

## Power PCB Relay T9E

- 1 pole 30A, 1 formA(NO) or 1 formC(CO)
- High breaking capacity 7500 VA
- PCB and PCB/quick connect terminals
- UL class F insulation as standard
- Ambient temperature up to 105°C
- Plastic materials according to IEC60335-1

### Typical applications

HVAC, power supplies, domestic appliances, measurement and control.



### Approvals

VDE 40027903, UL E58304

Technical data of approved types on request.

### Contact Data

|                                             |                              |               |
|---------------------------------------------|------------------------------|---------------|
| Contact arrangement                         | 1 form A (NO)                | 1 form C (CO) |
| Rated voltage                               | 240VAC                       |               |
| Max. switching voltage                      | 250VAC (VDE); 300VAC (UL)    |               |
| Rated current                               | 30A                          | 20A/10A       |
| Limiting continuous current                 | 30A                          |               |
| Breaking capacity max.                      | 7500VA                       | 5000/2500VA   |
| Contact material                            | AgSnOInO (AgCdO optional)    |               |
| Min. recommended contact load               | 1A, 5VDC or 12VAC            |               |
| Initial contact resistance                  | 75 mΩ at 1A at 5VDC or 12VAC |               |
| Frequency of operation, with/without load   | 6/120min <sup>-1</sup>       |               |
| Operate/release time max., including bounce | 15/15ms                      |               |

### Contact ratings

| Type | Contact | Load | Cycles |
|------|---------|------|--------|
|------|---------|------|--------|

#### IEC 61810

|                      |    |                                 |                     |
|----------------------|----|---------------------------------|---------------------|
| AgSnOInO, 1W coil    |    |                                 |                     |
| 1                    | NO | 30A, 250VAC, cosφ=1, 60°C       | 20x10 <sup>3</sup>  |
| 1                    | NO | 20A, 250VAC, cosφ=1, 85°C       | 100x10 <sup>3</sup> |
| 2                    | NO | 20A, 250VAC, cosφ=1, 70°C       | 100x10 <sup>3</sup> |
| 1, 2                 | CO | 20A / 10A, 250VAC, cosφ=1, 60°C | 20x10 <sup>3</sup>  |
| AgSnOInO, 900mW coil |    |                                 |                     |
| 1                    | NO | 17A, 250VAC, cosφ=1, 105°C      | 100x10 <sup>3</sup> |
| 1                    | NO | 20A, 250VAC, cosφ=1, 85°C       | 100x10 <sup>3</sup> |

#### EN 60730-1

|                   |    |                       |                     |
|-------------------|----|-----------------------|---------------------|
| AgSnOInO, 1W coil |    |                       |                     |
| 1                 | NO | 12(12)A, 240VAC, 60°C | 100x10 <sup>3</sup> |

#### UL 508 1)

|                      |    |                                    |                     |
|----------------------|----|------------------------------------|---------------------|
| AgSnOInO, 1W coil    |    |                                    |                     |
| 1, 2                 | NO | 30A, 240VAC, general purpose, 25°C | 100x10 <sup>3</sup> |
| AgSnOInO, 900mW coil |    |                                    |                     |
| 1, 2                 | NO | TV-8, 125VAC, 25°C                 | 25x10 <sup>3</sup>  |

1) Additional UL 508 ratings are available.

|                      |                         |
|----------------------|-------------------------|
| Mechanical endurance | 10x10 <sup>6</sup> ops. |
|----------------------|-------------------------|

### Coil Data

|                                     |                 |
|-------------------------------------|-----------------|
| Coil voltage range                  | 6 to 110VDC     |
| Max. coil power                     | 110% of nominal |
| Max. coil temperature               | 155°C           |
| Coil insulation system according UL | Class F         |

### Coil Data (continued)

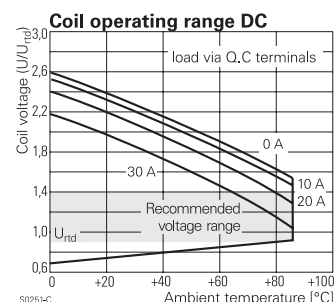
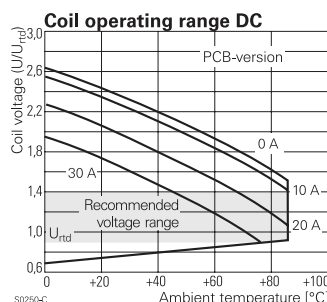
#### Coil versions, DC coil

