



POWER CONTROLLER CURRENT RANGE 90A 40  
DEGREES C 400-600V / 24V AC/DC FOR  
SEMICONDUCTOR RELAY / CONTACTOR W. PARTIAL LOAD  
MONITORING W. PARTIAL LOAD MONITORING

### General technical data:

|                                                                           |    |                                                |
|---------------------------------------------------------------------------|----|------------------------------------------------|
| product brand name                                                        |    | SIRIUS                                         |
| product designation                                                       |    | power controller                               |
| Product function                                                          |    | solid-state relay / solid-state contactor 3RF2 |
| Number of poles / for main current circuit                                |    | 0                                              |
| Protection class IP                                                       |    | IP20                                           |
| Product designation / _1 / of the accessories that can be ordered         |    | sealable end cover                             |
| Manufacturer article number / _1 / of the accessories that can be ordered |    | <a href="#">3RF2900-0RA88</a>                  |
| Product designation / _2 / of the accessories that can be ordered         |    | input reactor / 1AC                            |
| Manufacturer article number / _2 / of the accessories that can be ordered |    | <a href="#">4EM5412-0CB00</a>                  |
| Hole diameter / of the current transformer                                | mm | 17                                             |
| Number of partial loads / for load monitoring                             |    | 6                                              |
| 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
- according to DIN EN 61346-2

A

K

#### Main circuit:

|                                                                    |    |             |
|--------------------------------------------------------------------|----|-------------|
| <b>Number of NO contacts / for main contacts</b>                   |    | 0           |
| <b>Number of NC contacts / for main contacts</b>                   |    | 0           |
| <b>Operating current</b>                                           |    |             |
| • at AC-1 / at 400 V / rated value                                 | A  | 90          |
| <b>Derating temperature</b>                                        | °C | 40          |
| <b>Operating voltage</b>                                           |    |             |
| • at 50 Hz / at AC / rated value                                   | V  | 400 ... 600 |
| • at 60 Hz / at AC / rated value                                   | V  | 400 ... 600 |
| <b>Working area related to the operating voltage</b>               |    |             |
| • at 50 Hz / for AC                                                | V  | 340 ... 660 |
| • at 60 Hz / for AC                                                | V  | 340 ... 660 |
| <b>Operating frequency</b>                                         |    |             |
| • rated value                                                      | Hz | 50 ... 60   |
| <b>Relative symmetrical tolerance / of the operation frequency</b> | %  | 10          |
| <b>Insulation voltage / rated value</b>                            | V  | 600         |
| <b>Kompensation of the mains voltage swing</b>                     | %  | 20          |
| <b>Partial load / for load monitoring</b>                          | A  | 2.9         |
| <b>Metering range current</b>                                      | A  | 0 ... 99    |

#### Control circuit:

|                                                                             |    |            |
|-----------------------------------------------------------------------------|----|------------|
| <b>type of voltage</b>                                                      |    | AC/DC      |
| <b>Control supply voltage</b>                                               |    |            |
| • for DC / rated value                                                      | V  | 24 ... 24  |
| • at 50 Hz / at AC / rated value                                            | V  | 24 ... 24  |
| • at 60 Hz / at AC / rated value                                            | V  | 24 ... 24  |
| • at 50 Hz / for AC / final value for signal<0>-recognition                 | V  | 14         |
| • at 60 Hz / for AC / final value for signal<0>-recognition                 | V  | 14         |
| • for DC / final value for signal<0>-recognition                            | V  | 15         |
| <b>Supply voltage frequency / for auxiliary and control current circuit</b> |    |            |
| • rated value                                                               | Hz | 50 ... 60  |
| <b>Tolerance of the line frequency</b>                                      | Hz | 5          |
| <b>Relative symmetrical tolerance / of the supply voltage frequency</b>     | %  | 10         |
| <b>Control current / for AC / rated value</b>                               | mA | 40         |
| <b>Control current / for DC / rated value</b>                               | mA | 40         |
| <b>Operating voltage</b>                                                    |    |            |
| • at the analog input                                                       | V  | -1 ... +11 |

|                                         |   |       |
|-----------------------------------------|---|-------|
| Source resistance / at the analog input | Ω | 8,000 |
|-----------------------------------------|---|-------|

|                                                         |    |             |
|---------------------------------------------------------|----|-------------|
| <b>Auxiliary circuit:</b>                               |    |             |
| Number of NC contacts / for auxiliary contacts          |    | 1           |
| Number of NO contacts / for auxiliary contacts          |    | 1           |
| Number of change-over switches / for auxiliary contacts |    | 0           |
| Operating voltage / of the auxiliary contacts           |    |             |
| • for AC                                                | V  | 15 ... 30   |
| • for DC                                                | V  | 15 ... 30   |
| Operating current / of the auxiliary contacts           |    |             |
| • for AC                                                | mA | 5 ... 1,000 |
| • for DC                                                | mA | 5 ... 1,000 |

