



power contactor AC-1 275 A / 690 V / 40 °C 3-pole, U<sub>c</sub>: 96-127 V AC(50-60 Hz) / DC F-PLC input 24 V DC drive: electronic auxiliary contacts 2 NO + 2 NC main circuit: busbar control and auxiliary circuit: screw terminal

|                                                                                       |                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| product brand name                                                                    | SIRIUS                                                                                                                                                                                                                                                                             |
| product designation                                                                   | Contacteur                                                                                                                                                                                                                                                                         |
| product type designation                                                              | 3RT14                                                                                                                                                                                                                                                                              |
| <b>General technical data</b>                                                         |                                                                                                                                                                                                                                                                                    |
| size of contactor                                                                     | S6                                                                                                                                                                                                                                                                                 |
| product extension                                                                     |                                                                                                                                                                                                                                                                                    |
| • function module for communication                                                   | No                                                                                                                                                                                                                                                                                 |
| • auxiliary switch                                                                    | Yes                                                                                                                                                                                                                                                                                |
| power loss [W] for rated value of the current                                         |                                                                                                                                                                                                                                                                                    |
| • at AC in hot operating state                                                        | 86.4 W                                                                                                                                                                                                                                                                             |
| • at AC in hot operating state per pole                                               | 28.8 W                                                                                                                                                                                                                                                                             |
| • without load current share typical                                                  | 2.8 W                                                                                                                                                                                                                                                                              |
| type of calculation of power loss depending on pole                                   | quadratic                                                                                                                                                                                                                                                                          |
| insulation voltage                                                                    |                                                                                                                                                                                                                                                                                    |
| • of main circuit with degree of pollution 3 rated value                              | 1 000 V                                                                                                                                                                                                                                                                            |
| • of auxiliary circuit with degree of pollution 3 rated value                         | 500 V                                                                                                                                                                                                                                                                              |
| surge voltage resistance                                                              |                                                                                                                                                                                                                                                                                    |
| • of main circuit rated value                                                         | 8 kV                                                                                                                                                                                                                                                                               |
| • of auxiliary circuit rated value                                                    | 6 kV                                                                                                                                                                                                                                                                               |
| shock resistance at rectangular impulse                                               |                                                                                                                                                                                                                                                                                    |
| • at AC                                                                               | 8,5g / 5 ms, 4,2g / 10 ms                                                                                                                                                                                                                                                          |
| • at DC                                                                               | 8,5g / 5 ms, 4,2g / 10 ms                                                                                                                                                                                                                                                          |
| shock resistance with sine pulse                                                      |                                                                                                                                                                                                                                                                                    |
| • at AC                                                                               | 13,4g / 5 ms, 6,5g / 10 ms                                                                                                                                                                                                                                                         |
| • at DC                                                                               | 13,4g / 5 ms, 6,5g / 10 ms                                                                                                                                                                                                                                                         |
| mechanical service life (operating cycles)                                            |                                                                                                                                                                                                                                                                                    |
| • of contactor typical                                                                | 10 000 000                                                                                                                                                                                                                                                                         |
| • of the contactor with added electronically optimized auxiliary switch block typical | 5 000 000                                                                                                                                                                                                                                                                          |
| • of the contactor with added auxiliary switch block typical                          | 10 000 000                                                                                                                                                                                                                                                                         |
| reference code according to IEC 81346-2                                               | Q                                                                                                                                                                                                                                                                                  |
| Substance Prohibitance (Date)                                                         | 03/01/2017                                                                                                                                                                                                                                                                         |
| SVHC substance name                                                                   | Lead - 7439-92-1<br>Lead monoxide (lead oxide) - 1317-36-8<br>2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7<br>2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5<br>Perfluorobutane sulfonic acid (PFBS) and its salts - -<br>Melamine - 108-78-1 |
| Weight                                                                                | 3.34 kg                                                                                                                                                                                                                                                                            |
| <b>Ambient conditions</b>                                                             |                                                                                                                                                                                                                                                                                    |
| installation altitude at height above sea level maximum                               | 2 000 m                                                                                                                                                                                                                                                                            |
| ambient temperature                                                                   |                                                                                                                                                                                                                                                                                    |

