



Circuit breaker size S0 for motor protection, CLASS 10 A-release 1.8...2.5 A N-release 33 A Spring-type 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 | 7.25 W |
| • at AC in hot operating state per pole | 2.4 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 Prohibition (Date) | 10/01/2009 |
| SVHC substance name | Lead CAS-No. 7439-92-1 |
| Net Weight | 400 g |
| 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 % |
| Main circuit | |
| number of poles for main current circuit | 3 |
| adjustable current response value current of the current-dependent overload release | 1.8 ... 2.5 A |
| type of voltage for main current circuit | AC |
| operating voltage | |
| • rated value | 20 ... 690 V |

| | |
|--|--------------------------------------|
| <ul style="list-style-type: none"> ● at AC-3 rated value maximum | 690 V |
| <ul style="list-style-type: none"> ● at AC-3e rated value maximum | 690 V |
| operating frequency rated value | 50 ... 60 Hz |
| operational current rated value | 2.5 A |
| operational current | |
| <ul style="list-style-type: none"> ● at AC-3 at 400 V rated value | 2.5 A |
| <ul style="list-style-type: none"> ● at AC-3e at 400 V rated value | 2.5 A |
| operating power | |
| <ul style="list-style-type: none"> ● at AC-3 <ul style="list-style-type: none"> — at 230 V rated value — at 400 V rated value — at 500 V rated value — at 690 V rated value | 0.4 kW 0.8 kW 1.1 kW 1.5 kW |
| <ul style="list-style-type: none"> ● at AC-3e <ul style="list-style-type: none"> — at 230 V rated value — at 400 V rated value — at 500 V rated value — at 690 V rated value | 0.4 kW 0.8 kW 1.1 kW 1.5 kW |
| operating frequency | |
| <ul style="list-style-type: none"> ● at AC-3 maximum | 15 1/h |
| <ul style="list-style-type: none"> ● at AC-3e maximum | 15 1/h |

Auxiliary circuit

| | |
|--|-------|
| type of voltage for auxiliary and control circuit | AC/DC |
| number of NC contacts for auxiliary contacts | 0 |
| number of NO contacts for auxiliary contacts | 0 |
| number of CO contacts for auxiliary contacts | 0 |

Protective and monitoring functions

| | |
|--|----------|
| product function | |
| <ul style="list-style-type: none"> ● ground fault detection | No |
| <ul style="list-style-type: none"> ● phase failure detection | Yes |
| trip class | CLASS 10 |
| design of the overload release | thermal |
| maximum short-circuit current breaking capacity (Icu) | |
| <ul style="list-style-type: none"> ● at AC at 240 V rated value | 100 kA |
| <ul style="list-style-type: none"> ● at AC at 400 V rated value | 100 kA |
| <ul style="list-style-type: none"> ● at AC at 500 V rated value | 100 kA |
| <ul style="list-style-type: none"> ● at AC at 690 V rated value | 10 kA |
| operating short-circuit current breaking capacity (Ics) at AC | |
| <ul style="list-style-type: none"> ● at 240 V rated value | 100 kA |
| <ul style="list-style-type: none"> ● at 400 V rated value | 100 kA |
| <ul style="list-style-type: none"> ● at 500 V rated value | 100 kA |
| <ul style="list-style-type: none"> ● at 690 V rated value | 10 kA |
| response value current of instantaneous short-circuit trip unit | 33 A |

UL/CSA ratings

| | |
|--|---|
| full-load current (FLA) for 3-phase AC motor | |
| <ul style="list-style-type: none"> ● at 480 V rated value | 2.5 A |
| <ul style="list-style-type: none"> ● at 600 V rated value | 2.5 A |
| yielded mechanical performance [hp] | |
| <ul style="list-style-type: none"> ● for single-phase AC motor <ul style="list-style-type: none"> — at 230 V rated value | 0.17 hp |
| <ul style="list-style-type: none"> ● for 3-phase AC motor <ul style="list-style-type: none"> — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value | 0.5 hp 0.5 hp 1 hp 1.5 hp |
| UL File Number (CCN) | E47705 (NLRV, NLRV7), E156943 (NKJH, NKJH7) |

Short-circuit protection

| | |
|--|----------|
| product function short circuit protection | Yes |
| design of the short-circuit trip | magnetic |

