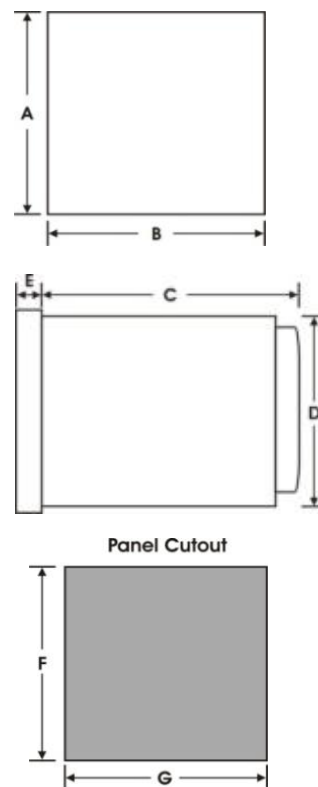


DIGITAL TIMER : TD1D



FEATURES	<ul style="list-style-type: none"> • Single Set point • ON Delay / Interval / Cyclic on first / Cyclic off first modes • Time range: 0.01sec to 999 hours • Output Contacts 2 C/O • Front Panel reset • Up/Down counting • High Reliability • Battery backup 	TIME RANGES
		0 - 9.99 Sec 0 - 99.9 Sec 0 - 999 Sec 0 - 9.59Min:Sec 0 - 99.9Min 0 - 999 Min 0 - 9.59Hr:Min 0 - 99.9Hr 0 - 999Hr (Programmable)
OPERATING MODES	ON Delay, Interval, Cyclic on first, Cyclic off first (Configurable by keys)	
SUPPLY	SUPPLY VOLTAGE	85 to 270V AC , 50 – 60Hz / 24V AC/DC* (Recommended fuse : 1A, 230V AC Fast blow)
	POWER CONSUMPTION	3VA Max
	INRUSH CURRENT	Max. 2A@240V AC for 20ms / 5A@24VDC
INPUT SPECIFICATIONS	DISPLAY	7 segment LED(Red), Height : 0.5"
	TIME SETTING	Programmable by keys
	DIGITS	3 digits
	START INPUT	Pulse Start : upon contact closure (15msec minimum), Gate Start
	ACCURACY	±0.05% of Set Time or 50msec (whichever is greater) Repeat : ±0.05%
	RESET	Front, Remote, On interruption of power Reset time < 100msec
OUTPUT SPECIFICATIONS	OUTPUT CONTACT	DPDT (2 C/O)
	CONTACT RATING	5A@250V AC
	INDICATION	LED Status Indicator : Relay ON
ISOLATION	Supply Terminals – Contacts : 1.5KV, 1min Contact Set1 – Contact Set2 : 1.5KV, 1min Supply Terminal – Start/Reset : 1.5KV, 1min Start/Reset – Contacts : 1.5KV, 1min	
ENDURANCE	RELAY	MECHANICAL : 10,000,000 ops. Minimum (1800 ops./hr.) ELECTRICAL : 100,000 ops. Minimum (1200 ops./hr.)
AMBIENT CONDITIONS	OPERATING AMBIENT	0 to 55°C
	STORAGE AMBIENT	-5°C to 50°C
	HUMIDITY	95% RH non condensing
GENERAL SPECIFICATIONS	TERMINATIONS	Screw type, for 2.5mm sq. wire
	MOUNTING	Panel Mount
	PROTECTION LEVEL	IP20



DIM MODELS	A	B	C	D	E	F	G
	TD1D-48	48	48	95	46	4	46
TD1D-72	72	72	115	68	10	69	69
TD1D-96	96	96	75	90	10	92	92

Dimensions

All dimensions in mm

*Refer ordering information on page 2.

