

Multifunction TRDU Series Time Delay Relay



- Microcontroller +/-0.1% Repeat Accuracy
- Multifunction – 21 Timing Functions
- Multirange – 0.1 s ... 1,705 h in 8 Ranges
- Switch Selectable Modes, Time Delay, & Ranges
- AC and DC Input Voltages are Available
- 10 A, Isolated SPDT or DPDT Output Contacts

Approvals:

Accessories

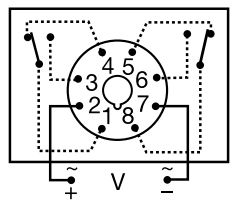
- Panel mount kit
P/N: **BZ1**
- Hold down clips
P/Ns:
PSC8 (NDS-8)
PSC11 (NDS-11)
- 11 pin socket
P/N: **NDS-11**
- Octal 8 pin socket
P/N: **NDS-8**
- DIN rail P/Ns:
017322005 (Steel)
C103PM (Al)

See accessory pages for specifications.

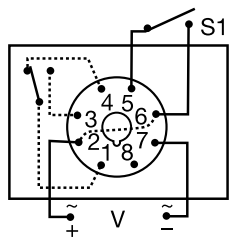
Description

The TRDU Series is a versatile universal time delay relay with 21 selectable single and dual functions. The dual functions replace up to three timers required to accomplish the same function. Both the function and the timing range are selectable with switches located on the face of the unit. Two LED's indicate input voltage and output status. This device offers full 10 A isolated relay output contacts in either SPDT or DPDT. The TRDU replaces hundreds of part numbers, thereby, reducing your stock inventory requirements.

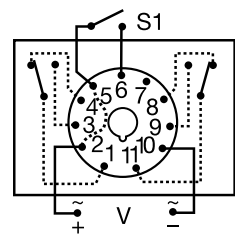
Connection



8 Pin DPDT



8 Pin SPDT



11 Pin DPDT

V = Voltage S1 = Initiate Switch
Relay contacts are isolated. Dashed lines are internal connections.

21 Functions

Five switches are provided to set one of 10 single or 11 dual modes of operation.

- Single Functions-
- * Delay on Make
 - Delay on Break
 - * Recycle (ON Time First, Equal Recycle Delays)
 - Single Shot
 - * Interval
 - Trailing Edge Single Shot
 - Inverted Single Shot
 - Inverted Delay on Break
 - Accumulative Delay on Make
 - Retriggerable Single Shot (Motion Detector)
- Dual Functions -
- Delay on Make/Delay on Break
 - * Delay on Make/Recycle (ON Time First, Equal Recycle Delays)
 - * Delay on Make/Interval
 - Delay on Make/Single Shot
 - * Interval/Recycle (ON Time First, Equal Recycle Delays)
 - Delay on Break/Recycle (ON Time First, Equal Recycle Delays)
 - Single Shot/Recycle (ON Time First, Equal Recycle Delays)
 - * Recycle - Both Times Adjust. (ON Time First)
 - * Recycle - Both Times Adjust. (OFF Time First)
 - * Interval/Delay on Make
 - Accumulative Delay on Make/Interval

*9 Functions in 8 PIN DPDT UNITS

Available Models-

- TRDU120A1
- TRDU12D1
- TRDU230A2
- TRDU24A3
- TRDU120A2
- TRDU12D2
- TRDU24A1
- TRDU120A3
- TRDU12D3
- TRDU24A2

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Ordering Table

TRDU Series	X Input	X Base Connection
	- 12D - 12 V DC	- 1 - 8 pin DPDT *
	- 24A - 24 V AC/DC	- 2 - 8 pin SPDT
	- 120A - 120 V AC	- 3 - 11 pin DPDT
	- 230A - 230 V AC	

Example P/N: **TRDU120A2**

*Limited to Nine Operating Functions

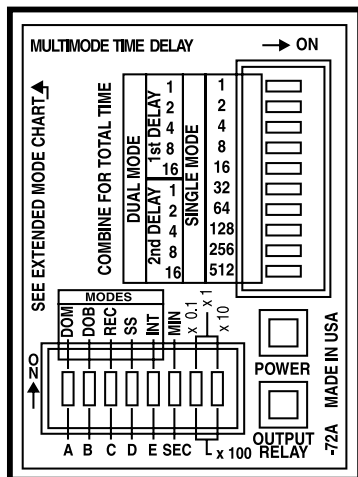
Multifunction TRDU Series Time Delay Relay