|                                               |    |         |
|-----------------------------------------------|----|---------|
| <b>Installation/mounting/dimensions:</b>      |    |         |
| Type of mounting                              |    | clip-on |
| Type of fixing/fixation / series installation |    | Yes     |
| Width                                         | mm | 45      |
| Height                                        | mm | 111.5   |
| Depth                                         | mm | 69.5    |

|                                                                                    |     |                                            |
|------------------------------------------------------------------------------------|-----|--------------------------------------------|
| <b>Connections:</b>                                                                |     |                                            |
| Design of the electrical connection                                                |     |                                            |
| • for auxiliary and control current circuit                                        |     | screw-type terminals                       |
| Design of the thread / of the connection screw / of the auxiliary and control pins |     | M3                                         |
| Type of the connectable conductor cross-section                                    |     |                                            |
| • 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) |
| • for AWG conductors / for auxiliary and control contacts                          |     | 1x (AWG 20 ... 12)                         |
| Conductor cross-section that can be connected / for auxiliary and control contacts |     |                                            |
| • solid                                                                            | mm² | 0.5 ... 2.5                                |
| • stranded wire                                                                    |     |                                            |
| • with conductor end processing /                                                  | mm² | 0.5 ... 2.5                                |
| • without conductor final cutting                                                  | mm² | 0.5 ... 2.5                                |
| AWG number / as coded connectable conductor cross-section                          |     |                                            |
| • for auxiliary and control contacts                                               |     | 12 ... 20                                  |
| Skinning length / of the cable / for auxiliary and control contacts                | mm  | 7                                          |

|                                                                                                       |        |             |
|-------------------------------------------------------------------------------------------------------|--------|-------------|
| <b>Tightening torque / for auxiliary and control contacts</b><br>• with screw-type terminals          | N·m    | 0.5 ... 0.6 |
| <b>Tightening torque (lbf·in) / for auxiliary and control contacts</b><br>• with screw-type terminals | lbf·in | 4.5 ... 5.3 |

#### Certificates/approvals:

| General Product Approval | EMC | Declaration of Conformity | Test Certificates |
|--------------------------|-----|---------------------------|-------------------|
|--------------------------|-----|---------------------------|-------------------|



[Type Test  
Certificates/Test  
Report](#)