ORDERING INFORMATION	TD1D-48-Z			
	DESIGN NAME	SIZE	SUPPLY VOLTAGE	WEIGHT
	TD1D	48 : 48mm x 48mm	Z : 85 to 270V AC , 50 – 60Hz 24V : 20V to 30V AC(50 – 60Hz)/DC	150 gms
		72 : 72mm x 72mm		210 gms
96 : 96mm x 96mm		230 gms		

TERMINAL CONNECTIONS	TD1D-48	TD1D-72	TD1D-96
	<p>L(+):6 N(-):7 NO1:3 COM1:4 NC1:5 NO2:11 COM2:1 NC2:2 CONFIG:8 RST:9 GND:10 START:12</p>	<p>Short for Config START GND RST Fuse 1A L(+):15 N(-):16 NO1 COM1 NC1 NO2 COM2 NC2</p>	<p>Short for Config START GND RST Fuse 1A L(+) N(-)</p>

PROGRAMMING SCHEME					
CONFIGURATION SCHEME :					
1) At power OFF, short terminals to enter in configuration menu. For TD1D-48, short terminals 8 & 10. For TD1D-72, short terminals 5 & 6. For TD1D-96, short terminals 7 & 8. 2) Turn ON power. 3) Program configuration settings as per instructions below.					
1. SCALE			4. COUNTING DIRECTION		
Default Setting : 9.99			Default Setting : Down		
OPERATION	DISPLAY	DESCRIPTION	OPERATION	DISPLAY	DESCRIPTION
PRESS 'MODE' KEY	9.99	0 – 9.99	PRESS 'MODE' KEY	dn	DOWN: Counting starts from set point and proceed down to 0.
PRESS 'MODE' KEY	99.9	0 – 99.9	PRESS 'MODE' KEY	up	UP: Counting starts from 0 and proceed towards set point.
PRESS 'MODE' KEY	999	0 – 999	> PRESS 'ENT / RST' KEY TO STORE & PROCEED		
PRESS 'MODE' KEY	9.59	0 – 9.59	5. START INPUT		
> PRESS 'ENT / RST' KEY TO STORE & PROCEED			Default Setting : Pulse Start		
2. RANGE			Default Setting : Pulse Start		
Default Setting : Sec			Default Setting : Pulse Start		
OPERATION	DISPLAY	DESCRIPTION	OPERATION	DISPLAY	DESCRIPTION
PRESS 'MODE' KEY	SEC	SECOND	PRESS 'MODE' KEY	PUL	PULSE: Timing starts on momentary closure of switch connected between start and ground.
PRESS 'MODE' KEY	n - S	MINUTE - SECOND	PRESS 'MODE' KEY	GATE	GATE: Timing starts on power ON. When switch between start & ground is closed, timing freezes & resumes only after release of switch
PRESS 'MODE' KEY	n 1n	MINUTE	> PRESS 'ENT / RST' KEY TO STORE & PROCEED		
PRESS 'MODE' KEY	H - n	HOUR - MINUTE	6. POWER ON RESET		
PRESS 'MODE' KEY	Hn	HOUR	Default Setting : Yes		
> PRESS 'ENT / RST' KEY TO STORE & PROCEED			Default Setting : Yes		
3. DELAY MODE			Default Setting : Yes		
Default Setting : On Delay			Default Setting : Yes		
OPERATION	DISPLAY	DESCRIPTION	OPERATION	DISPLAY	DESCRIPTION
PRESS 'MODE' KEY	On	ON DELAY	PRESS 'MODE' KEY	P.P.Y	YES : Unit is reset on power interruption.
PRESS 'MODE' KEY	InE	INTERVAL DELAY	PRESS 'MODE' KEY	P.P.N	NO : Unit is not reset on power interruption.
PRESS 'MODE' KEY	C.On	CYCLIC (ON FIRST)	> PRESS 'ENT / RST' KEY TO STORE & PROCEED		
PRESS 'MODE' KEY	C.OF	CYCLIC (OFF FIRST)	> PRESS 'ENT / RST' KEY TO STORE & PROCEED		
> PRESS 'ENT / RST' KEY TO STORE & PROCEED			> PRESS 'ENT / RST' KEY TO STORE & PROCEED		

7. FRONT PANEL RESET			Default Setting : Yes	8. DEFAULT SETTING			Default Setting : No
OPERATION	DISPLAY	DESCRIPTION		OPERATION	DISPLAY	DESCRIPTION	
PRESS 'MODE' KEY		YES : Time can be reset from the front panel.		PRESS 'MODE' KEY		NO : Parameters remain unchanged.	
PRESS 'MODE' KEY		NO : Time can- not be reset from the front panel.		PRESS 'MODE' KEY		YES : All parameters are set to factory set values.	
➤ PRESS 'ENT / RST' KEY TO STORE & PROCEED				➤ PRESS 'ENT / RST' KEY TO STORE & PROCEED (roll over back to first parameter)			
AFTER CONFIGURATION SETTING :							
1) Turn power OFF. 2) Remove connection between the terminals. For TD1D-48, remove connection between 8 & 10. For TD1D-72, remove connection between 5 & 6. For TD1D-96, remove connection between 7 & 8. 3) Turn power ON.							

