

Through advanced circuit design and packaging technology, the ON-Delay ATC 313A packs all of the performance of a conventional plug-in TDR in a space-saving housing. It features a digital timing circuit which ensures high repeat accuracy and excellent noise immunity.

**Miniature Housing:** You can mount several ATC 313A timers in the same space as a single conventional TDR.

**Digital Accuracy:** A custom C-MOS integrated circuit accurately measures the dial-adjustable delay by counting the output of an internal oscillator. Repeat accuracy remains high even with variations in voltage, temperature and reset time.

**Status Indicators:** Two LEDs clearly indicate the operational status of the 313A: one is energized when power is applied; the other is off during the delay period and on at time-out.

**Industrial Quality:** With a load relay capable of switching 7A resistive loads and a C-MOS design that protects components against noise and voltage transients, the 313A is built for industrial use.



Plug-In Adjustable TDR

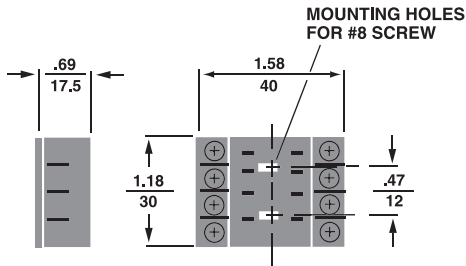
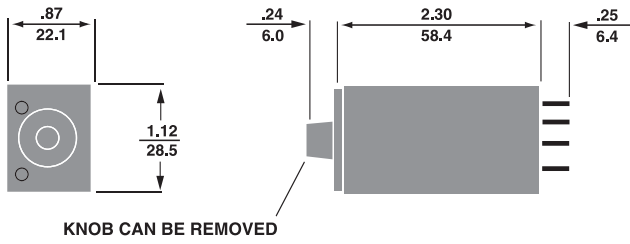
**SPECIFICATIONS**

RANGES AND MINIMUM SETTINGS	0.1 SEC-1 SEC	
Choice of four	0.5 SEC-10 SEC	
	3 SEC-1 MIN	
	30 SEC-10 MIN	
LOAD RELAY	TYPE	2 Form C
	LIFE AC	50,000,000 operations (no load)
	LIFE DC	100,000,000 operations (no load)
TEMPERATURE RATING	15 to 120°F (-10 to 50°C)	
CONTACT RATING	7A resistive 1/10 HP at 120V	
MOUNTING	Plug-in optional surface-mounting socket with screw terminals; optional PC board mount socket and wire wrap	
POWER REQUIREMENTS	120 VAC	80 to 132V, 50/60 Hz, 10 mA
	240 VAC	160 to 242V, 50/60 Hz, 8mA
	24V DC	19.2 to 26.4V (at 20°C), 40 mA
SETTING ACCURACY	± 10% of range at full scale	
REPEAT ACCURACY	± 1% of setting or 10 ms when temperature and voltage are constant	
	± 7% of setting when temperature and voltage change within specified operating limits	
RESET TIME	0.1 SEC during timing and at least 15 ms after time out	
HOUSING	Dust, moisture and impact-resistant molded polycarbonate	
WEIGHT	NET: 2 oz.	SHIPPING: 4 oz.

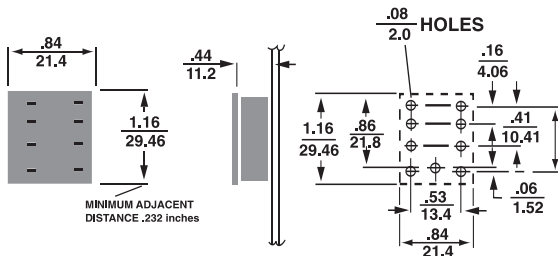
MODEL NUMBER >>>>>	313A			
	Range			
	1 SEC	001		
	10 SEC	003		
	1 MIN	007		
	10 MIN	014		
	Special	000		
	Voltage & Frequency			
	120 VAC, 50/60 Hz		Q	
	240 VAC, 50/60 Hz		R	
	24 VAC		N	
	Special		K	
	Arrangement			
	On-Delay		1	
	Special		0	
	Features			
	Standard		X	
	Special		K	
	Accessories			
	Surface Mounting Socket		0000-825-81-00	
	PC Board Socket		0000-825-82-00	

Time Delay Relays // 313A Series

## DIMENSIONS (INCHES/MILLIMETERS)

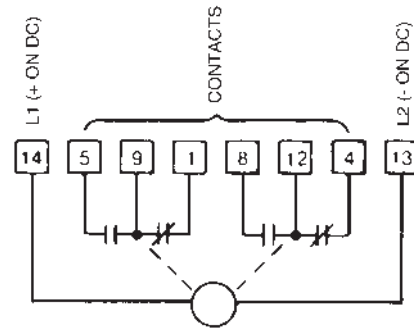


Optional Surface mounting Socket

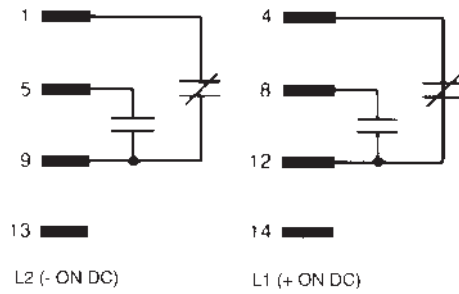


Optional Socket for PC Boards

## WIRING



## TERMINAL WIRING



The ATC 314B is an economical multi-range solid-state TDR with two models; one for OFF-delay (delay-on-break) and one for interval-ON-delay operation. With three dial-selected adjustable ranges, it provides any timing period between 0.035 and 100 SEC with excellent repeat accuracy even with wide changes in voltage, temperature and reset time.

**OFF-DELAY MODEL:** Presuming the AC line is energizing the unit continuously, when the start switch is closed the relay energizes, the pilot light goes on and the unit resets. Opening the start switch begins the timing cycle. A relaxation oscillator runs at a rate determined by the set pot. When the oscillator count is equal to the level set by the range switch, a digital count circuit is satisfied and the unit times out.

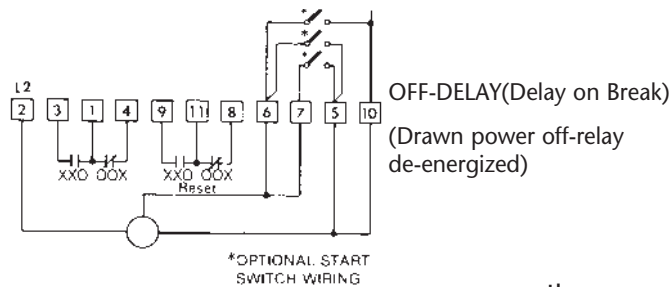
At time out, the timing circuit and relay are de-energized and the pilot light goes off. Closing the start switch resets the unit. After a power failure (or on first startup) the unit will go to the timed out condition (relay de-energized) until the unit is reset by closing the start switch to begin a new cycle.

**INTERVAL-ON-DELAY MODEL:** Timing begins when the start switch is closed; simultaneously the relay is energized and the pilot light goes on. Either a momentary/sustained start or a sustained start input can be used (see wiring). Reset is accomplished by de-energizing the unit. At time-out, the timing circuit and relay are de-energized and the pilot light goes off.



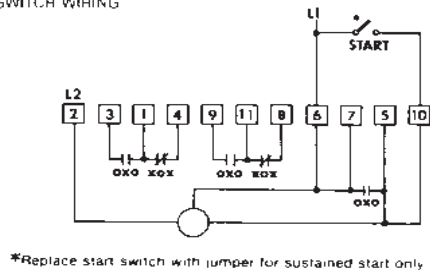
Plug-In Multi-Range Off-Delay/Interval

WIRING

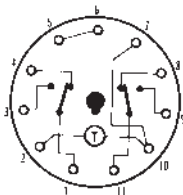


INTERVAL-ON-DELAY

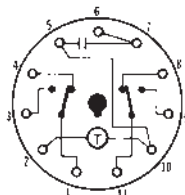
Momentary or Sustained Start\*



TERMINAL WIRING



OFF DELAY



INTERVAL/ON-DELAY

11 PIN MOUNT SOCKET

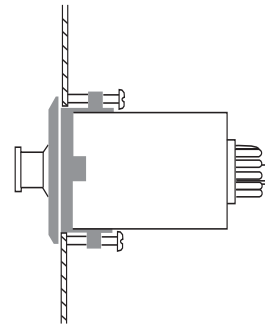
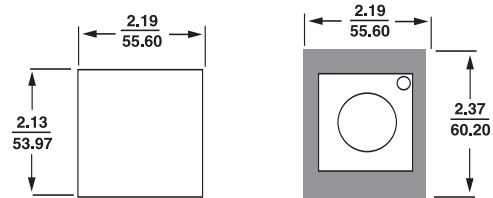
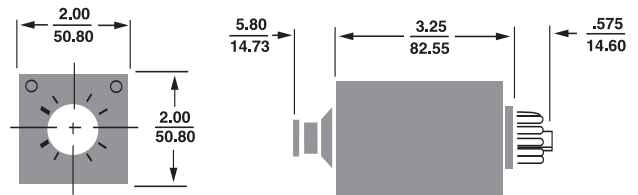
MODEL NUMBER >>>>>>	314B		
Range	134		
Three dial-selected ranges (1 SEC, 10 SEC, 100 SEC)			
Special	000		
Voltage & Frequency			
120 VAC, 50/60 Hz	Q		
240 VAC, 50/60 Hz	R		
24V, 50/60 Hz	T		
Special	K		
Arrangement			
Off-Delay mode	2		
Interval mode	3		
Features			
Standard	C		
Special	K		
Accessories			
Surface Mounting Socket	0000-825-63-00		
Retaining clip for use with socket	0319-025-06-00		
Panel mount bezel kit	0319-261-44-00		
Panel mount socket kit	0314-260-07-00		

