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## Data sheet 3RF2310-1AA14



Solid-state contactor 1-phase 3RF2 AC 51 / 10 A / 40 °C 48-460 V / 24 V AC/DC screw terminal

| | |
|---|---|
| **product brand name** | SIRIUS |
| **product designation** | solid-state contactor |
| **design of the product** | single-phase |
| **product type designation** | 3RF23 |
| **manufacturer's article number** | |
| ● _1 of the accessories that can be ordered | 3RF2900-3PA88 |
| ● _3 of the accessories that can be ordered | 3RF2900-0EA18 |
| ● _4 of the accessories that can be ordered | 3RF2920-0GA16 |
| **product designation** | |
| ● _1 of the accessories that can be ordered | terminal cover |
| ● _3 of the accessories that can be ordered | converter |
| ● _4 of the accessories that can be ordered | load monitoring |
| **General technical data** | |
| **product function** | zero-point switching |
| **power loss [W] for rated value of the current** | |
| ● at AC in hot operating state | 11 W |
| ● at AC in hot operating state per pole | 11 W |
| ● without load current share typical | 0.5 W |
| **insulation voltage rated value** | 600 V |
| **degree of pollution** | 3 |
| **type of voltage** | |
| ● of the operating voltage | AC |
| ● of the control supply voltage | AC/DC |
| surge voltage resistance of main circuit rated value | 6 kV |
| **shock resistance according to IEC 60068-2-27** | 15g / 11 ms |
| **vibration resistance according to IEC 60068-2-6** | 2g |
| **reference code according to EN 61346-2** | Q |
| **reference code according to IEC 81346-2** | Q |
| **Substance Prohibitance (Date)** | 05/28/2009 |
| **Main circuit** | |
| **number of poles for main current circuit** | 1 |
| **number of NO contacts for main contacts** | 1 |
| **number of NC contacts for main contacts** | 0 |
| **type of voltage of the operating voltage** | AC |
| **operating voltage** | |
| ● at AC | |
| — at 50 Hz rated value | 48 ... 460 V |
| — at 60 Hz rated value | 48 ... 460 V |
| **operating frequency rated value** | 50 ... 60 Hz |
| **operating range relative to the operating voltage at AC** | |


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| • at 50 Hz | 40 ... 506 V |
| • at 60 Hz | 40 ... 506 V |
| **operational current** | |
| • at AC-51 rated value | 10.5 A |
| • at AC-51 according to IEC 60947-4-3 | 7.5 A |
| • according to UL 508 rated value | 9.6 A |
| **operational current minimum** | 100 mA |
| **rate of voltage rise at the thyristor for main contacts maximum permissible** | 500 V/µs |
| **blocking voltage at the thyristor for main contacts maximum permissible** | 1 200 V |
| **reverse current of the thyristor** | 10 mA |
| **derating temperature** | 40 °C |
| **surge current resistance rated value** | 200 A |
| **I2t value maximum** | 200 A²·s |
| **Control circuit/ Control** | |
| **type of voltage of the control supply voltage** | AC/DC |
| **control supply voltage 1 at AC** | |
| • at 50 Hz | 24 ... 24 V |
| • at 60 Hz | 24 ... 24 V |
| **control supply voltage frequency** | |
| • **1 rated value** | 50 Hz |
| • **2 rated value** | 60 Hz |
| **control supply voltage 1** | |
| • at DC rated value | 30 V |
| • at DC | 15 ... 24 V |
| **control supply voltage at AC** | |
| • at 50 Hz full-scale value for signal<0> recognition | 5 V |
| • at 60 Hz full-scale value for signal<0> recognition | 5 V |
| **control supply voltage** | |
| • at AC initial value for signal <1> detection | 14 V |
| • at DC initial value for signal <1> detection | 15 V |
| • at DC full-scale value for signal<0> recognition | 5 V |
| **symmetrical line frequency tolerance** | 5 Hz |
| **control current at minimum control supply voltage** | |
| • at AC | 2 mA |
| control current at AC rated value | 15 mA |
| control current at DC rated value | 20 mA |
| **ON-delay time** | 1 ms; additionally max. one half-wave |
| **OFF-delay time** | 15 ms; additionally max. one half-wave |
| **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 |
| **Installation/ mounting/ dimensions** | |
| **fastening method** | screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715 |
| • side-by-side mounting | Yes |
| **design of the thread of the screw for securing the equipment** | M4 |
| **height** | 95 mm |
| **width** | 22.5 mm |
| **depth** | 88 mm |
| **Connections/ Terminals** | |
| **product component removable terminal for auxiliary and control circuit** | Yes |
| **type of electrical connection** | |
| • for main current circuit | screw-type terminals |
| • for auxiliary and control circuit | screw-type terminals |
| **type of connectable conductor cross-sections** | |
| • for main contacts | |
| — solid | 2x (1.5 ... 2.5 mm²), 2x (2.5 ... 6 mm²) |


