

power contactor, AC-3 12 A, 5.5 kW / 400 V 2 NO + 2 NC, 24 V DC with diode integrated 3-pole, Size S00 Spring-type terminal Captive auxiliary switch for SUVA applications



|                                                                                  |                 |
|----------------------------------------------------------------------------------|-----------------|
| Product brand name                                                               | SIRIUS          |
| Product designation                                                              | Power contactor |
| Product type designation                                                         | 3RT2            |
| General technical data                                                           |                 |
| Size of contactor                                                                | S00             |
| Product extension                                                                |                 |
| • function module for communication                                              | No              |
| • Auxiliary switch                                                               | No              |
| Power loss [W] for rated value of the current                                    |                 |
| • at AC in hot operating state                                                   | 3.6 W           |
| • at AC in hot operating state per pole                                          | 1.2 W           |
| Power loss [W] for rated value of the current without load current share typical | 4 W             |
| Surge voltage resistance                                                         |                 |
| • of main circuit rated value                                                    | 6 kV            |
| • of auxiliary circuit rated value                                               | 6 kV            |
| maximum permissible voltage for safe isolation                                   |                 |
| • 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 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                                                                  | 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             | 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                         | 12 A   |
| • at AC-3                                              |        |
| — at 400 V rated value                                 | 12 A   |
| — at 500 V rated value                                 | 9.2 A  |
| — at 690 V rated value                                 | 6.7 A  |
| • at AC-4 at 400 V rated value                         | 8.5 A  |
| • at AC-5a up to 690 V rated value                     | 19.4 A |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at AC-5b up to 400 V rated value</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 9.9 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>                                                                                                                                                                                                                                                                                                                                                                                                           | 7.2 A<br>7.2 A<br>7.2 A<br>6.7 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>                                                                                                                                                                                                                                                                                                                                                                                                           | 4.8 A<br>4.8 A<br>4.8 A<br>4.8 A                                                                                             |
| <b>Minimum cross-section in main circuit</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                              |
| <ul style="list-style-type: none"> <li>• at maximum AC-1 rated value</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 4 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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 4.1 A<br>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> </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 |

|                                                                    |            |
|--------------------------------------------------------------------|------------|
| — at 600 V rated value                                             | 1 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                                             | 0.1 A      |
| • with 2 current paths in series at DC-3 at DC-5                   |            |
| — at 24 V rated value                                              | 20 A       |
| — at 110 V rated value                                             | 0.35 A     |
| • with 3 current paths in series at DC-3 at DC-5                   |            |
| — at 24 V rated value                                              | 20 A       |
| — at 110 V rated value                                             | 20 A       |
| — at 220 V rated value                                             | 1.5 A      |
| — at 440 V rated value                                             | 0.2 A      |
| — at 600 V rated value                                             | 0.2 A      |
| <b>Operating power</b>                                             |            |
| • at AC-1                                                          |            |
| — at 230 V rated value                                             | 7.5 kW     |
| — at 230 V at 60 °C rated value                                    | 7.5 kW     |
| — at 400 V rated value                                             | 13 kW      |
| — at 400 V at 60 °C rated value                                    | 13 kW      |
| — at 690 V rated value                                             | 22 kW      |
| — at 690 V at 60 °C rated value                                    | 22 kW      |
| • at AC-2 at 400 V rated value                                     | 5.5 kW     |
| • at AC-3                                                          |            |
| — at 230 V rated value                                             | 3 kW       |
| — at 400 V rated value                                             | 5.5 kW     |
| — at 500 V rated value                                             | 5.5 kW     |
| — at 690 V rated value                                             | 5.5 kW     |
| <b>Operating power for approx. 200000 operating cycles at AC-4</b> |            |
| • at 400 V rated value                                             | 2 kW       |
| • at 690 V rated value                                             | 2.5 kW     |
| <b>No-load switching frequency</b>                                 |            |
| • at DC                                                            | 10 000 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                                                  | 750 1/h    |
| • at AC-4 maximum                                                  | 250 1/h    |
| <b>Control circuit/ Control</b>                                    |            |
| <b>Type of voltage of the control supply voltage</b>               | DC         |