Installation/ mounting/ dimensions

| | |
|--|--|
| mounting position | any |
| fastening method | screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715 |
| height | 119 mm |
| width | 45 mm |
| depth | 97 mm |
| required spacing | |
| • 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 |

Connections/ Terminals

| | |
|--|--------------------------------|
| type of electrical connection | |
| • for main current circuit | spring-loaded terminals |
| arrangement of electrical connectors for main current circuit | Top and bottom |
| type of connectable conductor cross-sections | |
| • for main contacts | |
| — solid or stranded | 2x (1 ... 10 mm ²) |
| — finely stranded with core end processing | 2x (1 ... 6 mm ²) |
| — finely stranded without core end processing | 2x (1 ... 6 mm ²) |
| • for AWG cables for main contacts | 2x (18 ... 8) |
| design of screwdriver shaft | Diameter 3 mm |
| size of the screwdriver tip | 3,0 x 0,5 mm |

Safety related data

| | |
|---|------|
| product function suitable for safety function | Yes |
| suitability for use | |
| • safety-related switching on | No |
| • safety-related switching OFF | Yes |
| service life maximum | 10 a |
| test wear-related service life necessary | Yes |
| proportion of dangerous failures | |
| • with low demand rate according to SN 31920 | 40 % |
| • with high demand rate according to SN 31920 | 50 % |

| | |
|--|--|
| B10 value with high demand rate according to SN 31920 | 5 000 |
| failure rate [FIT] with low demand rate according to SN 31920 | 50 FIT |
| ISO 13849 | |
| device type according to ISO 13849-1 | 3 |
| overdimensioning according to ISO 13849-2 necessary | Yes |
| IEC 61508 | |
| safety device type according to IEC 61508-2 | Type A |
| T1 value | 10 a |
| <ul style="list-style-type: none"> for proof test interval or service life according to IEC 61508 | |
| Electrical Safety | |
| protection class IP on the front according to IEC 60529 | IP20 |
| touch protection on the front according to IEC 60529 | finger-safe, for vertical contact from the front |
| Display | |
| display version for switching status | Handle |

Approvals Certificates

| | |
|--|--|
| Environmental Product Declaration | |
| <ul style="list-style-type: none"> global warming potential [CO2 eq] / during manufacturing global warming potential [CO2 eq] / during sales global warming potential [CO2 eq] / during operation global warming potential [CO2 eq] / after end of life global warming potential [CO2 eq] / total | <ul style="list-style-type: none"> 2.68 kg 0.143 kg 72.7 kg -0.445 kg 75.078 kg |

Environment General Product Approval

[Environmental Confirmations](#)



General Product Approval For use in hazardous locations Maritime application



Maritime application other



other

[Confirmation](#) [Miscellaneous](#)

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=3RV2021-1CA20>
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
<https://support.industry.siemens.com/cs/ww/en/ps/3RV2021-1CA20>

