PROGRAMMABLE | MULTI-FUNCTION

DIP-Switch | Digital-Set | TD-8 Series

- Sixteen user-selectable modes in one unit
- DIP-Switches for accurate digital set of time delay & selection of function
- 50ms - 10,230 hours programmable time delay (Single Mode functions only)
- Uses industry-standard 8 or 11 pin octal socket
- Pilot duty rating

with appropriate socket

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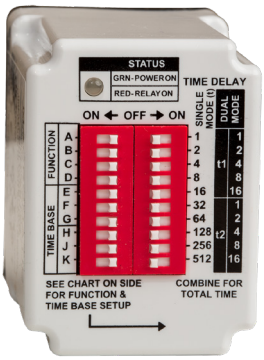
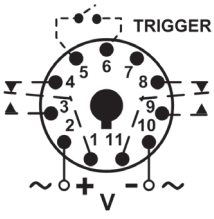
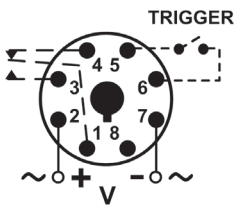
The TD-881 Series offers the digital-set accuracy of DIP-switch setting as well as the flexible programmability of a multi-function and multi-time range relay. These products provide an easy and accurate method to select any of 16 time delay functions and any time delay between 50ms and 10,230 hours (310 hours maximum for Dual Mode functions). Programming is accomplished through the use of two 10-position DIP-switches. This product can literally replace hundreds of different catalog numbers, thereby reducing inventory requirements.



MULTI-FUNCTION ■
(16 Functions in One Unit)

Single Mode	Dual Mode
◆ On Delay	◆ Repeat Cycle (OFF 1st)
◆ Interval On	◆ Repeat Cycle (ON 1st)
◆ Flasher (OFF 1st)	◆ Delayed Interval
◆ Flasher (ON 1st)	◆ Triggered Delayed Interval *
◆ Off Delay *	◆ On/Off Delay *
◆ Single Shot *	◆ Single Shot-Flasher *
◆ Watchdog *	◆ On Delay/Flasher
◆ Single Shot (Trailing Edge) *	
◆ Triggered On Delay *	

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

OUTPUT	INPUT VOLTAGE	CATALOG NUMBER	WIRING/ SOCKETS
11 Pin DPDT	120V AC/DC 12V DC 24V AC/DC 240V AC	TD-88122 TD-88126 TD-88128 TD-88121	11 PIN OCTAL **70170-D**  **DIAGRAM 121**
8 Pin SPDT	120V AC/DC 12V DC 24V AC/DC 240V AC	TD-88162 TD-88166 TD-88168 TD-88161	8 PIN OCTAL **70169-D**  **DIAGRAM 169**

■ See “Definitions of Timing Functions”.

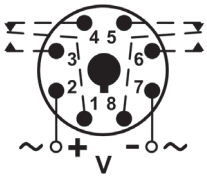
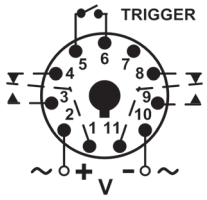
Sockets & Accessories available

Build your Time Delay Relays with the ***Online Product Builder***

PROGRAMMABLE | SINGLE FUNCTION

DIP-SWITCH | DIGITAL-SET | TD-8 SERIES

The TD-8 Series time delay relays offer an easy and accurate method to select any time delay between 100ms and 1,023 hours. Programming is accomplished through the use of a 10-position DIP-switch. Each position is marked with a binary time increment. The required delay is selected by moving the switch of each increment to the ON position and adding their corresponding values (see examples below). This method provides a greater setting accuracy than is found on other units with an analog potentiometer. An LED indicates relay status.

