



solid-state contactor 1-pole 3RF33 AC-1 30 A 40 °C / 48-600 V / 4-30 V DC / screw terminal / blocking voltage 1200 V

|                                                            |                                                                                                                                                                                    |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>product brand name</b>                                  | SIRIUS                                                                                                                                                                             |
| <b>product designation</b>                                 | solid-state contactor                                                                                                                                                              |
| <b>product type designation</b>                            | 3RF33                                                                                                                                                                              |
| <b>manufacturer's article number</b>                       |                                                                                                                                                                                    |
| • _1 of the accessories that can be ordered                | <a href="#">3RF2900-3PA88</a>                                                                                                                                                      |
| • _2 of the accessories that can be ordered                | <a href="#">3RF3950-0HA16</a>                                                                                                                                                      |
| • _3 of the accessories that can be ordered                | <a href="#">3RF3900-0EA18</a>                                                                                                                                                      |
| • _4 of the accessories that can be ordered                | <a href="#">3RF3950-0GA16</a>                                                                                                                                                      |
| • _5 of the accessories that can be ordered                | <a href="#">3RF3920-0FA08</a>                                                                                                                                                      |
| <b>product designation</b>                                 |                                                                                                                                                                                    |
| • _1 of the accessories that can be ordered                | terminal cover                                                                                                                                                                     |
| • _2 of the accessories that can be ordered                | power regulator                                                                                                                                                                    |
| • _3 of the accessories that can be ordered                | converter                                                                                                                                                                          |
| • _4 of the accessories that can be ordered                | load monitoring                                                                                                                                                                    |
| • _5 of the accessories that can be ordered                | load monitoring, basis                                                                                                                                                             |
| <b>General technical data</b>                              |                                                                                                                                                                                    |
| <b>product function</b>                                    | zero-point switching                                                                                                                                                               |
| <b>power loss [V·A] maximum</b>                            | 25 VA                                                                                                                                                                              |
| <b>power loss [W] for rated value of the current</b>       |                                                                                                                                                                                    |
| • at AC in hot operating state                             | 27 W                                                                                                                                                                               |
| • at AC in hot operating state per pole                    | 27 W                                                                                                                                                                               |
| • without load current share typical                       | 0.6 W                                                                                                                                                                              |
| <b>type of calculation of power loss current-dependent</b> | linear                                                                                                                                                                             |
| <b>insulation voltage rated value</b>                      | 600 V                                                                                                                                                                              |
| <b>degree of pollution</b>                                 | 3                                                                                                                                                                                  |
| surge voltage resistance of main circuit rated value       | 6 kV                                                                                                                                                                               |
| <b>protection class IP</b>                                 | IP20                                                                                                                                                                               |
| protection class IP on the front according to IEC 60529    | IP20                                                                                                                                                                               |
| <b>shock resistance according to IEC 60068-2-27</b>        | 15 g / 11 ms                                                                                                                                                                       |
| <b>vibration resistance according to IEC 60068-2-6</b>     | 2 g                                                                                                                                                                                |
| <b>reference code according to IEC 81346-2</b>             | Q                                                                                                                                                                                  |
| <b>Substance Prohibitance (day/month/year)</b>             | 01/15/2024                                                                                                                                                                         |
| <b>SVHC substance name</b>                                 | 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 |

