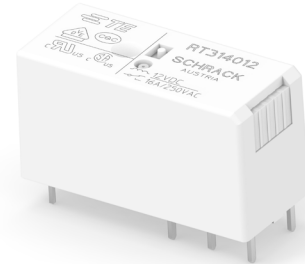


**Power PCB Relay RT1**

- 1 pole 12A/16A, 1 form C (CO) or 1 form A (NO) contact
- DC or AC coil
- 5kV/10mm coil-contact, reinforced insulation
- Ambient temperature 85°C (DC coil)
- Product in accordance to IEC 60335-1
- Reflow version: for THR (Through-Hole Reflow) soldering process



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



**Approvals**

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

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<br>max. 4s, duty factor 10% | 25A  | 30A          |
| Breaking capacity max.                              | 3000VA                                       | 4000VA       |
| Contact material                                    | AgNi 90/10, AgNi 90/10 gold plated           |              |
| Frequency of operation, with/without load           |  |              |
| DC coil   | 360/72000h <sup>-1</sup>                     |              |
| AC coil   | 360/36000h <sup>-1</sup>                     |              |
| Operate/release time max., DC coil                  | 8/6ms  |              |
| Bounce time max., DC coil, form A/form B            | 4/6ms  |              |
| Electrical endurance                                | see electrical endurance graph <sup>1)</sup> |              |

**Contact ratings**

| Type                              | Contact     | Load                               | Cycles              |
|-----------------------------------|-------------|------------------------------------|---------------------|
| <b>IEC 61810</b>                  |             |                                    |                     |
| RT314 DC-coil                     | A (NO)      | 16A, 250VAC, cosφ=1, 85°C          | 30x10 <sup>3</sup>  |
| RT314 DC-coil                     | C (CO)      | 16A, 250VAC, cosφ=1, 85°C          | 10x10 <sup>3</sup>  |
| RT314 DC-coil                     | A (NO)      | 10A, 400VAC, cosφ=1, 85°C          | 150x10 <sup>3</sup> |
| RT114 DC-coil                     | A (NO)      | 12A, 250VAC, cosφ=1, 85°C          | 50x10 <sup>3</sup>  |
| RT114 AC-coil                     | A (NO)      | 12A, 250VAC, cosφ=1, 70°C          | 100x10 <sup>3</sup> |
| <b>UL 61810-1 (former UL 508)</b> |             |                                    |                     |
| RT314                             | A/B (NO/NC) | 20A, 250VAC, general purpose, 85°C | 6x10 <sup>3</sup>   |
| RT334                             | A (NO)      | 16A, 250VAC, gen. purpose, 85°C    | 50x10 <sup>3</sup>  |
| RT314                             | A (NO)      | 1hp, 240VAC, 40°C                  | 1x10 <sup>3</sup>   |
| RT314                             | A (NO)      | FLA/LRA, 4.5/13.1A, 480VAC, 70°C   | 100x10 <sup>3</sup> |
| <b>EN60947-4-1</b>                |             |                                    |                     |
| RT314                             | A (NO)      | 250V/2A, AC-3                      | 6.050               |

**Contact Data (continued)**

|                    |             |                      |                     |
|--------------------|-------------|----------------------|---------------------|
| <b>EN60947-5-1</b> |             |                      |                     |
| RT314 DC-coil      | A/B (NO/NC) | 2A, 24VDC, DC13      | 6.050               |
| RT314              | A (NO)      | 250/3A, AC-15        | 6.050               |
| <b>EN60730-1</b>   |             |                      |                     |
| RT314 DC-coil      | A (NO)      | 12(2)A, 250VAC, 85°C | 100x10 <sup>3</sup> |

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

**Mechanical endurance**

|                         |                                |
|-------------------------|--------------------------------|
| DC coil                 | >30x10 <sup>6</sup> operations |
| AC coil                 | >10x10 <sup>6</sup> operations |
| AC coil, reflow version | >5x10 <sup>6</sup> operations  |

**Coil Data**

|                                      |                            |
|--------------------------------------|----------------------------|
| Coil voltage range, DC coil/ AC coil | 5 to 110VDC / 24 to 230VAC |
| 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% <sup>2)</sup> | 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                 |
| 020       | 20                | 14.0                | 2.0                 | 952                                 | 420                 |
| 024       | 24                | 16.8                | 2.4                 | 1440                                | 400                 |
| 048       | 48                | 33.6                | 4.8                 | 5520                                | 417                 |
| 060       | 60                | 42.0                | 6.0                 | 8570 <sup>2)</sup>                  | 420                 |
| 110       | 110               | 77.0                | 11.0                | 28800 <sup>2)</sup>                 | 420                 |

2) Coil resistance ±12%.

