

INDUSTRIAL RELAYS

The MA series has a maximum switching capacity up to 30A/40A and a Plug-In or P.C.B. option terminal type. This relay also offers a variety of Form configurations and an optional mounting bracket.

FEATURES

1. Max. switching capacity up to 30A/40A.
2. P.C.B. mounting or quick connect terminals.
3. Optional Mounting bracket.
4. 1 Form A, 1 Form B, 1 Form C and 2 Form A arrangements.

ORDERING INFORMATION

MA **1C** - **12** **M** **C** **T** **P**
(1) (2) (3) (4) (5) (6) (7)

(1) Basic Designation

MA = MA Series

(2) Contact Arrangement

1A = 1 Form A (SPST-NO)

1B = 1 Form B (SPST-NC)

1C = 1 Form C (SPDT)

2A = 2 Form A (DPST-NO)

(3) Coil Voltage

6~24V

(4) Mounting Bracket

Nil = Standard (Without Lever)

M = With Lever

W = Weatherproof Type

(5) Terminal Type

Nil = Plug-In

C = P.C.B.

(6) Contact Load

Nil = 30A

T = 40A

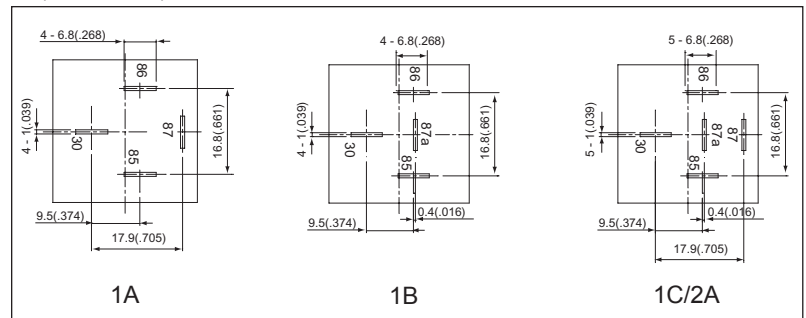
(7) RoHS Compliance

P = RoHS

Nil = Standard

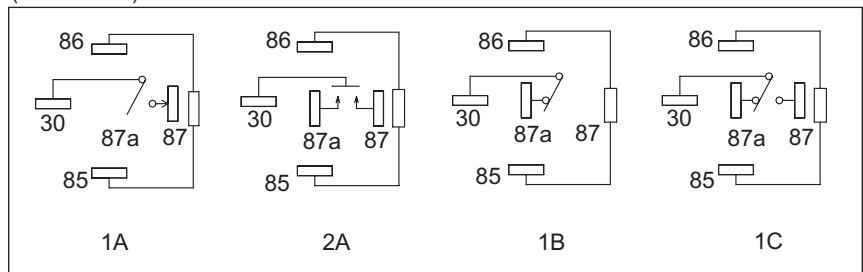
P.C.B. LAYOUT

(bottom view)



SCHEMATICS

(bottom view)



Unit: mm(inch)

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	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: 130% of Coil Nominal Voltage.

CONTACT RATINGS

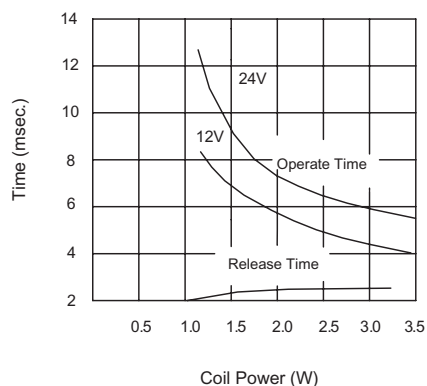
Contact Arrangement		1 Form A (SPST-NO)	1 Form B (SPST-NC)	1 Form C (SPDT)	2 Form A (DPST-NO)
Max. Switching Power		480W			
Max. Switching Voltage		12VDC			
Max. Switching Current		40A			
Contact Resistance		≤50mΩ			
Rating Resistive Load	Contact Load = 30A	30A 12VDC	20A 12VDC	NO: 30A 12VDC NC: 20A 12VDC	2 x 30A 12VDC
	Contact Load = 40A	40A 12 VDC	30A 12VDC	NO: 40A 12VDC NC: 30A 12VDC	2 x 40A 12VDC
Contact Material		silver alloy			

