

SEMICONDUCTOR RELAY 3RF2, 1-PH. WIDTH  
22.5MM, 70 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                          |
| Product designation _1 of the accessories that can be ordered         |    | terminal cover                |
| Manufacturer article number _1 of the accessories that can be ordered |    | <a href="#">3RF2900-3PA88</a> |
| Product designation _2 of the accessories that can be ordered         |    | power regulator               |
| Manufacturer article number _2 of the accessories that can be ordered |    | <a href="#">3RF2950-0HA36</a> |
| Product designation _4 of the accessories that can be ordered         |    | load monitoring               |
| Manufacturer article number _4 of the accessories that can be ordered |    | <a href="#">3RF2990-0GA36</a> |
| 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:

|   |                   |            |
|---|-------------------|------------|
| Number of NO contacts for main contacts                                     |                   | 1          |
| Number of NC contacts for main contacts                                     |                   | 0          |
| <b>Operating current</b>  |                   |            |
| • Rated value maximum   | A                 | 70         |
| • 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 |
| Operating frequency Rated value   | Hz                | 50 ... 60  |
| Relative symmetrical tolerance of the operating frequency                   | %                 | 10         |
| Insulation voltage Rated value  | V                 | 600        |
| Rate of voltage rise at the thyristor for main contacts maximum permissible | V/μs              | 1 000      |
| Blocking voltage at the thyristor for main contacts maximum permissible     | V                 | 1 600      |
| Reverse current of the thyristor  | mA                | 10         |
| Derating temperature  | °C                | 40         |
| Active power loss total typical   | W                 | 94         |
| Apparent power loss maximum   | V·A               | 94         |
| Surge current resistance Rated value  | A                 | 1 150      |
| I <sup>2</sup> t value maximum  | A <sup>2</sup> ·s | 6 600      |
| Short-circuit protection, design of the fuse link                           |                   |            |

#### Control circuit/ Control:

|                                  |    |    |
|----------------------------------|----|----|
| Control supply voltage frequency |    |    |
| • 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>  |    |     |
| • at minimum control supply voltage                                   |    |     |
| — at AC   | mA | 2   |
| • at AC Rated value   | 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  | 22.5         |
| <b>Height</b>   | mm  | 85           |
| <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>          | N·m    | 2 ... 2.5  |
| <b>Tightening torque [lbf·in] for main contacts with screw-type terminals</b> | lbf·in | 7 ... 10.3   |
| <b>Type of connectable conductor cross-section</b>                            |        |  |
| • for main contacts   |        |  |
| — solid   |        | 2x (1.5 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> ) |
| — finely stranded   |        |  |

|   |                 |   |
|---|-----------------|---|
| <ul style="list-style-type: none"> <li>— with core end processing</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 <ul style="list-style-type: none"> <li>— with core end processing</li> <li>— without core end processing</li> </ul> </li> </ul> </li> </ul>                              |                 | <p>2x (1 ... 2.5 mm<sup>2</sup>), 2x (2.5 ... 6 mm<sup>2</sup>), 1x 10 mm<sup>2</sup></p> <p>2x (14 ... 10)</p> <p>1x (AWG 20 ... 12)</p> <p>1x (0.5 ... 2.5 mm<sup>2</sup>), 2x (0.5 ... 1.0 mm<sup>2</sup>)</p> <p>1x (0.5 ... 2.5 mm<sup>2</sup>), 2x (0.5 ... 1.0 mm<sup>2</sup>)</p> <p>1x (0.5 ... 2.5 mm<sup>2</sup>), 2x (0.5 ... 1.0 mm<sup>2</sup>)</p> |
| <b>Connectable conductor cross-section</b>  |                 |   |
| <ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— single or multi-stranded</li> <li>— finely stranded <ul style="list-style-type: none"> <li>— with core end processing</li> </ul> </li> </ul> </li> <li>• for auxiliary and control contacts <ul style="list-style-type: none"> <li>— solid</li> <li>— finely stranded <ul style="list-style-type: none"> <li>— with core end processing</li> <li>— without core end processing</li> </ul> </li> </ul> </li> </ul> | mm <sup>2</sup> | 1.5 ... 6   |
|   | mm <sup>2</sup> | 1 ... 10  |
|   | mm <sup>2</sup> | 0.5 ... 2.5   |
|   | mm <sup>2</sup> | 0.5 ... 2.5   |
|   | mm <sup>2</sup> | 0.5 ... 2.5   |
| <b>AWG number as coded connectable conductor cross section</b>  |                 |   |
| <ul style="list-style-type: none"> <li>• for main contacts</li> <li>• for auxiliary and control contacts</li> </ul>   |                 | <p>14 ... 10</p> <p>20 ... 12</p>   |
| <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>   |                 |   |
| <ul style="list-style-type: none"> <li>• for main contacts</li> <li>• for auxiliary and control contacts</li> </ul>   | mm              | 7   |
|   | 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 |
|--------------------------|-----|---------------------------|-------------------|



