

Circuit breaker size S0 for motor protection, CLASS 10 A-release 9...12 A N-release 163 A Spring-type terminal Standard switching capacity with transverse auxiliary switches 1 NO+1 NC



|                          |                      |
|--------------------------|----------------------|
| Product brand name       | SIRIUS               |
| Product designation      | Circuit breaker      |
| Design of the product    | For motor protection |
| Product type designation | 3RV2                 |

| General technical data                                                    |         |
|---------------------------------------------------------------------------|---------|
| Size of the circuit-breaker                                               | S0      |
| Size of contactor can be combined company-specific                        | S00, S0 |
| Product extension                                                         |         |
| • Auxiliary switch                                                        | Yes     |
| Power loss [W] for rated value of the current                             |         |
| • at AC in hot operating state                                            | 9.25 W  |
| • at AC in hot operating state per pole                                   | 3.1 W   |
| Insulation voltage with degree of pollution 3 at AC rated value           | 690 V   |
| Surge voltage resistance rated value                                      | 6 kV    |
| maximum permissible voltage for safe isolation                            |         |
| • in networks with grounded star point between main and auxiliary circuit | 400 V   |

|                                                                                                                             |                   |
|-----------------------------------------------------------------------------------------------------------------------------|-------------------|
| <ul style="list-style-type: none"> <li>• in networks with grounded star point between main and auxiliary circuit</li> </ul> | 400 V             |
| <b>Protection class IP</b>                                                                                                  |                   |
| <ul style="list-style-type: none"> <li>• on the front</li> </ul>                                                            | IP20              |
| <ul style="list-style-type: none"> <li>• of the terminal</li> </ul>                                                         | IP20              |
| <b>Shock resistance</b>                                                                                                     |                   |
| <ul style="list-style-type: none"> <li>• acc. to IEC 60068-2-27</li> </ul>                                                  | 25g / 11 ms       |
| <b>Mechanical service life (switching cycles)</b>                                                                           |                   |
| <ul style="list-style-type: none"> <li>• of the main contacts typical</li> </ul>                                            | 100 000           |
| <ul style="list-style-type: none"> <li>• of auxiliary contacts typical</li> </ul>                                           | 100 000           |
| <b>Electrical endurance (switching cycles)</b>                                                                              |                   |
| <ul style="list-style-type: none"> <li>• typical</li> </ul>                                                                 | 100 000           |
| <b>Type of protection according to ATEX directive 2014/34/EU</b>                                                            | Ex II (2) GD      |
| Certificate of suitability according to ATEX directive 2014/34/EU                                                           | DMT 02 ATEX F 001 |
| <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> </ul> | -20 ... +60 °C |
| <ul style="list-style-type: none"> <li>• during storage</li> </ul>   | -50 ... +80 °C |
| <ul style="list-style-type: none"> <li>• during transport</li> </ul> | -50 ... +80 °C |
| <b>Temperature compensation</b>                                      | -20 ... +60 °C |
| Relative humidity during operation                                   | 10 ... 95 %    |

#### Main circuit

|                                                                                                                                                                       |                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| <b>Number of poles for main current circuit</b>                                                                                                                       | 3                  |
| <b>Adjustable pick-up value current of the current-dependent overload release</b>                                                                                     | 9 ... 12.5 A       |
| <b>Operating voltage</b>                                                                                                                                              |                    |
| <ul style="list-style-type: none"> <li>• rated value</li> </ul>                                                                                                       | 690 V              |
| <ul style="list-style-type: none"> <li>• at AC-3 rated value maximum</li> </ul>                                                                                       | 690 V              |
| <b>Operating frequency rated value</b>                                                                                                                                | 50 ... 60 Hz       |
| <b>Operating current rated value</b>                                                                                                                                  | 12.5 A             |
| <b>Operating current</b>                                                                                                                                              |                    |
| <ul style="list-style-type: none"> <li>• at AC-3 <ul style="list-style-type: none"> <li>— at 400 V rated value</li> </ul> </li> </ul>                                 | 12.5 A             |
| <b>Operating power</b>                                                                                                                                                |                    |
| <ul style="list-style-type: none"> <li>• at AC-3 <ul style="list-style-type: none"> <li>— at 230 V rated value</li> <li>— at 400 V rated value</li> </ul> </li> </ul> | 3 000 W<br>5 500 W |

