

ON DELAY, INTERVAL, FLASHER, CYCLE & DELAYED INTERVAL

RELAY OUTPUT | THR SERIES

Isolated Relay Common

FUNCTION ■	INPUT VOLTAGE	PRODUCT NUMBER **	WIRING
ON DELAY A	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-10262-** THR-10266-** THR-10268-** THR-10261-**	<p>Onboard Adjustable or Fixed Time Delay</p> <p>DIAGRAM 300</p> <p>Remote Time Delay</p> <p>DIAGRAM 302</p>
INTERVAL ON B	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-10562-** THR-10566-** THR-10568-** THR-10561-**	
FLASHER (OFF Time 1st) E	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-10862-** THR-10866-** THR-10868-** THR-10861-**	
FLASHER (ON Time 1st) F	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-10962-** THR-10966-** THR-10968-** THR-10961-**	
REPEAT CYCLE * (OFF Time 1st) L	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-13162-** THR-13166-** THR-13168-** THR-13161-**	
REPEAT CYCLE * (ON Time 1st) M	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-15162-** THR-15166-** THR-15168-** THR-15161-**	
DELAYED INTERVAL * N	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-16162-** THR-16166-** THR-16168-** THR-16161-**	



- ◆ 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
- ◆ 10A SPDT relay output contacts can handle most pilot duty & fractional HP loads
- ◆ Onboard & remote adjustable or fixed time delays from 0.05 seconds to 100 hours



■ See "Definitions of Timing Functions".

* ON & OFF Time Ranges for these functions are the same. See www.macromatic.com/onoff for information on how to order a unit with different ON & OFF time ranges.

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

TIME DELAYS

THR Series Products have three time delay options:

- **Onboard Adjustable Time Delay**--complete Product Number by adding two-digit Code from Table at right, i.e., THR-10262-30 is an On Delay with a time delay range of 0.1-10 seconds. * See www.macromatic.com/onoff for information on how to order these functions with different ON & OFF time ranges.
- **Onboard Fixed Time Delay**--replace two-digit Code with suffix "F" followed by delay [0.1 ... 100] followed by (S) seconds, (M) minutes or (H) hours, i.e., THR-10262-F5S is an On Delay with a time delay fixed at 5 seconds.
- **Remote Time Delay**--THR Series products can be built with two terminals for remote adjustable or fixed time delays.

** TIMING RANGE TABLE	
Time Delay Range	Code
0.05 - 5 Sec.	04
0.1 - 10 Sec.	30
1 - 100 Sec.	31
10 - 1,000 Sec.	36
0.1 - 10 Min.	32
1 - 100 Min.	33
10 - 1,000 Min.	37
1 - 100 Hr.	35



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ON DELAY, INTERVAL, FLASHER, CYCLE & DELAYED INTERVAL

RELAY OUTPUT | THR SERIES

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Relay Common Internally Connected to Pin 2

FUNCTION ■	INPUT VOLTAGE	PRODUCT NUMBER **	WIRING
ON DELAY A	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-10262-**J THR-10266-**J THR-10268-**J THR-10261-**J	<p>Onboard Adjustable or Fixed Time Delay</p> <p>DIAGRAM 301</p> <p>Remote Time Delay</p> <p>DIAGRAM 303</p>
INTERVAL ON B	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-10562-**J THR-10566-**J THR-10568-**J THR-10561-**J	
FLASHER (OFF Time 1st) E	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-10862-**J THR-10866-**J THR-10868-**J THR-10861-**J	
FLASHER (ON Time 1st) F	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-10962-**J THR-10966-**J THR-10968-**J THR-10961-**J	
REPEAT CYCLE * (OFF Time 1st) L	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-13162-**J THR-13166-**J THR-13168-**J THR-13161-**J	
REPEAT CYCLE * (ON Time 1st) M	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-15162-**J THR-15166-**J THR-15168-**J THR-15161-**J	
DELAYED INTERVAL * N	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-16162-**J THR-16166-**J THR-16168-**J THR-16161-**J	

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TIME DELAYS

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- **Onboard Fixed Time Delay**--replace two-digit Code with suffix "F" followed by delay [0.1 ... 100] followed by (S) seconds, (M) minutes or (H) hours, i.e., THR-10262-F5SJ is an On Delay with a time delay fixed at 5 seconds.
- **Remote Adjustable Time Delay**--THR Series products can be built with two terminals for remote adjustable or fixed time delays.

