

Power PCB Relay RT1

- 1 pole 12 / 16 A, 1 CO or 1 NO contact
- DC- or AC-coil
- Sensitive coil 400 mW
- 5 kV / 10 mm coil-contact, reinforced insulation
- Ambient temperature 85°C (DC-coil)
- WG version: Product in accordance to IEC60335-1
- RoHS compliant (Directive 2002/95/EC) as per product date code 0413



F0144-B

Applications

Boiler control, timers, garage door control, POS automation, interface modules

Approvals

VDE REG.-Nr. 6106, c **RU** us E214025, (BEAB) C0786, (S) 0039110/01-02, (FI) FI 190164 A1, (KEMA) 98.4118.01
 Technical data of approved types on request

Contact data

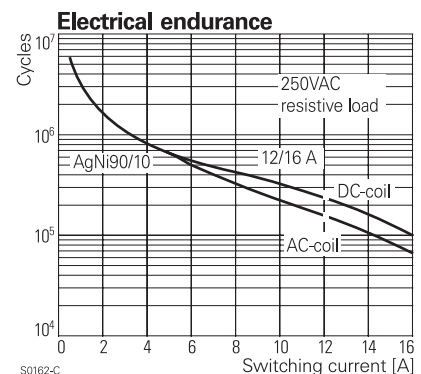
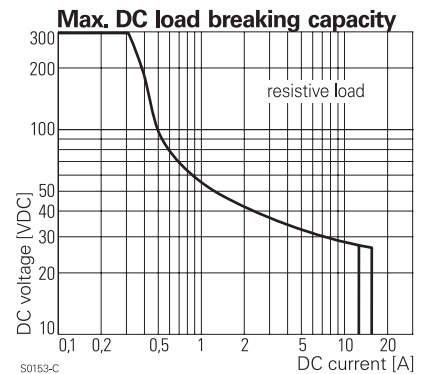
| | | |
|--|------------------------------------|---------|
| Contact configuration | 1 CO or 1 NO contact | |
| Contact set | single contact | |
| Type of interruption | micro disconnection | |
| Rated current | 12 A | 16 A |
| Rated voltage / max.switching voltage AC | 240/400 VAC | |
| Limiting continuous current | UL: 20 A | |
| Maximum breaking capacity AC | 3000 VA | 4000 VA |
| Limiting making capacity, max 4 s, df 10% | 25 A | 30 A |
| Contact material | AgNi 90/10, AgNi 90/10 gold plated | |
| Mechanical endurance DC coil | > 30 x 10 ⁶ cycles | |
| AC coil | > 10 x 10 ⁶ cycles | |
| Rated frequency of operation with / without load | 6 / 1200 min ⁻¹ | |

Contact ratings

| Type | Load | Cycles |
|-------|---|---------------------|
| RT314 | 16 A, 250 VAC, NO contact, 85°C, DF 10%, UL508 | 50x10 ³ |
| RT314 | 16 A, 250 VAC, NC contact, 70°C, 30min ⁻¹ | 53x10 ³ |
| RT314 | 20 A, 250 VAC, NO contact, 85°C, UL508 | 6x10 ³ |
| RT314 | 1000 W incandescent lamp, 250 VAC | 1.2x10 ³ |
| RT314 | 10 A, 250 VAC, cosφ=0.6, CO contact, 70°C | 200x10 ³ |
| RT314 | 5 A / 2 A, 250 VAC, cosφ=1, motor, NO contact, 10min ⁻¹ , 70°C | 1.1x10 ⁶ |
| RT314 | 0.26 A / 0.01 A, 230 VAC, cosφ=0.38, valve, NO contact, 25min ⁻¹ | 7.6x10 ⁶ |
| RT314 | Pilot duty A300 (NO contact), B300 (CO/NC contact), UL508 | |
| RT314 | 1hp @ 240 VAC, 1/2hp @ 120 VAC, NO contact, UL508 | |
| RT314 | AC15, 6 A, 250 VAC, NO and NC contact, 85°C, EN60947-5-1 | |
| RT314 | DC13, 2 A / 24 VDC, 0.2 A / 250 VDC, NO and NC contact, 85°C, EN60947-5-1 | |

