SIEMENS

## Data sheet 3RF2320-1AA14

Solid-state contactor 1-phase 3RF2 AC 51 / 20 A / 40 °C 48-460 V / 24 V AC/DC screw terminal

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| **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 | 20 W |
| ● at AC in hot operating state per pole | 20 W |
| ● without load current share typical | 0.5 W |
| **insulation voltage rated value** | 600 V |
| **degree of pollution** | 3 |
| type of voltage 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 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 |
| 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** | |
| ● at 50 Hz | 40 ... 506 V |
| ● at 60 Hz | 40 ... 506 V |
| **operational current** | |
| ● at AC-51 rated value | 20 A |
| ● at AC-51 according to IEC 60947-4-3 | 13.2 A |
| ● according to UL 508 rated value | 17.6 A |

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| **operational current minimum** | 500 mA |
| **rate of voltage rise at the thyristor for main contacts maximum permissible** | 1 000 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** | 600 A |
| **I2t value maximum** | 1 800 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** | 120 mm |
| **Connections/ Terminals** | |
| **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) |
| — 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 (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) |

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| — finely stranded without core end processing | 1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²) |
| • at 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 | 3NE1814-0 |
| • of full range R fuse link for semiconductor protection at cylindrical design usable | 5SE1325 |
| • 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 | 3NC1032 |
| • of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable | 3NC1450 |
| • of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable | 3NC2263 |
| manufacturer's article number of the gG fuse | |
| • at NH design usable | 3NA6807 |
| • at cylindrical design 10 x 38 mm usable | 3NW6005-1; These fuses have a smaller rated current than the semiconductor relays |
| • at cylindrical design 14 x 51 mm usable | 3NW6105-1; These fuses have a smaller rated current than the semiconductor relays |
| • at cylindrical design 22 x 58 mm usable | 3NW6205-1; These fuses have a smaller rated current than the semiconductor relays |
| manufacturer's article number | |
| • of DIAZED fuse usable | 5SB2711 |

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| ● of NEOZED fuse usable | 5SE2320 |

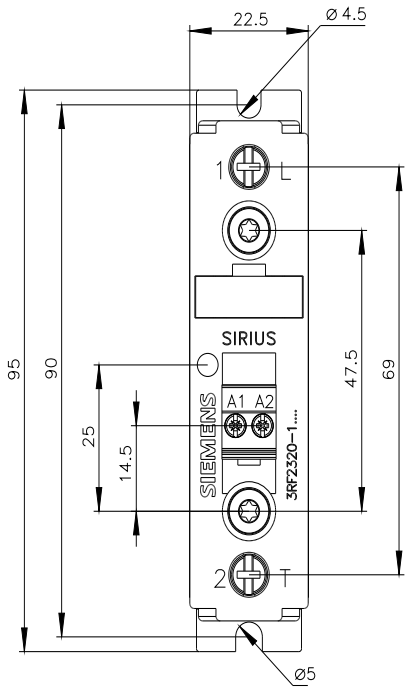
## Certificates/ approvals

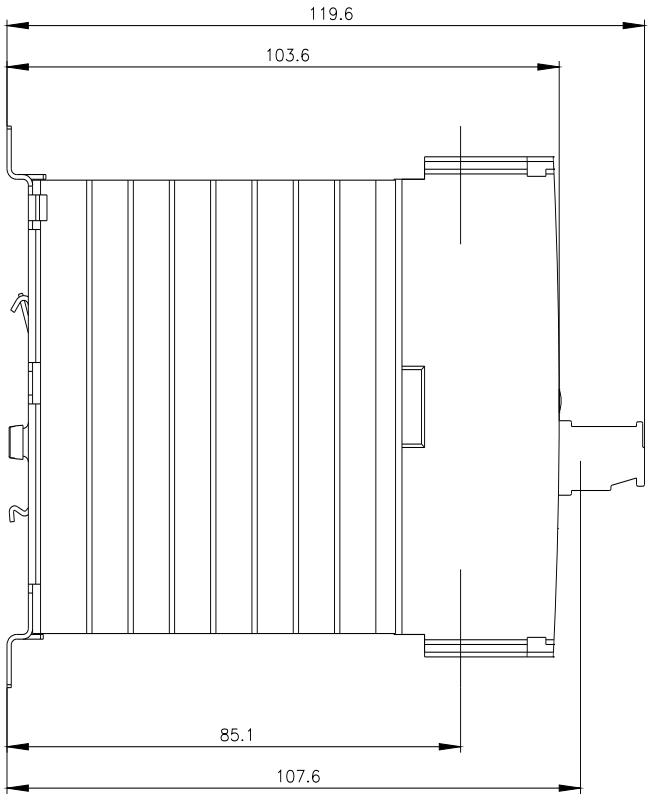
| General Product Approval | | | | EMC | Declaration of Conformity |
|---|---|---|---|---|---|
| CSA | Confirmation | UL | EAC | RCM | CE EG-Konf. |

