

SOLID-STATE CONTACTOR 3-PH 3RF3 AC53 12.5A  
 40 DEGREES C 48-480V / 24V DC 2-PH.  
 CONTROLLED INSTANTANEOUS SCREW  
 TERMINALS



General technical data

|  |    |  |
|--|----|--|
| product brandname  |    | SIRIUS   |
| Product designation _2 of the accessories that can be ordered  |    | Connection adapter   |
| Product designation _1 of the accessories that can be ordered  |    | Link module  |
| Manufacturer's article number  |    |  |
| <ul style="list-style-type: none"> <li>• _1 of the accessories that can be ordered</li> <li>• _2 of the accessories that can be ordered</li> </ul> |    | <a href="#">3RA2921-1BA00</a><br><a href="#">3RF3900-0QA88</a> |
| Protection class IP  |    | IP20   |
| Insulation voltage rated value   | V  | 600  |
| Installation altitude at height above sea level maximum  | m  | 1 000  |
| Ambient temperature  |    |  |
| <ul style="list-style-type: none"> <li>• during storage</li> <li>• during operation</li> </ul>   | °C | -55 ... +80<br>-25 ... +60                                     |
| Shock resistance acc. to IEC 60068-2-27  |    | 15g / 11 ms  |
| Vibration resistance acc. to IEC 60068-2-6   |    | 2g   |
| Surge current resistance rated value   | A  | 1 200  |

|   |   |                         |
|---|---|-------------------------|
| Power loss [W] total typical  | W | 22                      |
| Equipment marking acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750 |   | K                       |
| Equipment marking acc. to DIN EN 61346-2  |   | Q                       |
| Product function  |   | instantaneous switching |

### Main circuit

|   |                   |            |
|---|-------------------|------------|
| Number of poles for main current circuit                                    |                   | 3          |
| Number of NO contacts for main contacts                                     |                   | 2          |
| Operating frequency rated value   | Hz                | 60 ... 50  |
| Operating voltage at AC   |                   |            |
| • at 60 Hz rated value  | V                 | 48 ... 480 |
| • at 50 Hz rated value  | V                 | 48 ... 480 |
| Operating current   |                   |            |
| • minimum   | mA                | 500        |
| • at AC-53a at 400 V at ambient temperature 40 °C rated value               | A                 | 12.5       |
| Operating range relative to the operating voltage at AC                     |                   |            |
| • at 50 Hz  | V                 | 40 ... 506 |
| • at 60 Hz  | V                 | 40 ... 506 |
| Operating power at AC-3 at 400 V rated value                                | kW                | 5.5        |
| Derating temperature  | °C                | 40         |
| Symmetrical line frequency tolerance  | Hz                | 5          |
| Relative symmetrical tolerance of the operating frequency                   | %                 | 10         |
| I <sup>2</sup> t value maximum  | A <sup>2</sup> ·s | 7 200      |
| Rate of voltage rise at the thyristor for main contacts maximum permissible | V/μs              | 1 000      |
| Blocking voltage at the thyristor for main contacts maximum permissible     | V                 | 1 200      |
| Reverse current of the thyristor  | mA                | 10         |

### Control circuit/ Control

|   |   |    |
|---|---|----|
| Type of voltage of the control supply voltage |   | DC |
| Control supply voltage 1                      |   |    |
| • at DC                                       |   |    |
| — Initial rated value                         | V | 15 |
| — Final rated value                           | V | 24 |
| — rated value maximum permissible             | V | 30 |
| Control supply voltage at DC                  |   |    |
| • initial value for signal <1> detection      | V | 15 |
| • Full-scale value for signal <0> recognition | V | 5  |
| Control current                               |   |    |
| • at minimum control supply voltage           |   |    |

|                        |    |                                       |
|------------------------|----|---------------------------------------|
| — at DC                | mA | 2                                     |
| • at DC rated value    | mA | 15                                    |
| <b>switching times</b> |    |                                       |
| • ON delay             |    | 1 ms                                  |
| • OFF delay            |    | 1 ms + in addition max. one half-wave |