Time Delay Relays // 314B Series

## SPECIFICATIONS

MODELS	OFF-Delay mode	
	Interval mode	
RANGES AND MINIMUM SETTINGS	Three dial-selected adjustable ranges	
	0.035–1.0 SEC	
	0.18–10 SEC	
	1.8–100 SEC	
LOAD RELAY	TYPE	DPDT, hard wired
	LIFE	50,000,000 operation (no load)
	CONTACT RATING	7A resistive at 120 or 240V 1/10 HP at 120V
TEMPERATURE RATING	32 to 158° F (0 to 70° C)	
MOUNTING	PLUG-IN 11-PIN BASE; mounts in any position	
	OPTIONAL: surface-mounting socket panel-mounting bezel kit plug-on socket kit	
POWER REQUIREMENTS	120 VAC	95 to 132V, 50/60 Hz, 0.02A
	240 VAC	190 to 264V, 50/60 Hz, 0.02A
SETTING ACCURACY	10% at full scale	
REPEAT ACCURACY	Varies as a function of line voltage and temperature but not of reset time (see Recycle Characteristics)	
	± 1% of setting or 2.0 mSEC, when temperature is constant and line voltage is constant or varies within limits*	
	± 4% of setting or 2.0 mSEC, when line voltage is constant and temperature varies within limits*	
	± 6% of setting or 2.0 mSEC, when line voltage and temperature vary within limits*	
	*Variations of line voltage must be within 95 and 132V; of temperature between 0° and 70°C (32° and 158°F); and reset/start time must be at least 75 mSEC.	
RESET TIME	OFF-DELAY: 75 mSEC during timing or after time-out	
START	INTERVAL-ON-DELAY: 45 mSEC (for momentary start wiring)	
POWER INTERRUPTION EFFECT	OFF-DELAY	A power failure over 5 mSEC during timing will cause relay drop-out. If power is restored in up to 75 mSEC, the unit will re-energize its relay and continue timing. If the power loss is over 75 mSEC the unit will lock in to the timed-out (relay de-energized) position until reset.
	INTERVAL-ON-DELAY	A power failure over 5 mSEC causes relay drop-out. Restoring power in up to 75 mSEC will re-energize the relay and timing will continue. A power loss over 75 mSEC will always reset the timer fully.
HOUSING	Dust, moisture and impact-resistant molded plastic case	
WEIGHT	NET: 6 oz.	SHIPPING: 10 oz.

## DIMENSIONS (INCHES/MILLIMETERS)



An economical solid-state TDR with octal plug-in base, the ATC 319 maintains excellent repeat accuracy despite wide voltage and temperature variations, even after long periods of down-time. One model has five dial-selected adjustable ranges and provides any timing period between 0.02 SEC and 30 MIN; Lower-cost models incorporate three dial selected ranges or a single adjustable range.

**WIDE CHOICE OF RANGES:** In addition to the short ranges expected of an electronic TDR, the 319E is also available with ranges as long as 100 minutes, for AC or DC operation. An unusually versatile model, the 319E five ranger has five dial-selected ranges—from 0.3 SEC to 30 MIN—and provides any dial-adjustable timing period between 0.02 seconds and 30 minutes; (1, 10 and 100 SEC and 10 and 100 MIN). A single 319E model thus accommodates the needs of a wide range of applications, allowing the user to select—easily and precisely—an appropriate range to permit optimum setting accuracy. The dial face automatically displays the selected range. The 319 offers a choice of five dial-adjustable fixed ranges between 1 SEC and 30 SEC.

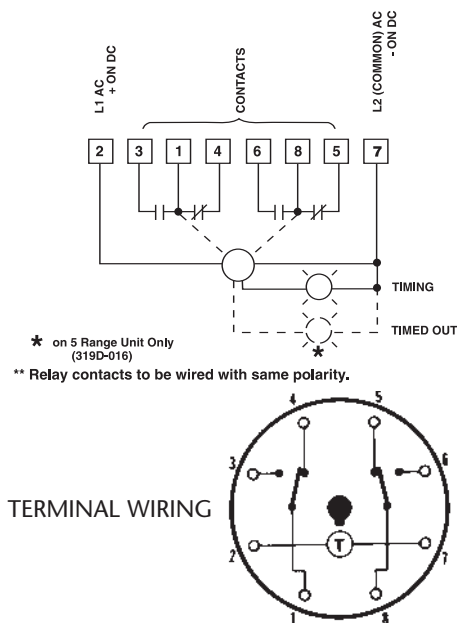
**CYCLE PROGRESS INDICATION—MODEL 319E:** All options incorporate a light-emitting diode (LED) which is on during the time cycle, off at the end of timing. The 5-range option also includes a second LED which separately indicates the status of the output relay: on when energized, off when de-energized.

**HIGH ACCURACY:** The 319's timing circuit is not subject to the large plus error that plagues many electronic TDRs after long periods of down-time: it maintains rated accuracy regardless of reset time variations, provided that there is at least 0.1 SEC between cycles for Model 319E. All models hold unusually high repeat accuracy in the face of wide voltage and temperature swings.

**OPERATIONS**

Timing begins when the start switch is closed. At the same time, the Timing LED goes on and a relaxation oscillator starts to run at a rate determined by the set-pot. The 319E times out when the oscillator count is equal to the level set by the range switch, a second LED turns on at time-out. At time-out, the load relay is energized, transferring its contacts. Reset occurs when the start switch is opened or when power is interrupted.

**WIRING**



Plug-In Adjustable AC/DC TDR

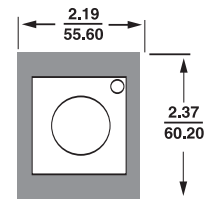
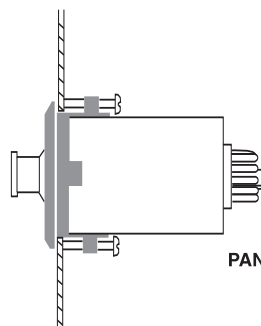
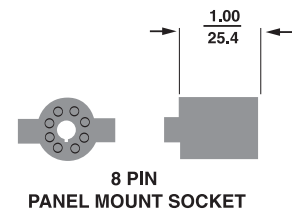
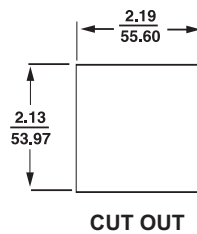
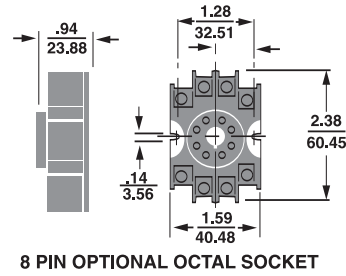
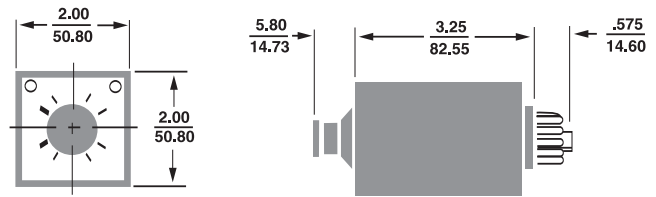
MODEL NUMBER >>>>>>	319E	F	
Range			
Five dial-selected ranges (0.3 SEC., 3 SEC., 30 SEC., 3 MIN, 30 MIN)	030		
1 SEC., 10 SEC, 100 SEC, 10 MIN, 100 MIN	100		
Voltage & Frequency		F	
24-240 VAC, 24 VDC			
Arrangement			
On-Delay	1		
Special	0		
Features			
Standard	C		
Special	K		
Accessories			
Surface/DIN rail mounting socket	0000-825-85-00		
Surface mounting socket	0000-825-64-00		
Retaining clip for mounting socket	0319-025-06-00		
Panel mount bezel kit	0319-261-44-00		
Panel mount socket kit, 8-pin	0319-261-45-00		

Time Delay Relays // 319 Series

## SPECIFICATIONS

MODELS	319E-AC or DC; 5 dial-selected adj. ranges	
	All models operate in on-delay mode only	
RANGES AND MINIMUM SETTINGS	Model 319E-030F	0.02 SEC — 0.3 SEC
		0.07 SEC — 3.0 SEC
		0.6 SEC — 30.0 SEC
		3.5 SEC — 3.0 MIN
		35.0 SEC — 30.0 MIN
	Model 319E-100F	0-1 SEC — .003 SEC
		0-10 SEC — .1 SEC
		0-100 SEC — 1 SEC
		0-10 MIN — 6 SEC
		0-100 MIN — 60 SEC
LOAD RELAY	TYPE	DPDT (2 Form C)
	LIFE	AC: 50,000,000 operations (no load) DC: 100,000,000 operations (no load)
	CONTACT RATING	AC: 7A resistive at 120 or 240V DC: 3A at 30V
TEMPERATURE RATING	32° to 158°F (0° to 70°C)	
MOUNTING	Plug-in octal base; mounts in any position OPTIONAL: Surface-mounting socket; panel-mounting bezel kit and plug-on socket kit for Model 319D.	
POWER REQUIREMENTS	24 - 240 VAC or 24 VDC	
SETTING ACCURACY	10% at full scale	
REPEAT ACCURACY	Varies as a function of line voltage and temperature but not of reset time (see Recycle Characteristics)	
	± 1% of range or 2.0 mSEC (whichever is greater), when temperature is constant and line voltage is constant or varies within limits*	
	± 4% of range or 2.0 mSEC (whichever is greater), when line voltage is constant and temperature varies within limits*	
	± 6% of range or 2.0 mSEC (whichever is greater), when line voltage and temperature vary within limits*	
RESET TIME	5 mSEC if power is interrupted any time after time-out; 70 mSEC if power is interrupted during timing.	
RECYCLE CHARACTERISTICS	When 0.1 SEC or longer of reset time is allowed after time-out or after power interruption, the next cycle is timed at full repeat accuracy; when only 0.07 SEC is allowed, the next cycle is shortened by as much as 1%.	
HOUSING	Dust, moisture and impact-resistant molded plastic case.	
WEIGHT	NET: 6 oz. SHIPPING: 10 oz.	