Coil data

| | |
|---|--------------|
| Rated coil voltage range DC coil | 5...110 VDC |
| AC coil | 24...230 VAC |
| Coil power DC coil | typ 400 mW |
| AC coil | typ 0.75 VA |
| Operative range | 2 |
| Coil insulation system according UL1446 | class F |



Coil versions, DC-coil

| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ohm | Rated coil power mW |
|-----------|-------------------|---------------------|---------------------|---------------------|---------------------|
| 005 | 5 | 3.5 | 0.5 | 62±10% | 403 |
| 006 | 6 | 4.2 | 0.6 | 90±10% | 400 |
| 012 | 12 | 8.4 | 1.2 | 360±10% | 400 |
| 024 | 24 | 16.8 | 2.4 | 1440±10% | 400 |
| 048 | 48 | 33.6 | 4.8 | 5520±10% | 417 |
| 060 | 60 | 42.0 | 6.0 | 8570±12% | 420 |
| 110 | 110 | 77.0 | 11.0 | 28800±12% | 420 |

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

Coil versions, AC-coil 50Hz

| Coil code | Rated voltage VAC | Operate voltage 50 Hz VAC | Release voltage 50 Hz VAC | Coil resistance Ohm | Rated coil power 50 Hz VA |
|-----------|-------------------|---------------------------|---------------------------|---------------------|---------------------------|
| 524 | 24 | 18.0 | 3.6 | 350±10% | 0.76 |
| 615 | 115 | 86.3 | 17.3 | 8100±15% | 0.76 |
| 700 | 200 | 150.0 | 30.0 | 24350±15% | 0.76 |
| 730 | 230 | 172.5 | 34.5 | 32500±15% | 0.74 |

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

Insulation

| | | |
|---|-----------------------|-------|
| Dielectric strength coil-contact circuit | 5000 V _{rms} | |
| open contact circuit | 1000 V _{rms} | |
| Clearance / creepage coil-contact circuit | ≥ 10 / 10 mm | |
| Material group of insulation parts | ≥ IIIa | |
| Tracking index of relay base | PTI 250 V | |
| Insulation to IEC 60664-1 | | |
| Type of insulation coil-contact circuit | reinforced | |
| open contact circuit | functional | |
| Rated insulation voltage | 250 V | |
| Pollution degree 12 A version | 3 | 3 |
| 16 A version | 3 | 2 |
| Rated voltage system | 240 V | 400 V |
| Overvoltage category | III | |

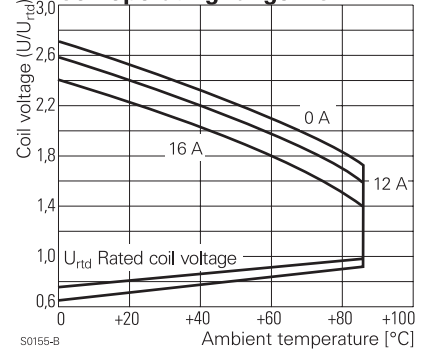
Other data

| | |
|--|---|
| RoHS - Directive 2002/95/EC | compliant as per product date code 0413 |
| Flammability class according to UL94 | V-0 |
| For WG version: GWFI to IEC 60335-1 | > 850 °C |
| GWT to IEC 60335-1 current ≤ 0,2 A | > 650 °C |
| current > 0,2 A | > 750 °C |
| Ambient temperature range DC coil | -40...+85°C |
| AC coil | -40...+70°C |
| Operate- / release time DC coil | typ 7 / 3 ms |
| Bounce time DC coil, NO / NC contact | typ 1 / 3 ms |
| Vibration resistance (function), NO / NC contact | 20 / 5 g, 30 ... 500 Hz |
| Shock resistance (destruction) | 100 g |
| Category of protection | RTII - flux proof, RTIII - wash tight |
| Mounting | pcb or on socket |
| Mounting position | any |
| Mounting distance DC / AC coils | 0 / 2.5 mm |
| Resistance to soldering heat flux-proof version | 270°C / 10 s |
| wash-tight version | 260°C / 5 s |
| Relay weight | 14 g |
| Packaging unit | 20 / 500 pcs |

