

**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, cULus E214025, (BEAB) C0786, (S) 0039110/01-02, (FI) FI 190164 A1,

KEUR 98.4118.01

Technical data of approved types on request

**Contact data**

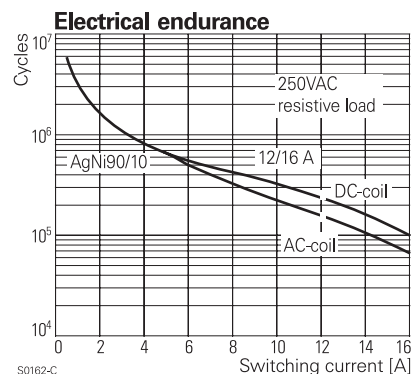
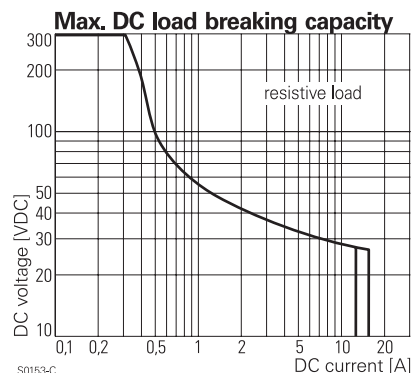
|                                                  |                                    |         |
|--------------------------------------------------|------------------------------------|---------|
| Contact configuration                            | 1 CO or 1 NO contact               |         |
| 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 <sup>6</sup> cycles      |         |
| AC coil                                          | > 10 x 10 <sup>6</sup> cycles      |         |
| Rated frequency of operation with / without load | 6 / 1200 min <sup>-1</sup>         |         |

**Contact ratings**

| Type  | Load                                                                        | Cycles              |
|-------|-----------------------------------------------------------------------------|---------------------|
| RT314 | 16 A, 250 VAC, NO contact, 85°C, DF 10%, UL508                              | 50x10 <sup>3</sup>  |
| RT314 | 16 A, 250 VAC, NC contact, 70°C, 30min <sup>-1</sup>                        | 53x10 <sup>3</sup>  |
| RT314 | 20 A, 250 VAC, NO contact, 85°C, UL508                                      | 6x10 <sup>3</sup>   |
| RT314 | 1000 W incandescent lamp, 250 VAC                                           | 1.2x10 <sup>3</sup> |
| RT314 | 10 A, 250 VAC, cosφ=0.6, CO contact, 70°C                                   | 200x10 <sup>3</sup> |
| RT314 | 5 A / 2 A, 250 VAC, cosφ=1, motor, NO contact, 10min <sup>-1</sup> , 70°C   | 1.1x10 <sup>6</sup> |
| RT314 | 0.26 A / 0.01 A, 230 VAC, cosφ=0.38, valve, NO contact, 25min <sup>-1</sup> | 7.6x10 <sup>6</sup> |
| 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      |



**Power PCB Relay RT1 (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                 |
| 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 <sub>rms</sub> |
| open contact circuit                      | 1000 V <sub>rms</sub> |
| 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                     |
| 16 A version                              | 3                     |
| Rated voltage system                      | 240 V                 |
| Overvoltage category                      | III                   |

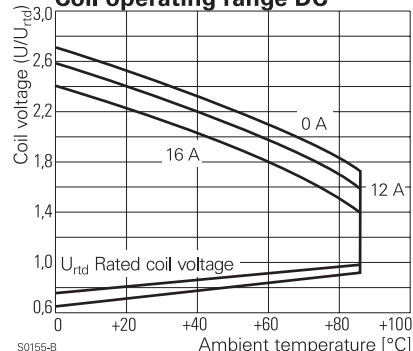
**Other data**

|                                                    |                                         |
|----------------------------------------------------|-----------------------------------------|
| 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 (functional), 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                            |

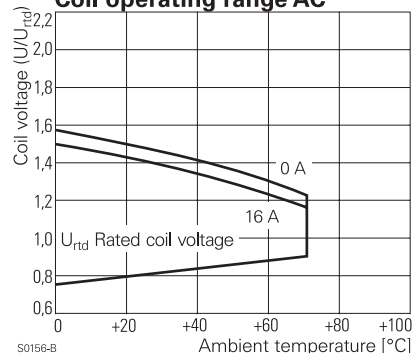
**Accessories**

|                           |                            |
|---------------------------|----------------------------|
| For details see datasheet | Accessories Power Relay RT |
|---------------------------|----------------------------|

