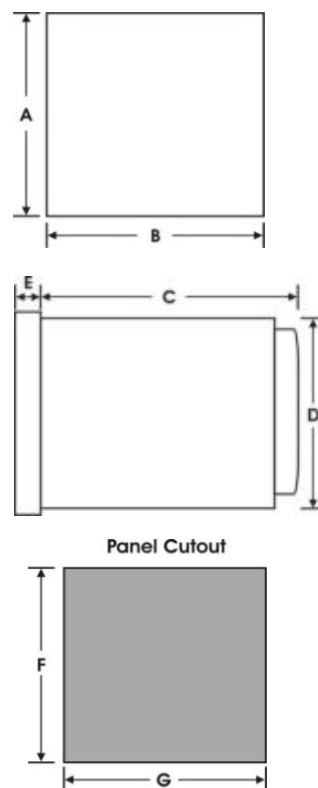


# DIGITAL TIMER : TD1D



<b>FEATURES</b>	<ul style="list-style-type: none"> <li>• Single Set point</li> <li>• ON Delay / Interval / Cyclic on first / Cyclic off first modes</li> <li>• Time range: 0.01sec to 999 hours</li> <li>• Output Contacts 2 C/O</li> <li>• Front Panel reset</li> <li>• Up/Down counting</li> <li>• High Reliability</li> <li>• Battery backup</li> </ul>		<b>TIME RANGES</b>
			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)
<b>OPERATING MODES</b>	ON Delay, Interval, Cyclic on first, Cyclic off first (Configurable by keys)		
<b>SUPPLY</b>	<b>SUPPLY VOLTAGE</b>	85 to 270V AC , 50 – 60Hz / 24V AC/DC* (Recommended fuse : 1A, 230V AC Fast blow)	
	<b>POWER CONSUMPTION</b>	3VA Max	
	<b>INRUSH CURRENT</b>	Max 2A@240V AC for 20ms / 5A@24VDC	
<b>INPUT SPECIFICATIONS</b>	<b>DISPLAY</b>	7 segment LED(Red), Height : 0.5"	
	<b>TIME SETTING</b>	Programmable by keys	
	<b>DIGITS</b>	3 digits	
	<b>START INPUT</b>	Pulse Start : upon contact closure (15ms ec minimum), Gate Start	
	<b>ACCURACY</b>	±0.05% of Set Time or 50ms ec (whichever is greater) Repeat : ±0.05%	
	<b>RESET</b>	Front, Remote, On interruption of power Reset time < 100ms ec	
<b>OUTPUT SPECIFICATIONS</b>	<b>OUTPUT CONTACT</b>	DPDT (2 C/O)	
	<b>CONTACT RATING</b>	5A@250V AC	
	<b>INDICATION</b>	LED Status Indicator : Relay ON	
<b>ISOLATION</b>	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		
<b>ENDURANCE</b>	<b>RELAY</b>	MECHANICAL : 10,000,000 ops. Minimum (1800 ops./hr.)	
		ELECTRICAL : 100,000 ops. Minimum (1200 ops./hr.)	
<b>AMBIENT CONDITIONS</b>	<b>OPERATING AMBIENT</b>	0 to 55°C	
	<b>STORAGE AMBIENT</b>	-5°C to 50°C	
	<b>HUMIDITY</b>	95% RH non condensing	
<b>GENERAL SPECIFICATIONS</b>	<b>TERMINATIONS</b>	Screw type, for 2.5mm sq. wire	
	<b>MOUNTING</b>	Panel Mount	
	<b>PROTECTION LEVEL</b>	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>START : 1 GND : 2 RST : 3 L(+) : 15 N(-) : 16</p>	<p>START : 1 GND : 2 RST : 3 NO1 : 10 COM1 : 11 NC1 : 12 NO2 : 13 COM2 : 14 NC2 : 15 L(+) : 17 N(-) : 18</p>	

