

Siemens
EcoTech



Circuit breaker size S3 for motor protection CLASS 10 with overload relay function
A-release 28...40 A N-release 520 A screw terminal Increased switching capacity
100 kA



| | |
|---|---|
| product brand name | SIRIUS |
| product designation | Circuit breaker |
| design of the product | For motor protection with overload relay function |
| product type designation | 3RV2 |
| General technical data | |
| size of the circuit-breaker | S3 |
| size of contactor can be combined company-specific | S3 |
| product extension auxiliary switch | Yes |
| power loss [W] for rated value of the current | |
| • at AC in hot operating state | 23 W |
| • at AC in hot operating state per pole | 7.7 W |
| insulation voltage with degree of pollution 3 at AC rated value | 1 000 V |
| surge voltage resistance rated value | 8 kV |
| shock resistance according to IEC 60068-2-27 | 25g / 11 ms Sinus |
| mechanical service life (operating cycles) | |
| • of the main contacts typical | 25 000 |
| • of auxiliary contacts typical | 25 000 |
| electrical endurance (operating cycles) typical | 25 000 |
| reference code according to IEC 81346-2 | Q |
| Substance Prohibitance (Date) | 03/01/2017 |
| SVHC substance name | Lead - 7439-92-1 |
| Weight | 2.26 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 | 283.24 kg |
| global warming potential [CO2 eq] during manufacturing | 18.5 kg |
| global warming potential [CO2 eq] during sales | 1.24 kg |
| global warming potential [CO2 eq] during operation | 265 kg |
| global warming potential [CO2 eq] after end of life | -1.5 kg |
| Siemens Eco Profile (SEP) | Siemens EcoTech |

| Main circuit | |
|---|--|
| number of poles for main current circuit | 3 |
| adjustable current response value current of the current-dependent overload release | 28 ... 40 A |
| type of voltage for main current circuit | AC |
| operating voltage <ul style="list-style-type: none"> • rated value • at AC-3 rated value maximum • at AC-3e rated value maximum | 20 ... 690 V 690 V 690 V |
| operating frequency rated value | 50 ... 60 Hz |
| operational current rated value | 40 A |
| operational current <ul style="list-style-type: none"> • at AC-3 at 400 V rated value • at AC-3e at 400 V rated value | 40 A 40 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 • 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 | 11 kW 18.5 kW 22 kW 37 kW 11 kW 18.5 kW 22 kW 37 kW |
| operating frequency <ul style="list-style-type: none"> • at AC-3 maximum • at AC-3e maximum | 15 1/h 15 1/h |
| Auxiliary circuit | |
| design of the auxiliary switch | laterally |
| 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 • phase failure detection | No Yes |
| trip class | CLASS 10 |
| design of the overload release | thermal |
| maximum short-circuit current breaking capacity (I _{cu}) <ul style="list-style-type: none"> • at AC at 240 V rated value • at AC at 400 V rated value • at AC at 500 V rated value • at AC at 690 V rated value | 100 kA 100 kA 18 kA 12 kA |
| operating short-circuit current breaking capacity (I _{cs}) at AC <ul style="list-style-type: none"> • at 240 V rated value • at 400 V rated value • at 500 V rated value • at 690 V rated value | 100 kA 50 kA 9 kA 6 kA |
| response value current of instantaneous short-circuit trip unit | 520 A |
| UL/CSA ratings | |
| full-load current (FLA) for 3-phase AC motor <ul style="list-style-type: none"> • at 480 V rated value • at 600 V rated value | 40 A 40 A |
| yielded mechanical performance [hp] <ul style="list-style-type: none"> • for single-phase AC motor <ul style="list-style-type: none"> — at 110/120 V rated value — at 230 V rated value • for 3-phase AC motor <ul style="list-style-type: none"> — at 200/208 V rated value | 3 hp 7.5 hp 15 hp |

| | |
|----------------------------|-------|
| — at 220/230 V rated value | 15 hp |
| — at 460/480 V rated value | 30 hp |
| — at 575/600 V rated value | 40 hp |

