



SEMI-CONDUCTOR CONTAC.3-PH.3RF2 AC51 50A 40  
DEG. C 48-600V / 230V AC 3-PHASE CONTROLLED  
SCREW TERMINAL BLOCKING VOLTAGE 1200V

### General technical data:

|                                                                            |    |                       |
|----------------------------------------------------------------------------|----|-----------------------|
| product brand name                                                         |    | SIRIUS                |
| product designation                                                        |    | solid-state contactor |
| Product function                                                           |    | zero-point switching  |
| Number of poles / for main current circuit                                 |    | 3                     |
| Protection class IP                                                        |    | IP20                  |
| Ambient temperature                                                        |    |                       |
| • during operating                                                         | °C | -25 ... +60           |
| • during storage                                                           | °C | -55 ... +80           |
| Installation altitude / at a height over sea level / maximum               | m  | 1,000                 |
| Resistance against vibration / according to IEC 60068-2-6                  |    | 2g                    |
| Resistance against shock / according to IEC 60068-2-27                     |    | 15g / 11 ms           |
| Item designation                                                           |    |                       |
| • according to DIN 40719 extendable after IEC 204-2 / according to IEC 750 |    | K                     |
| • according to DIN EN 61346-2                                              |    | Q                     |
| Number of NC contacts / for auxiliary contacts                             |    | 0                     |
| Number of NO contacts / for auxiliary contacts                             |    | 0                     |
| Number of change-over switches / for auxiliary contacts                    |    | 0                     |

### Main circuit:

|                                                                                |                   |                                                                                                                                                                 |
|--------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of NO contacts / for main contacts                                      |                   | 3                                                                                                                                                               |
| Number of NC contacts / for main contacts                                      |                   | 0                                                                                                                                                               |
| Operating current / at AC-1 / at 400 V / rated value                           | A                 | 50                                                                                                                                                              |
| Operating current / at AC-51 / rated value                                     | A                 | 50                                                                                                                                                              |
| Reverse current / of the thyristor                                             | mA                | 10                                                                                                                                                              |
| Derating temperature                                                           | °C                | 40                                                                                                                                                              |
| Operating current / minimum                                                    | mA                | 500                                                                                                                                                             |
| Resistance against the impulse current / rated value                           | A                 | 1,150                                                                                                                                                           |
| I <sup>2</sup> t-level / maximum                                               | A <sup>2</sup> ·s | 6,600                                                                                                                                                           |
| Operating voltage                                                              |                   |                                                                                                                                                                 |
| • at 50 Hz / at AC / rated value                                               | V                 | 48 ... 600                                                                                                                                                      |
| • at 60 Hz / at AC / rated value                                               | V                 | 48 ... 600                                                                                                                                                      |
| Working area related to the operating voltage                                  |                   |                                                                                                                                                                 |
| • at 50 Hz / for AC                                                            | V                 | 40 ... 660                                                                                                                                                      |
| • at 60 Hz / for AC                                                            | V                 | 40 ... 660                                                                                                                                                      |
| Operating frequency                                                            |                   |                                                                                                                                                                 |
| • rated value                                                                  | Hz                | 50 ... 60                                                                                                                                                       |
| Relative symmetrical tolerance / of the operation frequency                    | %                 | 10                                                                                                                                                              |
| Insulation voltage / rated value                                               | V                 | 600                                                                                                                                                             |
| Voltage slew rate / at the thyristor / for main contacts / maximum permissible | V/μs              | 1,000                                                                                                                                                           |
| Block voltage / at the thyristor / for main contacts / maximum permissible     | V                 | 1,600                                                                                                                                                           |
| Fuse assignments                                                               |                   | <a href="https://www.automation.siemens.com/cd-static/material/info/3RF24_eng.pdf">https://www.automation.siemens.com/cd-static/material/info/3RF24_eng.pdf</a> |