| Installation/ mounting/ dimensions                                  |     |  |
|---|-----|--|
| <b>Mounting position</b>  |     | vertical   |
| <b>Mounting type</b>  |     | screw and snap-on mounting onto 35 mm standard mounting rail |
| <b>Mounting type Side-by-side mounting</b>                          |     | Yes  |
| <b>Tightening torque of the screw for securing the equipment</b>    | N·m | 1.5  |
| <b>Design of the thread of the screw for securing the equipment</b> |     | M4   |
| <b>Width</b>  | mm  | 90   |
| <b>Height</b>   | mm  | 95   |
| <b>Depth</b>  | mm  | 100.8  |
| <b>Required spacing with side-by-side mounting</b>                  |     |  |
| • upwards   | mm  | 70   |
| • downwards   | mm  | 50   |

| Connections/Terminals  |  |   |
|--|--|---|
| <b>Type of electrical connection</b>   |  |   |
| • for main current circuit   |  | screw-type terminals  |
| • for auxiliary and control current circuit                                  |  | screw-type terminals  |
| <b>Design of the thread of the connection screw</b>                          |  |   |
| • for main contacts  |  | M4  |
| • of the auxiliary and control contacts                                      |  | M3  |
| <b>Product function removable terminal for auxiliary and control circuit</b> |  | Yes   |
| <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> |
| • at AWG conductors  |  |   |
| — for main contacts  |  | 2x (14 ... 10)  |
| — for auxiliary and control contacts   |  | 1x (AWG 20 ... 12)  |
| • for auxiliary and control contacts   |  |   |
| — solid  |  | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )                    |
| — finely stranded  |  |   |
| — with core end processing   |  | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )                    |
| — without core end processing  |  | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )                    |

|  |        |             |
|--|--------|-------------|
| <b>Tightening torque</b>   |        |             |
| <ul style="list-style-type: none"> <li>for main contacts with screw-type terminals</li> </ul>                  | N·m    | 2 ... 2.5   |
| <ul style="list-style-type: none"> <li>for auxiliary and control contacts with screw-type terminals</li> </ul> | N·m    | 0.5 ... 0.6 |
| <b>Tightening torque [lbf·in]</b>  |        |             |
| <ul style="list-style-type: none"> <li>for main contacts with screw-type terminals</li> </ul>                  | lbf·in | 18 ... 22   |
| <ul style="list-style-type: none"> <li>for auxiliary and control contacts with screw-type terminals</li> </ul> | lbf·in | 7.5 ... 5.3 |
| <b>Wire stripping length of the cable</b>  |        |             |
| <ul style="list-style-type: none"> <li>for main contacts</li> </ul>  | mm     | 7           |
| <ul style="list-style-type: none"> <li>for auxiliary and control contacts</li> </ul>                           | mm     | 7           |

#### UL/CSA ratings

|  |    |     |
|--|----|-----|
| <b>Full-load current (FLA) for three-phase AC motor</b>                    |    |     |
| <ul style="list-style-type: none"> <li>at 480 V rated value</li> </ul>     | A  | 7.6 |
| <b>Yielded mechanical performance [hp] for three-phase AC motor</b>        |    |     |
| <ul style="list-style-type: none"> <li>at 200/208 V rated value</li> </ul> | hp | 2   |
| <ul style="list-style-type: none"> <li>at 220/230 V rated value</li> </ul> | hp | 2   |
| <ul style="list-style-type: none"> <li>at 460/480 V rated value</li> </ul> | hp | 5   |

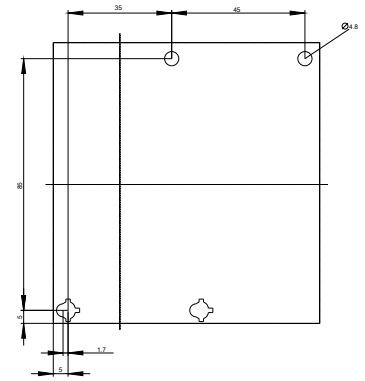
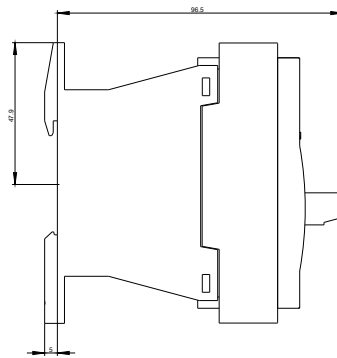
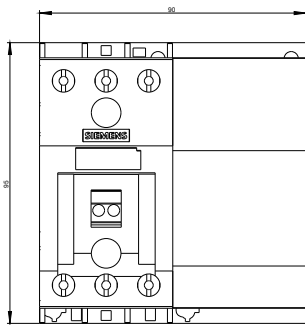
#### Certificates/approvals