Short-circuit protection

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|--|----------|
| 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 | 165 mm |
| width | 90 mm |
| depth | 176 mm |

required spacing

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|---|---|
| <ul style="list-style-type: none"> • with side-by-side mounting at the side | 0 mm |
| <ul style="list-style-type: none"> • for grounded parts at 400 V <ul style="list-style-type: none"> — downwards — upwards — at the side | 70 mm 70 mm 10 mm |
| <ul style="list-style-type: none"> • for live parts at 400 V <ul style="list-style-type: none"> — downwards — upwards — at the side | 70 mm 70 mm 10 mm |
| <ul style="list-style-type: none"> • for grounded parts at 500 V <ul style="list-style-type: none"> — downwards — upwards — at the side | 110 mm 110 mm 10 mm |
| <ul style="list-style-type: none"> • for live parts at 500 V <ul style="list-style-type: none"> — downwards — upwards — at the side | 110 mm 110 mm 10 mm |
| <ul style="list-style-type: none"> • for grounded parts at 690 V <ul style="list-style-type: none"> — downwards — upwards — backwards — at the side — forwards | 150 mm 150 mm 0 mm 30 mm 0 mm |
| <ul style="list-style-type: none"> • for live parts at 690 V <ul style="list-style-type: none"> — downwards — upwards — backwards — at the side — forwards | 150 mm 150 mm 0 mm 30 mm 0 mm |

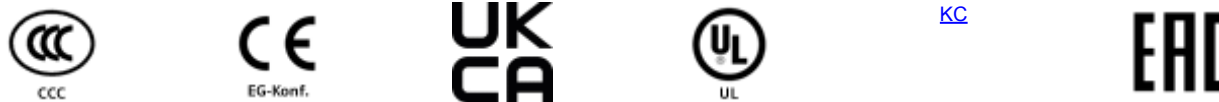
Connections/ Terminals

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|--|---|
| type of electrical connection | |
| <ul style="list-style-type: none"> • for main current circuit • for auxiliary and control circuit | screw-type terminals screw-type terminals |
| arrangement of electrical connectors for main current circuit | Top and bottom |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • for main contacts <ul style="list-style-type: none"> — solid — solid or stranded — finely stranded with core end processing — finely stranded without core end processing | 2x (2.5 ... 16 mm ²) 2x (2.5 ... 50 mm ²), 1x (10 ... 70 mm ²) 2x (2.5 ... 35 mm ²), 1x (2.5 ... 50 mm ²) 2x (10 ... 35 mm ²), 1x (10 ... 50 mm ²) |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • for auxiliary contacts <ul style="list-style-type: none"> — finely stranded with core end processing • for AWG cables for auxiliary contacts | 2x (0.5 ... 1.5 mm ²), 2x (0.75 ... 2.5 mm ²) 2x (20 ... 16), 2x (18 ... 14) |
| tightening torque | |
| <ul style="list-style-type: none"> • for main contacts for ring cable lug | 4.5 ... 6 N·m |
| outer diameter of the usable ring cable lug maximum | 19 mm |

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|---|--|
| tightening torque | |
| <ul style="list-style-type: none"> for main contacts with screw-type terminals for auxiliary contacts with screw-type terminals | <p>4.5 ... 6 N·m</p> <p>0.8 ... 1.2 N·m</p> |
| design of the thread of the connection screw | |
| <ul style="list-style-type: none"> of the auxiliary and control contacts | M3 |
| Safety related data | |
| product function suitable for safety function | Yes |
| suitability for use | |
| <ul style="list-style-type: none"> safety-related switching on safety-related switching OFF | <p>No</p> <p>Yes</p> |
| service life maximum | 10 a |
| test wear-related service life necessary | Yes |
| proportion of dangerous failures | |
| <ul style="list-style-type: none"> with low demand rate according to SN 31920 with high demand rate according to SN 31920 | <p>40 %</p> <p>50 %</p> |
| 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 | |
| <ul style="list-style-type: none"> for proof test interval or service life according to IEC 61508 | 10 a |
| 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

General Product Approval



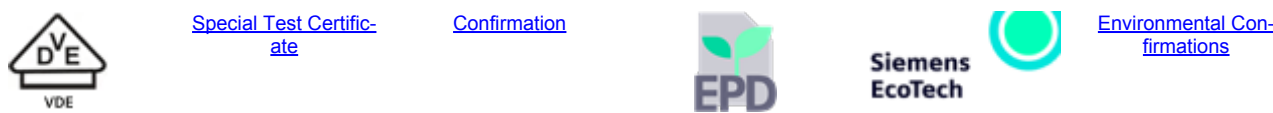
| | | |
|---------------------------------|--------------------------|-----------------------------|
| General Product Approval | Test Certificates | Maritime application |
|---------------------------------|--------------------------|-----------------------------|



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



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



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=3RV2142-4FA10>

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2142-4FA10>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2142-4FA10>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2142-4FA10&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RV2142-4FA10/char>

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

<https://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2142-4FA10&objecttype=14&gridview=view1>

