



Solid-state contactor 1-phase 3RF2 AC 51 / 20 A / 40 °C 48-460 V / 4-30 V DC
short circuit-proof with B miniature circuit breaker

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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 |
| • _5 of the accessories that can be ordered | 3RF2920-0FA08 |
| 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 |
| • _5 of the accessories that can be ordered | load monitoring, basis |
| General technical data | |
| product function | short-circuit resistant with B-automatic device |
| 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 operating voltage | AC |
| • 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 | 0.19 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 |

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| 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 |
| operational current minimum | 500 mA |
| operational current of the MCB at AC rated value | 20 A |
| 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 | 1 150 A |
| I²t value maximum | 6 600 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 | 4 ... 24 V |
| control supply voltage | |
| • at DC initial value for signal <1> detection | 4 V |
| • at DC full-scale value for signal<0> recognition | 1 V |
| control current at minimum control supply voltage | |
| • at DC | 18 mA |
| control current at DC rated value | 20 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 | |
| • 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 mm ²), 2x (2.5 ... 6 mm ²) |
| — finely stranded with core end processing | 2x (1 ... 2.5 mm ²), 2x (2.5 ... 6 mm ²), 1x 10 mm ² |
| • for AWG cables for main contacts | 2x (14 ... 10) |
| connectable conductor cross-section for main contacts | |
| • solid or stranded | 1.5 ... 6 mm ² |

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| <ul style="list-style-type: none"> finely stranded with core end processing | 1 ... 10 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 finely stranded without core end processing for AWG cables for auxiliary and control contacts | 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²) 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²) 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²) 1x (AWG 20 ... 12) |
| AWG number as coded connectable conductor cross section for main contacts | 10 ... 14 |
| tightening torque <ul style="list-style-type: none"> for main contacts with screw-type terminals for auxiliary and control contacts with screw-type terminals | 2 ... 2.5 N·m 0.5 ... 0.6 N·m |
| tightening torque [lbf·in] <ul style="list-style-type: none"> for main contacts with screw-type terminals for auxiliary and control contacts with screw-type terminals | 18 ... 22 lbf·in 4.5 ... 5.3 lbf·in |
| design of the thread of the connection screw <ul style="list-style-type: none"> for main contacts of the auxiliary and control contacts | M4 M3 |
| stripped length of the cable <ul style="list-style-type: none"> for main contacts for auxiliary and control contacts | 7 mm 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 <ul style="list-style-type: none"> during operation during storage | -25 ... +60 °C -55 ... +80 °C |
| Electromagnetic compatibility | |
| conducted interference <ul style="list-style-type: none"> due to burst according to IEC 61000-4-4 due to conductor-earth surge according to IEC 61000-4-5 due to conductor-conductor surge according to IEC 61000-4-5 due to high-frequency radiation according to IEC 61000-4-6 | 2 kV / 5 kHz behavior criterion 2 2 kV behavior criterion 2 1 kV behavior criterion 2 140 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 <ul style="list-style-type: none"> of gS fuse for semiconductor protection at NH design usable of full range R fuse link for semiconductor protection at cylindrical design usable of back-up R fuse link for semiconductor protection at NH design usable of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable | 3NE1814-0 5SE1325 3NE8015-1 3NC1032 3NC1450 3NC2263 |
| manufacturer's article number of the gG fuse <ul style="list-style-type: none"> at NH design usable at cylindrical design 10 x 38 mm usable at cylindrical design 14 x 51 mm usable at cylindrical design 22 x 58 mm usable | 3NA6807 3NW6005-1: These fuses have a smaller rated current than the semiconductor relays 3NW6105-1: These fuses have a smaller rated current than the semiconductor relays 3NW6205-1: These fuses have a smaller rated current than the semiconductor relays |


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| | relays |
| manufacturer's article number | |
| • of DIAZED fuse usable | 5SB2711 |
| • of NEOZED fuse usable | 5SE2320 |

| Approvals Certificates | |
|--------------------------|-----|
| General Product Approval | EMV |



