SIEMENS

## Data sheet 3RV2421-4BA10

Circuit breaker size S0 for transformer protection A-release 13...20 A N-release 325 A Screw terminal Standard switching capacity

| | |
|---|---|
| **product brand name** | SIRIUS |
| **product designation** | Circuit breaker |
| **design of the product** | For transformer 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 |
| **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** | 13 ... 20 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** | 20 A |
| **operational current** | |
| ● at AC-3 at 400 V rated value | 20 A |
| ● at AC-3e at 400 V rated value | 20 A |
| **operating power** | |

| | |
|---|---|
| ● at AC-3 | |
| — at 230 V rated value | 5.5 kW |
| — at 400 V rated value | 7.5 kW |
| — at 500 V rated value | 11 kW |
| — at 690 V rated value | 15 kW |
| ● at AC-3e | |
| — at 230 V rated value | 5.5 kW |
| — at 400 V rated value | 7.5 kW |
| — at 500 V rated value | 11 kW |
| — at 690 V rated value | 15 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** | 0 |
| **number of NO contacts for auxiliary contacts** | 0 |
| number of CO contacts for auxiliary contacts | 0 |
| **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 | 55 kA |
| ● at AC at 500 V rated value | 10 kA |
| ● at AC at 690 V rated value | 4 kA |
| **operating short-circuit current breaking capacity (Ics) at AC** | |
| ● 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 | 325 A |
| **UL/CSA ratings** | |
| **full-load current (FLA) for 3-phase AC motor** | |
| ● at 480 V rated value | 20 A |
| ● at 600 V rated value | 20 A |
| **yielded mechanical performance [hp]** | |
| ● 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 | 5 hp |
| — at 460/480 V rated value | 10 hp |
| **Short-circuit protection** | |
| **product function short circuit protection** | Yes |
| **design of the short-circuit trip** | magnetic |
| **design of the fuse link for IT network for short-circuit protection of the main circuit** | |
| ● at 400 V | gL/gG 63 A |
| ● at 500 V | gL/gG 50 A |
| ● at 690 V | gL/gG 50 A |
| **Installation/ mounting/ dimensions** | |
| **mounting position** | any |
| **fastening method** | screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715 |
| **height** | 97 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 | screw-type 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 ... 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 |
| ● at AWG cables for main contacts | 2x (16 ... 12), 2x (14 ... 8) |
| **tightening torque** | |
| ● for main contacts with screw-type terminals | 2 ... 2.5 N·m |
| **design of screwdriver shaft** | Diameter 5 to 6 mm |
| **size of the screwdriver tip** | Pozidriv size 2 |
| **design of the thread of the connection screw** | |
| ● for main contacts | M4 |

## Safety related data

| | |
|---|---|
| **B10 value** | |
| ● with high demand rate according to SN 31920 | 5 000 |
| **proportion of dangerous failures** | |
| ● with low demand rate according to SN 31920 | 50 % |
| ● with high demand rate according to SN 31920 | 50 % |
| **failure rate [FIT]** | |
| ● with low demand rate according to SN 31920 | 50 FIT |
| T1 value for proof test interval or service life according to IEC 61508 | 10 y |
| **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 version for switching status | Handle |

## Certificates/ approvals

**General Product Approval**

Confirmation

KC

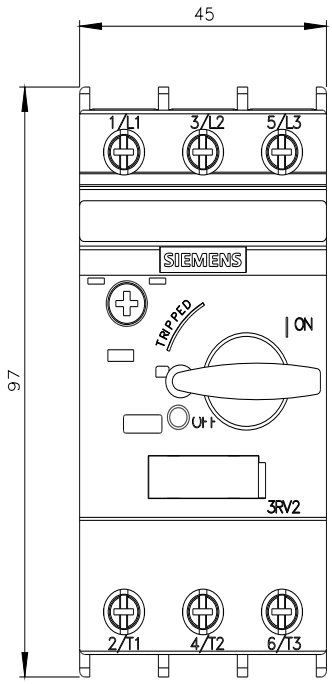
| Declaration of Conformity | Test Certificates | | Marine / Shipping | |
|---|---|---|---|---|
| | Special Test Certific-ate | Type Test Certific-ates/Test Report | | |

