

Circuit breaker size S0 for motor protection, CLASS 10 A-release 10...16 A N-release 208 A screw terminal Standard switching capacity Multi-unit packaging Pack = 12 units

|                                                                                                |                      |
|------------------------------------------------------------------------------------------------|----------------------|
| 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                                                                    | S0                   |
| size of contactor can be combined company-specific                                             | S00, S0              |
| 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                                                                 | 9.25 W               |
| • at AC in hot operating state per pole                                                        | 3.1 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                                                                              | IP20                 |
| shock resistance according to IEC 60068-2-27                                                   | 25g / 11 ms          |
| mechanical service life (operating cycles)                                                     |                      |
| • of the main contacts typical                                                                 | 100 000              |
| • of auxiliary contacts typical                                                                | 100 000              |
| electrical endurance (operating cycles) typical                                                | 100 000              |
| reference code according to IEC 81346-2                                                        | Q                    |
| continuous current rated value                                                                 | 16 A                 |
| Substance Prohibitance (day/month/year)                                                        | 10/01/2009           |
| Net Weight                                                                                     | 0.371 kg             |
| <b>Ambient conditions</b>                                                                      |                      |
| installation altitude at height above sea level maximum                                        | 2 000 m              |
| ambient temperature                                                                            |                      |
| • during operation                                                                             | -20 ... +60 °C       |
| • during storage                                                                               | -50 ... +80 °C       |
| • during transport                                                                             | -50 ... +80 °C       |
| temperature compensation                                                                       | -20 ... +60 °C       |
| relative humidity during operation                                                             | 10 ... 95 %          |
| <b>Main circuit</b>                                                                            |                      |
| number of poles for main current circuit                                                       | 3                    |
| adjustable current response value current of the current-dependent overload release            | 10 ... 16 A          |
| type of voltage for main current circuit                                                       | AC                   |
| operating voltage                                                                              |                      |
| • rated value                                                                                  | 690 V                |

|                                                                                                                                                                                                                                        |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <ul style="list-style-type: none"> <li>• rated value</li> </ul>                                                                                                                                                                        | 20 ... 690 V                      |
| <ul style="list-style-type: none"> <li>• at AC-3 rated value maximum</li> </ul>                                                                                                                                                        | 690 V                             |
| <ul style="list-style-type: none"> <li>• at AC-3e rated value maximum</li> </ul>                                                                                                                                                       | 690 V                             |
| <b>operating frequency rated value</b>                                                                                                                                                                                                 | 50 ... 60 Hz                      |
| <b>operational current rated value</b>                                                                                                                                                                                                 | 16 A                              |
| <b>operational current</b>                                                                                                                                                                                                             |                                   |
| <ul style="list-style-type: none"> <li>• at AC-3 at 400 V rated value</li> </ul>                                                                                                                                                       | 16 A                              |
| <ul style="list-style-type: none"> <li>• at AC-3e at 400 V rated value</li> </ul>                                                                                                                                                      | 16 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> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> </ul> </li> </ul>  | 4 kW<br>7.5 kW<br>7.5 kW<br>11 kW |
| <ul style="list-style-type: none"> <li>• at AC-3e <ul style="list-style-type: none"> <li>— at 230 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> </li> </ul> | 4 kW<br>7.5 kW<br>7.5 kW<br>11 kW |
| <b>operating frequency</b>                                                                                                                                                                                                             |                                   |
| <ul style="list-style-type: none"> <li>• at AC-3 maximum</li> </ul>                                                                                                                                                                    | 15 1/h                            |
| <ul style="list-style-type: none"> <li>• at AC-3e maximum</li> </ul>                                                                                                                                                                   | 15 1/h                            |
| <b>Auxiliary circuit</b>                                                                                                                                                                                                               |                                   |
| <b>type of voltage for auxiliary and control circuit</b>                                                                                                                                                                               | AC/DC                             |
| <b>number of NC contacts for auxiliary contacts</b>                                                                                                                                                                                    | 0                                 |
| <b>number of NO contacts for auxiliary contacts</b>                                                                                                                                                                                    | 0                                 |
| number of CO contacts for auxiliary contacts                                                                                                                                                                                           | 0                                 |
| <b>Protective and monitoring functions</b>                                                                                                                                                                                             |                                   |
| <b>product function</b>                                                                                                                                                                                                                |                                   |
| <ul style="list-style-type: none"> <li>• ground fault detection</li> </ul>                                                                                                                                                             | No                                |
| <ul style="list-style-type: none"> <li>• phase failure detection</li> </ul>                                                                                                                                                            | Yes                               |
| <b>trip class</b>                                                                                                                                                                                                                      | CLASS 10                          |
| <b>design of the overload release</b>                                                                                                                                                                                                  | thermal                           |
| <b>maximum short-circuit current breaking capacity (Icu)</b>                                                                                                                                                                           |                                   |
| <ul style="list-style-type: none"> <li>• at AC at 240 V rated value</li> </ul>                                                                                                                                                         | 100 kA                            |
| <ul style="list-style-type: none"> <li>• at AC at 400 V rated value</li> </ul>                                                                                                                                                         | 55 kA                             |
| <ul style="list-style-type: none"> <li>• at AC at 500 V rated value</li> </ul>                                                                                                                                                         | 10 kA                             |
| <ul style="list-style-type: none"> <li>• at AC at 690 V rated value</li> </ul>                                                                                                                                                         | 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> </ul>                                                                                                                                                               | 100 kA                            |
| <ul style="list-style-type: none"> <li>• at 400 V rated value</li> </ul>                                                                                                                                                               | 25 kA                             |
| <ul style="list-style-type: none"> <li>• at 500 V rated value</li> </ul>                                                                                                                                                               | 5 kA                              |
| <ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>                                                                                                                                                               | 2 kA                              |
| response value current of instantaneous short-circuit trip unit                                                                                                                                                                        | 208 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> </ul>                                                                                                                                                               | 16 A                              |
| <ul style="list-style-type: none"> <li>• at 600 V rated value</li> </ul>                                                                                                                                                               | 16 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> </ul>                                            | 1 hp<br>2 hp                      |
| <ul style="list-style-type: none"> <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> </ul> </li> </ul>         | 3 hp<br>5 hp<br>10 hp             |
| <b>UL File Number (CCN)</b>                                                                                                                                                                                                            | E47705 (NLRV, NLRV7)              |
| <b>Short-circuit protection</b>                                                                                                                                                                                                        |                                   |
| <b>product function short circuit protection</b>                                                                                                                                                                                       | Yes                               |

