

Circuit breaker size S00 for motor protection CLASS 10 A-release 9...12.5 A N-release 163 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                                                                    | S00                  |
| 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                                                                 | 12.5 A               |
| Substance Prohibitance (day/month/year)                                                        | 10/01/2009           |
| Net Weight                                                                                     | 0.354 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            | 9 ... 12.5 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>                                                                                                                                                                                                                             | 12.5 A                             |
| <b>operational current</b>                                                                                                                                                                                                                                         |                                    |
| <ul style="list-style-type: none"> <li>• at AC-3 at 400 V rated value</li> </ul>                                                                                                                                                                                   | 12.5 A                             |
| <ul style="list-style-type: none"> <li>• at AC-3e at 400 V rated value</li> </ul>                                                                                                                                                                                  | 12.5 A                             |
| <b>operating power</b>                                                                                                                                                                                                                                             |                                    |
| <ul style="list-style-type: none"> <li>• at AC-3 <ul style="list-style-type: none"> <li>— at 230 V rated value</li> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> </ul> </li> </ul>                              | 3 kW<br>5.5 kW<br>7.5 kW<br>7.5 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>                             | 3 kW<br>5.5 kW<br>7.5 kW<br>7.5 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>                                                                                                                                                                                     | 100 kA                             |
| <ul style="list-style-type: none"> <li>• at AC at 500 V rated value</li> </ul>                                                                                                                                                                                     | 42 kA                              |
| <ul style="list-style-type: none"> <li>• at AC at 690 V rated value</li> </ul>                                                                                                                                                                                     | 6 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>                                                                                                                                                                                           | 100 kA                             |
| <ul style="list-style-type: none"> <li>• at 500 V rated value</li> </ul>                                                                                                                                                                                           | 42 kA                              |
| <ul style="list-style-type: none"> <li>• at 690 V rated value</li> </ul>                                                                                                                                                                                           | 4 kA                               |
| response value current of instantaneous short-circuit trip unit                                                                                                                                                                                                    | 163 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>                                                                                                                                                                                           | 12.5 A                             |
| <ul style="list-style-type: none"> <li>• at 600 V rated value</li> </ul>                                                                                                                                                                                           | 12.5 A                             |
| <b>yielded mechanical performance [hp]</b>                                                                                                                                                                                                                         |                                    |
| <ul style="list-style-type: none"> <li>• for single-phase AC motor <ul style="list-style-type: none"> <li>— at 110/120 V rated value</li> <li>— at 230 V rated value</li> </ul> </li> </ul>                                                                        | 0.5 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> <li>— at 575/600 V rated value</li> </ul> </li> </ul> | 3 hp<br>3 hp<br>8 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</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> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> <li>• for grounded parts at 400 V               <ul style="list-style-type: none"> <li>— downwards</li> <li>— upwards</li> <li>— at the side</li> </ul> </li> <li>• for live parts at 400 V               <ul style="list-style-type: none"> <li>— downwards</li> <li>— upwards</li> <li>— at the side</li> </ul> </li> <li>• for grounded parts at 500 V               <ul style="list-style-type: none"> <li>— downwards</li> <li>— upwards</li> <li>— at the side</li> </ul> </li> <li>• for live parts at 500 V               <ul style="list-style-type: none"> <li>— downwards</li> <li>— upwards</li> <li>— at the side</li> </ul> </li> <li>• for grounded parts at 690 V               <ul style="list-style-type: none"> <li>— downwards</li> <li>— upwards</li> <li>— backwards</li> <li>— at the side</li> <li>— forwards</li> </ul> </li> <li>• for live parts at 690 V</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>30 mm<br>50 mm<br><br>0 mm<br>0 mm<br>50 mm<br>50 mm<br>30 mm<br><br>30 mm<br>30 mm<br>9 mm<br><br>30 mm<br>30 mm<br>9 mm<br><br>30 mm<br>30 mm<br>9 mm<br><br>50 mm<br>50 mm<br>0 mm<br>30 mm<br>0 mm |

|                                                                                  |                                                                       |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| — downwards                                                                      | 50 mm                                                                 |
| — 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 (0,75 ... 2,5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup>              |
| — finely stranded with core end processing                                       | 2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ) |
| • for AWG cables for main contacts                                               | 2x (18 ... 14), 2x 12                                                 |
| <b>connectable conductor cross-section for main contacts</b>                     |                                                                       |
| • solid or stranded                                                              | 0.75 ... 4 mm <sup>2</sup>                                            |
| • finely stranded with core end processing                                       | 0.5 ... 2.5 mm <sup>2</sup>                                           |
| <b>AWG number as coded connectable conductor cross section for main contacts</b> | 18 ... 12                                                             |
| <b>tightening torque</b>                                                         |                                                                       |
| • for main 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                                                              | 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                       | 1.98 kg                                                               |
| • global warming potential [CO2 eq] / during sales                               | 0.134 kg                                                              |
| • global warming potential [CO2 eq] / during operation                           | 72.7 kg                                                               |
| • global warming potential [CO2 eq] / after end of life                          | -0.116 kg                                                             |

• global warming potential [CO2 eq] / total

74.698 kg

| Environment | General Product Approval |
|-------------|--------------------------|
|-------------|--------------------------|

[Environmental Confirmations](#)

Siemens  
EcoTech



| General Product Approval | For use in hazardous locations |
|--------------------------|--------------------------------|
|--------------------------|--------------------------------|



EG-Konf.



IECEX

| For use in hazardous locations | Test Certificates | Maritime application |
|--------------------------------|-------------------|----------------------|
|--------------------------------|-------------------|----------------------|



[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



ABS



BUREAU  
VERITAS



DNV

| Maritime application | other |
|----------------------|-------|
|----------------------|-------|



LRS



PRS



RINA

[Miscellaneous](#)

[Confirmation](#)

[Miscellaneous](#)

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



[Confirmation](#)

[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=3RV2011-1KA10-Z W97>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2011-1KA10-Z W97>

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

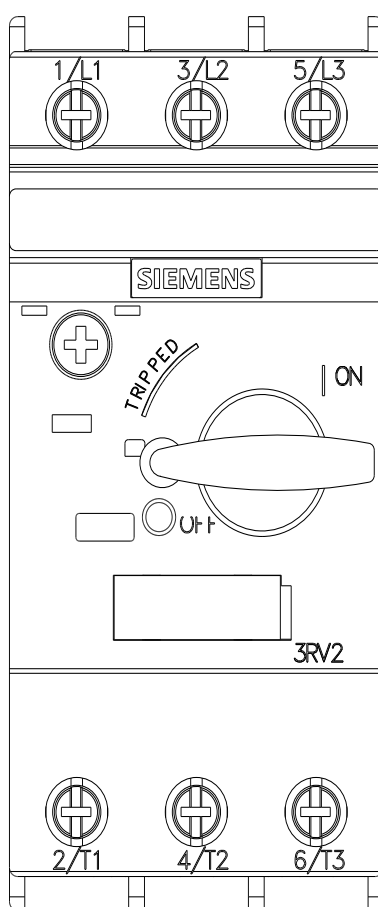
[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RV2011-1KA10-Z W97&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2011-1KA10-Z W97&lang=en)

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2011-1KA10-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='HAUPT'></mmp_prod_no>)





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