|                                                                                       |                  |
|---------------------------------------------------------------------------------------|------------------|
| <b>Control supply voltage at DC</b>                                                   |                  |
| • rated value                                                                         | 24 V             |
| <b>Operating range factor control supply voltage rated value of magnet coil at DC</b> |                  |
| • initial value                                                                       | 0.8              |
| • Full-scale value                                                                    | 1.1              |
| <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>                                                                  |                  |
| • at DC                                                                               | 30 ... 100 ms    |
| <b>Opening delay</b>                                                                  |                  |
| • at DC                                                                               | 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 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>                   |        |
| • 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                               | 6 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)                                                                                      |
| <b>UL/CSA ratings</b>                                           |                                                                                                                                      |
| <b>Full-load current (FLA) for three-phase AC motor</b>         |                                                                                                                                      |
| • at 480 V rated value                                          | 11 A                                                                                                                                 |
| • at 600 V rated value                                          | 11 A                                                                                                                                 |
| <b>Yielded mechanical performance [hp]</b>                      |                                                                                                                                      |
| • for single-phase AC motor                                     |                                                                                                                                      |
| — at 110/120 V rated value                                      | 0.5 hp                                                                                                                               |
| — at 230 V rated value                                          | 2 hp                                                                                                                                 |
| • for three-phase AC motor                                      |                                                                                                                                      |
| — at 200/208 V rated value                                      | 3 hp                                                                                                                                 |
| — at 220/230 V rated value                                      | 3 hp                                                                                                                                 |
| — at 460/480 V rated value                                      | 7.5 hp                                                                                                                               |
| — at 575/600 V rated value                                      | 10 hp                                                                                                                                |
| <b>Contact rating of auxiliary contacts according to UL</b>     | A600 / Q600                                                                                                                          |
| <b>Short-circuit protection</b>                                 |                                                                                                                                      |
| <b>Design of the fuse link</b>                                  |                                                                                                                                      |
| • for short-circuit protection of the main circuit              |                                                                                                                                      |
| — with type of coordination 1 required                          | gG: 50A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)                                                                    |
| — with type of assignment 2 required                            | gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V, 80kA)                                                                  |
| • for short-circuit protection of the auxiliary switch required | gG: 10 A (500 V, 1 kA)                                                                                                               |
| <b>Installation/ mounting/ dimensions</b>                       |                                                                                                                                      |
| <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                                               |
| • Side-by-side mounting                                         | Yes                                                                                                                                  |
| <b>Height</b>                                                   | 70 mm                                                                                                                                |
| <b>Width</b>                                                    | 45 mm                                                                                                                                |
| <b>Depth</b>                                                    | 121 mm                                                                                                                               |
| <b>Required spacing</b>                                         |                                                                                                                                      |
| • with side-by-side mounting                                    |                                                                                                                                      |
| — forwards                                                      | 10 mm                                                                                                                                |
| — upwards                                                       | 10 mm                                                                                                                                |
| — downwards                                                     | 10 mm                                                                                                                                |
| — at the side                                                   | 0 mm                                                                                                                                 |
| • for grounded parts                                            |                                                                                                                                      |
| — forwards                                                      | 10 mm                                                                                                                                |

|                  |       |
|------------------|-------|
| — upwards        | 10 mm |
| — at the side    | 6 mm  |
| — downwards      | 10 mm |
| • for live parts |       |
| — forwards       | 10 mm |
| — upwards        | 10 mm |
| — downwards      | 10 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           |
| • at contactor for auxiliary contacts                             | Spring-type terminals             |
| • of magnet coil                                                  | Spring-type 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>Connectable conductor cross-section for main contacts</b>      |                                   |
| • solid                                                           | 0.5 ... 4 mm <sup>2</sup>         |
| • stranded                                                        | 0.5 ... 4 mm <sup>2</sup>         |
| • finely stranded with core end processing                        | 0.5 ... 2.5 mm <sup>2</sup>       |
| • finely stranded without core end processing                     | 0.5 ... 2.5 mm <sup>2</sup>       |
| <b>Connectable conductor cross-section for auxiliary contacts</b> |                                   |
| • single or multi-stranded                                        | 0.5 ... 4 mm <sup>2</sup>         |
| • finely stranded with core end processing                        | 0.5 ... 2.5 mm <sup>2</sup>       |
| • finely stranded without core end processing                     | 0.5 ... 2.5 mm <sup>2</sup>       |
| <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)                    |
| <b>AWG number as coded connectable conductor cross section</b>    |                                   |

- for main contacts
- for auxiliary contacts

20 ... 12

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> </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         |
| <ul style="list-style-type: none"> <li>• positively driven operation acc. to IEC 60947-5-1</li> </ul> | 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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|-------|
| other |
|-------|

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| Further information |
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**Information- and Downloadcenter (Catalogs, Brochures,...)**

[www.siemens.com/sirius/catalogs](http://www.siemens.com/sirius/catalogs)

**Industry Mall (Online ordering system)**

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2017-2FB44-3MA0>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2017-2FB44-3MA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-2FB44-3MA0>

