

## Power PCB Relay RT Inrush Power

- 1 pole 16A, 1 form A (NO) contact (AgSnO<sub>2</sub> or W pre-make contact + AgSnO<sub>2</sub>)
- Mono- or bistable coil
- 5kV/10mm coil-contact
- Reinforced insulation
- Test tab (manual operator) optional for RTT3T bistable versions
- WG version: product in accordance to IEC60335-1
- RTS3T: Electronic ballast UL508/NEMA 410 rated
- RTSET: 8A Electronic ballast rated

### Typical applications

LED lighting systems, filament and incandescent lamp loads, movement detectors, light sensors, intelligent wall sockets, motors (RTS3L), bus system actuators.

### Approvals

VDE Cert. No. 40007571, UL E214025, cCSAus 1142018

Technical data of approved types on request.

| Contact Data                                          | RT.3T / RTSET                             | RTS3L              |
|-------------------------------------------------------|-------------------------------------------|--------------------|
| Contact arrangement                                   | 1 form A (NO) contact                     |                    |
| Rated voltage                                         | 250VAC                                    |                    |
| Max. switching voltage                                | 480VAC                                    |                    |
| Rated current                                         | 16A                                       |                    |
| Limiting continuous current                           | 16A                                       | 20A                |
| Limiting making current,<br>max. 20ms (incand. lamps) | 165A peak                                 | 120A peak          |
| max. 200µs                                            | 800A peak                                 |                    |
| Breaking capacity max.                                | 4000VA                                    |                    |
| Contact material                                      | W (pre-make cont.)<br>+AgSnO <sub>2</sub> | AgSnO <sub>2</sub> |
| Contact style                                         | pre-make contact                          | single contact     |
| Frequency of operation, with/without load             | 360/3600h <sup>-1</sup>                   |                    |
| Operate/release time max., DC coil                    | 10/5ms                                    |                    |
| Operate/Reset time max., bistable version             | 10/10ms                                   |                    |
| Bounce time max.                                      | 4ms                                       |                    |

### Contact ratings

| Type                    | Contact | Load                        | Cycles              |
|-------------------------|---------|-----------------------------|---------------------|
| <b>IEC 61810</b>        |         |                             |                     |
| RTS3L                   | A (NO)  | 20A, 250VAC resistive, 70°C | 20x10 <sup>3</sup>  |
| RTS3L monostable A (NO) | A (NO)  | 16A, 250VAC resistive, 85°C | 100x10 <sup>3</sup> |
| RTS3T                   | A (NO)  | 16A, 250VAC resistive, 85°C | 5x10 <sup>3</sup>   |

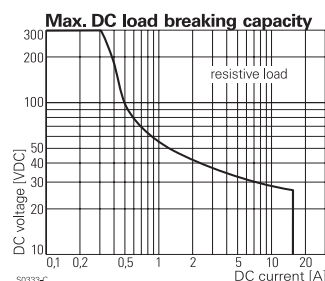
### In process:

| Type  | Contact | Load                           | Cycles            |
|-------|---------|--------------------------------|-------------------|
| RTSET | A (NO)  | 16A, 250VAC resistive, 85°C    | 5x10 <sup>3</sup> |
| RTSET | A (NO)  | 16A, 250VAC cosphi = 0.6, 85°C | 5x10 <sup>3</sup> |

