

## Power PCB Relay RT1 bistable

- 1 pole 16A, 1 form C (CO) or 1 form A (NO) contact
- Polarized bistable version with 1 or 2 coils
- 5kV/10mm coil-contact
- Reinforced insulation
- WG version: product in accordance to IEC 60335-1

Typical applications  
Battery powered equipment or applications with "memory function"



F0176-C



### Approvals

VDE Cert. No. 40007571, UL E214025, cCSAus 1142018  
Technical data of approved types on request

| Contact Data                                      | 12A                            | 16A          |
|---------------------------------------------------|--------------------------------|--------------|
| Contact arrangement                               | 1 form C (CO) or 1 form A (NO) |              |
| Rated voltage                                     | 250VAC                         |              |
| Max. switching voltage                            | 400VAC                         |              |
| Rated current                                     | 12A                            | 16A          |
| Limiting continuous current                       | 12A                            | 16A, UL: 20A |
| Limiting making current, max. 4s, duty factor 10% | 25A                            | 30A          |
| Breaking capacity max.                            | 4000VA                         |              |
| Contact material                                  | AgNi 90/10                     |              |
|                                                   | AgNi 90/10 gold plated         |              |
| Frequency of operation, with/without load         | 360/72000h <sup>-1</sup>       |              |
| Operate/Reset time max.                           | 10/10ms                        |              |
| Bounce time max., form A/form B                   | 3/6ms                          |              |

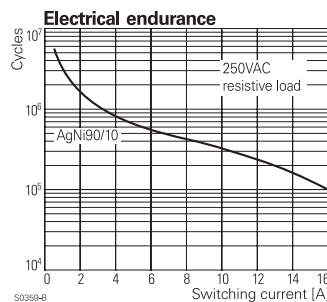
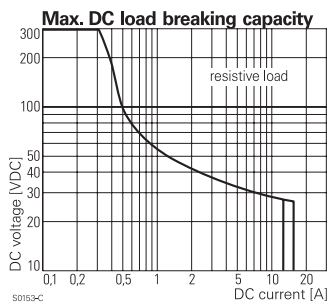
### Contact ratings

| Type             | Contact | Load                        | Cycles             |
|------------------|---------|-----------------------------|--------------------|
| <b>IEC 61810</b> |         |                             |                    |
| RT1*4            | A (NO)  | 12A, 250VAC resistive, 85°C | 30x10 <sup>3</sup> |
| RT1*4            | C (CO)  | 12A, 250VAC resistive, 85°C | 10x10 <sup>3</sup> |
| RT314            | A (NO)  | 16A, 250VAC resistive, 85°C | 30x10 <sup>3</sup> |
| RT314            | C (CO)  | 16A, 250VAC resistive, 85°C | 10x10 <sup>3</sup> |

### UL 508

|       |             |                                    |                     |
|-------|-------------|------------------------------------|---------------------|
| RT1*4 | A (NO)      | 12A, 250VAC, general purpose, 85°C | 50x10 <sup>3</sup>  |
| RT**4 | A (NO)      | R300, 85°C                         | 100x10 <sup>3</sup> |
| RT314 | A/B (NO/NC) | 20A, 250VAC, general purpose, 85°C | 6x10 <sup>3</sup>   |
| RT334 | A (NO)      | 16A, 250VAC, general purpose, 85°C | 50x10 <sup>3</sup>  |
| RT314 | A (NO)      | 1hp, 240VAC, 40°C                  | 1x10 <sup>3</sup>   |

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



### Coil Data, bistable coils

|                                           | 1 coil                        | 2 coils |
|-------------------------------------------|-------------------------------|---------|
| Magnetic system                           | polarized, bistable           |         |
| Coil voltage range                        | 3 to 36VDC                    |         |
| Operative range, IEC 61810                | 2                             |         |
| Limiting voltage, % of rated coil voltage | 120%                          | 150%    |
| Min./Max. energization duration           | 30ms/1min at <10% duty factor |         |
| Coil insulation system according UL1446   | class F                       |         |

### Coil versions, bistable coil

| Coil code               | Rated voltage VDC | Set voltage VDC | Reset voltage VDC | Coil resistance Ω±10% | Rated power mW |
|-------------------------|-------------------|-----------------|-------------------|-----------------------|----------------|
| <b>bistable 1 coil</b>  |                   |                 |                   |                       |                |
| A03                     | 3                 | 2.1             | 1.7               | 21                    | 429            |
| A05                     | 5                 | 3.5             | 2.8               | 62                    | 403            |
| A06                     | 6                 | 4.2             | 3.3               | 90                    | 400            |
| A12                     | 12                | 8.4             | 6.6               | 360                   | 400            |
| A24                     | 24                | 16.8            | 13.2              | 1440                  | 400            |
| <b>bistable 2 coils</b> |                   |                 |                   |                       |                |
| F03                     | 3                 | 2.1             | 1.7               | 15                    | 600            |
| F05                     | 5                 | 3.5             | 2.8               | 42                    | 595            |
| F06                     | 6                 | 4.2             | 3.3               | 55                    | 655            |
| F09                     | 9                 | 6.3             | 5.0               | 135                   | 600            |
| F12                     | 12                | 8.4             | 6.6               | 240                   | 600            |
| F24                     | 24                | 16.8            | 13.2              | 886                   | 650            |
| F36                     | 36                | 25.2            | 19.8              | 1994                  | 650            |

