

SEMICONDUCTOR RELAY 3RF2, 1-PH. WIDTH  
45MM, 90 A 48-600 V / 110-230 V AC SCREW  
TERMINAL



General technical data:

|   |    |                      |
|---|----|----------------------|
| product brand name  |    | SIRIUS               |
| Product designation   |    | solid-state relay    |
| Product function  |    | zero-point switching |
| Number of poles for main current circuit  |    | 1                    |
| Protection class IP   |    | IP20                 |
| Ambient temperature   |    |                      |
| • during operation  | °C | -25 ... +60          |
| • during storage  | °C | -55 ... +80          |
| Installation altitude at height above sea level maximum                             | m  | 1 000                |
| Vibration resistance acc. to IEC 60068-2-6  |    | 2g                   |
| Shock resistance acc. to IEC 60068-2-27   |    | 15g / 11 ms          |
| Equipment marking acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750 |    | K                    |
| Equipment marking acc. to DIN EN 61346-2  |    | Q                    |
| Number of NC contacts for auxiliary contacts  |    | 0                    |
| Number of NO contacts for auxiliary contacts  |    | 0                    |
| Number of CO contacts for auxiliary contacts  |    | 0                    |

**Main circuit:**

|  |                   |            |
|--|-------------------|------------|
| <b>Number of NO contacts for main contacts</b>                                     |                   | 1          |
| <b>Number of NC contacts for main contacts</b>                                     |                   | 0          |
| <b>Operating current</b>   |                   |            |
| • Rated value maximum  | A                 | 88         |
| • at AC-51 Rated value   | A                 | 50         |
| • minimum  | mA                | 500        |
| <b>Operating voltage at AC</b>   |                   |            |
| • at 50 Hz Rated value   | V                 | 48 ... 600 |
| • at 60 Hz Rated value   | V                 | 48 ... 600 |
| <b>Operating range relative to the operating voltage at AC</b>                     |                   |            |
| • at 50 Hz   | V                 | 40 ... 660 |
| • at 60 Hz   | V                 | 40 ... 660 |
| <b>Operating frequency Rated value</b>   | Hz                | 50 ... 60  |
| <b>Relative symmetrical tolerance of the operating frequency</b>                   | %                 | 10         |
| <b>Insulation voltage Rated value</b>  | V                 | 600        |
| <b>Rate of voltage rise at the thyristor for main contacts maximum permissible</b> | V/μs              | 1 000      |
| <b>Blocking voltage at the thyristor for main contacts maximum permissible</b>     | V                 | 1 600      |
| <b>Reverse current of the thyristor</b>  | mA                | 10         |
| <b>Derating temperature</b>  | °C                | 40         |
| <b>Active power loss total typical</b>   | W                 | 118        |
| <b>Surge current resistance Rated value</b>  | A                 | 1 150      |
| <b>I<sup>2</sup>t value maximum</b>  | A <sup>2</sup> ·s | 6 600      |
| <b>Short-circuit protection, design of the fuse link</b>                           |                   |            |

**Control circuit/ Control:**

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

|   |    |    |
|---|----|----|
| — at 60 Hz Full-scale value for signal<0> recognition   | V  | 40 |
| <b>Symmetrical line frequency tolerance</b>   | Hz | 5  |
| <b>Relative symmetrical tolerance of the supply voltage frequency</b>   | %  | 10 |
| <b>Control current</b>  |    |    |
| <ul style="list-style-type: none"> <li>• <b>at minimum control supply voltage</b> <ul style="list-style-type: none"> <li>— at AC</li> </ul> </li> <li>• <b>at AC Rated value</b></li> </ul> | mA | 2  |
|   | mA | 15 |