## DIMENSIONS (INCHES/MILLIMETERS)



A versatile dial-adjustable time delay relay, the ATC 328 provides a choice of ON-delay, OFF-delay or interval operation for any timing period between 50 mSEC and 10 hours—all in the same timer. Based on a unique digital circuit, it features cycle progress annunciation and is suitable for the most demanding industrial service.

**DESIGNED FOR INDUSTRIAL SERVICE:** With a load relay that is rated for 100,000,000 mechanical operations, and power supply that protects circuit components against the voltage transients that are typical of industrial plants, the 328 has a long life expectancy even in tough environments.

**CYCLE PROGRESS INDICATION:** The 328's LED annunciator provides a unique and extremely effective method of cycle progress indication. Off before timing, the LED blinks at an ever-increasing rate as the cycle progresses: once every 3-1/2 seconds during the first 10% of the cycle, twice during the second 10%, and so on. At time-out, the LED stays on constantly, pulsing at a high rate. (In the 1 and 10-second ranges, the LED is off before timing, steady on during timing, and pulsing on after time-out.)

**VERSATILE MOUNTING:** The standard 328 has an 11-pin base which accepts push-on connectors or plugs into a surface-mounted socket. Since all connections are made to the socket, the 328 is readily removed without disturbing the wiring. It is also available with an optional quick-connect plug and brackets for flush panel-mounting.

**MULTIPLE RANGES REDUCES INVENTORY:** Because the 328 has six switch-selected ranges—from 1 SEC to 10 hours—each timer can provide any dial-adjustable timing period between 50 ms and 10 hours—thus greatly reducing inventory requirements especially for large users. The range selector switch knob can be easily removed to prevent unauthorized range change.

**HIGH ACCURACY:** The 328's digital circuit maintains rated accuracy from cycle to cycle, regardless of reset time. Its oscillator-based circuit is also effectively compensated for changes in temperature and voltage and thus achieves excellent overall accuracy.

**VERSATILE CONTROL CAPABILITY:** Every 328 can be used for either **ON-Delay**, **OFF-Delay** or interval operation, depending on how its terminal block is wired.



Multi-Range Timer

MODEL NUMBER >>>>>>	328D	200	F		
Range					
Six Knob Selectable Ranges (1 or 10 SEC/MIN/HR)	200				
Voltage & Frequency					
24 VAC to 240 VAC and 24 VDC	F				
Arrangement					
Reset on power failure	10				
Special, use K in features	00				
Features					
Standard	XX				
Special	XK				
Accessories					
Surface Mounting Socket with hold down clips	0000-825-69-00				
DIN Rail Socket	0000-825-89-00				
Panel Mounting Plug-In Socket	0328-260-01-00				
Panel Mounting Kit Consisting of Gasket and 2 Clamps	0328-260-02-00				

OPERATIONS

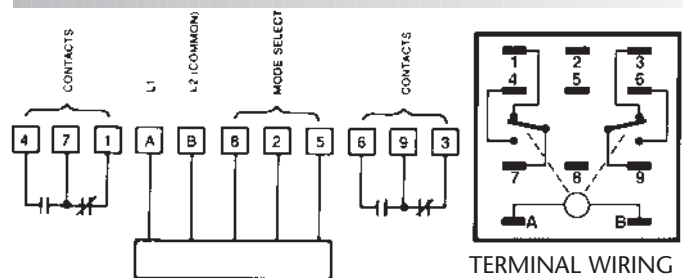
Control action of the 328 depends on how its terminal block is wired (see Wiring diagrams.)

In **ON-DELAY OPERATION**, timing begins when the start switch is closed. The load relay contacts transfer at the end of the timed period. Reset occurs when the start switch is opened or when there is a power interruption.

In **OFF-DELAY OPERATION**, timing begins when the start switch is opened. The load relay contacts transfer at the end of the timed period and back again at reset. Reset occurs when the start switch is closed. Control action of all loads is delayed, either closed-closed-open or open-open-closed.

In interval control, timing begins when the start switch is closed. The load relay contacts transfer at the beginning and at the end of the timed period, thus providing true interval control, either open-closed-open or closed-open-closed. The start signal may be either sustained or momentary; in the latter case, the start signal is "latched in" by wiring it to one of the load relay's two sets of contacts. Power interruption resets the timer.

WIRING



The 328D Directly Replaces 328A, 328B, and 328C.

## SPECIFICATIONS

MODELS	One model provides all ranges and control modes. 328D200F10XX	
RANGE	Six switch-selected ranges:	
	1 SEC	
	10 SEC	
	1 MIN	
	10 MIN	
	1 HR	
MINIMUM SETTING	2% of range, except 50 ms on 1 SEC range.	
	TYPE	DPDT
LOAD RELAY	LIFE	100,000,000 operations (no load)
	CONTACT RATING	AC-10 A (resistive) at 125-250V. 1/8 HP DC 10A at 30 VDC.
TEMPERATURE RATING	0° to 140° F (-18°C to 60°C)	
MOUNTING	11 blade case plugs into matching socket with 11 screw terminals; blades also accept 0.187 in. push-on connectors.	
	OPTIONAL: kit provides 11-pin plug-in socket and 2 brackets for flush panel mounting.	
POWER REQUIREMENTS	24 VAC to 240 VAC and 24 VDC	
	AC	(+10%, -20%) 50/60Hz
	DC	(+20%, -20%)
	Maximum Ripple @ 100 Hz-5%	
SETTING ACCURACY	10% of range	
REPEAT ACCURACY	Varies with changes in line voltage and ambient temperature but not with reset time: ±0.5% of setting or 15 mSEC over the entire voltage and temperature range	
TIMING MODES	ON-Delay/OFF-Delay/Interval	
INDICATOR	Timing LED	
RESET TIME	ON-DELAY	100 mSEC max.
	OFF-DELAY	50 mSEC max.
	INTERVAL	100 mSEC max.
HOUSING	Plug-in design; dust, moisture and impact-resistant molded plastic case. DIN size (48mm x 96mm)	
WEIGHT	NET: 7 oz.	SHIPPING: 1 lb.

## TYPICAL INSTALLATIONS

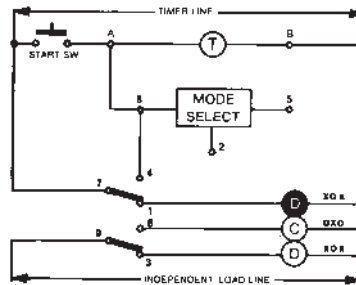
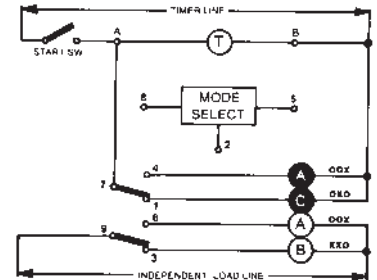
### KEY SYMBOLS

- TIMING CIRCUIT
- INDEPENDENT LOADS
- DEPENDENT LOADS
- MOMENTARY STARTING CONTACT
- SUSTAINED STARTING CONTACT
- LOAD ENERGIZED
- LOAD DE-ENERGIZED

All timers shown in "before start" position. Diagrams shown with power off unless otherwise marked.

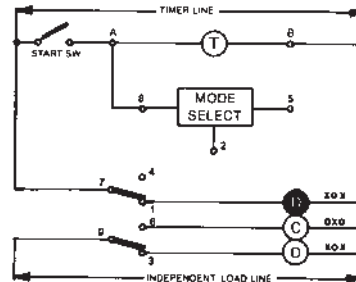
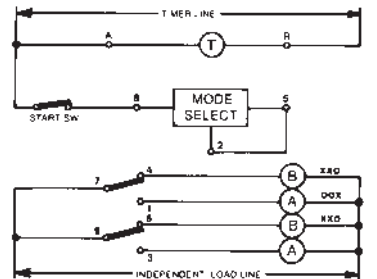
Maximum load current through any load carrying contact is 7 amperes.