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| — 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 (14 ... 10) |
| **connectable conductor cross-section for main contacts** | |
| • solid or stranded | 1.5 ... 6 mm² |
| • finely stranded with core end processing | 1 ... 10 mm² |
| **type of connectable conductor cross-sections** | |
| • for auxiliary and control contacts | |
| — solid | 1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²) |
| — finely stranded with core end processing | 1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²) |
| — finely stranded without core end processing | 1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²) |
| • for AWG cables for auxiliary and control contacts | 1x (AWG 20 ... 12) |
| AWG number as coded connectable conductor cross section for main contacts | 10 ... 14 |
| **tightening torque** | |
| • for main contacts with screw-type terminals | 2 ... 2.5 N·m |
| • for auxiliary and control contacts with screw-type terminals | 0.5 ... 0.6 N·m |
| **tightening torque [lbf·in]** | |
| • for main contacts with screw-type terminals | 18 ... 22 lbf·in |
| • for auxiliary and control contacts with screw-type terminals | 4.5 ... 5.3 lbf·in |
| **design of the thread of the connection screw** | |
| • for main contacts | M4 |
| • of the auxiliary and control contacts | M3 |
| **stripped length of the cable** | |
| • for main contacts | 7 mm |
| • for auxiliary and control contacts | 7 mm |
| **Safety related data** | |
| **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 |
| **Ambient conditions** | |
| installation altitude at height above sea level maximum | 1 000 m |
| **ambient temperature** | |
| • during operation | -25 ... +60 °C |
| • during storage | -55 ... +80 °C |
| **Electromagnetic compatibility** | |
| **conducted interference** | |
| • due to burst according to IEC 61000-4-4 | 2 kV / 5 kHz behavior criterion 2 |
| • due to conductor-earth surge according to IEC 61000-4-5 | 2 kV behavior criterion 2 |
| • due to conductor-conductor surge according to IEC 61000-4-5 | 1 kV behavior criterion 2 |
| • due to high-frequency radiation according to IEC 61000-4-6 | 140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1 |
| **field-based interference according to IEC 61000-4-3** | 80 MHz ... 1 GHz 10 V/m, behavior criterion 1 |
| **electrostatic discharge according to IEC 61000-4-2** | 4 kV contact discharging / 8 kV air discharging, behavior criterion 2 |
| **conducted HF interference emissions according to CISPR11** | Class A for industrial environment |
| **field-bound HF interference emission according to CISPR11** | Class B for the domestic, business and commercial environments |
| **Short-circuit protection, design of the fuse link** | |
| manufacturer's article number | |
| • of gS fuse for semiconductor protection at NH design usable | 3NE1813-0 |
| • of full range R fuse link for semiconductor protection at cylindrical design usable | 5SE1316 |
| • of back-up R fuse link for semiconductor protection at NH design usable | 3NE8015-1 |
| • of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable | 3NC1016 |
| • of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable | 3NC1420 |
| • of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable | 3NC2220 |
| manufacturer's article number of the gG fuse | |
| • at NH design usable | 3NA6801 |


