

Power PCB Relay RT1 reflow solderable

- 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)
- For THR (Through-Hole Reflow) soldering process
- Product in accordance to IEC60335-1



F0306-A

Applications

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

Approvals

VDE (in process), cULus E214025
 Technical data of approved types on request

Contact data

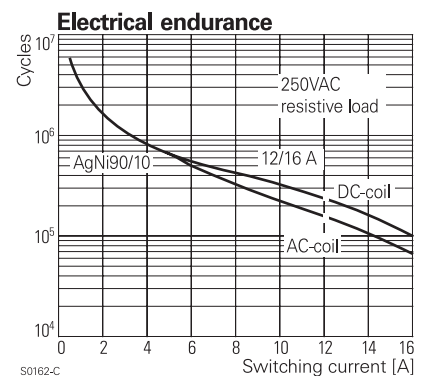
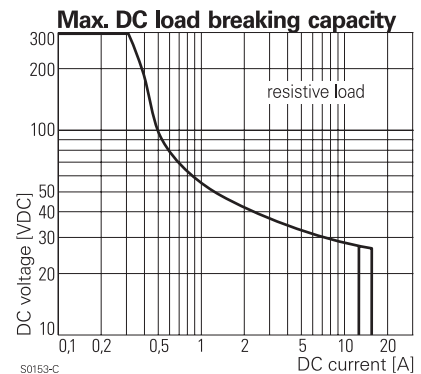
| | | |
|--|---|----------------|
| Contact configuration | 1 CO or 1 NO contact | |
| Contact set | single contact | |
| Type of interruption | micro disconnection | |
| Rated voltage / max. switching voltage AC | 250 / 400 VAC | |
| Rated current | 12 A | 16 A |
| Limiting continuous current | 12 A | 16 A, 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 | |
| Rated frequency of operation with / without load | DC coil: 6 / 1200 min ⁻¹ AC coil: 6 / 600 min ⁻¹ | |
| Operate- / release time DC coil | max 8 / 6 ms | |
| Bounce time DC coil, NO / NC contact | max 4 / 6 ms | |

Contact ratings

| Type | Contact | Load | Ambient temp. [°C] | Cycles |
|---------------|---------|--------------------------------|--------------------|--------------------|
| UL 508 | | | | |
| RT314 | NO / NC | 20 A, 250 VAC, general purpose | 85°C | 6x10 ³ |
| RT334 | NO | 16 A, 250 VAC, general purpose | 85°C | 50x10 ³ |
| RT114 | NO | 12 A, 250 VAC, general purpose | 85°C | 50x10 ³ |
| RT314 | NO | A300 | 40°C | 6x10 ³ |
| RT314 | NC | B300 | 40°C | 6x10 ³ |
| RT314 | NO | 1 hp, 240 VAC | 40°C | 1x10 ³ |

Coil data

| | |
|---|--------------|
| Rated coil voltage range DC coil | 5...110 VDC |
| AC coil | 24...230 VAC |
| Operative range to IEC 61810 | 2 |
| Coil insulation system according UL1446 | class F |



Power PCB Relay RT1 reflow solderable (Continued)

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 |
| 009 | 9 | 6.3 | 0.9 | 200 ± 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 |
| 620 | 120 | 90.0 | 18.0 | 8800 ± 15% | 0.75 |
| 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 175 V | |
| Insulation to IEC 60664-1 | | |
| Type of insulation coil-contact circuit | reinforced | |
| open contact circuit | micro disconnection | |
| Rated insulation voltage | 250 V | |
| Pollution degree 12 A version | 3 | 3 |
| 16 A version | 3 | 2 |
| Rated voltage system | 240 V | 230 / 400 V |
| Overvoltage category | III | |

