



Solid-state contactor 3-phase 3RF3 AC 53 / 9.2 A / 40 °C 48-480 V / 24 V DC 2-phase controlled Instantaneous switching screw terminal

|                                                         |                                                                                                                                                                                    |
|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| product brand name                                      | SIRIUS                                                                                                                                                                             |
| product designation                                     | solid-state contactor                                                                                                                                                              |
| design of the product                                   | 2-pole controlled                                                                                                                                                                  |
| product type designation                                | 3RF34                                                                                                                                                                              |
| manufacturer's article number                           |                                                                                                                                                                                    |
| • _1 of the accessories that can be ordered             | <a href="#">3RA2921-1BA00</a>                                                                                                                                                      |
| • _2 of the accessories that can be ordered             | <a href="#">3RF3900-0QA88</a>                                                                                                                                                      |
| product designation                                     |                                                                                                                                                                                    |
| • _1 of the accessories that can be ordered             | Link module                                                                                                                                                                        |
| • _2 of the accessories that can be ordered             | Connection adapter                                                                                                                                                                 |
| <b>General technical data</b>                           |                                                                                                                                                                                    |
| certificate of suitability                              | CE / UL / CSA / CCC / C-Tick (RCM)                                                                                                                                                 |
| product function                                        | instantaneous switching                                                                                                                                                            |
| power loss [W] for rated value of the current           |                                                                                                                                                                                    |
| • at AC in hot operating state                          | 16 W                                                                                                                                                                               |
| • at AC in hot operating state per pole                 | 5.33 W                                                                                                                                                                             |
| • without load current share typical                    | 0.4 W                                                                                                                                                                              |
| type of calculation of power loss current-dependent     | linear                                                                                                                                                                             |
| insulation voltage rated value                          | 600 V                                                                                                                                                                              |
| degree of pollution                                     | 3                                                                                                                                                                                  |
| surge voltage resistance of main circuit rated value    | 6 kV                                                                                                                                                                               |
| protection class IP                                     | IP20                                                                                                                                                                               |
| protection class IP on the front according to IEC 60529 | IP20                                                                                                                                                                               |
| 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 |
| Net Weight                                              | 0.49 kg                                                                                                                                                                            |
| <b>Main circuit</b>                                     |                                                                                                                                                                                    |
| number of poles for main current circuit                | 3                                                                                                                                                                                  |
| number of NO contacts for main contacts                 | 2                                                                                                                                                                                  |
| number of NC contacts for main contacts                 | 0                                                                                                                                                                                  |
| type of voltage of the operating voltage                | AC                                                                                                                                                                                 |
| operating voltage                                       |                                                                                                                                                                                    |
| • at AC                                                 |                                                                                                                                                                                    |

|                                                                                    |                                                                                         |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| — at 50 Hz rated value                                                             | 48 ... 480 V                                                                            |
| — at 60 Hz rated value                                                             | 48 ... 480 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 ... 506 V                                                                            |
| • at 60 Hz                                                                         | 40 ... 506 V                                                                            |
| <b>operational current</b>                                                         |                                                                                         |
| • at AC-3 at 400 V rated value                                                     | 9.2 A                                                                                   |
| • at AC-53a at 400 V at ambient temperature 40 °C rated value                      | 9.2 A                                                                                   |
| <b>operational current minimum</b>                                                 | 500 mA                                                                                  |
| <b>operating power</b>                                                             |                                                                                         |
| • at AC-3 at 400 V rated value                                                     | 4 kW                                                                                    |
| <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>                                        | 600 A                                                                                   |
| <b>I<sup>2</sup>t value maximum</b>                                                | 1 800 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 rated value</b>                                    | 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>symmetrical line frequency tolerance</b>                                        | 5 Hz                                                                                    |
| <b>operating range factor control supply voltage rated value at DC</b>             |                                                                                         |
| • initial value                                                                    | 0.63                                                                                    |
| • full-scale value                                                                 | 1.25                                                                                    |
| <b>control current at minimum control supply voltage</b>                           |                                                                                         |
| • at DC                                                                            | 2 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>                                          |                                                                                         |
| <b>mounting position</b>                                                           | vertical                                                                                |
| fastening method side-by-side mounting                                             | Yes                                                                                     |
| <b>fastening method</b>                                                            | screw and snap-on mounting onto 35 mm DIN rail                                          |
| <b>design of the thread of the screw for securing the equipment</b>                | M4                                                                                      |
| <b>height</b>                                                                      | 95 mm                                                                                   |
| <b>width</b>                                                                       | 90 mm                                                                                   |
| <b>depth</b>                                                                       | 100.8 mm                                                                                |
| required spacing with side-by-side mounting                                        |                                                                                         |
| • upwards                                                                          | 70 mm                                                                                   |
| • downwards                                                                        | 50 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 (1.5 ... 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)                                                        |
| <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 ... 10                                                             |
| <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                   | 7.5 ... 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>UL/CSA ratings</b>                                                            |                                                                       |
| <b>full-load current (FLA) for 3-phase AC motor</b>                              |                                                                       |
| • at 480 V rated value                                                           | 4.8 A                                                                 |
| yielded mechanical performance [hp] for 3-phase AC motor                         |                                                                       |
| • at 200/208 V rated value                                                       | 1.5 hp                                                                |
| • at 220/230 V rated value                                                       | 2 hp                                                                  |
| • at 460/480 V rated value                                                       | 3 hp                                                                  |
| <b>Safety related data</b>                                                       |                                                                       |
| proportion of dangerous failures with high demand rate according to SN 31920     | 50 %                                                                  |
| <b>MTTF with high demand rate</b>                                                | 76 a                                                                  |
| IEC 61508                                                                        |                                                                       |
| T1 value for proof test interval or service life according to IEC 61508          | 20 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>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 A for industrial environment                                    |
| <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
- of full range R fuse link for semiconductor protection at cylindrical design 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