** TIMING RANGE TABLE

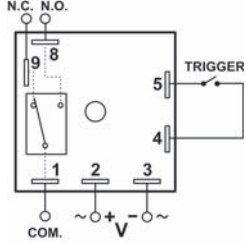
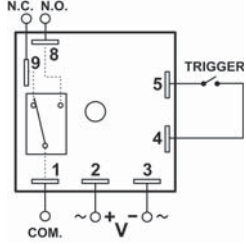
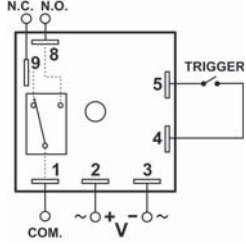
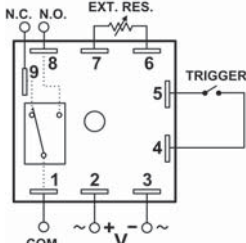
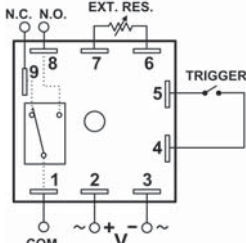
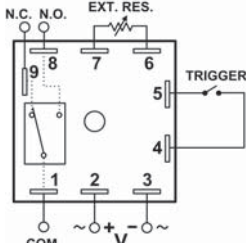
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1 - 100 Hr.	35

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OFF DELAY, SINGLE SHOT, WATCHDOG, SINGLE SHOT FALLING EDGE, ON DELAY/OFF DELAY & DELAYED INTERVAL

RELAY OUTPUT | THR SERIES

Isolated Control Switch & Isolated Relay Common

FUNCTION ■	INPUT VOLTAGE	PRODUCT NUMBER **	WIRING
OFF DELAY C	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-11662-** THR-11666-** THR-11668-** THR-11661-**	Onboard Adjustable or Fixed Time Delay 
SINGLE SHOT D	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-11562-** THR-11566-** THR-11568-** THR-11561-**	
WATCHDOG (Retriggerable Single Shot) J	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-11362-** THR-11366-** THR-11368-** THR-11361-**	
SINGLE SHOT FALLING EDGE (Retriggerable) H	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-12262-** THR-12266-** THR-12268-** THR-12261-**	
ON/OFF DELAY * G	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-14162-** THR-14166-** THR-14168-** THR-14161-**	
DELAYED INTERVAL * (Triggered) P	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-16562-** THR-16566-** THR-16568-** THR-16561-**	



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- ◆ Onboard & remote adjustable or fixed time delays from 0.05 seconds to 100 hours



- See "Definitions of Timing Functions".
- * ON & OFF Time Ranges for these functions are the same. See www.macromatic.com/onoff for information on how to order a unit with different ON & OFF time ranges.
- ** Complete Product Number using two-digit Code from Table below.

TIME DELAYS

THR Series Products have three time delay options:

- **Onboard Adjustable Time Delay**--complete Product Number by adding two-digit Code from Table at right, i.e., THR-11662-30 is an Off Delay with a time delay range of 0.1-10 seconds.
* See www.macromatic.com/onoff for information on how to order these functions with different ON & OFF time ranges.
- **Onboard Fixed Time Delay**--replace two-digit Code with suffix "F" followed by delay [0.1 ... 100] followed by (S) seconds, (M) minutes or (H) hours, i.e., THR-11662-F5S is an Off Delay with a time delay fixed at 5 seconds.
- **Remote Adjustable Time Delay**--THR Series products can be built with two terminals for remote adjustable or fixed time delays.

** TIMING RANGE TABLE

Time Delay Range	Code
0.05 - 5 Sec.	04
0.1 - 10 Sec.	30
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10 - 1,000 Sec.	36
0.1 - 10 Min.	32
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10 - 1,000 Min.	37
1 - 100 Hr.	35



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RELAY OUTPUT | THR SERIES

Isolated Control Switch & Relay Common Internally Connected to Pin 2

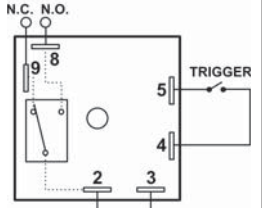
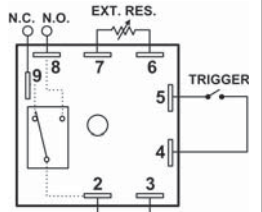


