Time Delay Relays
DELAY-ON-BREAK

TDB / TDBH / TDBL Series

Description

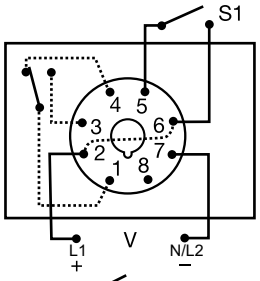
The TDB series combines accurate digital circuitry with isolated, 8 A, DPDT or SPDT contacts in an 8-pin or 11-pin plug-in package. The TDB series features DIP switch selectable time delays ranging from 0.1–10,230 seconds in three ranges. The TDB series is the product of choice for custom control panel and OEM designers.

Operation (Delay-on-Break)

Input voltage must be applied to the input before and during timing. Upon closure of the initiate switch, the output relay is energized. The time delay begins when the initiate switch is opened (trailing edge triggered). The output remains energized during timing. At the end of the time delay, the output de-energizes. The output will energize if the initiate switch is closed when input voltage is applied.

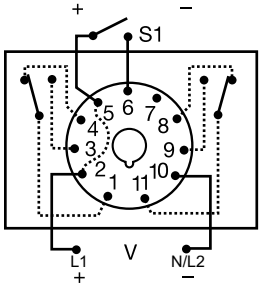
Reset: Reclosing the initiate switch during timing resets the time delay. Loss of input voltage resets the time delay and output.

Wiring Diagram



8-PIN OCTAL SPDT

S1 = Initiate Switch
Relay contacts are isolated



11-PIN DPDT

Features & Benefits

FEATURES	BENEFITS
3 time ranges available (0.1 s to 2.8 h)	Makes it versatile for use in many applications
Microcontroller based	Repeat Accuracy +/- 0.1 %; Setting Accuracy +/- 2 %
LED indication (select models)	Provides visual indication of relay status
Dip switch adjustment	Provides first time setting accuracy
Isolated output contacts	Allows control of loads with independent voltage sources

Ordering Information

MODEL	INPUT VOLTAGE	DELAY RANGE (SEC)	LED	TYPE PLUG/OUTPUT FORM
TDB120AL	120 V ac	1–1023 in 1 s increments	X	Octal (8-pin) plug, SPDT
TDB120ALD	120 V ac	1–1023 in 1 s increments	X	11-pin plug, DPDT
TDB12D	12 V dc	1–1023 in 1 s increments		Octal (8-pin) plug, SPDT
TDB230AL	230 V ac	1–1023 in 1 s increments	X	Octal (8-pin) plug, SPDT
TDB24AL	24 V ac	1–1023 in 1 s increments	X	Octal (8-pin) plug, SPDT
TDB24DL	24 V dc/ 28 V dc	1–1023 in 1s increments	X	Octal (8-pin) plug, SPDT
TDBH120AL	120 V ac	10–10230 in 10 s increments	X	Octal (8-pin) plug, SPDT
TDBH120ALD	120 V ac	10–10230 in 10 s increments	X	11-pin plug, DPDT
TDBL120AL	120 V ac	0.1–102.3 in 0.1 s increments	X	Octal (8-pin) plug, SPDT
TDBL120ALD	120 V ac	0.1–102.3 in 0.1 s increments	X	11-pin plug, DPDT
TDBL24DL	24 V dc/ 28 V dc	0.1–102.3 in 0.1 s increments	X	Octal (8-pin) plug, SPDT

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Accessories

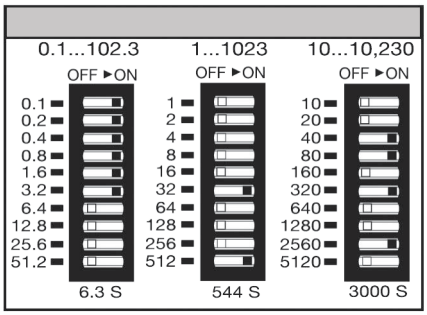
OT08PC 8-pin Octal Socket for UL listing*
8-pin 35 mm DIN-rail or surface mount. Rated at 10 A @ 600 V ac. Surface mounted with two #6 screws or snaps onto a 35 mm DIN rail.

OT11PC Octal Socket for UL listing*
11-pin surface & DIN-rail mountable. Rated for 10 A @ 300 V ac

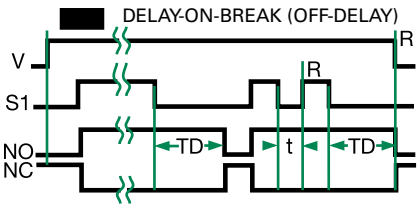
P1011-6 Octal Socket for UL listing*
8-pin surface mount socket with binder head screw terminals. Rated 10 A @ 600 V ac.

C103PM (AL) DIN Rail
35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.

Digi-Set Binary Switch Operation



Function Diagram



V = Voltage
S1 = Initiate Switch
NO = Normally Open Contact
NC = Normally Closed Contact
TD = Time Delay
t = Incomplete Time Delay
R = Reset
⌇ = Undefined Time

Specifications

Time Delay

Type	Digital integrated circuitry
Range	0.1–102.3 s in 0.1 s increments 1–1023 s in 1 s increments 10–10,230 s in 10 s increments
Repeat Accuracy	±0.1 %
Setting Accuracy	±2 %
Reset Time	≤ 150 ms
Time Delay vs Temp. & Voltage	±5 %
Indicator	LED indicates relay is energized
Initiate Time	≤ 60 ms

Input

Voltage	12, 24/28 V dc; 24, 120, or 230 V ac
Tolerance	
12 V dc & 24 V dc/ac	-15% – 20%
120 & 230 V ac	-20% – 10%
AC Line Frequency	50/60 Hz
Power Consumption	≤ 3.25W

Output

Type	Electromechanical relay
Form	SPDT or DPDT
Rating	8 A resistive @ 120/240 V ac; 1/3 hp @ 120/240 V ac
Life	Mechanical - 1 x 10^7; Electrical - 1 x 10^6
Protection	
Isolation Voltage	≥ 1500 V rms input to output
Polarity	Dc units reverse polarity protected

Mechanical

Mounting	Plug-in socket
Dimensions	**H** 44.45 mm (1.75"); **W** 60.33 mm (2.38"); **D** (with socket) 104.78 mm (4.13")
Termination	Octal 8-pin plug-in or 11-pin plug-in

Environmental

Operating/Storage Temperature	-20 °C to 65 °C / -30 °C to 85 °C
Weight	≅ 4 oz (113 g)
Safety Marks	
UL (socket required)*	UL 508 (E57310)

*UL Listed when used with Part Number OT08-PC, RB08-PC, OT11-PC, or RB11-PC manufactured by Custom Connector Corp.

Note: Manufacturer's recommended screw terminal torque for the OT series sockets is 12 in-lbs.

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