



power contactor, AC-3e/AC-3, 17 A, 7.5 kW / 400 V, 3-pole, 24 V DC, with plugged-in diode combination, auxiliary contacts: 1 NO + 1 NC, screw terminal

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

### General technical data

|                                                                                                       |                          |
|-------------------------------------------------------------------------------------------------------|--------------------------|
| size of contactor                                                                                     | S0                       |
| 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                                                                        | 1.8 W                    |
| • at AC in hot operating state per pole                                                               | 0.6 W                    |
| • without load current share typical                                                                  | 5.9 W                    |
| insulation voltage                                                                                    |                          |
| • of main circuit with degree of pollution 3 rated value                                              | 690 V                    |
| • of auxiliary circuit with degree of pollution 3 rated value                                         | 690 V                    |
| 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 according to EN 60947-1 | 400 V                    |
| shock resistance at rectangular impulse                                                               |                          |
| • at DC                                                                                               | 10g / 5 ms, 7,5g / 10 ms |
| shock resistance with sine pulse                                                                      |                          |
| • at DC                                                                                               | 15g / 5 ms, 10g / 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)                                                                         | 10/01/2009               |

### Ambient conditions

|                                                                |                |
|----------------------------------------------------------------|----------------|
| installation altitude at height above sea level maximum        | 2 000 m        |
| ambient temperature                                            |                |
| • during operation                                             | -25 ... +60 °C |
| • during storage                                               | -55 ... +80 °C |
| relative humidity minimum                                      | 10 %           |
| relative humidity at 55 °C according to IEC 60068-2-30 maximum | 95 %           |

### 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              |
| • at AC-3e rated value maximum                                         | 690 V              |
| <b>operational current</b>                                             |                    |
| • at AC-1 at 400 V at ambient temperature 40 °C rated value            | 40 A               |
| • at AC-1                                                              |                    |
| — up to 690 V at ambient temperature 40 °C rated value                 | 40 A               |
| — up to 690 V at ambient temperature 60 °C rated value                 | 35 A               |
| • at AC-3                                                              |                    |
| — at 400 V rated value                                                 | 17 A               |
| — at 500 V rated value                                                 | 17 A               |
| — at 690 V rated value                                                 | 13 A               |
| • at AC-3e                                                             |                    |
| — at 400 V rated value                                                 | 17 A               |
| — at 500 V rated value                                                 | 17 A               |
| — at 690 V rated value                                                 | 13 A               |
| • at AC-4 at 400 V rated value                                         | 15.5 A             |
| • at AC-5a up to 690 V rated value                                     | 35.2 A             |
| • at AC-5b up to 400 V rated value                                     | 14.1 A             |
| • at AC-6a                                                             |                    |
| — up to 230 V for current peak value n=20 rated value                  | 11.4 A             |
| — up to 400 V for current peak value n=20 rated value                  | 11.4 A             |
| — up to 500 V for current peak value n=20 rated value                  | 11.4 A             |
| — up to 690 V for current peak value n=20 rated value                  | 11.3 A             |
| • at AC-6a                                                             |                    |
| — up to 230 V for current peak value n=30 rated value                  | 7.6 A              |
| — up to 400 V for current peak value n=30 rated value                  | 7.6 A              |
| — up to 500 V for current peak value n=30 rated value                  | 7.6 A              |
| — up to 690 V for current peak value n=30 rated value                  | 7.6 A              |
| minimum cross-section in main circuit at maximum AC-1 rated value      | 10 mm <sup>2</sup> |
| <b>operational current for approx. 200000 operating cycles at AC-4</b> |                    |
| • at 400 V rated value                                                 | 7.7 A              |
| • at 690 V rated value                                                 | 7.7 A              |
| <b>operational current</b>                                             |                    |
| • <b>at 1 current path at DC-1</b>                                     |                    |
| — at 24 V rated value                                                  | 35 A               |
| — at 60 V rated value                                                  | 20 A               |
| — at 110 V rated value                                                 | 4.5 A              |
| — at 220 V rated value                                                 | 1 A                |
| — at 440 V rated value                                                 | 0.4 A              |
| — at 600 V rated value                                                 | 0.25 A             |
| • <b>with 2 current paths in series at DC-1</b>                        |                    |
| — at 24 V rated value                                                  | 35 A               |
| — at 60 V rated value                                                  | 35 A               |
| — at 110 V rated value                                                 | 35 A               |
| — at 220 V rated value                                                 | 5 A                |
| — at 440 V rated value                                                 | 1 A                |
| — at 600 V rated value                                                 | 0.8 A              |
| • <b>with 3 current paths in series at DC-1</b>                        |                    |
| — at 24 V rated value                                                  | 35 A               |
| — at 60 V rated value                                                  | 35 A               |

