Delay On Break (Release) TSDB Series Timing Module

TEN YEAR 10 WARRANTY

- Delay on Break Timing with AC & DC Voltage
- Totally Solid State & Encapsulated
- Fast Reset to Zero During Timing
- Excellent Accuracy & Reliability
- Polarity Protected

Description

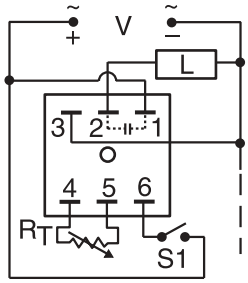
The TSDB Series digital circuit provides long or short delays with accuracy and stability over a wide voltage and temperature range. Suitable for industrial and commercial equipment.

Operation

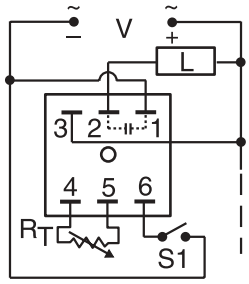
Input voltage must be applied before and during timing. Upon closure of the initiate switch, the output is energized. The time delay begins when the initiate switch is opened. The output remains energized during timing. At the end of the time delay, the output is de-energized. The output will energize if the initiate switch is closed when input voltage is applied.

Reset: Reclosing the initiate switch during timing resets the time delay. Loss of input voltage resets the time delay and output.

■ Approvals:

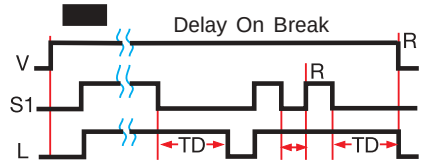


Positive Switching



Negative Switching

R_T is used when external adjustment is ordered.



V = Voltage L = Load S1 = Initiate Switch
TD = Time Delay R = Reset
⌇ = Undefined time

Ordering Table

TSDB Series

X Input
- **1** - 12 V DC
- **2** - 24 V AC
- **3** - 24 V DC
- **4** - 120 V AC
- **5** - 120 V DC
- **6** - 230 V AC

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

X Time Delay*
- **0** - 0.1 ... 10 s
- **1** - 1 ... 100 s
- **2** - 10 ... 1000 s
- **3** - 0.1 ... 10 m
- **4** - 1 ... 100 m
- **5** - 10 ... 1000 m

X Switching Mode (V DC Only)
- **P** - Positive
- **N** - Negative

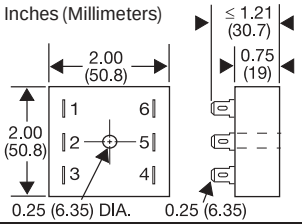
(120 V DC -- Positive switching only)

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

Example P/N: **TSDB420** Fixed – **TSDB110.1SP**

Technical Data

Time Delay	
Type	Digital integrated circuitry
Range	0.1 s ... 1000 m in 6 adjustable ranges or fixed
Repeat Accuracy	+/-0.5 %
Tolerance (Factory Calibration)	≤ +/-1%
Recycle Time	≤150 ms
Time Delay vs. Temperature & Voltage	+/-2%
Input	
Voltage	12, 24, or 120 V DC; 24, 120, or 230 V AC
Tolerance	+/-15%
DC Ripple	+/-10%
Line Frequency	50 ... 60 Hz
Output	
Type	Solid state
Form	Normally Open, closed before & during timing
Maximum Load Current (except) 120 V DC	1 A steady state, 10 A inrush at 60°C 0.5 A steady state, 5 A inrush
Voltage Drop	DC ≅ 1.7 V at rated current AC ≅ 2.5 V at 1 A
DC Operation	Positive or negative switching 120 V DC -- Positive switching only
Protection	
Circuitry	Encapsulated
Dielectric Breakdown	≥ 2000 V RMS terminals to mounting surface
Insulation Resistance	≥ 100 MΩ
Polarity	DC units are reverse polarity protected
Mechanical	
Mounting	Surface mount with one #10 (M5 x 0.8) screw
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)



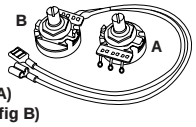
Time Delay	VTP P/N
0 – 0.1 ... 10 s	VTP5C
1 – 1 ... 100 s	VTP5G
2 – 10 ... 1000 s	VTP5K
3 – 0.1 ... 10 m	VTP5N
4 – 1 ... 100 m	VTP5P
5 – 10 ... 1000 m	VTP5R

R_T Selection Chart						
Desired Time Delay*						R_T
Seconds			Minutes			
0	1	2	3	4	5	Megohm
0.1	1	10	0.1	1	10	0.0
1	10	100	1	10	100	0.5
2	20	200	2	20	200	1.0
3	30	300	3	30	300	1.5
4	40	400	4	40	400	2.0
5	50	500	5	50	500	2.5
6	60	600	6	60	600	3.0
7	70	700	7	70	700	3.5
8	80	800	8	80	800	4.0
9	90	900	9	90	900	4.5
10	100	1000	10	100	1000	5.0

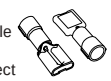
* When selecting an external R_T add at least 11% for tolerance of unit and the R_T.

Accessories

Mounting bracket
P/N: P1023-6



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

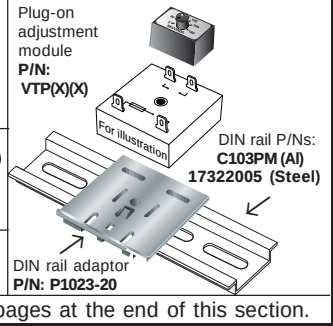


Female quick connect
P/N:
P1015-64 (AWG 14/16)

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

Versa-knob
P/N: P0700-7

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



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

DIN rail adaptor
P/N: P1023-20

See accessory pages at the end of this section.