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

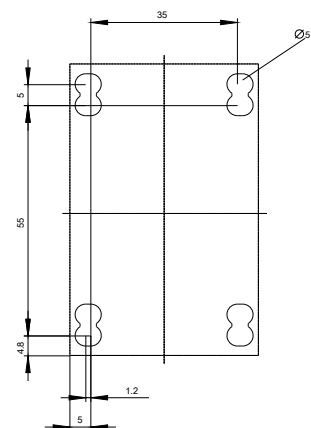
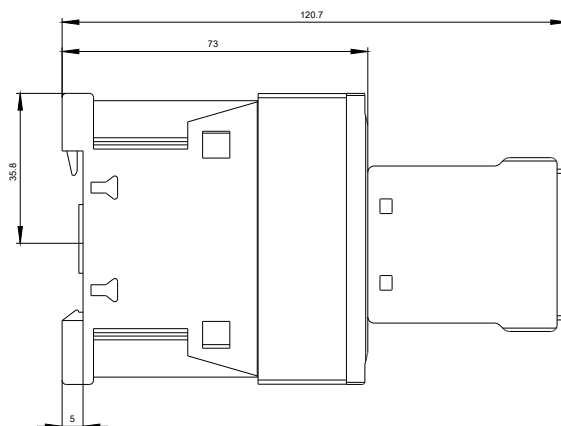
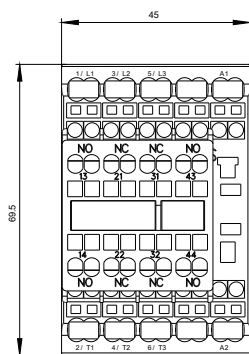
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2017-2FB44-3MA0&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2017-2FB44-3MA0&lang=en)

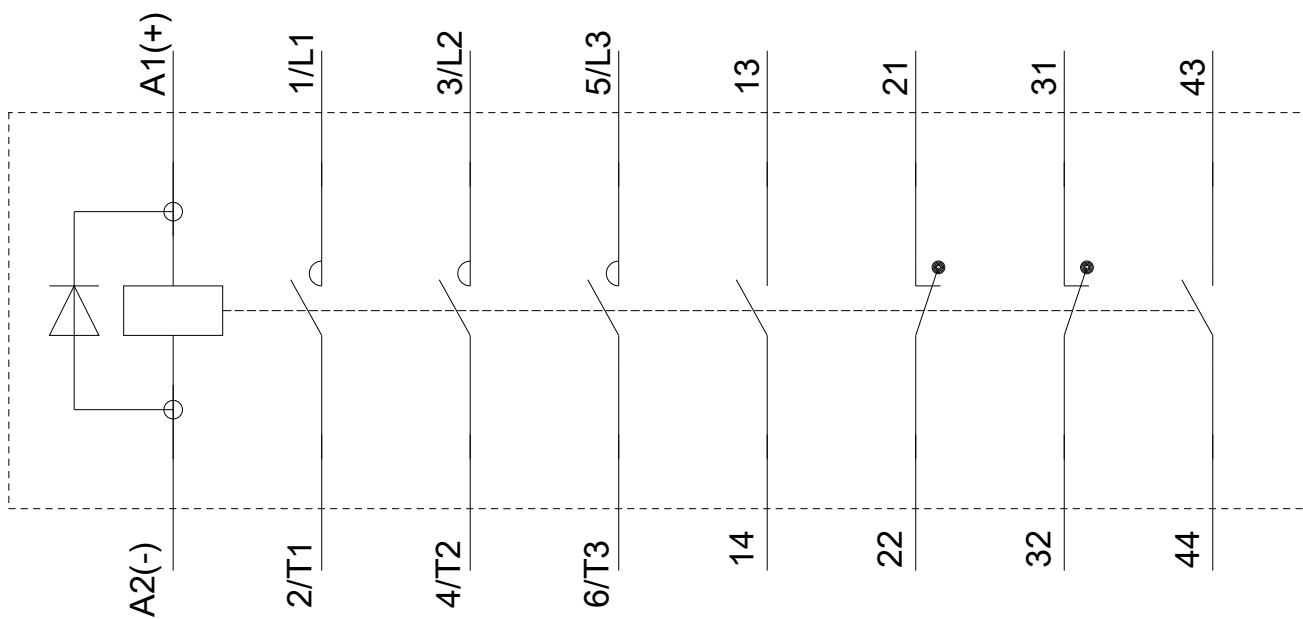
**Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current**

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-2FB44-3MA0/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2017-2FB44-3MA0&objecttype=14&gridview=view1>





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