

Delay On Break (Release) TSB Series Timing Module



10 YEAR WARRANTY

Discontinued Design
For more information contact
Technical Service at
(888)385-1221

- Timing Continued with Complete Loss of Power
- Fast Initiate
- Totally Solid State -- No Moving Parts
- Fixed or Adjustable Delays From 0.05 ... 600 s
- Good Repeat Accuracy and Stability

Description

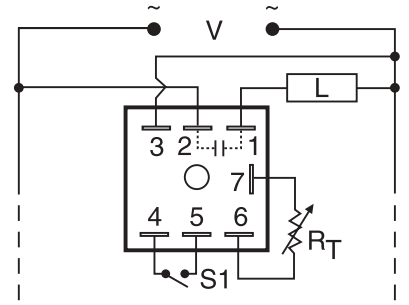
The TSB Series is a totally solid state delay on break timing module. The TSB is available with a fixed or external adjust time delay. Time Delays from .05 to 600 seconds, in 4 standard ranges, cover over 90% of all OEM and commercial appliance timing applications. The repeat accuracy of its analog circuitry is +/-2%. A convenient adjustment accessory called a VTR plugs onto the adjustment terminals to provide onboard adjustment. Operating voltages of 24,120, or 230 VAC are available. The TSB's 1A steady state, 10A rated solid state output is perfect for direct control of solenoids, contactors, relays, lamps, buzzers, and small heaters. The TSB can be surface mounted with a single screw, or snapped on 35 mm DIN track using the P1023-20 adaptor.

Operation

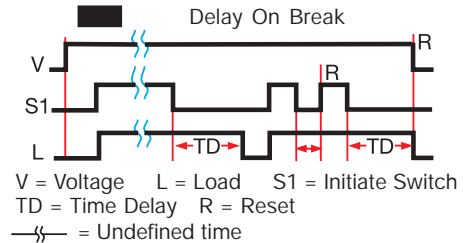
Input voltage must be applied to the input before and during timing. Upon closure of the initiate switch, the output is energized. The time delay begins when the initiate switch is opened. The output remains energized during timing. At the end of the time delay, the output is de-energized. The output 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 output but does not reset the time delay.

■ Approvals:



R_T is used when external adjustment is ordered.



Ordering Table

| TSB Series | X Input | X Adjustment | X Time Delay* |
|------------|---------------|----------------------|-------------------|
| | -2 - 24 V AC | -1 - Fixed | -1 - 0.05 ... 3 s |
| | -4 - 120 V AC | -2 - External Adjust | -2 - 0.5 ... 60 s |
| | -6 - 230 V AC | | -3 - 2 ... 180 s |
| | | | -4 - 5 ... 600 s |

* If Fixed Delay is selected, insert delay [0.05 ... 600] in seconds.

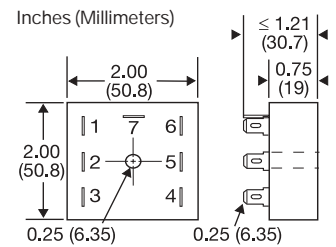
Example P/N: **TSB422** Fixed - **TSB410.5**

| Desired Time Delay* | | | | R _T Megohm |
|---------------------|-----|-----|-----|--------------------------|
| Seconds | | | | |
| 1 | 2 | 3 | 4 | |
| 0.05 | 0.5 | 2 | 5 | 0.0 |
| 0.5 | 10 | 30 | 60 | 0.5 |
| 1.0 | 20 | 60 | 120 | 1.0 |
| 1.5 | 30 | 90 | 180 | 1.5 |
| 2.0 | 40 | 120 | 240 | 2.0 |
| 2.5 | 50 | 150 | 300 | 2.5 |
| 3.0 | 60 | 180 | 360 | 3.0 |
| | | | 420 | 3.5 |
| | | | 480 | 4.0 |
| | | | 540 | 4.5 |
| | | | 600 | 5.0 |

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

Technical Data

| Time Delay | |
|--------------------------------------|--|
| Type | Analog circuitry |
| Range | 0.05 s ... 600 s in 4 adjustable ranges or fixed |
| Repeat Accuracy | +/-2% under fixed conditions |
| Tolerance (Factory Calibration) | ≤ +/- 10% |
| Time Delay vs. Temperature & Voltage | ≤ +/- 10% |
| Input | |
| Voltage | 24, 120, or 230 V AC |
| Tolerance | +/-20% |
| Line Frequency | 50 ... 60 Hz |
| Output | |
| Type | Solid state |
| Form | Normally Open, closed before & during timing |
| Maximum Load Current | 1 A steady state, 10 A inrush at 55°C |
| Voltage Drop | ≅ 2.5 V at 1 A |
| 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 Temperature | -40°C ... +75°C |
| Storage Temperature | -40°C ... +85°C |
| Humidity | 95% relative, non-condensing |
| Weight | ≅ 2.4 oz (68 g) |



| Time Delay | VTR P/N | Fig. A P/N | Fig. B P/N |
|------------------|---------|------------|------------|
| 1 - 0.05 ... 3 s | VTR4B | P1004-12 | P1004-12-X |
| 2 - 0.5 ... 60 s | VTR4F | P1004-12 | P1004-12-X |
| 3 - 2 ... 180 s | VTR4J | P1004-12 | P1004-12-X |
| 4 - 5 ... 600 s | VTR5N | P1004-13 | P1004-13-X |

Accessories

- Mounting bracket
P/N: P1023-6
- External adjust potentiometer
P/N: P1004-XX
- Female quick connect
P/N: P1015-64
- Plug-on adjustment module
P/N: VTR(X)(X)
- Quick connect to screw adaptor
P/N: P1015-18
- Versa-knob
P/N: P0700-7
- DIN rail adaptor
P/N: P1023-20
- DIN rail P/Ns: C103PM (Al) 17322005 (Steel)

See accessory pages at the end of this section.