



SOLID-STATE CONTACTOR 3-PH 3RF3 AC53 12.5A 40  
DEGREES C 48-600V / 24V DC 2-PH. CONTROLLED  
INSTANTANEOUS SCREW TERMINALS

### General technical data:

|                                                                     |    |                               |
|---------------------------------------------------------------------|----|-------------------------------|
| <b>product brand name</b>                                           |    | SIRIUS                        |
| <b>product designation</b>                                          |    | solid-state motor contactor   |
| • _1 / of the accessories that can be ordered                       |    | Link module                   |
| • _2 / of the accessories that can be ordered                       |    | Connection adapter            |
| <b>Manufacturer article number</b>                                  |    |                               |
| • _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> |
| <b>Protection class IP</b>                                          |    | IP20                          |
| <b>Insulation voltage / rated value</b>                             | V  | 600                           |
| <b>Installation altitude / at a height over sea level / maximum</b> | m  | 1,000                         |
| <b>Ambient temperature</b>                                          |    |                               |
| • during storage                                                    | °C | -55 ... +80                   |
| • during operating                                                  | °C | -25 ... +60                   |
| <b>Resistance against shock</b>                                     |    |                               |
| • according to IEC 60068-2-27                                       |    | 15g / 11 ms                   |
| <b>Resistance against vibration</b>                                 |    |                               |
| • according to IEC 60068-2-6                                        |    | 2g                            |
| <b>Resistance against the impulse current / rated value</b>         | A  | 1,150                         |
| <b>Active power loss / total / typical</b>                          | W  | 22                            |

|                                                                                                                                                |  |                         |
|------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------|
| <b>Item designation</b><br><br>• according to DIN 40719 extendable after IEC 204-2 / according to IEC 750<br><br>• according to DIN EN 61346-2 |  | K                       |
|                                                                                                                                                |  | Q                       |
| <b>Product function</b>                                                                                                                        |  | instantaneous switching |

### Main circuit:

|                                                                                                            |                   |            |
|------------------------------------------------------------------------------------------------------------|-------------------|------------|
| <b>Number of poles / for main current circuit</b>                                                          |                   | 3          |
| <b>Number of NC contacts / for main contacts</b>                                                           |                   | 0          |
| <b>Number of NO contacts / for main contacts</b>                                                           |                   | 2          |
| <b>Operating frequency</b><br><br>• rated value                                                            | Hz                | 60 ... 50  |
| <b>Operating voltage</b><br><br>• at 60 Hz / at AC / rated value<br><br>• at 50 Hz / at AC / rated value   | V                 | 48 ... 600 |
|                                                                                                            | V                 | 48 ... 600 |
| <b>Operating current</b><br><br>• minimum<br><br>• at AC-3 / at 400 V / rated value                        | mA                | 500        |
|                                                                                                            | A                 | 12.5       |
| <b>Working area related to the operating voltage</b><br><br>• at 50 Hz / for AC<br><br>• at 60 Hz / for AC | V                 | 40 ... 660 |
|                                                                                                            | V                 | 40 ... 660 |
| <b>Service power / at AC-3 / at 400 V</b><br><br>• rated value                                             | kW                | 5.5        |
| <b>Derating temperature</b>                                                                                | °C                | 40         |
| <b>Tolerance of the line frequency</b>                                                                     | Hz                | 5          |
| <b>Relative symmetrical tolerance / of the operation frequency</b>                                         | %                 | 10         |
| <b>I<sup>2</sup>t-level / maximum</b>                                                                      | A <sup>2</sup> ·s | 6,600      |
| <b>Voltage slew rate / at the thyristor / for main contacts</b><br><br>• maximum permissible               | V/μs              | 1,000      |
| <b>Block voltage / at the thyristor / for main contacts</b><br><br>• maximum permissible                   | V                 | 1,600      |
| <b>Reverse current / of the thyristor</b>                                                                  | mA                | 10         |