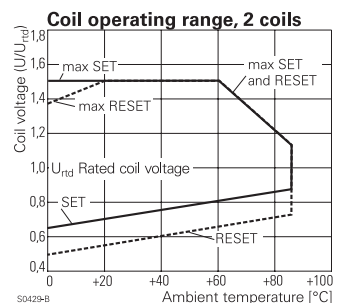
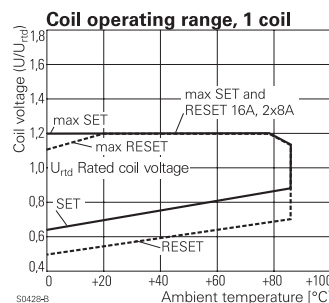
All figures are given for coil without pre-energization, at ambient temperature +23°C.

Other coil voltages on request.

### Bistable coils - operation

| Version        | 1 coil |    | 2 coils |    |
|----------------|--------|----|---------|----|
| Coil terminals | A1     | A2 | A1      | A3 |
| Operate        | +      | -  | +       | -  |
| Reset          | -      | +  | -       | +  |

Contact position not defined at delivery



**Power PCB Relay RT1 bistable** (Continued)

**Insulation Data**

|                                    |                      |
|------------------------------------|----------------------|
| Initial dielectric strength        |                      |
| between open contacts              | 1000V <sub>rms</sub> |
| between contact and coil           | 5000V <sub>rms</sub> |
| Clearance/creepage                 |                      |
| between contact and coil           | ≥ 10/10mm            |
| Material group of insulation parts | IIIa                 |
| Tracking index of relay base       | PTI 250V             |

**Other Data**

Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at [www.te.com/customer-support/rohssupportcenter](http://www.te.com/customer-support/rohssupportcenter)

|                                          |                                       |
|------------------------------------------|---------------------------------------|
| Ambient temperature                      | -40 to 85°C                           |
| Category of environmental protection     |                                       |
| IEC 61810                                | RTII - flux proof, RTIII - wash tight |
| Vibration/shock resistance (functional), |                                       |
| opening B contact                        | 3/5g                                  |
| opening closed A contact                 | 6/15g                                 |
| Shock resistance (destructive)           | 100g                                  |

**Other Data** (continued)

|                              |                                |
|------------------------------|--------------------------------|
| Terminal type                | PCB-THT, plug-in <sup>1)</sup> |
| Weight                       | 14g                            |
| Resistance to soldering heat | THT, IEC 60068-2-20            |
| RTII - flux proof            | 270°C/10s                      |
| RTIII - wash tight           | 260°C/5s                       |
| Packaging/unit               | tube/20 pcs., box/500 pcs.     |

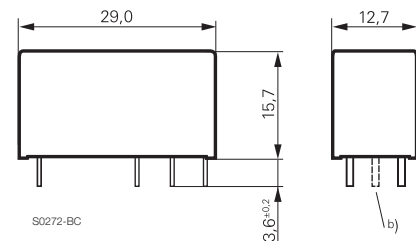
1) socket available for 1 coil version only, see Accessories.

**Accessories**

For 1 coil version,  
details see datasheet [Accessories Industrial Power Relay RT](#)

NOTE: indicated contact ratings and electrical endurance data for direct wiring of relays (according IEC 61810-1); for relays mounted on sockets deratings may apply.

**Dimensions**



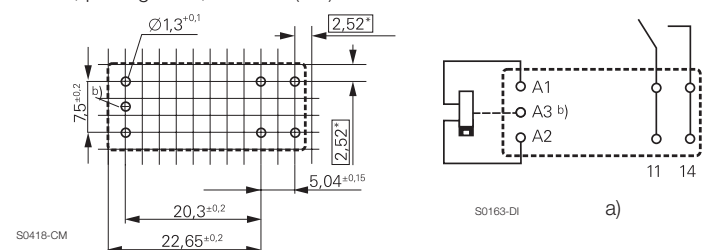
a) Indicated contact position during or after coil energization with reset voltage.