|                                                                        |            |
|------------------------------------------------------------------------|------------|
| — at 500 V rated value                                                 | 7 500 W    |
| — at 690 V rated value                                                 | 7 500 W    |
| <b>Operating frequency</b>                                             |            |
| • at AC-3 maximum                                                      | 15 1/h     |
| <b>Auxiliary circuit</b>                                               |            |
| <b>Design of the auxiliary switch</b>                                  | transverse |
| <b>Number of NC contacts for auxiliary contacts</b>                    | 1          |
| <b>Number of NO contacts for auxiliary contacts</b>                    | 1          |
| <b>Number of CO contacts</b>                                           |            |
| • for auxiliary contacts                                               | 0          |
| <b>Operating current of auxiliary contacts at AC-15</b>                |            |
| • at 24 V                                                              | 2 A        |
| • at 120 V                                                             | 0.5 A      |
| • at 125 V                                                             | 0.5 A      |
| • at 230 V                                                             | 0.5 A      |
| <b>Operating current of auxiliary contacts at DC-13</b>                |            |
| • at 24 V                                                              | 1 A        |
| • at 60 V                                                              | 0.15 A     |
| <b>Protective and monitoring functions</b>                             |            |
| <b>Product function</b>                                                |            |
| • Ground fault detection                                               | No         |
| • Phase failure detection                                              | Yes        |
| <b>Trip class</b>                                                      | CLASS 10   |
| <b>Design of the overload release</b>                                  | thermal    |
| <b>Operational short-circuit current breaking capacity (Ics) at AC</b> |            |
| • at 240 V rated value                                                 | 100 kA     |
| • at 400 V rated value                                                 | 100 kA     |
| • at 500 V rated value                                                 | 42 kA      |
| • at 690 V rated value                                                 | 4 kA       |
| <b>Maximum short-circuit current breaking capacity (Icu)</b>           |            |
| • at AC at 240 V rated value                                           | 100 kA     |
| • at AC at 400 V rated value                                           | 100 kA     |
| • at AC at 500 V rated value                                           | 42 kA      |
| • at AC at 690 V rated value                                           | 6 kA       |
| <b>Response value current</b>                                          |            |
| • of instantaneous short-circuit trip unit                             | 163 A      |
| <b>UL/CSA ratings</b>                                                  |            |
| <b>Full-load current (FLA) for three-phase AC motor</b>                |            |
| • at 480 V rated value                                                 | 12.5 A     |
| • at 600 V rated value                                                 | 12.5 A     |

|                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| <b>Yielded mechanical performance [hp]</b>                                                                                                                                                                                                                                                                                                                                                                                |                                                   |
| <ul style="list-style-type: none"> <li>• for single-phase AC motor <ul style="list-style-type: none"> <li>— at 110/120 V rated value</li> <li>— at 230 V rated value</li> </ul> </li> <li>• for three-phase AC motor <ul style="list-style-type: none"> <li>— at 200/208 V rated value</li> <li>— at 220/230 V rated value</li> <li>— at 460/480 V rated value</li> <li>— at 575/600 V rated value</li> </ul> </li> </ul> | 0.5 hp<br>2 hp<br>3 hp<br>3 hp<br>7.5 hp<br>10 hp |
| <b>Contact rating of auxiliary contacts according to UL</b>                                                                                                                                                                                                                                                                                                                                                               | C300 / R300                                       |