#### Installation/ mounting/ dimensions:






|   |     |              |
|---|-----|--------------|
| <b>Mounting type</b>  |     | screw fixing |
| <b>Mounting type Side-by-side mounting</b>                          |     | Yes          |
| <b>Design of the thread of the screw for securing the equipment</b> |     | M4           |
| <b>Tightening torque of the screw for securing the equipment</b>    | N·m | 1.5          |
| <b>Width</b>  | mm  | 45           |
| <b>Height</b>   | mm  | 58           |
| <b>Depth</b>  | mm  | 48           |

#### Connections/ Terminals:

|  |        |   |
|--|--------|---|
| <b>Type of electrical connection for main current circuit</b>  |        | screw-type terminals  |
| <b>Design of the thread of the connection screw for main contacts</b>  |        | M4  |
| <b>Tightening torque for main contacts with screw-type terminals</b>   |        |   |
| <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>   | N·m    | 2   |
|  | N·m    | 2.5   |
| <b>Tightening torque [lbf·in] for main contacts with screw-type terminals</b>  |        |   |
| <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>   | lbf·in | 7   |
|  | lbf·in | 10.3  |
| <b>Type of connectable conductor cross-section</b>   |        |   |
| <ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— solid</li> <li>— finely stranded</li> <li>— with core end processing</li> </ul> </li> <li>• for AWG conductors <ul style="list-style-type: none"> <li>— for main contacts</li> <li>— for auxiliary and control contacts</li> </ul> </li> <li>• for auxiliary and control contacts <ul style="list-style-type: none"> <li>— solid</li> <li>— finely stranded</li> </ul> </li> </ul> |        | 2x (1.5 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> )                      |
|  |        | 2x (1 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> ), 1x 10 mm <sup>2</sup> |
|  |        | 2x (14 ... 10)  |
|  |        | 1x (AWG 20 ... 12)  |
|  |        | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )                    |

|  |                 |  |
|--|-----------------|--|
| — with core end processing   |                 | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> ) |
| — without core end processing  |                 | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> ) |
| <b>Connectable conductor cross-section</b>   |                 |  |
| • for main contacts  |                 |  |
| — single or multi-stranded   | mm <sup>2</sup> | 1.5 ... 6  |
| — finely stranded  |                 |  |
| — with core end processing   | mm <sup>2</sup> | 1 ... 10   |
| • for auxiliary and control contacts   |                 |  |
| — solid  | mm <sup>2</sup> | 0.5 ... 2.5  |
| — finely stranded  |                 |  |
| — with core end processing   | mm <sup>2</sup> | 0.5 ... 2.5  |
| — without core end processing  | mm <sup>2</sup> | 0.5 ... 2.5  |
| <b>AWG number as coded connectable conductor cross section</b>                                 |                 |  |
| • for main contacts  |                 | 14 ... 10  |
| • for auxiliary and control contacts   |                 | 20 ... 12  |
| <b>Type of electrical connection for auxiliary and control current circuit</b>                 |                 | screw-type terminals   |
| <b>Design of the thread of the connection screw of the auxiliary and control contacts</b>      |                 | M3   |
| <b>Wire stripping length of the cable</b>  |                 |  |
| • for main contacts  | mm              | 10   |
| • for auxiliary and control contacts   | mm              | 7  |
| <b>Tightening torque for auxiliary and control contacts with screw-type terminals</b>          | N·m             | 0.5 ... 0.6  |
| <b>Tightening torque [lbf·in] for auxiliary and control contacts with screw-type terminals</b> | lbf·in          | 4.5 ... 5.3  |

#### Certificates/ approvals:

| General Product Approval  | EMC  | Declaration of Conformity  | Test Certificates  |
|---|--|--|--|
|  CSA |  UR |  EAC        |  C-TICK |
|   |  |  EG-Konf. | <a href="#">Typprüfbescheinigung/Werkszeugnis</a>  |

#### other

[Umweltbestätigung](#)

#### Further information

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

[https://www.automation.siemens.com/cd-static/material/info/3RF20\\_eng.pdf](https://www.automation.siemens.com/cd-static/material/info/3RF20_eng.pdf)

