

## Multimode Relay MT

- 2/3 pole 10A, 2 form C (CO) or 3 form C (CO) contacts
- DC and AC coils
- Mechanical indicator as standard
- Electrical indicator
- New test system with front operated finger protected push-to-test button and integral locking test tab
- White write on panel

Typical applications  
Mechanical engineering, plant control.

### Approvals

VDE Cert. No. 40009096, UL E214025  
Technical data of approved types on request.

### Contact Data

|                                           |                                |                       |
|-------------------------------------------|--------------------------------|-----------------------|
| Contact arrangement                       | 2 form C (CO) or 3 form C (CO) |                       |
| Rated voltage                             | 240VAC                         |                       |
| Max. switching voltage                    | 400VAC                         |                       |
| Rated current                             | 10A                            | 10A                   |
| Limiting making current, max. 20ms        | 20A                            | 20A                   |
| Limiting breaking current                 | 10A                            | 10A                   |
| Switching power                           | 2500VA                         | 2500VA                |
| Contact material                          | AgNi90/10                      | AgNi90/10 gold plated |
| Contact style                             | single contact                 | single contact        |
| Min. recommended contact load             | 12V at 10mA                    | 20mV at 1mA           |
| Initial voltage drop                      | 30mV at 100mA/6VAC/1kHz        |                       |
| Frequency of operation, with/without load | 1200/6000h <sup>-1</sup>       |                       |
| Operate time max., DC coil                | 15ms                           |                       |
| Release time max., DC coil                | 10ms                           |                       |
| Bounce time max., DC coil, form A/form B  | 4/10ms                         |                       |

### Contact ratings

| Type             | Contact       | Load                         | Cycles              |
|------------------|---------------|------------------------------|---------------------|
| <b>IEC 61810</b> |               |                              |                     |
| MT22 DC coil     | C (CO)        | 10A, 250VAC, cosφ=1, 35°C    | 100x10 <sup>3</sup> |
| MT22 AC coil     | C (CO)        | 10A, 250VAC, cosφ=1, 35°C    | 20x10 <sup>3</sup>  |
| MT32 DC coil     | C (CO)        | 10A, 250VAC, cosφ=1, 35°C    | 100x10 <sup>3</sup> |
| MT32 AC coil     | C (CO)        | 10A, 250VAC, cosφ=1, 35°C    | 20x10 <sup>3</sup>  |
| <b>UL 508</b>    |               |                              |                     |
| MT3              | A (NO)/B (NC) | B300, 40°C                   | 6.000               |
| MT2              | C (CO)        | 10A, 250VAC, resistive, 40°  | 30x10 <sup>3</sup>  |
| MT2              | A (NO)/B (NC) | B300 40°C                    | 6.000               |
| MT3              | C (CO)        | 10A, 250VAC, resistive, 40°C | 100x10 <sup>3</sup> |



### Contact Data (continued)

|                      |                               |
|----------------------|-------------------------------|
| Mechanical endurance |                               |
| DC coil              | 20x10 <sup>6</sup> operations |
| AC coil              | 20x10 <sup>6</sup> operations |

### Coil Data

|                                     |                            |
|-------------------------------------|----------------------------|
| Coil voltage range                  | 6 to 220VDC<br>6 to 230VAC |
| Operative range, IEC 61810          | 2                          |
| Coil insulation system according UL | class 130 (B)              |

### Coil versions, DC coil

| Coil code |                  | Rated   | Operate | Release | Coil                  | Rated coil |
|-----------|------------------|---------|---------|---------|-----------------------|------------|
| STD       | PD <sup>3)</sup> | voltage | voltage | voltage | resistance            | power      |
|           |                  | VDC     | VDC     | VDC     | Ω±10% <sup>1)2)</sup> | W          |
| 006       | 0A6              | 6       | 4.5     | 0.6     | 32                    | 1.1        |
| 012       | 0B2              | 12      | 9.0     | 1.2     | 110                   | 1.3        |
| 024       | 0C4              | 24      | 18.0    | 2.4     | 475                   | 1.2        |
| 048       | 0E8              | 48      | 36.0    | 4.8     | 2000                  | 1.2        |
| 060       | 0G0              | 60      | 45.0    | 6.0     | 2850                  | 1.3        |
| 110       | 1B0              | 110     | 82.5    | 11.5    | 10000 <sup>1)</sup>   | 1.2        |
| 220       | 2C0              | 220     | 165.0   | 22.0    | 40000 <sup>2)</sup>   | 1.2        |

1) Coil resistance ±12%, 2) Coil resistance ±15%.

