

Solid-state contactor 1-phase 3RF2 AC 51 / 88 A / 40 °C 48-600 V / 24 V DC Ring cable connection Phased-out product, no successor available!



| | |
|---|---|
| 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 / at AC / in hot operating state | 117 W |
| Insulation voltage | |
| <ul style="list-style-type: none"> • rated value | 600 V |
| Degree of pollution | 3 |
| Protection class IP | IP00 |

| | |
|--|-------------|
| 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 | 48 ... 600 V |
| • at 60 Hz / rated value | 48 ... 600 V |
| Operating frequency / rated value | 50 ... 60 Hz |
| Operating range relative to the operating voltage / at AC | |
| • at 50 Hz | 40 ... 660 V |
| • at 60 Hz | 40 ... 660 V |
| Operating current / minimum | 500 mA |
| Operating current | |
| • at AC-1 / at 400 V / rated value | 88 A |
| • at AC-51 / rated value | 88 A |
| Rate of voltage rise / at the thyristor / for main contacts / maximum permissible | 1 000 V/ μ s |
| Blocking voltage / at the thyristor / for main contacts / maximum permissible | 1 600 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 | 30 V |
| • 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 | 2 mA |
| Control current / at DC / rated value | 15 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 |
| <ul style="list-style-type: none"> • 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 electrical connection | |
| <ul style="list-style-type: none"> • for main current circuit • for auxiliary and control current circuit | <p>Ring cable lug connection</p> <p>ring cable connection</p> |
| Type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • for main contacts / for JIS cable lug • for DIN cable lug / for main contacts | <p>JIS C 2805 R 2-5, 5,5-5, 8-5, 14-5</p> <p>DIN 46234 -5-2,5, -5-6, -5-10, -5-16, -5-25</p> |
| 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 • at AWG conductors / for auxiliary and control contacts | <p>1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²)</p> <p>1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²)</p> <p>1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²)</p> <p>1x (AWG 20 ... 12)</p> |
| 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] | |
| <ul style="list-style-type: none"> • for auxiliary and control contacts / with screw-type terminals | 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 | <p>M5</p> <p>M3</p> |
| Wire stripping length / of the cable | |
| <ul style="list-style-type: none"> • for main contacts • for auxiliary and control contacts | <p>10 mm</p> <p>10 mm</p> |

Ambient conditions

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|----------------------------|--|
| Ambient temperature | |
|----------------------------|--|

- during operation
- during storage

-25 ... +60 °C

-55 ... +80 °C

Electromagnetic compatibility

| | |
|--|---|
| Conducted interference | |
| <ul style="list-style-type: none"> • due to burst / acc. to IEC 61000-4-4 | 2 kV / 5 kHz behavior criterion 2 |
| <ul style="list-style-type: none"> • due to conductor-earth surge / acc. to IEC 61000-4-5 | 2 kV behavior criterion 2 |
| <ul style="list-style-type: none"> • due to conductor-conductor surge / acc. to IEC 61000-4-5 | 1 kV behavior criterion 2 |
| <ul style="list-style-type: none"> • 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=3RF2390-3AA06>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2390-3AA06>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2390-3AA06>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2390-3AA06&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