**Coil operating range DC**

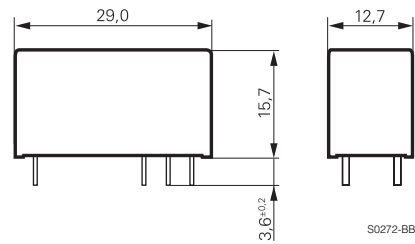


**Coil operating range AC**



**Power PCB Relay RT1 (Continued)**

**Dimensions**

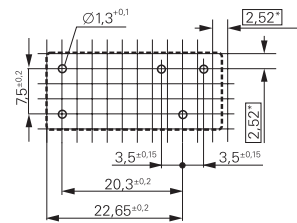


**PCB layout / terminal assignment**

Bottom view on solder pins

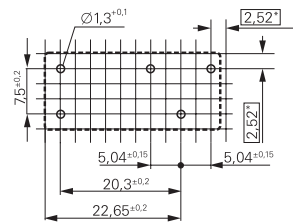
\*) With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.

12 A, pinning 3.5 mm



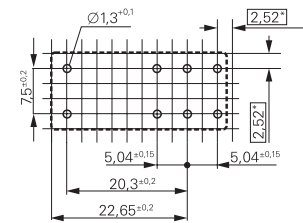
S0418-CB

12 A, pinning 5 mm



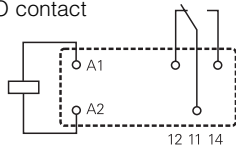
S0418-CN

16 A, pinning 5 mm



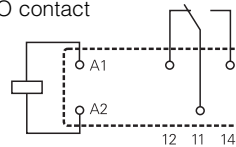
S0418-CA

1 CO contact



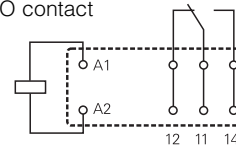
S0163-BG

1 CO contact



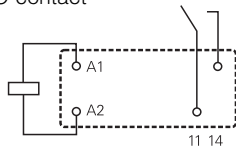
S0163-BC

1 CO contact



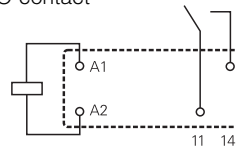
S0163-BE

1 NO contact



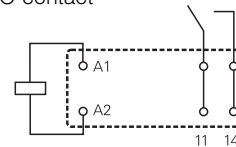
S0163-BH

1 NO contact



S0163-BD

1 NO contact



S0163-BF

**Product key**

Type

Version

- 1** 12 A, pinning 3.5 mm, flux proof
- 2** 12 A, pinning 5 mm, flux proof \*)
- 3** 16 A, pinning 5 mm, flux proof

- B** 12 A, pinning 3.5 mm, wash tight
- D** 16 A, pinning 5 mm, wash tight

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

|          |          |  |  |  |  |  |  |
|----------|----------|--|--|--|--|--|--|
| <b>R</b> | <b>T</b> |  |  |  |  |  |  |
|          |          |  |  |  |  |  |  |

**Power PCB Relay RT1** (Continued)

| 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    |              |                |         | 6 VDC   | 0-1393239-8 |
| RT114012    | flux proof        |              |                |         | 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      |              |                |         | 6 VDC   | 9-1393239-3 |
| RT314012    | flux proof        |              |                |         | 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    |              |                |         | 12 VDC  | 1-1393238-5 |
| RTB14024    | wash tight        |              |                |         | 24 VDC  | 1-1393238-9 |
| RTB14048    |                   |              |                |         | 48 VDC  | 2-1393238-1 |
| RTD14005    | 16 A              |              |                |         | 5 VDC   | 5-1393238-9 |
| RTD14006    | pinning 5 mm      |              |                |         | 6 VDC   | 6-1393238-0 |
| RTD14012    | wash tight        |              |                |         | 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 |

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