[Typprüfbescheinigung/Werkszeugnis](#)

**other**

[Umweltbestätigung](#)

**Further information**

**Short-circuit protection, design of the fuse link**  
[https://www.automation.siemens.com/cd-static/material/info/3RF21\\_eng.pdf](https://www.automation.siemens.com/cd-static/material/info/3RF21_eng.pdf)

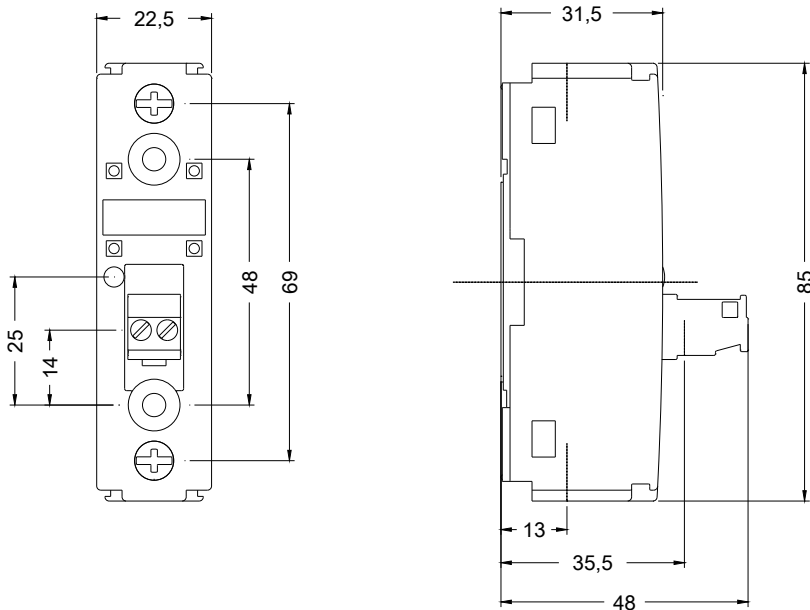
**Information- and Downloadcenter (Catalogs, Brochures,...)**  
<http://www.siemens.com/industrial-controls/catalogs>

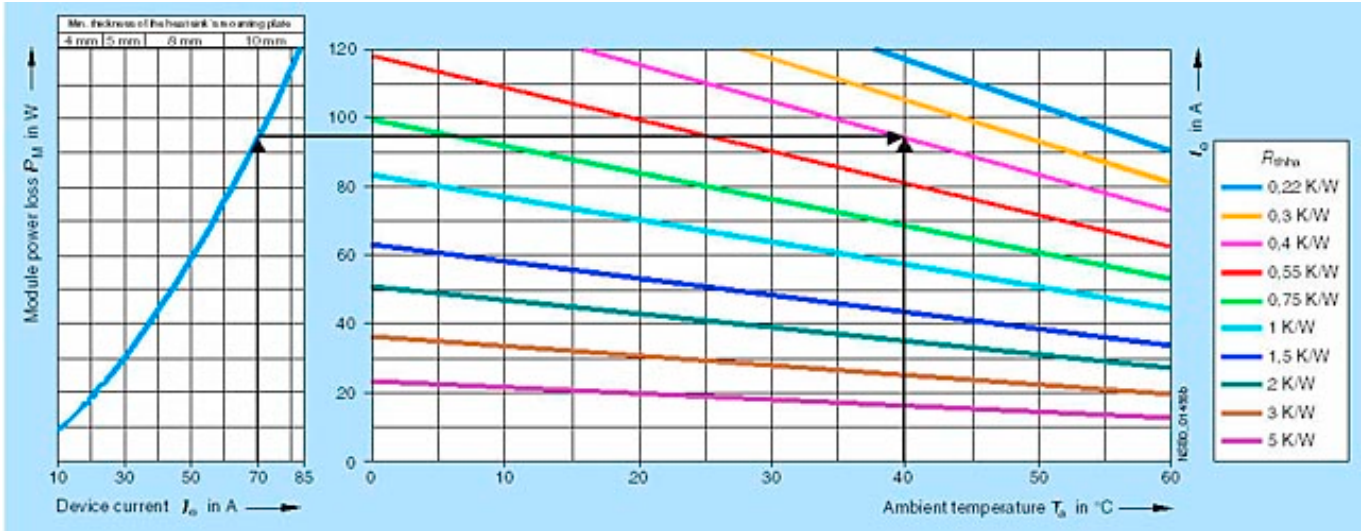
**Industry Mall (Online ordering system)**  
<http://www.siemens.com/industrymall>

**Cax online generator**  
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF21701AA26>

**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**  
<https://support.industry.siemens.com/cs/ww/en/ps/3RF21701AA26>

**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**  
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF21701AA26&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF21701AA26&lang=en)





last modified:

17.07.2015