### Control circuit:

|                                                                                                                                                                          |   |    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----|
| <b>Type of voltage / of the controlled supply voltage</b>                                                                                                                |   | DC |
| <b>Control supply voltage</b><br><br>• 1<br><br>• for DC<br><br>• initial rated value<br><br>• final rated value<br><br>• for DC / final value for signal<0>-recognition |   |    |
|                                                                                                                                                                          | V | 15 |
|                                                                                                                                                                          | V | 30 |
|                                                                                                                                                                          | V | 5  |

|                                                                                                          |    |    |
|----------------------------------------------------------------------------------------------------------|----|----|
| <b>Control current</b><br><br>• for DC / rated value<br><br>• at minimum control supply voltage / for DC | mA | 15 |
|                                                                                                          | mA | 2  |

|                                                                |  |   |
|----------------------------------------------------------------|--|---|
| <b>Auxiliary circuit:</b>                                      |  |   |
| <b>Number of NC contacts / for auxiliary contacts</b>          |  | 0 |
| <b>Number of NO contacts / for auxiliary contacts</b>          |  | 0 |
| <b>Number of change-over switches / for auxiliary contacts</b> |  | 0 |

|                                                                                              |     |                                                              |
|----------------------------------------------------------------------------------------------|-----|--------------------------------------------------------------|
| <b>Installation/mounting/dimensions:</b>                                                     |     |                                                              |
| <b>mounting position</b>                                                                     |     | vertical                                                     |
| <b>Type of mounting</b>                                                                      |     | screw and snap-on mounting onto 35 mm standard mounting rail |
| <b>Type of fixing/fixation / series installation</b>                                         |     | Yes                                                          |
| <b>Tightening torque / of the screw for fastening of the operating resource</b>              | N·m | 1.5                                                          |
| <b>Design of the thread / of the screw for fastening of the operating resource</b>           |     | M4                                                           |
| <b>Width</b>                                                                                 | mm  | 90                                                           |
| <b>Height</b>                                                                                | mm  | 95                                                           |
| <b>Depth</b>                                                                                 | mm  | 100.8                                                        |
| <b>Distance, to be maintained, to the ranks assembly</b><br><br>• upwards<br><br>• downwards | mm  | 70                                                           |
|                                                                                              | mm  | 50                                                           |

|                                                                                                                                                                                                                                                                             |  |                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------|
| <b>Connections:</b>                                                                                                                                                                                                                                                         |  |                                                   |
| <b>Design of the electrical connection</b><br><br>• for main current circuit<br><br>• for auxiliary and control current circuit                                                                                                                                             |  | screw-type terminals                              |
|                                                                                                                                                                                                                                                                             |  | screw-type terminals                              |
| <b>Design of the thread / of the connection screw</b><br><br>• for main contacts<br><br>• of the auxiliary and control pins                                                                                                                                                 |  | M4                                                |
|                                                                                                                                                                                                                                                                             |  | M4                                                |
| <b>Product function / removable terminal for auxiliary and control circuit</b>                                                                                                                                                                                              |  | Yes                                               |
| <b>Type of the connectable conductor cross-section</b><br><br>• for main contacts<br><br>• solid<br><br>• finely stranded<br><br>• with conductor end processing<br><br>• for AWG conductors / for main contacts<br><br>• for auxiliary and control contacts<br><br>• solid |  | 2x (1.5 ... 2.5 mm²), 2x (2.5 ... 6 mm²)          |
|                                                                                                                                                                                                                                                                             |  | 2x (1 ... 2.5 mm²), 2x (2.5 ... 6 mm²), 1x 10 mm² |
|                                                                                                                                                                                                                                                                             |  | 2x (14 ... 10)                                    |
|                                                                                                                                                                                                                                                                             |  | 1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²)        |

|                                                                                                                                                                                                                    |        |                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>finely stranded</li> <li>with conductor end processing</li> <li>without conductor final cutting</li> <li>for AWG conductors / for auxiliary and control contacts</li> </ul> |        | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )<br>1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )<br>1x (AWG 20 ... 12) |
| <b>Tightening torque</b>                                                                                                                                                                                           |        |                                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>for main contacts / with screw-type terminals</li> <li>for auxiliary and control contacts / with screw-type terminals</li> </ul>                                            | N·m    | 2 ... 2.5                                                                                                                                                          |
|                                                                                                                                                                                                                    | 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> <li>for auxiliary and control contacts / with screw-type terminals</li> </ul>                                            | lbf·in | 18 ... 22                                                                                                                                                          |
|                                                                                                                                                                                                                    | lbf·in | 7.5 ... 5.3                                                                                                                                                        |
| <b>Skinning length / of the cable</b>                                                                                                                                                                              |        |                                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>for main contacts</li> <li>for auxiliary and control contacts</li> </ul>                                                                                                    | mm     | 7                                                                                                                                                                  |
|                                                                                                                                                                                                                    | mm     | 7                                                                                                                                                                  |