[3NE1802-0](#)

[5SE1335](#)

[3NE8020-1](#)

[3NC1032](#)

[3NC1450](#)

[3NC2263](#)

manufacturer's article number of the gG fuse

- at NH design usable
- at cylindrical design 10 x 38 mm usable
- at cylindrical design 14 x 51 mm usable
- at cylindrical design 22 x 58 mm usable

[3NA3805-6](#)

[3NW6005-1](#)

[3NW6105-1](#)

[3NW6205-1](#)

## Approvals Certificates

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

[Environmental Confirmations](#)



| General Product Approval | 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=3RF3410-1BB04>

Cax online generator

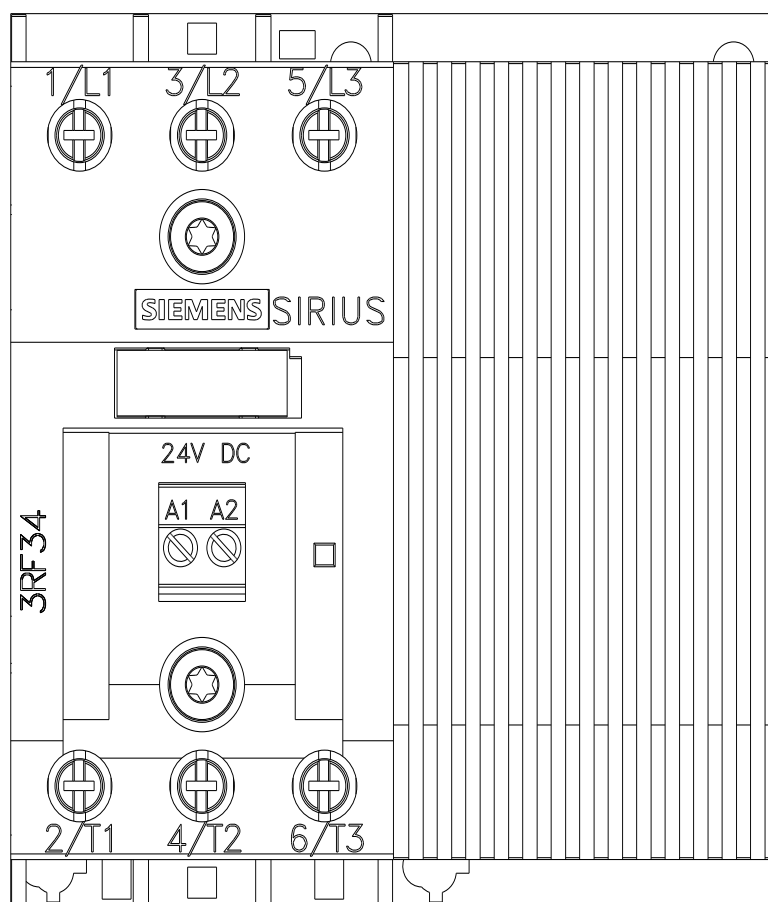
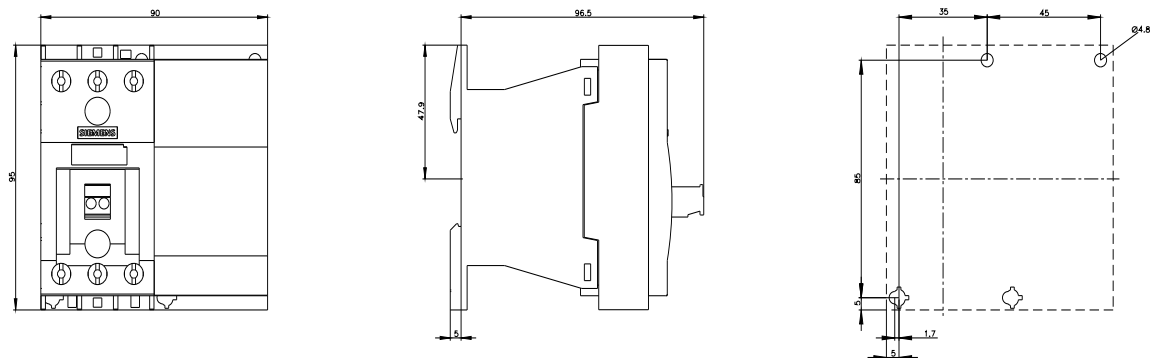
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF3410-1BB04>

