

Power contactor, AC-3 185 A, 90 kW / 400 V Coil AC 50/60 Hz and DC 96-127 V x (0.8-1.1) F-PLC input 24 V DC 3-pole size S6  
 Auxiliary contacts 2 NO + 2 NC cannot be dissolved (SUVA) Main circuit: Busbar Control and auxiliary circuit: screw terminal



Figure similar

|                          |                 |
|--------------------------|-----------------|
| Product brand name       | SIRIUS          |
| Product designation      | Power contactor |
| Product type designation | 3RT1            |

| General technical data  |   |
|---|---|
| Size of contactor   | S6  |
| 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   |
| Surge voltage resistance  |   |
| <ul style="list-style-type: none"> <li>of main circuit rated value</li> </ul>                       | 8 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> | 690 V   |
| Protection class IP   |   |
| <ul style="list-style-type: none"> <li>on the front</li> </ul>                                      | IP00; IP20 on the front with cover / box terminal |
| <ul style="list-style-type: none"> <li>of the terminal</li> </ul>                                   | IP00  |

|   |  |
|---|--|
| <b>Shock resistance at rectangular impulse</b>  |  |
| <ul style="list-style-type: none"> <li>• at AC</li> <li>• at DC</li> </ul>  | 8,5g / 5 ms, 4,2g / 10 ms<br>8,5g / 5 ms, 4,2g / 10 ms   |
| <b>Shock resistance with sine pulse</b>   |  |
| <ul style="list-style-type: none"> <li>• at AC</li> <li>• at DC</li> </ul>  | 13,4g / 5 ms, 6,5g / 10 ms<br>13,4g / 5 ms, 6,5g / 10 ms |
| <b>Mechanical service life (switching cycles)</b>   |  |
| <ul style="list-style-type: none"> <li>• of contactor typical</li> <li>• of the contactor with added electronics-compatible auxiliary switch block typical</li> <li>• of the contactor with added auxiliary switch block typical</li> </ul> | 10 000 000<br>5 000 000<br>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>   |                                  |
| <ul style="list-style-type: none"> <li>• maximum</li> </ul>                                    | 2 000 m                          |
| <b>Ambient temperature</b>   |                                  |
| <ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage</li> </ul> | -25 ... +60 °C<br>-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>   |  |
| <ul style="list-style-type: none"> <li>• at AC-3 rated value maximum</li> </ul>  | 1 000 V  |
| <b>Operating current</b>   |  |
| <ul style="list-style-type: none"> <li>• at AC-1 at 400 V <ul style="list-style-type: none"> <li>— at ambient temperature 40 °C rated value</li> </ul> </li> <li>• at AC-1 <ul style="list-style-type: none"> <li>— up to 690 V at ambient temperature 40 °C rated value</li> <li>— up to 690 V at ambient temperature 60 °C rated value</li> <li>— up to 1000 V at ambient temperature 40 °C rated value</li> <li>— up to 1000 V at ambient temperature 60 °C rated value</li> </ul> </li> <li>• at AC-2 at 400 V rated value</li> <li>• at AC-3 <ul style="list-style-type: none"> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> </ul> </li> </ul> | 215 A<br>215 A<br>185 A<br>100 A<br>100 A<br>185 A<br>185 A<br>185 A |

|  |                    |
|--|--------------------|
| — at 690 V rated value   | 170 A              |
| — at 1000 V rated value  | 65 A               |
| • at AC-4 at 400 V rated value                                       | 160 A              |
| <b>Connectable conductor cross-section in main circuit at AC-1</b>   |                    |
| • at 60 °C minimum permissible                                       | 95 mm <sup>2</sup> |
| • at 40 °C minimum permissible                                       | 95 mm <sup>2</sup> |
| <b>Operating current for approx. 200000 operating cycles at AC-4</b> |                    |
| • at 400 V rated value   | 81 A               |
| • at 690 V rated value   | 65 A               |
| <b>Operating current</b>   |                    |
| • at 1 current path at DC-1  |                    |
| — at 24 V rated value  | 160 A              |
| — at 110 V rated value   | 18 A               |
| — at 220 V rated value   | 3.4 A              |
| — at 440 V rated value   | 0.8 A              |
| — at 600 V rated value   | 0.5 A              |
| • with 2 current paths in series at DC-1                             |                    |
| — at 24 V rated value  | 160 A              |
| — at 110 V rated value   | 160 A              |
| — at 220 V rated value   | 20 A               |
| — at 440 V rated value   | 3.2 A              |
| — at 600 V rated value   | 1.6 A              |
| • with 3 current paths in series at DC-1                             |                    |
| — at 24 V rated value  | 160 A              |
| — at 110 V rated value   | 160 A              |
| — at 220 V rated value   | 160 A              |
| — at 440 V rated value   | 11.5 A             |
| — at 600 V rated value   | 4 A                |
| <b>Operating current</b>   |                    |
| • at 1 current path at DC-3 at DC-5                                  |                    |
| — at 24 V rated value  | 160 A              |
| — at 110 V rated value   | 2.5 A              |
| — at 220 V rated value   | 0.6 A              |
| — at 440 V rated value   | 0.17 A             |
| — at 600 V rated value   | 0.12 A             |
| • with 2 current paths in series at DC-3 at DC-5                     |                    |
| — at 24 V rated value  | 160 A              |
| — at 110 V rated value   | 160 A              |
| — at 220 V rated value   | 2.5 A              |
| — at 440 V rated value   | 0.65 A             |