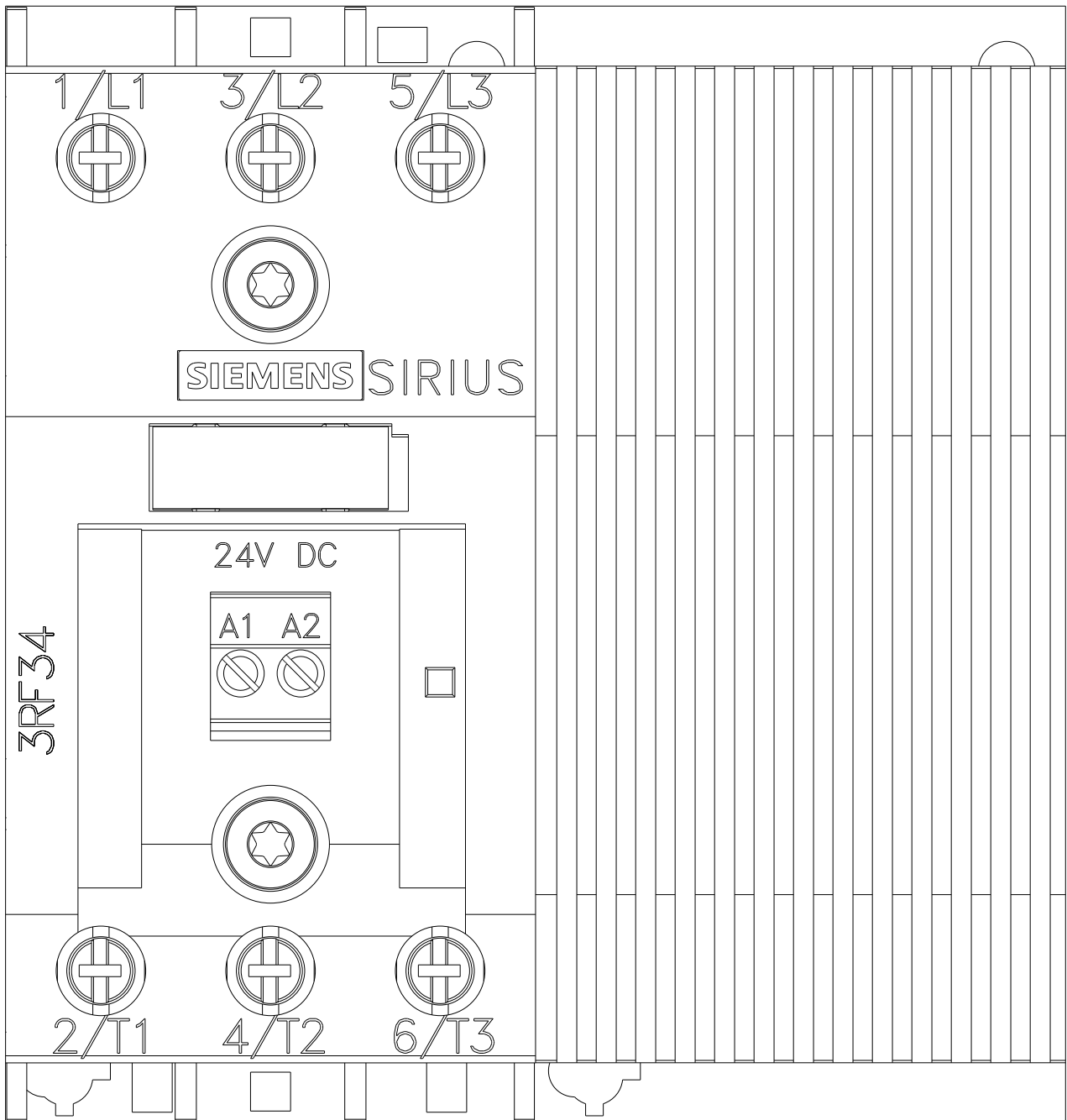
|  |  |   |
|--|--|---|
| <b>General Product Approval</b>  | <b>EMC</b>   | <b>Declaration of Conformity</b>  |
| <br>CCC | <br>EAC | <br>EG-Konf. |
| <br>CSA | <br>UL  | <br>C-Tick   |