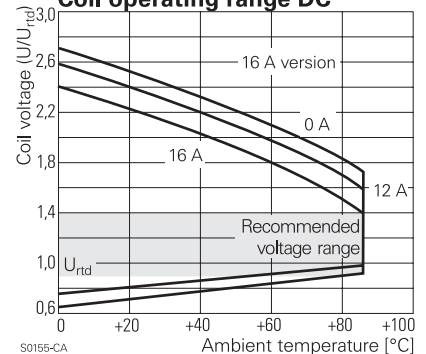
Other data

| | |
|--|---|
| Mechanical endurance DC coil | > 30 x 10 ⁶ cycles |
| AC coil | > 5 x 10 ⁶ cycles |
| Material | |
| RoHS - Directive 2002/95/EC | compliant |
| Resistance to heat and fire | according EN60335-1, par.30 |
| Environment | |
| Ambient temperature range DC coil | -40...+85°C |
| AC coil | -40...+70°C |
| Vibration resistance (function), NO / NC cont. | 20 / 5 g, 30 ... 500 Hz |
| Shock resistance (destruction) | 100 g |
| Category of protection | RTII - flux proof |
| Processing | |
| Mounting | pcb |
| Mounting distance DC / AC coils | ≥ 0 / ≥ 2.5 mm |
| Wave soldering soldering heat resistance | 270°C / 10 s |
| Reflow soldering | |
| soldering process | forced gas convection ¹⁾ or vapour phase ²⁾ |
| temperature profile | according EN61760 |
| Relay weight | 14 g |
| Packaging unit | 20 / 500 pcs |

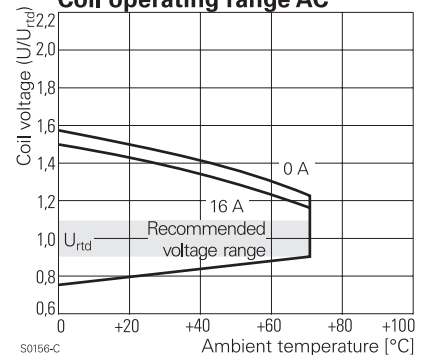
¹⁾ infrared heating not allowed

²⁾ recommended fluid LS / 230

Coil operating range DC



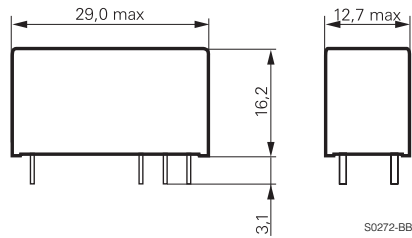
Coil operating range AC



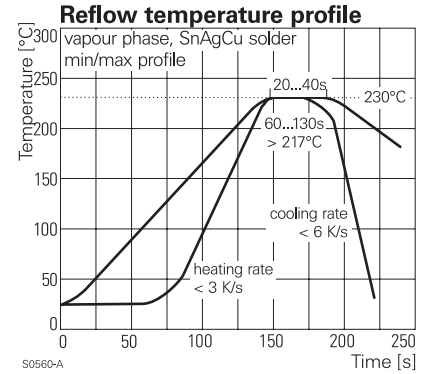
Power PCB Relay RT1 reflow solderable (Continued)

Dimensions

For automated mouting please ask for detailed drawing.



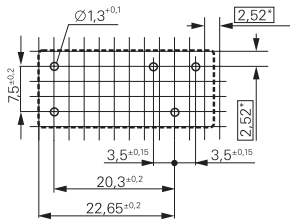
Process conditions for Reflow soldering according to EN61760-1



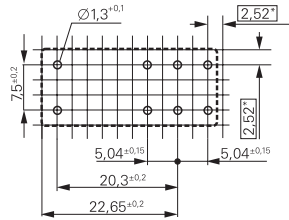
PCB layout / terminal assignment

Bottom view on solder pins

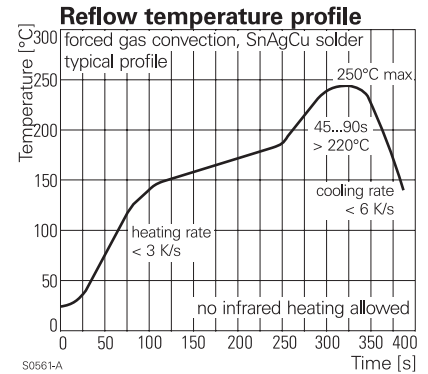
12 A, pinning 3.5 mm



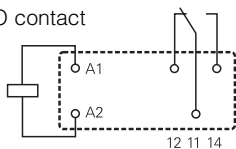
16 A, pinning 5 mm



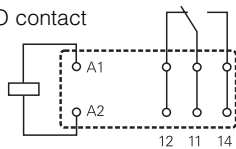
*) With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.



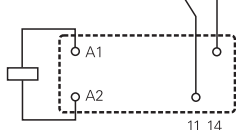
1 CO contact



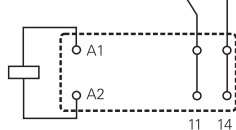
1 CO contact



1 NO contact



1 NO contact



Product key

Typical product key

RT 3 1 4 024 R

Type

RT Power PCB Relay RT1 reflow solderable

Version

- 1 12 A, pinning 3.5 mm, flux proof
- 3 16 A, pinning 5 mm, flux proof

Contact configuration

- 1 1 CO contact (1 form C)
- 3 1 NO contact (1 form A)

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

- R Reflow solderable