FUNCTION ■	INPUT VOLTAGE 50/60Hz.	CATALOG NUMBER **	WIRING/ SOCKETS
ON DELAY **A**	120V AC/DC 12V DC 24V AC/DC 240V AC	TD-80222-** TD-80226-** TD-80228-** TD-80221-**	8 PIN OCTAL **70169-D**  **DIAGRAM 1**
INTERVAL ON **B**	120V AC/DC 12V DC 24V AC/DC 240V AC	TD-80522-** TD-80526-** TD-80528-** TD-80521-**	
REPEAT CYCLE * (OFF Time First Followed By ON Time and Repeating) **L**	120V AC/DC 12V DC 24V AC/DC 240V AC	TD-83122-** TD-83126-** TD-83128-** TD-83121-**	
REPEAT CYCLE * (ON Time First Followed By OFF Time and Repeating) **M**	120V AC/DC 12V DC 24V AC/DC 240V AC	TD-85122-** TD-85126-** TD-85128-** TD-85121-**	
OFF DELAY Control Switch Trigger **C**	120V AC/DC 12V DC 24V AC/DC 240V AC	TD-81622-** TD-81626-** TD-81628-** TD-81621-**	11 PIN OCTAL **70170-D**  **DIAGRAM 2**
SINGLE SHOT Control Switch Trigger **D**	120V AC/DC 12V DC 24V AC/DC 240V AC	TD-81522-** TD-81526-** TD-81528-** TD-81521-**	

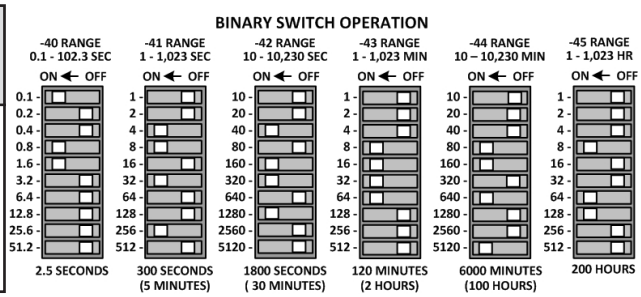
■ See "Definitions of Timing Functions".

* 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.

TIME DELAYS

****TIMING RANGE TABLE**
COMPLETE PRODUCT NUMBER USING TWO DIGIT CODE BELOW: i.e., TD-80222-40

Time Delay Range	Code
0.1 - 102.3 Sec.	40
1 - 1,023 Sec.	41
10 - 10,230 Sec.	42
1 - 1,023 Min.	43
10 - 10,230 Min.	44
1 - 1,023 Hr.	45



Sockets & Accessories available

Build your Time Delay Relays with the ***Online Product Builder***


Single Mode


Dual Mode

- DIP-Switches for accurate digital set of time delay
- 100ms - 1,023 hours program-mable time delay
- Uses industry-standard 8 or 11 pin octal sockets
- 10A DPDT output contacts
- LED indicates relay status
- Pilot duty rating

UL LISTED with appropriate socket

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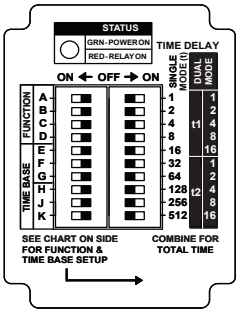
TD-8 SERIES

DIP-Switch | Digital-Set

Programming Function & Time Delay

(TD-881 Series Multi-Function Only)

Programming is accomplished through the use of two 10-position DIP-switches. Switches A-D of the left-mounted DIP-switch are used to select a function (see the descriptions of how each function operates in “Definition of Timing Functions” in this catalog). Switches E, F & G of the same DIP-switch are used to select the time base (t) for single mode functions and (t1) for dual mode functions. Switches H, J & K are used to select the time base (t2) for dual mode functions. A convenient chart is on the side of the product to clearly illustrate how to set both the function and time base.