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FUNCTION ■	INPUT VOLTAGE	PRODUCT NUMBER **	WIRING
OFF DELAY C	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-11662-**J THR-11666-**J THR-11668-**J THR-11661-**J	Onboard Adjustable or Fixed Time Delay 
SINGLE SHOT D	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-11562-**J THR-11566-**J THR-11568-**J THR-11561-**J	Remote Time Delay 
WATCHDOG (Retriggerable Single Shot) J	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-11362-**J THR-11366-**J THR-11368-**J THR-11361-**J	
SINGLE SHOT FALLING EDGE (Retriggerable) H	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-12262-**J THR-12266-**J THR-12268-**J THR-12261-**J	
ON/OFF DELAY * G	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-14162-**J THR-14166-**J THR-14168-**J THR-14161-**J	
DELAYED INTERVAL * P	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-16562-**J THR-16566-**J THR-16568-**J THR-16561-**J	

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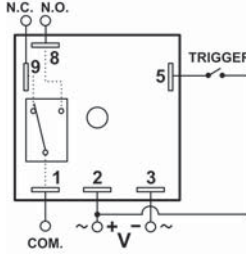
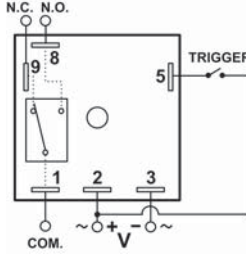
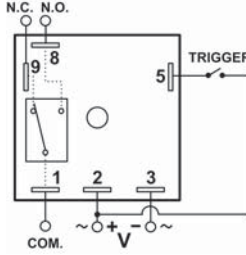
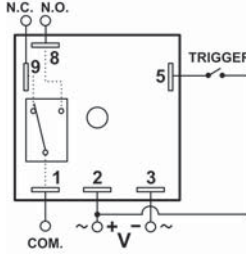
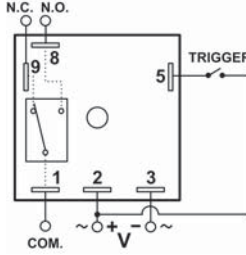
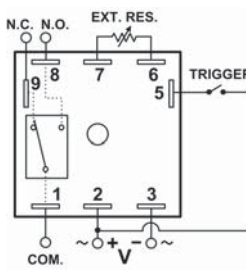
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Time Delay Range	Code
0.05 - 5 Sec.	04
0.1 - 10 Sec.	30
1 - 100 Sec.	31
10 - 1,000 Sec.	36
0.1 - 10 Min.	32
1 - 100 Min.	33
10 - 1,000 Min.	37
1 - 100 Hr.	35

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OFF DELAY, SINGLE SHOT, WATCHDOG, SINGLE SHOT FALLING EDGE, ON DELAY/OFF DELAY & DELAYED INTERVAL

RELAY OUTPUT | THR SERIES

Control Switch Common to Pin 2 & Isolated Relay Common

FUNCTION ■	INPUT VOLTAGE	PRODUCT NUMBER **	WIRING
OFF DELAY C	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-11662-**T THR-11666-**T THR-11668-**T THR-11661-**T	Onboard Adjustable or Fixed Time Delay 
SINGLE SHOT D	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-11562-**T THR-11566-**T THR-11568-**T THR-11561-**T	
WATCHDOG (Retriggerable Single Shot) J	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-11362-**T THR-11366-**T THR-11368-**T THR-11361-**T	
SINGLE SHOT FALLING EDGE (Retriggerable) H	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-12262-**T THR-12266-**T THR-12268-**T THR-12261-**T	
ON/OFF DELAY * G	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-14162-**T THR-14166-**T THR-14168-**T THR-14161-**T	
DELAYED INTERVAL * (Triggered) P	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-16562-**T THR-16566-**T THR-16568-**T THR-16561-**T	Remote Time Delay 

■ See "Definitions of Timing Functions".

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TIME DELAYS

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- **Onboard Fixed Time Delay**--replace two-digit Code with suffix "F" followed by delay [0.1 ... 100] followed by (S) seconds, (M) minutes or (H) hours, i.e., THR-11662-F5ST is an Off Delay with a time delay fixed at 5 seconds.
- **Remote Adjustable Time Delay**--THR Series products can be built with two terminals for remote adjustable or fixed time delays.

