



SEMI-COND. CONTACTOR 3RF2,1-PH. AC 51 90 A 40 DEGREES C 48-460 V / 110-230 V AC RING TERMINAL

| General technical data:                                                   |    |                               |
|---------------------------------------------------------------------------|----|-------------------------------|
| product brand name                                                        |    | SIRIUS                        |
| product designation                                                       |    | solid-state contactor         |
| 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 / _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 operating                                                        | °C | -25 ... +60                   |
| • during storage                                                          | °C | -55 ... +80                   |
| Installation altitude / at a height over sea level / maximum              | m  | 1,000                         |
| Resistance against vibration / according to IEC 60068-2-6                 |    | 2g                            |
| Resistance against shock / according to IEC 60068-2-27                    |    | 15g / 11 ms                   |
| Item designation                                                          |    |                               |

|                                                                                                                              |   |
|------------------------------------------------------------------------------------------------------------------------------|---|
| <ul style="list-style-type: none"> <li>• according to DIN 40719 extendable after IEC 204-2 / according to IEC 750</li> </ul> | K |
| <ul style="list-style-type: none"> <li>• according to DIN EN 61346-2</li> </ul>                                              | Q |
| <b>Number of NC contacts / for auxiliary contacts</b>                                                                        | 0 |
| <b>Number of NO contacts / for auxiliary contacts</b>                                                                        | 0 |
| <b>Number of change-over switches / for auxiliary contacts</b>                                                               | 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>                                                              |                   |            |
| <ul style="list-style-type: none"> <li>• at AC-1 / at 400 V / rated value</li> </ul>  | A                 | 88         |
| <ul style="list-style-type: none"> <li>• at AC-51 / rated value</li> </ul>            | A                 | 88         |
| <b>Operating current / minimum</b>                                                    | mA                | 500        |
| <b>Operating voltage</b>                                                              |                   |            |
| <ul style="list-style-type: none"> <li>• at 50 Hz / at AC / rated value</li> </ul>    | V                 | 48 ... 460 |
| <ul style="list-style-type: none"> <li>• at 60 Hz / at AC / rated value</li> </ul>    | V                 | 48 ... 460 |
| <b>Working area related to the operating voltage</b>                                  |                   |            |
| <ul style="list-style-type: none"> <li>• at 50 Hz / for AC</li> </ul>                 | V                 | 40 ... 506 |
| <ul style="list-style-type: none"> <li>• at 60 Hz / for AC</li> </ul>                 | V                 | 40 ... 506 |
| <b>Operating frequency</b>                                                            |                   |            |
| <ul style="list-style-type: none"> <li>• rated value</li> </ul>                       | Hz                | 50 ... 60  |
| <b>Insulation voltage / rated value</b>                                               | V                 | 600        |
| <b>Voltage slew rate / at the thyristor / for main contacts / maximum permissible</b> | V/μs              | 1,000      |
| <b>Block voltage / at the thyristor / for main contacts / maximum permissible</b>     | V                 | 1,200      |
| <b>Reverse current / of the thyristor</b>                                             | mA                | 10         |
| <b>Derating temperature</b>                                                           | °C                | 40         |
| <b>Active power loss / total / typical</b>                                            | W                 | 117        |
| <b>Resistance against the impulse current / rated value</b>                           | A                 | 1,150      |
| <b>I<sup>2</sup>t-level / maximum</b>                                                 | A <sup>2</sup> ·s | 6,600      |

#### Control circuit:

|                                                                         |    |     |
|-------------------------------------------------------------------------|----|-----|
| <b>Control supply voltage frequency</b>                                 |    |     |
| <ul style="list-style-type: none"> <li>• 1 / rated value</li> </ul>     | Hz | 50  |
| <ul style="list-style-type: none"> <li>• 2 / rated value</li> </ul>     | Hz | 60  |
| <b>Type of voltage / of the controlled supply voltage</b>               |    | AC  |
| <b>Control supply voltage / 1</b>                                       |    |     |
| <ul style="list-style-type: none"> <li>• at 50 Hz / for AC</li> </ul>   |    |     |
| <ul style="list-style-type: none"> <li>• initial rated value</li> </ul> | V  | 110 |

