

**INDUSTRIAL RELAYS**

**FEATURES**

1. Max. switching capacity up to 30/40A.
2. High Load current is available.
3. PCB mounting or quick connect terminals.
4. 1 Form A, 1 Form C and 1 Form U arrangements.
5. Optional metal bracket.
6. Sealed type relay.

**ORDERING INFORMATION**

MB 1C - 12 S P M D A  
(1) (2) (3) (4) (5) (6) (7) (8)

- |   |  |
|---|--|
| <p>(1) <b>Basic Designation</b><br/>MB = MB Series</p> <p>(2) <b>Contact Arrangement</b><br/>1A = 1 Form A (SPST-NO)<br/>1C = 1 Form C (SPDT)<br/>1U = 1 Form U<br/>(SPST-NO, NO with 2 Terminals)</p> <p>(3) <b>Coil Voltage</b><br/>6~24V</p> <p>(4) <b>Enclosure</b><br/>Nil = Unsealed type<br/>S = Sealed type</p> | <p>(5) <b>Terminal Type</b><br/>Nil = Plug-In<br/>P = PCB</p> <p>(6) <b>Cover Type</b><br/>Nil = Standard Cover<br/>M = With mounting bracket</p> <p>(7) <b>Options</b><br/>Nil = Standard<br/>R = Coil with Resistance<br/>D = Coil with Diode</p> <p>(8) <b>Contact Rating</b><br/>Nil = 30A<br/>A = 40A<br/>H1 = NO: 60A, NC: 40A</p> |
|---|--|

**COIL RATINGS (AT 20°C)**

Coil Type	Coil Nominal Voltage (V)	Coil Resistance ( $\Omega \pm 10\%$ )	Pick-Up Voltage (V) $\leq$	Drop-Out Voltage (V) $\geq$	Nominal Current (mA)
DC Standard Coils	6	22.5	3.6	0.6	267
	12	90	7.2	1.2	133
	24	360	14.4	2.4	67

\* Max continuous Voltage at 20°C: 110% of Coil Nominal Voltage.

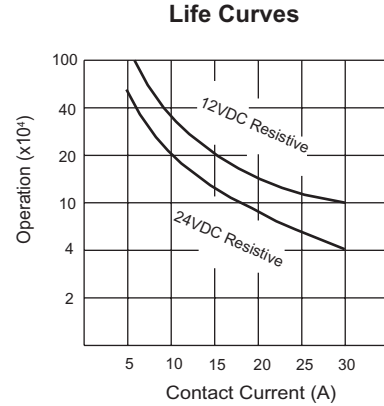
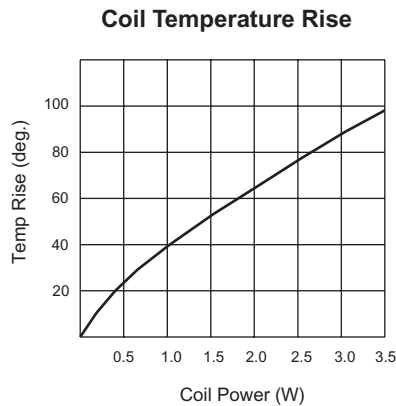
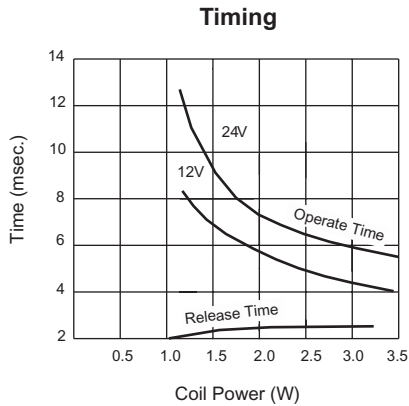
**CONTACT RATINGS**

