

Interval or Delay On Break

TSD7 Series Timing Module

5



10 YEAR WARRANTY

- Two Terminal Series Connection to Load
- Fixed or Adjustable Delays From 1 s ... 1000 m
- Digital Integrated Circuitry
- +/-0.5% Repeat Accuracy

Approvals:

Accessories

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

Female quick connect
P/N:
P1015-64 (AWG 14/16)

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

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

Mounting bracket
P/N: **P1023-6**

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

For illustration
DIN rail P/Ns:
017322005 (Steel)
C103PM (Al)

DIN rail adaptor
P/N: **P1023-20**

See accessory pages for specifications.

Description

The TSD7 utilizes only two terminals connected in series with the load. Interval timing mode period is achieved by using a small portion of the AC sine wave allowing sufficient voltage for circuit operation. It can be used as an interval timer to control or pulse shape the operation of contactors, solenoids, relays, and lamp loads. The TSD7 can be wired to delay on the break of a switch for energy saving fan delays.

Operation

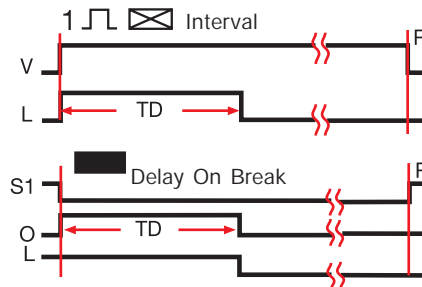
Interval -- Upon application of input voltage, the output energizes and the time delay begins. The output remains energized throughout the time delay. At the end of the time delay, the output de-energizes and remains de-energized until power is removed.

Reset: Removing input voltage resets the time delay and the output.

Delay On Break -- Upon closure of SW1, the load is energized and the timer is reset (zero volts 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.

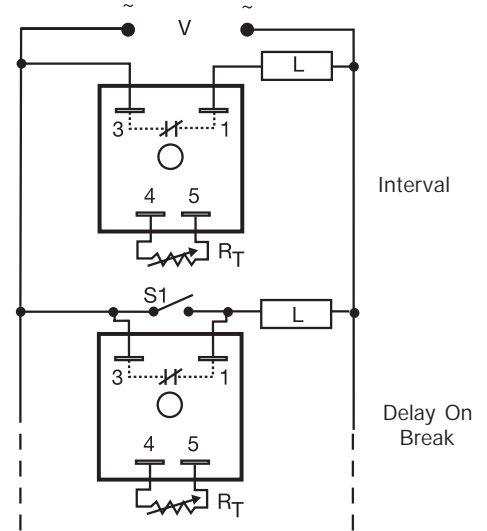
Reset: Reclosing SW1 resets the timer.

Function



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

Connection



V = Voltage L = Load S1 = Initiate Switch

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

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.

Ordering Table

TSD7 Series	X Input	X Adjustment	X Time Delay *
	-2 - 24 V AC	-1 - Fixed	-1 - 1 ... 100 s
	-4 - 120 V AC	-2 - External Adjust	-2 - 10 ... 1000 s
	-6 - 230 V AC		-3 - 0.1 ... 10 m
			-4 - 1 ... 100 m
			-5 - 10 ... 1000 m

Example P/N: **TSD7221** Fixed - **TSD7410.5M**

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

Interval or Delay On Break

TSD7 Series

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	≤ 400 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								
Maximum Load Current	1 A steady state, 10 A inrush at 45°C								
Minimum Load Current	40 mA								
Effective Voltage Drop (VLine-VLoad)	<table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Input</th> <th>Effective Drop</th> </tr> </thead> <tbody> <tr> <td>24 V AC</td> <td>3 V</td> </tr> <tr> <td>120 V AC</td> <td>4 V</td> </tr> <tr> <td>230 V AC</td> <td>6 V</td> </tr> </tbody> </table>	Input	Effective Drop	24 V AC	3 V	120 V AC	4 V	230 V AC	6 V
Input	Effective Drop								
24 V AC	3 V								
120 V AC	4 V								
230 V AC	6 V								
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								
Package	2 x 2 x 1.21 in. (50.8 x 50.8 x 30.7 mm)								
Termination	0.25 in. (6.35 mm) male quick connect terminals								
Environmental									
Operating/Storage Temperature	-40°C ... +75°C / -40°C ... +85°C								
Humidity	95% relative, non-condensing								
Weight	≅ 2.4 oz (68 g)								

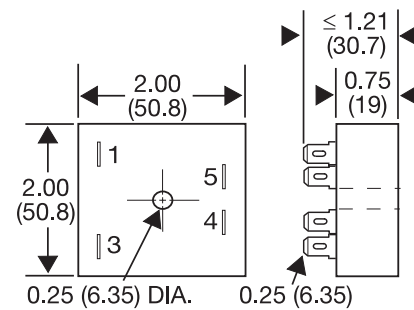
5

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)