

TIME DELAY RELAYS

THR-3 SERIES ENCAPSULATED--RELAY OUTPUT

PROGRAMMABLE: MULTI-FUNCTION, MULTI-TIME RANGE & MULTI-VOLTAGE

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 & 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 & 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 & 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 & fractional HP loads.

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



- ◆ 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



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TIME DELAY RELAYS

THR-3 SERIES ENCAPSULATED--RELAY OUTPUT

APPLICATION DATA & DIMENSIONS

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 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.

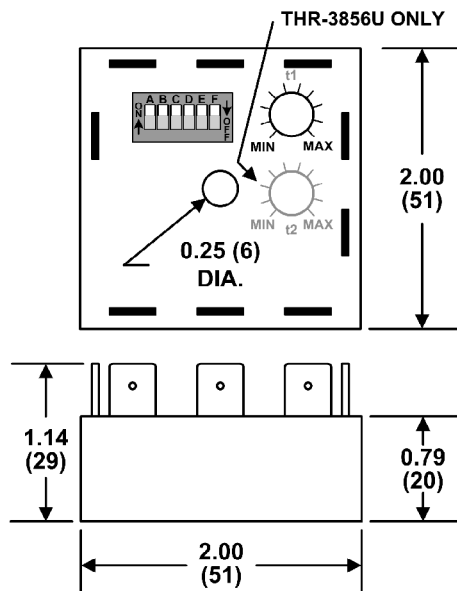
Termination:

0.25" male quick-connect terminals

Approvals:



DIMENSIONS



All Dimensions in
Inches (Millimeters)