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

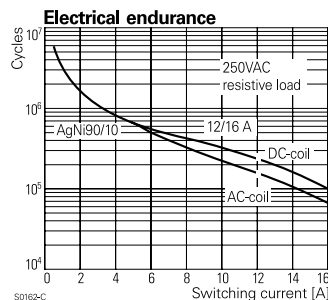
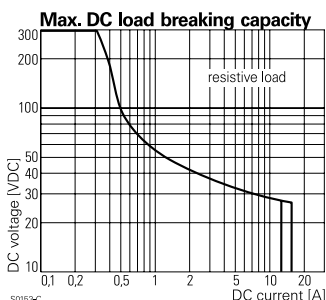
Other coil voltages on request.

**Coil versions, AC coil 50/60 Hz**

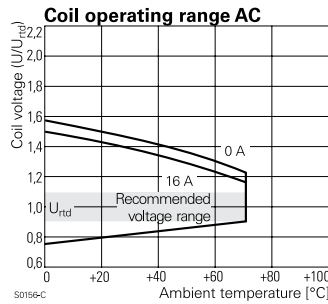
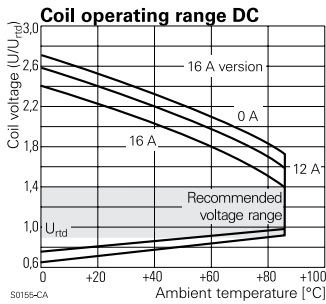
| Coil code | Rated voltage VAC | Operate voltage VAC | Release voltage VAC | Coil resistance Ω±15% <sup>3)</sup> | Rated coil power VA |
|-----------|-------------------|---------------------|---------------------|-------------------------------------|---------------------|
| 524       | 24                | 18.0                | 3.6                 | 350 <sup>3)</sup>                   | 0.76                |
| 548       | 48                | 36.0                | 7.2                 | 1420                                | 0.74                |
| 615       | 115               | 86.3                | 17.3                | 8100                                | 0.76                |
| 620       | 120               | 90.0                | 18.0                | 8800                                | 0.75                |
| 700       | 200               | 150.0               | 30.0                | 24350                               | 0.76                |
| 730       | 230               | 172.5               | 34.5                | 32500                               | 0.74                |

3) Coil resistance ±10%.

All figures are given for coil without pre-energization, at ambient temperature +23°C, 50 Hz. Other coil voltages on request.



**Power PCB Relay RT1** (Continued)



**Other Data** (continued)

|                              |                                       |   |
|------------------------------|---------------------------------------|---|
| Terminal type                | standard version                      | PCB-THT, plug-in  |
|                              | reflow version                        | PCB-THR   |
| Mounting distance            |                                       | AC coil: ≥2.5mm   |
| Weight                       |                                       | 14g   |
| Resistance to soldering heat | THT, IEC 60068-2-20                   |   |
|                              | RTII                                  | 270°C/10s   |
|                              | RTIII                                 | 260°C/5s  |
| Resistance to soldering heat | THR                                   |   |
|                              | reflow soldering (for reflow version) | forced gas convection <sup>4)</sup> or vapour phase <sup>5)</sup> |
|                              |                                       | temperature profile according EN61730                             |
| Packaging/unit               |                                       | tube/20 pcs., box/500 pcs.  |

4) infrared heating not allowed  
5) recommended fluid LS/230

**Insulation Data**

|                                    |                      |
|------------------------------------|----------------------|
| Initial dielectric strength        |                      |
| between open contacts              | 1000V <sub>rms</sub> |
| between contact and coil           | 5000V <sub>rms</sub> |
| Clearance/creepage                 |                      |
| between contact and coil           | ≥10/10mm             |
| Material group of insulation parts | IIIa                 |
| Tracking index of relay base       | PTI 250V             |
| reflow version                     | PTI 175V             |

