



\*\*\*phase-out type\*\*\* solid-state contactor 1-phase 3RF2 AC 51 / 70 A / 40 °C 48-460 V / 24 V DC ring cable terminal 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                           |                                                                                                                                                                                                                                                  |
| • _1 of the accessories that can be ordered             | <a href="#">3RF2900-3PA88</a>                                                                                                                                                                                                                    |
| • _3 of the accessories that can be ordered             | <a href="#">3RF2900-0EA18</a>                                                                                                                                                                                                                    |
| • _4 of the accessories that can be ordered             | <a href="#">3RF2990-0GA16</a>                                                                                                                                                                                                                    |
| product designation                                     |                                                                                                                                                                                                                                                  |
| • _1 of the accessories that can be ordered             | terminal cover                                                                                                                                                                                                                                   |
| • _3 of the accessories that can be ordered             | converter                                                                                                                                                                                                                                        |
| • _4 of the accessories that can be ordered             | load monitoring                                                                                                                                                                                                                                  |
| <b>General technical data</b>                           |                                                                                                                                                                                                                                                  |
| product function                                        | zero-point switching                                                                                                                                                                                                                             |
| power loss [W] for rated value of the current           |                                                                                                                                                                                                                                                  |
| • at AC in hot operating state                          | 83 W                                                                                                                                                                                                                                             |
| • at AC in hot operating state per pole                 | 83 W                                                                                                                                                                                                                                             |
| • without load current share typical                    | 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)                 | 07/01/2006                                                                                                                                                                                                                                       |
| 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 g                                                                                                                                                                                                                                            |
| <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                                                                                                                                                                                                                                                |
| type of voltage of the operating voltage                | AC                                                                                                                                                                                                                                               |
| operating voltage                                       |                                                                                                                                                                                                                                                  |

|                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at AC <ul style="list-style-type: none"> <li>— at 50 Hz rated value</li> <li>— at 60 Hz rated value</li> </ul> </li> </ul>                                                                                                                                                                                                           | 48 ... 460 V<br>48 ... 460 V                                                                                                                                                                                                     |
| <b>operating frequency rated value</b>                                                                                                                                                                                                                                                                                                                                        | 50 ... 60 Hz                                                                                                                                                                                                                     |
| <b>operating range relative to the operating voltage at AC</b> <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>                                                                                                                                                                                                                               | 40 ... 506 V<br>40 ... 506 V                                                                                                                                                                                                     |
| <b>operational current</b> <ul style="list-style-type: none"> <li>• at AC-1 at 400 V rated value</li> <li>• at AC-51 rated value</li> <li>• at AC-51 according to IEC 60947-4-3</li> <li>• according to UL 508 rated value</li> </ul>                                                                                                                                         | 70 A<br>70 A<br>70 A<br>62 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>                                                                                                                                                                                                                                                                                                | 1 200 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> <ul style="list-style-type: none"> <li>• initial value for signal &lt;1&gt; detection</li> <li>• full-scale value for signal&lt;0&gt; recognition</li> </ul>                                                                                                                                                                              | 15 V<br>5 V                                                                                                                                                                                                                      |
| <b>control current at minimum control supply voltage</b> <ul style="list-style-type: none"> <li>• at DC</li> </ul>                                                                                                                                                                                                                                                            | 13 mA                                                                                                                                                                                                                            |
| control current at DC rated value                                                                                                                                                                                                                                                                                                                                             | 15 mA                                                                                                                                                                                                                            |
| <b>ON-delay time</b>                                                                                                                                                                                                                                                                                                                                                          | 1 ms; additionally max. one half-wave                                                                                                                                                                                            |
| <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>                                                                                                                                                                                                                                                                                                                                                                  | 162 mm                                                                                                                                                                                                                           |
| <b>Connections/ Terminals</b>                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                  |
| <b>product component removable terminal for auxiliary and control circuit</b>                                                                                                                                                                                                                                                                                                 | Yes                                                                                                                                                                                                                              |
| <b>type of electrical connection</b> <ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for auxiliary and control circuit</li> </ul>                                                                                                                                                                                                                | Ring cable lug connection<br>ring terminal lug connection                                                                                                                                                                        |
| <b>type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>• for main contacts for JIS cable lug</li> <li>• for DIN cable lug for main contacts</li> </ul>                                                                                                                                                                                    | JIS C 2805 R 2-5, 5,5-5, 8-5, 14-5<br>DIN 46234-5-2,5, -5-6, -5-10, -5-16, -5-25                                                                                                                                                 |
| <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>• for AWG cables for auxiliary and control contacts</li> </ul> | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1 mm <sup>2</sup> )<br>1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1 mm <sup>2</sup> )<br>1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1 mm <sup>2</sup> )<br>1x (20 ... 12) |
| <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                                                                                                                                                                                                                    |

|                                                                                                                |                    |
|----------------------------------------------------------------------------------------------------------------|--------------------|
| <ul style="list-style-type: none"> <li>for auxiliary and control contacts with screw-type terminals</li> </ul> | 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> </ul>                                            | M5                 |
| <ul style="list-style-type: none"> <li>of the auxiliary and control contacts</li> </ul>                        | M3                 |
| <b>stripped length of the cable</b>                                                                            |                    |
| <ul style="list-style-type: none"> <li>for main contacts</li> </ul>                                            | 10 mm              |
| <ul style="list-style-type: none"> <li>for auxiliary and control contacts</li> </ul>                           | 7 mm               |

