

## Technical specifications

| Type                                                                                       |                 | 3RF29 ...E...                                                       | 3RF29 ...F... | 3RF29 ...G... | 3RF29 ...H... | 3RF29 ...J... | 3RF29 ...K... |
|--------------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------------------|---------------|---------------|---------------|---------------|---------------|
| <b>General data</b>                                                                        |                 |                                                                     |               |               |               |               |               |
| <b>Ambient temperature</b>                                                                 |                 |                                                                     |               |               |               |               |               |
| • During operation, derating from 40 °C                                                    | °C              | -25 ... +60                                                         |               |               |               |               |               |
| • During storage                                                                           | °C              | -55 ... +80                                                         |               |               |               |               |               |
| <b>Installation altitude</b>                                                               | m               | 0 ... 1000; derating from 1000                                      |               |               |               |               |               |
| <b>Shock resistance</b><br>According to IEC 60068-2-27                                     | g/ms            | 15/11                                                               |               |               |               |               |               |
| <b>Vibration resistance</b><br>According to IEC 60068-2-6                                  | g               | 2                                                                   |               |               |               |               |               |
| <b>Degree of protection</b>                                                                |                 | IP20                                                                |               |               |               |               |               |
| <b>Electromagnetic compatibility (EMC)</b>                                                 |                 |                                                                     |               |               |               |               |               |
| • Emitted interference                                                                     |                 |                                                                     |               |               |               |               |               |
| - Conducted interference voltage according to IEC 60947-4-3                                |                 | Class A for industrial applications <sup>1)</sup>                   |               |               |               |               |               |
| - Emitted, high-frequency interference voltage according to IEC 60947-4-3                  |                 | Class A for industrial applications                                 |               |               |               |               |               |
| • Interference immunity                                                                    |                 |                                                                     |               |               |               |               |               |
| - Electrostatic discharge according to IEC 61000-4-2 (corresponds to degree of severity 3) | kV              | Contact discharge 4; air discharge 8; behavior criterion 2          |               |               |               |               |               |
| - Induced RF fields according to IEC 61000-4-6                                             | MHz             | 0.15 ... 80; 140 dBµV; behavior criterion 1                         |               |               |               |               |               |
| - Burst according to IEC 61000-4-4                                                         |                 | 2 kV/5.0 kHz; behavior criterion 1                                  |               |               |               |               |               |
| - Surge according to IEC 61000-4-5                                                         | kV              | Conductor - ground 2; conductor - conductor 1; behavior criterion 2 |               |               |               |               |               |
| <b>Connection, auxiliary/control contacts, screw terminal</b>                              |                 |                                                                     |               |               |               |               |               |
| • Conductor cross-section                                                                  | mm <sup>2</sup> | 1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0), 1 x (AWG 20 ... 12)           |               |               |               |               |               |
| • Stripped length                                                                          | mm              | 7                                                                   |               |               |               |               |               |
| • Terminal screw                                                                           |                 | M3                                                                  |               |               |               |               |               |
| • Tightening torque                                                                        | Nm<br>lb. in    | 0.5 ... 0.6<br>4.5 ... 5.3                                          |               |               |               |               |               |
| <b>Converter, feed-through opening</b>                                                     |                 |                                                                     |               |               |               |               |               |
| • Diameter                                                                                 | mm              | --                                                                  | 7             | 17            |               |               |               |

<sup>1)</sup> Note limitations for power controller function modules. These modules were built as Class A devices. The use of these devices in residential areas could result in lead in radio interference. In this case these may be required to introduce additional interference suppression measures.

# 3RF29 Function Modules

## General data

| Type                                              |    | 3RF29 ...E..8 | 3RF29 ...F..8 | 3RF29 ...G..3 | 3RF29 ...G..6 |
|---------------------------------------------------|----|---------------|---------------|---------------|---------------|
| <b>Main circuit</b>                               |    |               |               |               |               |
| <b>Rated operational voltage <math>U_e</math></b> | V  | -- 1)         |               | 110 ... 230   | 400 ... 600   |
| • Operating range                                 | V  | --            |               | 93.5 ... 253  | 340 ... 660   |
| • Rated frequency                                 | Hz | --            |               | 50/60         |               |
| <b>Rated insulation voltage <math>U_i</math></b>  | V  | --            |               | 600           |               |
| <b>Voltage measuring</b>                          |    |               |               |               |               |
| • Measuring range                                 | V  | --            |               | 93.5 ... 253  | 340 ... 660   |
| <b>Mains voltage, fluctuation compensation</b>    | %  | --            |               | 20            |               |

1) Versions are independent of the main circuit.