|                                                                                                                     |    |                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• final rated value</li> </ul>                                               | V  | 230                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>• at 60 Hz / for AC</li> </ul>                                               |    |                                                                                                                                                                 |
| <ul style="list-style-type: none"> <li>• initial rated value</li> </ul>                                             | V  | 110                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>• final rated value</li> </ul>                                               | V  | 230                                                                                                                                                             |
| <b>Control supply voltage</b>                                                                                       |    |                                                                                                                                                                 |
| <ul style="list-style-type: none"> <li>• at 50 Hz / for AC / final value for signal&lt;0&gt;-recognition</li> </ul> | V  | 40                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>• at 60 Hz / for AC / final value for signal&lt;0&gt;-recognition</li> </ul> | V  | 40                                                                                                                                                              |
| <b>Tolerance of the line frequency</b>                                                                              | Hz | 5                                                                                                                                                               |
| <b>Control current</b>                                                                                              |    |                                                                                                                                                                 |
| <ul style="list-style-type: none"> <li>• at minimum control supply voltage / for AC</li> </ul>                      | mA | 2                                                                                                                                                               |
| <ul style="list-style-type: none"> <li>• for AC / rated value</li> </ul>                                            | mA | 15                                                                                                                                                              |
| <b>Fuse assignments</b>                                                                                             |    | <a href="https://www.automation.siemens.com/cd-static/material/info/3RF21_eng.pdf">https://www.automation.siemens.com/cd-static/material/info/3RF21_eng.pdf</a> |

### Installation/mounting/dimensions:






|                                                                                    |     |              |
|------------------------------------------------------------------------------------|-----|--------------|
| <b>Type of mounting</b>                                                            |     | screw fixing |
| <b>Type of fixing/fixation / series installation</b>                               |     | Yes          |
| <b>Design of the thread / of the screw for fastening of the operating resource</b> |     | M4           |
| <b>Tightening torque / of the screw for fastening of the operating resource</b>    | N·m | 1.5          |
| <b>Width</b>                                                                       | mm  | 180          |
| <b>Height</b>                                                                      | mm  | 100          |
| <b>Depth</b>                                                                       | mm  | 162.5        |

### Connections:

|                                                                                           |     |                                                                      |
|-------------------------------------------------------------------------------------------|-----|----------------------------------------------------------------------|
| <b>Design of the electrical connection / for main current circuit</b>                     |     | ring cable connection                                                |
| <b>Design of the thread / of the connection screw / for main contacts</b>                 |     | M5                                                                   |
| <b>Tightening torque / for main contacts</b>                                              |     |                                                                      |
| <ul style="list-style-type: none"> <li>• with screw-type terminals</li> </ul>             | N·m | 2 ... 2.5                                                            |
| <b>Type of the connectable conductor cross-section</b>                                    |     |                                                                      |
| <ul style="list-style-type: none"> <li>• for main contacts / for JIS cable lug</li> </ul> |     | JIS C 2805 R 2-5, 5,5-5, 8-5, 14-5                                   |
| <ul style="list-style-type: none"> <li>• for DIN cable lug / for main contacts</li> </ul> |     | DIN 46234 -5-2,5, -5-6, -5-10, -5-16, -5-25                          |
| <ul style="list-style-type: none"> <li>• for AWG conductors</li> </ul>                    |     |                                                                      |
| <ul style="list-style-type: none"> <li>• for auxiliary and control contacts</li> </ul>    |     | 1x (AWG 20 ... 12)                                                   |
| <ul style="list-style-type: none"> <li>• for auxiliary and control contacts</li> </ul>    |     |                                                                      |
| <ul style="list-style-type: none"> <li>• solid</li> </ul>                                 |     | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> ) |
| <ul style="list-style-type: none"> <li>• finely stranded</li> </ul>                       |     |                                                                      |
| <ul style="list-style-type: none"> <li>• with conductor end processing</li> </ul>         |     | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> ) |
| <ul style="list-style-type: none"> <li>• without conductor final cutting</li> </ul>       |     | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> ) |
| <b>Conductor cross section that can be connected</b>                                      |     |                                                                      |

