# TMEM116 Multifunction Timer

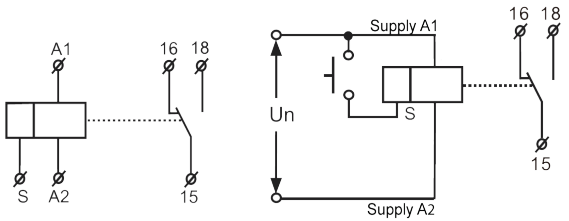
## Features

- 10 Functions
  - 5 Functions controlled by supply voltage
  - 4 Functions controlled by control input
  - 1 Latching Relay Function
- Easy Setup using Rotary Switches
- Adjustable Timing from 0.1 secs - 10 Days
  10 Time Divisions
- LED Light Status Indicator
- 35mm DIN Rail Mounting

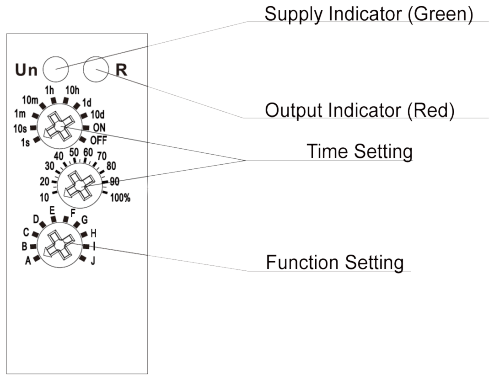
## Specifications

- Supply Terminals: A1 - A2
- Voltage Range: AC/DC 12 - 240V (50-60Hz)
- Burden: AC 0.09 - 3VA / DC 0.05 - 1.7W
- Power Input: AC Max .6VA / 1.3W, AC Max .6VA / 1.9W
- Time Deviation: 10% - Mechanical Setting
- Repeat Accuracy: 0.2% - Set Value Stability
- Output: 1 x SPDT
- Current Rating: 16A / AC1
- Switching Voltage: 250V AC / 24V DC
- Min Breaking Capacity DC: 500mW
- Mechanical Life: 1 x $10^7$
- Electrical Life (AC1): 1 x $10^5$
- Reset Time: Max .200ms
- Operating Temperature: -20°C to +55°C
- Protection Degree: IP40 for Front Panel, IP20 Terminals
- Max Cable Size: 1 x 2.5mm$^2$
- Tightening Torque: 0.4Nm
- Standards: IEC60947-5-1

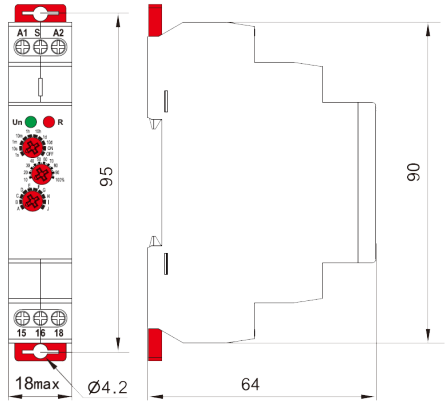
## Wiring Diagram




## Diagram




## Dimensions




## Functions

### A. On Delay (Power On)

When the input voltage (U) is applied, timing delay (t) begins. Relay contacts (R) change state after time delay is complete. Contacts (R) return to their shelf state when input voltage (U) is removed. Trigger switch is not used in this function.


### B. Interval (Power On)

When the input voltage (U) is applied, relay contacts (R) change state immediately and timing cycle begins. When time delay is complete, contacts return to shelf state. When input voltage (U) is removed, contacts will return to their shelf state. Trigger switch is not used in this function.


### C. Repeat Cycle (Starting Off)

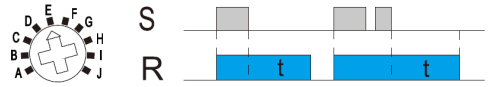
When the input voltage (U) is applied, time delay (t) begins. When time delay (t) is complete, relay contacts (R) change state for time delay (t). This cycle will repeat until input voltage (U) is removed. Trigger switch is not used in this function.