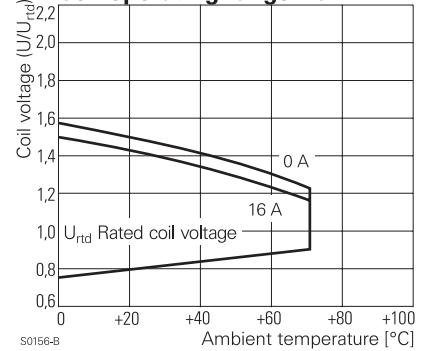
Accessories

For details see datasheet Accessories Power Relay RT

Coil operating range DC

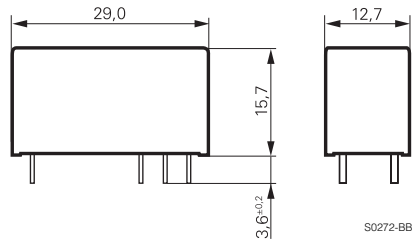


Coil operating range AC



Power PCB Relay RT1 (Continued)

Dimensions

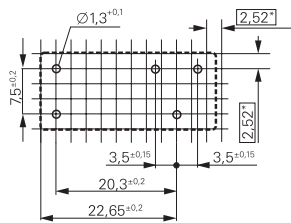


PCB layout / terminal assignment

Bottom view on solder pins

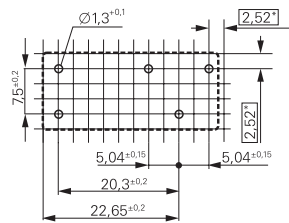
*) With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.

12 A, pinning 3.5 mm



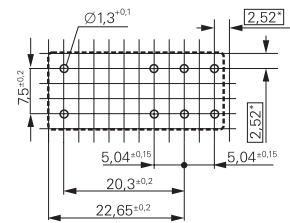
S0418-CB

12 A, pinning 5 mm



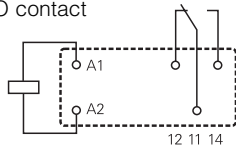
S0418-CN

16 A, pinning 5 mm



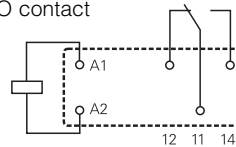
S0418-CA

1 CO contact



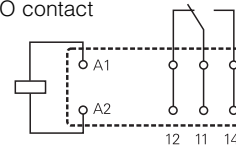
S0163-BG

1 CO contact



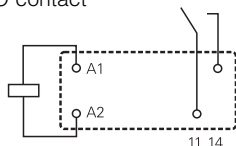
S0163-BC

1 CO contact



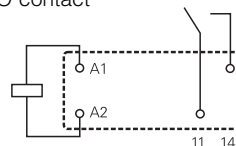
S0163-BE

1 NO contact



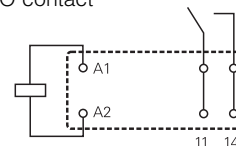
S0163-BH

1 NO contact



S0163-BD

1 NO contact



S0163-BF

Product key

| | | | | | | | |
|-----------------------|---|--|---|--|--|--|--|
| Type | R T | | | | | | |
| Version | 1 12 A, pinning 3.5 mm, flux proof | | B 12 A, pinning 3.5 mm, wash tight | | | | |
| | 2 12 A, pinning 5 mm, flux proof *) | | D 16 A, pinning 5 mm, wash tight | | | | |
| | 3 16 A, pinning 5 mm, flux proof | | | | | | |
| Contact configuration | 1 1 CO contact | | 3 1 NO contact | | | | |
| Contact material | 4 AgNi 90/10 | | 5 AgNi 90/10 gold plated (for type RT31.) | | | | |
| Coil | Coil code: please refer to coil versions table | | | | | | |
| Version | Blank Standard version | | | | | | |
| | WG Product in accordance with IEC 60335-1 (domestic appliances) | | | | | | |