PROGRAMMING SCHEME					
<b>CONFIGURATION SCHEME :</b>					
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.					
<b>1. SCALE</b> <span style="float:right">Default Setting : 9.99</span>			<b>4. COUNTING DIRECTION</b> <span style="float:right">Default Setting : Down</span>		
OPERATION	DISPLAY	DESCRIPTION	OPERATION	DISPLAY	DESCRIPTION
PRESS 'MODE' KEY	9.99	0 – 9.99	PRESS 'MODE' KEY	dn	<b>DOWN:</b> Counting starts from set point and proceed down to 0.
PRESS 'MODE' KEY	99.9	0 – 99.9	PRESS 'MODE' KEY	up	<b>UP:</b> 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	<b>5. START INPUT</b> <span style="float:right">Default Setting : Pulse Start</span>		
➤ PRESS 'ENT / RST' KEY TO STORE & PROCEED			OPERATION	DISPLAY	DESCRIPTION
<b>2. RANGE</b> <span style="float:right">Default Setting : Sec</span>			PRESS 'MODE' KEY	PUL	<b>PULSE:</b> Timing starts on momentary closure of switch connected between start and ground.
OPERATION	DISPLAY	DESCRIPTION	PRESS 'MODE' KEY	GATE	<b>GATE:</b> Timing starts on power ON. When switch between start & ground is closed, timing freezes & resumes only after release of switch
PRESS 'MODE' KEY	SEC	SECOND	➤ PRESS 'ENT / RST' KEY TO STORE & PROCEED		
PRESS 'MODE' KEY	m - s	MINUTE - SECOND	<b>6. POWER ON RESET</b> <span style="float:right">Default Setting : Yes</span>		
PRESS 'MODE' KEY	m in	MINUTE	OPERATION	DISPLAY	DESCRIPTION
PRESS 'MODE' KEY	H - m	HOUR - MINUTE	PRESS 'MODE' KEY	P.P.Y	<b>YES :</b> Unit is reset on power interruption.
PRESS 'MODE' KEY	HP	HOUR	PRESS 'MODE' KEY	P.P.N	<b>NO :</b> Unit is not reset on power interruption.
➤ PRESS 'ENT / RST' KEY TO STORE & PROCEED			➤ PRESS 'ENT / RST' KEY TO STORE & PROCEED		
<b>3. DELAY MODE</b> <span style="float:right">Default Setting : On Delay</span>			<b>6. POWER ON RESET</b> <span style="float:right">Default Setting : Yes</span>		
OPERATION	DISPLAY	DESCRIPTION	OPERATION	DISPLAY	DESCRIPTION
PRESS 'MODE' KEY	ON	ON DELAY	PRESS 'MODE' KEY	P.P.Y	<b>YES :</b> Unit is reset on power interruption.
PRESS 'MODE' KEY	int	INTERVAL DELAY	PRESS 'MODE' KEY	P.P.N	<b>NO :</b> 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		

7. FRONT PANEL RESET			Default Setting : Yes	8. DEFAULT SETTING			Default Setting : No
OPERATION	DISPLAY	DESCRIPTION		OPERATION	DISPLAY	DESCRIPTION	
PRESS 'MODE' KEY		<b>YES</b> : Time can be reset from the front panel.		PRESS 'MODE' KEY		<b>NO</b> : Parameters remain unchanged.	
PRESS 'MODE' KEY		<b>NO</b> : Time can- not be reset from the front panel.		PRESS 'MODE' KEY		<b>YES</b> : 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

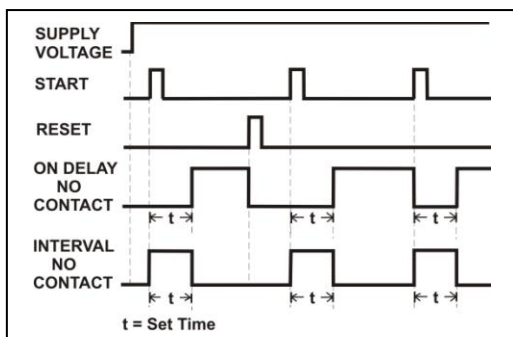
OPERATION	DISPLAY	Description
Press 'SET' key for 2sec to enter into time setting mode	Mode : On delay / Interval 	<ul style="list-style-type: none"> <li>• Press 'SET' key repeatedly to select digit. Selected digit will start blinking.</li> <li>• Press 'MODE' key to change set value. The corresponding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

