

Siemens  
EcoTech



Circuit breaker size S0 for motor protection, CLASS 10 A-release 16...22 A N-release 286 A screw terminal Standard switching capacity



|                                                                 |                                                                |
|-----------------------------------------------------------------|----------------------------------------------------------------|
| product brand name                                              | SIRIUS                                                         |
| product designation                                             | Circuit breaker                                                |
| design of the product                                           | For motor protection                                           |
| product type designation                                        | 3RV2                                                           |
| General technical data                                          |                                                                |
| size of the circuit-breaker                                     | S0                                                             |
| size of contactor can be combined company-specific              | S00, S0                                                        |
| product extension auxiliary switch                              | Yes                                                            |
| power loss [W] for rated value of the current                   |                                                                |
| • at AC in hot operating state                                  | 10.5 W                                                         |
| • at AC in hot operating state per pole                         | 3.5 W                                                          |
| insulation voltage with degree of pollution 3 at AC rated value | 690 V                                                          |
| surge voltage resistance rated value                            | 6 kV                                                           |
| 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                                                              |
| Substance Prohibitance (Date)                                   | 10/01/2009                                                     |
| SVHC substance name                                             | Lead - 7439-92-1<br>Lead titanium zirconium oxide - 12626-81-2 |
| Weight                                                          | 0.362 kg                                                       |
| Ambient conditions                                              |                                                                |
| 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                                                 |
| relative humidity during operation                              | 10 ... 95 %                                                    |
| Environmental footprint                                         |                                                                |
| Environmental Product Declaration (EPD)                         | Yes                                                            |
| global warming potential [CO2 eq] total                         | 75.078 kg                                                      |
| global warming potential [CO2 eq] during manufacturing          | 2.68 kg                                                        |
| global warming potential [CO2 eq] during sales                  | 0.143 kg                                                       |
| global warming potential [CO2 eq] during operation              | 72.7 kg                                                        |
| global warming potential [CO2 eq] after end of life             | -0.445 kg                                                      |

|                                                                                            |                 |
|--------------------------------------------------------------------------------------------|-----------------|
| Siemens Eco Profile (SEP)                                                                  | Siemens EcoTech |
| <b>Main circuit</b>                                                                        |                 |
| <b>number of poles for main current circuit</b>                                            | 3               |
| <b>adjustable current response value current of the current-dependent overload release</b> | 16 ... 22 A     |
| <b>type of voltage for main current circuit</b>                                            | AC              |
| <b>operating voltage</b>                                                                   |                 |
| • rated value                                                                              | 20 ... 690 V    |
| • at AC-3 rated value maximum                                                              | 690 V           |
| • at AC-3e rated value maximum                                                             | 690 V           |
| <b>operating frequency rated value</b>                                                     | 50 ... 60 Hz    |
| <b>operational current rated value</b>                                                     | 22 A            |
| <b>operational current</b>                                                                 |                 |
| • at AC-3 at 400 V rated value                                                             | 22 A            |
| • at AC-3e at 400 V rated value                                                            | 22 A            |
| <b>operating power</b>                                                                     |                 |
| • at AC-3                                                                                  |                 |
| — at 230 V rated value                                                                     | 5.5 kW          |
| — at 400 V rated value                                                                     | 11 kW           |
| — at 500 V rated value                                                                     | 11 kW           |
| — at 690 V rated value                                                                     | 18.5 kW         |
| • at AC-3e                                                                                 |                 |
| — at 230 V rated value                                                                     | 5.5 kW          |
| — at 400 V rated value                                                                     | 11 kW           |
| — at 500 V rated value                                                                     | 11 kW           |
| — at 690 V rated value                                                                     | 18.5 kW         |
| <b>operating frequency</b>                                                                 |                 |
| • at AC-3 maximum                                                                          | 15 1/h          |
| • at AC-3e maximum                                                                         | 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>                                                                    |                 |
| • ground fault detection                                                                   | No              |
| • phase failure detection                                                                  | Yes             |
| <b>trip class</b>                                                                          | CLASS 10        |
| <b>design of the overload release</b>                                                      | thermal         |
| <b>maximum short-circuit current breaking capacity (I<sub>cu</sub>)</b>                    |                 |
| • at AC at 240 V rated value                                                               | 100 kA          |
| • at AC at 400 V rated value                                                               | 55 kA           |
| • at AC at 500 V rated value                                                               | 10 kA           |
| • at AC at 690 V rated value                                                               | 4 kA            |
| <b>operating short-circuit current breaking capacity (I<sub>cs</sub>) at AC</b>            |                 |
| • at 240 V rated value                                                                     | 100 kA          |
| • at 400 V rated value                                                                     | 25 kA           |
| • at 500 V rated value                                                                     | 5 kA            |
| • at 690 V rated value                                                                     | 2 kA            |
| response value current of instantaneous short-circuit trip unit                            | 286 A           |
| <b>UL/CSA ratings</b>                                                                      |                 |
| <b>full-load current (FLA) for 3-phase AC motor</b>                                        |                 |
| • at 480 V rated value                                                                     | 22 A            |
| • at 600 V rated value                                                                     | 22 A            |
| <b>yielded mechanical performance [hp]</b>                                                 |                 |
| • for single-phase AC motor                                                                |                 |
| — at 110/120 V rated value                                                                 | 1.5 hp          |
| — at 230 V rated value                                                                     | 3 hp            |
| • for 3-phase AC motor                                                                     |                 |
| — at 200/208 V rated value                                                                 | 7.5 hp          |

