

General Purpose High Power PCB Relays

7.

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 Data | | |
|--------------------------------------|----------------|----------------------|
| Contact arrangement | 1 form A (NO) | 1 form C (CO) |
| Rated voltage | 240 | IVAC |
| Max. switching voltage | 250VAC (VDE | E); 300VAC (UL) |
| Rated current | 30A | 20A/10A |
| Limiting continuous current | 30A | |
| Breaking capacity max. | 7500VA | 5000/2500VA |
| Contact material | AgSnOlnO (Ag | gCdO 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 | ut load 6/ | 120min ⁻¹ |
| Operate/release time max., includin | ig bounce 15/1 | 15ms |
| | | |

| Contac | t ratings | | |
|-----------|--------------------|------------------------------------|-------------------------|
| Туре | Contact | Load | Cycles |
| IEC 618 | B10 | | |
| AgSnOl | nO, 1W coil | | |
| 1 | NO | 30A, 250VAC, cosφ=1, 60°C | 20x10 ³ |
| 1 | NO | 20A, 250VAC, cosφ=1, 85°C | 100x10 ³ |
| 2 | NO | 20A, 250VAC, cosφ=1, 70°C | 100x10 ³ |
| 1, 2 | CO | 20A / 10A, 250VAC, cosφ=1, 60°C | 20x10 ³ |
| AgSnOl | nO, 900mW co | bil | |
| 1 | NO | 17A, 250VAC, cosφ=1, 105°C | 100x10 ³ |
| 1 | NO | 20A, 250VAC, cosφ=1, 85°C | 100x10 ³ |
| EN 607 | 30-1 | | |
| AgSnOl | nO, 1W coil | | |
| 1 | NO | 12(12)A, 240VAC, 60°C | 100x10 ³ |
| UL 508 | 1) | | |
| AgSnOl | nO, 1W coil | | |
| 1, 2 | NO | 30A, 240VAC, general purpose, 25°C | 100x10 ³ |
| AgSnOl | nO, 900mW co | bil | |
| 1, 2 | NO | TV-8, 125VAC, 25°C | 25x10 ³ |
| 1) Additi | onal UL 508 rating | is are available. | |
| Mechar | nical endurance | | 10x10 ⁶ ops. |
| moona | | | 10/10 003. |

| 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 | |



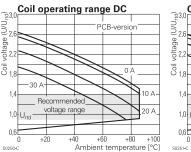
Coil Data (continued)

| Coil versions, DC coil | | | | | | | | |
|------------------------|--------------------|------------------|---------------------------|-------------------|-------|--|--|--|
| Coil | Rated | Operate | Operate Release Coil Rate | | | | | |
| code | voltage | voltage | voltage | resistance | power | | | |
| | VDC | VDC | VDC | Ω±10% | 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 aiven for coil | without preenerg | ization at ambi | ont tomnoraturo . | 123°C | | | |

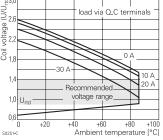
All figures are given for coil without preenergization, at ambient temperature +23°C.

Insulation Data

| Initial dielectric strength | |
|---------------------------------|-------------------------------|
| between open contacts | 1500V _{rms} |
| between contact and coil | 2500V |
| Initial surge withstand voltage | mo |
| between contact and coil | 6kV (1.2µs/50µs impulse wave) |
| Initial insulation resistance | |
| between insulated elements | 1×10ºΩ |
| Clearance/creepage | |
| between contact and coil | ≥3mm/4mm |
| | |



Coil operating range DC



Coil operating ranges shown above are for 1W coils.

