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# Power PCB Relay RT1

- **1 pole 12A/16A, 1 form C (CO) or 1 form A (NO) contact**
- **5kV/10mm coil-contact, reinforced insulation**
- **Ambient temperature 85°C**



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

## Approvals

VDE Cert. No. 40007571, cULus E214025, cCSAus 1142018;
CQC 18002197247 (monostable), CQC 20002275223 (China production),
CQC 08001027262 (China production)

Technical data of approved types on request

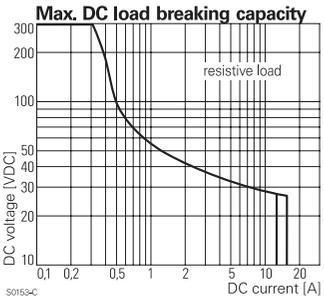
## Contact Data

| | 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. | 3000VA | 4000VA |
| Contact material | AgNi 90/10 | |
| Frequency of operation, with/without load DC coil | 360/72000h$^{-1}$ | |
| Operate/release time max., DC coil | 8/6ms | |
| Bounce time max., DC coil, form A/form B | 4/6ms | |

**Contact ratings**

| Type | Contact | Load | Cycles |
|---|---|---|---|
| **IEC 61810** | | | |
| RT314 DC-coil | A (NO) | 16A, 250VAC, cosφ=1, 85°C | 30x10$^3$ |
| RT314 DC-coil | C (CO) | 16A, 250VAC, cosφ=1, 85°C | 10x10$^3$ |
| RT314 DC-coil | A (NO) | 10A, 400VAC, cosφ=1, 85°C | 150x10$^3$ |
| RT114 DC-coil | A (NO) | 12A, 250VAC, cosφ=1, 85°C | 50x10$^3$ |
| RT114 AC-coil | A (NO) | 12A, 250VAC, cosφ=1, 70°C | 100x10$^3$ |
| **UL 61810-1 (former UL 508)** | | | |
| RT314 | A/B (NO/NC) | 20A, 250VAC, general purpose, 85°C | 6x10$^3$ |
| RT334 | A (NO) | 16A, 250VAC, gen. purpose, 85°C | 50x10$^3$ |
| RT314 | A (NO) | 1hp, 240VAC, 40°C | 1x10$^3$ |
| RT314 | A (NO) | FLA/LRA, 4.5/13.1A, 480VAC, 70°C | 100x10$^3$ |
| RT314, RTD14 | A (NO) | 1/2 HP@120VAC, 40°C | 1x10$^3$ |
| RT314, RTD14 | A (NO) | 60LRA/10 FLA@240VAC, 40°C | 6x10$^3$ |
| RT314, RTD14 | A (NO) | A300 Pilot Duty, 40°C | 6x10$^3$ |
| RT314, RTD14 | B (CO) | B300 Pilot Duty, 40°C | 6x10$^3$ |

**Max. DC load breaking capacity**




## Contact Data (continued)

| | | |
|---|---|---|
| **EN60947-5-1** | | |
| RT314 DC-coil A/B (NO/NC) | 2A, 24VDC, DC13 | 6.050 |
| **EN60730-1** | | |
| RT314 DC-coil A (NO) | 12(2)A, 250VAC, 85°C | 100x10$^3$ |
| Mechanical endurance DC coil | >30x10$^6$ operations | |

1) For reflow solderable versions: actual contact performance may be influenced by the reflow soldering process.

## Coil Data

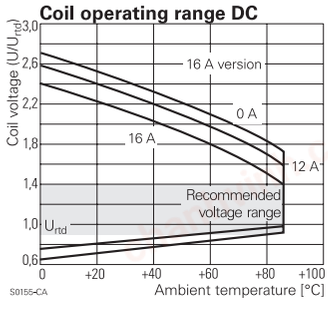
| | |
|---|---|
| Coil voltage range, DC coil | 5 to 110VDC |
| Operative range, IEC 61810 | 2 |
| Coil insulation system according UL | class F |

**Coil versions, DC coil**

| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ω±10%2) | Rated coil power mW |
|---|---|---|---|---|---|
| 005 | 5 | 3.5 | 0.5 | 62 | 403 |
| 006 | 6 | 4.2 | 0.6 | 90 | 400 |
| 009 | 9 | 6.3 | 0.9 | 200 | 400 |
| 012 | 12 | 8.4 | 1.2 | 360 | 400 |
| 018 | 18 | 12.6 | 1.8 | 770 | 420 |
| 024 | 24 | 16.8 | 2.4 | 1440 | 400 |
| 048 | 48 | 33.6 | 4.8 | 5520 | 417 |
| 110 | 110 | 77.0 | 11.0 | 28800[2] | 420 |

2) Coil resistance ±12%.
All figures are given for coil without pre-energization, at ambient temperature +23°C.
Other coil voltages on request.

