



**THE DATASHEET OF  
PE014F02**



**Miniature PCB Relay PE bistable**

- Polarized bistable version
- 1 pole 5 A, 1 form C (CO) or 6A, 1 form A (NO) contact
- Sensitive version with 200mW coil
- Ambient temperature 70°C
- Low height 10.0mm
- Plastic materials according to IEC 60335-1 (domestic appliances)

Typical applications  
Room thermostats, electricity meters, home automation, white goods, battery powered controls.



**Approvals**

VDE Cert. No. 40011901 (for AgNi90/10 contacts only), UL E214025  
Technical data of approved types on request.

**Contact Data**

|   |  |
|---|--|
| Contact arrangement                       | 1 form C (CO) or 1 form A (NO)                                 |
| Rated voltage                             | 250VAC   |
| Max. switching voltage                    | 400VAC   |
| Rated current                             | 5A (CO - types)<br>6A (NO - AgNi - types)                      |
| Breaking capacity max.                    | 1250VA (CO - types)<br>1500VA (NO AgNi - types)                |
| Contact material                          | AgNi 90/10, AgSnO <sub>2</sub><br>AgNi 90/10 HTV (gold plated) |
| Frequency of operation, with/without load | 360/72000 ops/h  |
| Set/reset time                            | typ. 8/8ms   |
| Bounce time, form A/form B                | 4/7ms  |

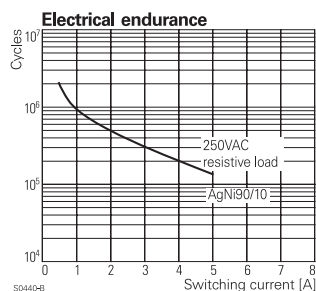
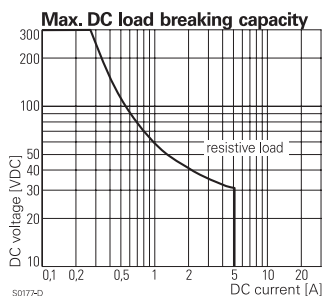
**Contact ratings**

| Type             | Contact | Load                     | Cycles              |
|------------------|---------|--------------------------|---------------------|
| <b>IEC 61810</b> |         |                          |                     |
| PE014            | C (CO)  | 5A, 250VAC, cosφ=1, 85°C | 100x10 <sup>3</sup> |
| PE014            | A (NO)  | 5A, 30VDC, 0 ms, 85°C    | 100x10 <sup>3</sup> |
| PE034            | NO      | 6A, 250VAC cosφ=1, 70°C  | 20x10 <sup>3</sup>  |

**UL 508**

|       |            |                                   |                     |
|-------|------------|-----------------------------------|---------------------|
| PE013 | C (CO)     | 5A, 240VAC, resistive, 85°C       | 30x10 <sup>3</sup>  |
| PE014 | NO (of CO) | B300                              | 6.000               |
| PE514 | NO (of CO) | R300                              | 6.000               |
| PE514 | C (CO)     | 5A, 250VAC, general purpose, 85°C | 6.000               |
| PE033 | N (NO)     | 5A, 240VAC, resistive, 85°C       | 50x10 <sup>3</sup>  |
| PE014 | C/A/B      | 5A, 250VAC, resistive, 85°C       | 100x10 <sup>3</sup> |
| PE034 | A (NO)     | 6A, 250VAC, resistive, 70°C       | 100x10 <sup>3</sup> |

Mechanical endurance >5x10<sup>6</sup> operations.



**Coil Data**

|   |   |
|---|---|
| Magnetic system                             | bistable, polarized                           |
| Coil voltage range                          | 2.2 to 48VDC                                  |
| Operative range, IEC 61810                  | 2   |
| Reset voltage max., % of rated coil voltage | 120% at -40°C                                 |
| Min./Max. energization duration             | 20ms <sup>1)</sup> /1 min at <10% duty factor |

1) Information on reduced pulse duration with higher energization voltages on demand.

**Coil versions, bistable 1 coil**

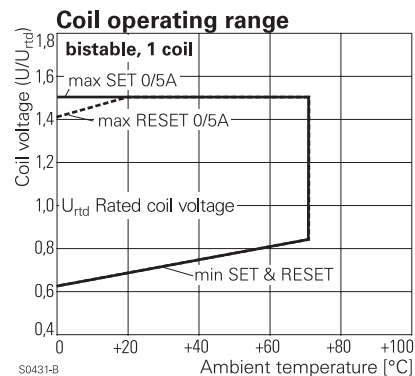
| Coil code <sup>2)</sup> | Rated voltage VDC | Set voltage VDC | Reset voltage VDC | Coil resistance Ω±10% | Rated coil power mW |
|-------------------------|-------------------|-----------------|-------------------|-----------------------|---------------------|
| F02 H02                 | 2.2               | 1.65            | 1.65              | 22                    | 220                 |
| F03 H03                 | 3                 | 2.25            | 2.25              | 41                    | 220                 |
| F05 H05                 | 5                 | 3.75            | 3.75              | 125                   | 200                 |
| F06 H06                 | 6                 | 4.5             | 4.5               | 180                   | 200                 |
| F12 H12                 | 12                | 9.0             | 9.0               | 650                   | 222                 |
| F24 H24                 | 24                | 18.0            | 18.0              | 2750                  | 209                 |

<sup>2)</sup> Coil codes F.. and H.. have opposite polarity; refer to coil operation table.  
All figures are given for coil without pre-energization, at ambient temperature +23°C.  
Other coil voltages on request.