|                                                                                                |                                                                          |
|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| — at 220/230 V rated value                                                                     | 7.5 hp                                                                   |
| — at 460/480 V rated value                                                                     | 15 hp                                                                    |
| <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> |                                                                          |
| • at 400 V                                                                                     | gL/gG 63 A                                                               |
| • at 500 V                                                                                     | gL/gG 50 A                                                               |
| • at 690 V                                                                                     | gL/gG 50 A                                                               |
| <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>height</b>                                                                                  | 97 mm                                                                    |
| <b>width</b>                                                                                   | 45 mm                                                                    |
| <b>depth</b>                                                                                   | 97 mm                                                                    |
| <b>required spacing</b>                                                                        |                                                                          |
| • with side-by-side mounting at the side                                                       | 0 mm                                                                     |
| • for grounded parts at 400 V                                                                  |                                                                          |
| — downwards                                                                                    | 30 mm                                                                    |
| — upwards                                                                                      | 30 mm                                                                    |
| — at the side                                                                                  | 9 mm                                                                     |
| • for live parts at 400 V                                                                      |                                                                          |
| — downwards                                                                                    | 30 mm                                                                    |
| — upwards                                                                                      | 30 mm                                                                    |
| — at the side                                                                                  | 9 mm                                                                     |
| • for grounded parts at 500 V                                                                  |                                                                          |
| — downwards                                                                                    | 30 mm                                                                    |
| — upwards                                                                                      | 30 mm                                                                    |
| — at the side                                                                                  | 9 mm                                                                     |
| • for live parts at 500 V                                                                      |                                                                          |
| — downwards                                                                                    | 30 mm                                                                    |
| — upwards                                                                                      | 30 mm                                                                    |
| — at the side                                                                                  | 9 mm                                                                     |
| • for grounded parts at 690 V                                                                  |                                                                          |
| — downwards                                                                                    | 50 mm                                                                    |
| — upwards                                                                                      | 50 mm                                                                    |
| — backwards                                                                                    | 0 mm                                                                     |
| — at the side                                                                                  | 30 mm                                                                    |
| — forwards                                                                                     | 0 mm                                                                     |
| • for live parts at 690 V                                                                      |                                                                          |
| — downwards                                                                                    | 50 mm                                                                    |
| — upwards                                                                                      | 50 mm                                                                    |
| — backwards                                                                                    | 0 mm                                                                     |
| — at the side                                                                                  | 30 mm                                                                    |
| — forwards                                                                                     | 0 mm                                                                     |
| <b>Connections/ Terminals</b>                                                                  |                                                                          |
| <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 mm²), 2x (2.5 ... 10 mm²)                                  |
| — finely stranded with core end processing                                                     | 2x (1 ... 2.5 mm²), 2x (2.5 ... 6 mm²), 1x 10 mm²                        |
| • for AWG cables for main contacts                                                             | 2x (16 ... 12), 2x (14 ... 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>General Product Approval</b>                                      |                                                  |