|   |              |
|---|--------------|
| — at 600 V rated value  | 0.37 A       |
| • with 3 current paths in series at DC-3 at DC-5  |              |
| — at 24 V rated value   | 160 A        |
| — at 110 V rated value  | 160 A        |
| — at 220 V rated value  | 160 A        |
| — at 440 V rated value  | 1.4 A        |
| — at 600 V rated value  | 0.75 A       |
| <b>Operating power</b>  |              |
| • at AC-1   |              |
| — at 230 V at 60 °C rated value   | 70 kW        |
| — at 400 V rated value  | 121 kW       |
| — at 400 V at 60 °C rated value   | 121 kW       |
| — at 690 V rated value  | 215 kW       |
| — at 690 V at 60 °C rated value   | 210 kW       |
| — at 1000 V at 60 °C rated value  | 165 kW       |
| • at AC-2 at 400 V rated value  | 90 kW        |
| • at AC-3   |              |
| — at 230 V rated value  | 55 kW        |
| — at 400 V rated value  | 90 kW        |
| — at 500 V rated value  | 132 kW       |
| — at 690 V rated value  | 160 kW       |
| — at 1000 V rated value   | 90 kW        |
| <b>Operating power for approx. 200000 operating cycles at AC-4</b>                            |              |
| • at 400 V rated value  | 45 kW        |
| • at 690 V rated value  | 65 kW        |
| <b>Power loss [W] at AC-3 at 400 V for rated value of the operating current per conductor</b> | 13 W         |
| <b>No-load switching frequency</b>  |              |
| • at AC   | 1 000 1/h    |
| • at DC   | 1 000 1/h    |
| <b>Operating frequency</b>  |              |
| • at AC-1 maximum   | 800 1/h      |
| • at AC-2 maximum   | 300 1/h      |
| • at AC-3 maximum   | 750 1/h      |
| • at AC-4 maximum   | 130 1/h      |
| <b>Control circuit/ Control</b>   |              |
| <b>Type of voltage of the control supply voltage</b>  | AC/DC        |
| <b>Control supply voltage at AC</b>   |              |
| • at 50 Hz rated value  | 96 ... 127 V |
| • at 60 Hz rated value  | 96 ... 127 V |

|   |                                |
|---|--------------------------------|
| <b>Control supply voltage at DC</b>   |                                |
| • rated value   | 96 ... 127 V                   |
| <b>Type of PLC-control input acc. to IEC 60947-1</b>                                  | Type 1                         |
| <b>Consumed current at PLC-control input acc. to IEC 60947-1 maximum</b>              | 30 mA                          |
| <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>Operating range factor control supply voltage rated value of magnet coil at AC</b> |                                |
| • at 50 Hz  | 0.8 ... 1.1                    |
| • at 60 Hz  | 0.8 ... 1.1                    |
| <b>Design of the surge suppressor</b>   | with varistor                  |
| <b>Apparent pick-up power of magnet coil at AC</b>                                    |                                |
| • at 50 Hz  | 280 V·A                        |
| <b>Inductive power factor with closing power of the coil</b>                          |                                |
| • at 50 Hz  | 0.8                            |
| <b>Apparent holding power of magnet coil at AC</b>                                    |                                |
| • at 50 Hz  | 4.4 V·A                        |
| <b>Inductive power factor with the holding power of the coil</b>                      |                                |
| • at 50 Hz  | 0.5                            |
| <b>Closing power of magnet coil at DC</b>   | 320 W                          |
| <b>Holding power of magnet coil at DC</b>   | 2.8 W                          |
| <b>Closing delay</b>  |                                |
| • at AC   | 60 ... 75 ms                   |
| • at DC   | 60 ... 75 ms                   |
| <b>Opening delay</b>  |                                |
| • at AC   | 115 ... 130 ms                 |
| • at DC   | 115 ... 130 ms                 |
| <b>Recovery time after power failure typical</b>                                      | 2 s                            |
| <b>Arcing time</b>  | 10 ... 15 ms                   |
| <b>Control version of the switch operating mechanism</b>                              | Fail-safe PLC input (F-PLC-IN) |
| <b>Auxiliary circuit</b>  |                                |
| <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                            |