**Coils - operation**

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

Contact position not defined at delivery



**Miniature PCB Relay PE bistable** (Continued)

**Insulation Data**

|                                    |                       |
|------------------------------------|-----------------------|
| Initial dielectric strength        |                       |
| between open contacts              | 1000V <sub>rms</sub>  |
| between contact and coil           | 4000V <sub>rms</sub>  |
| Initial insulation resistance      |                       |
| open contact circuit               | >10x10 <sup>9</sup> Ω |
| coil-contact circuit               | >10x10 <sup>9</sup> Ω |
| Clearance/creepage                 |                       |
| between contact and coil           | ≥3.2/4mm              |
| Material group of insulation parts | IIIa                  |
| Tracking index of relay base       | PTI250V               |

**Other Data**

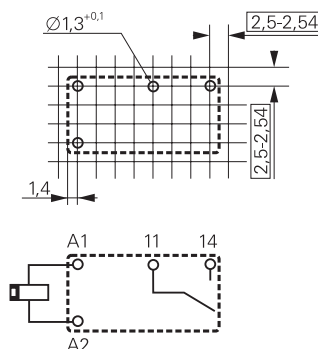
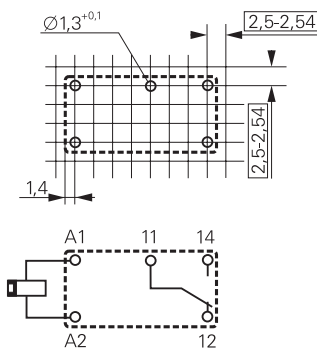
|  |  |
|--|--|
| Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content | refer to the Product Compliance Support Center at <a href="http://www.te.com/customer-support/rohssupportcenter">www.te.com/customer-support/rohssupportcenter</a> |
| Resistance to heat and fire  | according EN60335, par.30  |
| Ambient temperature  | -40 to 85°C<br>70°C at 100% duty factor  |
| Category of environmental protection                                 | IEC 61810<br>RTII - flux proof<br>RTIII - wash tight on request  |
| Shock resistance (destructive)                                       | >100g  |
| Shock resistance (functional/ 11ms), form A/form B                   | >15/5g   |
| Terminal type  | PCB-THT  |
| Resistance to soldering heat THT                                     | IEC 60068-2-20<br>260°C/10s (flux proof version)<br>260°C/5s (wash tight version)  |
| Packaging/unit   | tube/25 pcs., box/500 pcs.   |

**PCB Layout / terminal assignment**

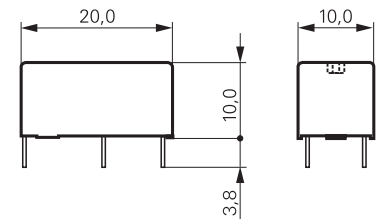
Bottom view on solder pins

1 form C (CO) version

1 form A (NO) version



**Dimensions**



**Product code structure**



Typical product code **PE 0 1 4 F12**

|                              |  |                           |                                |  |  |
|------------------------------|--|---------------------------|--------------------------------|--|--|
| <b>Type</b>                  | PE Miniature PCB Relay PE bistable             |                           |                                |  |  |
| <b>Version</b>               | 0 Flux proof                                   | 5 Wash tight (on request) |                                |  |  |
| <b>Contact configuration</b> | 1 1 form C (CO) contact                        | 3 1 form A (NO) contact   |                                |  |  |
| <b>Contact material</b>      | 4 AgNi 90/10                                   | 3 AgSnO <sub>2</sub>      | 5 AgNi 90/10 HTV (gold plated) |  |  |
| <b>Coil</b>                  | Coil code: please refer to coil versions table |                           |                                |  |  |

| Product code | Version    | Contacts     | Contact material | Coil       | Part number |
|--------------|------------|--------------|------------------|------------|-------------|
| PE514F03     | wash tight |              |                  | bistable   | 2-1415539-0 |
| PE014F02     | flux proof |              | AgNi 90/10       | polarity F | 9-1415389-1 |
| PE014F03     |            | 1 CO contact |                  |            | 1415390-1   |
| PE014F05     |            |              |                  |            | 1-1415390-1 |
| PE014F06     |            |              |                  |            | 2-1415390-1 |
| PE014F12     |            |              |                  |            | 3-1415390-1 |
| PE014F24     |            |              |                  |            | 5-1415390-1 |
| PE014H02     |            |              |                  | bistable   | 7-1415390-1 |
| PE014H03     |            |              |                  | polarity H | 8-1415390-1 |
| PE014H05     |            |              |                  |            | 9-1415390-1 |
| PE014H06     |            |              |                  |            | 1415391-1   |
| PE014H12     |            |              |                  |            | 1-1415391-1 |
| PE014H24     |            |              |                  |            | 2-1415391-1 |
| PE015F05     |            | 1 form C     | AgNi 90/10 HTV   | bistable   | 3-1415542-4 |
| PE034F09     |            | 1 form A     | AgNi 90/10       | polarity F | 1415543-7   |
| PE034F12     |            | 1 NO contact |                  |            | 1415544-4   |

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