SIEMENS

## Data sheet 3RV2142-4YA10

Siemens EcoTech

Circuit breaker size S3 for motor protection CLASS 10 with overload relay function A-release 75...93 A N-release 1300 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 | 39 W |
| • at AC in hot operating state per pole | 13 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** | 2.341 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** | |
| 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** | 75 ... 93 A |
| **operating voltage** | |
| ● rated value | 20 ... 690 V |
| ● at AC-3 rated value maximum | 690 V |
| ● at AC-3e rated value maximum | 690 V |
| **operating frequency rated value** | 50 ... 60 Hz |
| **operational current rated value** | 93 A |
| **operational current** | |
| ● at AC-3 at 400 V rated value | 93 A |
| ● at AC-3e at 400 V rated value | 93 A |
| **operating power** | |
| ● at AC-3 | |
| — at 230 V rated value | 22 kW |
| — at 400 V rated value | 45 kW |
| — at 500 V rated value | 55 kW |
| — at 690 V rated value | 90 kW |
| ● at AC-3e | |
| — at 230 V rated value | 22 kW |
| — at 400 V rated value | 45 kW |
| — at 500 V rated value | 55 kW |
| — at 690 V rated value | 90 kW |
| **operating frequency** | |
| ● at AC-3 maximum | 15 1/h |
| ● at AC-3e maximum | 15 1/h |
| **Auxiliary circuit** | |
| **number of NC contacts for auxiliary contacts** | |
| ● note | 1 |
| **number of NO contacts for auxiliary contacts** | |
| ● note | 1 |
| **Protective and monitoring functions** | |
| **product function** | |
| ● ground fault detection | No |
| ● phase failure detection | Yes |
| **trip class** | CLASS 10 |
| **design of the overload release** | thermal |
| **maximum short-circuit current breaking capacity (Icu)** | |
| ● at AC at 240 V rated value | 100 kA |
| ● at AC at 400 V rated value | 100 kA |
| ● at AC at 500 V rated value | 10 kA |
| ● at AC at 690 V rated value | 6 kA |
| **operating short-circuit current breaking capacity (Ics) at AC** | |
| ● at 240 V rated value | 100 kA |
| ● at 400 V rated value | 50 kA |
| ● at 500 V rated value | 5 kA |
| ● at 690 V rated value | 3 kA |
| response value current of instantaneous short-circuit trip unit | 1 300 A |
| **UL/CSA ratings** | |
| **full-load current (FLA) for 3-phase AC motor** | |
| ● at 480 V rated value | 93 A |
| ● at 600 V rated value | 93 A |
| **yielded mechanical performance [hp]** | |
| ● for single-phase AC motor | |
| — at 110/120 V rated value | 7.5 hp |
| — at 230 V rated value | 20 hp |
| ● for 3-phase AC motor | |
| — at 200/208 V rated value | 30 hp |
| — at 220/230 V rated value | 40 hp |
| — at 460/480 V rated value | 75 hp |
| — at 575/600 V rated value | 100 hp |

