



Solid-state contactor 1-phase 3RF2 AC 51 / 20 A / 40 °C 24-230 V / 24 V DC
Spring-type 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 | |
| <ul style="list-style-type: none"> _3 of the accessories that can be ordered | 3RF2900-0EA18 |
| product designation | |
| <ul style="list-style-type: none"> _3 of the accessories that can be ordered | converter |
| General technical data | |
| product function | zero-point switching |
| power loss [W] for rated value of the current | |
| <ul style="list-style-type: none"> at AC in hot operating state | 20 W |
| <ul style="list-style-type: none"> at AC in hot operating state per pole | 20 W |
| <ul style="list-style-type: none"> without load current share typical | 0.4 W |
| insulation voltage rated value | 600 V |
| degree of pollution | 3 |
| type of voltage | |
| <ul style="list-style-type: none"> of the operating voltage | AC |
| <ul style="list-style-type: none"> of the control supply voltage | DC |
| surge voltage resistance of main circuit rated value | 6 kV |
| protection class IP | IP20 |
| protection class IP on the front according to IEC 60529 | IP20 |
| 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 |
| SVHC substance name | Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Dibutylbis(pentane-2,4-dionato-O,O')tin - 22673-19-4 |
| Weight | 0.18 kg |
| 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 | |
| <ul style="list-style-type: none"> at AC | |
| <ul style="list-style-type: none"> at 50 Hz rated value | 24 ... 230 V |
| <ul style="list-style-type: none"> at 60 Hz rated value | 24 ... 230 V |
| operating frequency rated value | 50 ... 60 Hz |
| operating range relative to the operating voltage at AC | |

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| <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 20 ... 253 V |
| operational current | |
| <ul style="list-style-type: none"> • at AC-51 rated value • at AC-51 according to IEC 60947-4-3 • according to UL 508 rated value | 20 A 13.2 A 17.6 A |
| operational current minimum | 500 mA |
| rate of voltage rise at the thyristor for main contacts maximum permissible | 1 000 V/ μ s |
| blocking voltage at the thyristor for main contacts maximum permissible | 800 V |
| reverse current of the thyristor | 10 mA |
| derating temperature | 40 °C |
| surge current resistance rated value | 600 A |
| I²t value maximum | 1 800 A ² ·s |
| Control circuit/ Control | |
| type of voltage of the control supply voltage | DC |
| control supply voltage 1 at DC rated value maximum permissible | 30 V |
| control supply voltage 1 at DC | 15 ... 24 V |
| control supply voltage | |
| <ul style="list-style-type: none"> • at DC initial value for signal <1> detection • at DC full-scale value for signal<0> recognition | 15 V 5 V |
| control current at minimum control supply voltage | |
| <ul style="list-style-type: none"> • at DC | 13 mA |
| control current at DC rated value | 15 mA |
| ON-delay time | 1 ms; additionally max. one half-wave |
| OFF-delay time | 1 ms; additionally max. one half-wave |
| Auxiliary circuit | |
| type of switching contact | normally open contact (NO) |
| 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 side-by-side mounting | Yes |
| fastening method | screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715 |
| design of the thread of the screw for securing the equipment | M4 |
| height | 95 mm |
| width | 22.5 mm |
| depth | 120 mm |
| Connections/ Terminals | |
| product component removable terminal for auxiliary and control circuit | Yes |
| type of electrical connection | |
| <ul style="list-style-type: none"> • for main current circuit • for auxiliary and control circuit | spring-loaded terminals spring-loaded terminals |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • for main contacts <ul style="list-style-type: none"> — solid — finely stranded with core end processing — finely stranded without core end processing • for AWG cables for main contacts | 2x (0.5 ... 2.5 mm ²) 2x (0.5 ... 1.5 mm ²) 2x (0.5 ... 2.5 mm ²) 2x (18 ... 14) |
| connectable conductor cross-section for main contacts | |
| <ul style="list-style-type: none"> • solid or stranded • finely stranded with core end processing • finely stranded without core end processing | 0.5 ... 2.5 mm ² 0.5 ... 0.5 mm ² 0.5 ... 2.5 mm ² |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • for auxiliary and control contacts <ul style="list-style-type: none"> — solid — finely stranded with core end processing | 0.5 ... 1.5 mm ² 0.5 ... 2.5 mm ² |

