

20×10×12

# M4

UL E158859 R50044268

## Features

- DIL pitch terminals. High sensitivity.
- Conforms to FCC Part 68 1.5kV surge and dielectric 1000VAC.
- High reliability bifurcated contact.
- Application for telecommunication equipment, office equipment, security alarm systems, measuring instruments, medical monitoring equipment, audio visual equipment, flight simulator, sensor control.

## Ordering Information

**M4 - 12 H A W**  
1 2 3 4 5

|  |   |
|--|---|
| 1 Part number: M4  | 3 Enclosure: H: Wash tight              |
| 2 Coil rated voltage: DC:3:3V; 5:5V; 6:6V; 9:9V;<br>12:12V; 24:24V; 48:48V | 4 Nominal coil power: Nil:0.15W; A:0.2W |
|  | 5 Contact material: Nil: AgPd; W: AgNi  |

## Contact Data

|                        |  |  |
|------------------------|--|--|
| Contact Arrangement    | 2C(DPDT(B-M)) (Bifurcated Crossbar)  |  |
| Contact Material       | AgPd(Au plated) AgNi(Au plated)  |  |
| Contact Rating         | 1A/24VDC; 2A/30VDC; 0.5A/120VAC  |  |
| Max. Switching Power   | 60W 125VA  | Min. Switching Load:0.01mA/10mV(Reference Value) |
| Max. Switching Voltage | 220VDC 250VAC  | Max. Switching Current:2A                        |
| Contact Resistance     | ≤50mΩ  | Item 4.12 of IEC 61810-7                         |
| Electrical Endurance   | 1A/24VDC: 5×10 <sup>5</sup> (Ag Ni: 1×10 <sup>5</sup> )<br>2A/30VDC:1×10 <sup>5</sup><br>0.5A/120VAC:2×10 <sup>5</sup> | Item 4.30 of IEC 61810-7                         |
| Mechanical Endurance   | 1×10 <sup>8</sup>  | Item 4.31 of IEC 61810-7                         |

**Notes:** Relays previously tested or used above 10mA resistive at 6V maximum(DC or peak AC)open circuit are not recommended for subsequent use in low level applications.

## Coil Parameter

| Dash numbers | Coil voltage VDC |       | Coil resistance Ω ± 10% | Pick-up voltage VDC(max) (70% or 66%of rated voltage ) | Drop-out voltage VDC(min) (5% or 10% of rated voltage) | Coil power W | Operate time ms | Release time ms |
|--------------|------------------|-------|-------------------------|--|--|--------------|-----------------|-----------------|
|              | Rated            | Max.  |                         |  |  |              |                 |                 |
| M4-003       | 3                | 7.5   | 60                      | 2.1  | 0.15   | 0.15         | Approx.<br>4.5  | Approx.<br>1.5  |
| M4-005       | 5                | 12.5  | 167                     | 3.5  | 0.25   | 0.15         |                 |                 |
| M4-006       | 6                | 15.0  | 240                     | 4.2  | 0.3  | 0.15         |                 |                 |
| M4-009       | 9                | 22.5  | 540                     | 6.3  | 0.45   | 0.15         |                 |                 |
| M4-012       | 12               | 30.0  | 960                     | 8.4  | 0.6  | 0.15         |                 |                 |
| M4-024       | 24               | 52.9  | 3840                    | 16.8   | 1.2  | 0.15         |                 |                 |
| M4-048       | 48               | 84.9  | 7680                    | 33.6   | 2.4  | 0.30         | Approx.<br>4.5  | Approx.<br>1.5  |
| M4-003A      | 3                | 6.5   | 45                      | 2.1  | 0.3  | 0.2          |                 |                 |
| M4-005A      | 5                | 10.8  | 125                     | 3.5  | 0.5  | 0.2          |                 |                 |
| M4-006A      | 6                | 13.0  | 180                     | 4.2  | 0.6  | 0.2          |                 |                 |
| M4-009A      | 9                | 19.5  | 405                     | 6.3  | 0.9  | 0.2          |                 |                 |
| M4-012A      | 12               | 26.5  | 720                     | 8.4  | 1.2  | 0.2          |                 |                 |
| M4-024A      | 24               | 52.9  | 2880                    | 16.8   | 2.4  | 0.2          | Approx.<br>4.5  | Approx.<br>1.5  |
| M4-048A      | 48               | 103.9 | 11520                   | 33.6   | 4.8  | 0.2          |                 |                 |

**Notes:** 1.The use of any coil voltage less than the rated coil voltage will compromise the operation of the relay.

2.Pick-up and drop-out voltage are for test purposes only and are not to be used as design criteria.