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| ● at cylindrical design 10 x 38 mm usable | 3NW6001-1: These fuses have a smaller rated current than the semiconductor relays |
| ● at cylindrical design 14 x 51 mm usable | 3NW6101-1: These fuses have a smaller rated current than the semiconductor relays |
| manufacturer's article number | |
| ● of NEOZED fuse usable | 5SE2306: These fuses have a smaller rated current than the semiconductor relays |

## Certificates/ approvals

| General Product Approval | | | | EMC | Declaration of Conformity |
|---|---|---|---|---|---|
| CSA | Confirmation | UL | EAC | RCM | UKCA |

| Declaration of Conformity | Test Certificates | | other | | Railway |
|---|---|---|---|---|---|
| EG-Konf. | Special Test Certificate | Type Test Certificates/Test Report | Confirmation | VDE | Vibration and Shock |

## Further information

**Siemens has decided to exit the Russian market (see here).**
https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business

**Siemens is working on the renewal of the current EAC certificates.**
Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

**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=3RF2310-1AA14

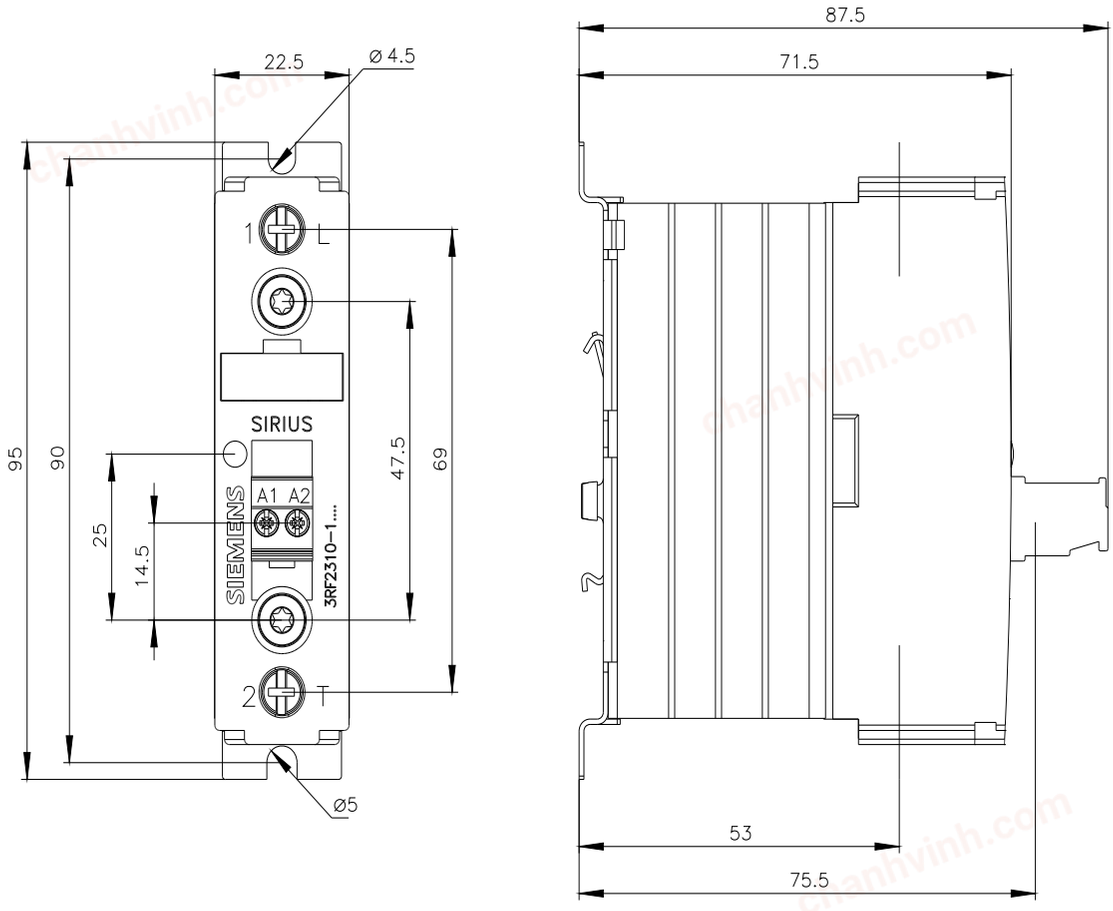
**Cax online generator**
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2310-1AA14