#### Control circuit:

|                                                                                    |    |             |
|------------------------------------------------------------------------------------|----|-------------|
| Type of voltage / of the controlled supply voltage                                 |    | AC          |
| Control supply voltage / 1                                                         |    |             |
| • at 50 Hz                                                                         |    |             |
| • for AC                                                                           | V  | 180 ... 230 |
| • at 60 Hz                                                                         |    |             |
| • for AC                                                                           | V  | 180 ... 230 |
| Control supply voltage frequency                                                   |    |             |
| • 1                                                                                | Hz | 45          |
| • 2                                                                                | Hz | 66          |
| Control supply voltage / at 50 Hz / for AC / final value for signal<0>-recognition | V  | 180         |
| Control supply voltage / at 60 Hz / for AC / final value for signal<0>-recognition | V  | 180         |
| Tolerance of the line frequency                                                    | Hz | 5           |

|                                                                         |    |    |
|-------------------------------------------------------------------------|----|----|
| <b>Relative symmetrical tolerance / of the supply voltage frequency</b> | %  | 10 |
| <b>Control current</b>                                                  |    |    |
| • at minimum control supply voltage / for AC                            | mA | 2  |
| • for AC / rated value                                                  | mA | 15 |

| Installation/mounting/dimensions:                                                  |     |              |
|------------------------------------------------------------------------------------|-----|--------------|
| <b>Type of mounting</b>                                                            |     | screw fixing |
| <b>Type of fixing/fixation / series installation</b>                               |     | Yes          |
| <b>Design of the thread / of the screw for fastening of the operating resource</b> |     | M4           |
| <b>Tightening torque / of the screw for fastening of the operating resource</b>    | N·m | 1.5          |
| <b>Width</b>                                                                       | mm  | 157.5        |
| <b>Height</b>                                                                      | mm  | 180          |
| <b>Depth</b>                                                                       | mm  | 121          |

| Connections:                                                              |        |                                                   |
|---------------------------------------------------------------------------|--------|---------------------------------------------------|
| <b>Design of the electrical connection / for main current circuit</b>     |        | screw-type terminals                              |
| <b>Design of the thread / of the connection screw / for main contacts</b> |        | M4                                                |
| <b>Tightening torque / for main contacts</b>                              |        |                                                   |
| • with screw-type terminals                                               | N·m    | 2 ... 2.5                                         |
| <b>Tightening torque (lbf·in) / for main contacts</b>                     |        |                                                   |
| • with screw-type terminals                                               | lbf·in | 18 ... 22                                         |
| <b>Type of the connectable conductor cross-section</b>                    |        |                                                   |
| • for main contacts                                                       |        |                                                   |
| • solid                                                                   |        | 2x (1.5 ... 2.5 mm²), 2x (2.5 ... 6 mm²)          |
| • finely stranded                                                         |        |                                                   |
| • with conductor end processing                                           |        | 2x (1 ... 2.5 mm²), 2x (2.5 ... 6 mm²), 1x 10 mm² |
| • for 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 mm²), 2x (0.5 ... 1.0 mm²)        |
| • finely stranded                                                         |        |                                                   |
| • with conductor end processing                                           |        | 1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²)        |
| • without conductor final cutting                                         |        | 1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²)        |
| <b>Conductor cross section that can be connected</b>                      |        |                                                   |
| • for main contacts                                                       |        |                                                   |
| • solid                                                                   | mm²    | 1.5 ... 6                                         |
| • stranded wire                                                           |        |                                                   |

