

Siemens  
EcoTech



Circuit breaker size S2 for motor protection class 20 A-release 28...36 A N-release 520 A screw terminal Standard switching capacity with transverse auxiliary switch 1 NO+1 NC

|                                                                                                |                        |
|------------------------------------------------------------------------------------------------|------------------------|
| product brand name                                                                             | SIRIUS                 |
| product designation                                                                            | Circuit breaker        |
| design of the product                                                                          | For motor protection   |
| product type designation                                                                       | 3RV2                   |
| <b>General technical data</b>                                                                  |                        |
| Product equipment of circuit breaker for motor protection complete unit with protection device | Yes                    |
| size of the circuit-breaker                                                                    | S2                     |
| size of contactor can be combined company-specific                                             | S2                     |
| product function disconnecter functionality                                                    | Yes                    |
| product extension auxiliary switch                                                             | Yes                    |
| power loss [W] for rated value of the current                                                  |                        |
| • at AC in hot operating state                                                                 | 20 W                   |
| • at AC in hot operating state per pole                                                        | 6.7 W                  |
| type of calculation of power loss current-dependent                                            | quadratic              |
| insulation voltage with degree of pollution 3 at AC rated value                                | 690 V                  |
| surge voltage resistance rated value                                                           | 6 kV                   |
| maximum permissible voltage for protective separation                                          |                        |
| • in networks with ungrounded star point between main and auxiliary circuit                    | 400 V                  |
| • in networks with grounded star point between main and auxiliary circuit                      | 400 V                  |
| protection class IP                                                                            |                        |
| • on the front according to IEC 60529                                                          | IP20                   |
| • on the front                                                                                 | IP20                   |
| • of the terminal                                                                              | IP00                   |
| shock resistance according to IEC 60068-2-27                                                   | 25 g / 11 ms Sinus     |
| mechanical service life (operating cycles)                                                     |                        |
| • of the main contacts typical                                                                 | 50 000                 |
| • of auxiliary contacts typical                                                                | 50 000                 |
| electrical endurance (operating cycles) typical                                                | 50 000                 |
| reference code according to IEC 81346-2                                                        | Q                      |
| continuous current rated value                                                                 | 36 A                   |
| Substance Prohibitance (day/month/year)                                                        | 10/15/2014             |
| SVHC substance name                                                                            | Lead CAS-No. 7439-92-1 |
| Net Weight                                                                                     | 1.133 kg               |
| <b>Ambient conditions</b>                                                                      |                        |

