# Delay On Make (Operate)
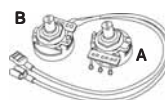## TMV8000/TSU2000 Uni-Timer
## Timing Module

TMV8000

- Operates From 24 ... 240 V AC/DC
- Knob or External Adjust Time Delays
- Delays from 0.1 ... 8 m
- Totally Solid State - Encapsulated
- 1 A Steady - 10 A Inrush
- Two Terminal Series Connection with Load

Approvals:

### Accessories

**B** / **A**  External adjust potentiometer P/Ns: **P1004-12** (fig A) **P1004-12-X** (fig B)

Mounting bracket P/N: **P1023-6**
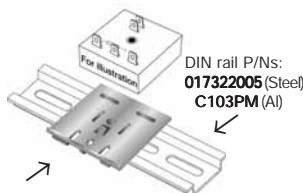
Female quick connect P/N: **P1015-64** (AWG 14/16)

Quick connect to screw adaptor P/N: **P1015-18**

Versa-knob P/N: **P0700-7**

DIN rail P/Ns: **017322005** (Steel) **C103PM** (Al)

DIN rail adaptor P/N: **P1023-20**

See accessory pages for specifications.
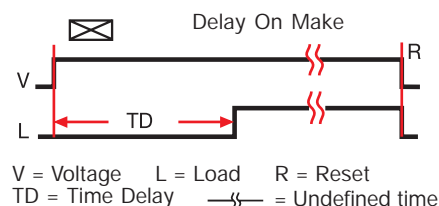
### Description
The TMV and TSU Series are universal voltage delay on make timers.  Two models cover all the popular voltages and time delays.  Available with knob or external adjust time delay.  Its simple two terminals can easily be connected in series with a relay coil, contactor coil, solenoid, lamps, small motor, etc., to delay their energization, prevent short cycling or to sequence on various loads.
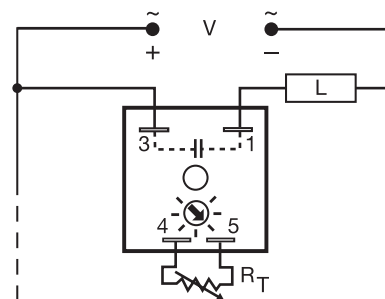
### Operation
Upon application of input voltage, the time delay begins.  The output is de-energized before and during the time delay.  At the end of the time delay, the output energizes and remains energized until input voltage is removed.

**Reset:**  Removing input voltage resets the time delay and output.

### Function

Delay On Make

V = Voltage     L = Load     R = Reset
TD = Time Delay     = Undefined time

### Connection

Load may be connected to terminal 3 or 1.
TMV has knob adjustment.
TSU has external adjustment terminals 4 & 5.

### Ordering Table

| Input | Time Delay | Adjustment | Part Number |
|---|---|---|---|
| 24 ... 240 V AC/DC | 5 ... 480 s | External | TSU2000 |
| 24 ... 240 V AC/DC | 0.1 ...   8 m | Knob | TMV8000 |

TMV/02B01    02.08.05

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## TMV8000/TSU2000 Uni-Timer
## Timing Module

## Technical Data

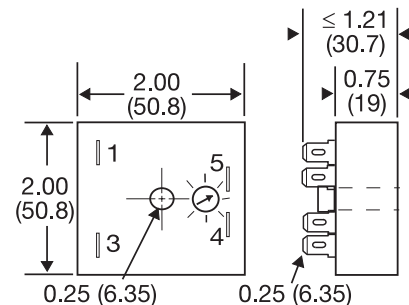| | |
|---|---|
| **Time Delay** | |
| Type | Analog circuitry |
| Range | 5 ... 480 s (TSU2000) |
| | 0.1 ... 8 m (TMV8000) |
| Repeat Accuracy | +/-2% |
| Tolerance (Factory Calibration) | ≤ +/-10% |
| Reset Time | ≤ 100 ms |
| **Input** | |
| Voltage | 24 ... 240 V AC/DC +/-20% |
| Line Frequency | 50 ... 60 Hz |
| **Output** | |
| Type | Solid State |
| Form | Normally Open, open during timing |
| Maximum Load Current | 1 A steady state, 10 A inrush at 55°C |
| Minimum Holding Current | ≤ 40 mA |
| Voltage Drop | ≅ 2.5 V at 1 A |
| **Protection** | |
| Circuitry | Encapsulated |
| Dielectric Breakdown | ≥ 2000 V RMS terminals to mounting surface |
| Insulation Resistance | ≥ 100 MΩ |
| **Mechanical** | |
| Mounting | Surface mount with one #10 (M5 x 0.8) screw |
| Package | 2 x 2 x 1.21 in. (50.8 x 50.8 x 30.7 mm) |
| Termination | 0.25 in. (6.35 mm) male quick connect terminals |
| **Environmental** | |
| Operating Temperature | -20°C ... +70°C |
| Storage Temperature | -30°C ... +85°C |
| Humidity | 95% relative, non-condensing |
| Weight | ≅ 2.4 oz (68 g) |

## TSU2000

### $R_T$ Selection Chart

| Time Delay* | |
|---|---|
| Seconds | $R_T$ Megohm |
| 5 | 0.0 |
| 85 | 0.5 |
| 163 | 1.0 |
| 240 | 1.5 |
| 320 | 2.0 |
| 400 | 2.5 |
| 480 | 3.0 |

* When selecting an external $R_T$ add at least 20% for tolerance of unit and the $R_T$.

## Mechanical View



≤ 1.21 (30.7)
0.75 (19)
2.00 (50.8)
2.00 (50.8)
0.25 (6.35)   0.25 (6.35)

Inches (Millimeters)

TMV has the knob and dial.
TSU has terminals 4 & 5.