Interval/Delay On Break
TSD7 Series
Timing Module

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

Description

The TSD7 is a unique control. With only two terminals connected in series with the load, an interval time period is achieved. Using a small portion of the AC sine wave allows sufficient voltage for operation. Can be used as an Interval Timer to control or pulse shape the operation of contactors, solenoids, relays, and lamp loads. Can be wired to delay on the break of a switch for energy saving fan delays.

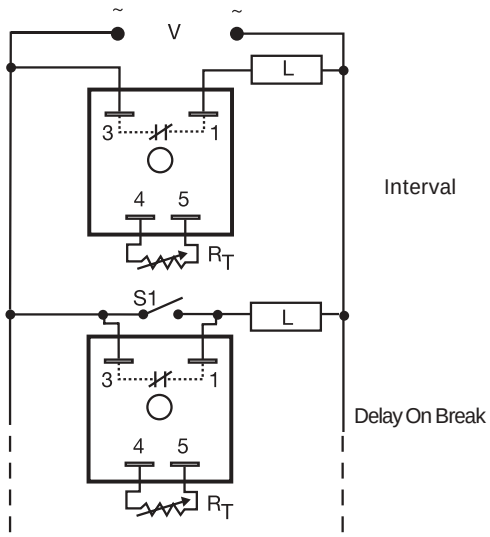
Operation: Interval

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

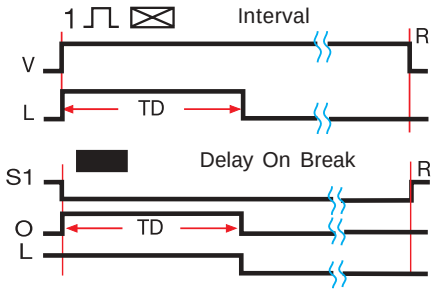
Operation: Delay On Break

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 will reset the timer.

- Approvals:



R_T is used when external adjustment is ordered.



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

Ordering Table

TSD7 Series

X Input
- **2** - 24 V AC
- **4** - 120 V AC
- **6** - 230 V AC

X Adjustment
- **1** - Fixed
- **2** - External Adjust

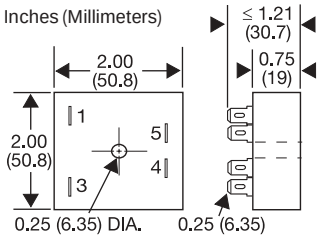
X Time Delay *
- **1** - 1 ... 100 s
- **2** - 10 ... 1000 s
- **3** - 0.1 ... 10 m
- **4** - 1 ... 100 m
- **5** - 10 ... 1000 m

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

Example P/N: **TSD7221**
Fixed – **TSD7413M**

Technical Data

Time Delay	
Type	Digital integrated circuitry
Range	1 s ... 1000 m in 5 adjustable ranges or fixed
Repeat Accuracy	+/-0.5%
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 Closed, 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)	**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
Operating/Storage Temperature	-40°C ... +75°C / -40°C ... +85°C
Humidity	95% relative, non-condensing
Weight	≅ 2.4 oz (68 g)

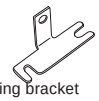


Time Delay	VTP P/N
1 – 1 ... 100 s	VTP5G
2 – 10 ... 1000 s	VTP5K
3 – 0.1 ... 10 m	VTP5N
4 – 1 ... 100 m	VTP5P
5 – 10 ... 1000 m	VTP5R

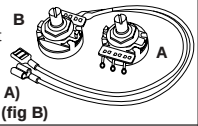
R_T Selection Chart					
Desired Time Delay*					R_T
Seconds		Minutes			
1	2	3	4	5	Megohm
1	10	0.1	1	10	0.0
10	100	1	10	100	0.5
20	200	2	20	200	1.0
30	300	3	30	300	1.5
40	400	4	40	400	2.0
50	500	5	50	500	2.5
60	600	6	60	600	3.0
70	700	7	70	700	3.5
80	800	8	80	800	4.0
90	900	9	90	900	4.5
100	1000	10	100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

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

Accessories



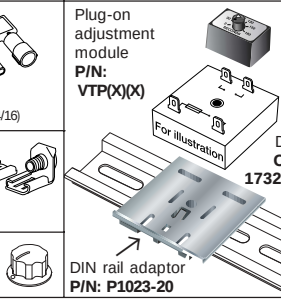
Mounting bracket
P/N: P1023-6



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



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

DIN rail P/Ns:
C103PM (Al)
17322005 (Steel)

Versa-knob
P/N: P0700-7

DIN rail adaptor
P/N: P1023-20

See accessory pages at the end of this section.