|                                                                                            |                |
|--------------------------------------------------------------------------------------------|----------------|
| installation altitude at height above sea level maximum                                    | 2 000 m        |
| <b>ambient temperature</b>                                                                 |                |
| • during operation                                                                         | -20 ... +60 °C |
| • during storage                                                                           | -50 ... +80 °C |
| • during transport                                                                         | -50 ... +80 °C |
| <b>temperature compensation</b>                                                            | -20 ... +60 °C |
| relative humidity during operation                                                         | 10 ... 95 %    |
| <b>Main circuit</b>                                                                        |                |
| <b>number of poles for main current circuit</b>                                            | 3              |
| <b>adjustable current response value current of the current-dependent overload release</b> | 28 ... 36 A    |
| <b>type of voltage for main current circuit</b>                                            | AC             |
| <b>operating voltage</b>                                                                   |                |
| • rated value                                                                              | 690 V          |
| • rated value                                                                              | 20 ... 690 V   |
| • at AC-3 rated value maximum                                                              | 690 V          |
| • at AC-3e rated value maximum                                                             | 690 V          |
| <b>operating frequency rated value</b>                                                     | 50 ... 60 Hz   |
| <b>operational current rated value</b>                                                     | 36 A           |
| <b>operational current</b>                                                                 |                |
| • at AC-3 at 400 V rated value                                                             | 36 A           |
| • at AC-3e at 400 V rated value                                                            | 36 A           |
| <b>operating power</b>                                                                     |                |
| • at AC-3                                                                                  |                |
| — at 230 V rated value                                                                     | 11 kW          |
| — at 400 V rated value                                                                     | 18.5 kW        |
| — at 500 V rated value                                                                     | 22 kW          |
| — at 690 V rated value                                                                     | 30 kW          |
| • at AC-3e                                                                                 |                |
| — at 230 V rated value                                                                     | 11 kW          |
| — at 400 V rated value                                                                     | 18.5 kW        |
| — at 500 V rated value                                                                     | 22 kW          |
| — at 690 V rated value                                                                     | 30 kW          |
| <b>operating frequency</b>                                                                 |                |
| • at AC-3 maximum                                                                          | 15 1/h         |
| • at AC-3e maximum                                                                         | 15 1/h         |
| <b>Auxiliary circuit</b>                                                                   |                |
| <b>design of the auxiliary switch</b>                                                      | transverse     |
| <b>type of voltage for auxiliary and control circuit</b>                                   | AC/DC          |
| <b>number of NC contacts for auxiliary contacts</b>                                        | 1              |
| <b>number of NO contacts for auxiliary contacts</b>                                        | 1              |
| number of CO contacts for auxiliary contacts                                               | 0              |
| <b>operational current of auxiliary contacts at AC-15</b>                                  |                |
| • at 24 V                                                                                  | 2 A            |
| • at 230 V                                                                                 | 0.5 A          |
| <b>operational current of auxiliary contacts at DC-13</b>                                  |                |
| • at 24 V                                                                                  | 1 A            |
| • at 60 V                                                                                  | 0.15 A         |
| • at 110 V                                                                                 | 0 A            |
| • at 125 V                                                                                 | 0 A            |
| • at 220 V                                                                                 | 0 A            |
| <b>Protective and monitoring functions</b>                                                 |                |
| <b>product function</b>                                                                    |                |
| • ground fault detection                                                                   | No             |
| • phase failure detection                                                                  | Yes            |
| <b>trip class</b>                                                                          | CLASS 20       |
| <b>design of the overload release</b>                                                      | thermal        |
| <b>protection function thermal overload protection (ANSI 49)</b>                           | Yes            |
| <b>maximum short-circuit current breaking capacity (Icu)</b>                               |                |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at AC at 240 V rated value</li> <li>• at AC at 400 V rated value</li> <li>• at AC at 500 V rated value</li> <li>• at AC at 690 V rated value</li> </ul>                                                                                                                                                                                                                                                                                                                              | 100 kA<br>65 kA<br>10 kA<br>4 kA                                                                          |
| <b>operating short-circuit current breaking capacity (Ics) at AC</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                           |
| <ul style="list-style-type: none"> <li>• at 240 V rated value</li> <li>• at 400 V rated value</li> <li>• at 500 V rated value</li> <li>• at 690 V rated value</li> </ul>                                                                                                                                                                                                                                                                                                                                                      | 100 kA<br>30 kA<br>5 kA<br>2 kA                                                                           |
| response value current of instantaneous short-circuit trip unit                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 520 A                                                                                                     |
| <b>UL/CSA ratings</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                           |
| <b>full-load current (FLA) for 3-phase AC motor</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                           |
| <ul style="list-style-type: none"> <li>• at 480 V rated value</li> <li>• at 600 V rated value</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                      | 36 A<br>36 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 3-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>                                                                                                         | 3 hp<br>7.5 hp<br><br>15 hp<br>15 hp<br>30 hp<br>40 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 gG: 10 A, miniature circuit breaker C 6 A (short-circuit current I <sub>k</sub> < 400 A)             |
| <b>design of the fuse link for IT network for short-circuit protection of the main circuit</b>                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                           |
| <ul style="list-style-type: none"> <li>• at 240 V</li> <li>• at 400 V</li> <li>• at 500 V</li> <li>• at 690 V</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                      | none required<br>125<br>100<br>80                                                                         |
| <b>Installation/ mounting/ dimensions</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                           |
| <b>mounting position</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | any                                                                                                       |
| <b>fastening method</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715                                  |
| <b>Mounting method of circuit breaker for Transformer protection, Generator protection and system protection optional standard bar mounting</b>                                                                                                                                                                                                                                                                                                                                                                               | Yes                                                                                                       |
| <b>height</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 140 mm                                                                                                    |
| <b>width</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 55 mm                                                                                                     |
| <b>depth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 149 mm                                                                                                    |
| <b>required spacing</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                           |
| <ul style="list-style-type: none"> <li>• with side-by-side mounting <ul style="list-style-type: none"> <li>— forwards</li> <li>— backwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> <li>• for grounded parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— backwards</li> <li>— upwards</li> <li>— at the side</li> <li>— downwards</li> </ul> </li> <li>• for live parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— backwards</li> </ul> </li> </ul> | 0 mm<br>0 mm<br>50 mm<br>50 mm<br>0 mm<br><br>0 mm<br>0 mm<br>50 mm<br>10 mm<br>50 mm<br><br>0 mm<br>0 mm |

