

**Miniature PCB Relay PE bistable**

- 1pole 5 A, polarized bistable version
- 1 CO contact
- Sensitive version with 200 mW coil
- 4 kV coil-contact, Insulation according to IEC 255
- Ambient temperature 70 °C
- Low height 10.0 mm
- RoHS compliant (Directive 2002/95/EC) as per product date code 0352

**Applications**

Room thermostats, electricity meters, domotic devices, white goods, battery powered controls



F0221-A

**Approvals**

VDE REG.-Nr. 6656, cULus E214025  
Technical data of approved types on request

**Contact data**

|  |                            |
|--|----------------------------|
| Contact configuration                            | 1 CO contact               |
| Contact set                                      | single contact             |
| Type of interruption                             | micro disconnection        |
| Rated current                                    | 5 A                        |
| Rated voltage / max.switching voltage AC         | 240/400 VAC                |
| Maximum breaking capacity AC                     | 1250 VA                    |
| Contact material                                 | AgNi90/10                  |
| Mechanical endurance                             | 5x10 <sup>6</sup> cycles   |
| Rated frequency of operation with / without load | 6 / 1200 min <sup>-1</sup> |

**Contact ratings**

| Type  | Load  | Cycles            |
|-------|---|-------------------|
| PE014 | 5 A, 250 VAC, 85°C, resistive load, 6 min <sup>-1</sup> , 50% df, EN61810-1   | 1x10 <sup>5</sup> |
| PE014 | 5 A, 240 VAC resistive load, on NO or NC contact, UL508                       | 1x10 <sup>5</sup> |
| PE014 | 5 A, 30 VDC resistive, 85°C, 6 min <sup>-1</sup> , 50% duty factor, EN61810-1 | 1x10 <sup>5</sup> |

**Coil data**

|   |                           |
|---|---------------------------|
| Rated coil voltage range  | 2,2...48 VDC              |
| Coil power  | typ. 200 mW               |
| Operative range   | 2                         |
| Reset voltage maximum, % of rated coil voltage                                    | 120% at -40°C             |
| Minimum energization duration   | 20 ms                     |
| Information on reduced pulse duration with higher energization voltages on demand |                           |
| Maximum energization duration   | 1 min at <10% duty factor |

**Coil versions, bistable, 1 coil**

| Coil code *) | Rated voltage VDC | Operate voltage VDC | Reset voltage VDC | Coil resistance Ohm | Rated coil power VA |     |
|--------------|-------------------|---------------------|-------------------|---------------------|---------------------|-----|
| F02          | H02               | 2.2                 | 1.65              | 1.65                | 22±10%              | 220 |
| F03          | H03               | 3                   | 2.25              | 2.25                | 41±10%              | 220 |
| F05          | H05               | 5                   | 3.75              | 3.75                | 125±10%             | 200 |
| F06          | H06               | 6                   | 4.5               | 4.5                 | 180±10%             | 200 |
| F12          | H12               | 12                  | 9.0               | 9.0                 | 650±10%             | 222 |
| F24          | H24               | 24                  | 18.0              | 18.0                | 2750±10%            | 209 |

All figures are given for coil without preenergization, at ambient temperature +23°C

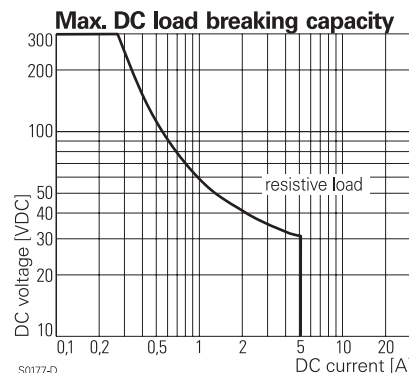
\*) Coil codes F.. and H.. have opposite polarity; refer to coil operation table

Other coil voltages on request

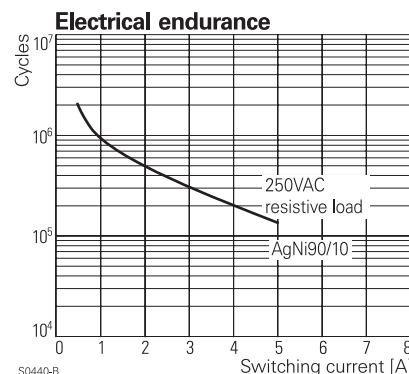
**Coils - operation**

| Version | F.. |    | H.. |    |
|---------|-----|----|-----|----|
|         | A1  | A2 | A1  | A2 |
| Operate | +   | -  | -   | +  |
| Reset   | -   | +  | +   | -  |