**Information- and Downloadcenter (Catalogs, Brochures,...)**

<http://www.siemens.com/industrial-controls/catalogs>

**Industry Mall (Online ordering system)**

<http://www.siemens.com/industrymall>

**Cax online generator**

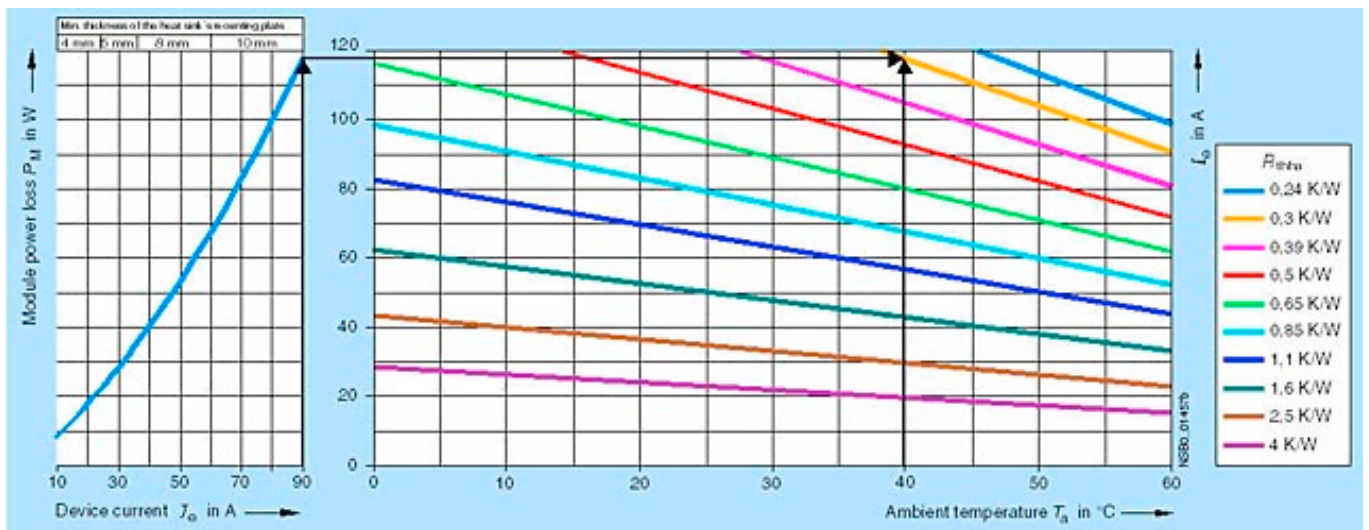
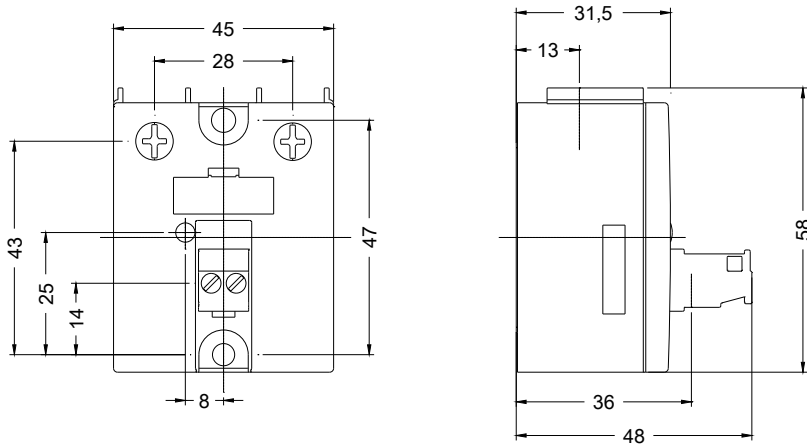
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mfb=3RF20901AA26>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF20901AA26>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mfb=3RF20901AA26&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mfb=3RF20901AA26&lang=en)



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