|                                                                                                                                                                                                                                                                                                  |                 |                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------|
| <ul style="list-style-type: none"> <li>for auxiliary and control contacts <ul style="list-style-type: none"> <li>solid</li> <li>stranded wire <ul style="list-style-type: none"> <li>with conductor end processing /</li> <li>without conductor final cutting</li> </ul> </li> </ul> </li> </ul> | 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>Design of the electrical connection / for auxiliary and control current circuit</b>                                                                                                                                                                                                           |                 | ring cable connection |
| <b>Design of the thread / of the connection screw / of the auxiliary and control pins</b>                                                                                                                                                                                                        |                 | M3                    |
| <b>AWG number / as coded connectable conductor cross-section</b> <ul style="list-style-type: none"> <li>for auxiliary and control contacts</li> </ul>                                                                                                                                            |                 | 20 ... 12             |
| <b>Skinning length / of the cable / for main contacts</b>                                                                                                                                                                                                                                        | mm              | 10                    |
| <b>Skinning length / of the cable / for auxiliary and control contacts</b>                                                                                                                                                                                                                       | mm              | 10                    |
| <b>Tightening torque / for auxiliary and control contacts</b> <ul style="list-style-type: none"> <li>with screw-type terminals</li> </ul>                                                                                                                                                        | N-m             | 0.5 ... 0.6           |
| <b>Tightening torque (lbf-in) / for auxiliary and control contacts</b> <ul style="list-style-type: none"> <li>with screw-type terminals</li> </ul>                                                                                                                                               | lbf-in          | 4.5 ... 5.3           |

#### Certificates/approvals:

| General Product Approval                                                                                                                                                                                                                                                      | EMC                                                                                        | Declaration of Conformity                                                                      | Test Certificates                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|----------------------------------------------------|
|  CSA<br> GOST<br> UL |  C-TICK |  EG-Konf. | <a href="#">Type Test Certificates/Test Report</a> |

#### other

[Environmental Confirmations](#)

