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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# THD1B410.5S



## Description

The THD1B410.5S combines accurate timing circuitry with high power solid-state switching. It can switch motors, lamps, and heaters directly without a contactor. You can reduce labor, component cost, and increase reliability with these small, easy-to-use, timers.

### Operation (Delay-on-Make)

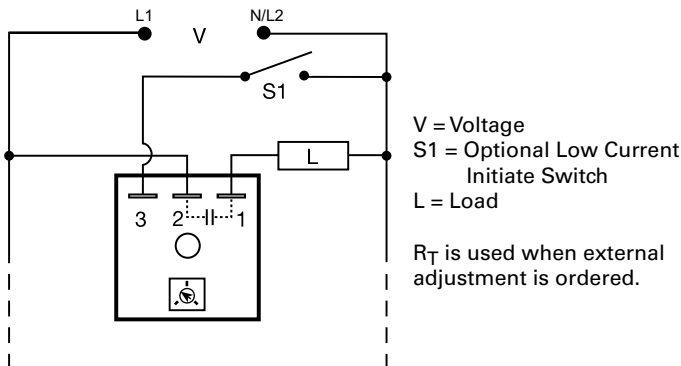
Upon application of input voltage, the time delay begins. The output is de-energized before and during the time delay. At the end of the time delay, the output energizes and remains energized until input voltage is removed.

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

## Features & Benefits

FEATURES	BENEFITS
<b>Microcontroller based</b>	Repeat Accuracy +/- 0.5%, Factory calibration +/- 1%
<b>Compact, low cost design</b>	Allows flexibility for OEM applications and reduces labor and component costs
<b>High load currents up to 20A, 200A inrush</b>	Allows direct operation of motors, lamps, and heaters directly without a contactor
<b>Totally solid state and encapsulated</b>	No moving parts to arc and wear out over time and encapsulated to protect against shock, vibration, and humidity
<b>Metalized mounting surface</b>	Facilitates heat transfer for high current applications

## Wiring Diagram



## Accessories



**P1004-95, P1004-95-X Versa-Pot**  
Panel mountable, industrial potentiometer recommended for remote time delay adjustment.



**P0700-7 Versa-Knob**  
Designed for 0.25 in. (6.35 mm) shaft of Versa-Pot. Semi-gloss industrial black finish.



**P1015-13 (AWG 10/12), 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.

## THD1 SERIES

### Specifications

#### Time Delay

**Range** 0.1s - 1000m in 6 adjustable ranges or fixed  
**Repeat Accuracy** ±0.5% or 20ms, whichever is greater

**Tolerance (Factory Calibration)** ≤ ±1%

**Recycle Time** ≤ 150ms

**Time Delay vs Temp. & Voltage** ≤ ±2%

#### Input

**Voltage** 24, 120, or 230VAC

**Tolerance** ±20%

**Line Frequency** 50/60 Hz

**Power Consumption** ≤ 2VA

#### Output

**Type** Solid state

**Form** NO, open during timing

Maximum Load Current	Output	Steady State	Inrush**
	A	6A	60A
	B	10A	100A
	C	20A	200A

**Minimum Load Current** 100mA

**Voltage Drop** ≈ 2.5V @ rated current

**OFF State Leakage Current** ≈ 5mA @ 230VAC

#### Protection

**Circuitry** Encapsulated

**Dielectric Breakdown** ≥ 2000V RMS terminals to mounting surface

**Insulation Resistance** ≥ 100 MΩ

#### Mechanical

**Mounting\*\*** Surface mount with one #10 (M5 x 0.8) screw

**Dimensions** **H** 50.8 mm (2.0"); **W** 50.8 mm (2.0");

**D** 38.4 mm (1.51")

**Termination** 0.25 in. (6.35 mm) male quick connect terminals

#### Environmental

**Operating/Storage**

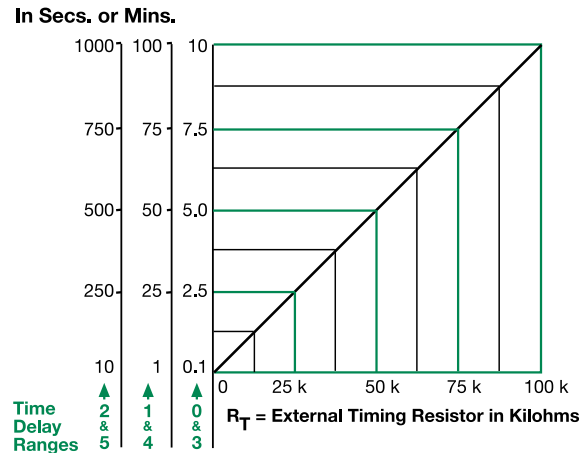
**Temperature** -40° to 60°C / -40° to 85°C

**Humidity** 95% relative, non-condensing

**Weight** ≈ 3.9 oz (111 g)

\*\*Must be bolted to a metal surface using the included heat sink compound. The maximum mounting surface temperature is 90°C. Inrush: Non-repetitive for 16ms.

### 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