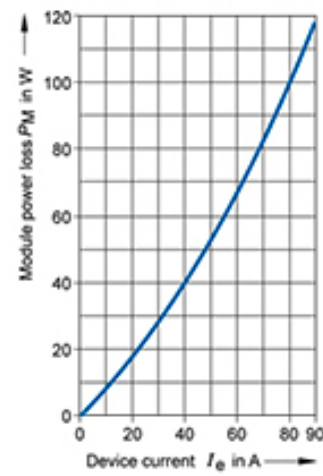
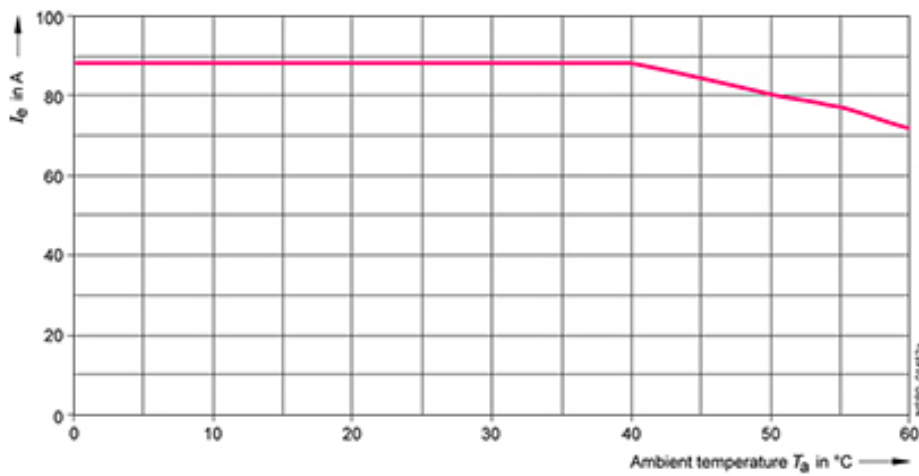
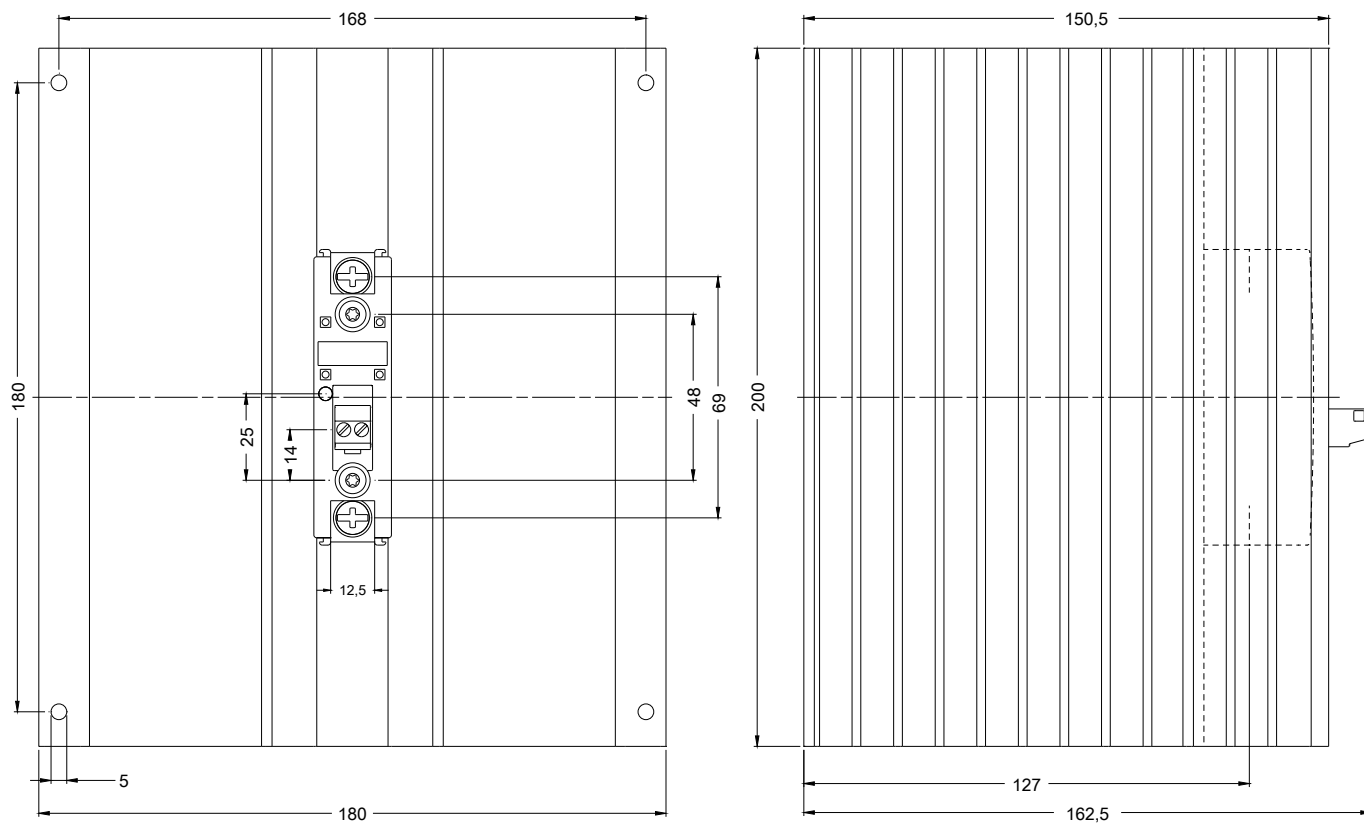
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Short-circuit protection, design of the fuse link

https://www.automation.siemens.com/cd-static/material/info/3RF24_eng.pdf



— I_{IEC} Current according to IEC 947-4-3 for individual and side-by-side mounting