|                                                                       |                |
|-----------------------------------------------------------------------|----------------|
| • during operation                                                    | -25 ... +60 °C |
| • during storage                                                      | -55 ... +80 °C |
| <b>relative humidity minimum</b>                                      | 10 %           |
| <b>relative humidity at 55 °C according to IEC 60068-2-30 maximum</b> | 95 %           |
| <b>Main circuit</b>                                                   |                |
| <b>number of poles for main current circuit</b>                       | 3              |
| <b>number of NO contacts for main contacts</b>                        | 3              |
| <b>number of NC contacts for main contacts</b>                        | 0              |
| <b>type of voltage for main current circuit</b>                       | AC             |
| <b>operational current</b>                                            |                |
| • at AC-1                                                             |                |
| — up to 690 V at ambient temperature 40 °C rated value                | 275 A          |
| — up to 690 V at ambient temperature 55 °C rated value                | 250 A          |
| — up to 690 V at ambient temperature 60 °C rated value                | 250 A          |
| • at AC-3                                                             |                |
| — at 400 V rated value                                                | 97 A           |
| — at 690 V rated value                                                | 97 A           |
| minimum cross-section in main circuit at maximum AC-1 rated value     | 140 mm²        |
| <b>operational current</b>                                            |                |
| • at 1 current path at DC-1                                           |                |
| — at 24 V rated value                                                 | 250 A          |
| — at 60 V rated value                                                 | 250 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                                                 | 250 A          |
| — at 60 V rated value                                                 | 250 A          |
| — at 110 V rated value                                                | 250 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                                                 | 250 A          |
| — at 60 V rated value                                                 | 250 A          |
| — at 110 V rated value                                                | 250 A          |
| — at 220 V rated value                                                | 250 A          |
| — at 440 V rated value                                                | 11.5 A         |
| — at 600 V rated value                                                | 4 A            |
| • at 1 current path at DC-3 at DC-5                                   |                |
| — at 24 V rated value                                                 | 250 A          |
| — at 60 V rated value                                                 | 7.5 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                                                 | 250 A          |
| — at 60 V rated value                                                 | 250 A          |
| — at 110 V rated value                                                | 250 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                                                 | 250 A          |
| — at 60 V rated value                                                 | 250 A          |

|                                                                                       |                                 |
|---------------------------------------------------------------------------------------|---------------------------------|
| — at 110 V rated value                                                                | 250 A                           |
| — at 220 V rated value                                                                | 250 A                           |
| — at 440 V rated value                                                                | 1.4 A                           |
| — at 600 V rated value                                                                | 0.75 A                          |
| <b>no-load switching frequency</b>                                                    |                                 |
| • at AC                                                                               | 1 000 1/h                       |
| • at DC                                                                               | 1 000 1/h                       |
| operating frequency at AC-1 maximum                                                   | 200 1/h                         |
| <b>Control circuit/ Control</b>                                                       |                                 |
| <b>type of voltage</b>                                                                | AC/DC                           |
| <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 rated value</b>                                       | 96 ... 127 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>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>type of PLC-control input according to IEC 60947-1</b>                             | Type 1                          |
| <b>consumed current at PLC-control input according to IEC 60947-1 maximum</b>         | 30 mA                           |
| <b>design of the surge suppressor</b>                                                 | with varistor                   |
| <b>apparent pick-up power</b>                                                         |                                 |
| • at minimum rated control supply voltage at AC                                       |                                 |
| — at 50 Hz                                                                            | 190 VA                          |
| — at 60 Hz                                                                            | 190 VA                          |
| • at maximum rated control supply voltage at AC                                       |                                 |
| — at 60 Hz                                                                            | 280 VA                          |
| — at 50 Hz                                                                            | 280 VA                          |
| <b>apparent pick-up power of magnet coil at AC</b>                                    |                                 |
| • at 50 Hz                                                                            | 280 VA                          |
| <b>inductive power factor with closing power of the coil</b>                          |                                 |
| • at 50 Hz                                                                            | 0.8                             |
| <b>apparent holding power</b>                                                         |                                 |
| • at minimum rated control supply voltage at DC                                       | 2.1 VA                          |
| • at maximum rated control supply voltage at DC                                       | 2.8 VA                          |
| <b>apparent holding power</b>                                                         |                                 |
| • at minimum rated control supply voltage at AC                                       |                                 |
| — at 50 Hz                                                                            | 4.3 VA                          |
| — at 60 Hz                                                                            | 4.3 VA                          |
| • at maximum rated control supply voltage at AC                                       |                                 |
| — at 50 Hz                                                                            | 5.2 VA                          |
| — at 60 Hz                                                                            | 5.2 VA                          |
| <b>apparent holding power of magnet coil at AC</b>                                    |                                 |
| • at 50 Hz                                                                            | 4.4 VA                          |
| <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>arcing time</b>                                                                    | 10 ... 15 ms                    |
| <b>control version of the switch operating mechanism</b>                              | Fail-safe PLC input (F-PL C-IN) |