|                                                                                                                   |                                                                                         |
|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| <b>Short-circuit protection</b>                                                                                   |                                                                                         |
| <b>Product function Short circuit protection</b>                                                                  | Yes                                                                                     |
| <b>Design of the short-circuit trip</b>                                                                           | magnetic                                                                                |
| <b>Design of the fuse link</b>                                                                                    |                                                                                         |
| <ul style="list-style-type: none"> <li>• for short-circuit protection of the auxiliary switch required</li> </ul> | Fuse gL/gG: 10 A, miniature circuit breaker C 6 A (short-circuit current $I_k < 400$ A) |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| <b>Installation/ mounting/ dimensions</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                    |
| <b>Mounting position</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | any                                                                                                                |
| <b>Mounting type</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715                             |
| <b>Height</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 119 mm                                                                                                             |
| <b>Width</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 45 mm                                                                                                              |
| <b>Depth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 97 mm                                                                                                              |
| <b>Required spacing</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                    |
| <ul style="list-style-type: none"> <li>• for grounded parts at 400 V <ul style="list-style-type: none"> <li>— downwards</li> <li>— upwards</li> <li>— Backwards</li> <li>— at the side</li> <li>— forwards</li> </ul> </li> <li>• for live parts at 400 V <ul style="list-style-type: none"> <li>— downwards</li> <li>— upwards</li> <li>— Backwards</li> <li>— at the side</li> <li>— forwards</li> </ul> </li> <li>• for grounded parts at 500 V <ul style="list-style-type: none"> <li>— downwards</li> <li>— upwards</li> <li>— Backwards</li> <li>— at the side</li> </ul> </li> </ul> | 30 mm<br>30 mm<br>0 mm<br>9 mm<br>0 mm<br>30 mm<br>30 mm<br>0 mm<br>9 mm<br>0 mm<br>30 mm<br>30 mm<br>0 mm<br>9 mm |

|                               |       |
|-------------------------------|-------|
| — forwards                    | 0 mm  |
| • for live parts at 500 V     |       |
| — downwards                   | 30 mm |
| — upwards                     | 30 mm |
| — Backwards                   | 0 mm  |
| — at the side                 | 9 mm  |
| — forwards                    | 0 mm  |
| • for grounded parts at 690 V |       |
| — downwards                   | 50 mm |
| — upwards                     | 50 mm |
| — Backwards                   | 0 mm  |
| — at the side                 | 30 mm |
| — forwards                    | 0 mm  |
| • for live parts at 690 V     |       |
| — downwards                   | 50 mm |
| — upwards                     | 50 mm |
| — Backwards                   | 0 mm  |
| — at the side                 | 30 mm |

## Connections/ Terminals

|                                                                      |                                   |
|----------------------------------------------------------------------|-----------------------------------|
| <b>Product function</b>                                              |                                   |
| • removable terminal for auxiliary and control circuit               | No                                |
| <b>Type of electrical connection</b>                                 |                                   |
| • for main current circuit                                           | spring-loaded terminals           |
| • for auxiliary and control current circuit                          | spring-loaded terminals           |
| <b>Arrangement of electrical connectors for main current circuit</b> | Top and bottom                    |
| <b>Type of connectable conductor cross-sections</b>                  |                                   |
| • for main contacts                                                  |                                   |
| — single or multi-stranded                                           | 2x (1 ... 10 mm <sup>2</sup> )    |
| — finely stranded with core end processing                           | 2x (1 ... 6 mm <sup>2</sup> )     |
| — finely stranded without core end processing                        | 2x (1 ... 6 mm <sup>2</sup> )     |
| • at AWG conductors for main contacts                                | 2x (18 ... 8)                     |
| <b>Type of connectable conductor cross-sections</b>                  |                                   |
| • for auxiliary contacts                                             |                                   |
| — single or multi-stranded                                           | 2x (0,5 ... 2,5 mm <sup>2</sup> ) |
| — finely stranded with core end processing                           | 2x (0.5 ... 1.5 mm <sup>2</sup> ) |
| — finely stranded without core end processing                        | 2x (0.5 ... 1.5 mm <sup>2</sup> ) |
| • at AWG conductors for auxiliary contacts                           | 2x (20 ... 14)                    |
| <b>Design of screwdriver shaft</b>                                   | Diameter 3 mm                     |