### D. Repeat Cycle (Starting On)

When the input voltage (U) is applied, relay contacts (R) change state immediately and time delay (t) begins. When time delay (t) is complete, contacts return to their shelf state for time delay (t). This cycle will repeat until input voltage U is removed. Trigger switch is not used in this function.

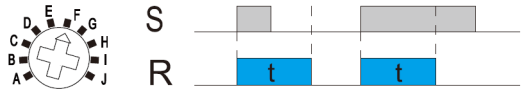
**E. Off Delay (S Break)**

The input voltage (U) is applied continuously. When trigger switch (S) is closed, relay contacts (R) change state. When trigger switch (S) is opened, time delay (t) begins. When time delay (t) is complete, contacts (R) return to their shelf state. If trigger switch (S) is closed before time delay (t) is complete, then time is reset. When trigger switch (S) is opened, the delay begins again, and relay contacts (R) remain in their energized state. If input voltage (U) is removed, relay contacts (R) return to their shelf state.



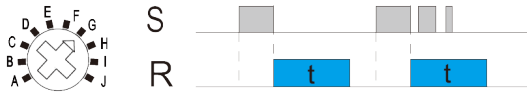

**F. Single Shot**

Upon application of input voltage (U), the relay is ready to accept trigger signal (S). Upon application of the trigger signal (S), the relay contacts (R) transfer and the preset time (t) begins. During time out, the trigger signal (S) is ignored. The relay resets by applying the trigger switch (S) when the relay is not energized.



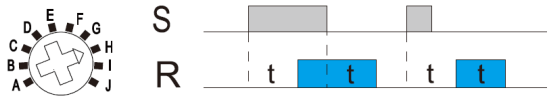

**G. Single Shot Trailing Edge (Non-Retriggerable)**

Upon application of input voltage (U), the relay is ready to accept trigger signal (S). Upon application of the trigger signal (S), the relay contacts (R) transfer and the preset time (t) begins. At the end of the preset time (t) the relay contacts (R) return to their normal condition unless the trigger switch (S) is opened and closed prior to time out (t) (before preset time elapses). Continuous cycling of the trigger switch (S) at a rate faster than the preset time will cause the relay contacts (R) to remain closed. If input voltage (U) is removed, relay contacts (R) return to their shelf state.



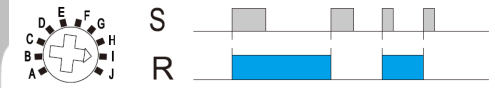

**H. ON/OFF Delay**

Input voltage (U) must be applied continuously. When trigger switch (S) is closed, time delay (t) is complete, relay contacts (R) change state and remain transferred until trigger switch (S) is opened. If input voltage (U) is removed, relay contacts (R) return to their shelf state.



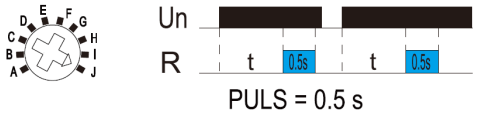

**I. Latching Relay**

Input voltage (U) must be applied continuously. Output changes state with every trigger switch (S) closure. If input voltage (U) is removed, relay contacts (R) return to their shelf state.



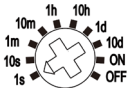
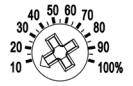

**J. Pulse Generator**

Upon application of input voltage (U), a single output pulse of 0.5 seconds is delivered to relay after time delay (t). Power must be removed and reapplied to repeat pulse. Trigger switch is not used in this function.




PULS = 0.5 s

**Time Setting Instructions**

| | |
|---|---|
|   | Knob 1:<br>Delay gear setting<br>'s' = second, 'm' = minute, 'h' = hour,<br>'d' = day<br>'ON' for relay action (15-18 closed)<br>'OFF' for relay open (15-18 open) |
|   | Knob 2:<br>Fine adjustment of delay time<br>10% ~ 100% adjustable |
| Delay Time = Knob 1 x Knob 2<br>**Example 1:**<br>Time setting required is 5 seconds. Set Knob 1 to 10 seconds and Knob 2 to 50%.<br>Delay time = 10s x 50% = 5s.<br>**Example 2:**<br>Time setting required is 8 minutes. Set Knob 1 to 10 minutes and Knob 2 to 80%.<br>Delay time = 10m x 80% = 8m. | |