| | | | | | |
|---|---|------------------------------|---|---|---|
| — finely stranded without core end processing | 0.5 ... 2.5 mm ² | | | | |
| • for AWG cables for auxiliary and control contacts | 1x (AWG 20 ... 12) | | | | |
| AWG number as coded connectable conductor cross section for main contacts | 14 ... 18 | | | | |
| stripped length of the cable | | | | | |
| • for main contacts | 7 mm | | | | |
| • for auxiliary and control contacts | 7 mm | | | | |
| 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 | | | | |
| 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 | 3NW6007-1 | | | | |
| • at cylindrical design 14 x 51 mm usable | 3NW6107-1 | | | | |
| • at cylindrical design 22 x 58 mm usable | 3NW6207-1: These fuses have a smaller rated current than the semiconductor relays | | | | |
| manufacturer's article number | | | | | |
| • of DIAZED fuse usable | 5SB2711 | | | | |
| • of NEOZED fuse usable | 5SE2320 | | | | |
| Approvals Certificates | | | | | |
| General Product Approval | EMV | | | | |
|  |  | Confirmation |  |  |  |
| Test Certificates | other | Railway | Environment | | |



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=3RF2320-2AA02>

Cax online generator

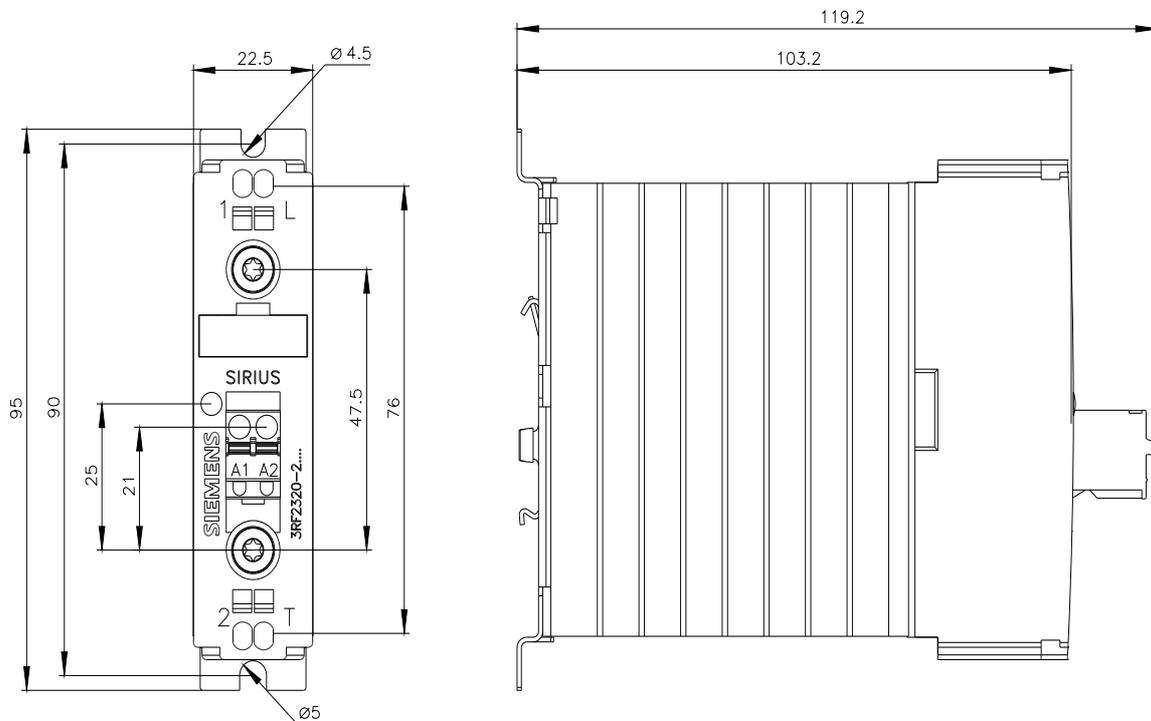
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2320-2AA02>

