

# TUB

## Universal Plug-In Timer



- One Timer Does It All
- Multiple Functions
- Multiple Time Delays
- Digital CMOS Design
- 10 Amp, SPDT
- $\pm 0.2\%$  Repeatability
- Transient Protected
- Timing Ranges Up To 72 Minutes



### Operation

#### Universal Timer

The TUB timer is easily field programmable by the customer. The multiple function and time delay characteristics are selected by connecting jumpers to the TUB's standard socket. The time delays range from .1 to 17 seconds up to 25 seconds to 72 minutes. A benefit is that you can easily program functions and time ranges, but someone else can't change them by flipping a switch.

- On Delay
- Interval On
- One Shot
- Off Delay
- Repeat Cycle (First Cycle On or First Cycle Off)

### Specifications

#### Electrical

##### Input Voltage:

24 Volts, AC or DC,  $\pm 10\%$   
115 Volts, AC or DC,  $\pm 10\%$

##### Time Delays:

Type: Adjustable  
Range: 100 Milliseconds to 72 Minutes in 4 ranges  
Repeat Accuracy:  $\pm 0.2\%$  of Time Range or less

##### Control Signal:

30 Milliseconds to insure turn-on

##### Reset Times:

100 Milliseconds, Max.  
60 Milliseconds, Typical

**Protection:** Varistor and/or R-C Network

**Power Consumption:** 4VA

#### Output Relay:

10Amp, SPDT  
500,000 Full Load Cycles  
50,000,000 Mechanical Cycles

#### U.L. & CSA Output Ratings:

5 Amps, 1/3 HP, 125VA @ 240VAC  
5 Amps, 1/6 HP, 125VA @ 120VAC

#### Physical

**Mounting:** Plug-In

**Termination:** 11 Pin or Blade Base

**Packaging:** Dust Cover

**Weight:** 7 Oz.

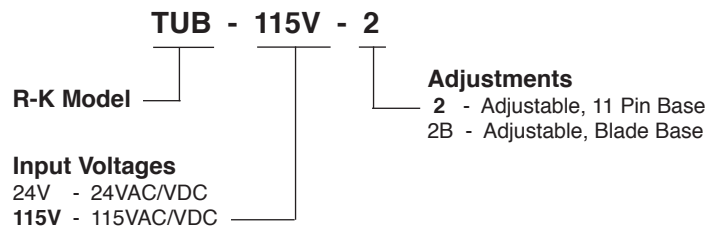
#### Ambient Temperatures

**Operating:**  $-10^{\circ}\text{C}$  to  $55^{\circ}\text{C}$

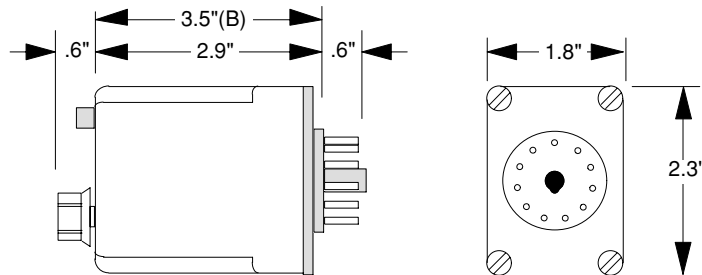
**U.L. Operating:**  $-10^{\circ}\text{C}$  to  $40^{\circ}\text{C}$

**Storage:**  $-10^{\circ}\text{C}$  to  $85^{\circ}\text{C}$

### Ordering Information

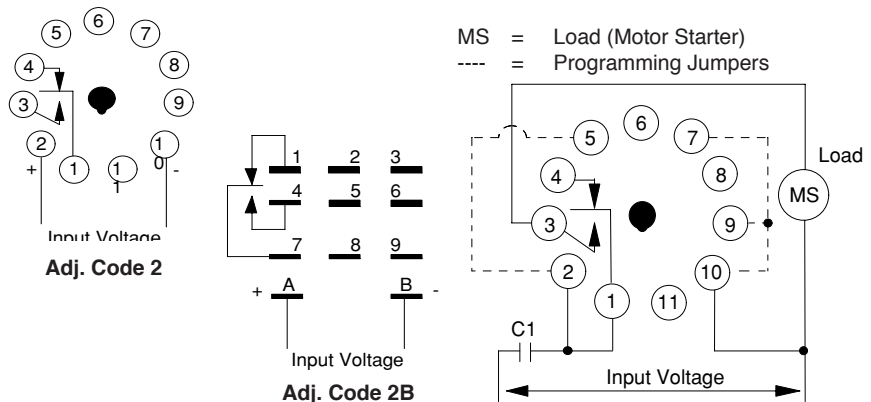


### Dimensions



### Connections

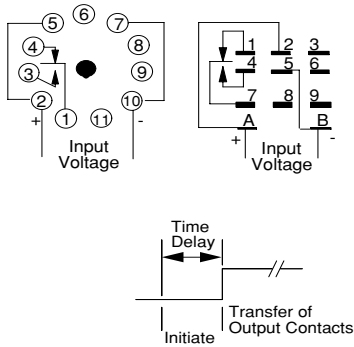
**Example of TUB hook-up for:**  
On Delay, .1 to 17 seconds



