

# TDU / TDUH / TDUL SERIES

## Encapsulated Solid-State, Delay-on-Make Timers



### Wiring Diagram



### Description

The TDU Series are encapsulated solid-state, delay-on-make timers that combine digital timing circuitry with universal voltage operation. The TDU offers DIP switch adjustment allowing accurate selection of the time delay over the full time delay range. This series is an excellent choice for process control systems and OEM equipment.

#### 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>Universal input voltage</b>	Meets wide application needs
<b>Microcontroller based</b>	Repeat Accuracy +/- 0.5% or 20ms, whichever is greater
<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>3 time ranges available (0.1s to 2.8h)</b>	Makes it versatile for use in many applications
<b>DIP switch adjustment</b>	Provides first time setting accuracy

### Accessories



#### P1023-6 Mounting bracket

The 90° orientation of mounting slots makes installation/removal of modules quick and easy.



#### 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.



#### C103PM (AL) DIN Rail

35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.



#### P1023-20 DIN Rail Adapter

Allows module to be mounted on a 35 mm DIN type rail with two #10 screws (DIN rail not included).

### Ordering Information

MODEL	INPUT VOLTAGE	TIME RANGE (SEC)
TDUL3000A	24 to 120VAC/DC	0.1-102.3
TDUL3001A	100 to 240VAC/DC	0.1-102.3
TDU3000A	24 to 120VAC/DC	1-102.3
TDU3001A	100 to 240VAC/DC	1-102.3
TDU3003A	120 to 277VAC/DC	1-102.3
TDUH3000A	24 to 120VAC/DC	10-10230
TDUH3001A	100 to 240VAC/DC	10-10230

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## Specifications

### Time Delay

**Type** Digital integrated circuitry  
**Range\*** 0.1 - 102.3s in 0.1s increments  
 1 - 1,023s in 1s increments  
 10 - 10,230s in 10s increments  
**Repeat Accuracy** ±0.5% or 20ms, whichever is greater

**Tolerance** ±10%  
**(Factory Calibration)**  
**Recycle Time** ≤ 150ms  
**Time Delay vs Temp. & Voltage** ±5%

### Input

**Voltage** 24 to 120VAC/DC; 100 to 240VAC/DC  
**AC Line Frequency** 50/60 Hz  
**Tolerance** ±20%

### Output

**Type** Solid state  
**Form** NO, open during timing  
**Maximum Load Current** 1A steady state, 10A inrush at 60°C  
**Minimum Holding Current** 40mA  
**Voltage Drop** ≈ 2.5V @ 1A

### Protection

**Circuitry** Encapsulated  
**Dielectric Breakdown** ≥ 2000V RMS terminals to mounting surface  
**Insulation Resistance** ≥ 100 MΩ

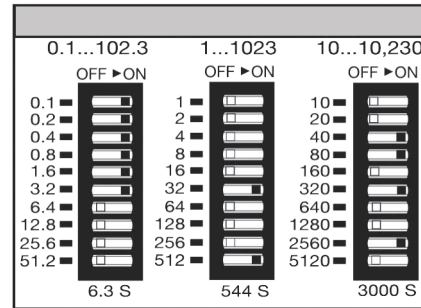
### Mechanical

**Mounting** Surface mount with one #10 (M5 x 0.8) screw  
**Dimensions** **H** 50.8 mm (2"); **W** 50.8 mm (2");  
**D** 30.7 mm (1.21")  
**Termination** 0.25 in. (6.35 mm)  
 male quick connect terminals

### Environmental

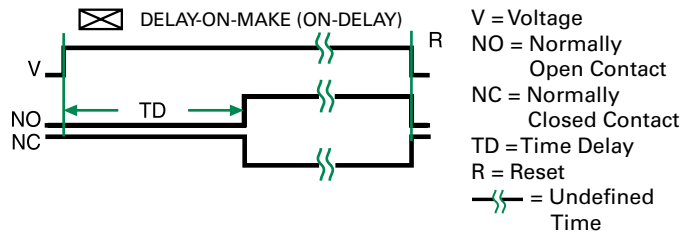
**Operating/Storage Temperature** -40° to 60°C / -40° to 85°C  
**Humidity** 95% relative, non-condensing  
**Weight** ≈ 2.4 oz (68 g)

## Binary Switch Operation



\*For CE approved applications, power must be removed from the unit when a switch position is changed.

## Function Diagram



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