|                               |       |
|-------------------------------|-------|
| — upwards                     | 50 mm |
| — downwards                   | 50 mm |
| — at the side                 | 10 mm |
| • for grounded parts at 400 V |       |
| — downwards                   | 50 mm |
| — upwards                     | 50 mm |
| — at the side                 | 10 mm |
| • for live parts at 400 V     |       |
| — downwards                   | 50 mm |
| — upwards                     | 50 mm |
| — at the side                 | 10 mm |
| • for grounded parts at 500 V |       |
| — downwards                   | 50 mm |
| — upwards                     | 50 mm |
| — at the side                 | 10 mm |
| • for live parts at 500 V     |       |
| — downwards                   | 50 mm |
| — upwards                     | 50 mm |
| — at the side                 | 10 mm |
| • for grounded parts at 690 V |       |
| — downwards                   | 50 mm |
| — upwards                     | 50 mm |
| — at the side                 | 10 mm |
| • for live parts at 690 V     |       |
| — downwards                   | 50 mm |
| — upwards                     | 50 mm |
| — at the side                 | 10 mm |

#### Connections/ Terminals

|                                                                                       |                                                                       |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| <b>product component removable terminal for auxiliary and control circuit</b>         | No                                                                    |
| <b>type of electrical connection</b>                                                  |                                                                       |
| • for main current circuit                                                            | screw-type terminals                                                  |
| • for auxiliary and control circuit                                                   | screw-type 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                                                                   |                                                                       |
| — solid or stranded                                                                   | 2x (1 ... 25 mm <sup>2</sup> ), 1x (1 ... 35 mm <sup>2</sup> )        |
| — finely stranded with core end processing                                            | 2x (1 ... 16 mm <sup>2</sup> ), 1x (1 ... 25 mm <sup>2</sup> )        |
| • for AWG cables for main contacts                                                    | 2x (18 ... 3), 1x (18 ... 2)                                          |
| <b>connectable conductor cross-section for main contacts</b>                          |                                                                       |
| • solid or stranded                                                                   | 1 ... 35 mm <sup>2</sup>                                              |
| • finely stranded with core end processing                                            | 1 ... 25 mm <sup>2</sup>                                              |
| <b>connectable conductor cross-section for auxiliary contacts</b>                     |                                                                       |
| • solid or stranded                                                                   | 0.5 ... 2.5 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 or stranded                                                                   | 2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 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)                                        |
| <b>AWG number as coded connectable conductor cross section for main contacts</b>      | 18 ... 2                                                              |
| <b>AWG number as coded connectable conductor cross section for auxiliary contacts</b> | 20 ... 14                                                             |
| <b>tightening torque</b>                                                              |                                                                       |
| • for main contacts with screw-type terminals                                         | 3 ... 4.5 N·m                                                         |
| • for auxiliary contacts with screw-type terminals                                    | 0.8 ... 1.2 N·m                                                       |
| <b>design of screwdriver shaft</b>                                                    | Diameter 5 to 6 mm                                                    |
| <b>size of the screwdriver tip</b>                                                    | Pozidriv size 2                                                       |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| <b>design of the thread of the connection screw</b>                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                  |
| • for main contacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | M6                                               |
| • of the auxiliary and control contacts                                                                                                                                                                                                                                                                                                                                                                                                                                                    | M3                                               |
| <b>Safety related data</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                  |
| product function suitable for safety function                                                                                                                                                                                                                                                                                                                                                                                                                                              | Yes                                              |
| <b>suitability for use</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                  |
| • safety-related switching on                                                                                                                                                                                                                                                                                                                                                                                                                                                              | No                                               |
| • safety-related switching OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Yes                                              |
| <b>service life maximum</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 10 a                                             |
| <b>test wear-related service life necessary</b>                                                                                                                                                                                                                                                                                                                                                                                                                                            | Yes                                              |
| <b>proportion of dangerous failures</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                  |
| • with low demand rate according to SN 31920                                                                                                                                                                                                                                                                                                                                                                                                                                               | 40 %                                             |