CHARACTERISTICS

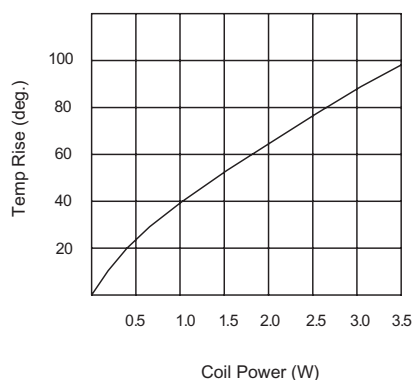
Electrical Life	1 x 10 ⁵
Mechanical Life	1 x 10 ⁷
Initial Insulation Resistance	Min. 100MΩ 500VDC
Contact Resistance (Initial)	≤50mΩ
Operate Time	≤10ms
Release Time	≤10ms
Initial Dielectric Strength	50/60Hz 500VAC 1 min. (between contact and coil) 50/60Hz 500VAC 1 min. (between open contact)
Vibration 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

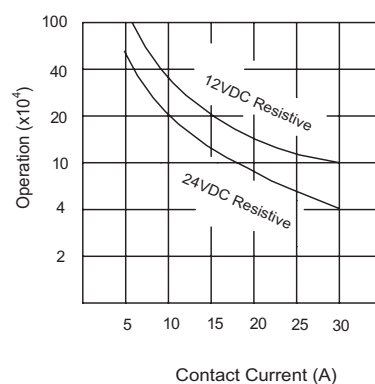
Timing



Coil Temperature Rise



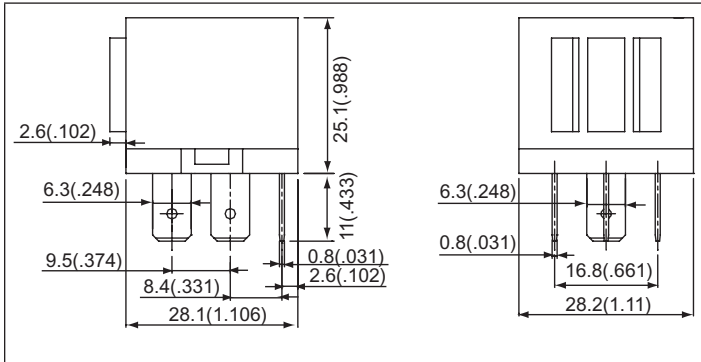
Life Curves



DIMENSIONS

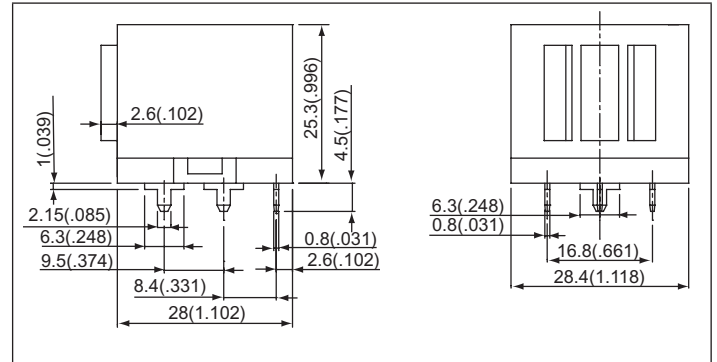
STANDARD (Plug-In)

Standard Type (Without Lever)

