

Semiconductor relay, 3-phase 3RF2 55 A / 40 °C 48-600 V / 4-30 V
DC 3-phase controlled screw 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 | 226 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 40719 extended according to IEC 204-2 / acc. to IEC 750 | K |
| Reference code / acc. to DIN EN 81346-2 | Q |

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| Reference code / acc. to DIN EN 61346-2 | Q |
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Main circuit

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|---|-------------------------|
| Number of poles / for main current circuit | 3 |
| Number of NO contacts / for main contacts | 3 |
| 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 | 50 A |
| Ampacity / maximum | 55 A |
| Operating current / minimum | 500 mA |
| Rate of voltage rise / at the thyristor / for main contacts / maximum permissible | 100 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 | 600 A |
| I ² t value / maximum | 1 800 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 | |
|--|--------------|
| Mounting type | screw fixing |
| • 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 (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 |
| • at AWG conductors / for main contacts | 2x (14 ... 10) |
| 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) |
| • 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 |
| • 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 |
| Wire stripping length / of the cable | |
| • for main contacts | 7 mm |
| • for auxiliary and control contacts | 7 mm |

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

| Electromagnetic compatibility | |
|-------------------------------|--|
| Conducted interference | |

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| <ul style="list-style-type: none"> • due to burst / acc. to IEC 61000-4-4 • due to conductor-earth surge / acc. to IEC 61000-4-5 • due to conductor-conductor surge / acc. to IEC 61000-4-5 • due to high-frequency radiation / acc. to IEC 61000-4-6 | <p>2 kV / 5 kHz behavior criterion 2</p> <p>2 kV behavior criterion 2</p> <p>1 kV behavior criterion 2</p> <p>140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1</p> |
| 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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|--|---|
| <p>Manufacturer's article number</p> <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 14 x 51 mm • of back-up R fuse link for semiconductor protection / at cylindrical design 22 x 58 mm | <p>3NE1803-0; These fuses have a smaller rated current than the semiconductor relays</p> <p>3NE8018-1</p> <p>3NC1450; These fuses have a smaller rated current than the semiconductor relays</p> <p>3NC2250; These fuses have a smaller rated current than the semiconductor relays</p> |
| <p>Manufacturer's article number / of the gG fuse / at NH design</p> <ul style="list-style-type: none"> • up to 460 V • up to 600 V | <p>3NA3807-6; These fuses have a smaller rated current than the semiconductor relays</p> <p>3NA3805-6; These fuses have a smaller rated current than the semiconductor relays</p> |

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=3RF2255-1AC45>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2255-1AC45>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2255-1AC45>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2255-1AC45&lang=en