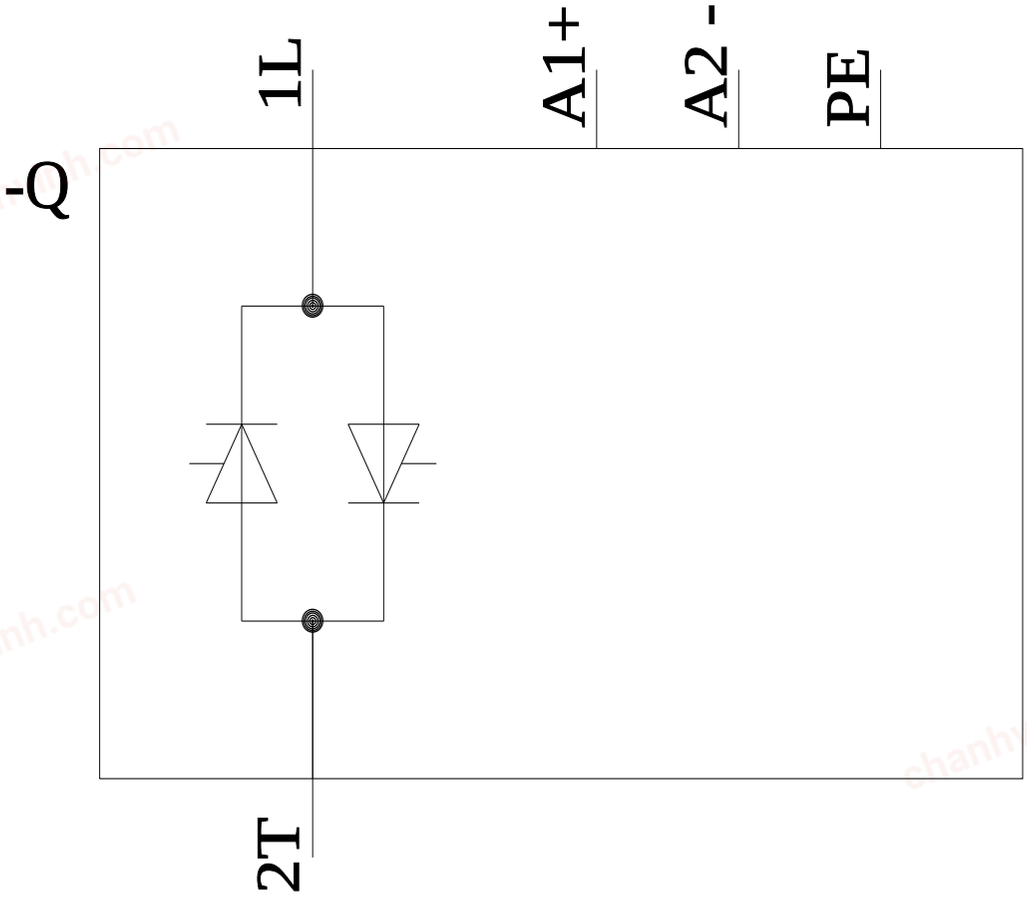
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
https://support.industry.siemens.com/cs/ww/en/ps/3RF2310-1AA14

**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2310-1AA14&lang=en


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