|   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• at 500 V rated value</li> <li>• at 690 V rated value</li> </ul>  | <p>2 A</p> <p>1 A</p>   |
| <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>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>180 A</p> <p>192 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 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>30 hp</p> <p>60 hp</p> <p>75 hp</p> <p>150 hp</p> <p>200 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: 355 A (690 V, 100 kA)</p> <p>gG: 315 A (690 V, 100 kA), aM: 200 A (690 V, 100 kA), BS88: 315 A (415 V, 50 kA)</p> <p>gG: 10 A (500 V, 1 kA)</p> |

#### Installation/ mounting/ dimensions

|   |  |
|---|--|
| <b>Mounting position</b>  | with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back |
| <b>Mounting type</b>  | screw fixing   |
| <ul style="list-style-type: none"> <li>• Side-by-side mounting</li> </ul>   | Yes  |
| <b>Height</b>   | 172 mm   |
| <b>Width</b>  | 120 mm   |
| <b>Depth</b>  | 170 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> | 20 mm<br>10 mm<br>10 mm<br>0 mm<br><br>20 mm<br>10 mm<br>10 mm<br>10 mm<br><br>20 mm<br>10 mm<br>10 mm<br>10 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>   | Connection bar<br>screw-type terminals   |
| <b>Type of connectable conductor cross-sections</b>   |  |
| <ul style="list-style-type: none"> <li>• at AWG conductors for main contacts</li> </ul>   | 2x 1/0   |
| <b>Connectable conductor cross-section for main contacts</b>  |  |
| <ul style="list-style-type: none"> <li>• stranded</li> </ul>  | 25 ... 120 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> <li>• finely stranded with core end processing</li> </ul>  | 0.5 ... 4 mm <sup>2</sup><br>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>— solid</li> <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> ), max. 2x (0.75 ... 4 mm <sup>2</sup> )<br>2x (0,5 ... 1,5 mm <sup>2</sup> ), 2x (0,75 ... 2,5 mm <sup>2</sup> ), max. 2x (0,75 ... 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), 1x 12 |

|  |           |
|--|-----------|
| <b>AWG number as coded connectable conductor cross section</b>             |           |
| <ul style="list-style-type: none"> <li>• for auxiliary contacts</li> </ul> | 18 ... 14 |

### Safety related data

|   |  |
|---|--|
| <b>Safety device type acc. to IEC 61508-2</b>   | Type 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>Safety Integrity Level (SIL) acc. to IEC 61508</b>   | 2  |
| <b>SIL Claim Limit (subsystem) acc. to EN 62061</b>   | 2  |
| <b>Performance level (PL) acc. to EN ISO 13849-1</b>  | c  |
| <b>Category acc. to EN ISO 13849-1</b>  | 2  |
| <b>Stop category acc. to DIN EN 60204-1</b>   | 0  |
| <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>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>PFHD with high demand rate acc. to EN 62061</b>  | 0.00000045 1/h   |
| <b>PFDavg with low demand rate acc. to IEC 61508</b>  | 0.007  |
| <b>MTBF</b>   | 75 y   |
| <b>Hardware fault tolerance acc. to IEC 61508</b>   | 0  |
| <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 when touched vertically from front acc. to IEC 60529 |

### Certificates/approvals

|                                 |  |                                  |
|---------------------------------|--|----------------------------------|
| <b>General Product Approval</b> | <b>Functional Safety/Safety of Machinery</b> | <b>Declaration of Conformity</b> |
|---------------------------------|--|----------------------------------|



[Type Examination Certificate](#)



|                          |              |
|--------------------------|--------------|
| <b>Test Certificates</b> | <b>other</b> |
|--------------------------|--------------|

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

[Confirmation](#)

[Miscellaneous](#)

### Further information



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

<http://www.siemens.com/industrial-controls/catalogs>

**Industry Mall (Online ordering system)**

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT1056-6SF36-3PA0>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1056-6SF36-3PA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1056-6SF36-3PA0>