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Catalog and product data is subject to the terms of the disclaimer and all chapters of the 'Definitions' section, available at http://relays.te.com/definitions

Catalog product data, 'Definitions' section, application notes and all specifications are subject to change. 1



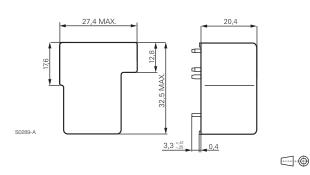
Power PCB Relay T9E (Continued)

| Other Data | | | | | | |
|--|---------------------------------|--|--|--|--|--|
| Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content | | | | | | |
| refer to the Produc | ct Compliance Support Center at | | | | | |
| www.te.com/cust | omersupport/rohssupportcenter | | | | | |
| Ambient temperature | | | | | | |
| DC coil | -40°C to 85°C / 105°C | | | | | |
| Category of environmental protection | | | | | | |
| IEC 61810 | RTII - flux proof (T9EV) | | | | | |
| | RTIII - wash tight (T9ES) | | | | | |
| Vibration resistance (functional) | 1.5mm, 10-55 Hz | | | | | |
| Shock resistance (functional) | 10g for 11msec | | | | | |
| Shock resistance (destructive) | 100g | | | | | |

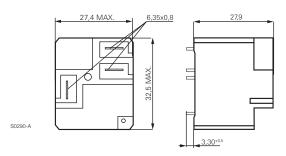
| PCB-tht and PCB-tht + quick |
|-----------------------------|
| |
| 26g mounting code 1 |
| 33g mounting codes 2 and 5 |
| |
| 260°C |
| tray/50 pcs., box/250 pcs. |
| |

Dimensions

PCB version



PCB/quick connect version



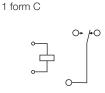
 \Box

Terminal assignment

Bottom view on pins

1 form A

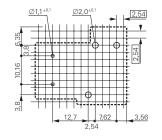




PCB layout

Bottom view on pins

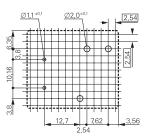
PCB version



Only necessary terminals are present on single throw models. Consequently, some holes will be unnecessary for single throw models.

S0261-AA

PCB/quick connect version



S0261-AH

Only necessary terminals are present on single throw models. Consequently, some holes will be unnecessary for single throw models.

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General Purpose High Power PCB Relays

Power PCB Relay T9E (Continued)

| Product | code structure | | Typical product code T9E | S | 1 | D | 1 | 4 | -24 |
|------------|---|------|---|---|---|---|---|---|-----|
| Туре | | | | | | | | | |
| Т9 | | | | | | | | | |
| Enclosure | e | | | | | | | | |
| S | Wash-tight plastic case with knock off nib | | | | | | | | |
| v | Flux-proof plastic case | | | | | | | | |
| Contact a | arrangement | | | | - | | | | |
| 1 | 1 form A (1 NO) | 5 | 1 form C (1 CO) | | | | | | |
| Coil Input | t | | | | | - | | | |
| D | DC voltage, 1W | L | DC voltage, 900mW | | | | | | |
| Mounting | and termination | | | | | | | | |
| 1 | PCB mounting; PCB terminals for coil and | con | tacts | | | | | | |
| 2 | PCB mounting; PCB terminals for coil and | con | tacts; 6.35mm (.250in) QC for contacts | | | | | | |
| Contact r | material | | | | | | | | |
| 4 | AgSnOlnO | | | | | | | | |
| 2 | AgCdO - optionally available. Contact Pro | duct | Engineering for availbaility and ratings. | | | | | | |
| Coil volta | ige | | | | | | | | 1 |
| Co | bil 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 | AgSnOlnO | 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 | AgSnOlnO | | | 12VDC | 2027234-8 |
| T9ES1D22-12 | | | AgCdO | | | 12VDC | 1-2027243-3 |
| T9ES5D14-12 | | PCB terminals | AgSnOlnO | 1 form C, 1 CO | | 12VDC | 2027234-6 |
| T9ES5D12-24 | | | AgCdO | | | 24VDC | 2027234-4 |
| T9ES5D24-12 | | PCB + quick connect | AgSnOlnO | | | 12VDC | 2027234-9 |
| T9EV1D14-22 | flux proof | PCB terminals | | 1 form A, 1 NO | | 22VDC | 2027234-5 |

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