

Solid-state contactor 1-phase 3RF2 AC 51 / 88 A / 40 °C 48-460 V / 24 V DC Ring cable connection Phased-out product, no successor available!

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|---|---|
| product brand name | SIRIUS |
| product designation | solid-state contactor |
| product type designation | 3RF23 |
| manufacturer's article number | |
| <ul style="list-style-type: none"> • _1 of the accessories that can be ordered • _3 of the accessories that can be ordered • _4 of the accessories that can be ordered | 3RF2900-3PA88 3RF2900-0EA18 3RF2990-0GA16 |
| product designation | |
| <ul style="list-style-type: none"> • _1 of the accessories that can be ordered • _3 of the accessories that can be ordered • _4 of the accessories that can be ordered | terminal cover converter load monitoring |
| 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 • at AC in hot operating state per pole • without load current share typical | 117 W 117 W 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 • of the control supply voltage | AC DC |
| surge voltage resistance of main circuit rated value | 6 kV |
| protection class IP | IP00 |
| protection class IP on the front according to IEC 60529 | IP00 |
| 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 Prohibittance (Date) | 07/01/2006 |
| SVHC substance name | Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 |
| Weight | 3.37 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 — at 60 Hz rated value | 48 ... 460 V 48 ... 460 V |
| operating frequency rated value | 50 ... 60 Hz |
| operating range relative to the operating voltage at AC | |
| <ul style="list-style-type: none"> • at 50 Hz • at 60 Hz | 40 ... 506 V 40 ... 506 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 | 88 A 88 A 80 A |
| operational current minimum | 500 mA |
| rate of voltage rise at the thyristor for main contacts | 1 000 V/μs |

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| maximum permissible | |
| 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 |
| I ² t 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 | 15 ... 24 V |
| control supply voltage | |
| • at DC initial value for signal <1> detection | 15 V |
| • at DC full-scale value for signal<0> recognition | 5 V |
| control current at minimum control supply voltage | |
| • 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 |
| design of the thread of the screw for securing the equipment | M4 |
| height | 200 mm |
| width | 180 mm |
| depth | 163 mm |
| Connections/ Terminals | |
| product component removable terminal for auxiliary and control circuit | Yes |
| type of electrical connection | |
| • for main current circuit | Ring cable lug connection |
| • for auxiliary and control circuit | ring terminal lug connection |
| type of connectable conductor cross-sections | |
| • for main contacts for JIS cable lug | JIS C 2805 R 2-5, 5,5-5, 8-5, 14-5 |
| • for DIN cable lug for main contacts | DIN 46234 -5-2,5, -5-6, -5-10, -5-16, -5-25 |
| type of connectable conductor cross-sections | |
| • for auxiliary and control contacts | |
| — solid | 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²) |
| — finely stranded with core end processing | 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²) |
| — finely stranded without core end processing | 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²) |
| • for AWG cables for auxiliary and control contacts | 1x (AWG 20 ... 12) |
| 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 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 | M5 |
| • of the auxiliary and control contacts | M3 |
| stripped length of the cable | |
| • for main contacts | 10 mm |
| • for auxiliary and control contacts | 10 mm |
| Electrical Safety | |

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| protection class IP on the front according to IEC 60529 | IP00; IP20 with cover |
| touch protection on the front according to IEC 60529 | finger-safe, for vertical contact from the front with cover |

Ambient conditions

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| 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

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| 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

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| manufacturer's article number | |
| • of full range R fuse link for semiconductor protection at NH design usable | 3NE1021-2 |
| • of back-up R fuse link for semiconductor protection at NH design usable | 3NE8021-1 |
| • of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable | 3NC2280: These fuses have a smaller rated current than the semiconductor relays |
| manufacturer's article number | |
| • of NEOZED fuse usable | 5SE2335: These fuses have a smaller rated current than the semiconductor relays |

Approvals Certificates

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| General Product Approval | EMV |
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[Confirmation](#)



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| Test Certificates | other | Environment |
|-------------------|-------|-------------|

[Type Test Certificates/Test Report](#)

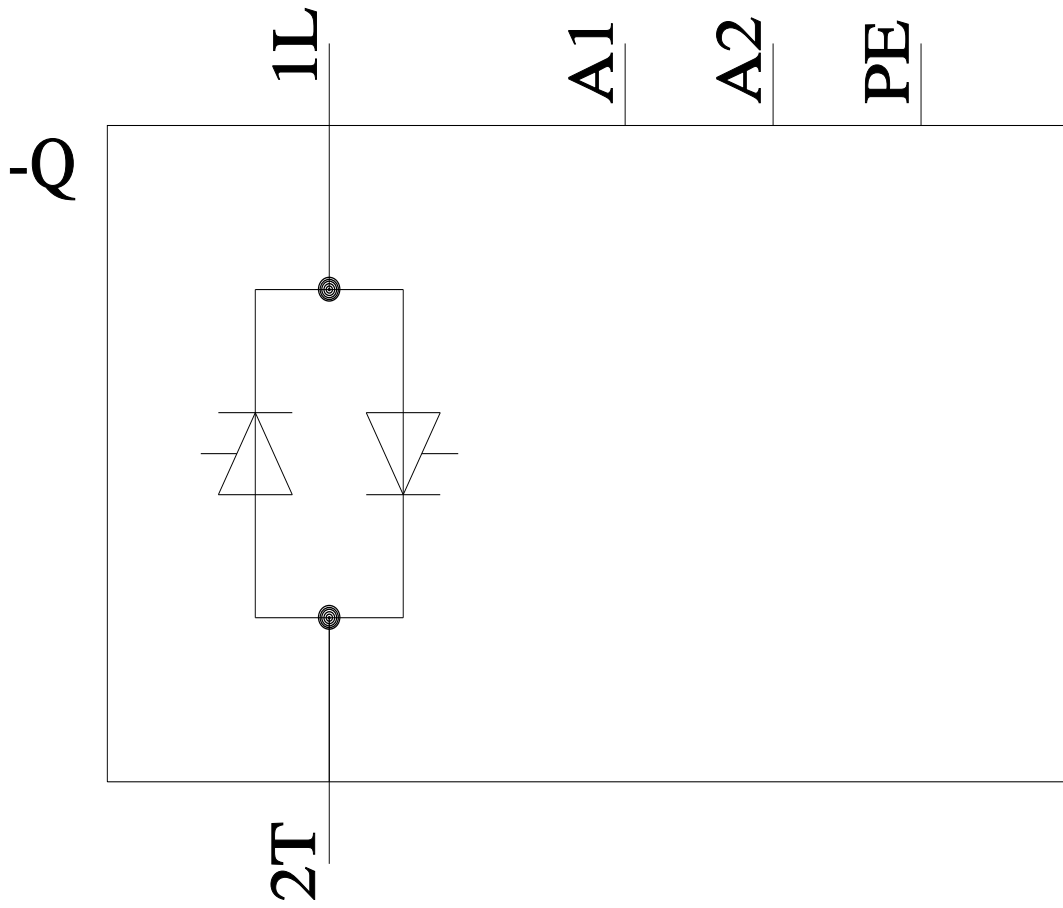
[Confirmation](#)



[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=3RF2390-3AA04>
- Cax online generator
<http://support.automation.siemens.com/WWW/CAXorder/default.aspx?lang=en&mlfb=3RF2390-3AA04>
- Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
<https://support.industry.siemens.com/cs/ww/en/ps/3RF2390-3AA04>
- Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2390-3AA04&lang=en



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