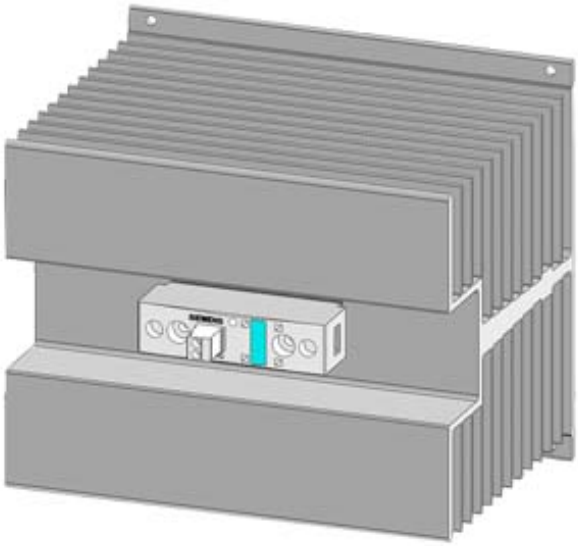
SIEMENS

## Data sheet 3RF2390-1BA22

Solid-state contactor 1-phase 3RF2 AC 15 / 30 A / 40 °C 24-230 V / 110-230 V AC Instantaneous switching Phased-out product, no successor available!



| | |
|---|---|
| **Product brand name** | SIRIUS |
| **Product designation** | solid-state contactor |
| **Product type designation** | 3RF23 |
| **Manufacturer's article number** | |
| • _1 / of the accessories that can be ordered | 3RF2900-3PA88 |
| • _2 / of the accessories that can be ordered | 3RF2950-0HA33 |
| • _4 / of the accessories that can be ordered | 3RF2950-0GA33 |
| **Product designation** | |
| • _1 / of the accessories that can be ordered | terminal cover |
| • _2 / of the accessories that can be ordered | power regulator |
| • _4 / of the accessories that can be ordered | load monitoring |

### General technical data

| | |
|---|---|
| **Product function** | instantaneous switching |
| Power loss [W] / for rated value of the current / at AC / in hot operating state | 117 W |
| **Insulation voltage** | |
| • rated value | 600 V |
| **Degree of pollution** | 3 |
| **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 |
| **Reference code / acc. to DIN EN 61346-2** | Q |

## 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 |
| Operating voltage / at AC | |
| • at 50 Hz / rated value | 24 ... 230 V |
| • at 60 Hz / rated value | 24 ... 230 V |
| **Operating frequency / rated value** | 50 ... 60 Hz |
| **Operating range relative to the operating voltage / at AC** | |
| • at 50 Hz | 20 ... 253 V |
| • at 60 Hz | 20 ... 253 V |
| **Operating current / minimum** | 500 mA |
| **Operating current** | |
| • at AC-1 / at 400 V / rated value | 50 A |
| • at AC-51 / rated value | 50 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** | 800 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 A²·s |

## Control circuit/ Control

| | |
|---|---|
| **Type of voltage / of the control supply voltage** | AC |
| **Control supply voltage / 1 / at AC** | |
| • at 50 Hz | 110 ... 230 V |
| • at 60 Hz | 110 ... 230 V |
| **Control supply voltage frequency** | |
| • **1 / rated value** | 50 Hz |
| • **2 / rated value** | 60 Hz |
| **Control supply voltage / at AC** | |
| • at 50 Hz / Full-scale value for signal<0> recognition | 40 V |
| • at 60 Hz / Full-scale value for signal<0> recognition | 40 V |

| | |
|---|---|
| **Control supply voltage** | |
| • at AC / initial value for signal <1> detection | 90 V |
| **Symmetrical line frequency tolerance** | 5 Hz |
| **Control current / at minimum control supply voltage** | |
| • at AC | 2 mA |
| Control current / at AC / rated value | 15 mA |
| **Switch-on delay time** | 40 ms |
| **Off-delay time** | 40 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** | 200 mm |
| **Width** | 180 mm |
| **Depth** | 163 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 mm²), 2x (2.5 ... 6 mm²) |
| — finely stranded / with core end processing | 2x (1 ... 2.5 mm²), 2x (2.5 ... 6 mm²), 1x 10 mm² |
| • 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 mm²), 2x (0.5 ... 1.0 mm²) |
| — finely stranded / with core end processing | 1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²) |
| — finely stranded / without core end processing | 1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²) |
| • 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 |
| **Tightening torque / 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** | |
| • 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 |
| **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 B for the domestic, business and commercial environments |

## Further information

**Information- and Downloadcenter (Catalogs, Brochures,…)**
www.siemens.com/sirius/catalogs

**Industry Mall (Online ordering system)**
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RF2390-1BA22

**Cax online generator**
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2390-1BA22

**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
https://support.industry.siemens.com/cs/ww/en/ps/3RF2390-1BA22

**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2390-1BA22&lang=en

**Short-circuit protection, design of the fuse link**
https://www.automation.siemens.com/cd-static/material/info/3RF20_eng.pdf

**Short-circuit protection, design of the fuse link**
https://www.automation.siemens.com/cd-static/material/info/3RF21_eng.pdf

**Short-circuit protection, design of the fuse link**
https://www.automation.siemens.com/cd-static/material/info/3RF22_eng.pdf

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**Short-circuit protection, design of the fuse link**
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