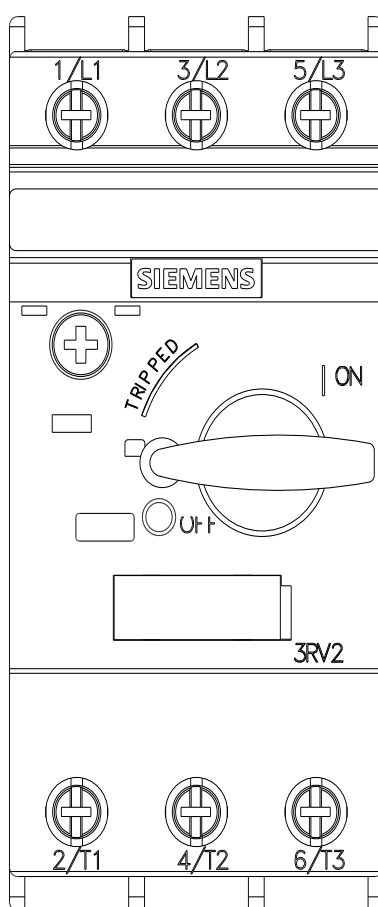
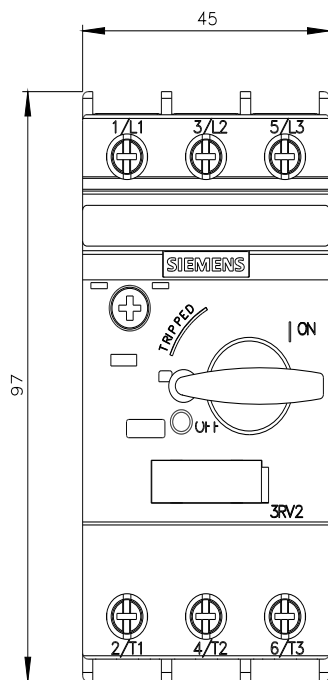
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| <b>design of the short-circuit trip</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | magnetic                                                                 |
| <b>design of the fuse link for IT network for short-circuit protection of the main circuit</b> <ul style="list-style-type: none"> <li>• at 400 V</li> <li>• at 500 V</li> <li>• at 690 V</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | gL/gG 63 A<br>gL/gG 50 A<br>gL/gG 40 A                                   |
| certificate of suitability according to ATEX directive 2014/34/EU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | DMT 02 ATEX F 001                                                        |
| <b>type of protection according to ATEX directive 2014/34/EU</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Ex II (2) GD                                                             |
| <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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 97 mm                                                                    |
| <b>width</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 45 mm                                                                    |
| <b>depth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 97 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 0 mm</li> <li>— backwards 0 mm</li> <li>— upwards 50 mm</li> <li>— downwards 50 mm</li> <li>— at the side 0 mm</li> </ul> </li> <li>• for grounded parts               <ul style="list-style-type: none"> <li>— forwards 0 mm</li> <li>— backwards 0 mm</li> <li>— upwards 50 mm</li> <li>— at the side 30 mm</li> <li>— downwards 50 mm</li> </ul> </li> <li>• for live parts               <ul style="list-style-type: none"> <li>— forwards 0 mm</li> <li>— backwards 0 mm</li> <li>— upwards 50 mm</li> <li>— downwards 50 mm</li> <li>— at the side 30 mm</li> </ul> </li> <li>• for grounded parts at 400 V               <ul style="list-style-type: none"> <li>— downwards 30 mm</li> <li>— upwards 30 mm</li> <li>— at the side 9 mm</li> </ul> </li> <li>• for live parts at 400 V               <ul style="list-style-type: none"> <li>— downwards 30 mm</li> <li>— upwards 30 mm</li> <li>— at the side 9 mm</li> </ul> </li> <li>• for grounded parts at 500 V               <ul style="list-style-type: none"> <li>— downwards 30 mm</li> <li>— upwards 30 mm</li> <li>— at the side 9 mm</li> </ul> </li> <li>• for live parts at 500 V               <ul style="list-style-type: none"> <li>— downwards 30 mm</li> <li>— upwards 30 mm</li> <li>— at the side 9 mm</li> </ul> </li> <li>• for grounded parts at 690 V               <ul style="list-style-type: none"> <li>— downwards 50 mm</li> <li>— upwards 50 mm</li> <li>— backwards 0 mm</li> <li>— at the side 30 mm</li> <li>— forwards 0 mm</li> </ul> </li> <li>• for live parts at 690 V               <ul style="list-style-type: none"> <li>— downwards 50 mm</li> </ul> </li> </ul> |                                                                          |

