

# ON DELAY | INLINE (SERIES CONNECTION)

SOLID STATE OUTPUT | DIP-SWITCH DIGITAL-SET | THL-8 SERIES



- ◆ Universal input voltage: 24-240V AC & 12-48V DC
- ◆ DIP-switch for accurate digital-set of any time delay from 100ms to 10,230 seconds
- ◆ Two-terminal series-connection with the load
- ◆ Cost effective design & compact 2" x 2" enclosure are ideal for volume OEM applications
- ◆ Microprocessor-based design for greater performance & maximum flexibility
- ◆ Encapsulated for protection against harsh environments
- ◆ Output rated 1A continuous/10A inrush pilot duty is perfect for high duty cycle/long life applications



The THL-8 On Delay Inline (Series Connection) offers an easy and accurate method to select any time delay. The THL-8 Series is a compact 2" x 2" encapsulated enclosure with a universal input voltage. It is connected in series with the load requiring only 2 terminals/connections.

Three time ranges are available: 0.1 – 102.3 seconds, 1 – 1,023 seconds and 10 – 10,230 seconds. Programming is accomplished through the use of a 10-position DIP-switch. Each position is marked with a binary time increment. The required delay is selected by moving the switch of each increment to the ON position and adding their corresponding values (see examples below). This method provides a greater setting accuracy than is found on other units with an analog potentiometer.

These products feature a universal input voltage of 24-240V AC and 12-48V DC. The inline two-terminal output is rated 1A continuous/10A inrush pilot duty, and is ideal for high duty cycle and long life applications. The enclosure is encapsulated for protection against harsh environments.

For similar products with choices of onboard and remote analog-set or fixed time delay, see the THL-1 Series.

FUNCTION ■	INPUT VOLTAGE	CATALOG NUMBER **	WIRING
ON DELAY <b>A</b>	24-240V AC & 12-48V DC	THL-8024U-**	<p>DIAGRAM 329</p>

■ See "Definitions of Timing Functions".

\*\* Complete Product Number using two-digit Code from Table below.

## TIME DELAYS

**TIMING RANGE TABLE	
COMPLETE PRODUCT NUMBER USING TWO DIGIT CODE BELOW: i.e., THL-8024U-40	
Time Delay Range	Code
0.1 - 102.3 Sec.	40
1 - 1,023 Sec.	41
10 - 10,230 Sec.	42

### BINARY SWITCH OPERATION

-40 RANGE 0.1 - 102.3 SEC	-41 RANGE 1 - 1,023 SEC	-42 RANGE 10 - 10,230 SEC
OFF → ON	OFF → ON	OFF → ON
<input type="checkbox"/> 0.1	<input type="checkbox"/> 1	<input type="checkbox"/> 10
<input type="checkbox"/> 0.2	<input type="checkbox"/> 2	<input type="checkbox"/> 20
<input type="checkbox"/> 0.4	<input type="checkbox"/> 4	<input type="checkbox"/> 40
<input type="checkbox"/> 0.8	<input type="checkbox"/> 8	<input type="checkbox"/> 80
<input type="checkbox"/> 1.6	<input type="checkbox"/> 16	<input type="checkbox"/> 160
<input type="checkbox"/> 3.2	<input type="checkbox"/> 32	<input type="checkbox"/> 320
<input type="checkbox"/> 6.4	<input type="checkbox"/> 64	<input type="checkbox"/> 640
<input type="checkbox"/> 12.8	<input type="checkbox"/> 128	<input type="checkbox"/> 1280
<input type="checkbox"/> 25.6	<input type="checkbox"/> 256	<input type="checkbox"/> 2560
<input type="checkbox"/> 51.2	<input type="checkbox"/> 512	<input type="checkbox"/> 5120
2.5 SECONDS	300 SECONDS (5 MINUTES)	1800 SECONDS (30 MINUTES)

COMBINE FOR TOTAL TIME IN SECONDS



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## APPLICATION DATA

### Voltage Tolerance:

AC Operation: +10 to -15% of nominal voltage, 50/60 Hz  $\pm 5\%$   
DC Operation: +10 to -15% of nominal voltage

**Load (Burden):** Maximum of 1 VA for all voltages

### Setting Accuracy:

#### Constant Voltage & Temperature w/i specifications:

$\pm 2\%$  of set time or  $\pm 50\text{ms}$ , whichever is greater

#### For Variable Voltage & Temperature w/i specifications:

$\pm 5\%$  of set time or  $\pm 50\text{ms}$ , whichever is greater

### Repeat Accuracy:

#### Constant Voltage & Temperature w/i specifications:

$\pm 0.1\%$  of set time or  $\pm 0.02$  seconds, whichever is greater

#### For Variable Voltage & Temperature w/i specifications:

$\pm 1\%$  of set time or  $\pm 0.02$  seconds, whichever is greater

**Reset Time:** 50ms

### Start-up Time:

(Time from when power is applied until unit is timing)  
0.02 Seconds

### Maintain Function Time:

(Time unit continues to operate after power is removed)  
0.01 Seconds

**Temperature:** Operating:  $-40^\circ$  to  $65^\circ\text{C}$  ( $-40^\circ$  to  $149^\circ\text{F}$ )

Storage:  $-40^\circ$  to  $85^\circ\text{C}$  ( $-40^\circ$  to  $185^\circ\text{F}$ )

### Output Contacts:

Normally Open Solid State 1A Continuous, 10A Inrush @  $65^\circ\text{C}$ , Pilot Duty

### Life:

No predictable failure if used within operating parameters.

**Leakage Current (OFF-State):**  $< 5\text{ma}$  @ 240V AC

**Minimum Load Current:** 20ma

**Effective Voltage Drop (ON-State):** Maximum 3V @ 1A for all voltages

### Compatibility:

Using a solid state switch to initiate the time sequence is acceptable. See [www.macromatic.com/leakage](http://www.macromatic.com/leakage) or contact Macromatic for information regarding leakage current limits and other solid state design considerations.

### Mounting:

Surface with one #8 or #10 screw and a maximum tightening torque of 15 in-lbs.

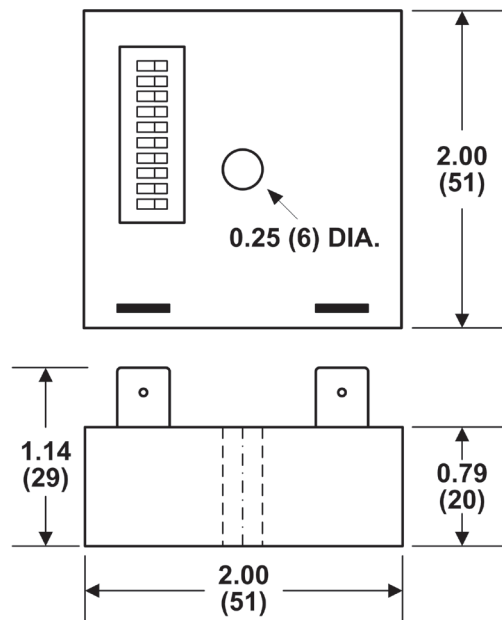
### Termination:

0.25" male quick-connect terminals

### Approvals:



## DIMENSIONS



All Dimensions in  
Inches (Millimeters)