Contact Arrangement	1 Form A (SPST-NO)	1 Form C (SPDT)	1 Form U (SPST-NO, NO with 2 Terminals)
Max. Switching Power	480W	480W	480W
Mac. Switching Voltage	12VDC	12VDC	12VDC
Max. Switching Current	40A	40A	40A
Contact Resistance	$\leq 50m\Omega$	$\leq 50m\Omega$	$\leq 50m\Omega$
Rating Load	Contact Rating 30A-30A 12VDC Contact Rating 40A-40A 12VDC	Contact Rating 30A-NO: 30A 12 VDC NC: 20A 12VDC Contact Rating 40A-NO: 40A 12VDC NC: 30A 12VDC	Contact Rating 30A-30A 12VDC Contact Rating 40A-40A 12VDC
Contact Material	silver alloy	silver alloy	silver alloy

**CHARACTERISTICS**

Electrical Life	$1 \times 10^5$
Mechanical Life	$1 \times 10^7$
Initial Insulation Resistance	$\geq 100M\Omega$ 500VDC
Contact Resistance	$\leq 50m\Omega$
Operate Time	$\leq 10ms$
Release Time	$\leq 10ms$
Initial Dielectric Strength	50/60Hz 500VAC 1 min. (between open contact) 50/60Hz 500VAC 1 min. (between all conductors)
Vibration Resistance	Malfunction: 10 to 40Hz at Double Amplitude of 1.27mm Destructive: 10 to 40Hz at Double Amplitude of 1.27mm
Shock Resistance	Malfunction: 10G(11ms) Destructive: 100G(6ms)
Ambient Temperature	-40°C ~ +85°C
Relative Humidity	85% at 40°C
Unit Weight	Approx. 30g

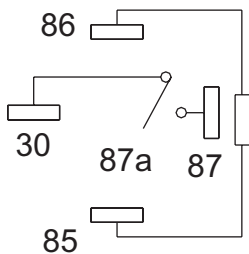
**REFERENCE DATA**



**SCHEMATICS**

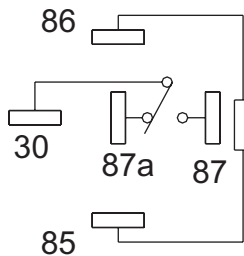
(bottom view)

**1A**



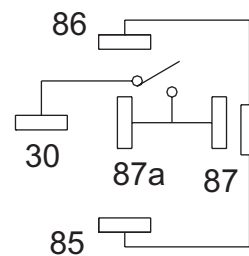
**1A (Coil with Diode)**

**1C**

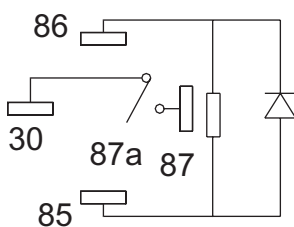


**1C (Coil with Diode)**

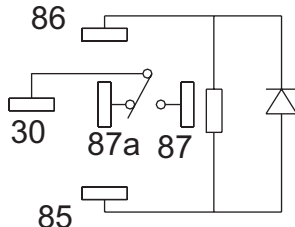
**1U**



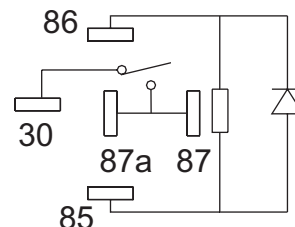
**1U (Coil with Diode)**



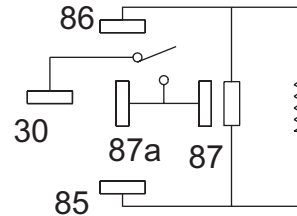
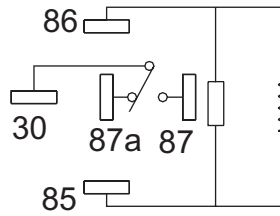
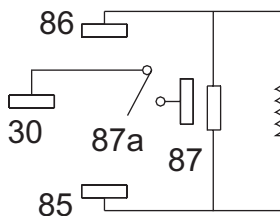
**1A (Coil with Resistance)**