| | |
|---|---|
| **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** | 165 mm |
| **width** | 90 mm |
| **depth** | 176 mm |
| **required spacing** | |
| ● with side-by-side mounting at the side | 0 mm |
| ● for grounded parts at 400 V | |
| — downwards | 70 mm |
| — upwards | 70 mm |
| — at the side | 10 mm |
| ● for live parts at 400 V | |
| — downwards | 70 mm |
| — upwards | 70 mm |
| — at the side | 10 mm |
| ● for grounded parts at 500 V | |
| — downwards | 110 mm |
| — upwards | 110 mm |
| — at the side | 10 mm |
| ● for live parts at 500 V | |
| — downwards | 110 mm |
| — upwards | 110 mm |
| — at the side | 10 mm |
| ● for grounded parts at 690 V | |
| — downwards | 150 mm |
| — upwards | 150 mm |
| — backwards | 0 mm |
| — at the side | 30 mm |
| — forwards | 0 mm |
| ● for live parts at 690 V | |
| — downwards | 150 mm |
| — upwards | 150 mm |
| — backwards | 0 mm |
| — at the side | 30 mm |
| — forwards | 0 mm |
| **Connections/ Terminals** | |
| **type of electrical connection** | |
| ● for main current circuit | screw-type terminals |
| ● for auxiliary and control circuit | screw-type terminals |
| **arrangement of electrical connectors for main current circuit** | Top and bottom |
| **type of connectable conductor cross-sections** | |
| ● for main contacts | |
| — solid | 2x (2.5 ... 16 mm²) |
| — solid or stranded | 2x (2,5 ... 50 mm²), 1x (10 ... 70 mm²) |
| — finely stranded with core end processing | 2x (2.5 ... 35 mm²), 1x (2.5 ... 50 mm²) |
| — finely stranded without core end processing | 2x (10 ... 35 mm²), 1x (10 ... 50 mm²) |
| **type of connectable conductor cross-sections** | |
| ● for auxiliary contacts | |
| — finely stranded with core end processing | 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²) |
| ● for AWG cables for auxiliary contacts | 2x (20 ... 16), 2x (18 ... 14) |
| **tightening torque** | |
| ● for main contacts for ring cable lug | 4.5 ... 6 N·m |
| **outer diameter of the usable ring cable lug maximum** | 19 mm |
| **tightening torque** | |
| ● for main contacts with screw-type terminals | 4.5 ... 6 N·m |
| ● for auxiliary contacts with screw-type terminals | 0.8 ... 1.2 N·m |

| | |
|---|---|
| **design of the thread of the connection screw** | |
| ● of the auxiliary and control contacts | M3 |
| **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** | |
| ● 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**

