

38581-MP

Multi-Function Timer

Microprocessor based, programmable, triggered timing module. Opto-isolated trigger input starts timing.

Programming requires patience and practice. Programmable as a Delay on Start, Delay on Stop or Recycling.

Programmable ON/OFF Times & Number of Recycles (Looping)

Time Ranges: 3

Range: 0.1sec. to 999min.

0-999 Minutes 1 Minute Resolution

0-999 Seconds 1 Second Resolution

0-99.9 Seconds .1 Second Resolution

Power: 6-30VDC

5V Only on the USB input

Current: Standby: <20mA <60mA Relay energized

Trigger Voltage; 3-24VDC

Relay: SPDT

Contacts: 10A 125/250VAC/30VDC

Terminal Strip for Relay Contacts

Terminal Strip for Power & Trigger

USB Micro B for 5V only Power.

L: 2-1/2" W: 1-1/2" H: 3/4" WT: .06

GETTING STARTED

It is recommended that before you install the module: Set up module with only Power and a Trigger Source connected.

This makes learning how to program the unit easier.

NOTES ON TRIGGER ISOLATION (Ground Jumper)

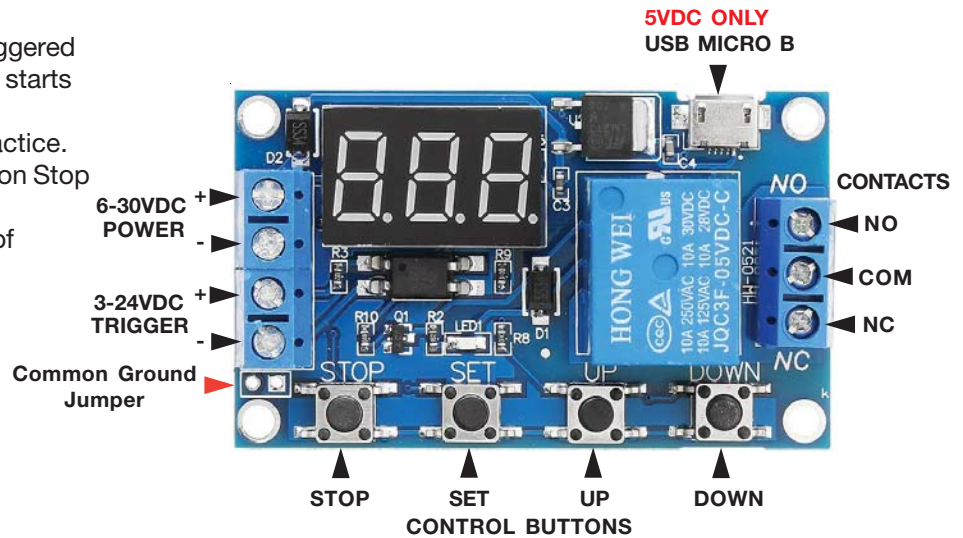
COMPLETE ISOLATION: Factory Default, Jumper Missing (Next to 4Position Terminal Strip)

Power and Signal (Trigger) Ground are NOT Connected

COMMON GROUND:

Install Ground Jumper

Power - and Signal (Trigger) Grounds are then Connected



RANGE INDICATION



Tens Units

888. Decimal point in "Units" place, range: 1 second ~ 999 seconds

88.8 Decimal point in "Tens", range: 0.1 seconds ~ 99.9 seconds

8.8.8. 3 decimal points, range: 1 minute to 999 minutes

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BASICS

The relay time module has many modes, but the relay can only work in one of the Modes at a time.

To change the mode, it is necessary to hold down the **SET** button for 3 seconds and release, then use the **UP** and **DOWN** buttons select the desired mode and confirm the selection with a short press of the **SET** button.

Immediately after the power is connected, the current operating Mode is Flashed on the display.

