

**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



F0161-B



**Approvals**

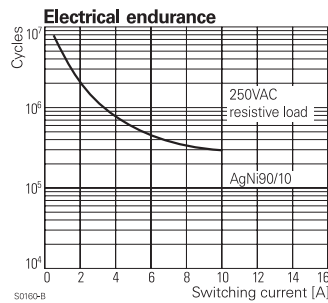
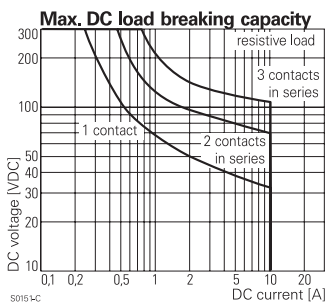
VDE REG.-Nr. 6182, UL E214025  
Technical data of approved types on request

**Contact Data**

|   |                                |                       |                       |
|---|--------------------------------|-----------------------|-----------------------|
| Contact arrangement                       | 2 form C (CO) or 3 form C (CO) |                       |                       |
| Rated voltage                             | 240VAC                         |                       |                       |
| Max. switching voltage                    | 400VAC                         |                       |                       |
| Rated current                             | 10A                            | 10A                   | 4A                    |
| Limiting making current, max. 20ms        | 20A                            | 20A                   | 8A                    |
| Limiting breaking current                 | 10A                            | 10A                   | 4A                    |
| Switching power                           | 2500VA                         | 2500VA                | 500 VA                |
| Contact material                          | AgNi90/10                      | AgNi90/10 gold plated | AgNi90/10 gold plated |
| Contact style                             | single contact                 | single contact        | bifurcated contact    |
| Min. recommended contact load             | 12V at 10mA                    | 20mV at 1mA           | 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  | 4/5ms                          |                       |                       |

**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>  |
| MT2              | C (CO)        | 10A, 250VAC, resistive, 40°            | 30x10 <sup>3</sup>  |
| MT2              | A (NO)/B (NC) | B300 40°C                              | 6.000               |
| MT2              | C (CO)        | 4A, 25VAC, resistive, bifurcated, 40°C | 30x10 <sup>3</sup>  |
| MT3              | C (CO)        | 10A, 250VAC, resistive, 40°C           | 30x10 <sup>3</sup>  |
| <b>UL 508</b>    |               |  |                     |
| MT3              | A (NO)/B (NC) | B300, 40°C                             | 6.000               |
| MT3              | C (CO)        | 4A, 25VAC, resistive, bifurcated, 40°C | 30x10 <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**

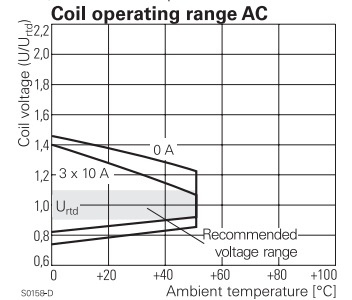
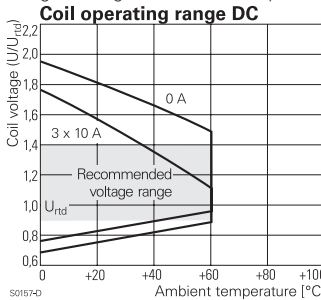
| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ω±10% <sup>1)2)</sup> | Rated coil power W  |
|-----------|-------------------|---------------------|---------------------|---------------------------------------|---------------------|
| 006       | 0A6   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

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 VAC | Operate voltage 50/60Hz VAC | Release voltage 50/60Hz VAC | Coil resistance Ω±10% <sup>1)</sup> | Rated coil power 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**