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

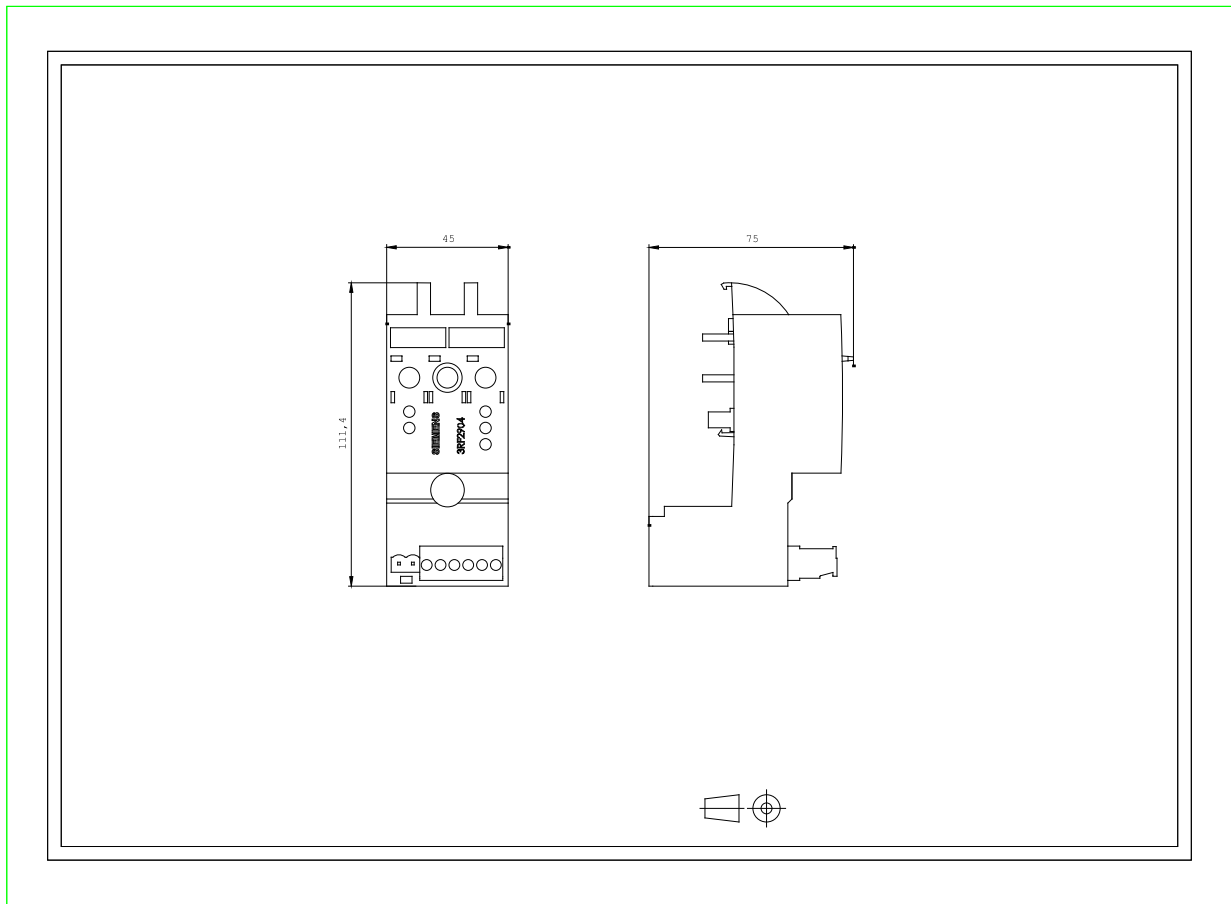
<http://www.siemens.com/cax>

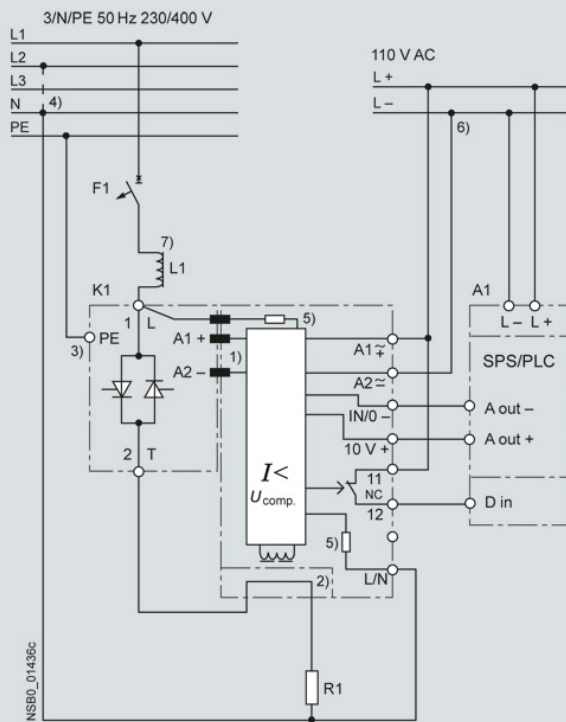
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<http://support.automation.siemens.com/WW/view/en/3RF2990-0KA16/all>

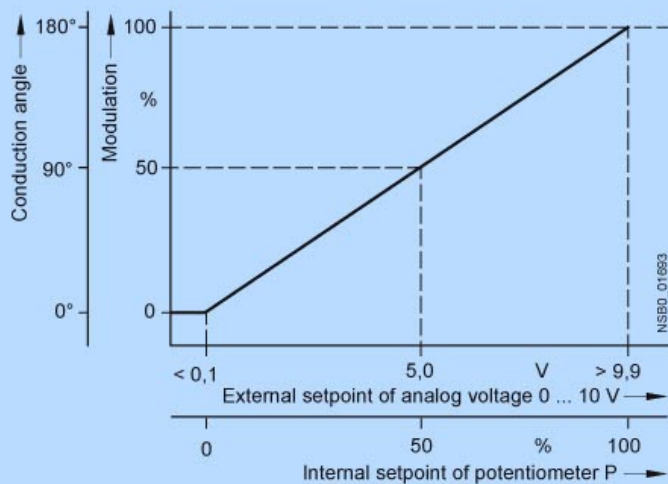
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)

[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=3RF2990-0KA16](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3RF2990-0KA16)





- 1) Internal connection to the solid-state relay/contactor
- 2) Straight-through
- 3) Make PE/ground connection according to installation regulations
- 4) Connection of L/N contact with
  - 3RF29 ...0GA.3 load monitoring on neutral conductor N (e.g. 230 V),
  - 3RF29 ...0GA.6 load monitoring on a second phase (e.g. 400 V)
- 5) Voltage detection not electrically isolated (3 M $\Omega$  per path)
- 6) Grounding of connection L- is recommended
- 7) A 200  $\mu$ H choke must be used when operating with leading-edge phase in order to observe the limit values of the conducted interference voltage according to Class A



last change:

Feb 18, 2013