DELAY-ON-MAKE



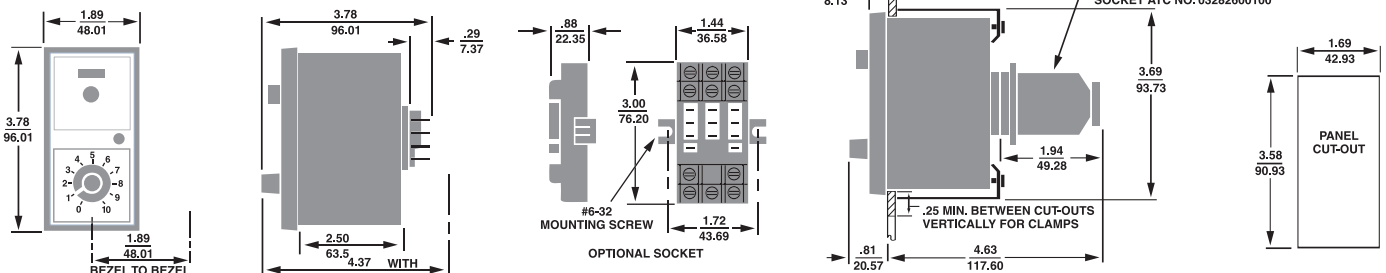
ONE-SHOT

OFF-DELAY (SHOWN WITH POWER ON)



INTERVAL

## DIMENSIONS (INCHES/MILLIMETERS)



Sold by AA Electric 1-800-237-8274 Lakeland, FL • Lawrenceville, GA • Greensboro, NC • East Rutherford, NJ

Web : www.A-Aelectric.com Email : njsales@a-aelectric.com

The most *economical* Solid-State TDR offered from ATC, the 329A on-delay TDR with plug-in base maintains excellent repeat accuracy despite wide voltage and temperature variations. A choice of eight fixed ranges are available from 0.3 seconds to 3 minutes.

**PRICE/PERFORMANCE VALUE:** The economical 329A is the *lowest cost* TDR ever offered by ATC. Ruggedly designed into a 36 x 36 mm housing, the 329A On-Delay TDR combines both *highly accurate* and *repeatable timing* with industrial quality that is usually found in only the more expensive timers.

**CHOICE OF RANGES:** The 329A is offered in a choice of eight different fixed ranges between 0.3 seconds to 3.0 minutes to permit optimum setting accuracy. The dial face clearly displays the range.

**DESIGNED FOR INDUSTRIAL SERVICE:** The 329A incorporates features designed to ensure a long trouble-free life expectancy, even in difficult industrial environments: high impact resistant housing with octal plug-in base that is easily surface/DIN or panel mounted; a DPDT 5 amp relay rated for 10 million operations at no load; and an oscillator-based timing circuit for *high accuracy* even with changes in temperature and voltage.

**HIGH ACCURACY:** The 329A's timing circuit is not a simple RC circuit, but it utilizes the sophistication of a proprietary integrated circuit that includes counting technology along with a stable oscillator to provide repeatable time delays. Timing begins when the start switch is closed. This starts an oscillator which runs at a frequency determined by the time setting. A fixed number of counts from the oscillator determines the end of the time cycle. The time required to accomplish this depends on the oscillator frequency.

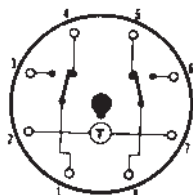
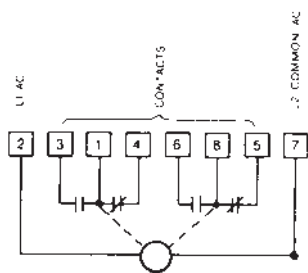


Economical Time Delay Relay

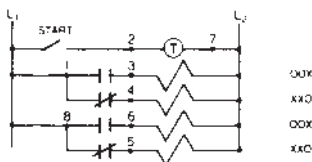
**OPERATION**

At time out, the built-in relay transfers its contacts. These contacts remain transferred until the start switch is opened or power is removed by some other means. The 329A then resets and is ready for another cycle.

**WIRING**



TYPICAL CIRCUIT ON-DELAY



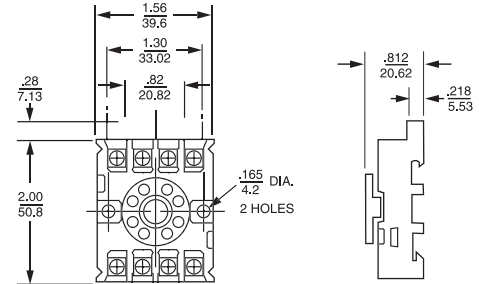
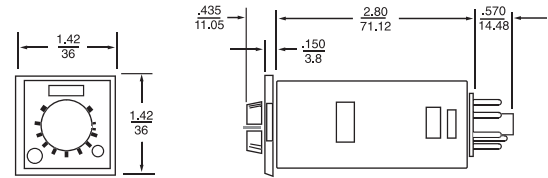
MODEL NUMBER >>>>>>	329A	Q	
Range			
0.3 SEC	361		
1 SEC	362		
3 SEC	363		
5 SEC	364		
10 SEC	365		
30 SEC	366		
1 MIN	367		
3 MIN	368		
special	000		
Voltage & Frequency		Q	
120 VAC, 50/60 Hz			
Arrangement			
On Delay	10		
Special, use K in features	00		
Features			
Standard	X		
Special	K		

Time Delay Relays // 329A Series

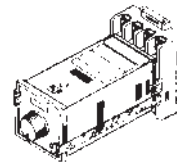
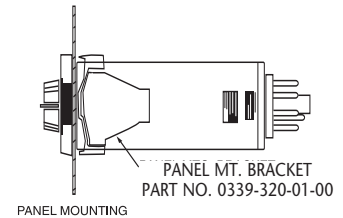
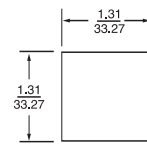
## SPECIFICATIONS

RANGE	Choice of 8 fixed ranges	
	0.3 SEC	10.0 SEC
	1.0 SEC	30.0 SEC
	3.0 SEC	1 MIN
	5.0 SEC	3 MIN
MINIMUM SETTING	5% of range, plus 50 mSEC on 0.3, 1.0, and 3.0 SEC ranges.	
LOAD RELAY	TYPE	DPDT 5 Amps resistive at 30 VDC or 240 VAC (or less) 1/8 HP @ 120 VAC 1/4 HP @ 240 VAC 240 VA @ 240 VAC
	LIFE	100,000 operations at full load: 5 A at 30 VAC (or less) resistive 5 A at 240 VAC (or less) resistive 10 million operations with no load
	CONTACT MATERIAL	Silver Cadmium Oxide
TEMPERATURE RATING	0° to 131°F (-17° to 55° C)	
MOUNTING	Plug-in octal base; mounts in any position with retaining clips.	
	OPTIONS: Surface mounting socket DIN rail mounting socket Panel-mounting adapter kit Plug-on socket Rear facing terminal socket	
POWER REQUIREMENTS	95 to 132 VAC, 50/60 Hz Running - 0.02 A	
SETTING ACCURACY	± 15%	
REPEAT ACCURACY	Varies as a function of line voltage and temperature but not of reset time	
	a	±2.0 at constant voltage, and full temperature range. (or ±25 mSEC, whichever is greater)
	b	±1.5%* at constant temperature and full voltage range. (or ±25 mSEC, whichever is greater)
	c	±3.5%* over full voltage and temperature range. (or ±30 mSEC, whichever is greater). Variations of line and voltage must be within 95 and 132V; of temperature between -17 and 55C (0 and 131F)
*Variation from average actual time		
MODE OF OPERATION	All models operate in ON-delay mode only	
RESET TIME	a	0 to 20 mSEC power interruption; guaranteed no reset
	b	20 mSEC to 100 mSEC; it may reset. (40 mSEC typical reset)
	c	Over 100 mSEC guaranteed to reset
WEIGHT	0.2 lbs.	

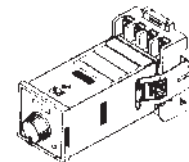
## DIMENSIONS (INCHES/MILLIMETERS)



8 PIN OPTIONAL OCTAL SOCKET NO. 00008258500



00008258500 SOCKET WITH 0339-025-03-00 HOLDDOWNS



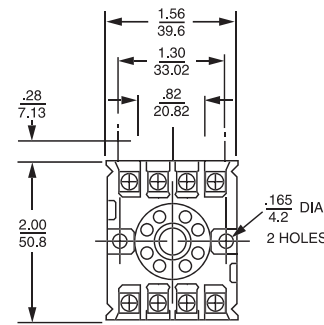
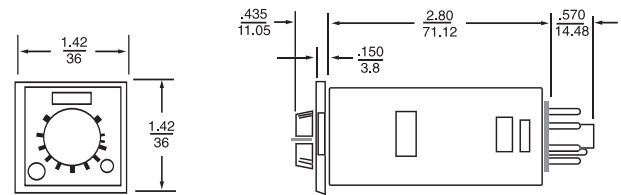
TYPICAL OTHER SOCKET WITH 0339-025-02-00 HOLDDOWNS