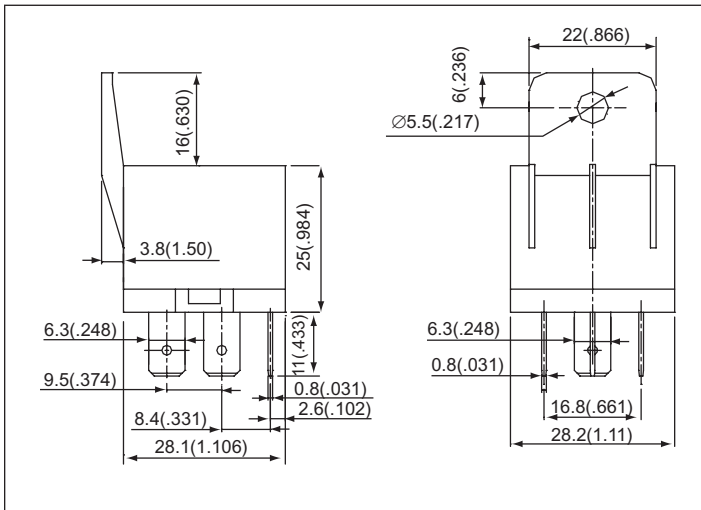


P.C.B. Type

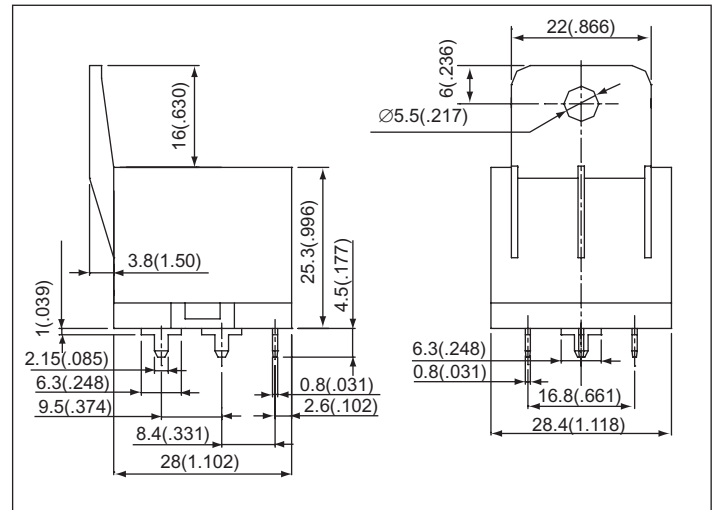
Standard Type (Without Lever)



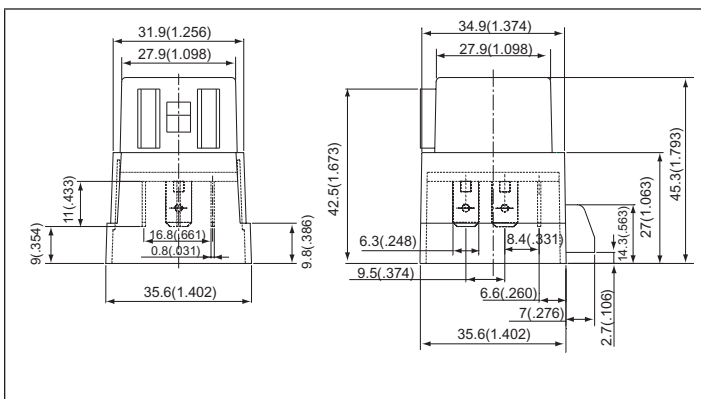
With Lever Type



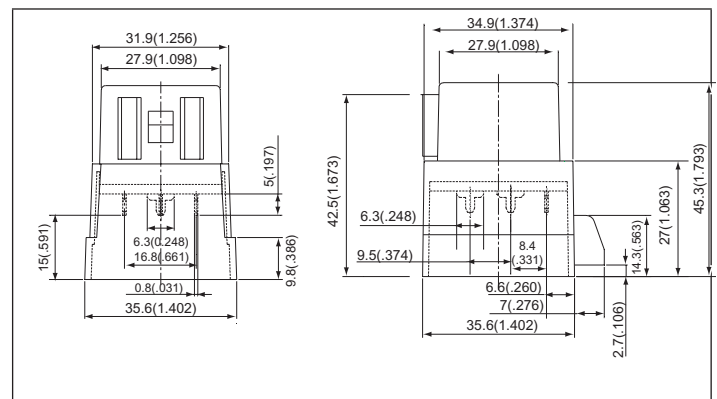
With Lever Type



Weatherproof Type



Weatherproof Type



Unit: mm(inch)

Tolerance: ± 0.2 (.008)