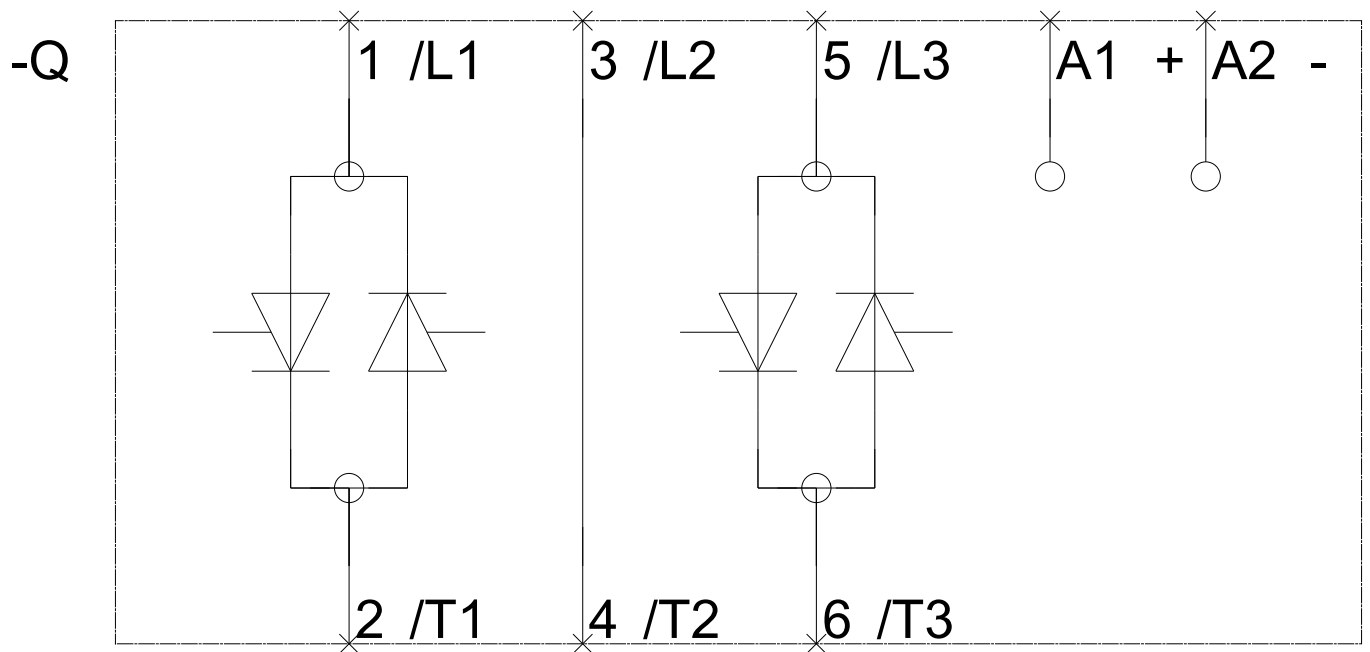
|  |   |
|--|---|
| <b>Test Certificates</b>                           | <b>other</b>                                |
| <a href="#">Type Test Certificates/Test Report</a> | <a href="#">Environmental Confirmations</a> |
|  | <a href="#">Confirmation</a>                |

#### Further information

- Information- and Downloadcenter (Catalogs, Brochures,...)**  
<http://www.siemens.com/industrial-controls/catalogs>
- Industry Mall (Online ordering system)**  
<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RF3412-1BB04>
- Cax online generator**  
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF3412-1BB04>
- Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**  
<https://support.industry.siemens.com/cs/ww/en/ps/3RF3412-1BB04>







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