**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.

**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](http://www.te.com/customer-support/rohssupportcenter)

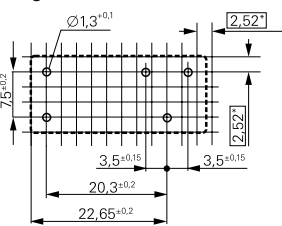
|   |                                       |
|---|---------------------------------------|
| Resistance to heat and fire                     | according EN60335, par30              |
| Ambient temperature                             |                                       |
| DC coil   | -40 to 85°C                           |
| AC coil   | -40 to 70°C                           |
| Category of environmental protection, IEC 61810 |                                       |
| standard version                                | RTII - flux proof, RTIII - wash tight |
| reflow version                                  | RTII - flux proof                     |
| Vibration resistance (functional)               |                                       |
| form A/form B contact, 30 to 500Hz              | 20g/5g                                |
| Shock resistance (destructive)                  | 100g                                  |

**PCB layout / terminal assignment**

Bottom view on solder pins

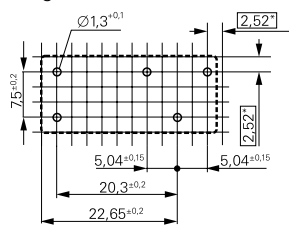
\*) With the recommended PCB hole sizes a grid pattern from 2.5mm to 2.54mm can be used.

