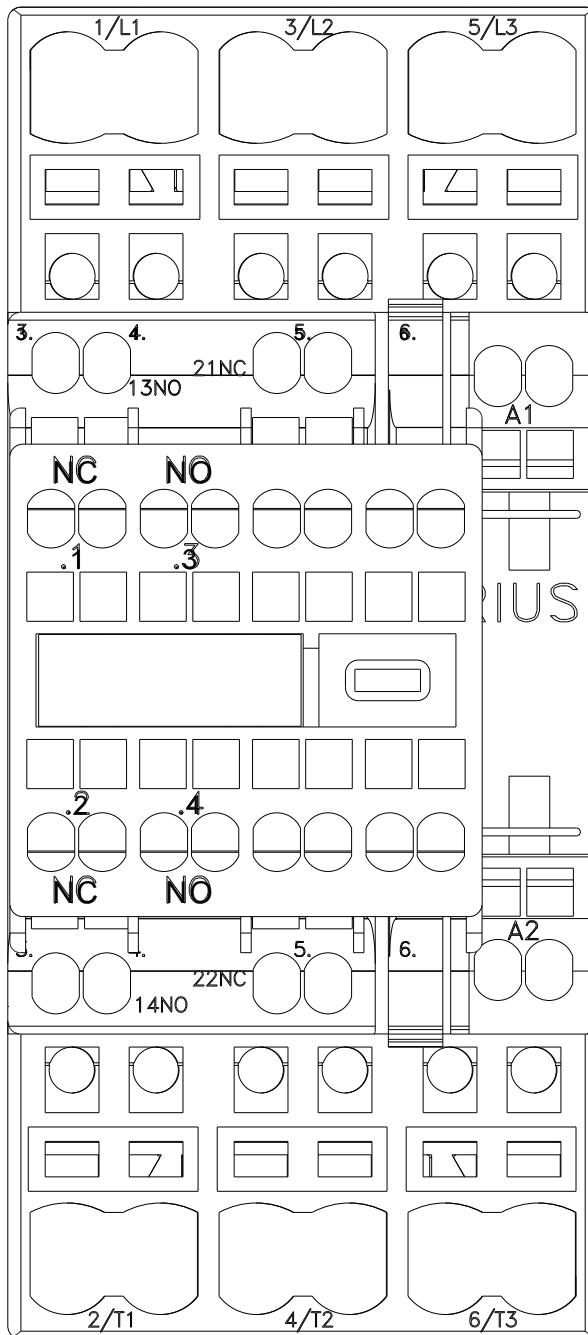
**Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current**

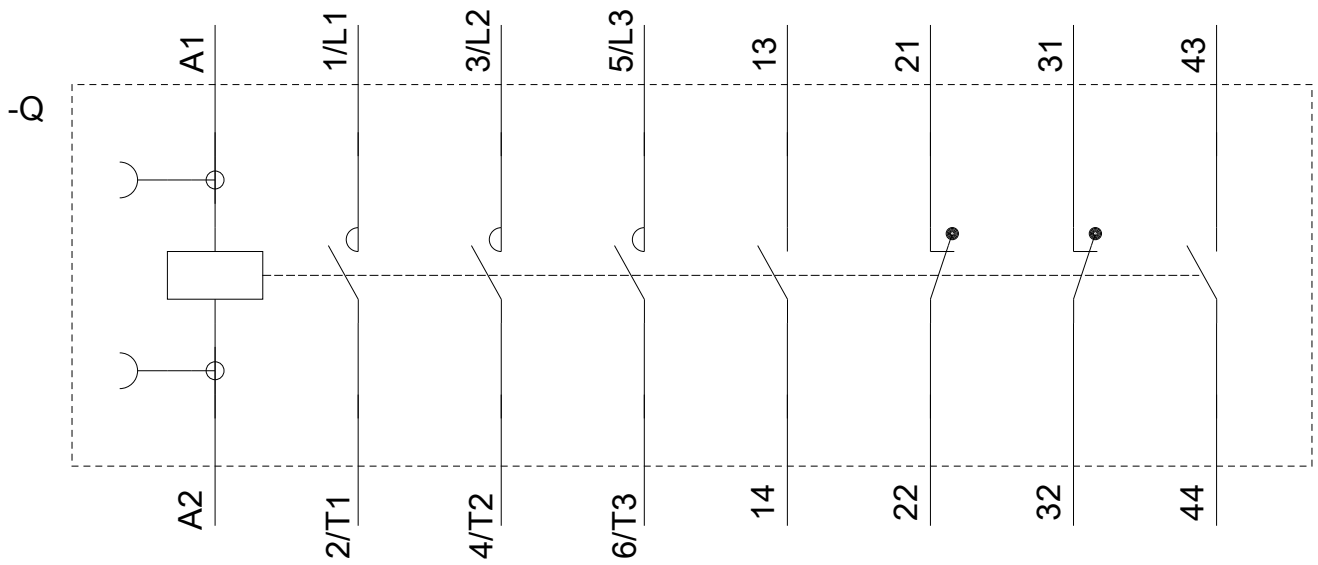
<https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-2AC24/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2028-2AC24&objecttype=14&gridview=view1>







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