

# MULTI-FUNCTION | PROGRAMMABLE MULTI-TIME RANGE | MULTI-VOLTAGE RELAY OUTPUT | THR-3 SERIES



- ◆ Three Catalog Numbers Offer All These Features:
  - ▶ Multi-Function: 4 common time delay functions in each one
  - ▶ Universal Voltage: 24-240VAC & 12-125VDC
  - ▶ Time Ranges: 0.1 Sec to 100 Minutes (1,000 Minutes on Dual Time product)
  - ▶ Onboard & remote adjust of time delay (remote adjust not offered on THR-3856U)
  - ▶ THR-3856U allows different ON & OFF times
- ◆ Cost effective design & compact 2" x 2" enclosure
- ◆ Encapsulated for protection against harsh environments
- ◆ 10A SPDT relay output contacts can handle most pilot duty & fractional HP loads



Better. By Design.

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The THR-3 Series products are designed to replace thousands of products from Macromatic and many other manufacturers with just three Catalog Numbers. Each comes with four functions and four timing ranges covering 0.1 second to 100 minutes (1,000 minutes on THR-3856U dual time unit). On the same unit, choose between onboard adjustable, onboard fixed and remote adjustable time delay setting (remote time delay not available on THR-3856U). All set up is done with DIP switches for ease of use. A universal input voltage of 24-240V AC and 12-125V DC adds to the ultimate flexibility of these products. All products are encapsulated for protection against harsh elements. A 10A SPDT relay output rating can handle most pilot duty and fractional HP loads.

FUNCTIONS (4 in each Product)	INPUT VOLTAGE	PRODUCT NUMBER	WIRING
<ul style="list-style-type: none"> <li>● ON DELAY</li> <li>● OFF DELAY</li> <li>● INTERVAL</li> <li>● SINGLE SHOT</li> </ul>	24-240V AC & 12-125V DC	THR-3816U	<p>Diagram 348</p>
<ul style="list-style-type: none"> <li>● FLASHER OFF</li> <li>● FLASHER ON</li> <li>● WATCHDOG</li> <li>● SINGLE SHOT FALLING EDGE</li> </ul>	24-240V AC & 12-125V DC	THR-3836U	<p>Diagram 348</p>
<ul style="list-style-type: none"> <li>● REPEAT CYCLE OFF</li> <li>● REPEAT CYCLE ON</li> <li>● DELAYED INTERVAL</li> <li>● DELAYED INTERVAL (TRIGGERED)</li> </ul>	24-240V AC & 12-125V DC	THR-3856U *	<p>Diagram 352</p>

Some functions require the use of a Trigger to initiate the unit.

See Macromatic Catalog or [www.macromatic.com/functions](http://www.macromatic.com/functions) for definitions & explanations of Timing Functions.

\* The THR-3856U has independently selectable & adjustable ON & OFF times.

## TIME DELAYS

THR-3 Series Products have three time delay options (two for THR-3856U dual-time product):

- **Onboard Adjustable Time Delay**-after selecting the desired time range, use the top-mounted potentiometer provided with the unit to adjust within that range (The THR-3856U has independently selectable & adjustable ON & OFF times).
- **Onboard Fixed Time Delay**-although these units come with an onboard potentiometer, they can be used to replace products with fixed time delays. After selecting the desired time range, set the top-mounted potentiometer at the fixed delay required (epoxy can be applied to prevent further changes if desired).
- **Remote Time Delay (THR-3816U & THR-3836U only)**-after selecting the desired time range & setting up the unit for remote time delay adjustment, connect a remote potentiometer for remote adjustability or a resistor for fixed time delay. Note that these products will only work with 100K, 1M or 2M remote potentiometers or resistors.

Build your Time Delay Relays with the [Online Product Builder](#)

# THR-3 SERIES

## RELAY OUTPUT

### APPLICATION DATA

**Voltage Tolerance:**

AC Operation: +10/-15% of nominal at 50/60 Hz  
 DC Operation: +10/-15% of nominal

**Load (Burden):** Maximum of 2 VA for all voltages

**Setting Accuracy:**

Maximum Setting (Adjustable): +5%, -0%  
 Minimum Setting (Adjustable): +0%, -50%

**Repeat Accuracy** (constant voltage and temperature):

±0.1% or ± 0.04 seconds, whichever is greater

**Reset Time:**

Triggered with Input Voltage: 100ms  
 Triggered with Control Switch: 40ms

**Start-up Time** (Time from when power is applied until unit is timing):

0.05 Seconds

**Maintain Function Time** (Time unit continues to operate after power is removed):

0.01 Seconds

**Units Triggered by a Control Switch:**

Minimum required trigger switch closure time is 50ms.

**Temperature:** Operating: -28° to 65°C (-18° to 149°F)

Storage: -40° to 85°C (-40° to 185°F)

**Output Contacts:**

10A @ 240VAC / 7A @ 28VDC SPDT, ¼hp @ 120VAC (N.O.)

**Life:**

Mechanical: 10,000,000 operations  
 Full Load: 100,000 operations

**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.

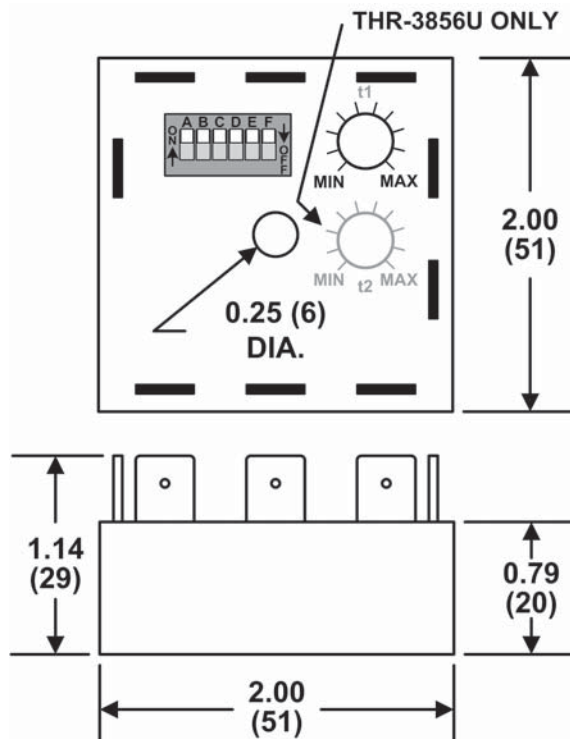
**Termination:**

0.25" male quick-connect terminals

**Approvals:**



### DIMENSIONS



All Dimensions in Inches (Millimeters)