| Type                                              |    | 3RF29 ...H..3<br>3RF29 ...K..3 | 3RF29 ...H..6<br>3RF29 ...K..6 | 3RF29 ...J..3 | 3RF29 ...J..6 |
|---------------------------------------------------|----|--------------------------------|--------------------------------|---------------|---------------|
| <b>Main circuit</b>                               |    |                                |                                |               |               |
| <b>Rated operational voltage <math>U_e</math></b> | V  | 110 ... 230                    | 400 ... 600                    | 110 ... 230   | 400 ... 600   |
| • Operating range                                 | V  | 93.5 ... 253                   | 340 ... 660                    | 93.5 ... 253  | 340 ... 660   |
| • Rated frequency                                 | Hz | 50/60                          |                                |               |               |
| <b>Rated insulation voltage <math>U_i</math></b>  | V  | 600                            |                                |               |               |
| <b>Voltage measuring</b>                          |    |                                |                                |               |               |
| • Measuring range                                 | V  | 93.5 ... 253                   | 340 ... 660                    | 93.5 ... 253  | 340 ... 660   |
| <b>Mains voltage, fluctuation compensation</b>    | %  | 20                             |                                |               |               |

| Type                                                 |    | 3RF29 ...0.. | 3RF29 ...1..    | 3RF29 ...3.. |
|------------------------------------------------------|----|--------------|-----------------|--------------|
| <b>Control circuit</b>                               |    |              |                 |              |
| <b>Method of operation</b>                           |    | DC operation | AC/DC operation | AC operation |
| <b>Rated control supply voltage <math>U_s</math></b> | V  | 24           | 24              | 110          |
| Rated control current                                | mA | 15           | 15              | 15           |
| <b>Rated frequency</b> of the control supply voltage | Hz | --           | 50/60           | 50/60        |
| <b>Actuating voltage, max.</b>                       | V  | 30           | 30              | 121          |
| <b>Rated control current</b><br>At maximum voltage   | mA | 15           | 15              | 15           |
| <b>Response voltage</b>                              | V  | 15           | 15              | 90           |
| • For tripping current                               | mA | 2            | 2               | 2            |
| <b>Drop-out voltage</b>                              | V  | 5            | 5               | 15           |

| Type                                              |   | 3RF29 20-0FA08 | 3RF29 20-0GA.. | 3RF29 50-0GA.. | 3RF29 90-0GA.. |
|---------------------------------------------------|---|----------------|----------------|----------------|----------------|
| <b>Current measurement</b>                        |   |                |                |                |                |
| <b>Rated operational current <math>I_e</math></b> | A | 20             | 20             | 50             | 90             |
| <b>Current measurement</b>                        |   |                |                |                |                |
| • Teach range                                     | A | 0.65 ... 20    | 0.56 ... 20    | 1.62 ... 50    | 2.93 ... 90    |
| • Measuring range                                 | A | 0 ... 22       | 0 ... 22       | 0 ... 55       | 0 ... 99       |
| • Minimum partial load current                    | A | 0.65           | 0.65           | 1.6            | 2.9            |
| <b>Number of partial loads</b>                    |   | 1 ... 6        | 1 ... 12       |                |                |

| Type                                              |   | 3RF29 20-0HA.. | 3RF29 50-0HA.. | 3RF29 90-0HA.. | 3RF29 16-0JA.. | 3RF29 32-0JA.. |
|---------------------------------------------------|---|----------------|----------------|----------------|----------------|----------------|
| <b>Current measurement</b>                        |   |                |                |                |                |                |
| <b>Rated operational current <math>I_e</math></b> | A | 20             | 50             | 90             | 16             | 32             |
| <b>Current measurement</b>                        |   |                |                |                |                |                |
| • Teach range                                     | A | 4 ... 20       | 10 ... 50      | 18 ... 90      | 0.42 ... 16    | 0.8 ... 32     |
| • Measuring range                                 | A | 0 ... 22       | 0 ... 55       | 4 ... 99       | 0 ... 16       | 0 ... 32       |
| • Minimum partial load current                    | A | --             |                |                | 0.42           | 0.8            |
| <b>Number of partial loads</b>                    |   | --             |                |                | 1 ... 6        |                |

| Type                                              |   | 3RF29 04-0KA.. | 3RF29 20-0KA.. | 3RF29 50-0KA.. | 3RF29 90-0KA.. |
|---------------------------------------------------|---|----------------|----------------|----------------|----------------|
| <b>Current measurement</b>                        |   |                |                |                |                |
| <b>Rated operational current <math>I_e</math></b> | A | 4              | 20             | 50             | 90             |
| <b>Current measurement</b>                        |   |                |                |                |                |
| • Teach range                                     | A | 0.15 ... 4     | 0.65 ... 20    | 1.6 ... 50     | 2.9 ... 90     |
| • Measuring range                                 | A | 0 ... 4        | 0 ... 22       | 0 ... 55       | 0 ... 99       |
| • Minimum partial load current                    | A | --             | 0.65           | 1.6            | 2.9            |
| <b>Number of partial loads</b>                    |   |                | 1 ... 6        |                |                |