| Auxiliary circuit                                                                                         |                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>number of NC contacts for auxiliary contacts</b>                                                       | 2                                                                                                                        |
| • attachable                                                                                              | 4                                                                                                                        |
| • instantaneous contact                                                                                   | 2                                                                                                                        |
| <b>number of NO contacts for auxiliary contacts</b>                                                       | 2                                                                                                                        |
| • attachable                                                                                              | 4                                                                                                                        |
| • instantaneous contact                                                                                   | 2                                                                                                                        |
| operational current at AC-12 maximum                                                                      | 10 A                                                                                                                     |
| <b>operational 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>operational current at DC-13</b>                                                                       |                                                                                                                          |
| • at 24 V rated value                                                                                     | 10 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)                                                                          |
| Short-circuit protection                                                                                  |                                                                                                                          |
| design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V | C characteristic: 10 A; 0.4 kA                                                                                           |
| <b>design of the fuse link</b>                                                                            |                                                                                                                          |
| • for short-circuit protection of the main circuit                                                        |                                                                                                                          |
| — with type of coordination 1 required                                                                    | gG: 355 A (690 V, 100 kA)                                                                                                |
| — with type of coordination 2 required                                                                    | gR: 350 A (690 V, 100 kA)                                                                                                |
| • for short-circuit protection of the auxiliary switch required                                           | gG: 10 A (500 V, 1 kA)                                                                                                   |
| 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 |
| fastening method side-by-side mounting                                                                    | Yes                                                                                                                      |
| <b>fastening method</b>                                                                                   | screw fixing                                                                                                             |
| <b>height</b>                                                                                             | 172 mm                                                                                                                   |
| <b>width</b>                                                                                              | 120 mm                                                                                                                   |
| <b>depth</b>                                                                                              | 170 mm                                                                                                                   |
| <b>required spacing</b>                                                                                   |                                                                                                                          |
| • with side-by-side mounting                                                                              |                                                                                                                          |
| — forwards                                                                                                | 20 mm                                                                                                                    |
| — upwards                                                                                                 | 10 mm                                                                                                                    |
| — downwards                                                                                               | 10 mm                                                                                                                    |
| — at the side                                                                                             | 0 mm                                                                                                                     |
| • for grounded parts                                                                                      |                                                                                                                          |
| — forwards                                                                                                | 20 mm                                                                                                                    |
| — upwards                                                                                                 | 10 mm                                                                                                                    |
| — at the side                                                                                             | 10 mm                                                                                                                    |
| — downwards                                                                                               | 10 mm                                                                                                                    |
| • for live parts                                                                                          |                                                                                                                          |
| — forwards                                                                                                | 20 mm                                                                                                                    |
| — upwards                                                                                                 | 10 mm                                                                                                                    |
| — downwards                                                                                               | 10 mm                                                                                                                    |
| — at the side                                                                                             | 10 mm                                                                                                                    |
| Connections/ Terminals                                                                                    |                                                                                                                          |
| <b>type of electrical connection</b>                                                                      |                                                                                                                          |
| • for main current circuit                                                                                | Connection bar                                                                                                           |
| • for auxiliary and control circuit                                                                       | screw-type terminals                                                                                                     |
| • at contactor for auxiliary contacts                                                                     | Screw-type terminals                                                                                                     |
| • of magnet coil                                                                                          | Screw-type terminals                                                                                                     |
| <b>width of connection bar</b>                                                                            | 17 mm                                                                                                                    |

