



\*\*\*phase-out type\*\*\* solid-state contactor 1-phase 3RF2 AC 15 / 27.5 A / 40 °C 24-230 V / 24 V DC instantaneous switching since 21.5.2018, the dimensions and the drilling pattern have changed, more information at Industry Online Support

|                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| product brand name                                                                                                                                                                                                                                   | SIRIUS                                                                                                                                                                                                                                           |
| product designation                                                                                                                                                                                                                                  | solid-state contactor                                                                                                                                                                                                                            |
| design of the product                                                                                                                                                                                                                                | 1-pole                                                                                                                                                                                                                                           |
| product type designation                                                                                                                                                                                                                             | 3RF23                                                                                                                                                                                                                                            |
| manufacturer's article number                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>_1 of the accessories that can be ordered</li> <li>_2 of the accessories that can be ordered</li> <li>_3 of the accessories that can be ordered</li> <li>_4 of the accessories that can be ordered</li> </ul> | <a href="#">3RF2900-3PA88</a><br><a href="#">3RF2990-0HA13</a><br><a href="#">3RF2900-0EA18</a><br><a href="#">3RF2990-0GA13</a>                                                                                                                 |
| product designation                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>_1 of the accessories that can be ordered</li> <li>_2 of the accessories that can be ordered</li> <li>_3 of the accessories that can be ordered</li> <li>_4 of the accessories that can be ordered</li> </ul> | terminal cover<br>power regulator<br>converter<br>load monitoring                                                                                                                                                                                |
| <b>General technical data</b>                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                  |
| product function                                                                                                                                                                                                                                     | instantaneous switching                                                                                                                                                                                                                          |
| power loss [W] for rated value of the current                                                                                                                                                                                                        |                                                                                                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>at AC in hot operating state</li> <li>at AC in hot operating state per pole</li> <li>without load current share typical</li> </ul>                                                                            | 83 W<br>83 W<br>0.4 W                                                                                                                                                                                                                            |
| insulation voltage rated value                                                                                                                                                                                                                       | 600 V                                                                                                                                                                                                                                            |
| degree of pollution                                                                                                                                                                                                                                  | 3                                                                                                                                                                                                                                                |
| surge voltage resistance of main circuit rated value                                                                                                                                                                                                 | 6 kV                                                                                                                                                                                                                                             |
| protection class IP                                                                                                                                                                                                                                  | IP00                                                                                                                                                                                                                                             |
| protection class IP on the front according to IEC 60529                                                                                                                                                                                              | IP00                                                                                                                                                                                                                                             |
| shock resistance according to IEC 60068-2-27                                                                                                                                                                                                         | 15 g / 11 ms                                                                                                                                                                                                                                     |
| vibration resistance according to IEC 60068-2-6                                                                                                                                                                                                      | 2 g                                                                                                                                                                                                                                              |
| reference code according to IEC 81346-2                                                                                                                                                                                                              | Q                                                                                                                                                                                                                                                |
| Substance Prohibitance (day/month/year)                                                                                                                                                                                                              | 05/28/2009                                                                                                                                                                                                                                       |
| SVHC substance name                                                                                                                                                                                                                                  | Lead CAS-No. 7439-92-1<br>Lead monoxide (lead oxide) CAS-No. 1317-36-8<br>2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5<br>Melamine CAS-No. 108-78-1<br>Dibutylbis(pentane-2,4-dionato-O,O')tin CAS-No. 22673-19-4 |
| Net Weight                                                                                                                                                                                                                                           | 0.6 kg                                                                                                                                                                                                                                           |
| <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                                                                                                                                                                                                                                                |

