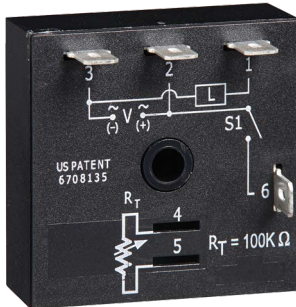
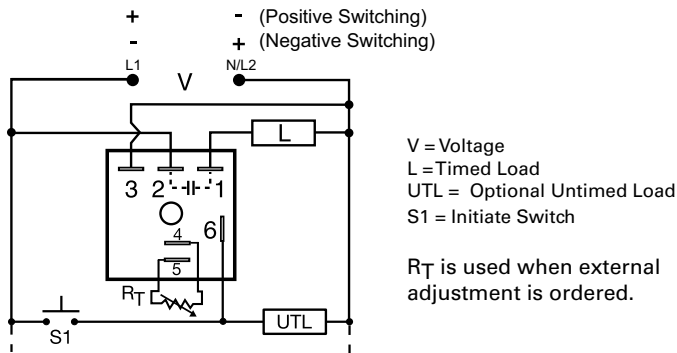


TSDS SERIES



Wiring Diagram



Description

The TSDS Series is designed for more demanding commercial and industrial applications where small size and accurate performance are required. The factory calibration for fixed time delays is within 1% of the target time delay. The repeat accuracy, under stable conditions, is 0.5% of the time delay. The TSDS Series is rated to operate over an extended temperature range. Time delays of 0.1 seconds to 1000 minutes are available. The output is rated 1A steady and 10A inrush. The modules are totally solid state and encapsulated to protect the electronic circuitry. This product is suitable for many applications, including dispensing, welding, and exposure timing.

Operation (Single Shot)

Input voltage must be applied before and during timing. Upon momentary or maintained closure of the initiate switch, the output 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 effect on the time delay. The output will not 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.

Features & Benefits

FEATURES	BENEFITS
Compact, low cost design measuring 2 in. (50.8mm) square	Allows flexibility for OEM applications
Microcontroller based	Repeat Accuracy +/- 0.5%, Factory calibration +/- 1%
1A Steady, 10A inrush solid-state output	Provides 100 million operations in typical conditions.
Totally solid state and encapsulated	No moving parts to arc and wear out over time and encapsulated to protect against shock, vibration, and humidity
Wide temperature range: -40° to 75°C	Reliable in demanding commercial and industrial applications

Ordering Information

MODEL	INPUT VOLTAGE	ADJUSTMENT	TIME DELAY	SWITCHING MODE
TSDS2110S	24VAC	Fixed	10s	n/a
TSDS320N	24VDC	External	0.1 - 10s	Negative
TSDS321P	24VDC	External	1 - 100s	Positive
TSDS421	120VAC	External	1 - 100s	n/a

If you don't find the part you need, call us for a custom product 800-843-8848

Accessories

- P1004-95, P1004-95-X Versa-Pot**
 Panel mountable, industrial potentiometer recommended for remote time delay adjustment.
- P1023-6 Mounting bracket**
 The 90° orientation of mounting slots makes installation/removal of modules quick and easy.
- P0700-7 Versa-Knob**
 Designed for 0.25 in (6.35 mm) shaft of Versa-Pot. Semi-gloss industrial black finish.

TSDS SERIES

Accessories



P1015-64 (AWG 14/16) Female Quick Connect

These 0.25 in. (6.35 mm) female terminals are constructed with an insulator barrel to provide strain relief.



P1015-18 Quick Connect to Screw Adapter

Screw adapter terminal designed for use with all modules with 0.25 in. (6.35 mm) male quick connect terminals.



C103PM (AL) DIN Rail

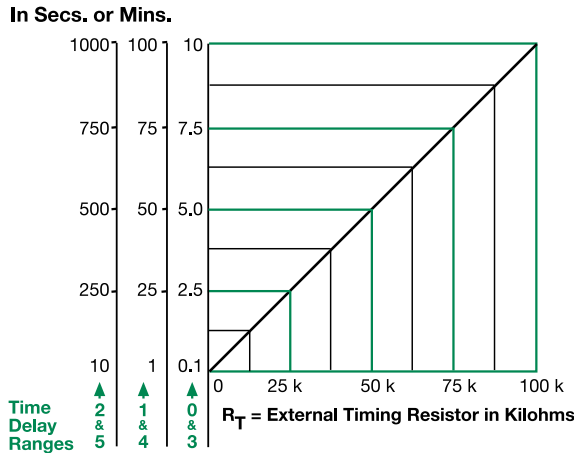
35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.



P1023-20 DIN Rail Adapter

Allows module to be mounted on a 35 mm DIN type rail with two #10 screws.

External Resistance vs. Time Delay

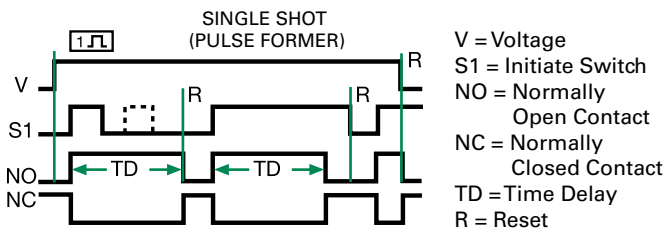


This chart applies to externally adjustable part numbers.
The time delay is adjustable over the time delay range selected by varying the resistance across the R_T terminals; as the resistance increases the time delay increases.

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 .

Function Diagram



Specifications

Time Delay Range	0.1s - 1000m in 6 adjustable ranges or fixed
Repeat Accuracy Tolerance (Factory Calibration)	$\pm 0.5\%$ or 20ms, whichever is greater
Reset Time	$\leq 150\text{ms}$
Initiate Time	$\leq 20\text{ms}$
Time Delay vs Temp. & Voltage	$\leq \pm 2\%$
Input Voltage Tolerance	12 or 24VDC; 24, 120, or 230VAC
Power Consumption	AC $\leq 2\text{VA}$; DC $\leq 1\text{W}$
AC Line Frequency/DC Ripple	50/60 Hz / $\leq 10\%$
Output Type	Solid state
Form	NO, closed during timing
Maximum Load Current	1A steady state, 10A inrush at 60°C
Voltage Drop	AC $\approx 2.5\text{V @ 1A}$; DC $\approx 1\text{V @ 1A}$
Off State Leakage Current	AC $\approx 5\text{mA @ 230VAC}$; DC $\approx 1\text{mA}$
DC Operation	Positive or negative switching
Protection Circuitry	Encapsulated
Dielectric Breakdown	$\geq 2000\text{V RMS}$ terminals to mounting surface
Insulation Resistance	$\geq 100\text{M}\Omega$
Polarity	DC units are reverse polarity protected
Mechanical Mounting Dimensions	Surface mount with one #10 (M5 x 0.8) screw H 50.8 mm (2.0"); W 50.8 mm (2.0"); D 30.7 mm (1.21")
Termination	0.25 in. (6.35 mm) male quick connect terminals
Environmental Operating/Storage Temperature	-40° to 75°C / -40° to 85°C
Humidity	95% relative, non-condensing
Weight	$\approx 2.4\text{ oz (68 g)}$