| Coil code           | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ω±10% | Rated coil power W |
|---------------------|-------------------|---------------------|---------------------|-----------------------|--------------------|
| Code D (1W) coil    |                   |                     |                     |                       |                    |
| 6                   | 6                 | 4.5                 | 0.6                 | 36                    | 1                  |
| 9                   | 9                 | 6.75                | 0.9                 | 81                    | 1                  |
| 12                  | 12                | 9                   | 1.2                 | 144                   | 1                  |
| 18                  | 18                | 13.5                | 1.8                 | 324                   | 1                  |
| 22                  | 22                | 16.5                | 2.2                 | 484                   | 1                  |
| 24                  | 24                | 18                  | 2.4                 | 576                   | 1                  |
| 48                  | 48                | 36.2                | 4.8                 | 2304                  | 1                  |
| 110                 | 110               | 82.5                | 11                  | 12100                 | 1                  |
| Code L (900mW) coil |                   |                     |                     |                       |                    |
| 6                   | 6                 | 4.5                 | 0.6                 | 40                    | .9                 |
| 12                  | 12                | 9                   | 1.2                 | 155                   | .9                 |
| 18                  | 18                | 13.5                | 1.8                 | 380                   | .9                 |
| 24                  | 24                | 18                  | 2.4                 | 660                   | .9                 |

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

### Insulation Data

|                                 |  |                               |
|---------------------------------|--|-------------------------------|
| Initial dielectric strength     |  | 1500V <sub>ms</sub>           |
| between open contacts           |  | 2500V <sub>ms</sub>           |
| between contact and coil        |  |                               |
| Initial surge withstand voltage |  | 6kV (1.2μs/50μs impulse wave) |
| between contact and coil        |  |                               |
| Initial insulation resistance   |  | 1x10 <sup>9</sup> Ω           |
| between insulated elements      |  |                               |
| Clearance/creepage              |  | ≥3mm/4mm                      |
| between contact and coil        |  |                               |



Coil operating ranges shown above are for 1W coils.



**Power PCB Relay T9E** (Continued)

**Product code structure**

Typical product code

**T9E S 1 D 1 4 -24**
**Type**
**T9E** Power PCB relay T9E

**Enclosure**
**S** Wash-tight plastic case with knock off nib  
**V** Flux-proof plastic case

**Contact arrangement**
**1** 1 form A (1 NO) **5** 1 form C (1 CO)

**Coil Input**
**D** DC voltage, 1W **L** DC voltage, 900mW

**Mounting and termination**
**1** PCB mounting; PCB terminals for coil and contacts  
**2** PCB mounting; PCB terminals for coil and contacts; 6.35mm (.250in) QC for contacts

**Contact material**
**4** AgSnOInO  
**2** AgCdO – optionally available. Contact Product Engineering for availability and ratings.

**Coil voltage**

Coil code: please refer to coil versions table

| Product Code | Enclosure  | Mounting            | Contact material | Contacts       | Coil version | Coil voltage | Part number |
|--------------|------------|---------------------|------------------|----------------|--------------|--------------|-------------|
| T9ES1L14-18  | wash tight | PCB terminals       | AgSnOInO         | 1 form A, 1 NO | 900mW        | 18VDC        | 1-2027234-8 |
| T9ES1D14-12  |            |                     |                  |                | 1W           | 12VDC        | 2027234-2   |
| T9ES1D14-24  |            |                     |                  |                |              | 24VDC        | 2027234-7   |
| T9ES1D12-12  |            |                     | AgCdO            |                |              | 12VDC        | 1-2027234-0 |
| T9ES1D24-12  |            | PCB + quick connect | AgSnOInO         |                |              | 12VDC        | 2027234-8   |
| T9ES1D22-12  |            |                     | AgCdO            |                |              | 12VDC        | 1-2027243-3 |
| T9ES5D14-12  |            | PCB terminals       | AgSnOInO         | 1 form C, 1 CO |              | 12VDC        | 2027234-6   |
| T9ES5D12-24  |            |                     | AgCdO            |                |              | 24VDC        | 2027234-4   |
| T9ES5D24-12  |            | PCB + quick connect | AgSnOInO         |                |              | 12VDC        | 2027234-9   |
| T9EV1D14-22  | flux proof | PCB terminals       |                  | 1 form A, 1 NO |              | 22VDC        | 2027234-5   |