|                                                                                    |                                                                                          |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| <b>type of voltage of the operating voltage</b>                                    | AC                                                                                       |
| <b>operating voltage</b>                                                           |                                                                                          |
| • at AC                                                                            |                                                                                          |
| — at 50 Hz rated value                                                             | 24 ... 230 V                                                                             |
| — at 60 Hz rated value                                                             | 24 ... 230 V                                                                             |
| <b>operating frequency rated value</b>                                             | 50 ... 60 Hz                                                                             |
| <b>operating range relative to the operating voltage at AC</b>                     |                                                                                          |
| • at 50 Hz                                                                         | 20 ... 253 V                                                                             |
| • at 60 Hz                                                                         | 20 ... 253 V                                                                             |
| <b>operational current</b>                                                         |                                                                                          |
| • at AC-1 at 400 V rated value                                                     | 70 A                                                                                     |
| • at AC-51 rated value                                                             | 70 A                                                                                     |
| • at AC-51 according to IEC 60947-4-3                                              | 70 A                                                                                     |
| • according to UL 508 rated value                                                  | 27.5 A                                                                                   |
| <b>operational current minimum</b>                                                 | 500 mA                                                                                   |
| <b>rate of voltage rise at the thyristor for main contacts maximum permissible</b> | 1 000 V/μs                                                                               |
| <b>blocking voltage at the thyristor for main contacts maximum permissible</b>     | 800 V                                                                                    |
| <b>reverse current of the thyristor</b>                                            | 10 mA                                                                                    |
| <b>derating temperature</b>                                                        | 40 °C                                                                                    |
| <b>surge current resistance rated value</b>                                        | 1 150 A                                                                                  |
| <b>I<sup>2</sup>t value maximum</b>                                                | 6 600 A <sup>2</sup> ·s                                                                  |
| <b>Control circuit/ Control</b>                                                    |                                                                                          |
| <b>type of voltage of the control supply voltage</b>                               | DC                                                                                       |
| <b>control supply voltage 1 at DC rated value maximum permissible</b>              | 30 V                                                                                     |
| <b>control supply voltage 1 at DC</b>                                              | 15 ... 24 V                                                                              |
| <b>control supply voltage at DC</b>                                                |                                                                                          |
| • initial value for signal <1> detection                                           | 15 V                                                                                     |
| • full-scale value for signal<0> recognition                                       | 5 V                                                                                      |
| <b>control current at minimum control supply voltage</b>                           |                                                                                          |
| • at DC                                                                            | 13 mA                                                                                    |
| control current at DC rated value                                                  | 15 mA                                                                                    |
| <b>ON-delay time</b>                                                               | 1 ms                                                                                     |
| <b>OFF-delay time</b>                                                              | 1 ms; additionally max. one half-wave                                                    |
| <b>Installation/ mounting/ dimensions</b>                                          |                                                                                          |
| fastening method side-by-side mounting                                             | Yes                                                                                      |
| <b>fastening method</b>                                                            | screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715 |
| <b>design of the thread of the screw for securing the equipment</b>                | M4                                                                                       |
| <b>height</b>                                                                      | 100 mm                                                                                   |
| <b>width</b>                                                                       | 80 mm                                                                                    |
| <b>depth</b>                                                                       | 164 mm                                                                                   |
| <b>Connections/ Terminals</b>                                                      |                                                                                          |
| <b>product component removable terminal for auxiliary and control circuit</b>      | Yes                                                                                      |
| <b>type of electrical connection</b>                                               |                                                                                          |
| • for main current circuit                                                         | Ring cable lug connection                                                                |
| • for auxiliary and control circuit                                                | ring terminal lug connection                                                             |
| <b>type of connectable conductor cross-sections</b>                                |                                                                                          |
| • for main contacts for JIS cable lug                                              | JIS C 2805 R 2-5, 5,5-5, 8-5, 14-5                                                       |
| • for DIN cable lug for main contacts                                              | DIN 46234-5-2,5, -5-6, -5-10, -5-16, -5-25                                               |
| <b>type of connectable conductor cross-sections</b>                                |                                                                                          |
| • for auxiliary and control contacts                                               |                                                                                          |
| — solid                                                                            | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1 mm <sup>2</sup> )                       |
| — finely stranded with core end processing                                         | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1 mm <sup>2</sup> )                       |
| — finely stranded without core end processing                                      | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1 mm <sup>2</sup> )                       |
| • for AWG cables for auxiliary and control contacts                                | 1x (20 ... 12)                                                                           |