|                                                                                    |                                                                                          |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|                                                                                    | Dibutylbis(pentane-2,4-dionato-O,O')tin CAS-No. 22673-19-4                               |
| <b>Net Weight</b>                                                                  | 0.165 kg                                                                                 |
| <b>Main circuit</b>                                                                |                                                                                          |
| <b>number of poles for main current circuit</b>                                    | 1                                                                                        |
| <b>number of NO contacts for main contacts</b>                                     | 1                                                                                        |
| <b>number of NC contacts for main contacts</b>                                     | 0                                                                                        |
| <b>type of voltage of the operating voltage</b>                                    | AC                                                                                       |
| <b>operating voltage</b>                                                           |                                                                                          |
| • at AC                                                                            |                                                                                          |
| — at 50 Hz rated value                                                             | 48 ... 600 V                                                                             |
| — at 60 Hz rated value                                                             | 48 ... 600 V                                                                             |
| <b>operating frequency rated value</b>                                             | 50 ... 60 Hz                                                                             |
| <b>relative symmetrical tolerance of the operating frequency</b>                   | 10 %                                                                                     |
| <b>operating range relative to the operating voltage at AC</b>                     |                                                                                          |
| • at 50 Hz                                                                         | 40 ... 660 V                                                                             |
| • at 60 Hz                                                                         | 40 ... 660 V                                                                             |
| <b>operational current rated value maximum</b>                                     | 30 A                                                                                     |
| <b>operational current</b>                                                         |                                                                                          |
| • at AC-1 at 400 V rated value                                                     | 30 A                                                                                     |
| • at AC-51 rated value                                                             | 30 A                                                                                     |
| • at AC-51 according to IEC 60947-4-3                                              | 30 A                                                                                     |
| • according to UL 508 rated value                                                  | 24 A                                                                                     |
| <b>ampacity maximum</b>                                                            | 30 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>                                        | 1 300 A                                                                                  |
| <b>I<sup>2</sup>t value maximum</b>                                                | 8 000 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 at DC</b>                                                | 4 ... 30 V                                                                               |
| <b>control supply voltage 1 at DC</b>                                              | 4 ... 30 V                                                                               |
| <b>control supply voltage at DC</b>                                                |                                                                                          |
| • initial value for signal <1> detection                                           | 4 V                                                                                      |
| • full-scale value for signal<0> recognition                                       | 1 V                                                                                      |
| <b>operating range factor control supply voltage rated value at DC</b>             |                                                                                          |
| • initial value                                                                    | 0.17                                                                                     |
| • full-scale value                                                                 | 1.25                                                                                     |
| <b>control current at minimum control supply voltage</b>                           |                                                                                          |
| • at DC                                                                            | 18 mA                                                                                    |
| <b>control current at DC rated value</b>                                           | 20 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>                                          |                                                                                          |
| <b>fastening method side-by-side mounting</b>                                      | 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>                                                                      | 95 mm                                                                                    |
| <b>width</b>                                                                       | 22.5 mm                                                                                  |
| <b>depth</b>                                                                       | 121 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                                                       | screw-type terminals                                                                    |
| • for auxiliary and control circuit                                              | screw-type terminals                                                                    |
| <b>type of connectable conductor cross-sections</b>                              |                                                                                         |
| • for main contacts                                                              |                                                                                         |
| — solid                                                                          | 2x (1 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> )                        |
| — finely stranded with core end processing                                       | 2x (1 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> ), 1x 10 mm <sup>2</sup> |
| • for AWG cables for main contacts                                               | 2x (14 ... 10), 1x 8                                                                    |
| <b>connectable conductor cross-section for main contacts</b>                     |                                                                                         |
| • solid or stranded                                                              | 1.5 ... 6 mm <sup>2</sup>                                                               |
| • finely stranded with core end processing                                       | 1 ... 10 mm <sup>2</sup>                                                                |
| <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>AWG number as coded connectable conductor cross section for main contacts</b> | 14 ... 8                                                                                |
| <b>tightening torque</b>                                                         |                                                                                         |
| • for main contacts with screw-type terminals                                    | 2 ... 2.5 N·m                                                                           |
| • for auxiliary and control contacts with screw-type terminals                   | 0.5 ... 0.6 N·m                                                                         |
| <b>tightening torque [lbf·in]</b>                                                |                                                                                         |
| • for main contacts with screw-type terminals                                    | 18 ... 22 lbf·in                                                                        |
| • for auxiliary and control contacts with screw-type terminals                   | 4.5 ... 5.3 lbf·in                                                                      |
| <b>design of the thread of the connection screw</b>                              |                                                                                         |
| • for main contacts                                                              | M4                                                                                      |
| • of the auxiliary and control contacts                                          | M3                                                                                      |
| <b>stripped length of the cable</b>                                              |                                                                                         |
| • for main contacts                                                              | 10 mm                                                                                   |
| • for auxiliary and control contacts                                             | 7 mm                                                                                    |
| <b>type of grounding</b>                                                         | grounding by snapping onto grounded DIN rails                                           |
| <b>UL/CSA ratings</b>                                                            |                                                                                         |
| <b>operational current according to UL 508 rated value</b>                       | 24 A                                                                                    |
| Electrical Safety                                                                |                                                                                         |
| <b>touch protection on the front according to IEC 60529</b>                      | finger-safe, for vertical contact from the front                                        |
| <b>Ambient conditions</b>                                                        |                                                                                         |
| installation altitude at height above sea level maximum                          | 1 000 m                                                                                 |
| <b>ambient temperature</b>                                                       |                                                                                         |
| • during operation                                                               | -25 ... +60 °C                                                                          |
| • during storage                                                                 | -55 ... +80 °C                                                                          |
| <b>Electromagnetic compatibility</b>                                             |                                                                                         |
| <b>conducted interference</b>                                                    |                                                                                         |
| • due to burst according to IEC 61000-4-4                                        | 2 kV / 5 kHz, behavior criterion 2                                                      |
| • due to conductor-earth surge according to IEC 61000-4-5                        | 2 kV, behavior criterion 2                                                              |
| • due to conductor-conductor surge according to IEC 61000-4-5                    | 1 kV, behavior criterion 2                                                              |
| • due to high-frequency radiation according to IEC 61000-4-6                     | 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                          |
| <b>Short-circuit protection, design of the fuse link</b>                         |                                                                                         |
| manufacturer's article number                                                    |                                                                                         |
| • of full range R fuse link for semiconductor protection at NH design usable     | <a href="#">3NE8702-1</a>                                                               |
| • of gS fuse for semiconductor protection at NH design                           | <a href="#">3NE1803-0</a>                                                               |

usable

- of back-up R fuse link for semiconductor protection at NH design usable
- of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable
- of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable
- of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable

[3NE8801-0MK](#)

[3NC1032](#)

[3NC1450](#)

[3NC2250](#)

manufacturer's article number of the gG fuse

- at NH design usable

[3NA6812](#)

#### Approvals Certificates

Environment

General Product Approval

[Environmental Confirmations](#)



Siemens  
EcoTech



EMV

Test Certificates

other



[Type Test Certificates/Test Report](#)

[Confirmation](#)



[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=3RF3330-1AA45>

Cax online generator

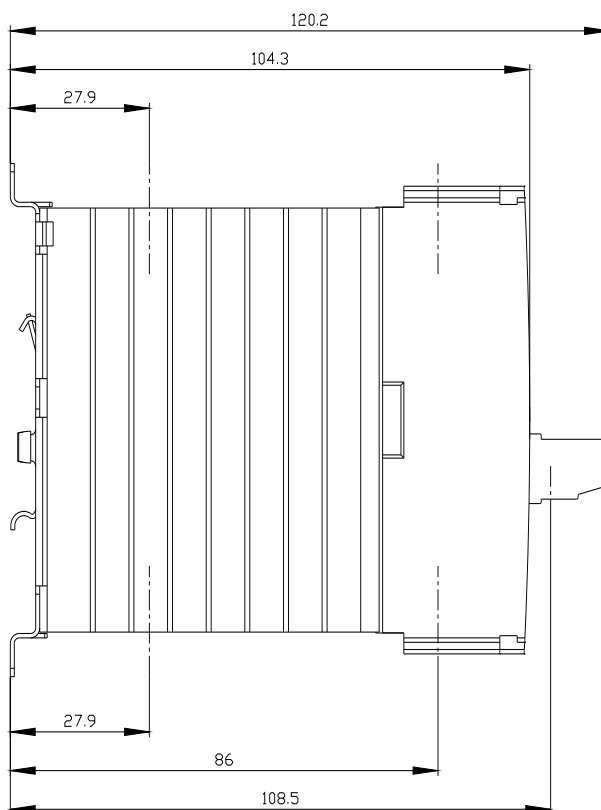
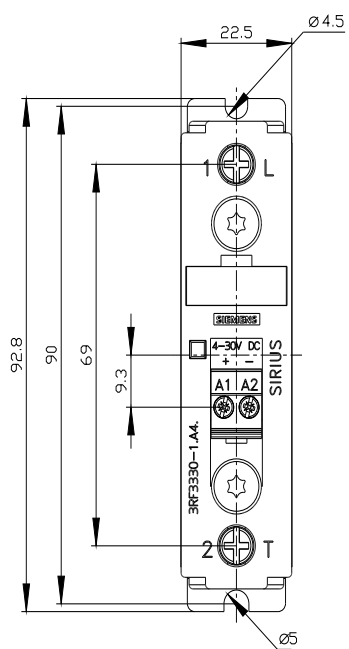
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF3330-1AA45>

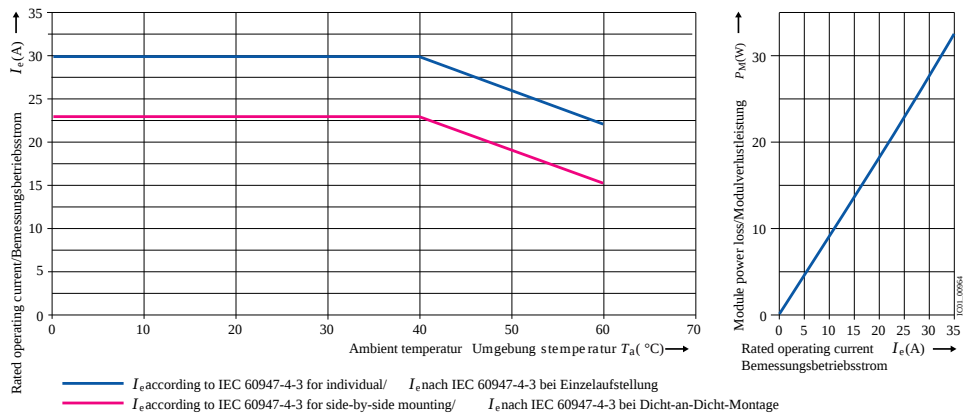
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF3330-1AA45>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF3330-1AA45&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF3330-1AA45&lang=en)





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