|                             |              |
|-----------------------------|--------------|
| Size of the screwdriver tip | 3,0 x 0,5 mm |
|-----------------------------|--------------|

| Safety related data                                                       |        |
|---------------------------------------------------------------------------|--------|
| <b>B10 value</b>                                                          |        |
| • with high demand rate acc. to SN 31920                                  | 5 000  |
| <b>Proportion of dangerous failures</b>                                   |        |
| • with low demand rate acc. to SN 31920                                   | 50 %   |
| • with high demand rate acc. to SN 31920                                  | 50 %   |
| <b>Failure rate [FIT]</b>                                                 |        |
| • with low demand rate acc. to SN 31920                                   | 50 FIT |
| <b>T1 value for proof test interval or service life acc. to IEC 61508</b> | 10 y   |
| <b>Display version</b>                                                    |        |
| • for switching status                                                    | Handle |

| Certificates/ approvals         |                                       |
|---------------------------------|---------------------------------------|
| <b>General Product Approval</b> | <b>For use in hazardous locations</b> |



[KC](#)



| For use in hazardous locations | Declaration of Conformity | Test Certificates                                                                                                               | Marine / Shipping |
|--------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------|-------------------|
| <br>IECEX                      | <br>EG-Konf.              | <a href="#">Miscellaneous</a><br><a href="#">Type Test Certificates/Test Report</a><br><a href="#">Special Test Certificate</a> | <br>ABS           |

| Marine / Shipping  |         |         |          |          |                  |
|--------------------|---------|---------|----------|----------|------------------|
| <br>BUREAU VERITAS | <br>LRS | <br>PRS | <br>RINA | <br>RMRS | <br>DNVGL.COM/AF |

| other                                   | Railway                             |                              |
|-----------------------------------------|-------------------------------------|------------------------------|
| <a href="#">Confirmation</a><br><br>VDE | <a href="#">Vibration and Shock</a> | <a href="#">Confirmation</a> |

## Further information

### 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=3RV2021-1KA25>

### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2021-1KA25>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2021-1KA25>