|                                                                         |                                                           |
|-------------------------------------------------------------------------|-----------------------------------------------------------|
| — at 110 V rated value                                                  | 35 A                                                      |
| — at 220 V rated value                                                  | 35 A                                                      |
| — at 440 V rated value                                                  | 2.9 A                                                     |
| — at 600 V rated value                                                  | 1.4 A                                                     |
| ● <b>at 1 current path at DC-3 at DC-5</b>                              |                                                           |
| — at 24 V rated value                                                   | 20 A                                                      |
| — at 60 V rated value                                                   | 5 A                                                       |
| — at 110 V rated value                                                  | 2.5 A                                                     |
| — at 220 V rated value                                                  | 1 A                                                       |
| — at 440 V rated value                                                  | 0.09 A                                                    |
| — at 600 V rated value                                                  | 0.06 A                                                    |
| ● <b>with 2 current paths in series at DC-3 at DC-5</b>                 |                                                           |
| — at 24 V rated value                                                   | 35 A                                                      |
| — at 60 V rated value                                                   | 35 A                                                      |
| — at 110 V rated value                                                  | 15 A                                                      |
| — at 220 V rated value                                                  | 3 A                                                       |
| — at 440 V rated value                                                  | 0.27 A                                                    |
| — at 600 V rated value                                                  | 0.16 A                                                    |
| ● <b>with 3 current paths in series at DC-3 at DC-5</b>                 |                                                           |
| — at 24 V rated value                                                   | 35 A                                                      |
| — at 60 V rated value                                                   | 35 A                                                      |
| — at 110 V rated value                                                  | 35 A                                                      |
| — at 220 V rated value                                                  | 10 A                                                      |
| — at 440 V rated value                                                  | 0.6 A                                                     |
| — at 600 V rated value                                                  | 0.6 A                                                     |
| <b>operating power</b>                                                  |                                                           |
| ● <b>at AC-3</b>                                                        |                                                           |
| — at 230 V rated value                                                  | 4 kW                                                      |
| — at 400 V rated value                                                  | 7.5 kW                                                    |
| — at 500 V rated value                                                  | 7.5 kW                                                    |
| — at 690 V rated value                                                  | 11 kW                                                     |
| ● <b>at AC-3e</b>                                                       |                                                           |
| — at 230 V rated value                                                  | 4 kW                                                      |
| — at 400 V rated value                                                  | 4.5 kW                                                    |
| — at 500 V rated value                                                  | 7.5 kW                                                    |
| — at 690 V rated value                                                  | 11 kW                                                     |
| <b>operating power for approx. 200000 operating cycles at AC-4</b>      |                                                           |
| ● at 400 V rated value                                                  | 3.5 kW                                                    |
| ● at 690 V rated value                                                  | 6 kW                                                      |
| <b>operating apparent power at AC-6a</b>                                |                                                           |
| ● up to 230 V for current peak value n=20 rated value                   | 4.5 kVA                                                   |
| ● up to 400 V for current peak value n=20 rated value                   | 7.8 kVA                                                   |
| ● up to 500 V for current peak value n=20 rated value                   | 9.9 kVA                                                   |
| ● up to 690 V for current peak value n=20 rated value                   | 13.6 kVA                                                  |
| <b>operating apparent power at AC-6a</b>                                |                                                           |
| ● up to 230 V for current peak value n=30 rated value                   | 3 kVA                                                     |
| ● up to 400 V for current peak value n=30 rated value                   | 5.2 kVA                                                   |
| ● up to 500 V for current peak value n=30 rated value                   | 6.6 kVA                                                   |
| ● up to 690 V for current peak value n=30 rated value                   | 9.1 kVA                                                   |
| <b>short-time withstand current in cold operating state up to 40 °C</b> |                                                           |
| ● limited to 1 s switching at zero current maximum                      | 225 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 5 s switching at zero current maximum                      | 225 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 10 s switching at zero current maximum                     | 189 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 30 s switching at zero current maximum                     | 140 A; Use minimum cross-section acc. to AC-1 rated value |
| ● limited to 60 s switching at zero current maximum                     | 115 A; Use minimum cross-section acc. to AC-1 rated value |
| <b>no-load switching frequency</b>                                      |                                                           |
| ● at DC                                                                 | 1 500 1/h                                                 |
| <b>operating frequency</b>                                              |                                                           |
| ● at AC-1 maximum                                                       | 1 000 1/h                                                 |
| ● at AC-2 maximum                                                       | 1 000 1/h                                                 |
| ● at AC-3 maximum                                                       | 1 000 1/h                                                 |
| ● at AC-3e maximum                                                      | 1 000 1/h                                                 |

