# Time Delay Relays
SINGLE SHOT

## TDS / TDSH / TDSL Series
## Relay Output, Single Shot Time Delay Relay


## Description

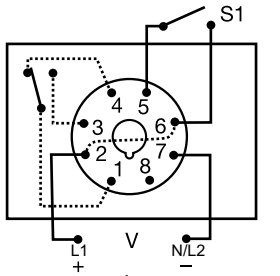
The TDS series combines accurate digital circuitry with isolated, 8 A rated, DPDT or SPDT relay contacts in an 8-pin or 11-pin plug-in package. The TDS series features DIP switch selectable time delays ranging from 0.1s to 10,230 s in three ranges. The TDS series is the product of choice for custom control panel and OEM designers.

### Operation (Single Shot)

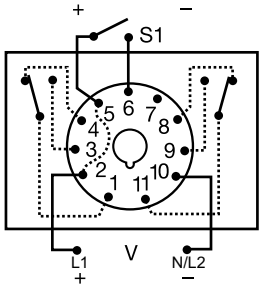
Input voltage must be applied to the input before and during timing. Upon momentary or maintained closure of the initiate switch (leading edge triggered), the output relay energizes for a measured interval of time. At the end of the delay, the output de-energizes. Opening or reclosing the initiate switch during timing has no affect on the time delay. The output will energize if the initiate switch is closed when input voltage is applied.

**Reset:** Reset occurs when the time delay is complete and the initiate switch is opened. Loss of input voltage resets the time delay and output.

## Wiring Diagram




8-PIN OCTAL SPDT




S1 = Initiate Switch
Relay contacts are isolated.

11-PIN DPDT

## Features & Benefits

| FEATURES | BENEFITS |
|---|---|
| **3 time ranges available (0.1 s to 2.8 h)** | Makes it versatile for use in many applications |
| **Microcontroller based** | Repeat Accuracy + / - 0.1 %; Setting Accuracy + / - 2 % |
| **LED indication (select models)** | Provides visual indication of relay status |
| **DIP switch adjustment** | Provides first time setting accuracy |
| **Isolated output contacts** | Allows control of loads with independent voltage sources |

## Ordering Information

| MODEL | INPUT VOLTAGE | DELAY RANGE (SEC) | LED | PLUG TYPE/OUTPUT FORM |
|---|---|---|---|---|
| TDS120AL | 120 V ac | 1–1023 in 1 s increments | X | Octal (8-pin) plug, SPDT |
| TDS120ALD | 120 V ac | 1–1023 in 1 s increments | X | 11-pin plug, DPDT |
| TDS12D | 12 V dc | 1–1023 in 1 s increments | | Octal (8-pin) plug, SPDT |
| TDS230AL | 230 V ac | 1–1023 in 1 s increments | X | Octal (8-pin) plug, SPDT |
| TDS24AL | 24 V ac | 1–1023 in 1 s increments | X | Octal (8-pin) plug, SPDT |
| TDSH120AL | 120 V ac | 10–10230 in 10 s increments | X | Octal (8-pin) plug, SPDT |
| TDSL120AL | 120 V ac | 0.1–102.3 in 0.1 s increments | X | Octal (8-pin) plug, SPDT |

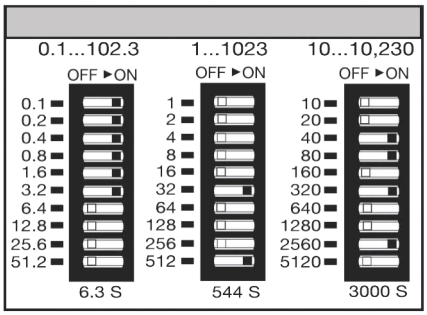
## Accessories

**OT08PC 8-pin Octal Socket for UL listing***
8-pin 35 mm DIN-rail or surface mount. Rated at 10 A @ 600 V ac. Surface mounted with two #6 screws or snaps onto a 35 mm DIN rail.

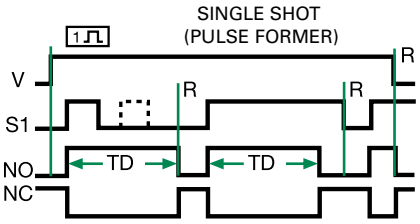
**OT11PC Octal Socket for UL listing***
11-pin surface & DIN rail mountable. Rated for 10 A @ 300 V ac

**P1011-6 Octal Socket for UL listing***
8-pin surface mount socket with binder head screw terminals. Rated 10 A @ 600 V ac.

## Digi-Set Binary Switch Operation




## Function Diagram




V = Voltage
S1 = Initiate Switch
NO = Normally Open Contact
NC = Normally Closed Contact
TD = Time Delay
R = Reset

## Specifications

### Time Delay

| | |
|---|---|
| **Type** | Digital integrated circuitry |
| **Range** | 0.1–102.3 s in 0.1 s increments<br>1–1023 s in 1 s increments<br>10–10,230 s in 10 s increments |
| **Repeat Accuracy** | ±0.1 % |
| **Setting Accuracy** | ±2 % |
| **Reset Time** | ≤ 150 ms |
| **Time Delay vs Temp. & Voltage** | ±5 % |
| **Indicator** | LED glows during timing; relay is energized |
| **Initiate Time** | ≤ 60 ms |

### Input

| | |
|---|---|
| **Voltage** | 12 V dc; 24, 120, or 230 V ac |
| **Tolerance** | |
| **12 V dc & 24 V** | -15 %–20 % |
| **120 & 230 V ac** | -20 %–10 % |
| **AC Line Frequency** | 50/60 Hz |
| **Power Consumption** | ≤ 3.25W |

### Output

| | |
|---|---|
| **Type** | Electromechanical relay |
| **Form** | SPDT or DPDT |
| **Rating** | 8 A resistive @ 120/240 V ac<br>1/3 hp @ 120/240 V ac |
| **Life** | Mechanical - 1 x $10^7$; Electrical - 1 x $10^6$ |

### Protection

| | |
|---|---|
| **Isolation Voltage** | ≥ 1500 V rms input to output |
| **Polarity** | Dc units are reverse polarity protected |

### Mechanical

| | |
|---|---|
| **Mounting** | Plug-in socket |
| **Termination** | Octal 8-pin plug-in or 11-pin plug-in |
| **Dimensions** | **H** 44.45 mm (1.75"); **W** 60.33 mm (2.38");<br>**D** (with socket) 104.78 mm (4.13") |

### Environmental

| | |
|---|---|
| **Operating/Storage Temperature** | -20 °C to 65 °C/-30 °C to 85 °C |
| **Weight** | ≅ 4 oz (113 g) |
| **Safety Marks** | |
| **UL (socket required)*** | UL 508 (E57310) |

*UL Listed when used with Part Number OT08-PC, RB08-PC, OT11-PC, or RB11-PC manufactured by Custom Connector Corp.

**Note:** Manufacturer's recommended screw terminal torque for the OT Series sockets is 12 in-lbs.