** TIMING RANGE TABLE

Time Delay Range	Code
0.05 - 5 Sec.	04
0.1 - 10 Sec.	30
1 - 100 Sec.	31
10 - 1,000 Sec.	36
0.1 - 10 Min.	32
1 - 100 Min.	33
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Control Switch Common to Pin 2 &
Relay Common Internally Connected to Pin 2

FUNCTION ■	INPUT VOLTAGE	PRODUCT NUMBER **	WIRING
OFF DELAY C	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-11662-**JT THR-11666-**JT THR-11668-**JT THR-11661-**JT	Onboard Adjustable or Fixed Time Delay DIAGRAM 309
SINGLE SHOT D	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-11562-**JT THR-11566-**JT THR-11568-**JT THR-11561-**JT	 DIAGRAM 309
WATCHDOG (Retriggerable Single Shot) J	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-11362-**JT THR-11366-**JT THR-11368-**JT THR-11361-**JT	 DIAGRAM 309
SINGLE SHOT FALLING EDGE (Retriggerable) H	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-12262-**JT THR-12266-**JT THR-12268-**JT THR-12261-**JT	 DIAGRAM 309
ON/OFF DELAY * G	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-14162-**JT THR-14166-**JT THR-14168-**JT THR-14161-**JT	 DIAGRAM 311
DELAYED INTERVAL * (Triggered) P	120V AC/DC 12V DC 24V AC/DC 240V AC	THR-16562-**JT THR-16566-**JT THR-16568-**JT THR-16561-**JT	 DIAGRAM 311

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TIME DELAYS

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* See www.macromatic.com/onoff for information on how to order these functions with different ON & OFF time ranges.
- **Onboard Fixed Time Delay**--replace two-digit Code with suffix "F" followed by delay [0.1 ... 100] followed by (S) seconds, (M) minutes or (H) hours, i.e., THR-11662-F5SJT is an Off Delay with a time delay fixed at 5 seconds.
- **Remote Adjustable Time Delay**--THR Series products can be built with two terminals for remote adjustable or fixed time delays.

** TIMING RANGE TABLE

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0.05 - 5 Sec.	04
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1 - 100 Hr.	35

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THR 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%
 Fixed Time Delay: ±2% or 50ms, whichever is greater

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:

Operate: -28° to 65°C (-18° to 149°F)
 Storage: -45° to 85°C (-49° 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 or on 35mm DIN rail with accessory

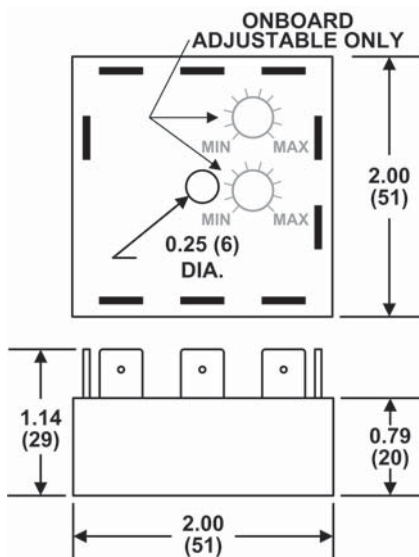
Termination:

0.25" male quick-connect terminals

Approvals:



DIMENSIONS



All Dimensions in Inches (Millimeters)

REMOTE TIME DELAY

Most THR Series products can be built with two terminals for remote adjustable or fixed time delays. To order a product with a remote time delay, complete the Product Number by adding the two-digit Code from the Table shown on the appropriate product selection page followed by the suffix "R1", i.e., THR-10262-30R1. Contact Macromatic for information on limitations of remote time delays on functions with ON & OFF timing ranges.

Adjustable Time Delay

A 100K ohm potentiometer is required to obtain the maximum time delay for all standard ranges. To use other values of remote potentiometers, contact Macromatic.

Fixed Time Delay

A fixed time delay can be set by connecting a resistor across the two terminals. To determine the resistor value required, use the following equation:

$$R = \frac{T}{T_{\max}} \times 100,000$$

R = Resistance value required to obtain T
 T = Desired time delay
 T_{\max} = Maximum time delay of range

Example: Using time range 0.1-10 seconds, what resistor value is required for a fixed time delay of 5 seconds:

$$R = \frac{5}{10} \times 100,000 = 50,000 \text{ ohms (50K ohms)}$$

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



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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"> ● 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.

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 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.