#### Further information:

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

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

##### Industry Mall (Online ordering system)

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

##### CAX-Online-Generator

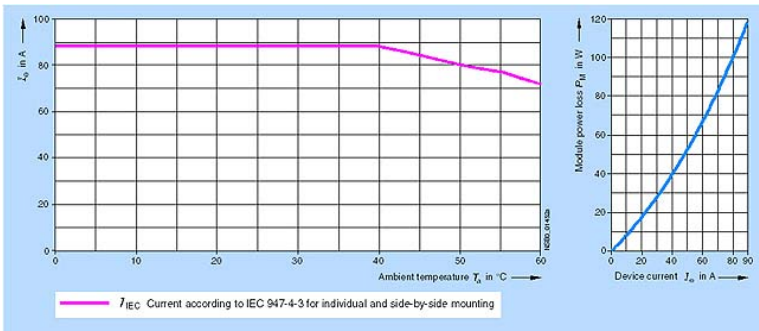
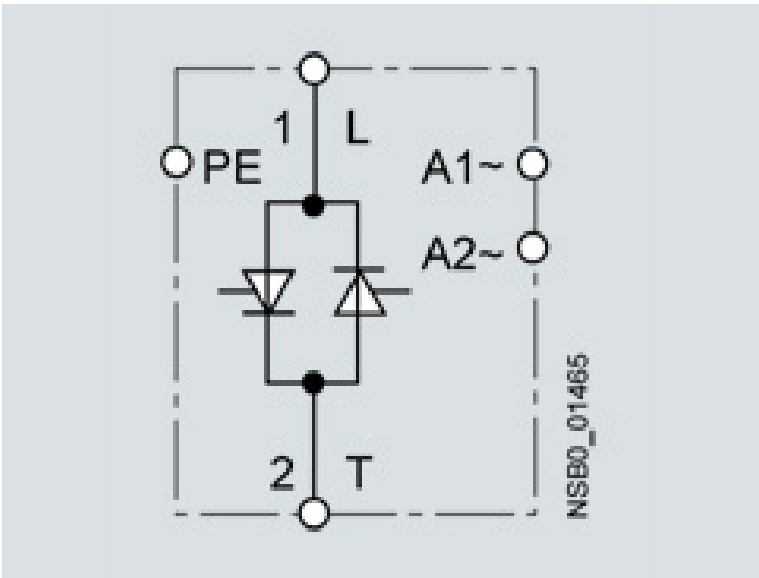
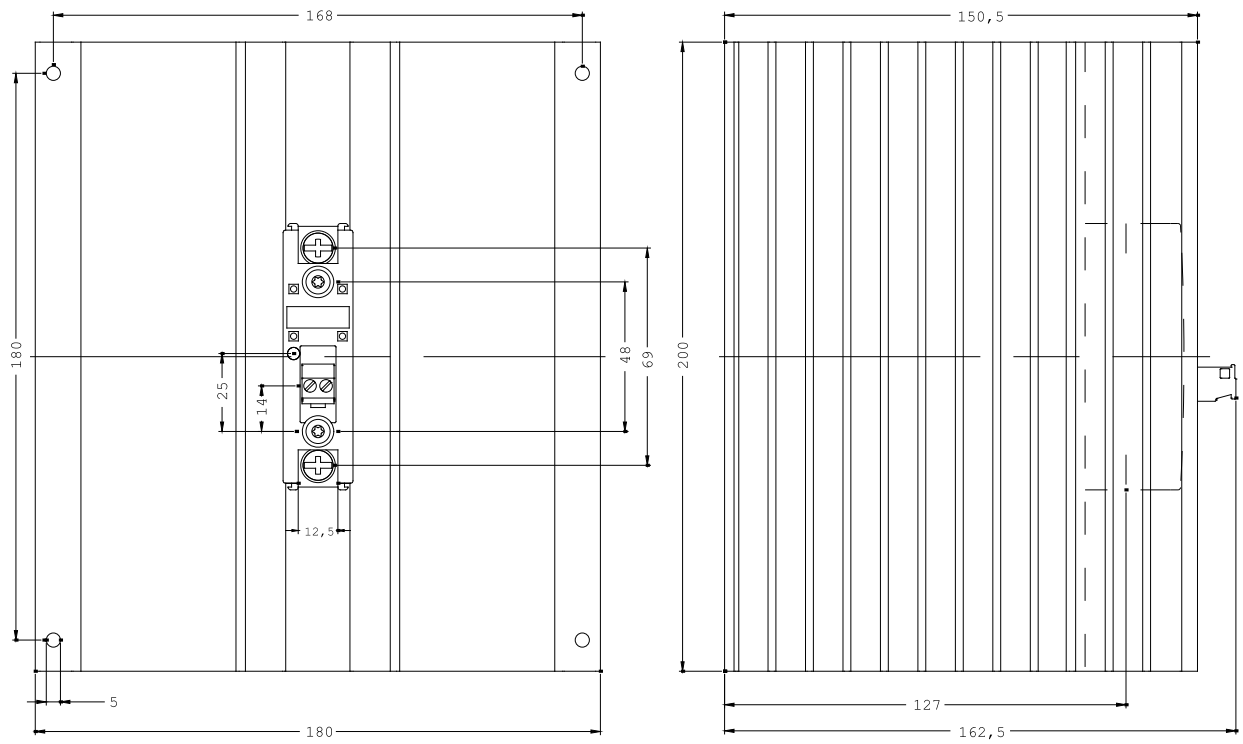
<http://www.siemens.com/cax>

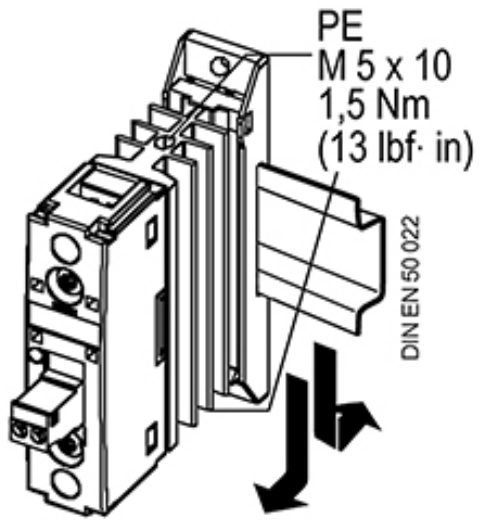
##### Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<http://support.automation.siemens.com/WW/view/en/3RF2390-3AA24/all>

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

[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3RF2390-3AA24](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3RF2390-3AA24)





last change:

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