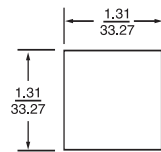
## SPECIFICATIONS

MODELS	Choice of two multi-range units. All models operate in on-delay or interval mode.	
RANGES	Choice of two models Six dial-selected ranges: 1.0 and 10 SEC, MIN, HR or 0.3 and 3 SEC, MIN, HR	
NOISE IMMUNITY	Showering ARC per NEMA ICS 2-230	
MINIMUM SETTING	3% of range, except 75 mSEC on 0.3 SEC and 1.0 SEC ranges.	
LOAD RELAY	TYPE	DPDT 10 AMPS resistive at 30 VDC or 250 VAC (or less) 1/8 HP @ 120 VAC
	LIFE	10 million operations with no load 100,000 operations with: 10 AMPS at 30 VDC (or less) or 10 AMPS at 250 VAC (or less)
	CONTACT MATERIAL	Silver Cadmium Oxide
TEMPERATURE RATING	0° to 140°F (-17° to 60°C)	
MOUNTING	Plug-in octal base; mounts in any position with retaining clips.	
	OPTIONS: Surface-mounting socket DIN rail mounting socket Panel-mounting adapter kit Plug-on socket kit Rear facing terminal socket	
POWER REQUIREMENTS	120 VAC	95 - 132 VAC, 50/60Hz Inrush - .4A Running - .025
	240 VAC	190 - 264 VAC, 50/60Hz Inrush - .2A Running - .013A
	24 VAC/DC	19.2 - 26.4 VAC/DC Inrush - .4A Running - .075A
	12 VDC	9.6 - 13.2 VDC Inrush - .25A Running - .10A
REPEAT ACCURACY	Varies as a function of line voltage and temperature but not of reset time	
	a	±0.5% at constant temperature and voltage. (or ± 15 mSEC whichever is greater)
	b	± 1%* at constant voltage and full temperature range. (or ± 25 mSEC which ever is greater)
	c	± 1.5%* at constant temperature and full voltage range. (or ± 25 ms. whichever is greater)
	d	± 2%* over full voltage and temperature range. (or ± 30 mSEC, which ever is greater)
Variations of line voltage must be within 95 and 132V; of temperature between -17° and 60°C (0° and 140°F)		
RECYCLE CHARACTERISTICS	The timer can be used as a pulse generator with L1 power wired thru its NC contacts. The pulse will be 35 mSEC to 90 mSEC long. (40 m SEC typical pulse.)	
	a	0 to 20 ms power interruption; Guaranteed no reset.
	b	20 ms to 90 ms; it may reset. (40 ms typical reset).
	c	Over 90 ms guaranteed to reset. The TDR will reset properly and not start timing when subjected to an open start switch leakage of 1.5 mA or less. (Prox switch and Triac drive applications)
WEIGHT	2.5 oz. (70g)	

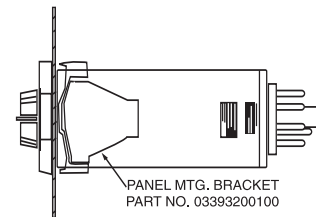
## DIMENSIONS (INCHES/MILLIMETERS)



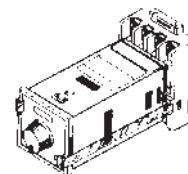
8 PIN OPTIONAL OCTAL SOCKET NO. 00008258500



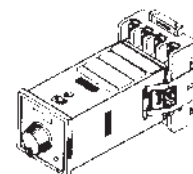
CUTOUT



PANEL MOUNTING



00008258500 SOCKET WITH 0339-025-03-00 HOLDDOWNS

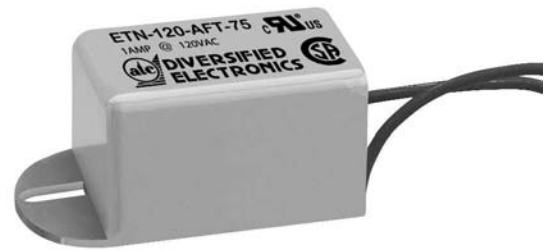
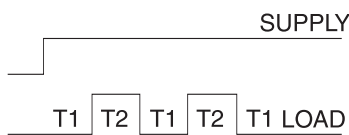
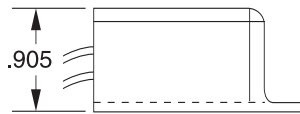
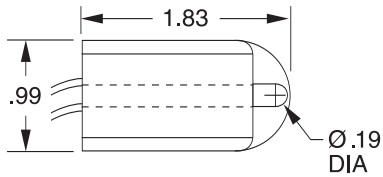


TYPICAL OTHER SOCKET WITH 0339-025-02-00 HOLDDOWNS

**OPERATION**

When supply voltage is applied, the OFF delay (T1) begins. Upon completion of the OFF delay, the load energizes and the ON delay (T2) begins. Upon completion of the ON delay, the load de-energizes and one cycle is complete. This ON/OFF cycling continues until the supply voltage is removed. The OFF delay always equals the ON delay.

**DIMENSIONS (INCHES)**



Solid-State Flasher

- Totally Solid-state
- 2-Wire Leads (Series Connection with Load)
- Totally Encapsulated Circuitry
- Molded Case with Built-In Mounting Feature
- High Inrush Capability
- Low Cost
- 1 Amp (Fullwave) and 3 Amp (halfwave) versions

**SPECIFICATIONS**

TIMING ACTION	Flasher, 50% Duty Cycle	
TIMING RANGE	Factory Fixed, (45-150) Flashes per minute ±20%	
OUTPUT RATING (SOLID STATE)	1 A Resistive (Fullwave)	10 A Maximum (Inrush)
		40 mA Minimum (Hold in Current)
	3 A Resistive (Halfwave)	2.5 Volt Drop @ 1 A
		10 A Maximum (Inrush)
		40mA Minimum (Hold in Current)
		1.1 Volt Drop @ 3 Amp
SUPPLY VOLTAGE	120 VAC; ± 15%, 50/60	
TERMINATIONS	(2) 6 inch wires, 18 AWG, 300 Volt	
TEMPERATURE RATING	Operate	-4° to 140°F (-20° to +60°C) Free Air
	Storage	-40° to 185°F (-40° to +85°C)
MOUNTING	No. 8 or No. 10 Screw	
ENCLOSURE	Polycarbonate Case, Totally Encapsulated for Environmental Protection	
WEIGHT	0.1 lbs.	

MODEL NUMBER >>>>>	ETN	120		F	T	75
	Voltage					
	120 Volts	120				
	Type of Voltage					
	AC Voltage		A			
	3 Amp Halfwave			H		
	Type of Operation					
		Fixed Unit		F		
	Enclosure					
		Enclosure Type		T		
	FLASHING RATE					
	75 Flashes/minute (Standard)					75
	Contact factory for other flashing rates					

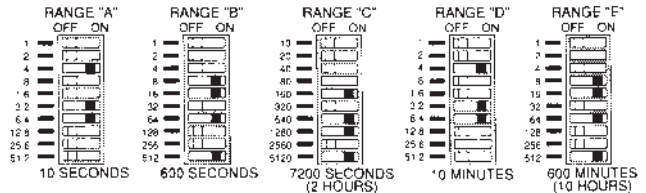


Interval DIP Switch TDR

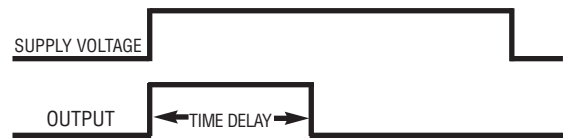
OPERATION

When supply voltage is applied to the input terminals, the relay energizes and the time delay begins. Upon completion of the delay period, the relay de-energizes. Reset during or after the delay period is accomplished by removal of the supply voltage.

DIP SWITCH OPERATION



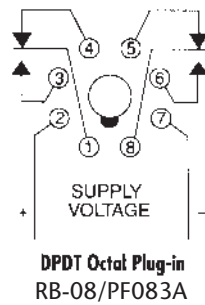
Digital selection of the time delay is accomplished by the use of ten (10) binary switches, each marked with a time increment. The time periods, of which there are five (5) ranges, represented by each switch in the ON position is added together to obtain the desired time delay. No more trial-by-error adjustments.



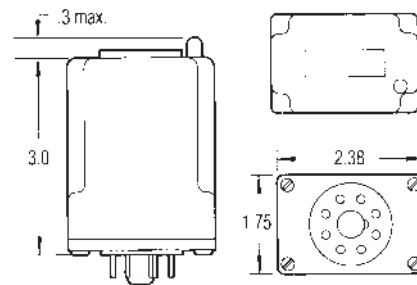
SPECIFICATIONS

TIME DELAY RANGE	A	0.1 to 102.3 SEC in 0.1 SEC Increments
	B	1.0 to 1,023 SEC in 1.0 SEC Increments
	C	10 to 10,230 SEC in 10 SEC Increments
	D	0.1 to 102.3 MIN in 0.1 MIN Increments
	E	1.0 to 1,023 MIN in 1.0 MIN Increments
OUTPUT RATING	10 A @ 250 VAC or 24 VDC, resistive	
ACCURACY	Setting	±2% or ±50 mSEC; whichever is greater
	Repeat	±0.1% or ±8.3 mSEC; whichever is greater
RESET TIMES	Before Time Out	100 mSEC
	After Time Out	50 mSEC
SUPPLY VOLTAGE	12, 24, 48, 120 or 240 VAC, 50/60 Hz; or DC; ±10%	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER REQUIRED	3 VA, approximately	
DUTY CYCLE	Continuous	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations, minimum
	Electrical	100,000 Operations @ rated load
INDICATORS	LED glows when relay is energized.	
ISOLATION	1,500 volts, input/output	
WEIGHT	0.35 lbs.	