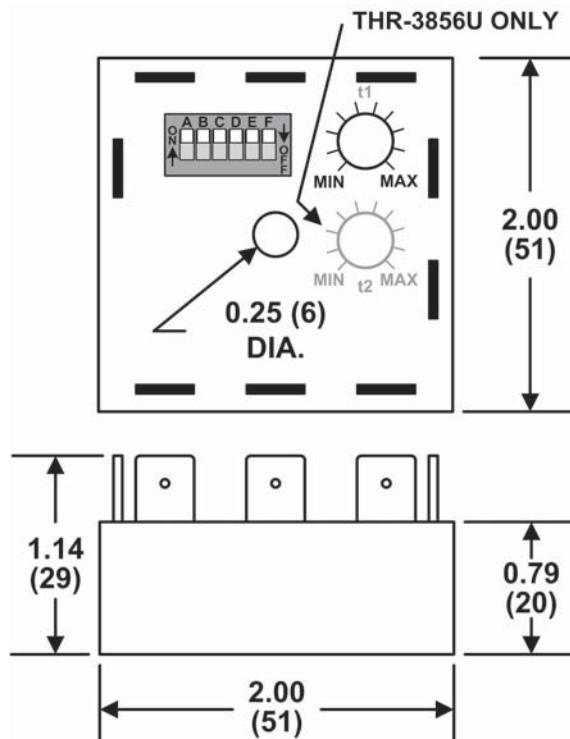
Termination:

0.25" male quick-connect terminals

Approvals:



DIMENSIONS



All Dimensions in Inches (Millimeters)

DEFINITION OF TIMING FUNCTIONS

Understanding the differences between all the functions available in time delay relays can sometimes be a daunting task. To begin with, time delay relays are simply control relays with a time delay built in. Their purpose is to control an event based on time.

Typically, time delay relays are initiated or triggered by one of two methods, depending on the function:

- ◆ application of input voltage
- ◆ application of a trigger

These triggers can be one of two signals: a control switch (dry contact), i.e., limit switch, push button, float switch, etc., or voltage (commonly known as a power trigger).

CAUTION: any time delay relay that is designed to be initiated with a dry contact control switch trigger could be damaged if voltage is applied to the trigger switch terminals. Only products that have a “power trigger” should be used with voltage as the trigger.

To help understand, some definitions are important:

- ◆ Input Voltage - control voltage applied to the input terminals. Depending on the function, input voltage will either initiate the unit or make it ready to initiate when a trigger is applied.
- ◆ Trigger- on certain timing functions, a trigger is used to initiate the unit after input voltage has been applied. As noted above, this trigger can either be a control switch (dry contact switch) or a power trigger (voltage).
- ◆ Output (Load) - every time delay relay has an output (either mechanical relay or solid state) that will open & close to control the load. Note that the user must provide the voltage to power the load being switched by the output contacts of the time delay relay. In all wiring diagrams, the output is shown in the normal de-energized position.

Below and on the following pages are both written and visual descriptions on how the common timing functions operate. A Timing Chart shows the relationship between Input Voltage, Trigger (if present) and Output. If you cannot find a product to fit your requirements or have any questions, Macromatic's Application Engineers offer technical information along with product selection and application assistance. Call us at 800-238-7474 or e-mail us tech-help@macromatic.com.

Function/Code	Operation	Timing Chart
ON DELAY Delay on Operate Delay on Make A	Upon application of input voltage, the time delay (t) begins. At the end of the time delay (t), the output is energized. Input voltage must be removed to reset the time delay relay & de-energize the output..	
INTERVAL ON Interval B	Upon application of input voltage, the output is energized and the time delay (t) begins. At the end of the time delay (t), the output is de-energized. Input voltage must be removed to reset the time delay relay.	
OFF DELAY Delay on Release Delay on Break Delay on De-Energization C	Upon application of input voltage, the time delay relay is ready to accept a trigger. When the trigger is applied, the output is energized. Upon removal of the trigger, the time delay (t) begins. At the end of the time delay (t), the output is de-energized. Any application of the trigger during the time delay will reset the time delay (t) and the output remains energized.	
SINGLE SHOT One Shot Momentary Interval D	Upon application of input voltage, the time delay relay is ready to accept a trigger. When the trigger is applied, the output is energized and the time delay (t) begins. During the time delay (t), the trigger is ignored. At the end of the time delay (t), the output is de-energized and the time delay relay is ready to accept another trigger.	