### UL 508

|       |        |                                                |                      |
|-------|--------|------------------------------------------------|----------------------|
| RTS3L | A (NO) | 20A, 250VAC, general purpose, 70°C             | 20x10 <sup>3</sup>   |
| RTS3L | A (NO) | 16A, 250VAC, resistive, 85°C                   | 50x10 <sup>3</sup>   |
| RTS3L | A (NO) | TV8, 240VAC, 40°C                              | 25x10 <sup>3</sup>   |
| RTS3L | A (NO) | 1.5hp, 240VAC, 70°C                            | 30x10 <sup>3</sup>   |
| RTS3T | A (NO) | 1200W Tungsten, 120VAC/277VAC, 60Hz, 50°C      | 6x10 <sup>3</sup>    |
| RTS3T | A (NO) | 2A, 480VAC, magnetic ballast, 80°C             | 10x10 <sup>3</sup> * |
| RTS3T | A (NO) | 2A, 480VAC, electronic ballast, 80°C           | 10x10 <sup>3</sup> * |
| RTS3T | A (NO) | 3A, 277VAC, electronic ballast, 80°C           | 15x10 <sup>3</sup>   |
| RTS3T | A (NO) | 5A, 120VAC, electronic ballast, 80°C           | 15x10 <sup>3</sup>   |
| RTS3T | A (NO) | 5A, 277VAC, electronic ballast, 85°C           | 10x10 <sup>3</sup>   |
| RTS3T | A (NO) | 5A, 347VAC, electronic ballast, 105°C with z.c | 10x10 <sup>3</sup> * |
| RTS3T | A (NO) | 5A, 347VAC, magnetic ballast, 105°C            | 10x10 <sup>3</sup> * |
| RTS3T | A (NO) | 3A, 480VAC, magnetic ballast, 105°C            | 10x10 <sup>3</sup> * |
| RTSET | A (NO) | 16A, 250VAC, general purpose, 85°C             | 5x10 <sup>3</sup>    |
| RTSET | A (NO) | 8A, 277VAC, electronic ballast, 85°C           | 6x10 <sup>3</sup>    |
| RTSET | A (NO) | 5A, 277VAC, electronic ballast, 85°C           | 10x10 <sup>3</sup>   |
| RTSET | A (NO) | 3A, 277VAC, electronic ballast, 85°C           | 20x10 <sup>3</sup>   |
| RTSET | A (NO) | 5A, 120VAC, electronic ballast, 85°C           | 20x10 <sup>3</sup>   |

\* Special test conditions available on request



### Contact Data (continued),

| Mechanical endurance  | RT.3T / RTSET           | RTS3L                    |
|-----------------------|-------------------------|--------------------------|
| DC coil               | >5x10 <sup>6</sup> ops. | >10x10 <sup>6</sup> ops. |
| bistable version      | >3x10 <sup>6</sup> ops. | >5x10 <sup>6</sup> ops.  |
| tab manually operated | >1x10 <sup>3</sup> ops. | -                        |

### Coil Data, monostable DC coil

|                                         | RT.3T       | RTSET | RTS3L |
|-----------------------------------------|-------------|-------|-------|
| Coil voltage range                      | 5 to 110VDC |       |       |
| Operative range, IEC 61810              | 2           |       |       |
| Coil insulation system according UL1446 | class F     |       |       |

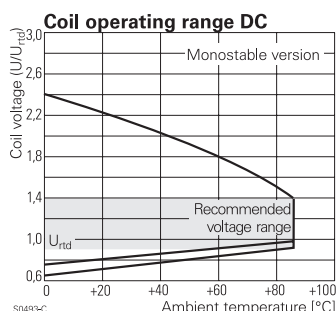
### Coil versions, monostable DC coil

| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance $\Omega \pm 10\%$ <sup>1)</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                 | 203                                             | 400                 |
| 012       | 12                | 8.4                 | 1.2                 | 360                                             | 400                 |
| 024       | 24                | 16.8                | 2.4                 | 1440                                            | 400                 |
| 048       | 48                | 33.6                | 4.8                 | 5520                                            | 417                 |
| 060       | 60                | 42.0                | 6.0                 | 8570 <sup>1)</sup>                              | 420                 |
| 110       | 110               | 77.0                | 11.0                | 28800 <sup>1)</sup>                             | 420                 |

<sup>1)</sup> Coil resistance  $\pm 12\%$ .

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

Other coil voltages on request.



**Power PCB Relay RT Inrush Power (Continued)**

**Coil Data (continued),**

| bistable coils                            | 1 coil                        | 2 coils |
|-------------------------------------------|-------------------------------|---------|
| Magnetic system                           | polarized, bistable           |         |
| Coil voltage range                        | 3 to 24VDC                    |         |
| Operative range, IEC 61810                | 2                             |         |
| Limiting voltage, % of rated coil voltage | 120%                          | 150%    |
| Min./Max. energization duration           | 30ms/1min at <10% duty factor |         |
| Coil insulation system according UL1446   | class F                       |         |

**Coil Data RT.3T RTS3L**

| Coil versions, bistable                |                   |                 |                   |                                   |                     |
|----------------------------------------|-------------------|-----------------|-------------------|-----------------------------------|---------------------|
| Coil code                              | Rated voltage VDC | Set voltage VDC | Reset voltage VDC | Coil resistance $\Omega \pm 10\%$ | Rated coil power mW |
| <b>Coil versions, bistable 1 coil</b>  |                   |                 |                   |                                   |                     |
| A03                                    | 3                 | 2.1             | 1.7               | 21                                | 429                 |
| A12                                    | 12                | 8.4             | 6.6               | 360                               | 400                 |
| A24                                    | 24                | 16.8            | 13.2              | 1440                              | 400                 |
| <b>Coil versions, bistable 2 coils</b> |                   |                 |                   |                                   |                     |
| F03                                    | 3                 | 2.1             | 1.7               | 15                                | 600                 |
| F12                                    | 12                | 8.4             | 6.6               | 240                               | 600                 |
| F24                                    | 24                | 16.8            | 13.2              | 886                               | 650                 |

