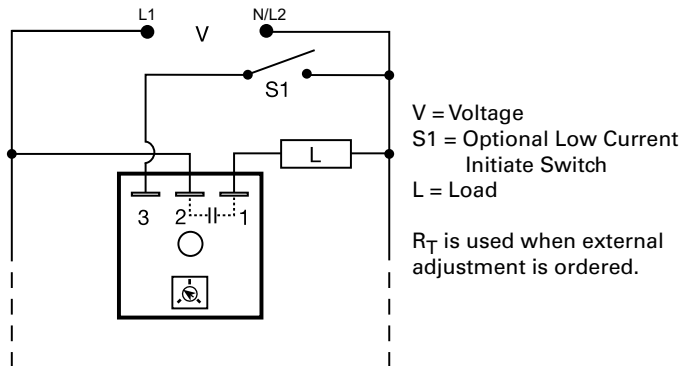


# TH1 SERIES



## Wiring Diagram



## Ordering Information

| MODEL   | OUTPUT RATING | INPUT VOLTAGE | ADJUSTMENT | TIME DELAY |
|---------|---------------|---------------|------------|------------|
| TH1B633 | 10A           | 230VAC        | Onboard    | 2 - 180s   |
| TH1C415 | 20A           | 120VAC        | Fixed      | 5s         |
| TH1C621 | 20A           | 230VAC        | External   | 0.1 - 3s   |

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

## Description

The TH1 Series is a solid-state relay and timer combined into one compact, easy-to-use control. This highly reliable device eliminates the need for a separate solid-state relay. When mounted to a metal surface, it can switch load currents up to 20A steady state, and 200A inrush.

### 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 + / - 2%,<br>Factory calibration + / - 5%  |
| <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  |

## 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.

# TH1 SERIES

## Specifications

### Time Delay

**Range** 0.1 - 600s in 4 adjustable ranges or fixed  
**Repeat Accuracy** ±2% or 20ms, whichever is greater

**Tolerance (Factory Calibration)** ≤ ± 5%

**Time Delay vs Temp. & Voltage** ≤ ±10%

**Recycle Time** ≤ 150ms

### Input

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

**Tolerance** ±15%

**AC Line Frequency** 50/60 Hz

**Power Consumption** ≤ 2VA

### Output

**Type** Solid state

**Form** NO, open during timing

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

**Minimum Load Current** 100mA

**Voltage Drop** ≈ 2.5V at 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** -20° to 60°C / -40° to 85°C

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

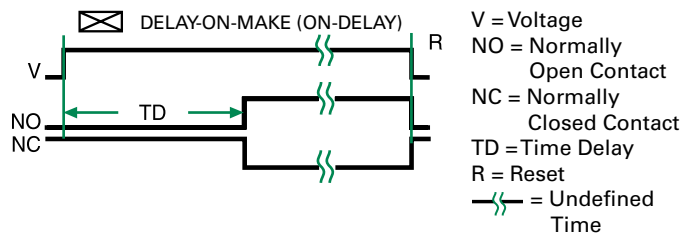
**Weight** ≈ 3.9 oz (111 g)

## Selection Guide

| RT Selection Chart  |     |     |     |       |
|---------------------|-----|-----|-----|-------|
| Desired Time Delay* |     |     |     | RT    |
| Seconds             |     |     |     |       |
| 1                   | 2   | 3   | 4   | Kohms |
| 0.1                 | 0.5 | 2   | 5   | 0     |
| 0.3                 | 6   | 20  | 60  | 10    |
| 0.6                 | 12  | 38  | 120 | 20    |
| 0.9                 | 18  | 55  | 180 | 30    |
| 1.2                 | 24  | 73  | 240 | 40    |
| 1.5                 | 30  | 90  | 300 | 50    |
| 1.8                 | 36  | 108 | 360 | 60    |
| 2.1                 | 42  | 126 | 420 | 70    |
| 2.4                 | 48  | 144 | 480 | 80    |
| 2.7                 | 54  | 162 | 540 | 90    |
| 3.0                 | 60  | 180 | 600 | 100   |

\* When selecting an external RT add at least 15% for tolerance of unit and the RT.

## Function Diagram



\*\*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.