|                                                                                       |                                                                                                              |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <b>thickness of connection bar</b>                                                    | 3 mm                                                                                                         |
| <b>diameter of holes</b>                                                              | 9 mm                                                                                                         |
| <b>number of holes</b>                                                                | 1                                                                                                            |
| <b>type of connectable conductor cross-sections</b>                                   |                                                                                                              |
| • for AWG cables for main contacts                                                    | 4 ... 250 kcmil                                                                                              |
| <b>connectable conductor cross-section for main contacts</b>                          |                                                                                                              |
| • solid or stranded                                                                   | 25 ... 120 mm <sup>2</sup>                                                                                   |
| • stranded                                                                            | 25 ... 120 mm <sup>2</sup>                                                                                   |
| <b>connectable conductor cross-section for auxiliary contacts</b>                     |                                                                                                              |
| • solid or stranded                                                                   | 0.5 ... 4 mm <sup>2</sup>                                                                                    |
| • finely stranded with core end processing                                            | 0.5 ... 2.5 mm <sup>2</sup>                                                                                  |
| <b>type of connectable conductor cross-sections</b>                                   |                                                                                                              |
| • for auxiliary contacts                                                              |                                                                                                              |
| — solid                                                                               | 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> ) |
| — solid or stranded                                                                   | 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> ) |
| — finely stranded with core end processing                                            | 2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> )                                        |
| • for AWG cables for auxiliary contacts                                               | 2x (20 ... 16), 2x (18 ... 14), 1x 12                                                                        |
| <b>AWG number as coded connectable conductor cross section for auxiliary contacts</b> | 18 ... 14                                                                                                    |

#### Safety related data

|                                                                      |           |
|----------------------------------------------------------------------|-----------|
| <b>product function</b>                                              |           |
| • mirror contact according to IEC 60947-4-1                          | Yes       |
| • positively driven operation according to IEC 60947-5-1             | No        |
| • suitable for safety function                                       | Yes       |
| suitability for use safety-related switching OFF                     | Yes       |
| <b>safe state</b>                                                    | off       |
| <b>stop category according to IEC 60204-1</b>                        | 0         |
| <b>proportion of dangerous failures</b>                              |           |
| • with low demand rate according to SN 31920                         | 40 %      |
| • with high demand rate according to SN 31920                        | 73 %      |
| <b>B10 value with high demand rate according to SN 31920</b>         | 1 000 000 |
| <b>failure rate [FIT] with low demand rate according to SN 31920</b> | 100 FIT   |

#### IEC 62061

|                                                            |            |
|------------------------------------------------------------|------------|
| <b>Safety Integrity Level (SIL) according to IEC 62061</b> | SIL 2      |
| PFHD with high demand rate according to IEC 62061          | 4.5E-7 1/h |

#### ISO 13849

|                                                            |      |
|------------------------------------------------------------|------|
| <b>performance level (PL) according to ISO 13849-1</b>     | PL c |
| <b>category according to ISO 13849-1</b>                   | 2    |
| <b>device type according to ISO 13849-1</b>                | 1    |
| <b>overdimensioning according to ISO 13849-2 necessary</b> | Yes  |

#### IEC 61508

|                                                          |            |
|----------------------------------------------------------|------------|
| Safety Integrity Level (SIL) according to IEC 61508      | 2          |
| <b>safety device type according to IEC 61508-2</b>       | Type B     |
| <b>PFHD with high demand rate according to IEC 61508</b> | 4.5E-7 1/h |
| PFDavg with low demand rate according to IEC 61508       | 0.007      |
| <b>Safe failure fraction (SFF)</b>                       | 93 %       |
| hardware fault tolerance according to IEC 61508          | 0          |
| T1 value of service life according to IEC 61508          | 20 a       |

#### Electrical Safety

|                                                                |                                                                          |
|----------------------------------------------------------------|--------------------------------------------------------------------------|
| <b>protection class IP on the front according to IEC 60529</b> | IP00; IP20 with box terminal/cover                                       |
| <b>touch protection on the front according to IEC 60529</b>    | finger-safe, for vertical contact from the front with box terminal/cover |

#### Approvals Certificates

|                                 |
|---------------------------------|
| <b>General Product Approval</b> |
|---------------------------------|



[KC](#)



|     |                   |                   |       |
|-----|-------------------|-------------------|-------|
| EMV | Functional Safety | Test Certificates | other |
|-----|-------------------|-------------------|-------|



[Type Examination Certificate](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



[Confirmation](#)

| other | Railway | Environment |
|-------|---------|-------------|
|-------|---------|-------------|

[Miscellaneous](#)

[Special Test Certificate](#)

[Environmental Conformations](#)

## Further information

### Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

### Information for data generation and storage

<https://support.industry.siemens.com/cs/ww/en/view/109995012>

### 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=3RT1456-6SF36>

### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT1456-6SF36>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1456-6SF36>