3.Unless otherwise stated, the rated coil voltage specified in coil parameter and its suitable polarity(if applicable) shall be used for all tests and its application to the relay.

## Characteristics

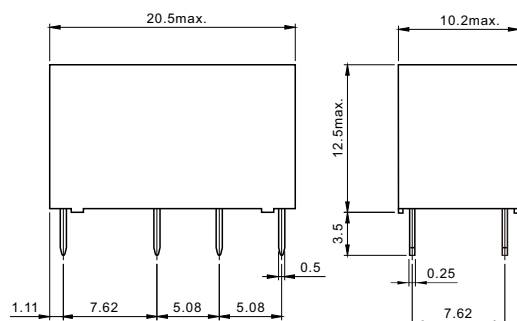
|                           |   |                          |
|---------------------------|---|--------------------------|
| Electrostatic Capacitance |   |                          |
| Between Open Contacts     | Approx.0.7pF  | Item 4.41 of IEC 61810-7 |
| Between Contacts and Coil | Approx. 1.0pF   | Item 4.41 of IEC 61810-7 |
| Between Contact Poles     | Approx.0.9pF  | Item 4.41 of IEC 61810-7 |
| Insulation Resistance     | 1000M $\Omega$ min (at 500VDC)  | Item 4.11 of IEC 61810-7 |
| Dielectric Strength       |   |                          |
| Between Open Contacts     | 1000VAC 1min  | Item 4.9 of IEC 61810-7  |
| Between Contacts and Coil | 1000VAC 1min  |                          |
| Between Contact Poles     | 1000VAC 1min  |                          |
| Surge Withstand Voltage   |   |                          |
| Between Open Contacts     | 1500V   | FCC 68                   |
| Between Contacts and Coil | 1500V   |                          |
| Between Contact Poles     | 1500V   |                          |
| Shock Resistance          | Functional:98m/s <sup>2</sup> 11ms;<br>Destructive:980 m/s <sup>2</sup> 6ms | Item 4.26 of IEC 61810-7 |
| Vibration Resistance      | 10Hz~55Hz Double amplitude<br>Functional: 1.5mm Destructive:5mm             | Item 4.28 of IEC 61810-7 |
| Terminals Strength        | 5N  | Item 4.24 of IEC 61810-7 |
| Temperature Range         | -40℃~90℃(-40°F~194°F)<br>(-40℃~80℃ for 0.3W Coil)                           |                          |
| Weight(Approx.)           | 4.8g  | Item 4.7 of IEC 61810-7  |

## Safety Approvals

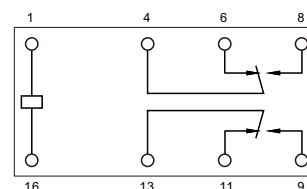
|                 |                                 |                       |
|-----------------|---------------------------------|-----------------------|
| Safety approval | UL&CUR                          | TüV                   |
| Load            | 1A/24VDC; 2A/30VDC; 0.5A/120VAC | 1A/24VDC; 0.5A/120VAC |

## Dimensions

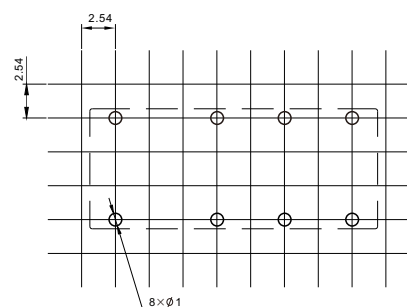
mm



Dimensions



Wiring diagram  
(Bottom view)



Mounting (Bottom view)

**Remark:** In case of no tolerance shown in outline dimension: outline dimension $\leq$ 1mm, tolerance should be  $\pm$ 0.2mm ;  
outline dimension  $>$ 1mm and  $\leq$ 5mm, tolerance should be  $\pm$ 0.3mm; outline dimension  $>$ 5mm, tolerance should be  $\pm$ 0.4mm.

# FORWARD RELAYS