|                                                                                                                                                                         |                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| <b>tightening torque</b>                                                                                                                                                |                                  |
| <ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> <li>• for auxiliary and control contacts with screw-type terminals</li> </ul> | 2 ... 2.5 N·m<br>0.5 ... 0.6 N·m |
| <b>tightening torque [lbf·in]</b>                                                                                                                                       |                                  |
| <ul style="list-style-type: none"> <li>• for auxiliary and control contacts with screw-type terminals</li> </ul>                                                        | 4.5 ... 5.3 lbf·in               |
| <b>design of the thread of the connection screw</b>                                                                                                                     |                                  |
| <ul style="list-style-type: none"> <li>• for main contacts</li> <li>• of the auxiliary and control contacts</li> </ul>                                                  | M5<br>M3                         |
| <b>stripped length of the cable</b>                                                                                                                                     |                                  |
| <ul style="list-style-type: none"> <li>• for main contacts</li> <li>• for auxiliary and control contacts</li> </ul>                                                     | 10 mm<br>7 mm                    |

#### UL/CSA ratings

|                                                            |        |
|------------------------------------------------------------|--------|
| <b>operational current according to UL 508 rated value</b> | 27.5 A |
|------------------------------------------------------------|--------|

#### Electrical Safety

|                                                             |                                                             |
|-------------------------------------------------------------|-------------------------------------------------------------|
| <b>touch protection on the front according to IEC 60529</b> | finger-safe, for vertical contact from the front with cover |
|-------------------------------------------------------------|-------------------------------------------------------------|

#### Ambient conditions

|                                                                                                |                                  |
|------------------------------------------------------------------------------------------------|----------------------------------|
| <b>installation altitude at height above sea level maximum</b>                                 | 1 000 m                          |
| <b>ambient temperature</b>                                                                     |                                  |
| <ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage</li> </ul> | -25 ... +60 °C<br>-55 ... +80 °C |

#### Electromagnetic compatibility

|                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>conducted interference</b>                                                                                                                                                                                                                                                                               |                                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>• due to burst according to IEC 61000-4-4</li> <li>• due to conductor-earth surge according to IEC 61000-4-5</li> <li>• due to conductor-conductor surge according to IEC 61000-4-5</li> <li>• due to high-frequency radiation according to IEC 61000-4-6</li> </ul> | 2 kV / 5 kHz, behavior criterion 2<br>2 kV, behavior criterion 2<br>1 kV, behavior criterion 2<br>140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1 |
| <b>field-based interference according to IEC 61000-4-3</b>                                                                                                                                                                                                                                                  | 80 MHz ... 1 GHz 10 V/m, behavior criterion 1                                                                                                                           |
| <b>electrostatic discharge according to IEC 61000-4-2</b>                                                                                                                                                                                                                                                   | 4 kV contact discharging / 8 kV air discharging, behavior criterion 2                                                                                                   |
| <b>conducted HF interference emissions according to CISPR11</b>                                                                                                                                                                                                                                             | Class A for industrial environment                                                                                                                                      |
| <b>field-bound HF interference emission according to CISPR11</b>                                                                                                                                                                                                                                            | Class B for the domestic, business and commercial environments                                                                                                          |