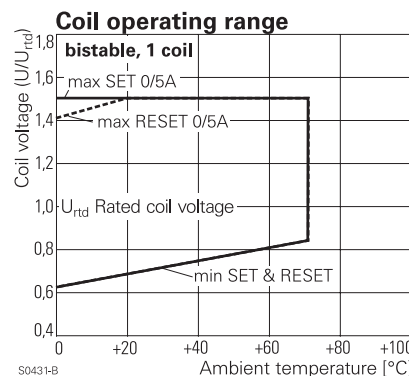
Contact position not defined at delivery



S0177-D



S0440-B

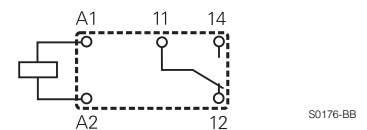
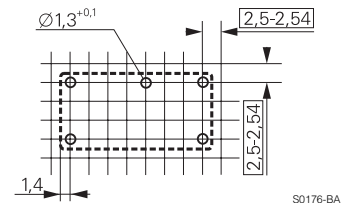


S0431-B

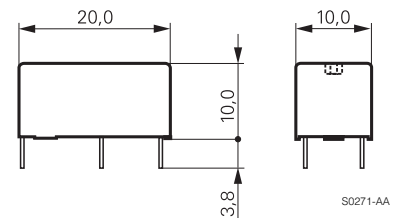
| Insulation                                |                       |
|---|-----------------------|
| Dielectric strength coil-contact circuit  | 4000 V <sub>rms</sub> |
| open contact circuit                      | 1000 V <sub>rms</sub> |
| Clearance / creepage coil-contact circuit | ≥ 3,2 / 4 mm          |
| Material group of insulation parts        | IIIa                  |
| Tracking index of relay base              | PTI 250               |
| Insulation to IEC 60664-1                 |                       |
| Type of insulation coil-contact circuit   | basic                 |
| open contact circuit                      | functional            |
| Rated insulation voltage                  | 250 V                 |
| Pollution degree                          | 3                     |
| Rated voltage system                      | 230 V                 |
| Overvoltage category                      | 2                     |
|   | 400 V                 |
|   | III                   |

| Other data                                      |  |
|---|--|
| RoHS - Directive 2002/95/EC                     | compliant as per product date code 0352              |
| Flammability class according to UL94            | V-0  |
| Ambient temperature range                       | -40...85°C, 70°C at 100% duty factor                 |
| Shock resistance (destruction)                  | > 100 g  |
| Category of protection                          | RTII - flux proof<br>(RTIII - wash tight on request) |
| Resistance to soldering heat flux-proof version | 270°C / 10 s   |
| Relay weight                                    | 5 g  |
| Packaging unit                                  | 25/500 pcs   |

**PCB layout / terminal assignment**  
Bottom view on solder pins



**Dimensions**



**Product key**

|                       |  |
|-----------------------|--|
| Type                  |  |
| Version               | <b>0</b> flux proof                            |
| Contact configuration | <b>1</b> 1 CO contact                          |
| Contact material      | <b>4</b> AgNi 90/10                            |
| Coil                  | Coil code: please refer to coil versions table |



| Product key | Version    | Contacts     | Contact material | Coil       | Coil    | Part number |
|-------------|------------|--------------|------------------|------------|---------|-------------|
| PE014F02    | flux proof | 1 CO contact | AgNi 90/10       | bistable   | 2,2 VDC | 9-1415389-1 |
| PE014F03    |            |              |                  | 1-coil     | 3 VDC   | 0-1415390-1 |
| PE014F05    |            |              |                  | polarity F | 5 VDC   | 1-1415390-1 |
| PE014F06    |            |              |                  | 200 mW     | 6 VDC   | 2-1415390-1 |
| PE014F12    |            |              |                  |            | 12 VDC  | 3-1415390-1 |
| PE014F24    |            |              |                  |            | 24 VDC  | 5-1415390-1 |
| PE014H02    |            |              |                  | bistable   | 2,2 VDC | 7-1415390-1 |
| PE014H03    |            |              |                  | 1-coil     | 3 VDC   | 8-1415390-1 |
| PE014H05    |            |              |                  | polarity H | 5 VDC   | 9-1415390-1 |
| PE014H06    |            |              |                  | 200 mW     | 6 VDC   | 0-1415391-1 |
| PE014H12    |            |              |                  |            | 12 VDC  | 1-1415391-1 |
| PE014H24    |            |              |                  |            | 24 VDC  | 2-1415391-1 |