

Semiconductor relay, 3-phase 3RF2 30 A / 40 °C 48-600 V / 4-30 V
DC 2-phase controlled Spring-type terminal Blocking voltage 1200 V



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|---|-------------------------------|
| Product brand name | SIRIUS |
| Product designation | solid-state relay |
| Product type designation | 3RF22 |
| Manufacturer's article number | |
| <ul style="list-style-type: none"> _2 / of the accessories that can be ordered | 3RF2900-0EA18 |
| Product designation | |
| <ul style="list-style-type: none"> _2 / 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 / at AC / in hot operating state | 81 W |
| Insulation voltage | |
| <ul style="list-style-type: none"> rated value | 600 V |
| Protection class IP | IP20 |
| Shock resistance / acc. to IEC 60068-2-27 | 15g / 11 ms |
| Vibration resistance / acc. to IEC 60068-2-6 | 2g |
| Reference code / acc. to DIN EN 81346-2 | Q |

| Main circuit | |
|---|---|
| Number of poles / for main current circuit | 3 |

| | |
|--|-----------------------|
| Number of NO contacts / for main contacts | 2 |
| Number of NC contacts / for main contacts | 0 |
| Operating voltage / at AC | |
| • at 50 Hz / rated value | 48 ... 600 V |
| • at 60 Hz / rated value | 48 ... 600 V |
| Operating frequency / rated value | 50 ... 60 Hz |
| Relative symmetrical tolerance / of the operating frequency | 10 % |
| Operating range relative to the operating voltage / at AC | |
| • at 50 Hz | 40 ... 660 V |
| • at 60 Hz | 40 ... 660 V |
| Operating current | |
| • at AC-51 / rated value | 20 A |
| • acc. to UL 508 / rated value | 20 A |
| Ampacity / maximum | 30 A |
| Operating current / minimum | 500 mA |
| Rate of voltage rise / at the thyristor / for main contacts / maximum permissible | 500 V/ μ s |
| 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 | 300 A |
| I²t value / maximum | 450 A ² ·s |

Control circuit/ Control

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|--|---------------------------------------|
| Type of voltage / of the control supply voltage | DC |
| Control supply voltage / 1 | |
| • at DC | 4 ... 30 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 | 22 mA |
| Control current / at DC / rated value | 30 mA |
| Switch-on delay time | 1 ms; additionally max. one half-wave |
| Off-delay time | 1 ms; additionally max. one half-wave |
| 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

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| Mounting type | screw fixing |
|----------------------|--------------|

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|--|---------|
| • Side-by-side mounting | Yes |
| Height | 95 mm |
| Width | 45 mm |
| Depth | 47 mm |
| Installation altitude / at height above sea level / maximum | 1 000 m |

Connections/ Terminals

| | |
|--|-----------------------------------|
| Type of connectable conductor cross-sections | |
| • for main contacts | |
| — solid | 2x (0.5 ... 2.5 mm ²) |
| — finely stranded / with core end processing | 2x (0.5 ... 1.5 mm ²) |
| — finely stranded / without core end processing | 2x (0.5 ... 2.5 mm ²) |
| • at AWG conductors / for main contacts | 2x (18 ... 14) |
| Type of connectable conductor cross-sections | |
| • for auxiliary and control contacts | |
| — solid | 0.5 ... 1.5 mm ² |
| — finely stranded / with core end processing | 0.5 ... 2.5 mm ² |
| — finely stranded / without core end processing | 0.5 ... 2.5 mm ² |
| • at AWG conductors / for auxiliary and control contacts | 1x (AWG 20 ... 12) |
| Tightening torque | |
| • for main contacts / with screw-type terminals | 2 ... 2.5 N·m |
| Design of the thread / of the connection screw | |
| • for main contacts | M4 |
| Wire stripping length / of the cable | |
| • for main contacts | 10 mm |
| • for auxiliary and control contacts | 10 mm |

Ambient conditions

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|----------------------------|----------------|
| Ambient temperature | |
| • during operation | -25 ... +60 °C |
| • during storage | -55 ... +80 °C |

Electromagnetic compatibility






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|--|---|
| Conducted interference | |
| • due to burst / acc. to IEC 61000-4-4 | 2 kV / 5 kHz behavior criterion 2 |
| • due to conductor-earth surge / acc. to IEC 61000-4-5 | 2 kV behavior criterion 2 |
| • due to conductor-conductor surge / acc. to IEC 61000-4-5 | 1 kV behavior criterion 2 |
| • due to high-frequency radiation / acc. to IEC 61000-4-6 | 140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1 |

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|--|---|
| Electrostatic discharge / acc. to IEC 61000-4-2 | 4 kV contact discharging / 8 kV air discharging, behavior criterion 2 |
| Conducted HF-interference emissions / acc. to CISPR11 | Class A for industrial environment |
| Field-bound HF-interference emission / acc. to CISPR11 | Class A for industrial environment |

Short-circuit protection, design of the fuse link

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|---|---|
| Manufacturer's article number <ul style="list-style-type: none"> • of full range R fuse link for semiconductor protection / at NH design • of back-up R fuse link for semiconductor protection / at NH design • of back-up R fuse link for semiconductor protection / at cylindrical design 10 x 38 mm • of back-up R fuse link for semiconductor protection / at cylindrical design 14 x 51 mm • of back-up R fuse link for semiconductor protection / at cylindrical design 22 x 58 mm | 3NE1814-0; These fuses have a smaller rated current than the semiconductor relays 3NE8003-1 3NC1025; These fuses have a smaller rated current than the semiconductor relays 3NC1430 3NC2232 |
| Manufacturer's article number / of the gG fuse / at NH design <ul style="list-style-type: none"> • up to 460 V • up to 600 V | 3NA3803-6; These fuses have a smaller rated current than the semiconductor relays 3NA3803-6; These fuses have a smaller rated current than the semiconductor relays |

Certificates/ approvals

| General Product Approval | EMC | Declaration of Conformity |
|--|--|---|
|  CSA |  RCM |  EG-Konf. |
|  UR | | Miscellaneous |
|  EAC | | |

| Test Certificates | other |
|--|------------------------------|
| Type Test Certificates/Test Report | Confirmation |



Further information

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=3RF2230-2AB45>

Cax online generator
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2230-2AB45>