|                                                                                       |                                                 |
|---------------------------------------------------------------------------------------|-------------------------------------------------|
| • at AC-4 maximum                                                                     | 300 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 assemblies                           |
| <b>closing power of magnet coil at DC</b>                                             | 5.9 W                                           |
| <b>holding power of magnet coil at DC</b>                                             | 5.9 W                                           |
| <b>closing delay</b>                                                                  |                                                 |
| • at DC                                                                               | 50 ... 170 ms                                   |
| <b>opening delay</b>                                                                  |                                                 |
| • at DC                                                                               | 15 ... 18 ms                                    |
| <b>arcing time</b>                                                                    | 10 ... 10 ms                                    |
| <b>control version of the switch operating mechanism</b>                              | Standard A1 - A2                                |
| <b>Auxiliary circuit</b>                                                              |                                                 |
| number of NC contacts for auxiliary contacts instantaneous contact                    | 1                                               |
| number of NO contacts for auxiliary contacts instantaneous contact                    | 1                                               |
| operational current at AC-12 maximum                                                  | 10 A                                            |
| <b>operational current at AC-15</b>                                                   |                                                 |
| • at 230 V rated value                                                                | 10 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-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>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) |
| <b>UL/CSA ratings</b>                                                                 |                                                 |
| <b>full-load current (FLA) for 3-phase AC motor</b>                                   |                                                 |
| • at 480 V rated value                                                                | 14 A                                            |
| • at 600 V rated value                                                                | 17 A                                            |
| <b>yielded mechanical performance [hp]</b>                                            |                                                 |
| • for single-phase AC motor                                                           |                                                 |
| — at 110/120 V rated value                                                            | 1 hp                                            |
| — at 230 V rated value                                                                | 3 hp                                            |
| • for 3-phase AC motor                                                                |                                                 |
| — at 200/208 V rated value                                                            | 3 hp                                            |
| — at 220/230 V rated value                                                            | 5 hp                                            |
| — at 460/480 V rated value                                                            | 10 hp                                           |
| — at 575/600 V rated value                                                            | 15 hp                                           |
| <b>contact rating of auxiliary contacts according to UL</b>                           | A600 / P600                                     |
| <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
- with type of assignment 2 required
- for short-circuit protection of the auxiliary switch required

gG: 63A (690V,100kA), aM: 32A (690V,100kA), BS88: 63A (415V,80kA)  
gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)  
gG: 10 A (500 V, 1 kA)

#### Installation/ mounting/ dimensions

##### mounting position

+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface

##### fastening method

screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715

- side-by-side mounting

Yes

##### height

85 mm

##### width

45 mm

##### depth

107 mm

##### required spacing

- 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

##### type of electrical connection

- for main current circuit
- for auxiliary and control circuit
- at contactor for auxiliary contacts
- of magnet coil

screw-type terminals

screw-type terminals

Screw-type terminals

Screw-type terminals

type of connectable conductor cross-sections for main contacts

- solid
- solid or stranded
- finely stranded with core end processing

2x (1 ... 2.5 mm<sup>2</sup>), 2x (2.5 ... 10 mm<sup>2</sup>)

2x (1 ... 2.5 mm<sup>2</sup>), 2x (2.5 ... 10 mm<sup>2</sup>)

2x (1 ... 2.5 mm<sup>2</sup>), 2x (2.5 ... 6 mm<sup>2</sup>), 1x 10 mm<sup>2</sup>

