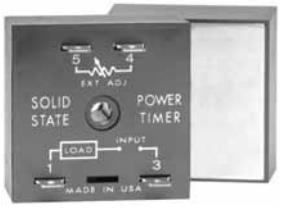
Interval or Delay On Break
THD7 Digi-Power Timing Module



TEN YEAR 10 WARRANTY

- Solid State Relay and Timer Combined
- Two Terminal Series Connection to Load
- Up to 20 A Steady State, 200 A Inrush
- Fixed or Adjustable Delays From 1 s ... 1000 m
- +/-0.5% Repeat Accuracy

Approvals:

5

Description

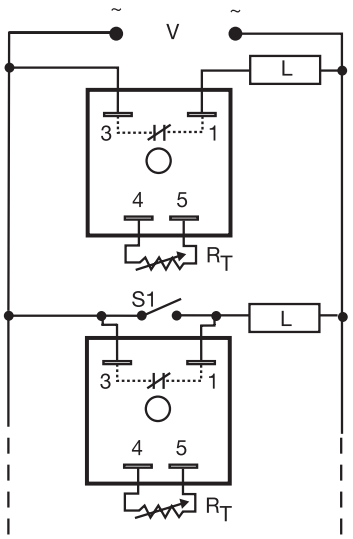
The THD7 utilizes only two terminals connected in series with the load. Interval timing mode is achieved by using a small portion of the AC sine wave allowing sufficient voltage for circuit operation. The THD7 can be used for interval or delay-on-break timing. It is designed to operate large loads directly, such as motors, heater elements, and motor starters.

Operation

Interval -- Upon application of input voltage, the output energizes and the time delay begins. The output remains energized throughout the time delay. At the end of the time delay the output de-energizes and remains de-energized until power is removed. **Reset:** Removing input voltage resets the time delay and the output.

Delay On Break -- Upon closure of SW1, the load energizes and the timer is reset (zero voltage across its input terminals). Opening SW1 re-applies input voltage to the timer, the load remains energized and the time delay begins. At the end of the time delay the output de-energizes. If SW1 is open when power is applied, the load will energize for the time delay then de-energize.
Reset: Reclosing SW1 resets the timer.

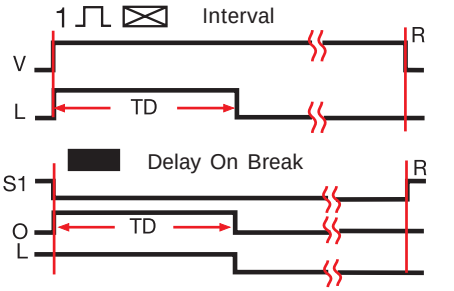
Connection



V = Voltage L = Load S1 = Initiate Switch

R_T is used when external adjustment is ordered. Dashed lines are internal connections.

Function



V = Voltage L = Load S1 = Initiate Switch
R = Reset TD = Time Delay O = Output
—⫽— = Undefined time

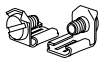
Time Delay	VTP P/N
1 – 1 ... 100 s	VTP5G
2 – 10 ... 1000 s	VTP5K
3 – 0.1 ... 10 m	VTP5N
4 – 1 ... 100 m	VTP5P
5 – 10 ... 1000 m	VTP5R

Selection Table for VTP Plug-on Adjustment Accessory.

Accessories

External adjust potentiometer
P/Ns:
P1004-13 (fig A)
P1004-13-X (fig B)

Female quick connect
P/Ns:
P1015-64 (AWG 14/16)
P1015-13 (AWG 10/12)



Quick connect to screw adaptor
P/N: **P1015-18**

Versa-knob
P/N: **P0700-7**

Plug-on adjustment module
P/N: **VTP(X)(X)**

See accessory pages for specifications.

Ordering Table

THD7	X	X	X	X
Series	**Input**	**Adjustment**	**Time Delay** *	**Output Rating**
	2 - 24 V AC	**1** - Fixed	**1** - 1 ... 100 s	**A** - 6 A
	4 - 120 V AC	**2** - External Adjust	**2** - 10 ... 1000 s	**B** - 10 A
	6 - 230 V AC		**3** - 0.1 ... 10 m	**C** - 20 A
			4 - 1 ... 100 m	
			5 - 10 ... 1000 m	

Example P/N: **THD7621B** Fixed – **THD7410.5MA**

*If Fixed Delay is selected, insert delay [**1**...**1000**] followed by (**S**) sec. or [**0.1** ... **1000**] (**M**) min.

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Interval or Delay On Break
THD7 Digi-Power
Timing Module

Technical Data

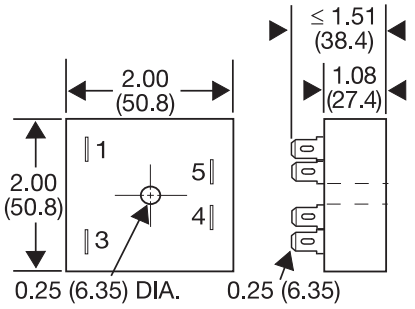
Time Delay		
Type	Digital integrated circuitry	
Range	1 s ... 1000 m in 5 adjustable ranges or fixed	
Repeat Accuracy	+/-0.5% or 20 ms, whichever is greater	
Tolerance (Factory Calibration)	≤ +/-10%	
Recycle Time	During timing: ≤ 350 ms; After timing: ≤150 ms	
Time Delay vs. Temperature & Voltage	≤ +/-2%	
Input		
Voltage	24, 120, or 230 V AC	
Tolerance	+/-20%	
Line Frequency	50 ... 60 Hz	
Output		
Type	Solid state	
Form	Normally Open, closed during timing	
Rating	Output / Steady State / Inrush** A / 6 A / 60 A B / 10 A / 100 A C / 20 A / 200 A	**Must be bolted to a metal surface using the included heat sink compound. The maximum mounting surface temperature is 90°C. Inrush: Non-repetitive for 16 ms.
Effective Voltage Drop (VLine-VLoad)	**Input / Effective Drop** 24 V AC / ≤ 3 V 120 V AC / ≤ 3 V 230 V AC / ≤ 5 V	
Minimum Load Current	100 mA	
Protection		
Circuitry	Encapsulated	
Dielectric Breakdown	≥ 2000 V RMS terminals to mounting surface	
Insulation Resistance	≥ 100 MΩ	
Mechanical		
Mounting **	Surface mount with one #10 (M5 x 0.8) screw	
Termination	0.25 in. (6.35 mm) male quick connect terminals	
Environmental		
Operating/Storage Temperature	-40°C ... +60°C / -40°C ... +85°C	
Humidity	95% relative, non-condensing	
Weight	≅ 3.9 oz (111 g)	

External Resistance vs Time Delay

R_T Selection Chart					
Desired Time Delay*					R_T
Seconds		Minutes			
1	2	3	4	5	Megohm
1	10	0.1	1	10	0.0
10	100	1	10	100	0.5
20	200	2	20	200	1.0
30	300	3	30	300	1.5
40	400	4	40	400	2.0
50	500	5	50	500	2.5
60	600	6	60	600	3.0
70	700	7	70	700	3.5
80	800	8	80	800	4.0
90	900	9	90	900	4.5
100	1000	10	100	1000	5.0

* When selecting an external R_T add at least 20% for tolerance of unit and the R_T.

Mechanical View



Inches (Millimeters)

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