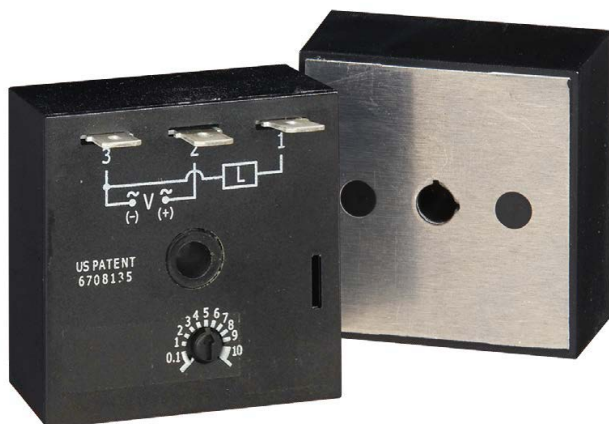


# Time Delay Relays

## DEDICATED - INTERVAL

### THD2 Series



### Description

The THD2 Series 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, Digi-Power timers.

#### Operation (Interval)

Upon application of input voltage, the time delay begins. The output energizes 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.

### Features

- Microcontroller based
- High load currents up to 20A, 200A inrush
- Totally solid state and encapsulated
- Metalized mounting surface
- Compact, low cost design

### Benefits

- Repeat Accuracy + / - 0.5%,  
Factory calibration + / - 1%
- Allows direct control of motors, lamps and heaters without a contactor
- No moving parts to arc and wear out over time and encapsulated to protect against shock, vibration, and humidity
- Facilitates heat transfer in high current applications
- Allows flexibility for OEM applications and reduces labor and components costs

### Specifications

#### Time Delay

<b>Range</b>	0.1s - 1000m in 6 adjustable ranges or fixed
<b>Repeat Accuracy</b>	±0.5% or 20ms, whichever is greater
<b>Tolerance</b>	
<b>(Factory Calibration)</b>	≤ ±1%
<b>Reset Time</b>	≤ 150ms
<b>Time Delay vs Temp. &amp; Voltage</b>	≤ ±2%

#### Input

<b>Voltage</b>	24, 120, or 230VAC
<b>Tolerance</b>	±20%
<b>AC Line Frequency</b>	50/60 Hz

#### Output

<b>Type</b>	Solid state		
<b>Form</b>	NO, closed during timing		
<b>Maximum Load Current</b>	<b>Output</b>	<b>Steady State</b>	<b>Inrush**</b>
	A	6A	60A
	B	10A	100A
	C	20A	200A

<b>Minimum Load Current</b>	100mA
<b>Voltage Drop</b>	≅ 2.5V at rated current
<b>OFF State Leakage Current</b>	≅ 5mA @ 230VAC

#### Protection

<b>Circuitry</b>	Encapsulated
<b>Dielectric Breakdown</b>	≥ 2000V RMS terminals to mounting surface
<b>Insulation Resistance</b>	≥ 100 MΩ

#### Mechanical

<b>Mounting **</b>	Surface mount with one #10 (M5 x 0.8) screw
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#### Dimensions

**H** 50.8 mm (2");  
**W** 50.8 mm (2");  
**D** 38.4 mm (1.51")

#### Termination

0.25 in. (6.35 mm) male quick connect terminals

#### Environmental

<b>Operating/Storage Temperature</b>	-40° to 60°C / -40° to 85°C
<b>Humidity</b>	95% relative, non-condensing
<b>Weight</b>	≅ 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.

### Web Resources

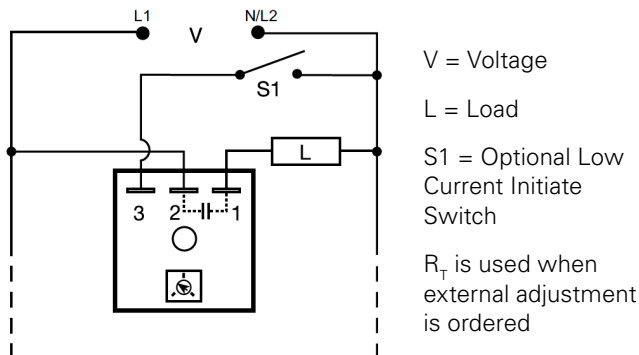
Download technical documents: [Littelfuse.com/thd2](http://Littelfuse.com/thd2)

# Time Delay Relays

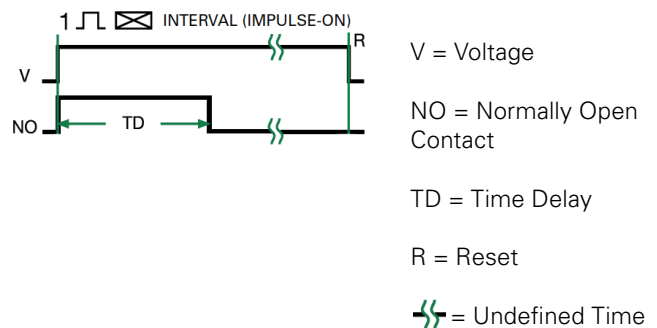
## DEDICATED - INTERVAL

### THD2 Series

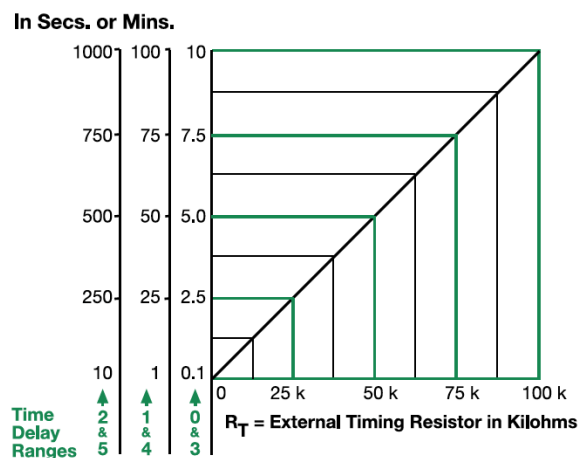
#### Wiring Diagram



#### Function Diagram



#### 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  $R_T$ .

#### Ordering Information

MODEL	OUTPUT RATING	INPUT VOLTAGE	ADJUSTMENT	TIME DELAY
THD2C420	20 A	120 VAC	External	0.1 - 10 s
THD2C423	20 A	120 VAC	External	0.1 - 10 m
THD2C433	20 A	120 VAC	Onboard	0.1 - 10 m
THD2C620	20 A	230 VAC	External	0.1 - 10 s
THD2C633	20 A	230 VAC	Onboard	0.1 - 10 m

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.



##### 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.

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