##### connectable conductor cross-section for main contacts

- solid
- stranded
- finely stranded with core end processing

1 ... 10 mm<sup>2</sup>

1 ... 10 mm<sup>2</sup>

1 ... 10 mm<sup>2</sup>

##### connectable conductor cross-section for auxiliary contacts

- solid or stranded
- finely stranded with core end processing

0.5 ... 2.5 mm<sup>2</sup>

0.5 ... 2.5 mm<sup>2</sup>

##### type of connectable conductor cross-sections

- for auxiliary contacts
  - solid or stranded
  - finely stranded with core end processing
- at AWG cables for auxiliary contacts

2x (0.5 ... 1.5 mm<sup>2</sup>), 2x (0.75 ... 2.5 mm<sup>2</sup>)

2x (0.5 ... 1.5 mm<sup>2</sup>), 2x (0.75 ... 2.5 mm<sup>2</sup>)

2x (20 ... 16), 2x (18 ... 14)

##### AWG number as coded connectable conductor cross section

- for main contacts
- for auxiliary contacts

16 ... 8

20 ... 14

#### Safety related data

##### product function

- mirror contact according to IEC 60947-4-1

Yes

B10 value with high demand rate according to SN 31920

450 000

##### proportion of dangerous failures

- with low demand rate according to SN 31920

40 %

- with high demand rate according to SN 31920
- failure rate [FIT] with low demand rate according to SN 31920
- T1 value for proof test interval or service life according to IEC 61508
- protection class IP on the front according to IEC 60529
- touch protection on the front according to IEC 60529
- suitability for use
  - safety-related switching OFF

73 %  
100 FIT  
20 a  
IP20  
finger-safe, for vertical contact from the front  
Yes

#### Certificates/ approvals

##### General Product Approval



[Confirmation](#)



[KC](#)



| EMC | Functional Safety/Safety of Machinery        | Declaration of Conformity | Test Certificates                                                                           |
|-----|----------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------|
|     | <a href="#">Type Examination Certificate</a> |                           | <a href="#">Type Test Certificates/Test Report</a> <a href="#">Special Test Certificate</a> |
| RCM |                                              | EG-Konf.                  |                                                                                             |

#### Marine / Shipping



| other                        | Railway                             | Dangerous Good                        |
|------------------------------|-------------------------------------|---------------------------------------|
| <a href="#">Confirmation</a> | <a href="#">Vibration and Shock</a> | <a href="#">Transport Information</a> |
|                              |                                     |                                       |
| VDE                          |                                     |                                       |

#### Further information

##### Information on the packaging

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

##### 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=3RT2025-1FB40>

##### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2025-1FB40>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-1FB40>

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

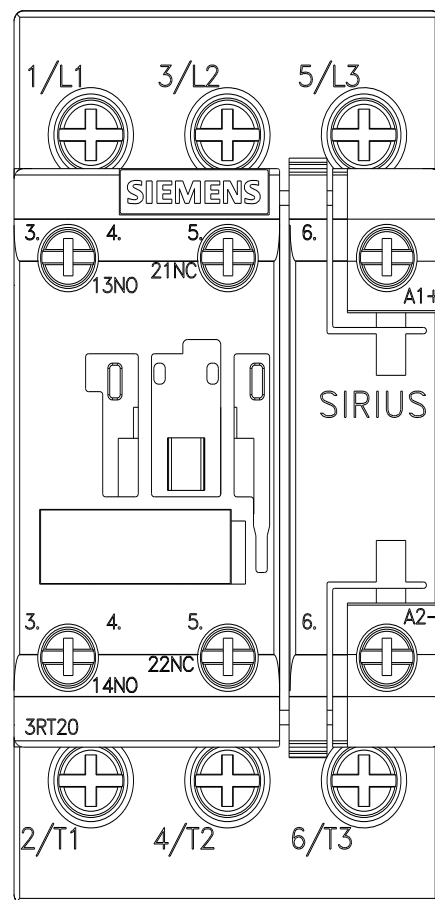
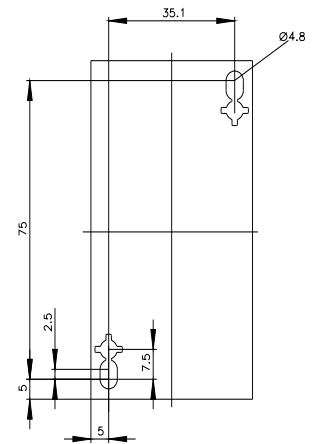
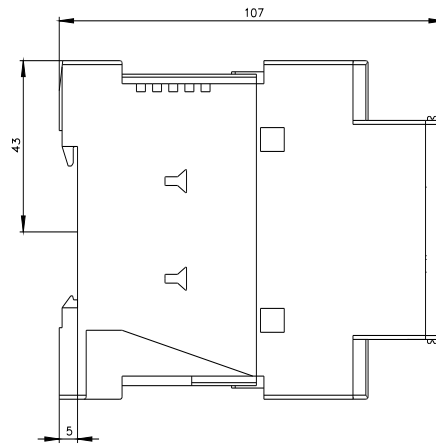
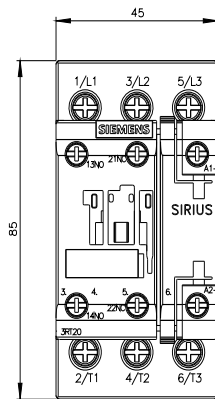
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2025-1FB40&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2025-1FB40&lang=en)