3) Protection diode PD; standard polarity: 2-pole relays: +2 / -7, 3-pole relays: +2 / -10.

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

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

| Coil code | Rated voltage | Operate voltage | Release voltage | Coil resistance     | Rated coil power |
|-----------|---------------|-----------------|-----------------|---------------------|------------------|
|           | VAC           | 50/60Hz VAC     | 50/60Hz VAC     | Ω±10% <sup>1)</sup> | 50/60Hz VA       |
| 006       | 6             | 4.8/5.1         | 1.8             | 5.3                 | 2.29/1.98        |
| 012       | 12            | 9.6/10.2        | 3.6             | 24                  | 2.19/1.86        |
| 024       | 24            | 19.2/20.4       | 7.2             | 86                  | 2.26/1.95        |
| 048       | 48            | 38.4/40.8       | 14.4            | 345                 | 2.28/1.97        |
| 060       | 60            | 48.0/51.0       | 18.0            | 544                 | 2.27/1.96        |
| 115       | 115           | 92.0/97.8       | 34.5            | 2000                | 2.37/2.00        |
| 230       | 230           | 184.0/195.5     | 69.0            | 8300 <sup>1)</sup>  | 2.32/1.96        |

1) Coil resistance ±12%.

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



## Multimode Relay MT (Continued)

### Insulation Data

|                                    |          |
|------------------------------------|----------|
| Initial dielectric strength        |          |
| between open contacts              | 1500Vrms |
| between contact and coil           | 2500Vrms |
| between adjacent contacts          | 2500Vrms |
| Clearance/creepage                 |          |
| between contact and coil           | ≥2.8/4mm |
| between adjacent contacts          | ≥2.8/4mm |
| Material group of insulation parts | IIIa     |

### 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                                           |                      |
| DC coil                                                       | -40 to +60°C         |
| AC coil                                                       | -40 to +50°C         |
| Category of environmental protection                          |                      |
| IEC 61810                                                     | RT1 - dust protected |
| Vibration resistance (functional),<br>form A (NO)/form B (NC) | 5/2g                 |
| Shock resistance (functional),<br>form A (NO)/form B (NC)     | 50/10g               |
| Terminal type                                                 | plug-in              |
| Cover retention, pull/push force                              | 100/100N             |
| Weight                                                        | 80g                  |
| Packaging unit                                                | 25 pcs.              |

### Accessories

For details see datasheet [Accessories Multimode Relay MT](#)

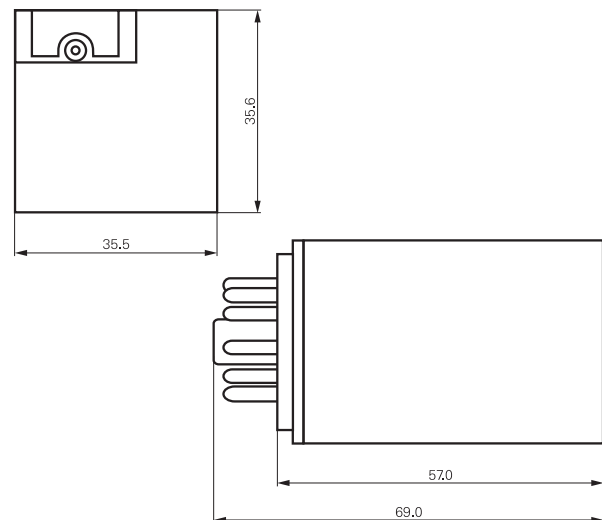
Note: indicated contact ratings and electrical endurance data for direct wiring of relays (according IEC 61810-1); for relays mounted on sockets deratings may apply.