#### Certificates/approvals:

##### Verification of suitability

CE / UL / CSA / CCC / C-TICK

##### General Product Approval

##### EMC

##### Declaration of Conformity

##### Test Certificates



[Type Test  
Certificates/Test  
Report](#)

#### UL/CSA ratings

##### yielded mechanical performance (hp) / for three-phase squirrel cage motors

- at 200/208 V / rated value
- at 220/230 V / rated value
- at 460/480 V / rated value
- at 575/600 V / rated value

hp 2  
hp 2  
hp 5  
hp 5

##### Operating current (FLA) / for three-phase squirrel cage motors

- at 480 V / rated value
- at 600 V / rated value

A 7.6  
A 6.1

#### Further information:

##### Information- and Downloadcenter (Catalogs, Brochures,...)

<http://www.siemens.com/industrial-controls/catalogs>

##### Industry Mall (Online ordering system)

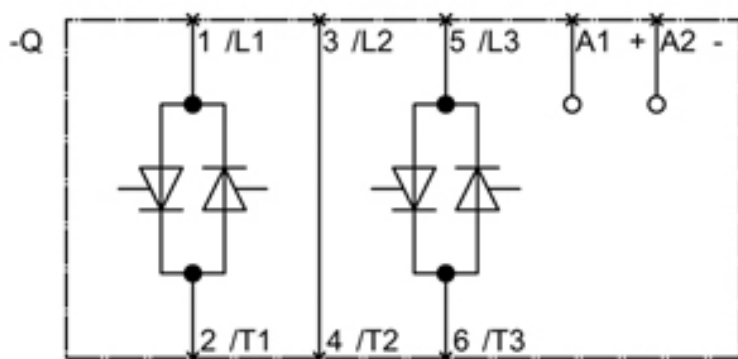
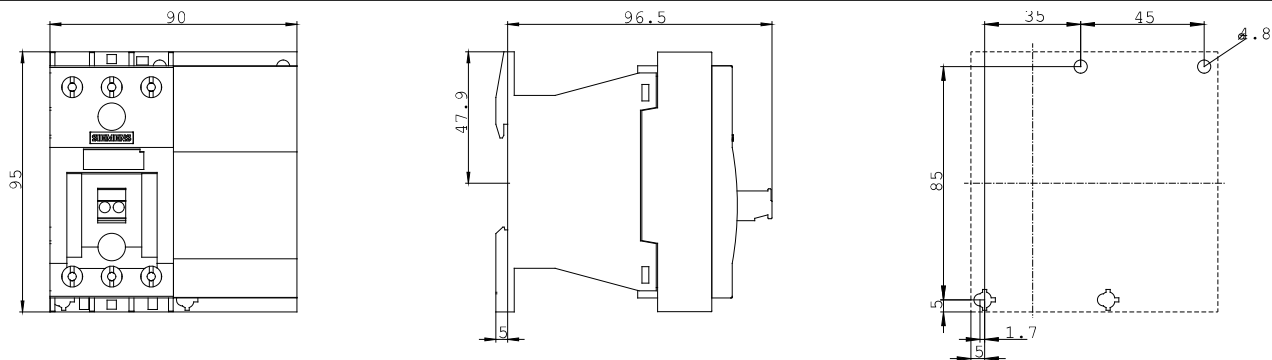
<http://www.siemens.com/industrial-controls/mall>

##### CAX-Online-Generator

<http://www.siemens.com/cax>

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

<http://support.automation.siemens.com/WW/view/en/3RF3412-1BB06/all>



last change:

Feb 4, 2013