#### UL/CSA ratings

|                                                             |                                                             |
|-------------------------------------------------------------|-------------------------------------------------------------|
| <b>operational current according to UL 508 rated value</b>  | 62 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

|                                                                    |                |
|--------------------------------------------------------------------|----------------|
| installation altitude at height above sea level maximum            | 1 000 m        |
| <b>ambient temperature</b>                                         |                |
| <ul style="list-style-type: none"> <li>during operation</li> </ul> | -25 ... +60 °C |
| <ul style="list-style-type: none"> <li>during storage</li> </ul>   | -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> </ul>                     | 2 kV / 5 kHz, behavior criterion 2                                    |
| <ul style="list-style-type: none"> <li>due to conductor-earth surge according to IEC 61000-4-5</li> </ul>     | 2 kV, behavior criterion 2                                            |
| <ul style="list-style-type: none"> <li>due to conductor-conductor surge according to IEC 61000-4-5</li> </ul> | 1 kV, behavior criterion 2                                            |
| <ul style="list-style-type: none"> <li>due to high-frequency radiation according to IEC 61000-4-6</li> </ul>  | 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

|                                                                                                                                               |                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| manufacturer's article number                                                                                                                 |                                                                                                 |
| <ul style="list-style-type: none"> <li>of full range R fuse link for semiconductor protection at NH design usable</li> </ul>                  | <a href="#">3NE1020-2</a>                                                                       |
| <ul style="list-style-type: none"> <li>of back-up R fuse link for semiconductor protection at NH design usable</li> </ul>                     | <a href="#">3NE8020-1</a>                                                                       |
| <ul style="list-style-type: none"> <li>of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable</li> </ul> | <a href="#">3NC2280</a>                                                                         |
| manufacturer's article number                                                                                                                 |                                                                                                 |
| <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

|             |                          |
|-------------|--------------------------|
| Environment | General Product Approval |
|-------------|--------------------------|

[Environmental Confirmations](#)



|     |                   |       |
|-----|-------------------|-------|
| EMV | Test Certificates | other |
|-----|-------------------|-------|



[Type Test Certificates/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=3RF2370-3AA04>

Cax online generator

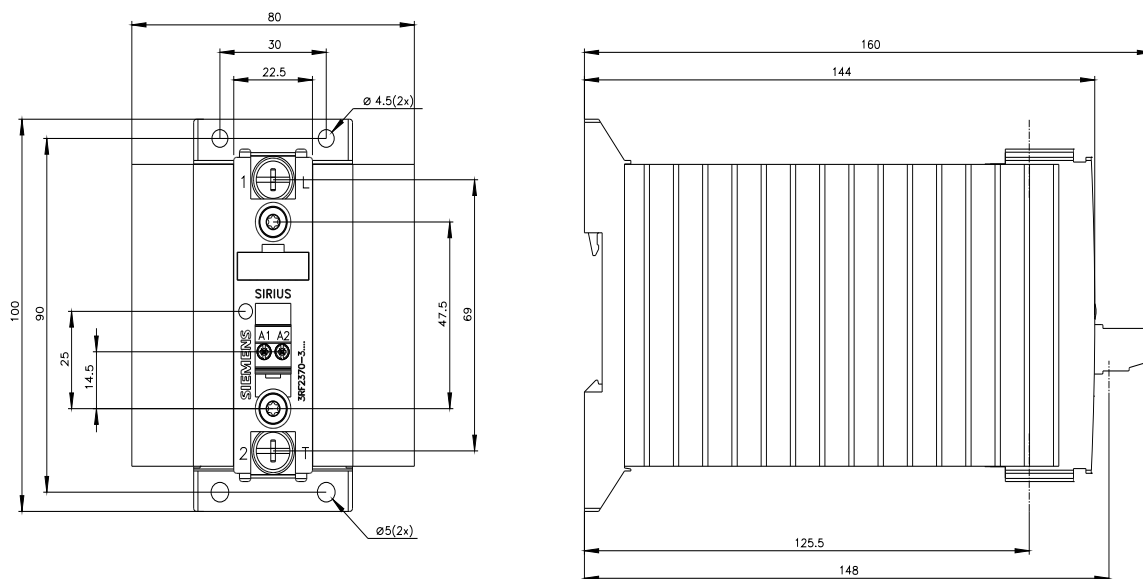
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2370-3AA04>