DEFINITION OF TIMING FUNCTIONS

Function/Code	Operation	Timing Chart
FLASHER (Off First) E	<p>Upon application of input voltage, the time delay (t) begins. At the end of the time delay (t), the output is energized and remains in that condition for the time delay (t). At the end of the time delay (t), the output is de-energized and the sequence repeats until input voltage is removed.</p>	
FLASHER (ON First) F	<p>Upon application of input voltage, the output is energized and the time delay (t) begins. At the end of the time delay (t), the output is de-energized and remains in that condition for the time delay (t). At the end of the time delay (t), the output is energized and the sequence repeats until input voltage is removed.</p>	
ON/OFF DELAY G	<p>Upon application of input voltage, the time delay relay is ready to accept a trigger. When the trigger is applied, the time delay (t_1) begins. At the end of the time delay (t_1), the output is energized. When the trigger is removed, the output contacts remain energized for the time delay (t_2). At the end of the time delay (t_2), the output is de-energized & the time delay relay is ready to accept another trigger. If the trigger is removed during time delay period (t_1), the output will remain de-energized and time delay (t_1) will reset. If the trigger is removed during time delay period (t_2), the output will remain energized and the time delay (t_2) will reset.</p>	
SINGLE SHOT FALLING EDGE H	<p>Upon application of input voltage, the time delay relay is ready to accept a trigger. When the trigger is applied, the output remains de-energized. Upon removal of the trigger, the output is energized and the time delay (t) begins. At the end of the time delay (t), the output is de-energized unless the trigger is removed and re-applied prior to time out (before time delay (t) elapses). Continuous cycling of the trigger at a rate faster than the time delay (t) will cause the output to remain energized indefinitely.</p>	
WATCHDOG Retriggerable Single Shot J	<p>Upon application of input voltage, the time delay relay is ready to accept a trigger. When the trigger is applied, the output is energized and the time delay (t) begins. At the end of the time delay (t), the output is de-energized unless the trigger is removed and re-applied prior to time out (before time delay (t) elapses). Continuous cycling of the trigger at a rate faster than the time delay (t) will cause the output to remain energized indefinitely.</p>	
TRIGGERED ON DELAY K	<p>Upon application of input voltage, the time delay relay is ready to accept a trigger. When the trigger is applied, the time delay (t) begins. At the end of the time delay (t), the output is energized and remains in that condition as long as either the trigger is applied or the input voltage remains. If the trigger is removed during the time delay (t), the output remains de-energized & the time delay (t) is reset.</p>	

DEFINITION OF TIMING FUNCTIONS

Function/Code	Operation	Timing Chart
REPEAT CYCLE (OFF 1st) L	Upon application of input voltage, the time delay (t1) begins. At the end of the time delay (t1), the output is energized and remains in that condition for the time delay (t2). At the end of this time delay, the output is de-energized and the sequence repeats until input voltage is removed.	
REPEAT CYCLE (ON 1st) M	Upon application of input voltage, the output is energized and the time delay (t1) begins. At the end of the time delay (t1), the output is de-energized and remains in that condition for the time delay (t2). At the end of this time delay, the output is energized and the sequence repeats until input voltage is removed.	
DELAYED INTERVAL Single Cycle N	Upon application of input voltage, the time delay (t1) begins. At the end of the time delay (t1), the output is energized and remains in that condition for the time delay (t2). At the end of this time delay (t2), the output is de-energized. Input voltage must be removed to reset the time delay relay.	
TRIGGERED DELAYED INTERVAL P	Upon application of input voltage, the time delay relay is ready to accept a trigger. When the trigger is applied, the time delay (t1) begins. At the end of the time delay (t1), the output is energized and remains in that condition for the time delay (t2). At the end of this time delay (t2), the output is de-energized & the relay is ready to accept another trigger. During both time delay (t1) & time delay (t2), the trigger is ignored.	
TRUE OFF DELAY R	Upon application of input voltage, the output is energized. When the input voltage is removed, the time delay (t) begins. At the end of the time delay (t), the output is de-energized. Input voltage must be applied for a minimum of 0.5 seconds to assure proper operation. Any application of the input voltage during the time delay (t) will reset the time delay. No external trigger is required.	
ON DELAY/ TRUE OFF DELAY S	Upon application of input voltage, the time delay (t1) begins. At the end of the time delay (t1), the output is energized. When the input voltage is removed, the output remains energized for the time delay (t2). At the end of the time delay (t2), the output is de-energized. Input voltage must be applied for a minimum of 0.5 seconds to assure proper operation. Any application of the input voltage during the time delay (t2) will keep the output energized & reset the time delay (t2). No external trigger is required.	
SINGLE SHOT-FLASHER T	Upon application of input voltage, the time delay relay is ready to accept a trigger. When the trigger is applied, the time delay (t1) begins and the output is energized for the time delay (t2). At the end of this time delay (t2), the output is de-energized and remains in that condition for the time delay (t2). At the end of the time delay (t2), the output is energized and the sequence repeats until time delay (t1) is completed. During the time delay (t1), the trigger is ignored.	
ON DELAY-FLASHER X	Upon application of input voltage, the time delay begins (t1). At the end of the time delay (t1), the output is energized and remains in that condition for the time delay (t2). At the end of this time delay (t2), the output is de-energized and remains in that condition for the time delay (t2). At the end of the time delay (t2), the output is energized and the sequence repeats until input voltage is removed.	