[KC](#)



|                                 |                                       |                          |                             |
|---------------------------------|---------------------------------------|--------------------------|-----------------------------|
| <b>General Product Approval</b> | <b>For use in hazardous locations</b> | <b>Test Certificates</b> | <b>Maritime application</b> |
|---------------------------------|---------------------------------------|--------------------------|-----------------------------|



[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



|                             |              |
|-----------------------------|--------------|
| <b>Maritime application</b> | <b>other</b> |
|-----------------------------|--------------|



[Miscellaneous](#)

|              |                |                    |
|--------------|----------------|--------------------|
| <b>other</b> | <b>Railway</b> | <b>Environment</b> |
|--------------|----------------|--------------------|



[Confirmation](#)



[Special Test Certificate](#)

[Confirmation](#)



|                    |
|--------------------|
| <b>Environment</b> |
|--------------------|

#### Further information

##### Information on the packaging

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

##### Information- and Downloadcenter (Catalogs, Brochures,...)

<https://www.siemens.com/ic10>

##### Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RV2021-4CA10>

##### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2021-4CA10>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2021-4CA10>

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

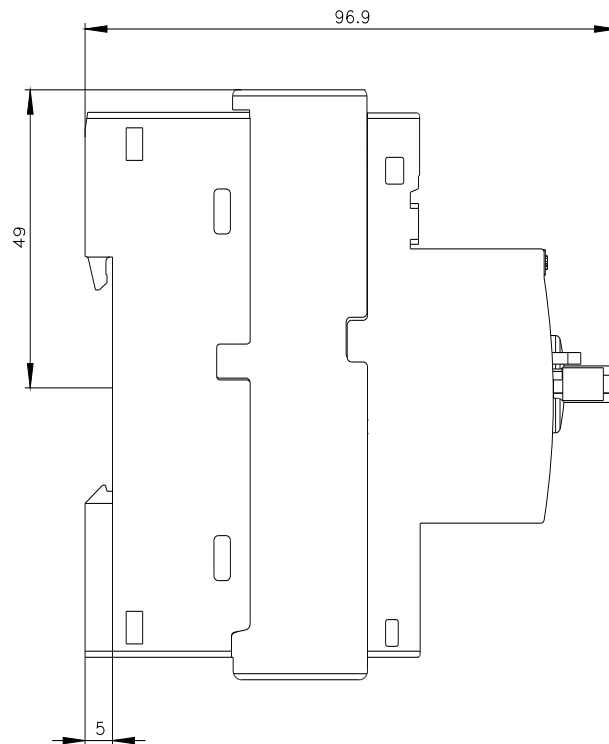
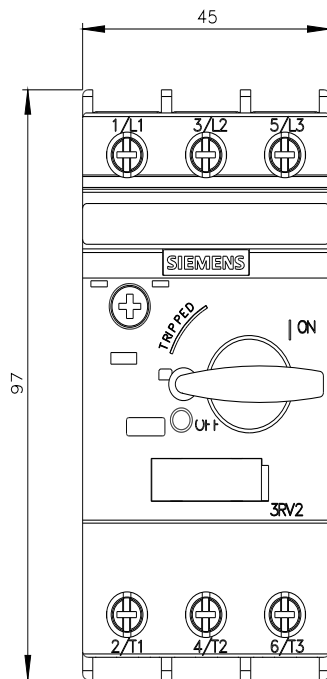
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RV2021-4CA10&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2021-4CA10&lang=en)