Multifunction
timers

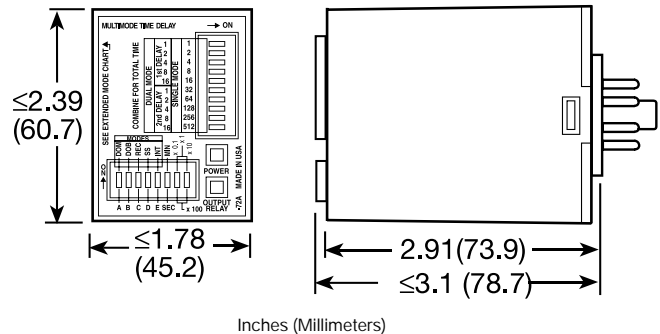
Technical Data

Time Delay Type Range: Switch Selectable** Adjustments Setting Accuracy Repeat Accuracy Timing Functions Reset Time Initiate Time Time Delay vs. Temp. & Voltage	Microcontroller Single Functions: 0.1 s ... 1,705 h in 8 ranges Dual Functions: 0.1 s ... 3,100 m each in 8 ranges Three switches are provided to set secs/mins & multipliers of x0.1, x1, x10, or x100 +/-1% or 50 ms, whichever is greater +/-0.1% or 20 ms, whichever is greater Five switches are provided to set one of twenty-one single or dual functions 50 ms 120 V AC: 75 ms +/-1%
Indication Two LED's indicate	1) Input voltage applied; 2) Output relay status
Input Voltage Tolerance 12 V DC & 24 V DC/AC 120 & 230 V AC Frequency Power Consumption	12 V DC, 24 V AC/DC, 120 V AC, or 230 V AC -15% ... +20% -20% ... +10% 50 ... 60 Hz 24 ... 230 V 3 W; 12 V DC 2 W
Output Type Form Rating Life	Electromechanical relay SPDT or DPDT 10 A resistive at 120/240 V AC & 28 V DC; 1/3 hp at 120/240 V AC Mechanical – 1 x 10 ⁷ ; Electrical – 1 x 10 ⁶
Protection Isolation Voltage Insulation Resistance Polarity	1500 V RMS input to output 100 M DC units are reverse polarity protected
Mechanical Mounting Package Termination	Plug-in socket 3.1 x 2.39 x 1.78 in. (78.7 x 60.7 x 45.2 mm) Octal plug (8 Pin) or Magnal plug (11 Pin)
Environmental Operating Temperature Storage Temperature Weight	-20°C ... +65°C -40°C ... +85°C ≅ 5.8 oz (164 g)

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



Mechanical View



<h3>Single Functions</h3> <p>* Delay On Make</p>	<h3>Dual Functions</h3> <p>Delay On Make Delay On Break</p>
<p>Delay On Break</p>	<p>* Delay On Make Recycle (ON Time First)</p>
<p>* Recycle (ON Time First, Equal Delays)</p>	<p>* Delay On Make Interval</p>
<p>Single Shot</p>	<p>Delay On Make Single Shot</p>
<p>* Interval</p>	<p>* Interval Recycle (ON Time First)</p>
<p>Trailing Edge Single Shot</p>	<p>Delay On Break Recycle (ON Time First)</p>
<p>Inverted Single Shot</p>	<p>Single Shot Recycle (ON Time First)</p>
<p>Inverted Delay On Break</p>	<p>* Recycle (ON Time First) Both Times Adjustable</p>
<p>Retriggerable Single Shot</p>	<p>* Recycle (OFF Time First) Both Times Adjustable</p>
<p>Accumulative Delay On Make</p>	<p>* Interval Delay On Make</p>
<p>KEY</p> <p>V=Voltage, R=Reset, S1=Initiate Switch, NO=Normally Open Contact, NC=Normally Closed Contact, TD,TD1,TD2=Complete Time Delay, t=Partial Time Delay, DOM=Delay On Make, DOB=Delay On Break, REC=Recycle, SS=Single Shot, INT=Interval, M=Minutes, S=Seconds, — = Undefined time</p> <p>5 Switches for Function Selection 3 Switches for Time Delay Range</p> <p>NOTE: The time delay range is the same for both functions when dual functions are selected.</p>	<p>Accumulative Delay on Make Interval</p> <p>* 9 Functions included in the 8 pin DPDT models</p>