▶ **READ THROUGH THE FOLLOWING DISCRIPTIONS OF THE AVAILABLE MODES AND THEN PROCEED TO SETUP** ◀

DISPLAY TERMS

OP - the time the relay is ON (This Can change by Status of **F-3/F-4**)

CL - time of the relay is OFF (This Can change by Status of **F-3/F-4**)

LOP - the number of ON/OFF repetitions (Loops) 1 to Continious (1-999 where --- is Continious)

CP - Sleep Mode (Timer Operates but Display Off (More on This Later)

Od - Display Always On (More on This Later)

NOTE: Function of F3/F4

Effects OP/CL and Relay Open/Closed at Power UP)

F3: Inverse of F4

F4: Generally Considered "Normal" Selection

GUIDE OF MODES AND THEIR OPERATION

P1 Modes NOTE: No CL or LOP in this Mode

P1.1 - In this mode: The relay ON or OFF Upon Powering Up Is Set By Status of **F-3/F-4**.

F-3: Relay ON at Power UP. When a Trigger (3V to 24V) is applied to the input, the relay immediately turns OFF and the time set in the **OP** parameter starts decreasing, after the countdown, the relay is switched ON.

F-4: Relay OFF at Power UP. When a Trigger (3V to 24V) is applied to the input, the relay immediately turns ON and the time set in the **OP** parameter starts decreasing, after the countdown, the relay is switched OFF.

If another Trigger is Received; It is Ignored until cycle is completed.

P1.2 - In this mode the relay ON or OFF Upon Powering Up.This Is Set By Status of **F-3/F-4**.

F-3: Relay ON at Power UP. When a Trigger (3V to 24V) is applied to the input, the relay immediately turns OFF and the time set in the **OP** parameter starts decreasing, after the countdown, the relay is switched ON.

F-4: Relay OFF at Power UP. When a Trigger (3V to 24V) is applied to the input, the relay immediately turns ON and the time set in the **OP** parameter starts decreasing, after the countdown, the relay is switched OFF.

If another Trigger is received before the time expires; the Timer will restart counting down.

P1.3 - In this mode the relay ON or OFF Upon Powering Up Is Set By Status of **F-3/F-4**.

F-3: Relay ON at Power UP. When a Trigger (3V to 24V) is applied to the input, the relay immediately turns OFF and the time set in the **OP** parameter starts decreasing, after the countdown, the relay is switched ON.

If another Trigger is received before the time expires; the the relay switches ON immediately.

F-4: Relay OFF at Power UP. When a Trigger (3V to 24V) is applied to the input, the relay immediately turns ON and the time set in the **OP** parameter starts decreasing, after the countdown, the relay is switched OFF.

If another Trigger is received before the time expires; the the relay switches ON immediately.

P1.4 - In this mode the relay ON or OFF Upon Powering Up Is Set By Status of **F-3/F-4**.

F-3: Relay OFF at Power UP. The count specified in the **OP** parameter starts, after the countdown, the relay is switched ON until next Power Up. Trigger is Inactive.

F-4 Relay ON at Power UP. The count specified in the **OP** parameter starts, after the countdown, the relay is switched OFF until next Power Up. Trigger is Inactive.



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P2.1- In this mode the relay ON or OFF Upon Powering Up Is Set By Status of **F-3/F-4**.

F-3: Relay is Closed (ON) at Power UP, When a Trigger signal is applied to the Input, the relay remains Closed (ON), counts down the time specified in the OFF state **CL**, after this time the relay Opens (OFF) and counts down for the time set for the Closed state **OP**. After that, the relay remains Closed (ON) and waits for the next Trigger signal.

Trigger is Ignored During cycle. LOP Not available in this mode.

F-4: Relay is Open (OFF) at Power UP, When a Trigger signal is applied to the Input, the relay remains Open (OFF), counts down the time specified in the OFF state **CL**, after this time, the relay Closes (ON) and counts down for the time set for the Closed state **OP**. After that, the relay remains Open (OFF) and waits for the next Trigger signal.