|                                                                                                                                |                 |                      |
|--------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------|
| <ul style="list-style-type: none"> <li>• with conductor end processing</li> </ul>                                              | mm <sup>2</sup> | 1 ... 10             |
| <ul style="list-style-type: none"> <li>• for auxiliary and control contacts</li> </ul>                                         | mm <sup>2</sup> | 0.5 ... 2.5          |
| <ul style="list-style-type: none"> <li>• solid</li> </ul>                                                                      | mm <sup>2</sup> | 0.5 ... 2.5          |
| <ul style="list-style-type: none"> <li>• stranded wire</li> </ul>                                                              | mm <sup>2</sup> | 0.5 ... 2.5          |
| <ul style="list-style-type: none"> <li>• with conductor end processing /</li> <li>• without conductor final cutting</li> </ul> | mm <sup>2</sup> | 0.5 ... 2.5          |
| <b>AWG number / as coded connectable conductor cross-section / for main contacts</b>                                           |                 | 14 ... 10            |
| <b>Design of the electrical connection / for auxiliary and control current circuit</b>                                         |                 | screw-type terminals |
| <b>Design of the thread / of the connection screw / of the auxiliary and control pins</b>                                      |                 | M3                   |
| <b>AWG number / as coded connectable conductor cross-section</b>                                                               |                 |                      |
| <ul style="list-style-type: none"> <li>• for auxiliary and control contacts</li> </ul>                                         |                 | 20 ... 12            |
| <b>Skinning length / of the cable / for main contacts</b>                                                                      | mm              | 7                    |
| <b>Skinning length / of the cable / for auxiliary and control contacts</b>                                                     | mm              | 7                    |
| <b>Tightening torque / for auxiliary and control contacts</b>                                                                  |                 |                      |
| <ul style="list-style-type: none"> <li>• with screw-type terminals</li> </ul>                                                  | N·m             | 0.5 ... 0.6          |
| <b>Tightening torque (lbf·in) / for auxiliary and control contacts</b>                                                         |                 |                      |
| <ul style="list-style-type: none"> <li>• with screw-type terminals</li> </ul>                                                  | lbf·in          | 7.5 ... 5.3          |

#### Certificates/approvals:

| General Product Approval                                                                | EMC                                                                                        | Declaration of Conformity                                                                      | Test Certificates                                  |
|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|----------------------------------------------------|
|  CSA |  C-TICK |  EG-Konf. | <a href="#">Type Test Certificates/Test Report</a> |

other

[Environmental Confirmations](#)

#### 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:**

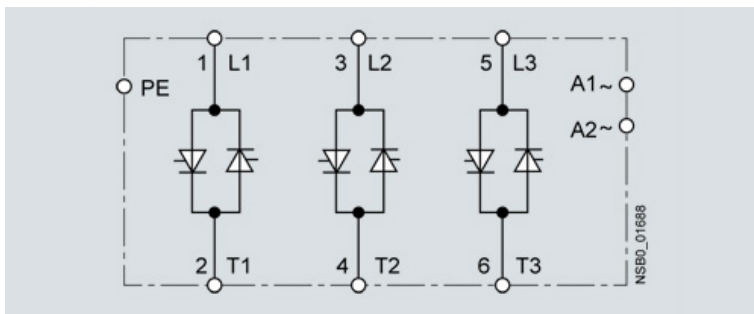
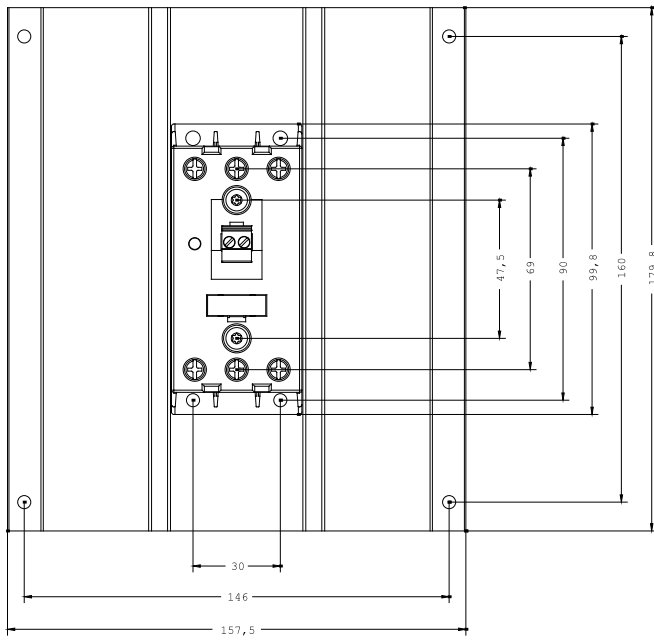
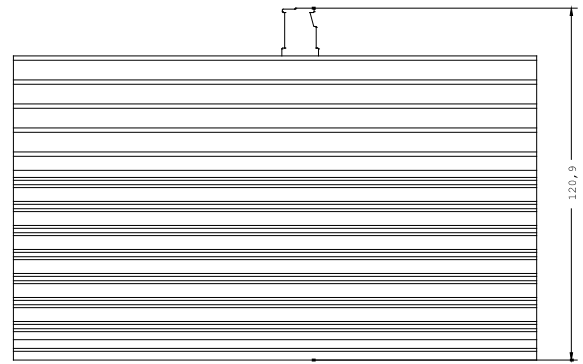
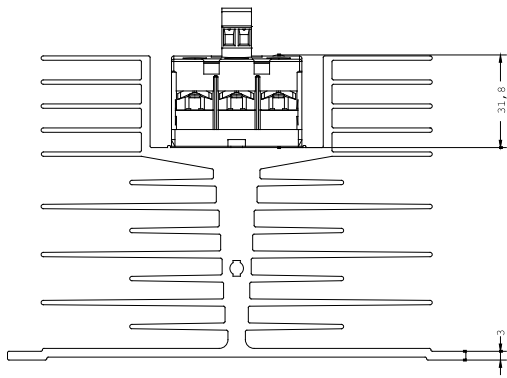
<http://www.siemens.com/cax>

