

## 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
- 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                              | RTS3T / RTSET                             | RTS3L              |
|-------------------------------------------|-------------------------------------------|--------------------|
| Contact arrangement                       | 1 form A (NO) contact                     |                    |
| Rated voltage                             | 250VAC                                    |                    |
| Max. switching voltage                    | 480VAC                                    |                    |
| Rated current                             | 16A                                       | 20A                |
| Limiting continuous current               | 16A                                       | 20A                |
| Limiting making current,                  |                                           |                    |
| max. 20ms (incand. lamps)                 | 165A peak                                 | 120A peak          |
| max. 1.5ms                                | 500A 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) |         | 16A, 250VAC resistive, 85°C | 100x10 <sup>3</sup> |
| RTS3T                   | A (NO)  | 16A, 250VAC resistive, 85°C | 5x10 <sup>3</sup>   |
| RTSET                   | A (NO)  | 16A, 250VAC resistive, 85°C | 5x10 <sup>3</sup>   |

### UL 61810-1 (former UL 508)

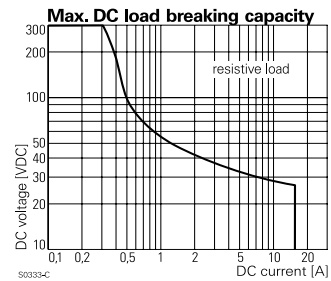
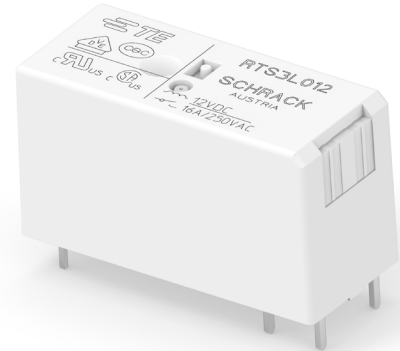
|       |        |                                      |                      |
|-------|--------|--------------------------------------|----------------------|
| RTS3L | A (NO) | 20A, 250VAC, general purpose, 70°C   | 20x10 <sup>3</sup>   |
| RTS3L | A (NO) | 16A, 250VAC, resistive, 85°C         | 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) | 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, magnetic ballast, 105°C  | 10x10 <sup>3</sup>   |
| RTSET | 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>   |

### UL 61810-1 (former UL 508) Tungsten Loads

|       |        |                                  |                       |
|-------|--------|----------------------------------|-----------------------|
| RTS3T | A (NO) | 1200W, 120VAC/277VAC, 60Hz, 50°C | 6x10 <sup>3</sup>     |
| RTS3T | A (NO) | 3500W, 277VAC, 40°C              | 12x10 <sup>3</sup> ** |

\* Special test conditions available on request

\*\* Not yet available in UL certificate, in progress



### Contact Data (continued),

| Mechanical endurance | RTS3T / 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.  |

### Coil Data, monostable DC coil

|                                         | RTS3T       | RTSET | RTS3L |
|-----------------------------------------|-------------|-------|-------|
| Coil voltage range                      | 5 to 110VDC |       |       |
| Operative range, IEC 61810              | 2           |       |       |
| Coil insulation system according UL1446 | class F     |       |       |

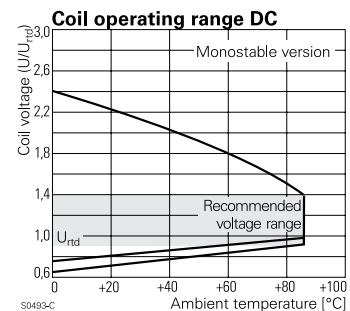
### Coil versions, monostable DC coil

| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ω±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 ±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 RTS3T 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                 |

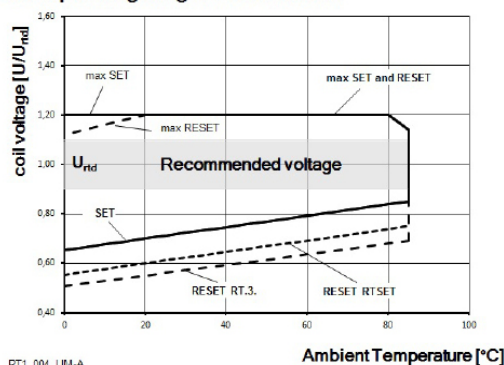
All figures are given for coil without pre-energization, at ambient temperature +23°C.  
Other coil voltages on request.