|                                                                                  |                                                                                         |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| — upwards                                                                        | 50 mm                                                                                   |
| — backwards                                                                      | 0 mm                                                                                    |
| — at the side                                                                    | 30 mm                                                                                   |
| — forwards                                                                       | 0 mm                                                                                    |
| <b>Connections/ Terminals</b>                                                    |                                                                                         |
| <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                                                                    |
| <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 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 10 mm <sup>2</sup> )                       |
| — finely stranded with core end processing                                       | 2x (1 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> ), 1x 10 mm <sup>2</sup> |
| • for AWG cables for main contacts                                               | 2x (16 ... 12), 2x (14 ... 8)                                                           |
| <b>connectable conductor cross-section for main contacts</b>                     |                                                                                         |
| • solid or stranded                                                              | 1 ... 10 mm <sup>2</sup>                                                                |
| • finely stranded with core end processing                                       | 1 ... 10 mm <sup>2</sup>                                                                |
| <b>AWG number as coded connectable conductor cross section for main contacts</b> | 16 ... 8                                                                                |
| <b>tightening torque</b>                                                         |                                                                                         |
| • for main contacts with screw-type terminals                                    | 2 ... 2.5 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                                                              | M4                                                                                      |
| <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 [CO <sub>2</sub> eq] / during manufacturing           | 2.68 kg                                                                                 |
| • global warming potential [CO <sub>2</sub> eq] / during sales                   | 0.143 kg                                                                                |
| • global warming potential [CO <sub>2</sub> eq] / during operation               | 72.7 kg                                                                                 |
| • global warming potential [CO <sub>2</sub> eq] / after end of life              | -0.445 kg                                                                               |
| • global warming potential [CO <sub>2</sub> eq] / total                          | 75.078 kg                                                                               |

|                                                                                    |                                                                                     |                                                                                    |                                                                                    |                                                                                     |                                                                                     |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Environment                                                                        |                                                                                     |                                                                                    | General Product Approval                                                           |                                                                                     |                                                                                     |
| <a href="#">Environmental Confirmations</a>                                        |    |   |   |  |  |
| General Product Approval                                                           |                                                                                     |                                                                                    |                                                                                    |                                                                                     | For use in hazardous locations                                                      |
|   |    |   |   |  |  |
| For use in hazardous locations                                                     |                                                                                     | Test Certificates                                                                  |                                                                                    | Maritime application                                                                |                                                                                     |
|   |    | <a href="#">Special Test Certificate</a>                                           | <a href="#">Type Test Certificates/Test Report</a>                                 |  |  |
| Maritime application                                                               |                                                                                     |                                                                                    |                                                                                    | other                                                                               |                                                                                     |
|  |   |  |  | <a href="#">Miscellaneous</a>                                                       | <a href="#">Confirmation</a>                                                        |
| other                                                                              |                                                                                     | Railway                                                                            |                                                                                    |                                                                                     |                                                                                     |
| <a href="#">Miscellaneous</a>                                                      |  | <a href="#">Confirmation</a>                                                       | <a href="#">Special Test Certificate</a>                                           |                                                                                     |                                                                                     |

#### 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=3RV2021-4AA10-Z W97>  
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)  
<https://support.industry.siemens.com/cs/ww/en/ps/3RV2021-4AA10-Z W97>  
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)  
[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RV2021-4AA10-Z W97&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2021-4AA10-Z W97&lang=en)  
Cax online generator  
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2021-4AA10-Z W97>  
Characteristic curves  
[https://curves.simaris.siemens.com/curves/<mmp\\_prod\\_noCOMP="HAUPT"></mmp\\_prod\\_no>](https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP=)





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