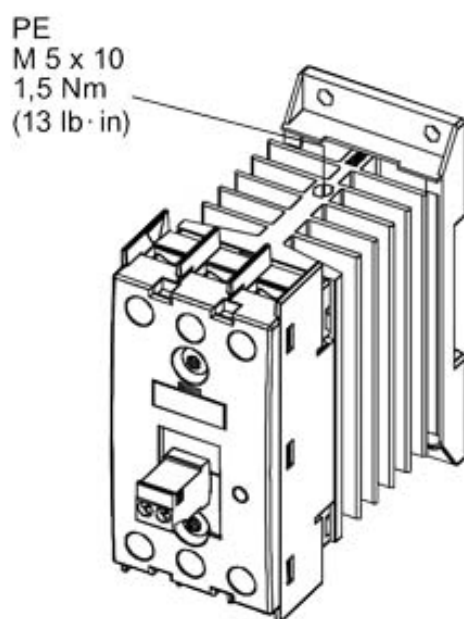
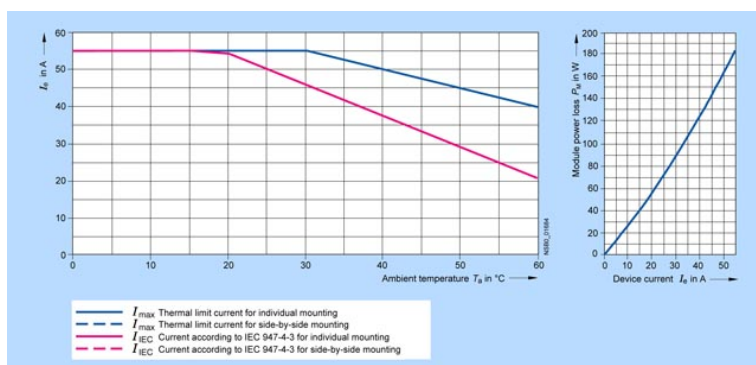
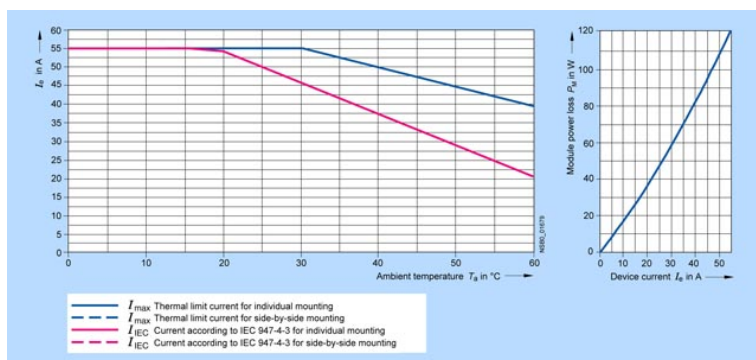
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

<http://support.automation.siemens.com/WW/view/en/3RF2450-1AC55/all>

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

[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3RF2450-1AC55](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3RF2450-1AC55)





last change:

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