Trigger is Ignored During cycle. LOP Not available in this mode

P2.2 In this mode the relay ON or OFF Upon Powering Up Is Set By Status of **F-3/F-4**.

F-3: Relay is Closed (ON) at Power UP, When a Trigger signal is applied to the Input, the relay remains Closed (ON), counts down the time specified in the OFF state **CL**, after this time the relay Opens (OFF) and counts down for the time set for the Closed state **OP**. After that, the relay remains Closed (ON) and waits for the next Trigger signal.

A Trigger Signal at any point in the cycle Resets (Restarts) timing. LOP is Not available in this mode.

F-4: Relay is Open (OFF) at Power UP, When a Trigger signal is applied to the Input, the relay remains Open (OFF), counts down the time specified in the OFF state **CL**, after this time, the relay Closes (ON) and counts down for the time set for the Closed state **OP**. After that, the relay remains Open (OFF) and waits for the next Trigger signal.

A Trigger Signal at any point in the cycle Resets (Restarts) timing. LOP Not available in this mode.

P2.3 This Mode is Deleted

P2.4 In this mode the relay ON or OFF Upon Powering Up Is Set By Status of **F-3/F-4**.

F-3: Relay is Open (OFF) at Power UP, Display Counts Down **CL** Time. Relay Does Not Operate. Only Display functions, Stays in this state until next Power Cycle. Trigger is Ignored, OP and LOP Not Available in this Mode

F-4: Relay Open (OFF) at Power UP, Display Counts Down **CL** Time. Relay Closes (ON). Relay stays Closed (ON) until next power cycle. Trigger is Ignored. OP and LOP Not Available in this Mode.

P3.1 - In this mode the relay ON or OFF Upon Powering Up Is Set By Status of **F-3/F-4**.

F-3: Relay is Closed (ON) at Power Up,

When a Trigger signal is applied to the Input, the relay Opens (OFF), for the **OP** Time, then Closes (ON) for **CL** time, after completing the Loops (LOP) the relay stays Closed (ON) and waits for the next Trigger signal.

During any Cycle (OP,CL,LOP), a retrigger will Stop the Cycle (including LOP) and Relay will be Closed (ON).

The next trigger will start the timing cycle (OP,CL,LOP) over.

F-4: Relay is Open (OFF) at Power Up,

When a Trigger signal is applied to the Input, the relay Closes (ON), for the **OP** Time then Opens (OFF) for **CL** time, after completing the Loops (LOP) the relay stays Open (OFF) and waits for the next Trigger signal.

During any Cycle (OP,CL,LOP), a retrigger will Stop the Cycle (including LOP) and Relay will be Open (OFF). The next trigger will start the timing cycle (OP,CL,LOP) over.

P3.2 - In this mode the relay ON or OFF Upon Powering Up Is Set By Status of **F-3/F-4**.

F-3: No Trigger is required. Relay is Open (OFF) at Power Up. Relay will start the cycle, Open (OFF) for **OP** time, then **ON** for **CL** time at power up and will continue cycling for the number of **LOP** (Loops) set. At end of **LOP** (Loops), Relay will Turn ON and wait for next Power cycle. If **LOP** set at (---) relay will cycle until power is removed.

F-4: No Trigger is required. Relay is Closed (ON) at Power Up. Relay will start the cycle, Closed (ON) for **OP** time, then Open (OFF) for **CL** time at power up and will continue cycling for the number of **LOP** (Loops) set. At end of **LOP** (Loops), Relay will Turn OFF and wait for next Power cycle. If **LOP** set at (---) relay will cycle until power is removed.

P-4: NOTE: No CL in this Mode

P4 - In this mode the relay ON or OFF Upon Powering Up Is Set By Status of **F-3/F-4**.

F-3: Relay ON at Power UP, When a Trigger (3V to 24V) is applied to the input, the relay immediately turns OFF and the time set in the **OP** parameter starts decreasing, after the countdown, the relay is switched ON. If another Trigger is received before the time expires; the Timer will restart counting down.

