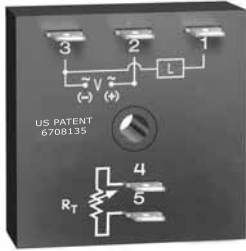


# Interval (Single Pulse On Operate)

## TSD2 Digi-Timer Timing Module

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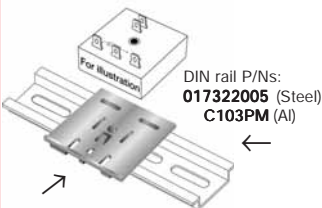


- Fixed or Adjustable Delays From 0.1 s... 100 h
- +/-0.1% Repeat Accuracy
- +/-1% Factory Calibration
- 24, 120, or 230 V AC
- 1 A Solid State Output
- Encapsulated

Approvals:

### Accessories

- External adjust potentiometer  
P/Ns: **P1004-95** (fig A) **P1004-95-X** (fig B)
- Mounting bracket  
P/N: **P1023-6**
- 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**



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

See accessory pages for specifications.

### Description

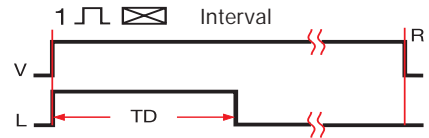
The TSD Series is designed for more demanding commercial and industrial applications where small size, and accurate performance is required. The factory calibration for fixed time delays is within 1% of the target time delay. The repeat accuracy, under stable conditions, is 0.1% of the time delay. The TSD Series is rated to operate over an extended temperature range. Time delays of 0.1 seconds to 100 hours are available. The output is rated 1 A steady and 10 A inrush. The modules are totally solid state and encapsulated to protect the electronic circuitry.

### Operation

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

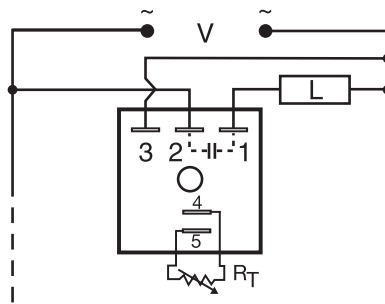
**Reset:** Removing input voltage resets the time delay and the output.

### Function



V = Voltage L = Load R = Reset  
TD = Time Delay ——— = Undefined time

### Connection



R<sub>T</sub> is used when external adjustment is ordered.  
Dashed lines are internal connections.

### Ordering Table

TSD2 Series	X Input	X Adjustment	X Time Delay*
-2	24 V AC	-1 - Fixed	-0 - 0.1 ... 10 s
-4	120 V AC	-2 - External Adjust	-1 - 1 ... 100 s
-6	230 V AC	-3 - Onboard Adjust	-2 - 10 ... 1000 s
			-3 - 0.1 ... 10 m
			-4 - 1 ... 100 m
			-5 - 10 ... 1000 m
			-6 - 1 ... 100 h

Example P/N: **TSD2421** Fixed – **TSD2410.1S**

\*If Fixed Delay is selected, insert delay [0.1 ... 1000] followed by (S) secs. or (M) mins. or [1 ... 100] (H) hours

# Interval (Single Pulse On Operate) TSD2 Digi-Timer Timing Module

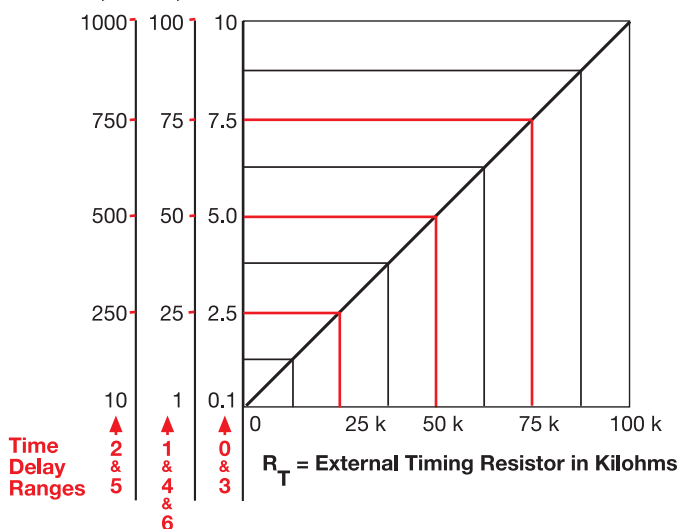
## Technical Data

<b>Time Delay</b>	
Range	0.1 s ... 100 h in 7 adjustable ranges or fixed
Repeat Accuracy	+/-0.1% or 20 ms, whichever is greater
Tolerance (Factory Calibration)	≤ +/-1%
Reset Time	≤ 150 ms
Time Delay vs. Temperature & Voltage	≤ +/-1%
<b>Input</b>	
Voltage	24, 120, or 230 V AC
Tolerance	+/-20%
Line Frequency	50 ... 60 Hz
Power Consumption	≤ 2 VA
<b>Output</b>	
Type	Solid state
Form	Normally Open, closed during timing
Maximum Load Current	1 A steady state, 10 A inrush at 60°C
Off State Leakage Current	≅ 5 mA at 230 V AC
Voltage Drop	≅ 2.5 V at 1 A
<b>Protection</b>	
Circuitry	Encapsulated
Dielectric Breakdown	≥ 2000 V RMS terminals to mounting surface
Insulation Resistance	≥ 100 MΩ
<b>Mechanical</b>	
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
<b>Environmental</b>	
Operating Temperature	-40°C ... +75°C
Storage Temperature	-40°C ... +85°C
Humidity	95% relative, non-condensing
Weight	≅ 2.4 oz (68 g)

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## External Resistance vs Time Delay

In Secs., Mins., or Hours



**This chart applies to externally adjustable part numbers.**

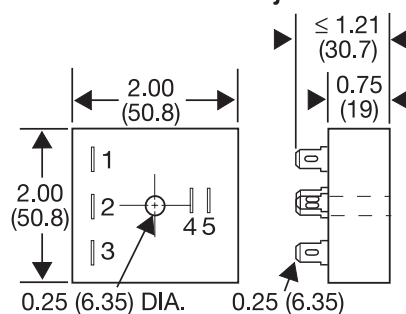
The time delay is adjustable over the time delay range selected by varying the resistance across the  $R_T$  terminals; as the resistance increases the time delay increases.

When selecting an external  $R_T$ , add the tolerances of the timer and the  $R_T$  for the full time range adjustment.

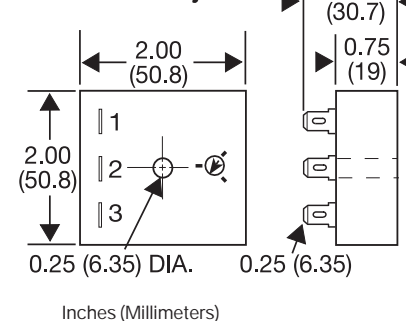
**Examples:** 1 to 50 S adjustable time delay, select time delay range 1 and a 50 K ohm  $R_T$ . For 1 to 100 S use a 100 K ohm  $R_T$ .

## Mechanical View

Fixed & External Adjust



Onboard Adjust



Inches (Millimeters)

TSD2Gen 06.30.04