12A, pinning 3.5mm



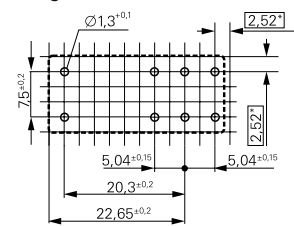
S0418-CB

12A, pinning 5mm



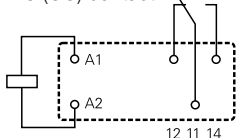
S0418-CN

16A, pinning 5mm



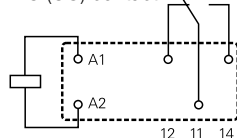
S0418-CA

1 form C (CO) contact



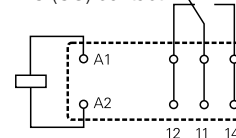
S0163-BG

1 form C (CO) contact



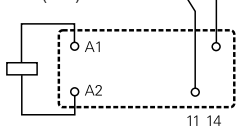
S0163-BC

1 form C (CO) contact



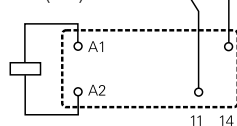
S0163-BE

1 form A (NO) contact



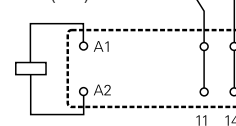
S0163-BH

1 form A (NO) contact



S0163-BD

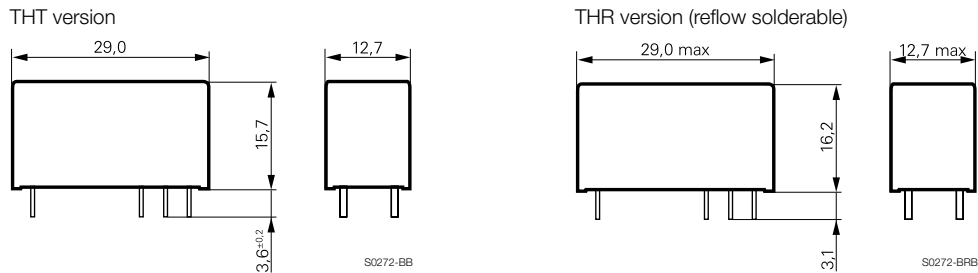
1 form A (NO) contact



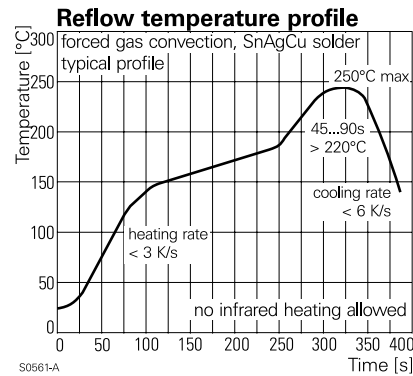
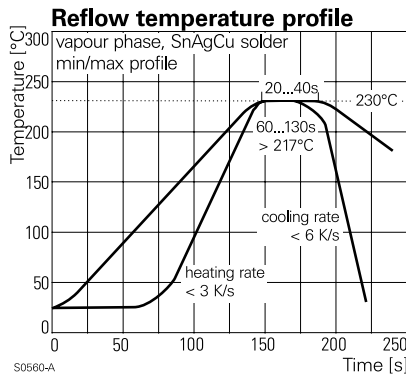
S0163-BF

**Power PCB Relay RT1 (Continued)**

**Dimensions**



**Process conditions for Reflow soldering**  
according to EN61760-1



**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 (not for Reflow version)
- C** 12A, pinning 5mm, wash tight (not for Reflow version)
- D** 16A, pinning 5mm, wash tight (not for Reflow version)

**Contact arrangement**

- 1** 1 form C (CO) contact
- 3** 1 form A (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
- R** Reflow solderable

