# PROGRAMMABLE | MULTI-RANGE <br> Digital-Set | TD-7 Series Time Rangerim 

The TD-781 Series offers an easy and accurate way to select a function and any time delay between 50 ms and 999 hours. Programming is accomplished by using a pushbutton thumbwheel to select one of seven built-in time ranges and three pushbutton thumbwheels to digitally set the time delay required. This method provides a greater setting accuracy than is found on other units with an analog potentiometer. These units have a fifth pushbutton thumbwheel to select one of ten built-in functions. An LED indicates timing mode and time out condition.

Single-function versions available.

Multi-Function Product

| FUNCTION - | INPUT VOLTAGE | PRODUCT NUMBER | WIRINGI SOCKETS |
| :---: | :---: | :---: | :---: |
| MULTI-FUNCTION <br> (10 Functions in One Unit) | $\begin{gathered} 120 \mathrm{~V} \text { AC/DC } \\ 12 \mathrm{~V} \text { DC } \end{gathered}$ | $\begin{aligned} & \text { TD-78122 } \\ & \text { TD-78126 } \end{aligned}$ | $\begin{aligned} & 11 \text { PIN OCTAL } \\ & 70170-D \end{aligned}$ |
| A On Delay | $\begin{gathered} 24 \mathrm{~V} \text { AC/DC } \\ 240 \mathrm{~V} A C \end{gathered}$ | TD-78128 |  |
| B Interval On |  | TD-78121 | $1^{-\bullet-} \mathrm{-}$ TRIG |
| C Off Delay * |  |  | 0678 |
| D Single Shot * |  |  |  |
| E Flasher (OFF 1st) |  |  | 2 |
| F Flasher (ON 1st) |  |  | d'\% |
| G On/Off Delay * |  |  |  |
| H Single Shot Falling Edge * |  |  |  |
| J Watchdog * |  |  |  |
| K Triggered On Delay * |  |  | DIAGRAM 121 |

■ See "Definitions of Timing Functions".

* These are the only functions requiring use of the Control Switch shown in Wiring Diagrams above.


## Sockets \& Accessories available



- Ten user-selectable modes in one unit
- Pushbutton Thumbwheels for digital set of time delay \& function
- 50ms - 999 hour programmable time range
- Uses industry-standard 11 pin octal socket
- 10A DPDT output contacts
- LED indicates timing mode and time out conditions
- Pilot duty rating


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c $\epsilon$
(41)
with appropriate socket

## PROGRAMMABLE | MULIT-RAMGE <br> Digital-Set | TD-7 Series Time Rangerin



- Pushbutton Thumbwheels for digital set of time delay
- 50ms - 999 hour programmable time range
- Uses industry-standard 8 or 11 pin octal sockets
- 10A DPDT output contacts
- LED indicates timing mode and time out conditions
- Pilot duty rating


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The TD-7 series of time delay relays offer an easy and accurate way to select any time delay between 50 ms and 999 hours. Programming is accomplished by using a pushbutton thumbwheel to select one of seven built-in time ranges and three pushbutton thumbwheels to digitally set the time delay required. This method provides a greater setting accuracy than is found on other units with an analog potentiometer. An LED indicates timing mode and time out condition.

Multi-function versions available.

