

# Advanced programmable 2 channel delay timer

Part number ETMR2-B



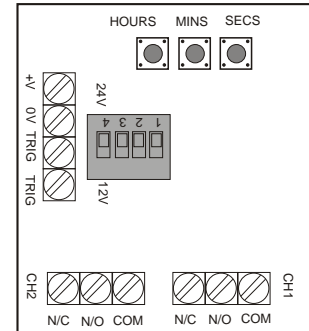
## Description

A tiny 2 channel delay timer PCB with 2 relay outputs with normally open and normally closed contacts rated at 3A at 30VDC/125VAC. The delay before each channel switches on can be programmed as can the time that each relay is held on for. Timings can be programmed easily using pushbuttons for hours, minutes and seconds. Can be set for re-triggerable operation or wait until cycle finished. 12V or 24V DC operation.

## Specification

Parameter	
Operating voltage range: With switch 4 set at 12V With switch 4 set at 24V	9V to 15.6VDC 18V to 30VDC
Current drain: Quiescent 1 relay operating 2 relays operating	5mA 22mA 40mA
Operating temperature	-10 to +60
Timing accuracy	30PPM*

\*accurate to 2 seconds per 12 hours



## Connections

+V	Positive supply (12V or 24V DC)*
0V	Supply 0V connection
TRIG	Trigger input
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N/C	Normally closed relay O/P 1
N/O	Normally open relay O/P 1
COM	Relay 1 common
N/C	Normally closed relay O/P 2
N/O	Normally open relay O/P 2
COM	Relay 2 common

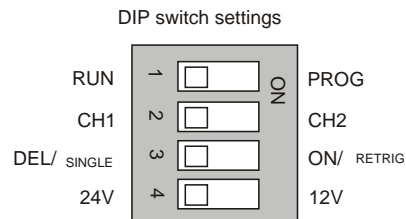
## Setting up

Before connecting power, you must select the correct position for the voltage select switch DIP switch 4. To operate the PCB from 24VDC, switch DIP switch 4 OFF. To operate from 12VDC, switch DIP switch 4 ON.

## Programming

The following timings can be programmed;

- 1) Relay 1 delay before switching ON
- 2) Relay 1 ON time
- 3) Relay 2 delay before switching ON
- 4) Relay 2 ON time



Each timing is programmed separately as follows;

- 1) Ensure DIP switch 1 is OFF (RUN position)
- 2) Select DIP switch 2 for channel 1 (CH1) or channel 2 (CH2)
- 3) Select DIP switch 3 for DELAY (DEL) or ON TIME (ON)
- 4) Place DIP switch 1 into program (PROG) position (LED illuminates and stays on)
- 5) Press the HOURS, MINUTES or SECONDS switches the required amount of times. (After each press, LED goes off then on)
- 6) Select DIP switch 1 into the RUN position. LED goes OFF, indicating parameter successfully programmed and stored in memory.
- 7) Repeat for other settings by selecting DIP switches 2 and 3 repeating from step 2

To program zero as the delay or relay on time, select DIP switches 2 and 3 accordingly and switch DIP switch 1 ON then OFF.

## Triggering the PCB

The ETMR2-B PCB is triggered by applying a short circuit across the TRIG inputs.

The PCB can be triggered in two modes as follows;

- 1) Single trigger. With DIP switch 3 set to SING, when the PCB is triggered it will complete the timing cycle before accepting another trigger
- 2) Re-trigger. With DIP switch 3 set to RETRIG, the PCB will restart the cycle upon additional triggers

To trigger the PCB, DIP switch 1 must be in the RUN position.

When the PCB is triggered, the LED will flash briefly every second until the cycle is complete.

## Application Example

Synchronizing a door opener and a door lock mechanism.

The following example shows how to;

Program the PCB to energize a lock release solenoid and a trigger to a door opener.

Programming the PCB:

- 1) Set the voltage select switch, DIP switch 4 to the required voltage.
- 2) Apply power to the PCB
- 3) Switch DIP switch 2 and 3 OFF (left)
- 4) Switch DIP switch 2 ON (PROG). (LED illuminates to indicate ready to program)
- 5) Switch DIP switch 1 OFF to store zero as the delay time before relay 1 switches on (LED goes out)
- 6) Switch DIP switch 3 to ON. (programming of relay 1 ON time)
- 7) Switch DIP switch 1 ON. LED illuminates.
- 8) Press the SECS (seconds) pushbutton 5 times. After each press, the LED extinguishes briefly.
- 9) Switch DIP switch 1 OFF to store the relay 1 ON time. (LED goes out)

So far, you will have programmed channel one to come on for 5 seconds immediately following a trigger.

- 10) Switch DIP switch 2 to CH2 (channel 2) and DIP switch 3 to DEL.
- 11) Switch DIP switch 1 ON. LED illuminates
- 12) Press the SECS pushbutton 2 times. This sets a delay of 2 seconds before relay 2 switches ON.
- 13) Switch DIP switch 1 OFF. (LED goes out)
- 14) Switch DIP switch 3 to the ON position
- 15) Switch DIP switch 1 ON. (LED illuminates)
- 16) Press the SECS switch once. This sets relay 2 to come on for 1 second.
- 17) Switch DIP switch 1 to the OFF position. (LED goes out)

Switch DIP switch 3 OFF (sing) to allow repeat triggers only after the cycle has completed

The diagram on the right shows the ETMR2-B connected to a solenoid lock release and motorized door opener

With the ETMR2-B programmed as above, following a trigger from the pushbutton trigger input the following sequence will occur;

- 1) CH1 relay switches on, operating the solenoid
- 2) After 2 seconds, CH2 relay operates, triggering the door opener
- 3) After a further 2 seconds, the CH1 relay switches off and releases the solenoid.
- 4) The door opening cycle completes and waits for another trigger