**Power PCB Relay RT1** (Continued)

| Product code | Version                              | Contacts                 | Contact material    | Coil                     | Version           | Part Number |             |             |
|--------------|--------------------------------------|--------------------------|---------------------|--------------------------|-------------------|-------------|-------------|-------------|
|              |                                      |                          |                     |                          |                   | Austria     | China       |             |
| RT114009     | 12A,<br>pinning 3.5mm,<br>flux proof | 1 form C (CO)<br>contact | AgNi 90/10          | 9VDC                     | Standard          | 1393239-9   | 1-1649326-2 |             |
| RT114012     |                                      |                          |                     |                          |                   | 1419108-1   | 1-1649326-3 |             |
| RT114024     |                                      |                          |                     |                          |                   | 1-1393239-3 | 1-1649326-5 |             |
| RT114730     |                                      |                          |                     |                          |                   | 1-1393239-9 |             |             |
| RT115024     |                                      |                          | AgNi 90/10 gold pl. | 24VDC                    |                   | 2-1393239-1 | 3-1833000-9 |             |
| RT134012     |                                      | 1 form A (NO)<br>contact | AgNi 90/10          | 12VDC                    |                   | 2-1393239-6 | 3-1649326-1 |             |
| RT134024     |                                      |                          |                     | 24VDC                    |                   | 3-1393239-0 | 3-1649326-3 |             |
| RT214012     | 12A,<br>pinning 5mm,<br>flux proof   |                          |                     | 1 form C (CO)<br>contact | 12VDC             |             | 5-1393239-4 | 1-1649327-3 |
| RT214024     |                                      |                          |                     |                          |                   | 24VDC       |             | 5-1393239-5 |
| RT214524     |                                      |                          | 24VAC               |                          |                   | 5-1393239-9 |             |             |
| RT214730     |                                      |                          | 230VAC              |                          |                   | 1419108-6   |             |             |
| RT314005     | 16A,<br>pinning 5mm,<br>flux proof   |                          |                     | 5VDC                     |                   | 9-1393239-1 | 1-1649328-0 |             |
| RT314006     |                                      |                          |                     |                          | 6VDC              |             | 9-1393239-3 | 1-1649328-1 |
| RT314009     |                                      |                          |                     |                          | 9VDC              |             | 9-1393239-4 |             |
| RT314012     |                                      |                          |                     |                          | 12VDC             |             | 9-1393239-5 | 1-1649328-3 |
| RT314012R    |                                      |                          |                     | 12VDC                    | Reflow solderable | 4-1415543-6 |             |             |
| RT314018     |                                      |                          |                     | 18VDC                    | Standard          | 9-1393239-7 | 1-1649328-4 |             |
| RT314024     |                                      |                          |                     | 24VDC                    |                   | 9-1393239-8 | 1-1649328-5 |             |
| RT314048     |                                      |                          |                     | 48VDC                    |                   | 1393240-1   | 1-1649328-6 |             |
| RT314060     |                                      |                          |                     | 60VDC                    |                   | 1-1649328-7 | 1-1649328-7 |             |
| RT314110     |                                      |                          |                     | 110VDC                   |                   | 1393240-3   |             |             |
| RT314524     |                                      |                          |                     | 24VAC                    |                   | 1393240-4   |             |             |
| RT314548     |                                      |                          |                     | 48VAC                    |                   | 1393240-5   |             |             |
| RT314615     |                                      |                          |                     | 115VAC                   |                   | 1393240-6   |             |             |
| RT314730     |                                      |                          |                     | 230VAC                   |                   | 1393240-7   |             |             |
| RT315024     |                                      |                          | AgNi 90/10 gold pl. | 24VDC                    |                   | 1-1393240-4 | 3-1833002-7 |             |
| RT334012     |                                      | 1 form A (NO)<br>contact | AgNi 90/10          | 12VDC                    |                   | 4-1393240-5 | 3-1649328-1 |             |
| RT334024     |                                      |                          |                     | 24VDC                    |                   | 4-1393240-8 | 3-1649328-3 |             |
| RT334048     |                                      |                          |                     | 48VDC                    |                   | 5-1393240-0 | 3-1649328-4 |             |
| RTB14005     | 12A,<br>pinning 3.5mm,<br>wash tight |                          |                     | 1 form C (CO)<br>contact |                   | 5VDC        |             | 1-1393238-2 |
| RTB14012     |                                      |                          | 12VDC               |                          |                   | 1-1393238-5 | 1649326-4   |             |
| RTB14024     |                                      |                          | 24VDC               |                          |                   | 1-1393238-9 | 1649326-6   |             |
| RTB14524     |                                      |                          | 24VAC               |                          |                   | 2-1393238-4 |             |             |
| RTB34012     |                                      | 1 form A (NO)            |                     | 12VDC                    |                   | 3-1393238-0 | 2-1649326-2 |             |
| RTC14024     | 12A, 5mm, wash tight                 | 1 form C (CO)            |                     | 24VDC                    |                   | 5-1393238-0 | 1649327-6   |             |
| RTD14005     | 16A,<br>pinning 5mm,<br>wash tight   | contact                  |                     | 5VDC                     |                   | 5-1393238-9 | 1649328-1   |             |
| RTD14012     |                                      |                          |                     | 12VDC                    |                   | 6-1393238-2 | 1649328-4   |             |
| RTD14024     |                                      |                          |                     | 24VDC                    |                   | 6-1393238-8 | 1649328-6   |             |
| RTD14048     |                                      |                          |                     | 48VDC                    |                   | 6-1393238-9 | 1649328-7   |             |
| RT114048     | 12A, pinning 3.5mm,<br>flux proof    |                          |                     | 48VDC                    |                   |             | 1-1649326-6 |             |
| RT114110     |                                      |                          |                     | 110VDC                   |                   | 1-1393239-6 |             |             |
| RT214005     | 12A, pinning 5mm,<br>flux proof      |                          |                     | 5VDC                     |                   |             | 1-1649327-0 |             |
| RT234012     |                                      |                          |                     | 12VDC                    |                   |             | 1-1649327-3 |             |
| RT234024     | 12A, pinning 3.5mm,<br>wash tight    |                          |                     | 24VDC                    |                   |             | 1-1649327-5 |             |
| RTB14048     |                                      |                          |                     | 48VDC                    |                   |             | 1649326-7   |             |
| RTB34005     | 16A, pinning 5mm,<br>wash tight      |                          |                     | 5VDC                     |                   |             | 1-1649326-9 |             |
| RTD14060     |                                      |                          |                     | 60VDC                    |                   |             | 1649328-8   |             |
| RTD34012     |                                      | 1 form A (NO)<br>contact |                     | 12VDC                    |                   |             | 2-1649328-2 |             |
| RTD34015     |                                      |                          | 15VDC               |                          |                   | 4-1833002-0 |             |             |
| RTD34024     |                                      |                          | 24VDC               |                          |                   | 2-1649328-4 |             |             |

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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[RTB34012F](#) [RTB34012](#) [RT134012](#) [RT134024](#) [RT314005](#) [RT334024](#) [RT334012](#) [RT314012](#) [RT314524](#) [RT314615](#)  
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