## Function Connections

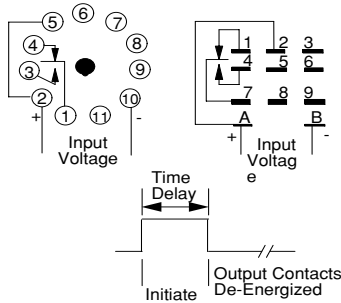
### On Delay

When input voltage is applied to the TUB, the timing cycle begins. At the end of the timed period the internal relay is energized, transferring the output contacts. When input voltage is removed, the timing circuit is reset and the internal relay is de-energized. To obtain the On Delay function with an 11 pin base, jumper pin 2 to pin 5 and pin 7 to pin 10.



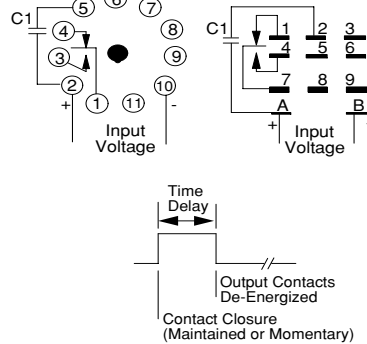
### Interval On

When input voltage is applied to the TUB, the internal relay is energized transferring the output contacts and the timing cycle begins. At the end of the timed period the internal relay is de-energized and the timing circuit is reset. Removal of input voltage during the timing cycle will de-energize the internal relay and reset the timing circuit. To obtain the Interval On function with an 11 pin base, jumper pin 2 to pin 5.



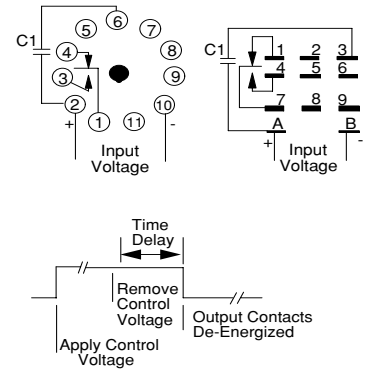
### One Shot

When input voltage is available, closure of the customer supplied contact (C1) will energize the internal relay and begin the timing cycle. At the end of the timed period, the relay will be de-energized. Closure of the contact (C1) may be maintained, momentary or repeated. The relay will only remain energized for the time period initiated by the initial closure of the contact (C1). The TUB resets when the timed cycle is complete and the contact (C1) is open or when the input voltage is removed. To obtain the One Shot function with an 11 pin base, place the customer supplied contact (C1) between pin 2 and pin 6.



### Off Delay

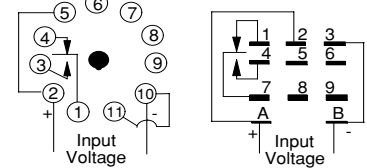
When input voltage is available, closure of the customer supplied contact (C1) will energize the internal relay. When the contact (C1) is opened, the timing cycle begins. At the end of the timed period, the relay will be de-energized. Re-closure of the contact (C1) during the timing cycle will reset the timing cycle. The TUB resets when the timed cycle is complete, the contact is re-closed during timing or the input voltage is removed. To obtain the Off Delay function with an 11 pin base, place the customer contact (C1) between pin 2 and pin 6.



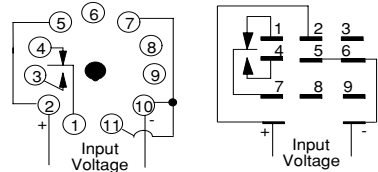
### Repeat Cycle

The TUB can be operated with the first cycle On or the first cycle Off. For first cycle On, when input voltage is applied to the TUB, the internal relay is energized and the first delay period (on time) begins. At the end of the on time period, the internal relay is de-energized and the second delay period (off time) begins. At the end of the off time, the internal relay is energized again. The TUB will continue to cycle the internal relay until the input voltage is removed. The opposite operation is obtained when the TUB is connected with the first cycle Off. Since there is only one adjustment knob, On and Off times are equal. (The CLRB on page 41 is available with independent On and Off times.)

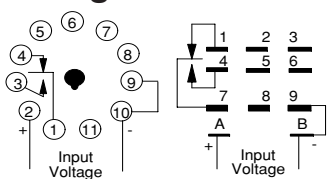
### On Time First



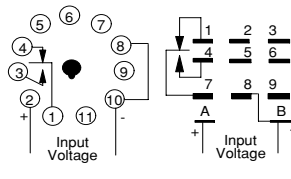
### Off Time First



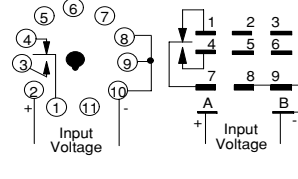
## Timing Connections



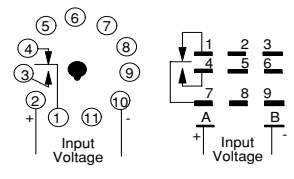
.1 Sec. to 17 Sec.



.4 Sec. to 68 Sec.



3.5 Sec. to 540 Sec.



25 Sec. to 72 Min.