WIRING



DIMENSIONS (INCHES)

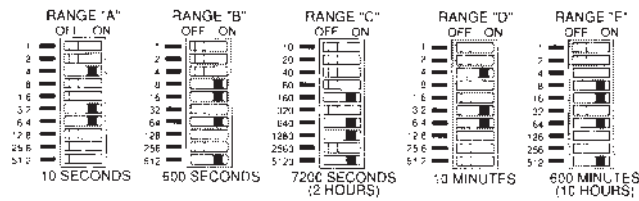


MODEL NUMBER >>>>>	TBB		A
Control Voltage			
12 Volts DC	12	D	
24 Volts AC/DC	24	A	
48 Volts DC	48	D	
120 Volts AC/DC	120	A	
240 Volts AC	240	A	
Time Delay Range			
0.1 to 102.3 SEC in 0.1 SEC Increments			A
1.0 to 1,023 SEC in 1.0 SEC Increments			B
10 to 10,230 SEC in 10 SEC Increments			C
0.1 to 102.3 MIN in 0.1 MIN Increments			D
1.0 to 1,023 MIN in 1.0 MIN Increments			E

**OPERATION**

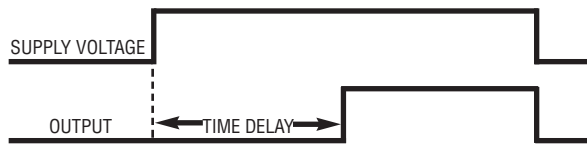
The time delay begins when supply voltage is applied to the input. Upon completion of the delay period, the relay energizes. Reset during or after the delay period is accomplished by removal of the supply voltage. The TBC Series will not false transfer if supply voltage is removed prior to completion of the delay period. A fast recycle time permits accurate, high speed, continuous operation.

**DIP SWITCH OPERATION**

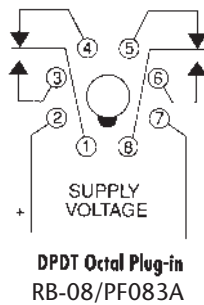


Digital selection of the time delay is accomplished by the use of ten (10) binary switches, each

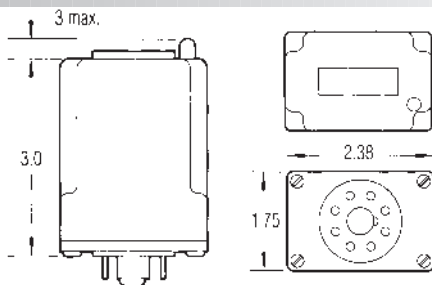
marked with a time increment. The time periods, of which there are five (5) ranges, represented by each switch in the ON position is added together to obtain the desired time delay. No more trial-by-error adjustments.



**WIRING**



**DIMENSIONS (INCHES)**



MODEL NUMBER >>>>>	TBC			A
<b>Control Voltage</b>				
12 Volts DC	12	D		
24 Volts AC/DC	24	A		
48 Volts DC	48	D		
120 Volts AC/DC	120	A		
240 Volts AC	240	A		
<b>Time Delay Range</b>				
0.1 to 102.3 SEC in 0.1 SEC Increments		A		
1.0 to 1,023 SEC in 1.0 SEC Increments		B		
10 to 10,230 SEC in 10 SEC Increments		C		
0.1 to 102.3 MIN in 0.1 MIN Increments		D		
1.0 to 1,023 MIN in 1.0 MIN Increments		E		

**SPECIFICATIONS**

TIME DELAY RANGE	A	0.1 to 102.3 SEC in 0.1 SEC Increments
	B	1.0 to 1,023 SEC in 1.0 SEC Increments
	C	10 to 10,230 SEC in 10 SEC Increments
	D	0.1 to 102.3 MIN in 0.1 MIN Increments
	E	1.0 to 1,023 MIN in 1.0 MIN Increments
OUTPUT RATING	10 A @ 250 VAC or 24 VDC, resistive	
ACCURACY	Setting	±2% or ±50 mSEC; whichever is greater
	Repeat	±0.1% or ±8.3 mSEC; whichever is greater
RESET TIMES	Before Time Out	100 mSEC
	After Time Out	50 mSEC
SUPPLY VOLTAGE	12, 24, 48, 120 or 240 VAC, 50/60 Hz; or DC; ±10%	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER REQUIRED	3 VA, approximately	
DUTY CYCLE	Continuous	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations, minimum
	Electrical	100,000 Operations @ rated load
INDICATORS	LED glows when relay is energized.	
ISOLATION	1,500 volts, input/output	
WEIGHT	0.35 lbs.	



On-Delay DIP Switch TDR



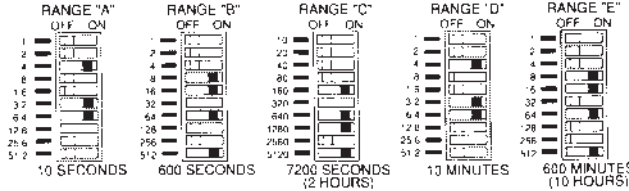
Off-Delay DIP Switch TDR

OPERATION

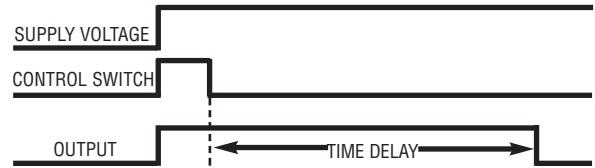
Supply voltage is continuously applied to the input. An external isolated switch between pins 5 and 6 controls the timer. When closed, the relay energizes. Opening the switch initiates the delay period. Upon completion of the delay period, the relay de-energizes. If the control switch recloses during the delay period, the relay remains energized and the timer resets to zero.

NOTE: The TBD Series is available in an 8-pin SPDT and an 11-pin DPDT configuration.

DIP SWITCH OPERATION



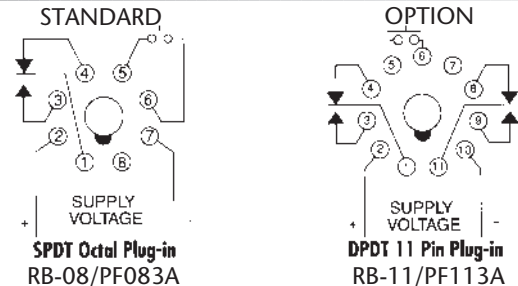
Digital selection of the time delay is accomplished by the use of ten (10) binary switches, each marked with a time increment. The time periods, of which there are five (5) ranges, represented by each switch in the ON position is added together to obtain the desired time delay. No more trial-by-error adjustments.



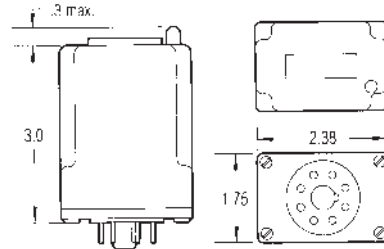
SPECIFICATIONS

TIME DELAY RANGE	A	0.1 to 102.3 SEC in 0.1 SEC Increments
	B	1.0 to 1,023 SEC in 1.0 SEC Increments
	C	10 to 10,230 SEC in 10 SEC Increments
	D	0.1 to 102.3 MIN in 0.1 MIN Increments
	E	1.0 to 1,023 MIN in 1.0 MIN Increments
OUTPUT RATING	SPDT	10 A @ 250 VAC or 24 VDC, resistive
	DPDT	5 A @ 240 VAC
ACCURACY	Setting	±2% or ±50 mSEC; whichever is greater
	Repeat	±0.1% or ±8.3 mSEC; whichever is greater
RESET TIMES	Before Time Out	100 mSEC
	After Time Out	50 mSEC
SUPPLY VOLTAGE	12, 24, 48, 120 or 240 VAC, 50/60 Hz; or DC; ±10%	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER REQUIRED	3 VA, approximately	
DUTY CYCLE	Continuous	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations, minimum
	Electrical	100,000 Operations @ rated load
INDICATORS	LED glows when relay is energized.	
ISOLATION	1,500 volts, input/output	
WEIGHT	0.4 lbs.	

WIRING



DIMENSIONS (INCHES)



MODEL NUMBER >>>>>	TBD		D
Control Voltage			
	12 Volts DC	12	D
	24 Volts AC/DC	24	A
	48 Volts DC	48	D
	120 Volts AC/DC	120	A
	240 Volts AC	240	A
Time Delay Range			
	0.1 to 102.3 SEC in 0.1 SEC Increments	A	
	1.0 to 1,023 SEC in 1.0 SEC Increments	B	
	10 to 10,230 SEC in 10 SEC Increments	C	
	0.1 to 102.3 MIN in 0.1 MIN Increments	D	
	1.0 to 1,023 MIN in 1.0 MIN Increments	E	
Option			
	DPDT, 5 Amps @120 VAC, 11-Pin	D	

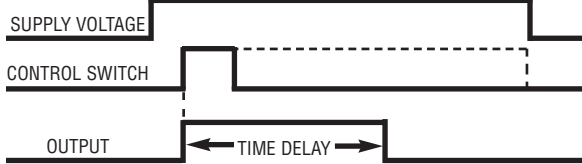
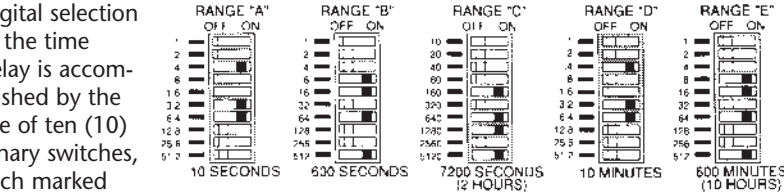
**OPERATION**

Supply voltage is continuously applied to the input. An external control isolated switch between pins 5 and 6 initiates the time delay. When closed (momentary or maintained), the relay energizes and the delay period begins. Upon completion of the delay period, the relay de-energizes.