| • with high demand rate according to SN 31920                                                                                                                                                                                                                                                                                                                                                                                                                                              | 50 %                                             |
| <b>B10 value with high demand rate according to SN 31920</b>                                                                                                                                                                                                                                                                                                                                                                                                                               | 5 000                                            |
| <b>failure rate [FIT] with low demand rate according to SN 31920</b>                                                                                                                                                                                                                                                                                                                                                                                                                       | 50 FIT                                           |
| <b>ISO 13849</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                  |
| <b>device type according to ISO 13849-1</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                | 3                                                |
| <b>overdimensioning according to ISO 13849-2 necessary</b>                                                                                                                                                                                                                                                                                                                                                                                                                                 | Yes                                              |
| <b>IEC 61508</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                  |
| <b>safety device type according to IEC 61508-2</b>                                                                                                                                                                                                                                                                                                                                                                                                                                         | Type A                                           |
| <b>T1 value</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                  |
| • for proof test interval or service life according to IEC 61508                                                                                                                                                                                                                                                                                                                                                                                                                           | 10 a                                             |
| <b>Electrical Safety</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                  |
| <b>protection class IP on the front according to IEC 60529</b>                                                                                                                                                                                                                                                                                                                                                                                                                             | IP20                                             |
| <b>touch protection on the front according to IEC 60529</b>                                                                                                                                                                                                                                                                                                                                                                                                                                | finger-safe, for vertical contact from the front |
| <b>Display</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                  |
| display version for switching status                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Handle                                           |
| <b>Approvals Certificates</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                  |
| <b>Environmental Product Declaration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                  |
| • global warming potential [CO2 eq] / during manufacturing                                                                                                                                                                                                                                                                                                                                                                                                                                 | 12.8 kg                                          |
| • global warming potential [CO2 eq] / during sales                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.477 kg                                         |
| • global warming potential [CO2 eq] / during operation                                                                                                                                                                                                                                                                                                                                                                                                                                     | 230 kg                                           |
| • global warming potential [CO2 eq] / after end of life                                                                                                                                                                                                                                                                                                                                                                                                                                    | -3.4 kg                                          |
| • global warming potential [CO2 eq] / total                                                                                                                                                                                                                                                                                                                                                                                                                                                | 239.877 kg                                       |
| <b>Environment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>General Product Approval</b>                  |
| <a href="#">Environmental Conformations</a>             |                                                  |
| <b>General Product Approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Test Certificates</b>                         |
|      <a href="#">Special Test Certificate</a>             |                                                  |
| <b>Test Certificates</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Maritime application</b>                      |
| <a href="#">Type Test Certificates/Test Report</a>      |                                                  |
| <b>Maritime application</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>other</b>                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Railway</b>                                   |



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## Railway

[Special Test Certificate](#)

## 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=3RV2031-4PB15>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2031-4PB15>