TO PROGRAM SET VALUE		
OPERATION	DISPLAY	Description
Press 'SET' key for 2sec to enter into time setting mode	Mode : On delay / Interval 	<ul style="list-style-type: none"> Press 'SET' key repeatedly to select digit. Selected digit will start blinking. Press 'MODE' key to change set value. The corresponding digit will increment from 0 to 9 and roll over back to 0. Press 'ENT / RST' key to store the set value. <p>Note : The unit will auto exit from set value mode after 60sec in case of key inactivity.</p>
	Mode : Cyclic 	<ul style="list-style-type: none"> In cyclic mode, display shows parameter name for 1sec and then its value. Press 'SET' key repeatedly to select digit. Selected digit will start blinking. Press 'MODE' key to change set value. The corresponding digit will increment from 0 to 9 and roll over back to 0. Press 'ENT / RST' key to store the set value. <p>Note : The unit will auto exit from set value mode after 60sec in case of key inactivity.</p>

MODE OF OPERATION	
Pulse start input : i. Refer terminal connections for start input. ii. Timing starts on momentary closure of start switch. ON Delay, Interval modes : <p>t = Set Time</p>	Typical application of Gate start (eg. On delay) : Time will start at every power ON or after applying reset input. <p>$t_1 + t_2 = t$ (set time), $th =$ hold time</p>
Cyclic ON first, Cyclic OFF first modes : <p>t1 = ON Time, t2 = OFF Time</p>	Typical application of continuous Start input (eg. On delay) If start switch is kept closed continuously, then time will start at every power ON. <p>t = Set Time</p>

VIEW MODE

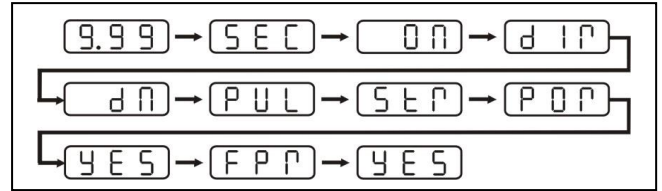
1. To view preset time :

- i. Press 'SET' key on front panel (< 1sec).
- ii. If set parameters are, Mode=On delay, Range=9.99sec, Set time=5.00sec then, timer will display parameters (each for 1sec) in following sequence.



2. To view set parameters from configuration

- i. Press mode key on front panel (< 1sec).
- ii. Timer will display parameters (each for 1sec) in following sequence.



RESETTING THE TIMER

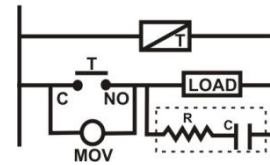
1. FRONT RESET : Timer can be reset from front panel by pressing 'RST/ENT' key (min. 1sec). (valid only if front panel reset is enabled in config setting).
2. REMOTE RESET : Timer can be reset by pressing switch connected between terminals 'RST' & 'GND' on rear side of timer (refer terminal connections).

POWER DOWN RESET (YES/NO)

YES : Time resets on power interruption. On power ON, timing starts accordingly with start input.

NO : On power interruption timer keeps backup of its current running status(i.e timing status, relay status), so on power resumption timer restores previous operation.

LOAD CONNECTION



Note : For inductive load , use of snubber and MOV, as shown above, is recommended.

KEYS

FUNCTIONS



SET

1. To enter into time setting mode.
2. To view preset time.
3. Selects the digit to be altered. Selected digit blinks. With every press of this key, next digit towards right starts blinking.



MODE

1. Scrolls up to next option of config. sub parameter.
2. To increment value of blinking digit.
3. To view set parameters from configuration.



ENT / RST

1. Scrolls to next option of config. parameter and to store previous parameter setting.
2. Front panel reset (RST).
3. To store set value and to exit from time setting mode.

(Specifications subject to change as development is a continuous process)