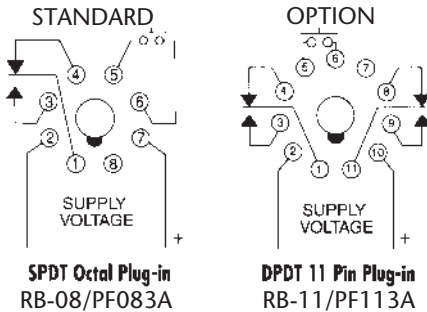
NOTE: The TBE Series is available in an 8-pin SPDT and an 11-pin DPDT configuration.

**DIP SWITCH OPERATION**

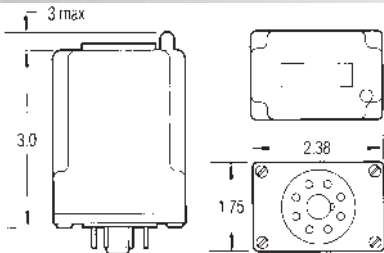
Digital selection of the time delay is accomplished by the use of ten (10) binary switches, each marked with a time increment. The time periods, of which there are five (5) ranges, represented by each switch in the ON position is added together to obtain the desired time delay. No more trial-by-error adjustments.



**WIRING**



**DIMENSIONS (INCHES)**



MODEL NUMBER >>>>>	TBE		A	D
<b>Control Voltage</b>				
	12 Volts DC	12	D	
	24 Volts AC/DC	24	A	
	48 Volts DC	48	D	
	120 Volts AC/DC	120	A	
	240 Volts AC	240	A	
<b>Time Delay Range</b>				
	0.1 to 102.3 SEC in 0.1 SEC Increments		A	
	1.0 to 1,023 SEC in 1.0 SEC Increments		B	
	10 to 10,230 SEC in 10 SEC Increments		C	
	0.1 to 102.3 MIN in 0.1 MIN Increments		D	
	1.0 to 1,023 MIN in 1.0 MIN Increments		E	
<b>Option</b>				
	DPDT. 5 Amps @120 VAC		D	



Single Shot DIP Switch TDR

**SPECIFICATIONS**

TIME DELAY RANGE	A	0.1 to 102.3 SEC in 0.1 SEC Increments
	B	1.0 to 1,023 SEC in 1.0 SEC Increments
	C	10 to 10,230 SEC in 10 SEC Increments
	D	0.1 to 102.3 MIN in 0.1 MIN Increments
	E	1.0 to 1,023 MIN in 1.0 MIN Increments
OUTPUT RATING	SPDT	10 A @ 250 VAC or 24 VDC, resistive
	DPDT	5 A @ 240 VAC
ACCURACY	Setting	±2% or ±50 mSEC; whichever is greater
	Repeat	±0.1% or ±8.3 mSEC; whichever is greater
RESET TIMES	Before Time Out	100 mSEC
	After Time Out	50 mSEC
SUPPLY VOLTAGE	12, 24, 48, 120 or 240 VAC, 50/60 Hz; or DC; ±10%	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER REQUIRED	3 VA, approximately	
DUTY CYCLE	Continuous	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations, minimum
	Electrical	100,000 Operations @ rated load
INDICATORS	LED glows when relay is energized.	
ISOLATION	1,500 volts, input/output	
WEIGHT	0.4 lbs.	

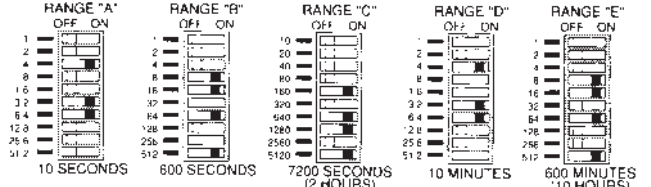


OPERATION

When supply voltage is applied to the input, the OFF time (T1) begins. Upon completion of the OFF time, the relay energizes and the ON time (T2) begins. Upon completion of the ON time, the relay de-energizes and one cycle is complete. This OFF/ON cycling continues until supply voltage is removed from the input. The OFF/ON time periods are independently selectable within the same range.

DIP SWITCH OPERATION

Digital selection of the time delay is accomplished by the use of ten (10) binary

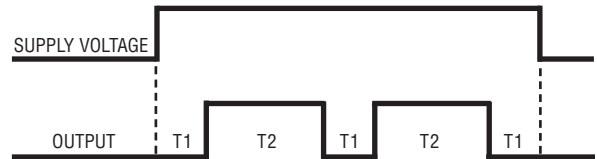


switches, each marked with a time increment. The time periods, of which there are five (5) ranges, represented by each switch in the ON position is added together to obtain the desired time delay. No more trial-by-error adjustments.

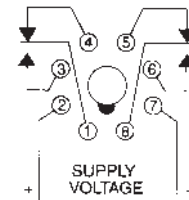
Repeat Cycle-Off Timer First Dip Switch TDR

SPECIFICATIONS

TIME DELAY RANGE	A	0.1 to 102.3 SEC in 0.1 SEC Increments
	B	1.0 to 1,023 SEC in 1.0 SEC Increments
	C	10 to 10,230 SEC in 10 SEC Increments
	D	0.1 to 102.3 MIN in 0.1 MIN Increments
	E	1.0 to 1,023 MIN in 1.0 MIN Increments
OUTPUT RATING	10 A @ 250 VAC or 24 VDC, resistive	
ACCURACY	Setting	±2% or ±50 mSEC; whichever is greater
	Repeat	±0.1% or ±8.3 mSEC; whichever is greater
RESET TIMES	Before Time Out	100 mSEC
	After Time Out	50 mSEC
SUPPLY VOLTAGE	12, 24, 48, 120 or 240 VAC, 50/60 Hz; or DC; ±10%	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER REQUIRED	3 VA, approximately	
DUTY CYCLE	Continuous	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations, minimum
	Electrical	100,000 Operations @ rated load
INDICATORS	LED glows when relay is energized	
ISOLATION	1,500 volts, input/output	
WEIGHT	0.4 lbs.	

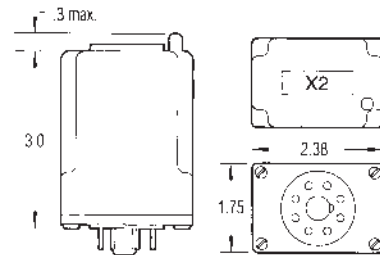


WIRING



DPDT Octal Plug-in RB-08/PF083A

DIMENSIONS (INCHES)



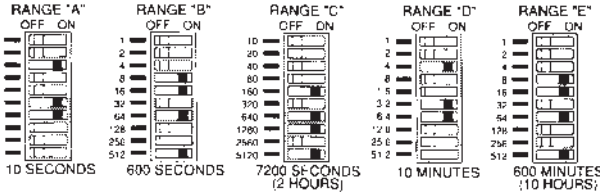
MODEL NUMBER >>>>>	TBF		A
Control Voltage			
	12 Volts DC	12	D
	24 Volts AC/DC	24	A
	48 Volts DC	48	D
	120 Volts AC/DC	120	A
	240 Volts AC	240	A
Time Delay Range			
	0.1 to 102.3 SEC in 0.1 SEC Increments		A
	1.0 to 1,023 SEC in 1.0 SEC Increments		B
	10 to 10,230 SEC in 10 SEC Increments		C
	0.1 to 102.3 MIN in 0.1 MIN Increments		D
	1.0 to 1,023 MIN in 1.0 MIN Increments		E

**OPERATION**

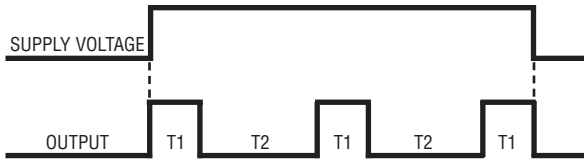
When supply voltage is applied to the input, the relay energizes and ON time (T1) begins. Upon completion of the ON time, the relay de-energizes and the OFF time (T2) begins. Upon completion of the OFF time, the relay energizes and one cycle is complete. This ON/OFF cycling continues until supply voltage is removed from the input. The ON/OFF delay periods are independently selectable within the same range.

**DIP SWITCH OPERATION**

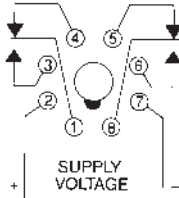
Digital selection of the time delay is accomplished by the use of ten (10)



binary switches, each marked with a time increment. The time periods, of which there are five (5) ranges, represented by each switch in the ON position is added together to obtain the desired time delay. No more trial-by-error adjustments.