### MODE OF OPERATION

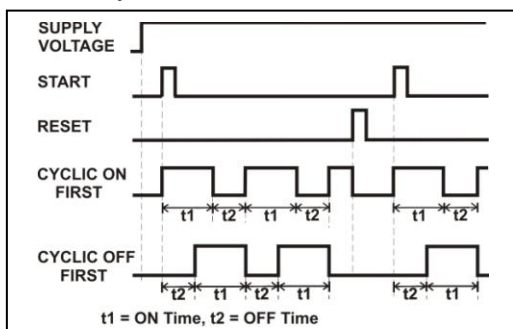
#### Pulse start input :

- Refer terminal connections for start input.
- Timing starts on momentary closure of start switch.

#### ON Delay, Interval modes :

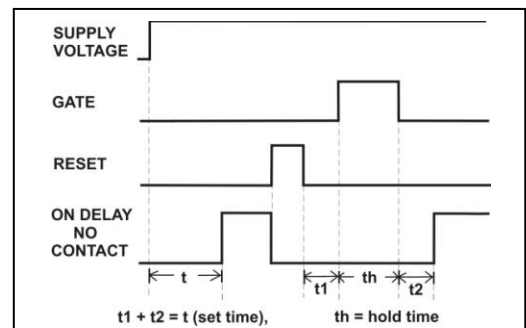


#### Cyclic ON first, Cyclic OFF first modes :



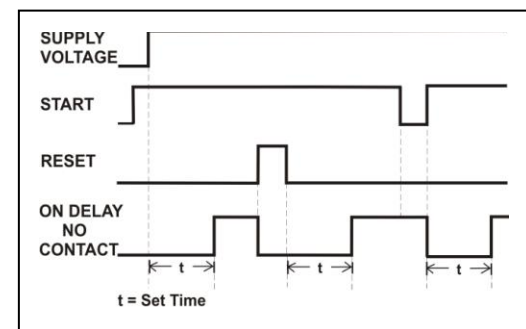
#### Typical application of Gate start (eg. On delay) :

Time will start at every power ON or after applying reset input.



#### Typical application of continuous Start input (eg. On delay)

If start switch is kept closed continuously, then time will start at every power ON.



## VIEW MODE

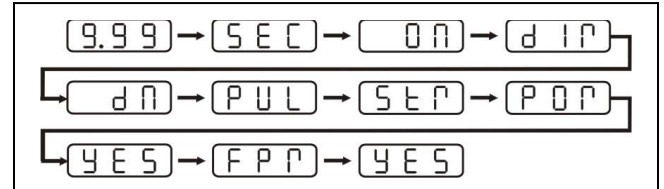
### 1. To view preset time :

- 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

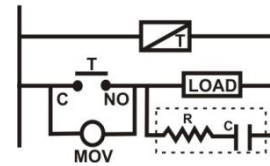
1. FRONT RESET : Timer can be reset from front panel by pressing 'RST/ENT' key (min. 1sec). (valid only if front panel reset is enabled in config setting).
2. REMOTE RESET : Timer can be reset by pressing switch connected between terminals 'RST' & 'GND' on rear side of timer (refer terminal connections).

### 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

KEYS	FUNCTIONS
● SET	<ol style="list-style-type: none"> <li>1. To enter into time setting mode.</li> <li>2. To view preset time.</li> <li>3. Selects the digit to be altered. Selected digit blinks. With every press of this key, next digit towards right starts blinking.</li> </ol>
● MODE	<ol style="list-style-type: none"> <li>1. Scrolls up to next option of config. sub parameter.</li> <li>2. To increment value of blinking digit.</li> <li>3. To view set parameters from configuration.</li> </ol>
● ENT / RST	<ol style="list-style-type: none"> <li>1. Scrolls to next option of config. parameter and to store previous parameter setting.</li> <li>2. Front panel reset (RST).</li> <li>3. To store set value and to exit from time setting mode.</li> </ol>

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