

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

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



F0176-C



Approvals

VDE REG.-Nr. 6106, UL E214025, cCSAus 14385
Technical data of approved types on request

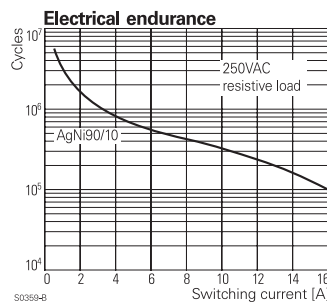
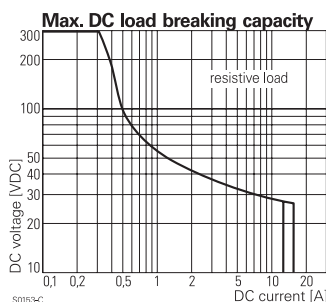
Contact Data

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

Contact ratings

| Type | Contact | Load | Cycles |
|------------------|-------------|------------------------------------|--------------------|
| IEC 61810 | | | |
| RT314 | A (NO) | 16A, 250VAC resistive, 85°C | 30x10 ³ |
| RT314 | C (CO) | 16A, 250VAC resistive, 85°C | 10x10 ³ |
| UL 508 | | | |
| RT314 | A/B (NO/NC) | 20A, 250VAC, general purpose, 85°C | 6x10 ³ |
| RT334 | A (NO) | 16A, 250VAC, general purpose, 85°C | 50x10 ³ |
| RT314 | A (NO) | 1hp, 240VAC, 40°C | 1x10 ³ |

Mechanical endurance >5x10⁶ operations



Coil Data, bistable coils

| | 1 coil | 2 coils |
|---|-------------------------------|---------|
| Magnetic system | polarized, bistable | |
| Coil voltage range | 3 to 24VDC | |
| 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 |
|-------------------------|-------------------|-----------------|-------------------|-----------------------|----------------|
| bistable 1 coil | | | | | |
| 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 |
| bistable 2 coils | | | | | |
| F03 | 3 | 2.1 | 1.7 | 15 | 600 |
| F05 | 5 | 3.5 | 2.8 | 42 | 595 |
| F06 | 6 | 4.2 | 3.3 | 55 | 655 |
| F12 | 12 | 8.4 | 6.6 | 240 | 600 |
| F24 | 24 | 16.8 | 13.2 | 886 | 650 |

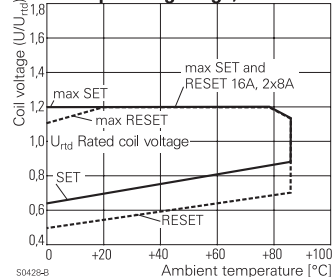
All figures are given for coil without pre-energization, at ambient temperature +23°C.
Other coil voltages on request.

Bistable coils - operation

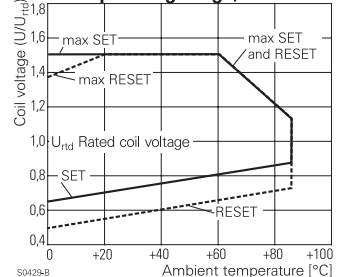
| Version | 1 coil | | 2 coils | | |
|----------------|--------|----|---------|----|----|
| Coil terminals | A1 | A2 | A1 | A3 | A2 |
| Operate | + | - | + | - | - |
| Reset | - | + | - | + | - |

Contact position not defined at delivery

Coil operating range, 1 coil



Coil operating range, 2 coils



Power PCB Relay RT1 bistable (Continued)

Insulation Data

| | |
|------------------------------------|----------------------|
| Initial dielectric strength | |
| between open contacts | 1000V _{rms} |
| between contact and coil | 5000V _{rms} |
| 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

| | |
|--|---------------------------------------|
| 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 ¹⁾ |
| 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. |

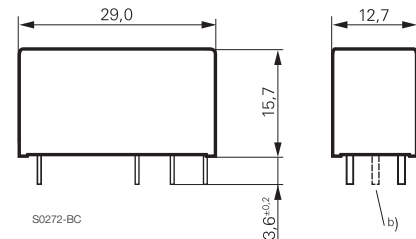
1) socket available for 1 coil version only, see Accessories.

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.

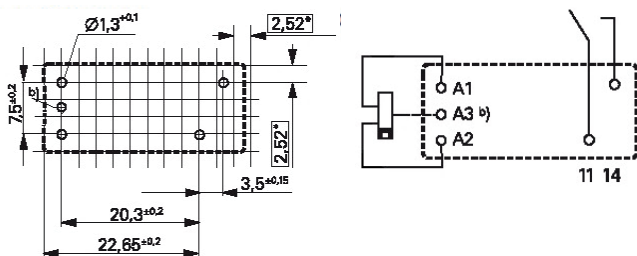
Dimensions



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

b) for 2 coil version only

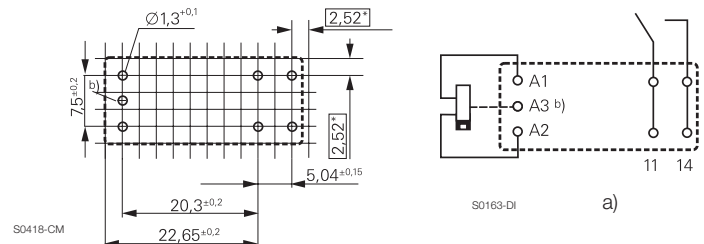
12A, pinning 3,5mm, 1 form A (NO) contact



PCB layout / terminal assignment

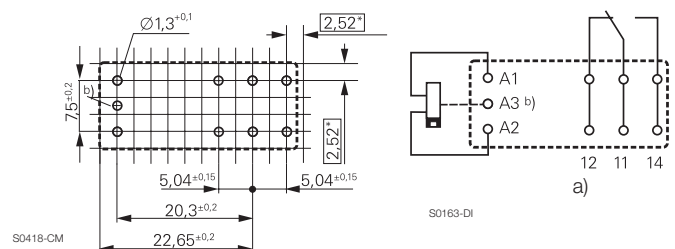
Bottom view on solder pins

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.

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 | | |
| Coil | | | |
| Coil code: please refer to coil versions table | | | |

| Product code | Version | Contacts | Contact material | Coil version | Coil | Part number |
|--------------|--------------------------------------|--------------------------|------------------|------------------|-------|-------------|
| RT314A03 | 16A; | 1 form C (CO) | AgNi 90/10 | Bistable 1coil | 3VDC | 7-1393239-7 |
| RT314A05 | pinning 5mm, | contact | | | 5VDC | 7-1393239-8 |
| RT314A06 | flux proof | | | | 6VDC | 7-1393239-9 |
| RT314A12 | | | | | 12VDC | 8-1393239-0 |
| RT314F03 | | | | Bistable 2 coils | 3VDC | 8-1393239-4 |
| RT314F05 | | | | | 5VDC | 8-1393239-5 |
| RT314F06 | | | | | 6VDC | 8-1393239-6 |
| RT314F12 | | | | | 12VDC | 8-1393239-7 |
| RT314F24 | | | | | 24VDC | 8-1393239-8 |
| RT134F12 | 12A, pinning 3,5mm, flux proof | 1 form A (NO) contact | AgNi 90/10 | Bistable 2 coils | 12VDC | 4-1415382-1 |

Other types on request.

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