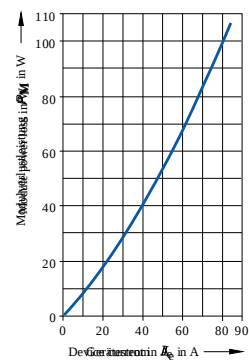
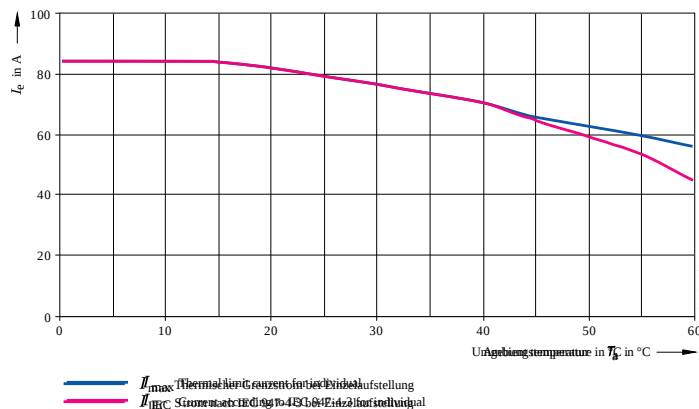
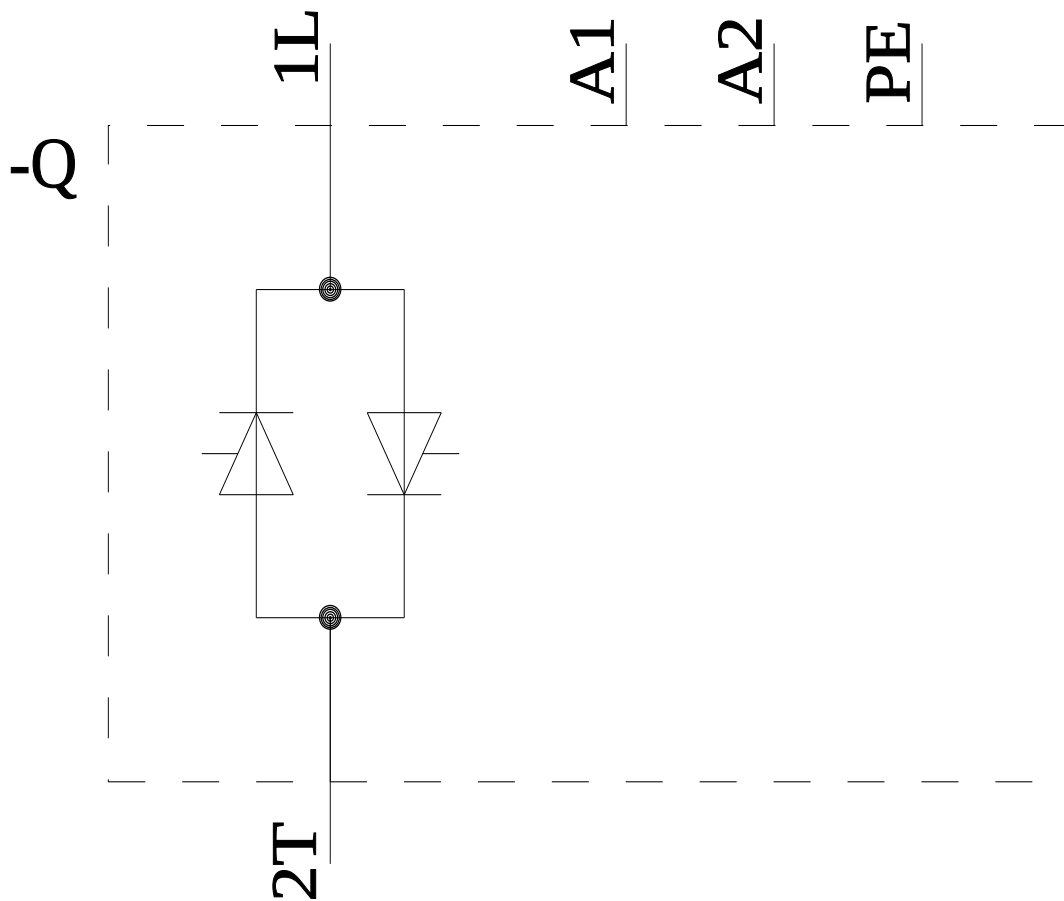
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2370-3AA04>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF2370-3AA04&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2370-3AA04&lang=en)





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