**Bistable coils - operation**

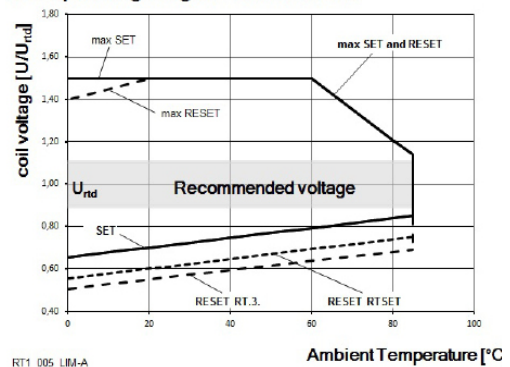
| Version        | 1 coil |    |  | 2 coils |    |    |
|----------------|--------|----|--|---------|----|----|
| Coil terminals | A1     | A2 |  | A1      | A3 | A2 |
| Operate        | +      | -  |  | +       | +  | -  |
| Reset          | -      | +  |  | -       | +  |    |

Contacts are preferably in reset contact position leaving our production.  
During transportation and handling the position may change. Ensure reset position before any thermal processing (e.g. soldering).

**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 | Illa                |
| 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 RTS3T / 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 |

**RTS3T / RTSET RTS3L**

|                                                       |                                |     |
|-------------------------------------------------------|--------------------------------|-----|
| Category of environmental protection                  | RTII - flux proof              |     |
| IEC 61810                                             |                                |     |
| 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                                                | 14g                            | 14g |
| Resistance to soldering heat THT                      | 270°C/10s                      |     |
| IEC 60068-2-20                                        |                                |     |

**RTS3T / RTSET RTS3L**

|                |                            |                            |
|----------------|----------------------------|----------------------------|
| Packaging/unit | tube/20 pcs., box/500 pcs. | tube/20 pcs., box/500 pcs. |
|----------------|----------------------------|----------------------------|

2) 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.

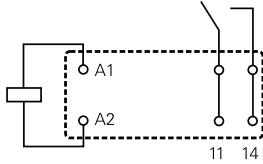
NOTE: indicated contact ratings and electrical endurance data for direct wiring of relays (according IEC 61810-1); for relays mounted on sockets deratings may apply.

## Power PCB Relay RT Inrush Power (Continued)

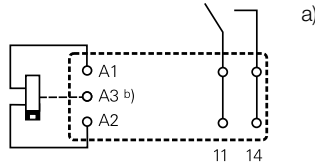
### Terminal assignment

Bottom view on solder pins

monostable version



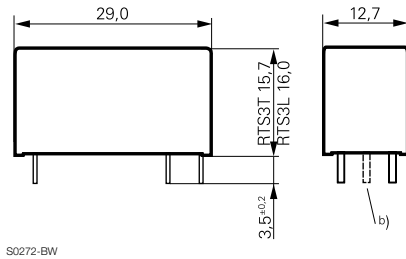
bistable version



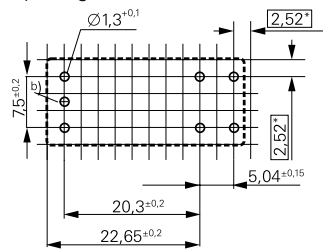
a) Indicated contact position during or after coil energization with reset voltage.

b) for 2 coil version only

### Dimensions / PCB layout



16A, pinning 5mm



b) for 2 coil version only

\*) 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** 16A, pinning 5mm, flux proof

**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

| Product code | Version      | Contacts      | Contact material                | Coil version      | Coil  | Version  | Part number |
|--------------|--------------|---------------|---------------------------------|-------------------|-------|----------|-------------|
| RTS3L005     | 16A          | 1 form A (NO) | AgSnO <sub>2</sub>              | Monostable        | 5VDC  | Standard | 1-1415898-8 |
| RTS3L006     | pinning 5mm  | contact       |                                 |                   | 6VDC  |          | 4-1415898-4 |
| RTS3L012     | flux proof,  |               |                                 |                   | 12VDC |          | 1-1415898-9 |
| RTS3L024     | 16mm hight   |               |                                 |                   | 24VDC |          | 1-1415898-4 |
| RTS3LA12     |              |               |                                 | Bistable, 1 coil  | 12VDC |          | 2-1415898-3 |
| RTS3LF12     |              |               |                                 | Bistable, 2 coils |       |          | 2-1415898-5 |
| RTS3T005     | 16A          |               | W pre-make + AgSnO <sub>2</sub> | Monostable        | 5VDC  |          | 1-1415898-6 |
| RTS3T012     | pinning 5mm  |               |                                 |                   | 12VDC |          | 1415898     |
| RTS3T024     | flux proof,  |               |                                 |                   | 24VDC |          | 1415898-1   |
| RTS3T048     | 15.7mm hight |               |                                 |                   | 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   |
| RTSET005     | 16A          | 1 form A (NO) | W pre-make + AgSnO <sub>2</sub> | Monostable        | 5VDC  | Standard | 7-1415898-7 |
| RTSET012     | pinning 5mm  | contact       |                                 |                   | 12VDC |          | 7-1415898-9 |
| RTSET024     | flux proof,  |               |                                 |                   | 24VDC |          | 8-1415898-0 |
| RTSETA12     | 16mm hight   |               |                                 | 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.