

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

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

Tolerance $\leq \pm 1\%$
(Factory Calibration)
Reset Time $\leq 150\text{ms}$

Time Delay vs Temp. & Voltage $\leq \pm 2\%$

Input

Voltage 24, 120, or 230VAC
Tolerance $\pm 20\%$
AC Line Frequency 50/60 Hz

Output

Type Solid state
Form NO, closed during timing
Maximum Load Current

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

Minimum Load Current 100mA
Voltage Drop $\approx 2.5\text{V}$ at rated current
OFF State Leakage Current $\approx 5\text{mA}$ @ 230VAC

Protection

Circuitry Encapsulated
Dielectric Breakdown $\geq 2000\text{V RMS}$ terminals to mounting surface
Insulation Resistance $\geq 100\text{M}\Omega$

Mechanical

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

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

Operating/Storage Temperature -40°C to 60°C / -40°C to 85°C
Humidity 95% relative, non-condensing
Weight $\approx 3.9\text{ oz}$ (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

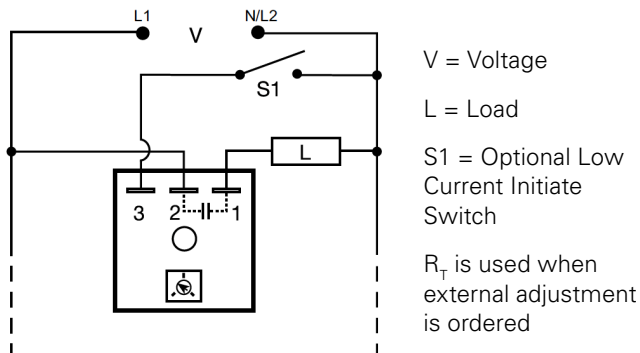
Download technical documents: Littelfuse.com/thd2

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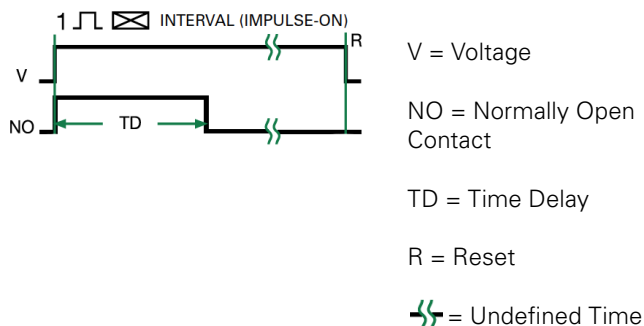
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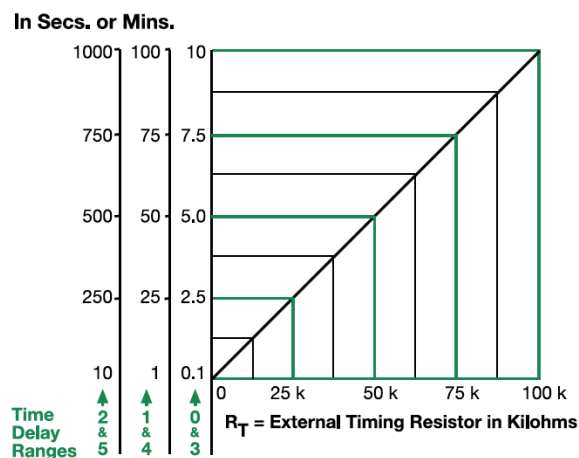
Wiring Diagram



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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