### Terminal assignment

Bottom view on pins



### Dimensions



**Multimode Relay MT** (Continued)

**Product code structure**

Typical product code

**MT 3 2 6 230**
**Type**
**MT** Multimode Relay MT

**Contact configuration**

- 2** 2 form C contacts (2 CO contacts), 8-pin  
**3** 3 form C contacts (3 CO contacts), 11-pin

**Contact material**

- 2** AgNi 90/10  
**3** AgNi 90/10, gold plated

**Version**

- 1** DC with test button  
**3** DC with test button and bipolar LED  
**6** AC with test button  
**8** AC with test button and LED

**Coil**

Coil code: please refer to coil versions table

Other types on request

| Product code | Contact Configuration | Contact material | Version            | Coil   | Part number |
|--------------|-----------------------|------------------|--------------------|--------|-------------|
| MT221012     | 2 form C              | AgNi 90/10       | DC                 | 12VDC  | 4-1393090-9 |
| MT221024     | 2 CO contacts         |                  | with test button   | 24VDC  | 5-1393090-0 |
| MT221048     | 8-pin                 |                  |                    | 48VDC  | 5-1393090-1 |
| MT221060     |                       |                  |                    | 60VDC  | 5-1393090-2 |
| MT221110     |                       |                  |                    | 110VDC | 5-1393090-3 |
| MT221220     |                       |                  |                    | 220VDC | 5-1393090-4 |
| MT223024     |                       |                  | DC+LED+test button | 24VDC  | 5-1393090-7 |
| MT226012     |                       |                  | AC                 | 12VAC  | 6-1393090-3 |
| MT226024     |                       |                  | test button        | 24VAC  | 6-1393090-4 |
| MT226048     |                       |                  |                    | 48VAC  | 6-1393090-5 |
| MT226115     |                       |                  |                    | 115VAC | 6-1393090-7 |
| MT226230     |                       |                  |                    | 230VAC | 6-1393090-8 |
| MT228024     |                       |                  | AC+LED             | 24VAC  | 6-1393090-9 |
| MT228115     |                       |                  | test button        | 115VAC | 7-1393090-0 |
| MT228230     |                       |                  |                    | 230VAC | 7-1393090-1 |
| MT321012     | 3 form C              | AgNi 90/10       | DC                 | 12VDC  | 6-1393091-8 |
| MT321024     | 3 CO contacts         |                  | with test button   | 24VDC  | 7-1393091-0 |
| MT321048     | 11-pin                |                  |                    | 48VDC  | 7-1393091-1 |
| MT321060     |                       |                  |                    | 60VDC  | 7-1393091-2 |
| MT321110     |                       |                  |                    | 110VDC | 7-1393091-4 |
| MT321220     |                       |                  |                    | 220VDC | 7-1393091-7 |
| MT323024     |                       |                  | DC+LED+test button | 24VDC  | 8-1393091-4 |
| MT3230C4     |                       |                  | DC+LED+PD+TB       | 24VDC  | 7-1393091-9 |
| MT326012     |                       |                  | AC                 | 12VAC  | 9-1393091-6 |
| MT326024     |                       |                  | test button        | 24VAC  | 9-1393091-7 |
| MT326048     |                       |                  |                    | 48VAC  | 9-1393091-8 |
| MT326115     |                       |                  |                    | 115VAC | 1393092-1   |
| MT326230     |                       |                  |                    | 230VAC | 1393092-2   |
| MT328024     |                       |                  | AC+LED             | 24VAC  | 1393092-4   |
| MT328115     |                       |                  | test button        | 115VAC | 1393092-7   |
| MT328230     |                       |                  |                    | 230VAC | 1393092-8   |
| MT331024     |                       | AgNi 90/10       | DC                 | 24VDC  | 1-1393092-1 |
| MT331110     |                       | gold plated      | with test button   | 110VDC | 1-1393092-3 |
| MT331220     |                       |                  |                    | 220VDC | 1-1393092-5 |
| MT333024     |                       |                  | DC+LED+test button | 24VDC  | 1-1393092-8 |
| MT3330C4     |                       |                  | DC+LED+PD+TB       | 24VDC  | 1-1393092-6 |
| MT333110     |                       |                  | DC+LED             | 110VDC | 2-1393092-0 |
| MT333220     |                       |                  | test button        | 220VDC | 2-1393092-2 |
| MT336115     |                       |                  | AC                 | 115VAC | 2-1393092-5 |
| MT336230     |                       |                  | test button        | 230VAC | 2-1393092-6 |
| MT338024     |                       |                  | AC+LED             | 24VAC  | 2-1393092-7 |
| MT338115     |                       |                  | test button        | 115VAC | 8-1415025-1 |
| MT338230     |                       |                  |                    | 230VAC | 2-1393092-8 |