SOCKETS & ACCESSORIES

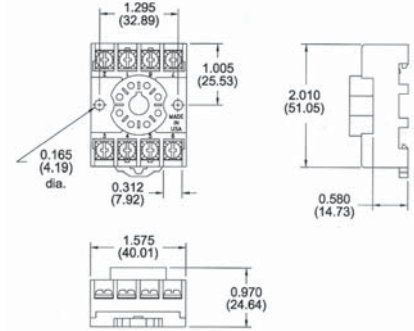
8 Pin Octal Socket- Surface or DIN Rail-Mounted

10A @ 600V
1 or 2 #12-22 AWG Wire
Recommended Tightening Torque
of 7 in-lbs. (12 in-lbs maximum)
Pressure Wire Clamp Terminations



File #E169693 File #LR701114

Catalog Number 70169-D



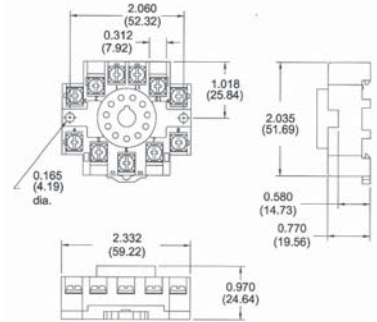
11 Pin Octal Socket- Surface or DIN Rail-Mounted

10A @ 300V
1 or 2 #12-22 AWG Wire
Recommended Tightening Torque
of 7 in-lbs. (12 in-lbs maximum)
Pressure Wire Clamp Terminations



File #E169693 File #LR701114

Catalog Number 70170-D



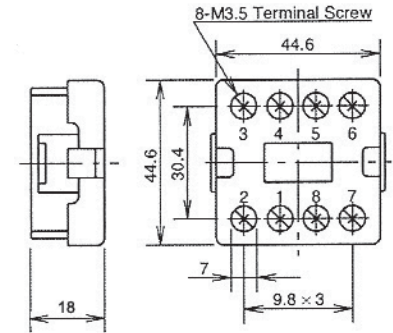
8 Pin Octal Socket- Back-Mounted

10A @ 300V
Pressure Wire Clamp Terminations



File #E62437

Catalog Number SR6P-M08G



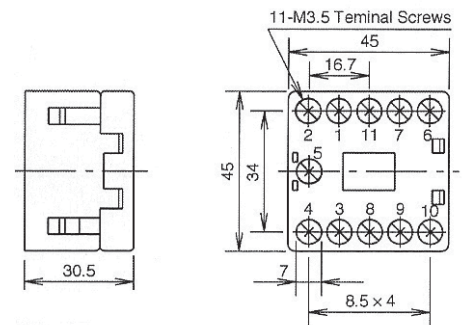
11 Pin Octal Socket- Back-Mounted

10A @ 300V
Pressure Wire Clamp Terminations



File #E62437

Catalog Number SR6P-M11G



SOCKETS & ACCESSORIES

Hold Down Spring Catalog Number 70166

Can be used for:

- ◆ Panel-Mounted Sockets
 - ◆ Sockets Mounted to 35mm DIN Rail *
- * Requires two machine screws with washers & nuts-- contact Macromatic or www.macromatic.com/70166 for more information.



DIN Rail Adaptor Kit Catalog Number 70500

Quick & Economical Way to Install Any THx Series 2" x 2" Encapsulated Time Delay Relays on 35mm DIN Rail

- ◆ Clip Comes with a Threaded Hole to Eliminate Need for a Washer & Nut
- ◆ All Mounting Hardware Included