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

|                                                                                                                                                                                                                                                                                                           |                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>manufacturer's article number</b>                                                                                                                                                                                                                                                                      |                                                                                                 |
| <ul style="list-style-type: none"> <li>• of gS fuse for semiconductor protection at NH design usable</li> <li>• of back-up R fuse link for semiconductor protection at NH design usable</li> <li>• of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable</li> </ul> | <a href="#">3NE1820-0</a><br><a href="#">3NE8020-1</a><br><a href="#">3NC2200</a>               |
| <b>manufacturer's article number</b>                                                                                                                                                                                                                                                                      |                                                                                                 |
| <ul style="list-style-type: none"> <li>• of NEOZED fuse usable</li> </ul>                                                                                                                                                                                                                                 | <a href="#">5SE2335: These fuses have a smaller rated current than the semiconductor relays</a> |

#### Approvals Certificates

|                    |                                 |
|--------------------|---------------------------------|
| <b>Environment</b> | <b>General Product Approval</b> |
|--------------------|---------------------------------|

[Environmental Con-  
firmations](#)



|            |                          |              |
|------------|--------------------------|--------------|
| <b>EMV</b> | <b>Test Certificates</b> | <b>other</b> |
|------------|--------------------------|--------------|



[Type Test Certi-  
ficates/Test Report](#)

[Confirmation](#)

[Miscellaneous](#)

[Confirmation](#)



## Further information

### Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

### Information for data generation and storage

<https://support.industry.siemens.com/cs/ww/en/view/109995012>

### 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=3RF2370-3BA02>

### Cax online generator

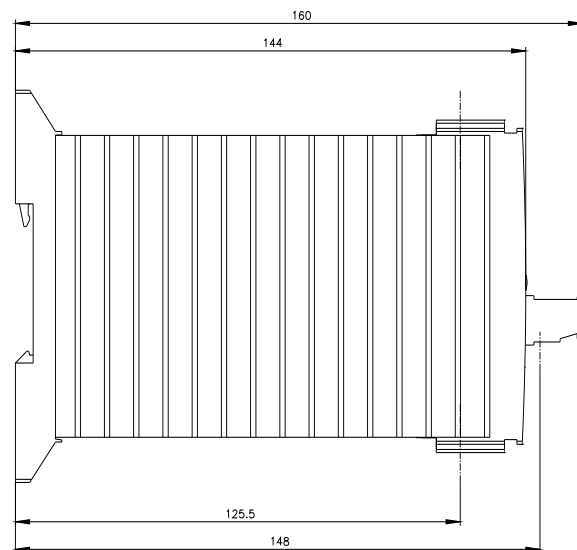
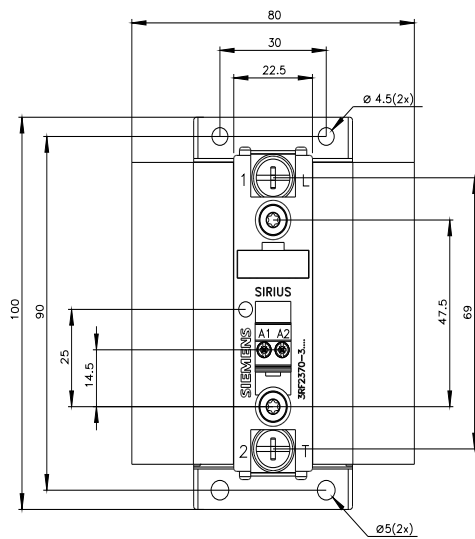
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2370-3BA02>