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

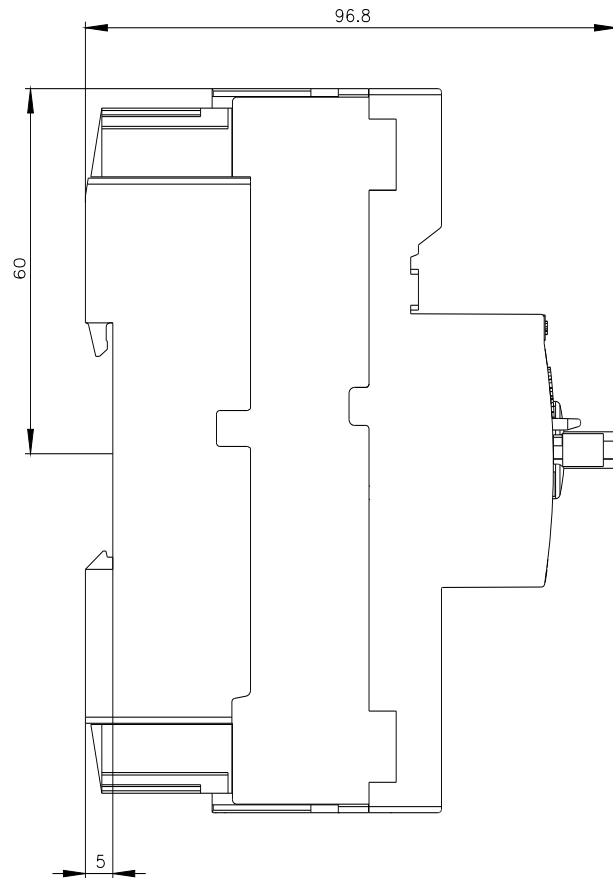
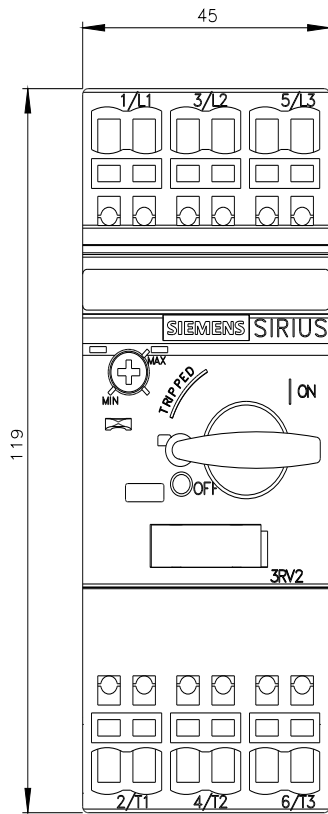
https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2021-1CA20&lang=en

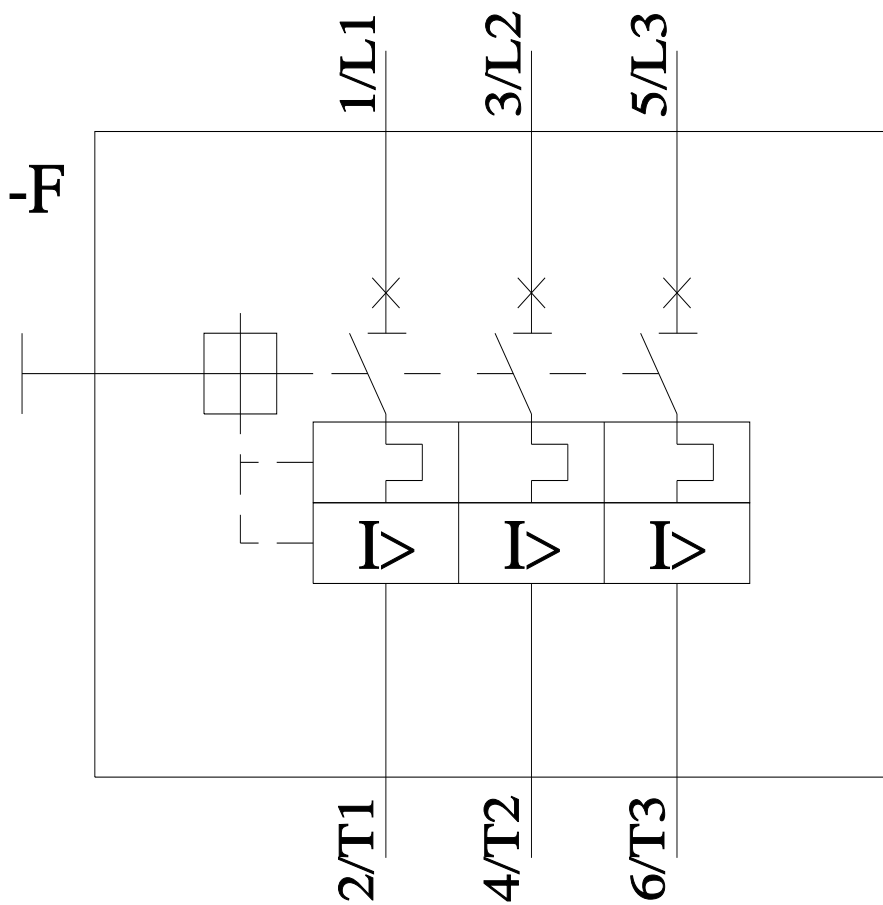
Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2021-1CA20>

Characteristic curves

https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP='HAUPT'></mmp_prod_no>





last modified:

3/8/2026 ↻