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

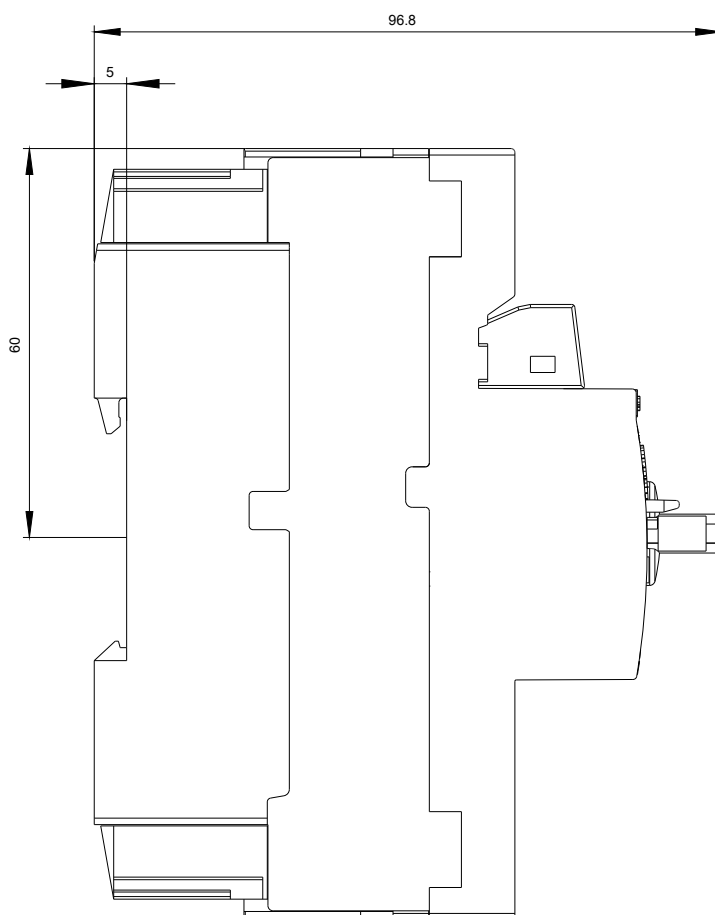
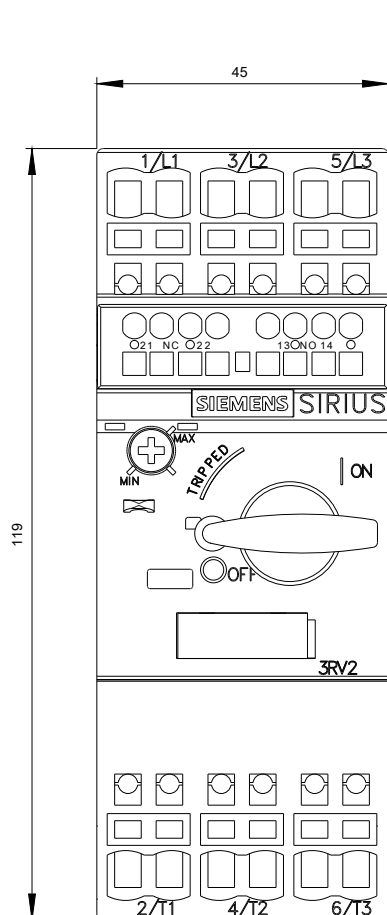
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RV2021-1KA25&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2021-1KA25&lang=en)

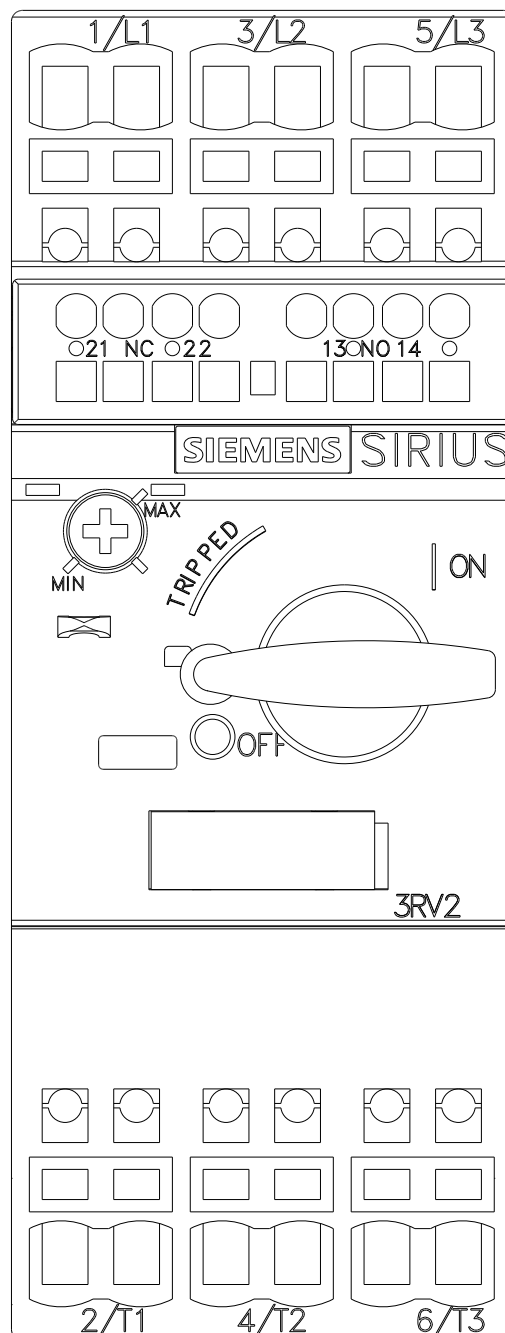
### Characteristic: Tripping characteristics, $I^2t$ , Let-through current