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

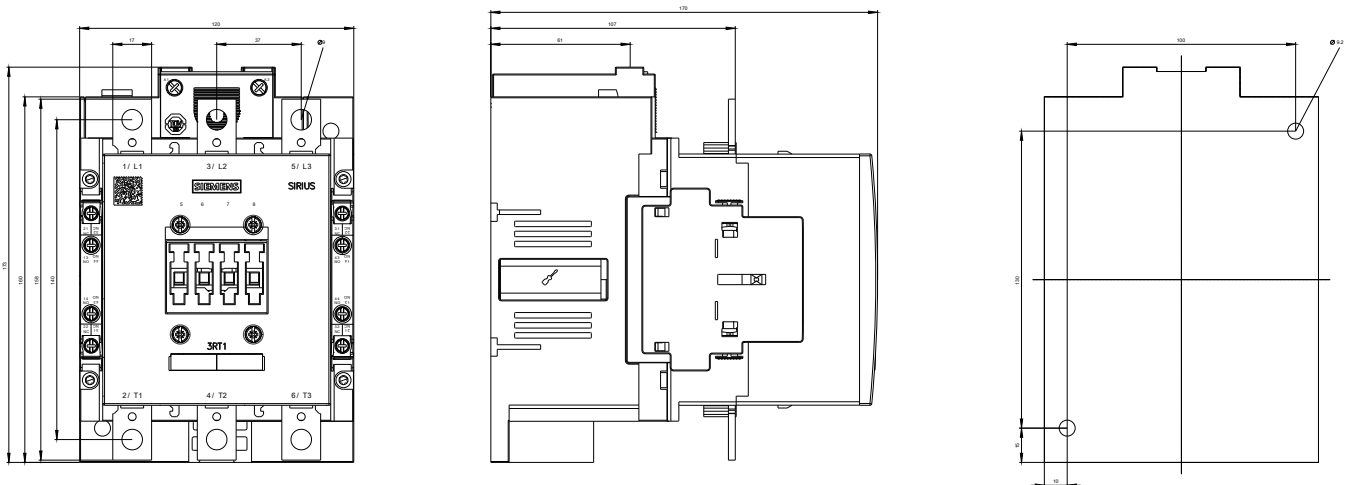
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT1056-6SF36-3PA0&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1056-6SF36-3PA0&lang=en)

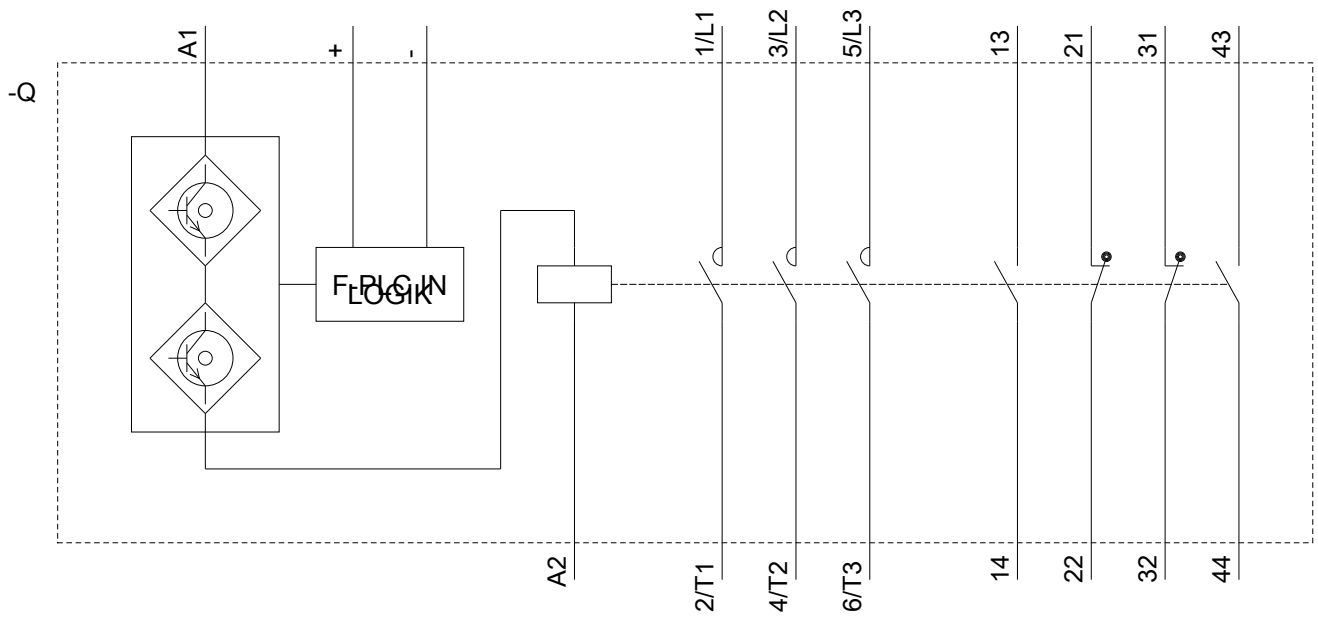
**Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current**

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1056-6SF36-3PA0/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1056-6SF36-3PA0&objecttype=14&gridview=view1>





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