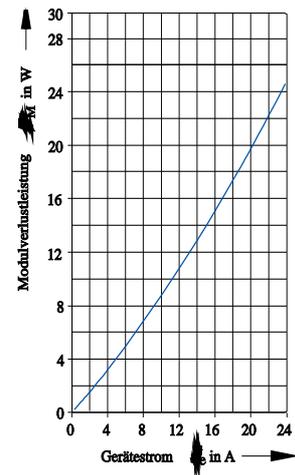
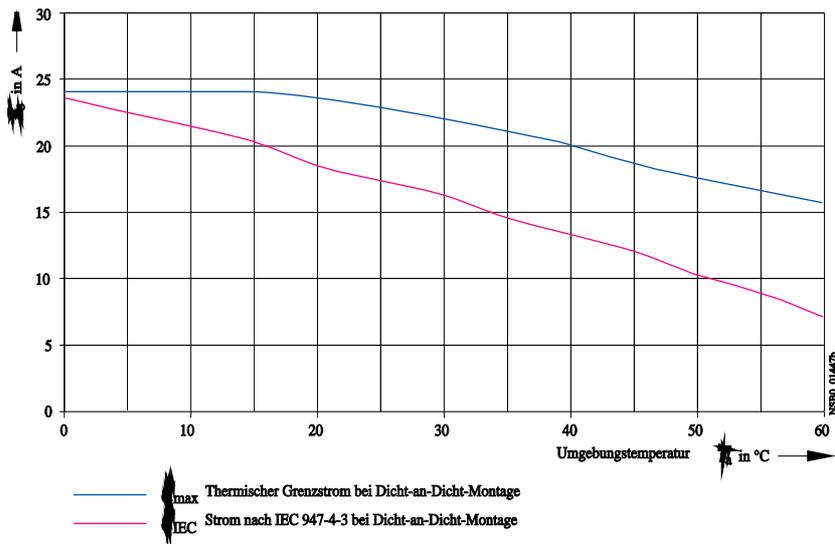
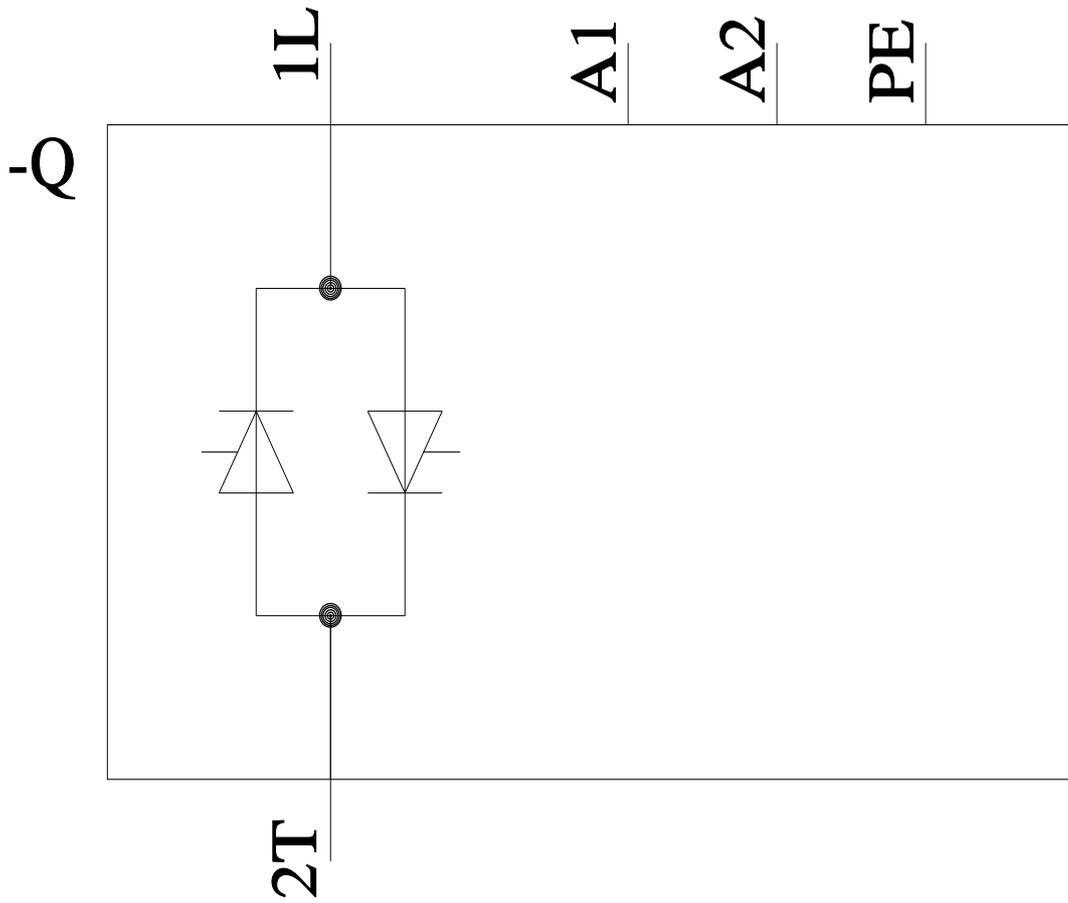
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2320-2AA02>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2320-2AA02&lang=en





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