F-4: Relay OFF at Power UP. When a Trigger (3V to 24V) is applied to the input, the relay immediately turns ON and the time set in the **OP** parameter starts decreasing, after the countdown, the relay is switched OFF. If another Trigger is received before the time expires; the Timer will restart counting down.

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GETTING STARTED

Immediately after the power is connected, the current operating Mode is Flashed on the display.

Order of Setup:

1: Select F3/F4

2: Select Mode (P1-P4)

NOTE: CL & LOP are Not Available In All Modes

Enter Values for **OP**

Set Time Range

Enter Value of **CL**

Set Time Range

Enter Value of **LOP**

Set Number of **LOP** (Where "---" is infinite)

3: Press **SET** to Exit

HOW TO SET PARAMETERS

All settings are saved with power removed

Upon Power Up, the display will flash the current Mode and then enter the normal display ("000")

To check existing values: Short press of **SET** button to scroll through the values in turn then return to normal operation.

1: RELAY STATUS AT POWER UP (F-3/F-4)

NOTE: Function of F3/F4 (Effects OP/CL and Relay Open/Closed at Power UP)

F3: Inverse of F4

F4: Generally Considered "Normal" Operation

USE Depends on the "P" Mode you Select

In "Normal" (Not counting) Operation Display Shows "000"

Press & Hold **DOWN** Button for ~3 Sec, Display will flash either **F-3** or **F-4** for ~3sec,

THIS Will Be The Setting.

To Change: Repeat (Alternating Selection)

2: SELECT MODE

1: Press and hold the **SET** button for ~3 seconds then Release to enter Mode selection (P1-P4).

Present Mode will be displayed

2: Select the Mode to be set (P1.1-P4) by scrolling using the **UP** and **DOWN** Buttons

3. Press **SET** to Select

OP will Flash

-CONTINUED-

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3: ADJUST TIME(s) OP/CL/LOP

OP will Be Flashing (See Above)

3.1: Press **SET**, A Numerical Value will Flash
Use **UP & DOWN** Buttons to adjust **OP** Time
example; 32 or 529

3.2: Press **STOP** Button to select the Time Range

3.3 Adjusting the Time Range

Briefly press the **STOP** Button to scroll through the Decimal Point locations.

XXX. Decimal Point in Unit Place, Range: 1 second ~ 999 seconds.

XX.X Decimal Point in Ten Place, Range: 0.1 seconds ~ 99.9 seconds.

X.X.X. All Decimal Points Lighted. Range: 1 minute ~ 999 minutes.

Example; If you want to set **OP** to 3.2 seconds, Adjust numerical values using the **UP & Down** Buttons to 32
Use **STOP** Button to move the decimal point to Tens Place. The LED display shows "3.2"

3.4: Press **SET** to select "**CL**" (If after pressing **SET**, "**CL**" (or LOP) Doesn't Appear, Then that function is not available in the Mode you selected

CL will Flash

Set the Time and Range The Same Way as **OP** (same for "**LOP**"),

4: Press & Hold **SET** to Save & Exit (Display will Flash)

5: ADITONAL FUNCTIONS

5.1 "Display" Sleep mode:

Press the "**STOP**" button for two seconds and then release to alternate between "**C-P**" and "**O-d**" state,

"C-P" Sleep mode: Display automatically turns off after 5 (Five) minutes without any operation.

The program running as usual.

"O-d" Normal mode: Display always on.

5.2 "STOP" Button Relay enable mode:

Short press the "**STOP**" button during Normal operation to switch between "ON" and "OFF",
Current setting will flash, and then return to the main display. (This function is an emergency "OFF"

function, one Button to open the closed relay)

"ON": The relay Operates per Mode Selected

"OFF": The relay is always "OFF"

RANGE INDICATION



Tens Units

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