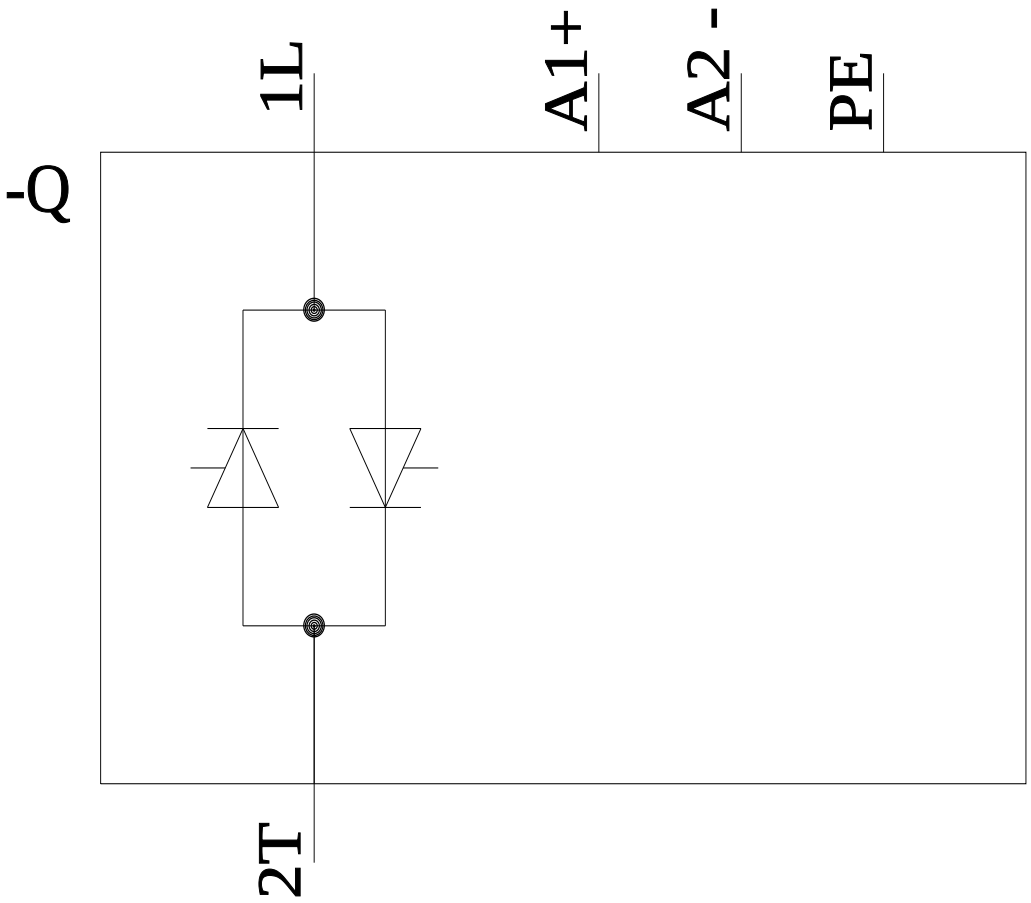
| Declaration of Conformity | Test Certificates | | other | | Railway |
|---|---|---|---|---|---|
| UKCA | Type Test Certificates/Test Report | Special Test Certificate | Confirmation | VDE | Vibration and Shock |

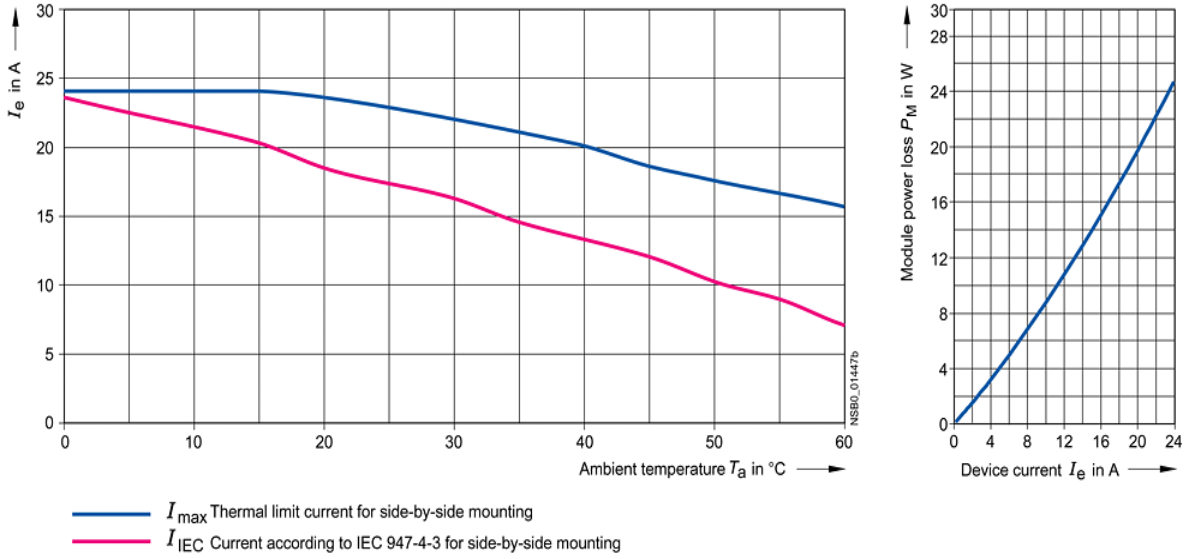
## Further information

**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=3RF2320-1AA14
**Cax online generator**
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2320-1AA14
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
https://support.industry.siemens.com/cs/ww/en/ps/3RF2320-1AA14
**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2320-1AA14&lang=en



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