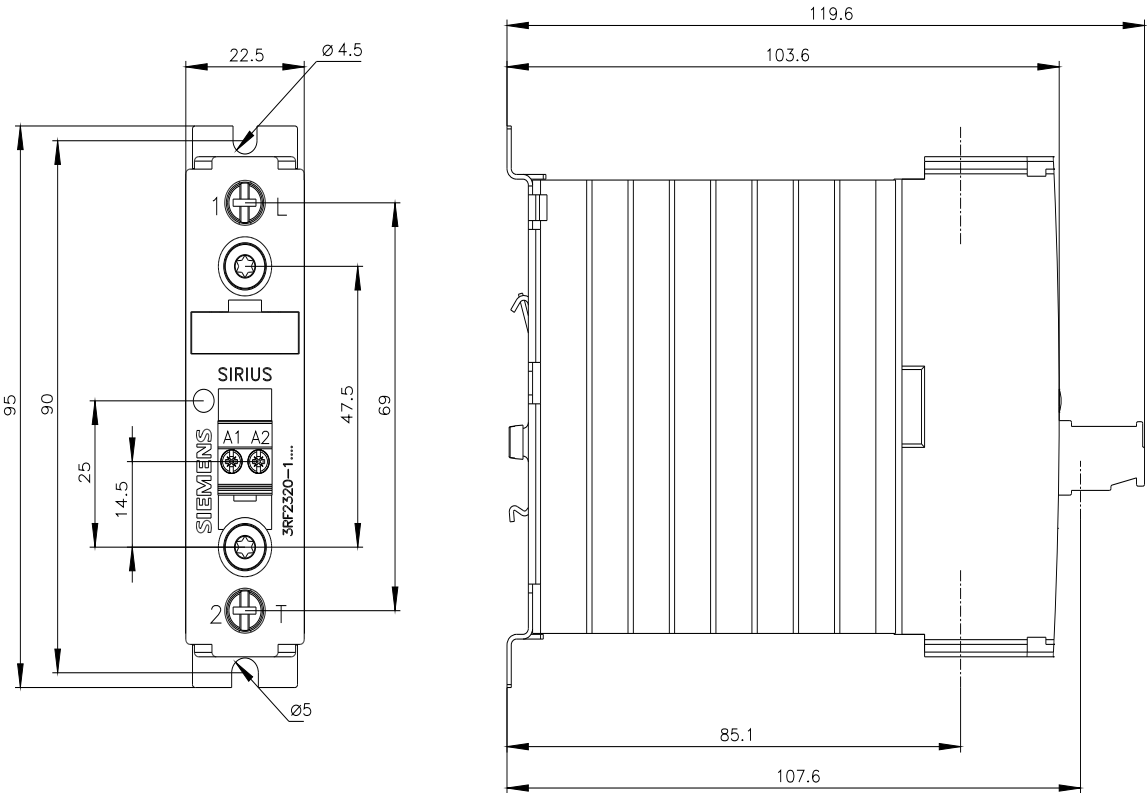
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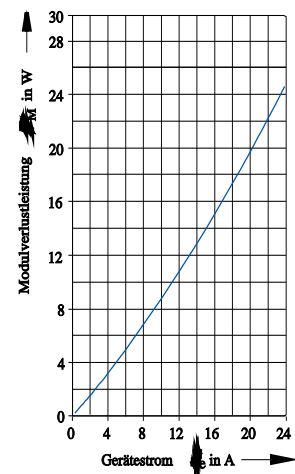
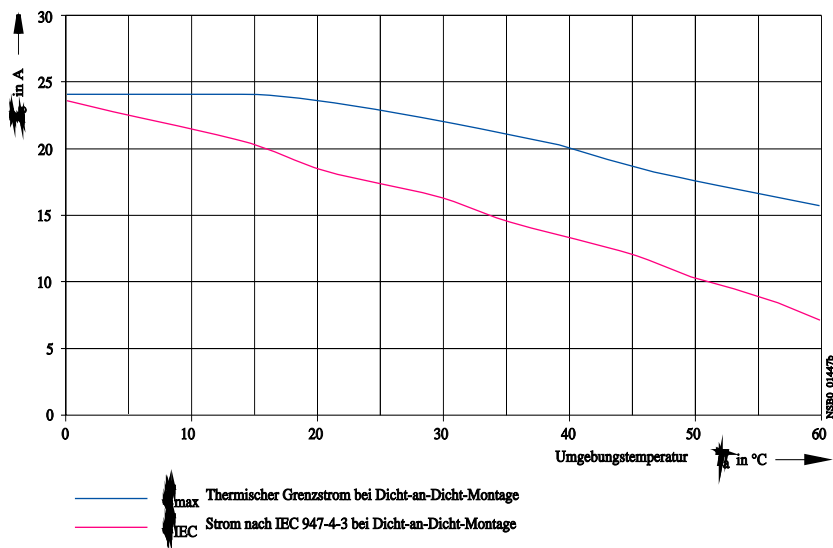


| Test Certificates | | other | Railway | Environment |
|--|--|---|--|---|
| Type Test Certificates/Test Report | Special Test Certificate | Confirmation | Special Test Certificate | Environmental Confirmations |
| | |  | | |

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=3RF2320-1DA44>
 Cax online generator
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2320-1DA44>
 Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
<https://support.industry.siemens.com/cs/ww/en/ps/3RF2320-1DA44>
 Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2320-1DA44&lang=en





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