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

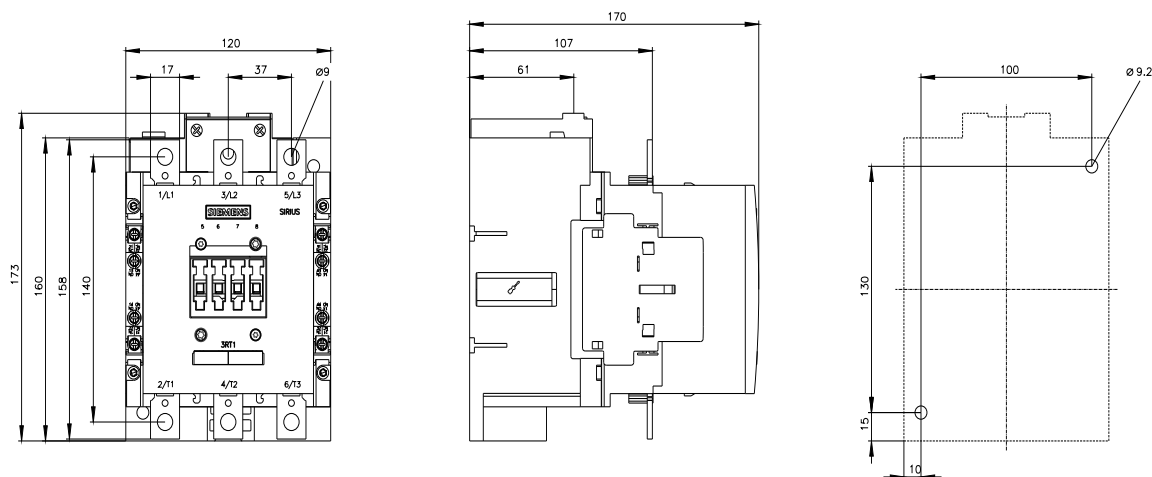
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT1456-6SF36&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT1456-6SF36&lang=en)

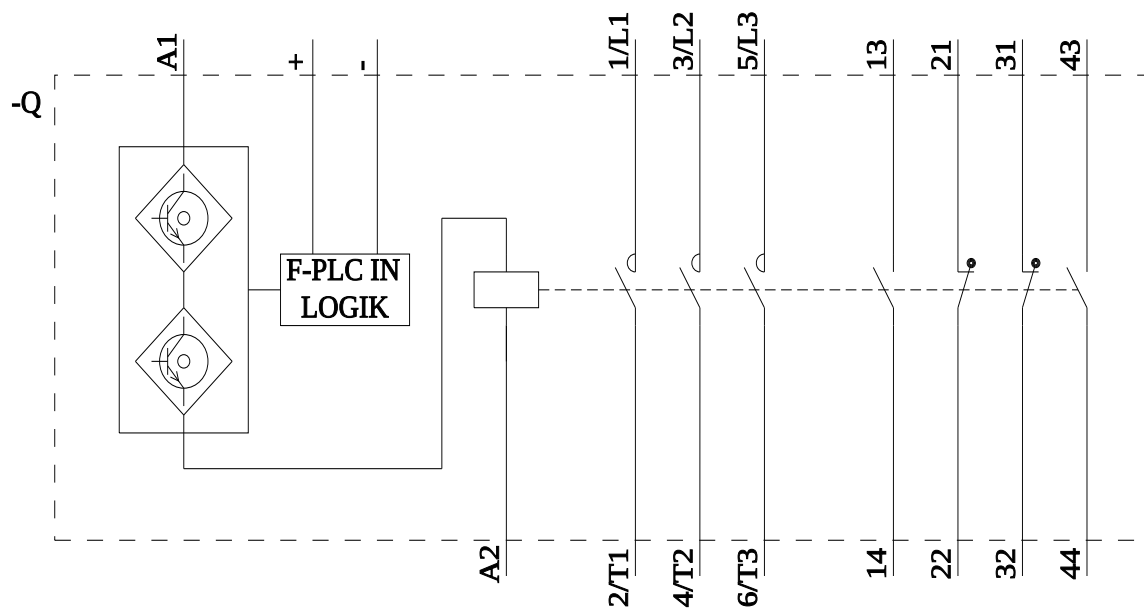
### Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT1456-6SF36/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT1456-6SF36&objecttype=14&gridview=view1>





last modified:

4/10/2025 