Single Function Products

| FUNCTION - | INPUT VOLTAGE | PRODUCT NUMBER | WIRING/ SOCKETS |
| :---: | :---: | :---: | :---: |
| ON DELAY A | $\begin{gathered} 120 \mathrm{~V} \text { AC/DC } \\ 12 \mathrm{~V} \mathrm{DC} \\ 24 \mathrm{~V} \mathrm{AC/DC} \\ 240 \mathrm{~V} \text { AC } \end{gathered}$ | $\begin{aligned} & \text { TD-70222 } \\ & \text { TD-70226 } \\ & \text { TD-70228 } \\ & \text { TD-70221 } \end{aligned}$ | 8 PIN OCTAL 70169-D <br> DIAGRAM 1 |
| INTERVAL ON B | $\begin{gathered} 120 \mathrm{~V} \text { AC/DC } \\ 12 \mathrm{~V} \mathrm{DC} \\ 24 \mathrm{~V} \mathrm{AC/DC} \\ 240 \mathrm{~V} \text { AC } \end{gathered}$ | $\begin{aligned} & \hline \text { TD-70522 } \\ & \text { TD-70526 } \\ & \text { TD-70528 } \\ & \text { TD-70521 } \end{aligned}$ |  |
| FLASHER (OFF 1st) E | $\begin{gathered} 120 \mathrm{~V} \text { AC/DC } \\ 12 \mathrm{~V} \mathrm{DC} \\ 24 \mathrm{~V} \mathrm{AC/DC} \\ 240 \mathrm{~V} \text { AC } \end{gathered}$ | $\begin{aligned} & \hline \text { TD-70822 } \\ & \text { TD-70826 } \\ & \text { TD-70828 } \\ & \text { TD-70821 } \end{aligned}$ |  |
| OFF DELAY C | $\begin{gathered} 120 \mathrm{~V} \text { AC/DC } \\ 12 \mathrm{~V} \mathrm{DC} \\ 24 \mathrm{~V} \mathrm{AC/DC} \\ 240 \mathrm{~V} \text { AC } \end{gathered}$ | $\begin{aligned} & \text { TD-71622 } \\ & \text { TD-71626 } \\ & \text { TD-71628 } \\ & \text { TD-71621 } \end{aligned}$ | 11 PIN OCTAL 70170-D <br> TRIGGER |
| SINGLE SHOT D | $\begin{gathered} 120 \mathrm{~V} \text { AC/DC } \\ 12 \mathrm{~V} \mathrm{DC} \\ 24 \mathrm{~V} \mathrm{AC/DC} \\ 240 \mathrm{~V} \text { AC } \end{gathered}$ | $\begin{aligned} & \hline \text { TD-71522 } \\ & \text { TD-71526 } \\ & \text { TD-71528 } \\ & \text { TD-71521 } \end{aligned}$ | DIAGRAM 2 |

See "Definitions of Timing Functions".

Sockets \& Accessories available

## TD-7 SERIES TIME RAMGERTM

## Application Data

Voltage Tolerance:
AC Operation: $\quad+10 /-15 \%$ of nominal at $50 / 60 \mathrm{~Hz}$.
DC Operation: $\quad+10 /-15 \%$ of nominal.
Load (Burden):
3 VA
Setting Accuracy:
Constant Voltage \& Temperature w/i specifications: $\pm 0.1 \%$ of set time or $\pm 50 \mathrm{~ms}$, whichever is greater
For Variable Voltage \& Temperature w/i specifications: $\pm 1 \%$ of set time or $\pm 50 \mathrm{~ms}$, whichever is greater

Repeat Accuracy:
Constant Voltage \& Temperature w/i specifications: $\pm 0.1 \%$ of set time or $\pm 0.02$ seconds, whichever is greater
For Variable Voltage \& Temperature w/i specifications: $\pm 1 \%$ of set time or $\pm 0.02$ seconds, whichever is greater

## Reset Time:

On Delay/Interval/Flasher: 0.1 Seconds
Functions with Control Switches: 0.04 Seconds
Start-up Time:
(Time from when power is applied until unit is timing)
0.05 Seconds for all units

## Maintain Function Time:

(Time unit continues to operate after power is removed)
0.01 Seconds for all units

Temperature: Operating: $-28^{\circ}$ to $65^{\circ} \mathrm{C}\left(-18^{\circ}\right.$ to $\left.149^{\circ} \mathrm{F}\right)$
Storage: $\quad-40^{\circ}$ to $85^{\circ} \mathrm{C}\left(-40^{\circ}\right.$ to $\left.185^{\circ} \mathrm{F}\right)$
Insulation Voltage: 2,000 volts

## Output Contacts:

DPDT 10A @ 240V AC/30V DC,
1/2HP @ 120/240V AC (N.O.), 1/3HP @ 120/240V AC (N.C.) B300 \& R300; AC15 \& DC13

## 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.
Initiating Units with Control Switch Triggers:
Timing sequence must be initiated only after input voltage is applied to unit. Minimum required trigger switch closure time is 0.1 seconds.

LED:
Red LED. Refer to instruction sheet provided with product to determine code for relay \& timing status.
Approvals:




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