**1C (Coil with Resistance)**



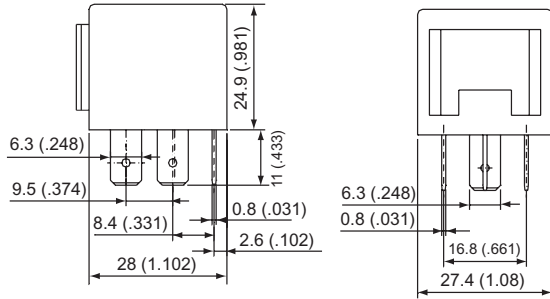
**1U (Coil with Resistance)**



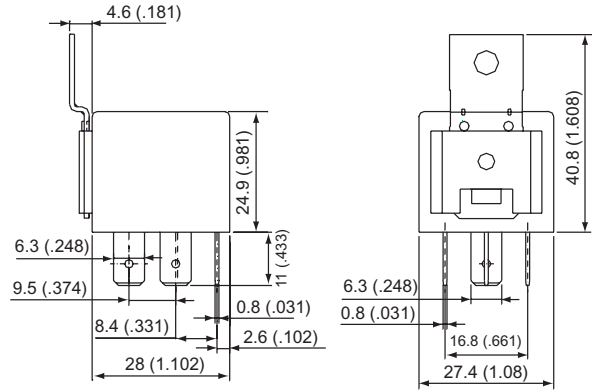
**DIMENSIONS**

**Socket Terminal**

**Standard Dust Cover**

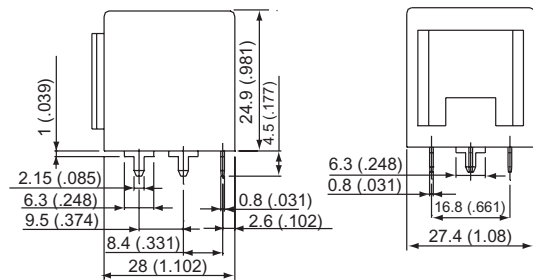


**Mounting Metal Bracket Dust Cover**

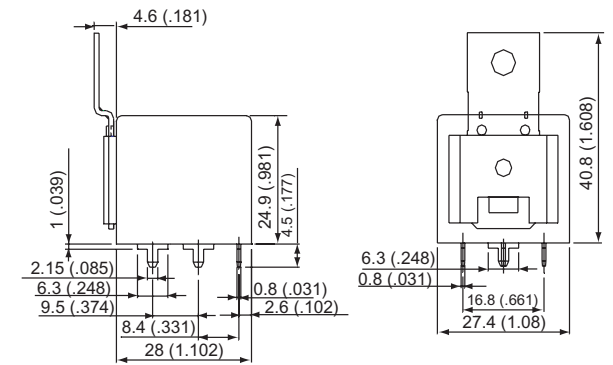


**PCB Terminal**

**Standard Dust Cover**



**Mounting Metal Bracket Dust Cover**



Unit: mm(inch)

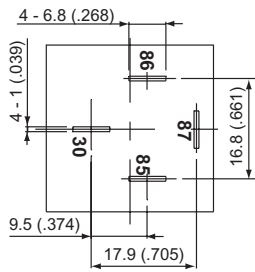
Tolerance: ±0.2(.008)

**PCB LAYOUT**

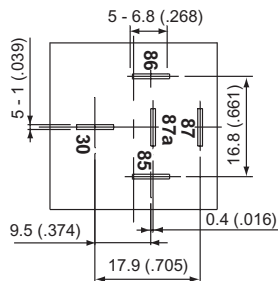
(bottom view)

Unit: mm(inch)

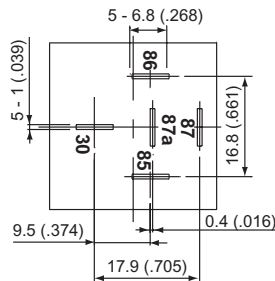
**1A**



**1C**



**1U**



**Bracket**