Side

SELECT FUNCTION		A	B	C	D
SINGLE MODE	ON DELAY	OFF	OFF	OFF	OFF
	INTERVAL ON	ON	OFF	OFF	OFF
	OFF DELAY	OFF	ON	OFF	OFF
	TR. ON DELAY	ON	ON	OFF	OFF
	FLASHER (ON)	OFF	OFF	ON	OFF
	FLASHER (OFF)	ON	OFF	ON	OFF
	WATCHDOG	OFF	ON	ON	OFF
	ONE SHOT T. EDGE	ON	ON	ON	OFF
DUAL MODE	SINGLE SHOT	OFF	OFF	OFF	ON
	CYCLE (ON)	ON	OFF	OFF	ON
	CYCLE (OFF)	OFF	ON	OFF	ON
	DELAYED INTERVAL	ON	ON	OFF	ON
	ON/OFF DELAY	OFF	OFF	ON	ON
	TR. DELAYED INT.	ON	OFF	ON	ON
	ONE SHOT-FLASHER	OFF	ON	ON	ON
	ON DELAY/FLASHER	ON	ON	ON	ON

SELECT TIME BASE		BASE	E	F	G
SINGLE MODE		0.1 S	ON	OFF	OFF
		1S	OFF	ON	OFF
		0.1M	OFF	OFF	ON
DUAL MODE (1ST DELAY)		1M	ON	ON	OFF
		0.1H	ON	OFF	ON
		1H	OFF	ON	ON
	BASE	H	J	K	
DUAL MODE (2ND DELAY)	0.1 S	ON	OFF	OFF	
	1S	OFF	ON	OFF	
	0.1M	OFF	OFF	ON	
	1M	ON	ON	OFF	
	0.1H	ON	OFF	ON	
	1H	OFF	ON	ON	

NOTE: SWITCHES H, J & K ARE ONLY USED ON DUAL RANGE PRODUCTS

The right-mounted 10-position DIP-switch is used to select the time delay within the time base or bases selected with switches E-K from the first DIP-switch. Each position on the right-mounted DIP-switch is marked with a time increment. The required delay, (t) for single mode functions or (t1) and (t2) for dual mode functions, is selected by moving the switch of each increment to the ON position and adding their corresponding values. NOTE: Dual mode functions can either have the same or different (t1) and (t2) times as well as different time bases. NOTE: Switches H, J ,& K are only used on dual mode functions and are not used for single mode functions.

LED Indicator: ***Green ON--Power, Red ON--Relay Energized***

For more information, see ***www.macromatic.com/onoff***.

Application Data

Voltage Tolerance:
AC Operation: +10/-15% of nominal at 50/60 Hz.
DC Operation: +10/-15% of nominal.

Load (Burden): 2 VA

Setting Accuracy:
Constant Voltage & Temperature w/i specifications:
±0.1% of set time or ±50ms, whichever is greater
For Variable Voltage & Temperature w/i specifications:
±1% of set time or ±50ms, whichever is greater

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

Reset Time:
All Functions Triggered by a Control Switch: 0.04 Seconds
All Other Functions: 0.1 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

Insulation Voltage: 2,000 volts

Temperature: Operating: -28° to 65°C (-18° to 149°F)
Storage: -40° to 85°C (-40° to 185°F)

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

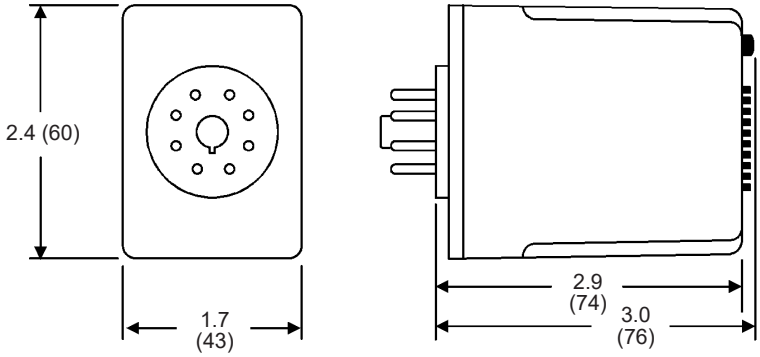
Life:
Mechanical: 10,000,000 operations
Full Load: 100,000 operations

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.

Control Switch Triggered Units:
Minimum required trigger switch closure time is 0.05 seconds.

Approvals:
File #E109466 File #LR45565 Low Voltage & EMC Directives EN60947-1, EN60947-5-1 UL LISTED IND. CONT. EQUIP. 50U7 with appropriate socket File #E109466

Dimensions



All Dimensions in Inches (Millimeters)