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

**Coil Data RTSET**

| Coil versions, bistable                |                   |                 |                   |                                   |                     |
|----------------------------------------|-------------------|-----------------|-------------------|-----------------------------------|---------------------|
| Coil code                              | Rated voltage VDC | Set voltage VDC | Reset voltage VDC | Coil resistance $\Omega \pm 10\%$ | Rated coil power mW |
| <b>Coil versions, bistable 1 coil</b>  |                   |                 |                   |                                   |                     |
| A03                                    | 3                 | 2.1             | 1.8               | 21                                | 429                 |
| A12                                    | 12                | 8.4             | 7.2               | 360                               | 400                 |
| A24                                    | 24                | 16.8            | 14.4              | 1440                              | 400                 |
| <b>Coil versions, bistable 2 coils</b> |                   |                 |                   |                                   |                     |
| F03                                    | 3                 | 2.1             | 1.8               | 15                                | 600                 |
| F12                                    | 12                | 8.4             | 7.2               | 240                               | 600                 |
| F24                                    | 24                | 16.8            | 14.4              | 886                               | 650                 |

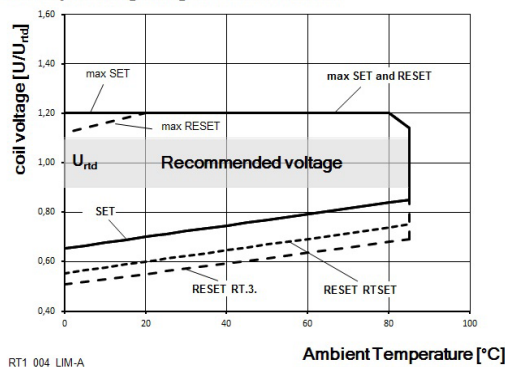
All figures are given for coil without pre-energization, at ambient temperature +23°C.  
Other coil voltages on request.

**Bistable coils - operation**

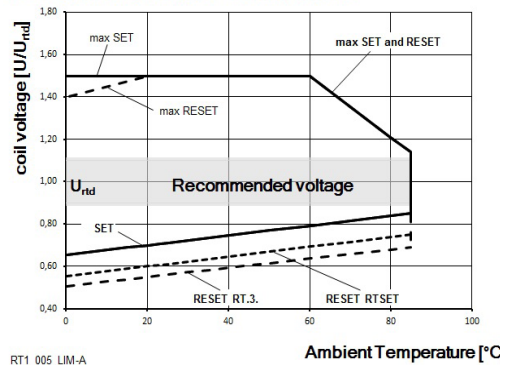
| Version        | 1 coil |    | 2 coils |    |    |
|----------------|--------|----|---------|----|----|
| Coil terminals | A1     | A2 | A1      | A3 | A2 |
| Operate        | +      | -  | +       | +  | -  |
| Reset          | -      | +  | -       | +  | -  |

Contact position not defined at delivery

**Coil operating range: 1 bistable coil**



**Coil operating range: 2 bistable coils**



**Insulation Data**

|                                    |                     |
|------------------------------------|---------------------|
| Initial dielectric strength        |                     |
| between open contacts              | 1250V <sub>ms</sub> |
| between contact and coil           | 5000V <sub>ms</sub> |
| Clearance/creepage                 |                     |
| between contact and coil           | ≥10/10mm            |
| Material group of insulation parts | IIla                |
| 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/customer-support/rohssupportcenter](http://www.te.com/customer-support/rohssupportcenter)

**Ambient temperature RT.3T / RTS3L**

|                    |              |
|--------------------|--------------|
| monostable DC coil | -40 to 105°C |
| bistable 1 coil    | -10 to 105°C |
| bistable 2 coils   | -40 to 105°C |