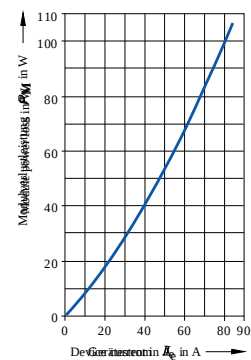
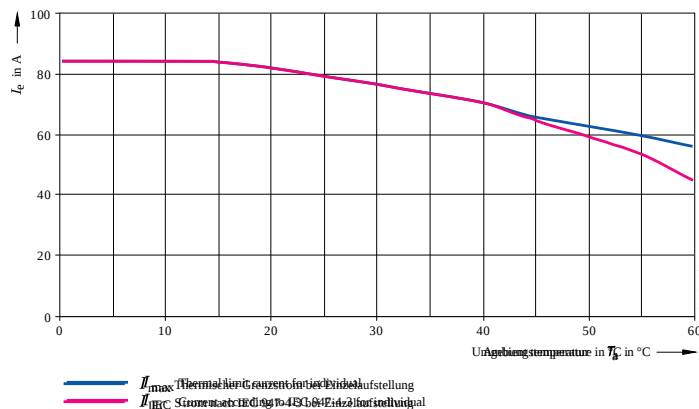
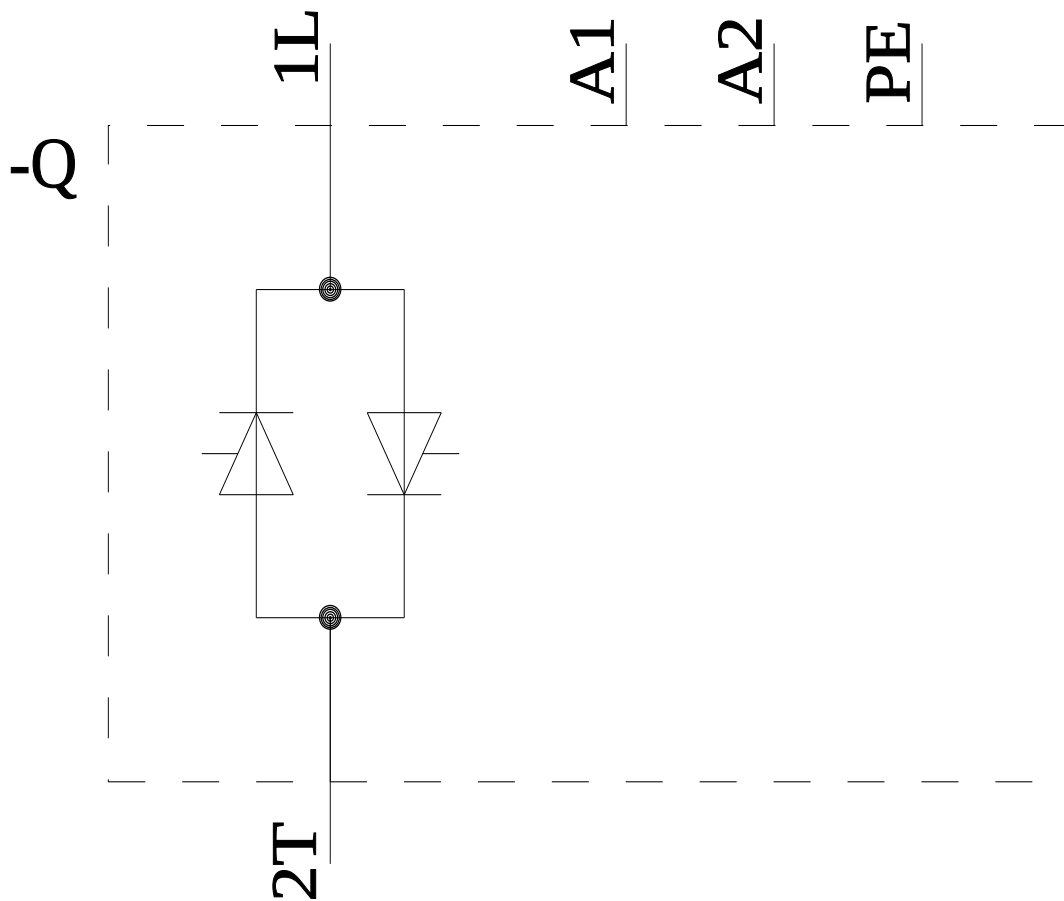
### Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2370-3BA02>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF2370-3BA02&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2370-3BA02&lang=en)





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