Confirmation

KC

**General Product Approval** | **Test Certificates** | **Marine / Shipping**

Type Test Certificates/Test Report

Special Test Certificate

**Marine / Shipping** | **other**

Miscellaneous

Confirmation

**Railway** | **Environment**

Special Test Certificate

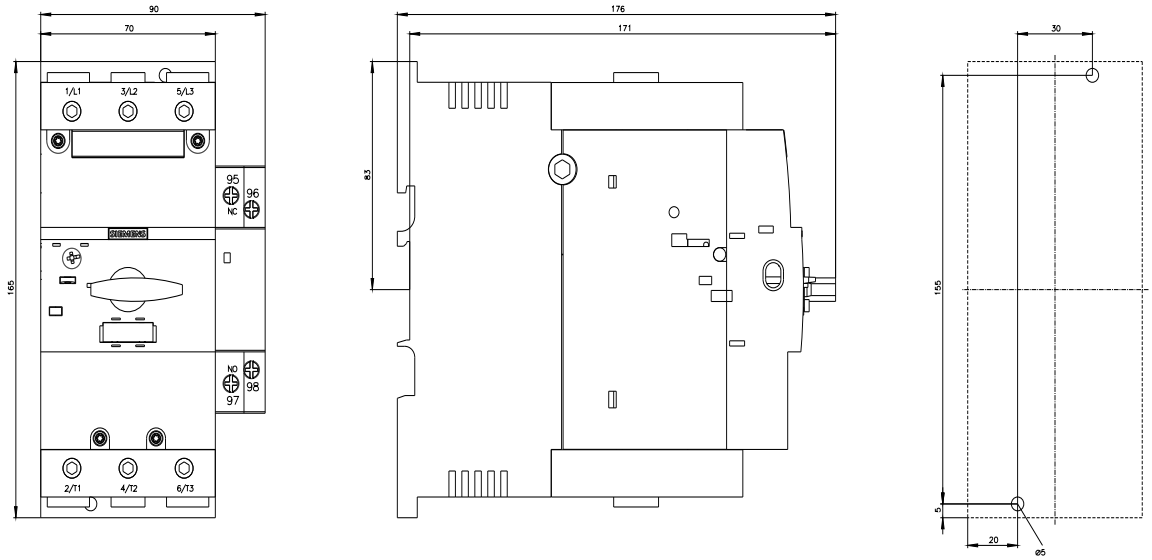
Confirmation

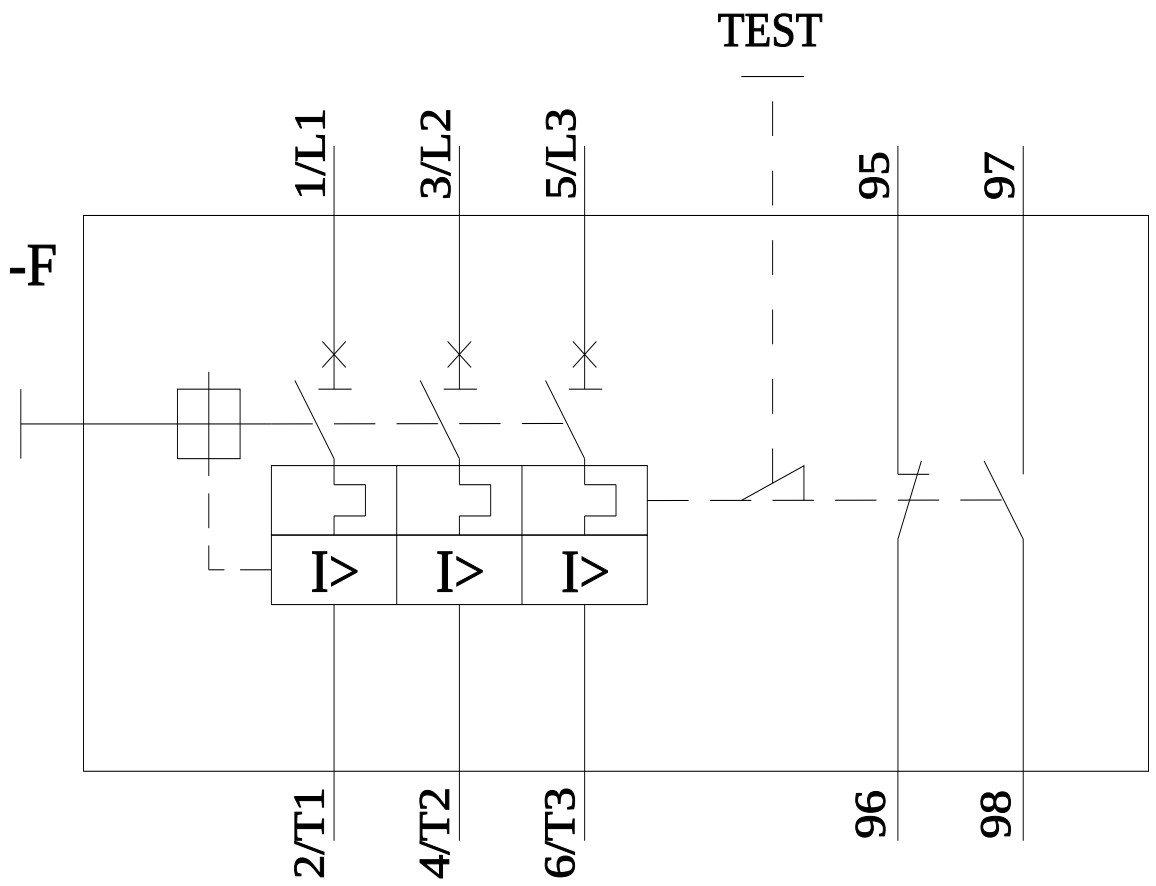
Environmental Confirmations

## 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=3RV2142-4YA10
**Cax online generator**
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2142-4YA10
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
https://support.industry.siemens.com/cs/ww/en/ps/3RV2142-4YA10
**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2142-4YA10&lang=en
**Characteristic: Tripping characteristics, I²t, Let-through current**
https://support.industry.siemens.com/cs/ww/en/ps/3RV2142-4YA10/char
**Further characteristics (e.g. electrical endurance, switching frequency)**
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2142-4YA10&objecttype=14&gridview=view1






**last modified:** 11/6/2024