**Ambient temperature RTSET**

|                    |             |
|--------------------|-------------|
| monostable DC coil | -40 to 85°C |
| bistable 1 coil    | -10 to 85°C |
| bistable 2 coils   | -40 to 85°C |

|                                                       | RT.3T / RTSET                  | RTS3L |
|-------------------------------------------------------|--------------------------------|-------|
| Category of environmental protection                  | IEC 61810                      |       |
|                                                       | RTII - flux proof              |       |
| RTIII - wash tight available upon request             |                                |       |
| Vibration resistance (functional), monostable version | 10g                            | 20g   |
| Shock resistance (destructive)                        | 100g                           |       |
| Terminal type                                         | PCB-THT, plug-in <sup>2)</sup> |       |
| Weight, without / with test tab                       | 14/16g                         | 14g/- |
| Resistance to soldering heat THT                      | 270°C/10s                      |       |
| IEC 60068-2-20                                        |                                |       |

|                  | RT.3T / RTSET              | RTS3L                      |
|------------------|----------------------------|----------------------------|
| Packaging/unit   |                            |                            |
| without test tab | tube/20 pcs., box/500 pcs. | tube/20 pcs., box/500 pcs. |
| with test tab    | tray/25 pcs., box/100 pcs. | -                          |

2) RTT3T or bistable 2 coil version: PCB mounting only. See Accessories.

**Accessories RTS.**

For details see datasheet [Accessories Industrial Power Relay RT](#)  
Socket available for 1 coil version only.

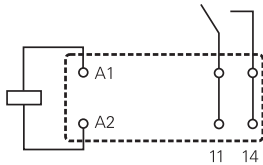
NOTE: indicated contact ratings and electrical endurance data for direct wiring of relays (according IEC 61810-1); for relays mounted on sockets deratings may apply.

## Power PCB Relay RT Inrush Power (Continued)

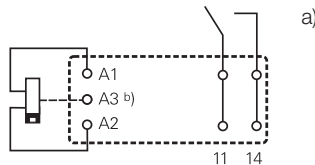
### Terminal assignment

Bottom view on solder pins

monostable version



bistable version

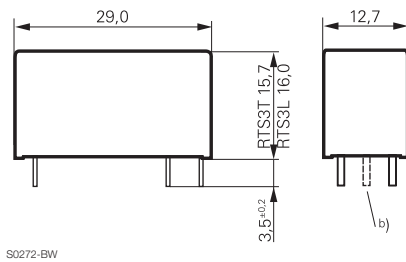


a) Indicated contact position during or after coil energization with reset voltage.

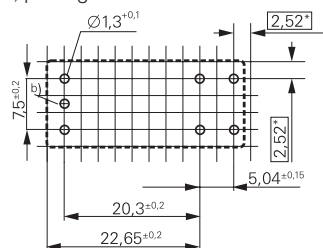
b) for 2 coil version only

### Dimensions / PCB layout

version without test tab

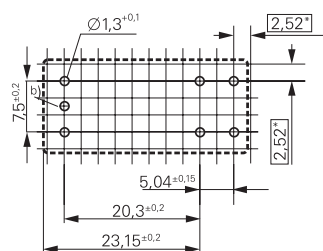
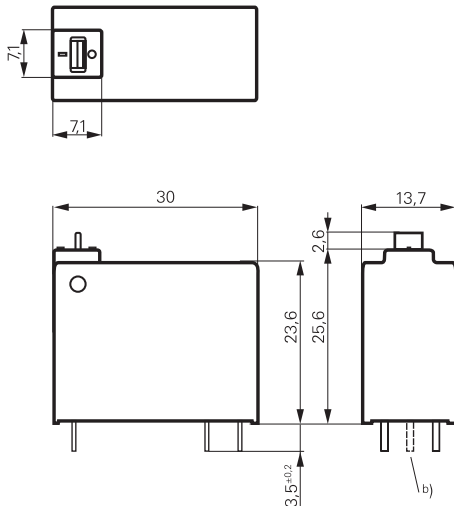


16A, pinning 5mm



b) for 2 coil version only

version with test tab



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

**Power PCB Relay RT Inrush Power** (Continued)

**Product code structure**

Typical product code

**RT S 3 T A12**

|                       |                                                |                                      |                                                                             |
|-----------------------|------------------------------------------------|--------------------------------------|-----------------------------------------------------------------------------|
| Type                  | RT                                             | Power PCB Relay RT1 Inrush Power     |                                                                             |
| Version               | S                                              | Without test tab                     | T With test tab (manual operator)<br>for version ,RTT3T' bistable coil only |
| Contact configuration | 3                                              | 1 form A (NO) contact                | E 1 form A(NO) ,electronic ballast' contact                                 |
| Contact material      | L                                              | AgSnO <sub>2</sub>                   | T Tungsten (W) pre-make + AgSnO <sub>2</sub>                                |
| Coil                  | Coil code: please refer to coil versions table |                                      |                                                                             |
| Version               | Blank                                          | Standard Version                     |                                                                             |
|                       | WG                                             | Product in accordance to IEC 60335-1 |                                                                             |