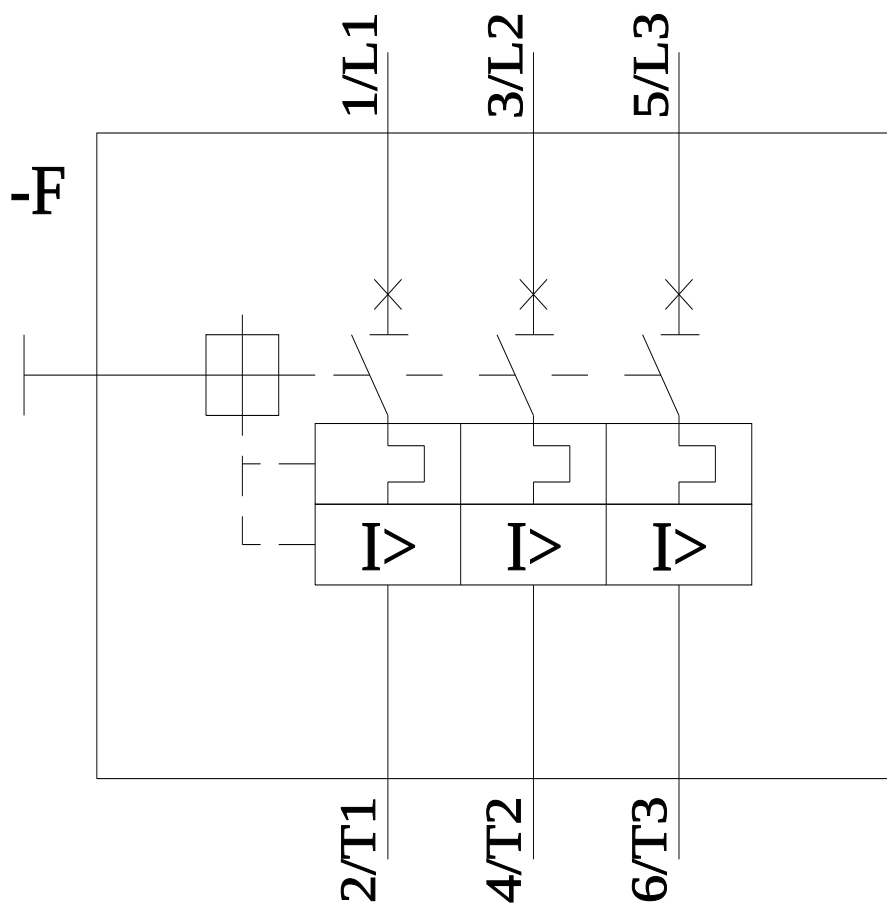
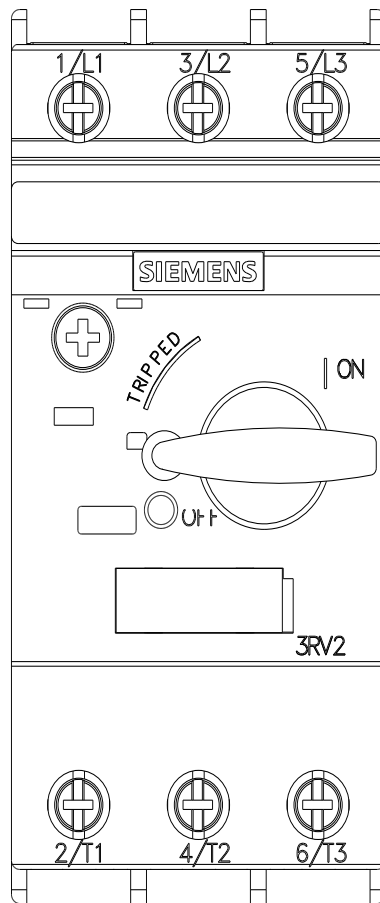
##### Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2021-4CA10/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2021-4CA10&objecttype=14&gridview=view1>





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