

# THDB SERIES



## Description

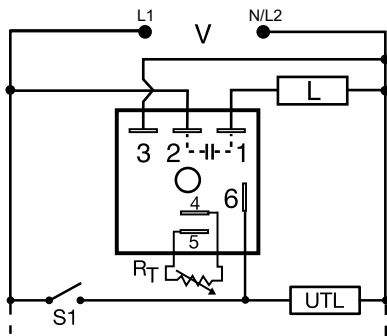
The THDB Series combines accurate timing circuitry with high power, solid-state switching. It can switch motors, lamps, and heaters directly without a contactor. You can reduce labor, component cost, and increase reliability with these small, easy-to-use, timers.

### Operation (Delay-on-Break)

Input voltage must be applied before and during timing. Upon closure of the initiate switch, the output energizes. The time delay begins when the initiate switch is opened. The output remains energized during timing. At the end of the time delay, the output de-energizes. The output energizes if the initiate switch is closed when input voltage is applied.

**Reset:** Reclosing the initiate switch during timing resets the time delay. Loss of input voltage resets the time delay and output.

## Wiring Diagram



V = Voltage  
UTL = Optional Untimed Load  
L = Timed Load  
S1 = Initiate Switch

$R_T$  is used when external adjustment is ordered.

## Features & Benefits

FEATURES	BENEFITS
<b>Microcontroller based</b>	Repeat accuracy + / - 0.5%, Factory calibration + / - 1%
<b>High load currents up to 20A, 200A inrush</b>	Allows direct operation of motors, lamps and heaters 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 in high current applications
<b>Compact, low cost design</b>	Allows flexibility for OEM applications and reduces labor and components costs

## 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.



### P1015-64 (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.

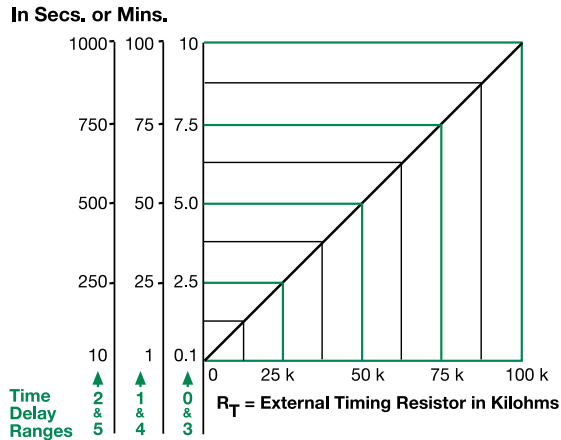
## Ordering Information

MODEL	INPUT VOLTAGE	ADJUSTMENT	TIME DELAY	OUTPUT RATING
THDB421A	120VAC	External	1 - 100s	6A
THDB434C	120VAC	Onboard	1 - 100m	20A

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

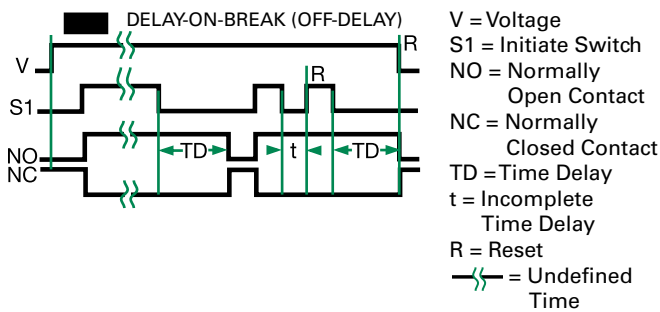
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## External Resistance vs. Time Delay



**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 tie 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

<b>Time Delay Range</b>	0.1s - 1000m in 6 adjustable ranges or fixed $\pm 0.5\%$ or 20ms, whichever is greater		
<b>Repeat Accuracy Tolerance (Factory Calibration)</b>	$\leq \pm 1\%$		
<b>Reset Time</b>	$\leq 150\text{ms}$		
<b>Initiate Time</b>	$\leq 20\text{ms}$		
<b>Time Delay vs Temp. &amp; Voltage</b>	$\leq \pm 2\%$		
<b>Input Voltage</b>	24, 120, or 230VAC		
<b>Tolerance</b>	$\pm 20\%$		
<b>AC Line Frequency</b>	50/60 Hz		
<b>Power Consumption</b>	$\leq 2\text{VA}$		
<b>Output Type</b>	Solid state		
<b>Form</b>	NO, closed before & 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>Voltage Drop</b>	$\approx 2.5\text{V}$ @ rated current		
<b>Off State Leakage Current</b>	$\approx 5\text{mA}$ @ 230VAC		
<b>Minimum Load Current</b>	100mA		
<b>Protection</b>	Encapsulated		
<b>Circuitry</b>	$\geq 2000\text{V}$ RMS terminals to mounting surface		
<b>Dielectric Breakdown</b>	$\geq 100\text{M}\Omega$		
<b>Insulation Resistance</b>	$\geq 100\text{M}\Omega$		
<b>Mechanical Mounting**</b>	Surface mount with one #10 (M5 x 0.8) screw		
<b>Dimensions</b>	<b>H</b> 50.8 mm (2.0"); <b>W</b> 50.8 mm (2.0"); <b>D</b> 38.4 mm (1.51")		
<b>Termination</b>	0.25 in. (6.35 mm) male quick connect terminals		
<b>Environmental Operating/Storage Temperature</b>	-40° to 60°C / -40° to 85°C		
<b>Humidity</b>	95% relative, non-condensing		
<b>Weight</b>	$\approx 3.9\text{ oz}$ (111 g)		

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