Preferred types in bold print
*) Wash tight version on request

| Product key | Version | Contacts | Cont. material | Coil | Coil | Part number |
|-------------|------------------------------|--------------|----------------|---------|---------|-------------|
| RT114005 | 12 A | 1 CO contact | AgNi 90/10 | DC-coil | 5 VDC | 0-1393239-7 |
| RT114006 | pinning 3.5 mm flux proof | | | | 6 VDC | 0-1393239-8 |
| RT114012 | | | | | 12 VDC | 0-1419108-1 |
| RT114024 | | | | | 24 VDC | 1-1393239-3 |
| RT114048 | | | | | 48 VDC | 1-1393239-4 |
| RT114110 | | | | | 110 VDC | 1-1393239-6 |
| RT114524 | | | | AC-coil | 24 VAC | 1-1393239-7 |
| RT114615 | | | | | 115 VAC | 1-1393239-8 |
| RT114730 | | | | | 230 VAC | 1-1393239-9 |
| RT134012 | | 1 NO contact | | DC-coil | 12 VDC | 2-1393239-6 |
| RT134024 | | | | | 24 VDC | 3-1393239-0 |
| RT214012 | 12 A, pinning 5mm | 1 CO contact | | | 12 VDC | 5-1393239-4 |
| RT214024 | flux proof | | | | 24 VDC | 5-1393239-5 |
| RT314005 | 16 A | | | | 5 VDC | 9-1393239-1 |
| RT314006 | pinning 5 mm flux proof | | | | 6 VDC | 9-1393239-3 |
| RT314012 | | | | | 12 VDC | 9-1393239-5 |
| RT314024 | | | | | 24 VDC | 9-1393239-8 |
| RT314048 | | | | | 48 VDC | 0-1393240-1 |
| RT314060 | | | | | 60 VDC | 0-1393240-2 |
| RT314110 | | | | | 110 VDC | 0-1393240-3 |
| RT314524 | | | | AC-coil | 24 VAC | 0-1393240-4 |
| RT314615 | | | | | 115 VAC | 0-1393240-6 |
| RT314730 | | | | | 230 VAC | 0-1393240-7 |
| RT315012 | | | AgNi 90/10 | DC-coil | 12 VDC | 1-1393240-1 |
| RT315024 | | | gold plated | | 24 VDC | 1-1393240-4 |
| RT315730 | | | | AC-coil | 230 VAC | 1-1419108-1 |
| RT334012 | | 1 NO contact | AgNi 90/10 | DC-coil | 12 VDC | 4-1393240-5 |
| RT334024 | | | | | 24 VDC | 4-1393240-8 |
| RT334048 | | | | | 48 VDC | 5-1393240-0 |
| RTB14005 | 12 A | 1 CO contact | | | 5 VDC | 1-1393238-2 |
| RTB14012 | pinning 3.5 mm wash tight | | | | 12 VDC | 1-1393238-5 |
| RTB14024 | | | | | 24 VDC | 1-1393238-9 |
| RTB14048 | | | | | 48 VDC | 2-1393238-1 |
| RTD14005 | 16 A | | | | 5 VDC | 5-1393238-9 |
| RTD14006 | pinning 5 mm wash tight | | | | 6 VDC | 6-1393238-0 |
| RTD14012 | | | | | 12 VDC | 6-1393238-2 |
| RTD14015 | | | | | 15 VDC | 6-1393238-4 |
| RTD14024 | | | | | 24 VDC | 6-1393238-8 |
| RTD14048 | | | | | 48 VDC | 6-1393238-9 |
| RTD34005 | | 1 NO contact | | | 5 VDC | 8-1393238-3 |
| RTD34012 | | | | | 12 VDC | 3-1419108-5 |
| RTD34024 | | | | | 24 VDC | 3-1419108-8 |