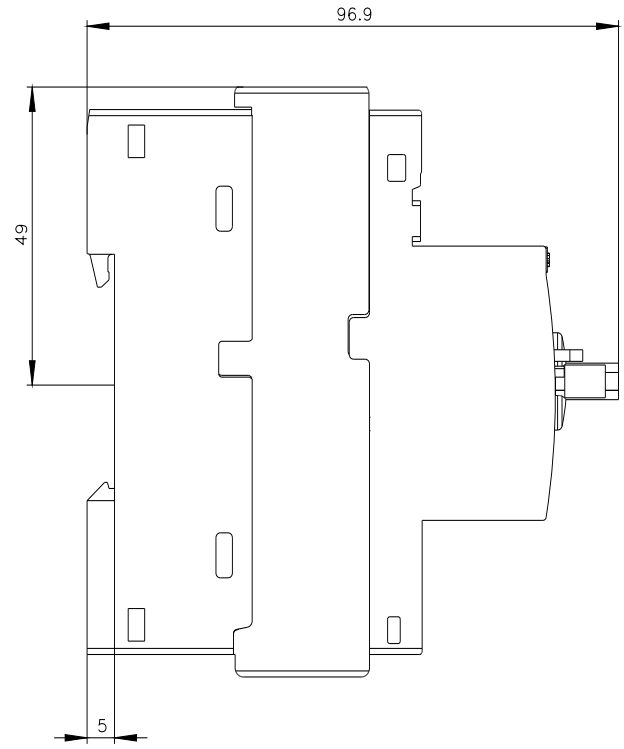
| Marine / Shipping | | | | | other |
|---|---|---|---|---|---|
| | | | | | Confirmation |

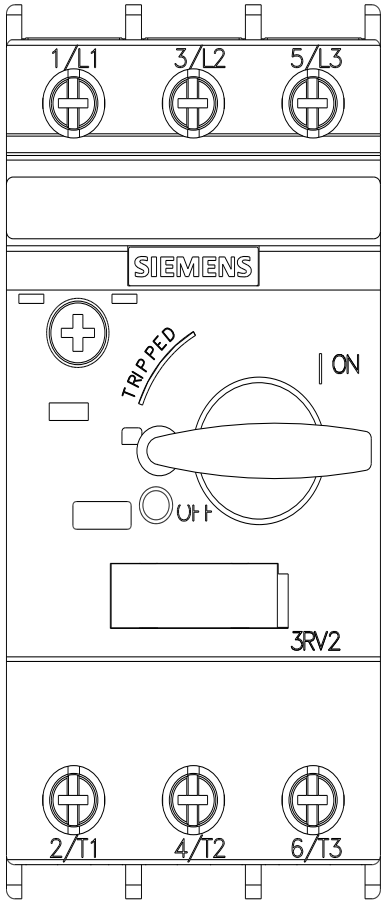
| other | Railway | |
|---|---|---|
| | Confirmation | Vibration and Shock |

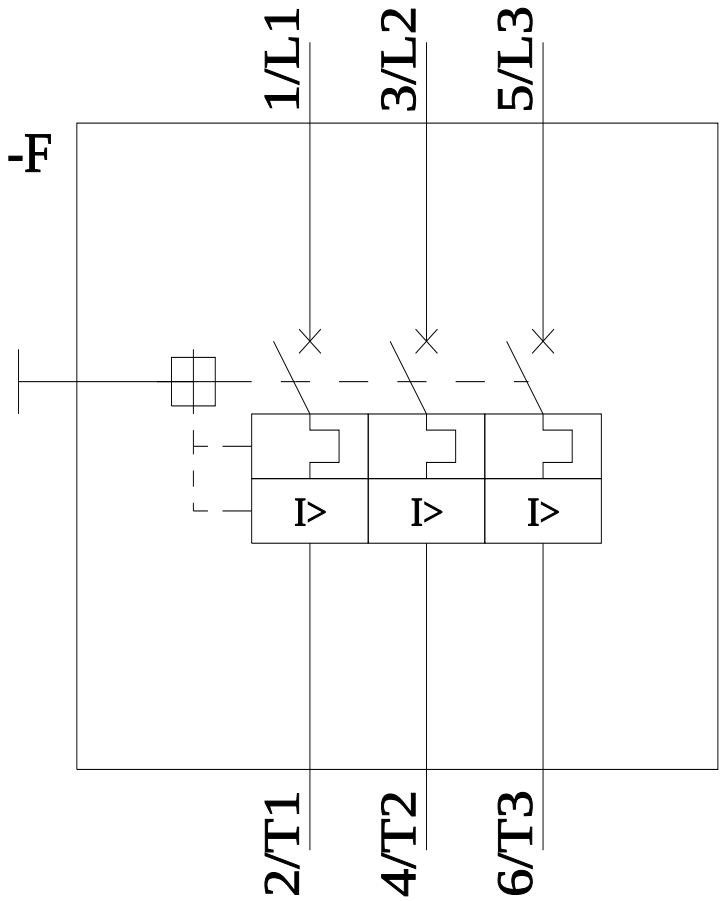
## Further information

**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=3RV2421-4BA10
**Cax online generator**
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2421-4BA10
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
https://support.industry.siemens.com/cs/ww/en/ps/3RV2421-4BA10
**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RV2421-4BA10&lang=en
**Characteristic: Tripping characteristics, I²t, Let-through current**
https://support.industry.siemens.com/cs/ww/en/ps/3RV2421-4BA10/char
**Further characteristics (e.g. electrical endurance, switching frequency)**
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2421-4BA10&objecttype=14&gridview=view1






**last modified:** 11/21/2022