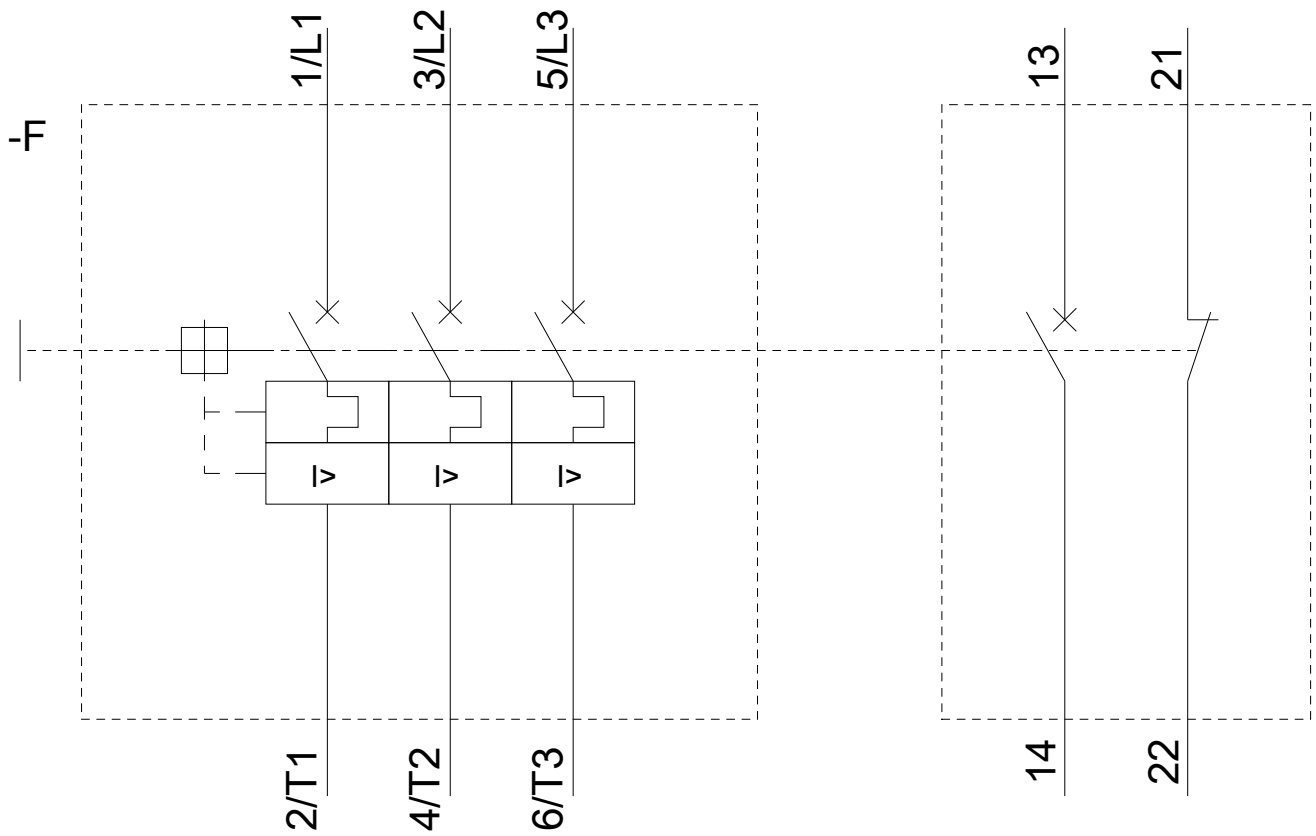
<https://support.industry.siemens.com/cs/ww/en/ps/3RV2021-1KA25/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2021-1KA25&objecttype=14&gridview=view1>







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