b) for 2 coil version only

**PCB layout / terminal assignment**

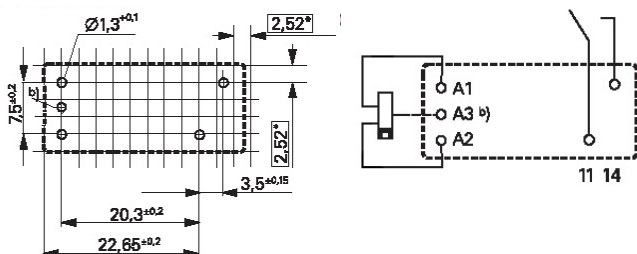
Bottom view on solder pins

16A, pinning 5mm, 1 form A (NO) contact

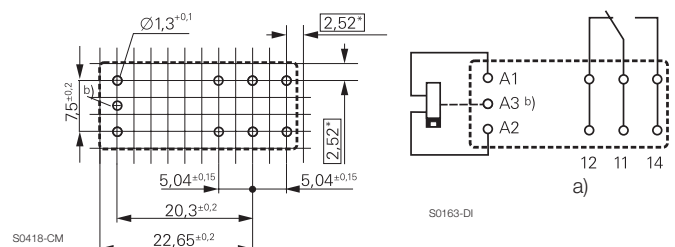


\*) With the recommended PCB hole sizes a grid pattern from 2.5mm to 2.54mm can be used.

12A, pinning 3,5mm, 1 form A (NO) contact



16A, pinning 5mm, 1 form C (CO) contact



\*) With the recommended PCB hole sizes a grid pattern from 2.5mm to 2.54mm can be used.

**Power PCB Relay RT1 bistable** (Continued)

**Product code structure**

Typical product code **RT 3 1 4 F24**

|                       |                                                |                                |                                |
|-----------------------|------------------------------------------------|--------------------------------|--------------------------------|
| Type                  | RT Power PCB Relay RT1 bistable                |                                |                                |
| Version               | 1 12A, pinning 3,5mm, flux proof               | 3 16A, pinning 5mm, flux proof | D 16A, pinning 5mm, wash tight |
| Contact configuration | 1 1 form C (CO) contact                        | 3 1 form A (NO) contact        |                                |
| Contact material      | 4 AgNi 90/10                                   | 5 AgNi 90/10 gold plated       |                                |
| Coil                  | Coil code: please refer to coil versions table |                                |                                |

**Version**

|              |                                                              |
|--------------|--------------------------------------------------------------|
| <b>Blank</b> | Standard version                                             |
| <b>WG</b>    | Product in accordance with IEC 60335-1 (domestic appliances) |

| Product code | Version        | Contacts              | Contact material       | Coil version     | Coil  | Part number |
|--------------|----------------|-----------------------|------------------------|------------------|-------|-------------|
| RT315A03WG   | 16A,           | 1 form C (CO) contact | AgNi 90/10 gold plated | Bistable 1 coil  | 3VDC  | 8-1415545-5 |
| RT314A03     | pinning 5mm,   |                       | AgNi 90/10             |                  | 3VDC  | 7-1393239-7 |
| RT314A05     | flux proof     |                       |                        |                  | 5VDC  | 7-1393239-8 |
| RT314A06     |                |                       |                        |                  | 6VDC  | 7-1393239-9 |
| RT314A12     |                |                       |                        |                  | 12VDC | 8-1393239-0 |
| RT314A24WG   |                |                       |                        |                  | 24VDC | 1415539-5   |
| RT314F03     |                |                       |                        | Bistable 2 coils | 3VDC  | 8-1393239-4 |
| RT314F05     |                |                       |                        |                  | 5VDC  | 8-1393239-5 |
| RT314F06     |                |                       |                        |                  | 6VDC  | 8-1393239-6 |
| RT314F09     |                |                       |                        |                  | 9VDC  | 6-1415351-1 |
| RT314F12     |                |                       |                        |                  | 12VDC | 8-1393239-7 |
| RT314F24     |                |                       |                        |                  | 24VDC | 8-1393239-8 |
| RT314F36     |                |                       |                        |                  | 36VDC | 8-1393239-9 |
| RTD14F03     | 16A,           |                       |                        |                  | 3VDC  | 5-1393238-7 |
| RTD14F12     | pinning 5mm,   |                       |                        |                  | 12VDC | 5-1393238-8 |
| RTD15F05     | wash tight     |                       | AgNi 90/10 gold plated |                  | 5VDC  | 1415538-8   |
| RT134F12     | 12A,           | 1 form A (NO) contact | AgNi 90/10             |                  | 12VDC | 1415544-5   |
| RT134F24     | pinning 3,5mm, | 1 form C (CO) contact |                        |                  | 24VDC | 4-1415382-1 |
| RT114F12     | flux proof     |                       |                        |                  | 12VDC | 6-1415543-8 |
| RT114F24     |                |                       |                        |                  | 24VDC | 5-1415400-1 |

Other types on request.

This list represents the most common types and does not show all variants covered by this datasheet.

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[8-1393239-6](#)