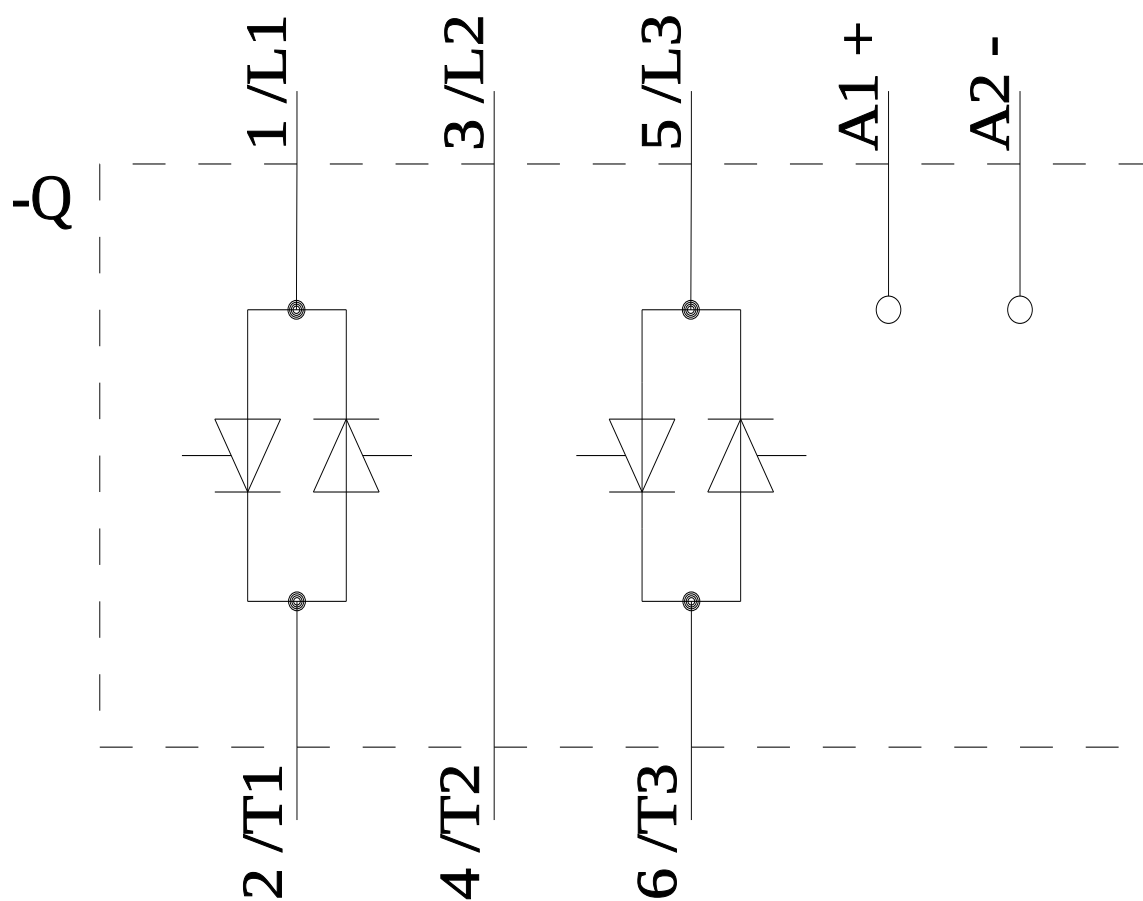
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF3410-1BB04>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF3410-1BB04&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF3410-1BB04&lang=en)





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