| Product code | Version                           | Contacts                 | Contact material                | Coil version      | Coil  | Version                 | Part number |
|--------------|-----------------------------------|--------------------------|---------------------------------|-------------------|-------|-------------------------|-------------|
| RTS3L005     | Without test tab,<br>16mm high    | 1 form A (NO)<br>contact | AgSnO <sub>2</sub>              | Monostable        | 5VDC  | Standard                | 1-1415898-8 |
| RTS3L006     |                                   |                          |                                 |                   | 6VDC  |                         | 4-1415898-4 |
| RTS3L012     |                                   |                          |                                 |                   | 12VDC |                         | 1-1415898-9 |
| RTS3L024     |                                   |                          |                                 |                   | 24VDC |                         | 1-1415898-4 |
| RTS3LA12     |                                   |                          |                                 | Bistable, 1 coil  | 12VDC |                         | 2-1415898-3 |
| RTS3LF12     |                                   |                          |                                 | Bistable, 2 coils |       |                         | 2-1415898-5 |
| RTS3T005     | Without test tab,<br>15.7mm high  |                          | W pre-make + AgSnO <sub>2</sub> | Monostable        | 5VDC  |                         | 1-1415898-6 |
| RTS3T012     |                                   |                          |                                 |                   | 12VDC |                         | 1415898     |
| RTS3T024     |                                   |                          |                                 |                   | 24VDC |                         | 1415898-1   |
| RTS3T048     |                                   |                          |                                 |                   | 48VDC |                         | 1-1415898-1 |
| RTS3T060     |                                   |                          |                                 |                   | 60VDC |                         | 1-1415898-2 |
| RTS3TA05     |                                   |                          |                                 | Bistable, 1 coil  | 5VDC  |                         | 1-1415898-5 |
| RTS3TA06     |                                   |                          |                                 |                   | 6VDC  |                         | 3-1415898-1 |
| RTS3TA12     |                                   |                          |                                 |                   | 12VDC |                         | 1415898-2   |
| RTS3TF03     |                                   |                          |                                 | Bistable, 2 coils | 3VDC  |                         | 1415898-4   |
| RTS3TF12     |                                   |                          |                                 |                   | 12VDC |                         | 1415898-5   |
| RTS3TF24     |                                   |                          |                                 |                   | 24VDC |                         | 1415898-6   |
| RTT3TA12     | With test tab,<br>23.6mm high     |                          |                                 | Bistable, 1 coil  | 12VDC |                         | 1415898-7   |
| RTT3TF24     |                                   |                          |                                 | Bistable, 2 coils | 24VDC |                         | 1-1415898-0 |
| RTS3L012WG   | Without test tab,<br>15.7 mm high | 1 form A (NO)<br>contact | AgSnO <sub>2</sub>              | Monostable        | 12VDC | IEC60335-1<br>compliant | 2-1415898-7 |
| RTS3L024WG   |                                   |                          |                                 |                   | 24VDC |                         | 5-1415898-1 |
| RTS3T012WG   |                                   |                          | W pre-make + AgSnO <sub>2</sub> |                   | 12VDC |                         | 5-1415898-6 |
| RTS3TA24WG   |                                   |                          |                                 | Bistable 1 coil   | 24VDC |                         | 4-1415898-7 |
| RTSET005     | Without test tab,<br>15.7mm high  | 1 form A (NO)<br>contact | W pre-make + AgSnO <sub>2</sub> | Monostable        | 5VDC  | Standard                | 7-1415898-7 |
| RTSET012     |                                   |                          |                                 |                   | 12VDC |                         | 7-1415898-9 |
| RTSET024     |                                   |                          |                                 |                   | 24VDC |                         | 8-1415898-0 |
| RTSETA12     |                                   |                          |                                 | Bistable, 1 coil  | 12VDC |                         | 8-1415898-6 |
| RTSETA24     |                                   |                          |                                 |                   | 24VDC |                         | 8-1415898-7 |
| RTSETF12     |                                   |                          |                                 | Bistable, 2 coils | 12VDC |                         | 9-1415898-1 |
| RTSETF24     |                                   |                          |                                 |                   | 24VDC |                         | 9-1415898-3 |

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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