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

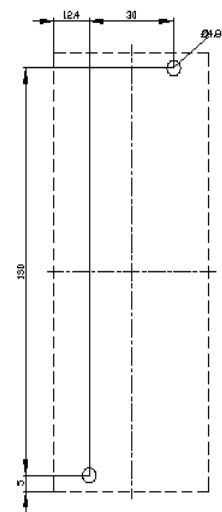
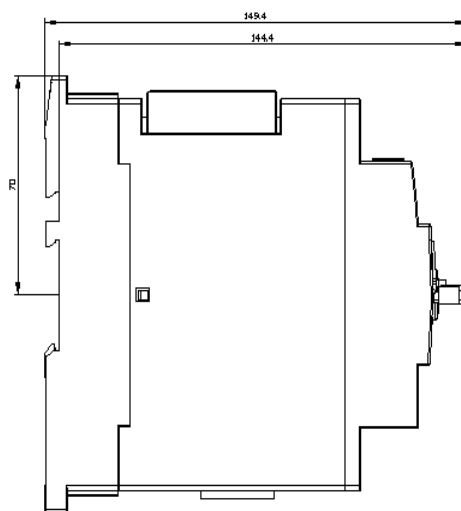
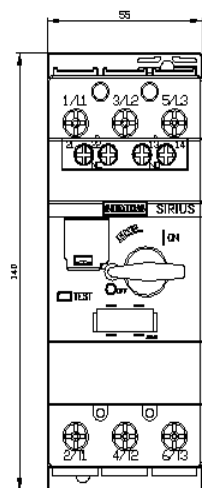
[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RV2031-4PB15&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2031-4PB15&lang=en)

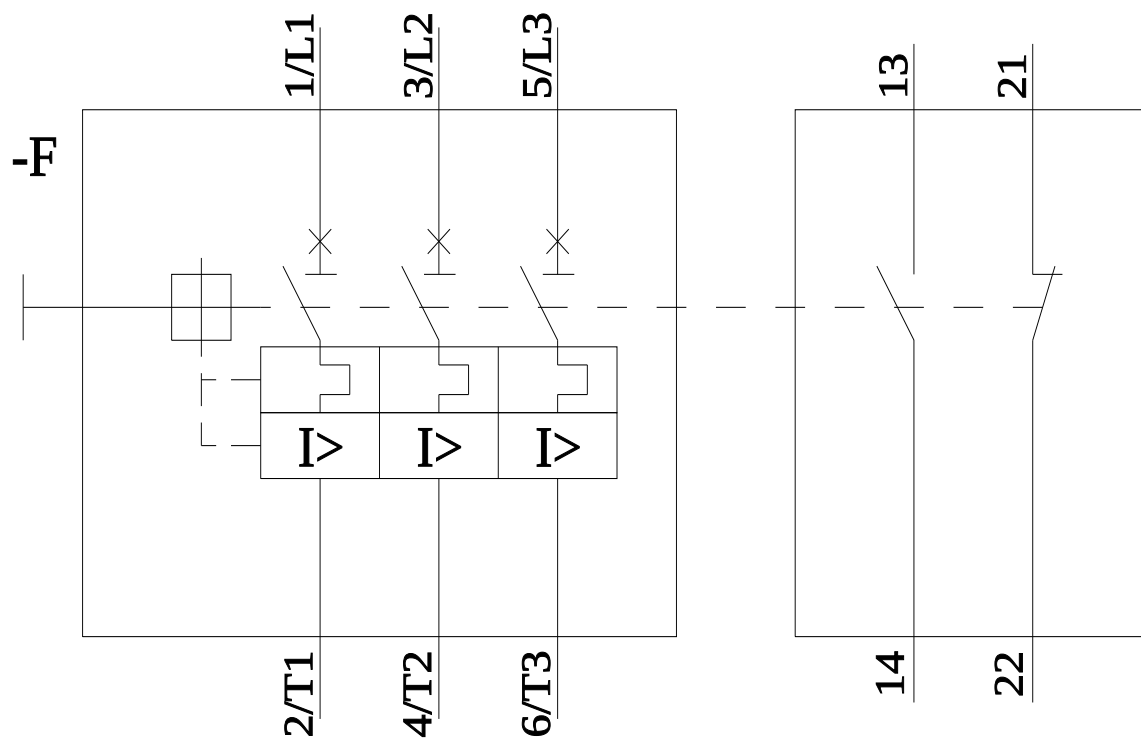
Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2031-4PB15>

Characteristic curves

[https://curves.simaris.siemens.com/curves/<mmp\\_prod\\_noCOMP="HAUPT"></mmp\\_prod\\_no>](https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP='HAUPT'></mmp_prod_no>)





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