

Semiconductor relay, 1-phase 3RF2 Overall width 22.5 mm, 50 A 48-600 V / 24 V DC Spring-type terminal



|   |                               |
|---|-------------------------------|
| <b>Product brand name</b>   | SIRIUS                        |
| <b>Product designation</b>  | solid-state relay             |
| <b>Product type designation</b>   | 3RF21                         |
| <b>Manufacturer's article number</b>  |                               |
| <ul style="list-style-type: none"> <li>• _3 / of the accessories that can be ordered</li> </ul> | <a href="#">3RF2900-0EA18</a> |
| <b>Product designation</b>  |                               |
| <ul style="list-style-type: none"> <li>• _3 / of the accessories that can be ordered</li> </ul> | converter                     |

| General technical data  |                      |
|---|----------------------|
| <b>Product function</b>   | zero-point switching |
| <b>Power loss [V·A] / maximum</b>   | 66 V·A               |
| Power loss [W] / for rated value of the current / at AC / in hot operating state            | 66 W                 |
| <b>Insulation voltage</b>   |                      |
| <ul style="list-style-type: none"> <li>• rated value</li> </ul>                             | 600 V                |
| <b>Protection class IP</b>  | IP20                 |
| Shock resistance / acc. to IEC 60068-2-27   | 15g / 11 ms          |
| Vibration resistance / acc. to IEC 60068-2-6  | 2g                   |
| <b>Reference code / acc. to DIN 40719 extended according to IEC 204-2 / acc. to IEC 750</b> | K                    |

|   |                                       |
|---|---------------------------------------|
| Reference code / acc. to DIN EN 81346-2   | Q                                     |
| Reference code / acc. to DIN EN 61346-2   | Q                                     |
| <b>Main circuit</b>   |                                       |
| 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                          |
| Relative symmetrical tolerance / of the operating frequency                       | 10 %                                  |
| Operating range relative to the operating voltage / at AC                         |                                       |
| • at 50 Hz  | 40 ... 660 V                          |
| • at 60 Hz  | 40 ... 660 V                          |
| Operating current   |                                       |
| • at AC-51 / rated value  | 20 A                                  |
| Ampacity / maximum  | 50 A                                  |
| Operating current / minimum   | 500 mA                                |
| Rate of voltage rise / at the thyristor / for main contacts / maximum permissible | 1 000 V/ $\mu$ 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  | 600 A                                 |
| I <sup>2</sup> t value / maximum  | 1 800 A <sup>2</sup> ·s               |
| <b>Control circuit/ Control</b>   |                                       |
| 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   | 13 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

|   |              |
|---|--------------|
| <b>Mounting type</b>  | screw fixing |
| <ul style="list-style-type: none"> <li>• Side-by-side mounting</li> </ul> | Yes          |
| <b>Height</b>   | 85 mm        |
| <b>Width</b>  | 22.5 mm      |
| <b>Depth</b>  | 48 mm        |
| <b>Installation altitude / at height above sea level / maximum</b>        | 1 000 m      |

### Connections/ Terminals

|  |   |
|--|---|
| <b>Type of connectable conductor cross-sections</b>  |   |
| <ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— solid</li> <li>— finely stranded / with core end processing</li> <li>— finely stranded / without core end processing</li> </ul> </li> <li>• at AWG conductors / for main contacts</li> </ul>                                   | <ul style="list-style-type: none"> <li>2x (0.5 ... 2.5 mm<sup>2</sup>)</li> <li>2x (0.5 ... 1.5 mm<sup>2</sup>)</li> <li>2x (0.5 ... 2.5 mm<sup>2</sup>)</li> <li>2x (18 ... 14)</li> </ul> |
| <b>Type of connectable conductor cross-sections</b>  |   |
| <ul style="list-style-type: none"> <li>• for auxiliary and control contacts <ul style="list-style-type: none"> <li>— solid</li> <li>— finely stranded / with core end processing</li> <li>— finely stranded / without core end processing</li> </ul> </li> <li>• at AWG conductors / for auxiliary and control contacts</li> </ul> | <ul style="list-style-type: none"> <li>0.5 ... 1.5 mm<sup>2</sup></li> <li>0.5 ... 2.5 mm<sup>2</sup></li> <li>0.5 ... 2.5 mm<sup>2</sup></li> <li>1x (AWG 20 ... 12)</li> </ul>            |
| <b>Tightening torque</b>   |   |
| <ul style="list-style-type: none"> <li>• for main contacts / with screw-type terminals</li> </ul>  | 2 ... 2.5 N·m   |
| <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>  | <ul style="list-style-type: none"> <li>10 mm</li> <li>10 mm</li> </ul>  |

### Ambient conditions

|  |  |
|--|--|
| <b>Ambient temperature</b>   |  |
| <ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage</li> </ul> | <ul style="list-style-type: none"> <li>-25 ... +60 °C</li> <li>-55 ... +80 °C</li> </ul> |

### Electromagnetic compatibility

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

|   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• due to conductor-conductor surge / acc. to IEC 61000-4-5</li> <li>• due to high-frequency radiation / acc. to IEC 61000-4-6</li> </ul> | <p>1 kV behavior criterion 2</p> <p>140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1</p> |
| <b>Electrostatic discharge / acc. to IEC 61000-4-2</b>  | 4 kV contact discharging / 8 kV air discharging, behavior criterion 2   |
| <b>Conducted HF-interference emissions / acc. to CISPR11</b>  | Class A for industrial environment  |
| <b>Field-bound HF-interference emission / acc. to CISPR11</b>   | Class B for the domestic, business and commercial environments  |

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

|   |   |
|---|---|
| <p>Manufacturer's article number</p> <ul style="list-style-type: none"> <li>• of gS fuse for semiconductor protection / at NH design</li> <li>• of back-up R fuse link for semiconductor protection / at NH design</li> <li>• of back-up R fuse link for semiconductor protection / at cylindrical design 14 x 51 mm</li> <li>• of back-up R fuse link for semiconductor protection / at cylindrical design 22 x 58 mm</li> </ul> | <p><a href="#">3NE1803-0</a></p> <p><a href="#">3NE8017-1</a></p> <p><a href="#">3NC1450</a></p> <p><a href="#">3NC2250</a></p> |
| <p>Manufacturer's article number / of the gG fuse</p> <ul style="list-style-type: none"> <li>• at NH design</li> </ul>  | <p><a href="#">3NA6807-6; These fuses have a smaller rated current than the semiconductor relays</a></p>                        |

### Further information

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

<https://www.siemens.com/ic10>

#### Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RF2150-2AA06>

#### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2150-2AA06>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2150-2AA06>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF2150-2AA06&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2150-2AA06&lang=en)