**Coil operating range DC**






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## Power PCB Relay RT1 (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/customersupport/rohssupportcenter | |
| Ambient temperature | |
| DC coil | -40 to 85°C |
| Category of environmental protection, IEC 61810 | |
| standard version | RTII - flux proof, RTIII - wash tight |
| Vibration resistance (functional) | |
| form A/form B contact, 30 to 500Hz | 20g/5g |
| Shock resistance (destructive) | 100g |

| Other Data (continued) | |
|---|---|
| Terminal type | |
| standard version | PCB-THT, plug-in |
| Weight | 14g |
| Resistance to soldering heat | THT, IEC 60068-2-20 |
| RTII | 270°C/10s |
| RTIII | 260°C/5s |
| Packaging/unit | tube/20 pcs., box/500 pcs. |

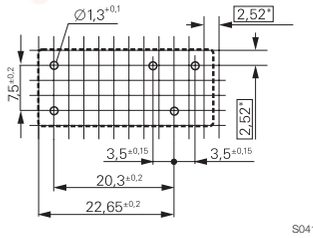
| Accessories |
|---|
| For details see datasheet Accessories Industrial Power Relay RT |
| NOTE: indicated contact ratings and electrical endurance data for direct wiring of relays (according IEC 61810-1); for relays mounted on sockets deratings may apply. |

### PCB layout / terminal assignment

Bottom view on solder pins

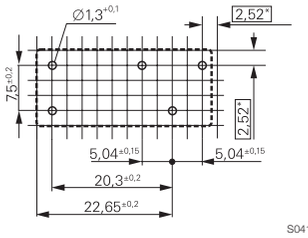
*) With the recommended PCB hole sizes a grid pattern from 2.5mm to 2.54mm can be used.

12A, pinning 3.5mm



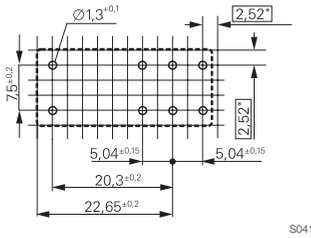

S0418-CB

12A, pinning 5mm



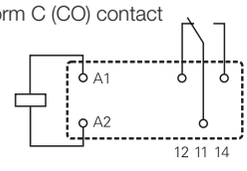

S0418-CN

16A, pinning 5mm



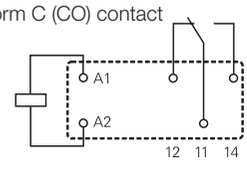

S0418-CA

1 form C (CO) contact



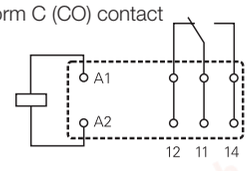

S0163-BG

1 form C (CO) contact



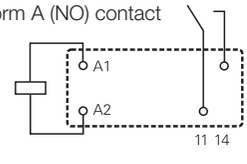

S0163-BC

1 form C (CO) contact



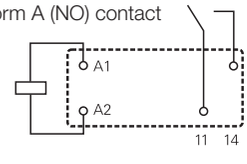

S0163-BE

1 form A (NO) contact



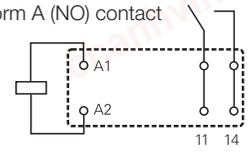

S0163-BH

1 form A (NO) contact




S0163-BD

1 form A (NO) contact




S0163-BF



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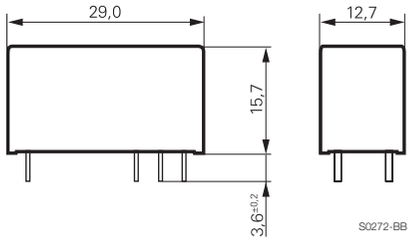
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## Power PCB Relay RT1 (Continued)

### Dimensions

THT version




### Product code structure

Typical product code: **RT 3 1 4 024**

**Type**
- **RT** Power PCB Relay RT1

**Version**
- **1** 12A, pinning 3.5mm, flux proof
- **2** 12A, pinning 5mm, flux proof *)
- **3** 16A, pinning 5mm, flux proof
- **B** 12A, pinning 3.5mm, wash tight
- **D** 16A, pinning 5mm, wash tight

**Contact arrangement**
- **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

**Version**
- **F** Standard version

*) Wash tight version on request

| Product code | Version | Contacts | Contact material | Coil | Part number |
|---|---|---|---|---|---|
| RT114012F | 12A, pinning 3.5mm, flux proof | 1 form C (CO) contact | AgNi 90/10 | 12VDC | 1419108-2 |
| RT114024F | | | | 24VDC | 1419108-3 |
| RT134012F | | 1 form A (NO) contact | | 12VDC | 5-1415020-1 |
| RT134024F | | | | 24VDC | 2-1393242-1 |
| RT314005F | 16A, pinning 5mm, flux proof | 1 form C (CO) contact | | 5VDC | 1419108-8 |
| RT314012F | | | | 12VDC | 2-1393237-2 |
| RT314024F | | | | 24VDC | 2-1393237-3 |
| RT334012F | | 1 form A (NO) contact | | 12VDC | 2-1393237-5 |
| RT334024F | | | | 24VDC | 2-1393237-7 |
| RTB14005F | 12A, pinning 3.5mm, wash tight | 1 form C (CO) contact | | 5VDC | 2-1419108-4 |
| RTB14012F | | | | 12VDC | 2-1419108-5 |
| RTB14024F | | | | 24VDC | 2-1419108-6 |
| RTB34012F | | 1 form A (NO) contact | | 12VDC | 2-1419108-7 |
| RTD14005F | 16A, pinning 5mm, wash tight | 1 form C (CO) contact | | 5VDC | 2-1419108-8 |
| RTD14012F | | | | 12VDC | 2-1419108-9 |
| RTD14024F | | | | 24VDC | 3-1419108-1 |
| RTD34012F | | 1 form A (NO) contact | | 12VDC | 3-1419108-6 |
| RTD34024F | | | | 24VDC | 3-1419108-9 |

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



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