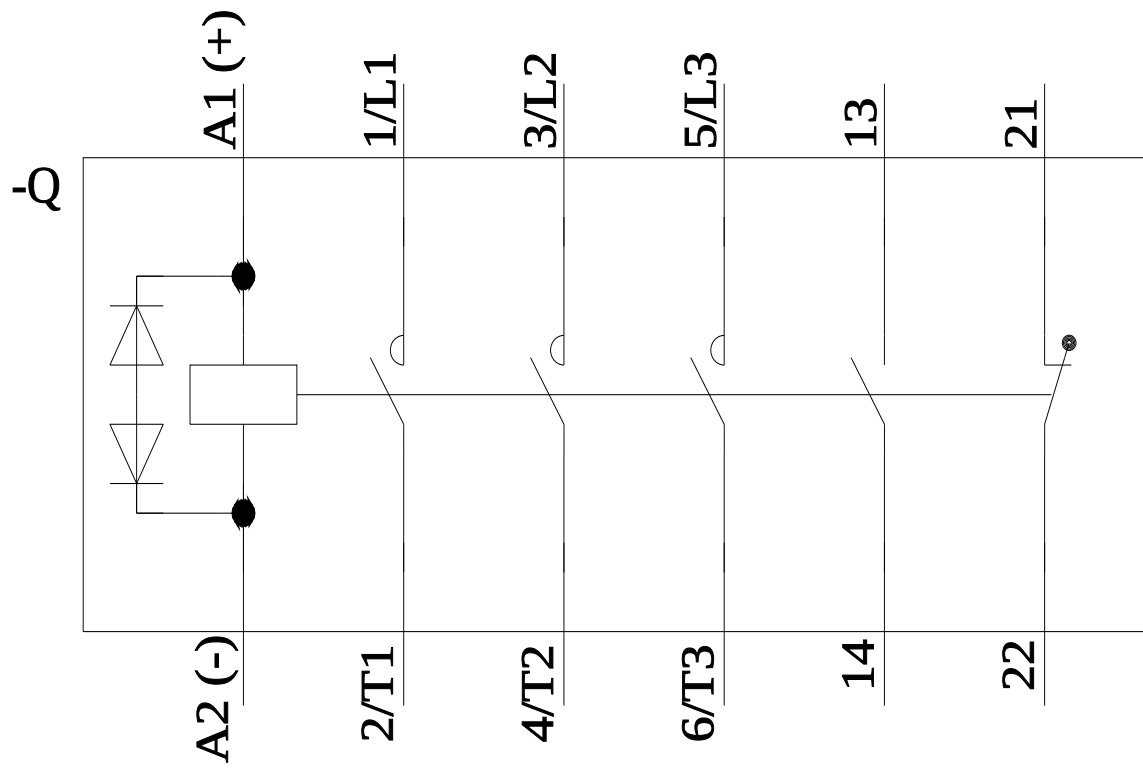
##### Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2025-1FB40/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2025-1FB40&objecttype=14&gridview=view1>





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