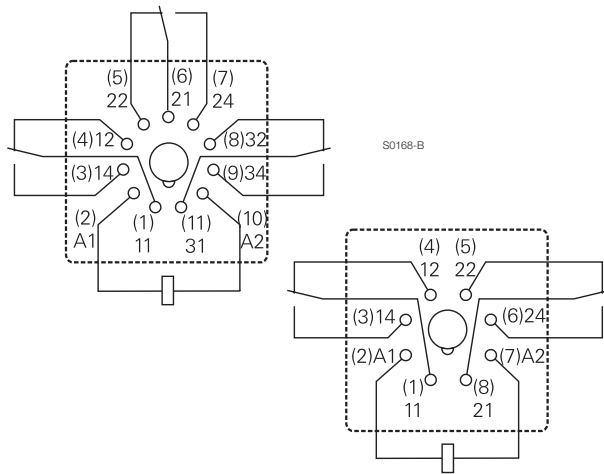
|   |                      |
|---|----------------------|
| Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at <a href="http://www.te.com/customer-support/rohssupportcenter">www.te.com/customer-support/rohssupportcenter</a> |                      |
| Ambient temperature   |                      |
| DC coil   | -40 to +60°C         |
| AC coil   | -40 to +50°C         |
| Category of environmental protection  |                      |
| IEC 61810   | RTI - dust protected |
| Vibration resistance (functional), form A (NO)/form B (NC)  |                      |
|   | 5/2g                 |
| Shock resistance (functional), form A (NO)/form B (NC)  |                      |
|   | 50/10g               |
| Terminal type   |                      |
| Cover retention, pull/push force  | plug-in 100/100N     |
| Weight  | 80g                  |
| Packaging unit  | 25 pcs.              |

**Accessories**

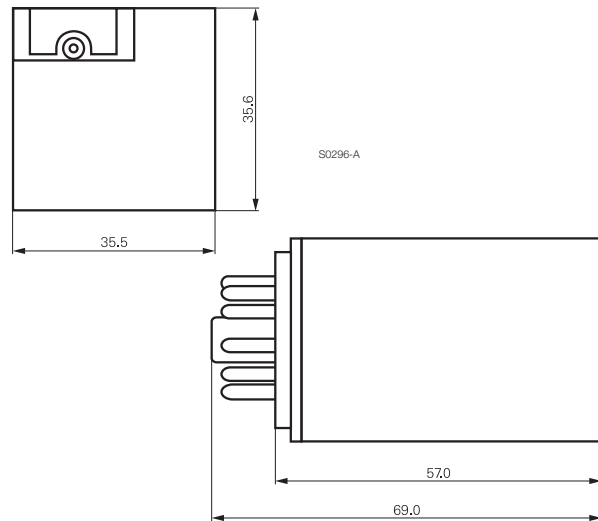
For details see datasheet [Accessories Multimode Relay MT](#)  
Note: indicated contact ratings and electrical endurance data for direct wiring of relays (according IEC 61810-1); for relays mounted on sockets deratings may apply.

**Terminal assignment**

Bottom view on pins



**Dimensions**



**Multimode Relay MT** (Continued)

**Product code structure**

Typical product code **MT 3 2 6 230**

|                              |   |  |  |  |  |
|------------------------------|---|--|--|--|--|
| <b>Type</b>                  | MT Multimode Relay MT                             |  |  |  |  |
| <b>Contact configuration</b> | <b>2</b> 2 form C contacts (2 CO contacts), 8-pin | <b>3</b> 3 form C (3 CO contacts), 11-pin            |  |  |  |
| <b>Contact material</b>      | <b>2</b> AgNi 90/10                               | <b>B</b> AgNi 90/10 bifurcated contacts, gold plated |  |  |  |
|                              | <b>3</b> AgNi 90/10, gold plated                  |  |  |  |  |
| <b>Version</b>               | <b>1</b> DC with test button                      | <b>6</b> AC with test button                         |  |  |  |
|                              | <b>3</b> DC with test button and bipolar LED      | <b>8</b> AC with test button and LED                 |  |  |  |
| <b>Coil</b>                  | 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+PT+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 |

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