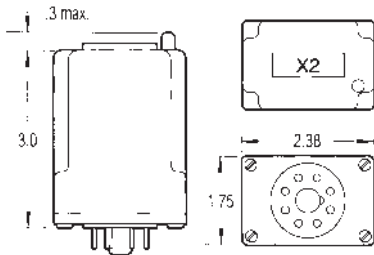


**WIRING**



DPDT Octal Plug-in RB-08/PF083A

**DIMENSIONS (INCHES)**



MODEL NUMBER >>>>>	TBG		A
<b>Control Voltage</b>			
12 Volts DC	12	D	
24 Volts AC/DC	24	A	
48 Volts DC	48	D	
120 Volts AC/DC	120	A	
240 Volts AC	240	A	
<b>Time Delay Range</b>			
0.1 to 102.3 SEC in 0.1 SEC Increments		A	
1.0 to 1,023 SEC in 1.0 SEC Increments		B	
10 to 10,230 SEC in 10 SEC Increments		C	
0.1 to 102.3 MIN in 0.1 MIN Increments		D	
1.0 to 1,023 MIN in 1.0 MIN Increments		E	

Repeat Cycle-ON Time First DIP Switch TDR



**SPECIFICATIONS**

TIME DELAY RANGE	A	0.1 to 102.3 SEC in 0.1 SEC Increments
	B	1.0 to 1,023 SEC in 1.0 SEC Increments
	C	10 to 10,230 SEC in 10 SEC Increments
	D	0.1 to 102.3 MIN in 0.1 MIN Increments
	E	1.0 to 1,023 MIN in 1.0 MIN Increments
OUTPUT RATING	10 A @ 250 VAC or 24 VDC, resistive	
ACCURACY	Setting	±2% or ±50 mSEC; whichever is greater
	Repeat	±0.1% or ±8.3 mSEC; whichever is greater
RESET TIMES	Before Time Out	100 mSEC
	After Time Out	50 mSEC
SUPPLY VOLTAGE	12, 24, 48, 120 or 240 VAC, 50/60 Hz; or DC; ±10%	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER REQUIRED	3 VA, approximately	
DUTY CYCLE	Continuous	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations, minimum
	Electrical	100,000 Operations @ rated load
INDICATORS	LED glows when relay is energized.	
ISOLATION	1,500 volts, input/output	
WEIGHT	0.4 lbs.	



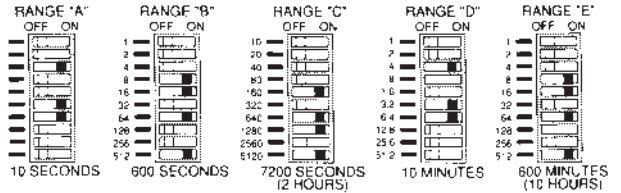
Flasher DIP Switch TDR

OPERATION

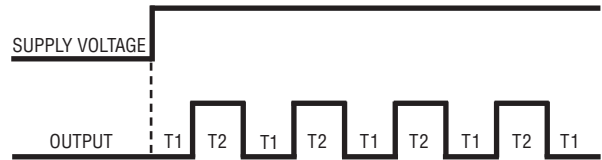
When supply voltage is applied to the input, the OFF time (T1) begins. Upon completion of the OFF time, the relay energizes and the ON time (T2) begins. Upon completion of the ON time, the relay de-energizes and one cycle is complete. This OFF/ON cycling continues until supply voltage is removed from the input. The OFF time always equals the ON time.

DIP SWITCH OPERATION

Digital selection of the time delay is accomplished by the use of ten (10) binary switches, each



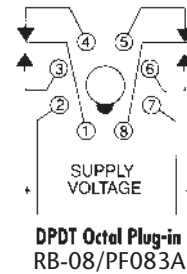
marked with a time increment. The time periods, of which there are five (5) ranges, represented by each switch in the ON position is added together to obtain the desired time delay. No more trial-by-error adjustments.



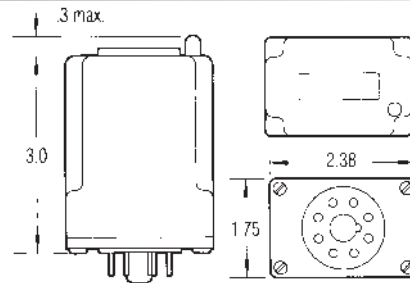
SPECIFICATIONS

TIME DELAY RANGE	A	0.1 to 102.3 SEC in 0.1 SEC Increments
	B	1.0 to 1,023 SEC in 1.0 SEC Increments
	C	10 to 10,230 SEC in 10 SEC Increments
	D	0.1 to 102.3 MIN in 0.1 MIN Increments
	E	1.0 to 1,023 MIN in 1.0 MIN Increments
OUTPUT RATING	10 A @ 250 VAC or 24 VDC, resistive	
ACCURACY	Setting	±2% or ±50 mSEC; whichever is greater
	Repeat	±0.1% or ±8.3 mSEC; whichever is greater
RESET TIMES	Before Time Out	100 mSEC
	After Time Out	50 mSEC
SUPPLY VOLTAGE	12, 24, 48, 120 or 240 VAC, 50/60 Hz; or DC; ±10%	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER REQUIRED	3 VA, approximately	
DUTY CYCLE	Continuous	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations, minimum
	Electrical	100,000 Operations @ rated load
INDICATORS	LED glows when relay is energized.	
ISOLATION	1,500 volts, input/output	
WEIGHT	0.35 lbs.	

WIRING



DIMENSIONS (INCHES)



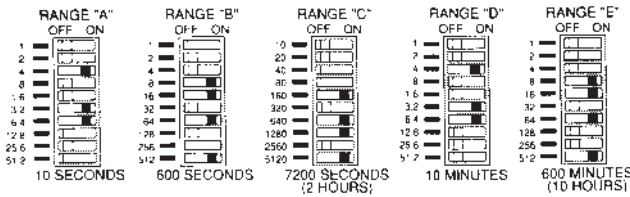
MODEL NUMBER >>>>>>	TBL		A
Control Voltage			
12 Volts DC	12	D	
24 Volts AC/DC	24	A	
48 Volts DC	48	D	
120 Volts AC/DC	120	A	
240 Volts AC	240	A	
Time Delay Range			
0.1 to 102.3 SEC in 0.1 SEC Increments			A
1.0 to 1,023 SEC in 1.0 SEC Increments			B
10 to 10,230 SEC in 10 SEC Increments			C
0.1 to 102.3 MIN in 0.1 MIN Increments			D
1.0 to 1,023 MIN in 1.0 MIN Increments			E

**OPERATION**

The TBU Series offers the accuracy of DIP SWITCH delay ranges "A" through "E" as well as the user programmable model, DIP SWITCH delay range "P," with 4 different ranges obtainable by either leaving 2 designated terminals unconnected or by connecting them to the appropriate terminals as shown below. The 6 most common modes of operation are easily selected by the use of one or more jumpers applied externally between designated base pins as outlined below. These features, coupled with 6 most popular supply voltages, make this timer one of the most versatile and cost effective Time Delay Relays available today. The CMOS digital circuitry provides high accuracy, repeatability and fast reset times.

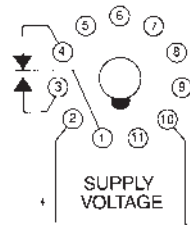
**DIP SWITCH OPERATION**

Digital selection of the time delay is accomplished by the use of ten (10) binary switches, each marked



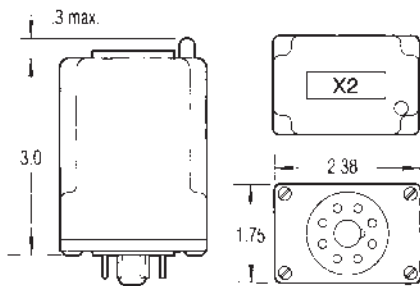
with a time increment. The time periods, of which there are five (5) ranges, represented by each switch in the ON position is added together to obtain the desired time delay. No more trial-by-error adjustments.

**WIRING**



SPDT 11 Pin Plug-in  
RB-11/PF113A

**DIMENSIONS (INCHES)**



MODEL NUMBER >>>>>>	TBU			A
<b>Control Voltage</b>				
	12 Volts DC	12	D	
	24 Volts AC/DC	24	A	
	48 Volts DC	48	D	
	120 Volts AC/DC	120	A	
	240 Volts AC	240	A	
<b>Time Delay Range</b>				
	0.1 to 102.3 SEC in 0.1 SEC Increments		A	
	1.0 to 1,023 SEC in 1.0 SEC Increments		B	
	10 to 10,230 SEC in 10 SEC Increments		C	
	0.1 to 102.3 MIN in 0.1 MIN Increments		D	
	1.0 to 1,023 MIN in 1.0 MIN Increments		E	
	Four (4) Programmable Ranges (TBU only)		P	

**SPECIFICATIONS**

<b>TIME DELAY RANGE</b>	A	0.1 to 102.3 SEC in 0.1 SEC Increments
	B	1.0 to 1,023 SEC in 1.0 SEC Increments
	C	10 to 10,230 SEC in 10 SEC Increments
	D	0.1 to 102.3 MIN in 0.1 MIN Increments
	E	1.0 to 1,023 MIN in 1.0 MIN Increments
<b>OUTPUT RATING</b>	10 A @ 250 VAC or 24 VDC, resistive	
<b>ACCURACY</b>	Setting	±2% or ±50 mSEC; whichever is greater
	Repeat	±0.1% or ±8.3 mSEC; whichever is greater
<b>RESET TIMES</b>	Before Time Out	100 mSEC
	After Time Out	50 mSEC
<b>SUPPLY VOLTAGE</b>	12, 24, 48, 120 or 240 VAC, 50/60 Hz; or DC; ±10%	
<b>FALSE TRANSFER</b>	No	
<b>REVERSE POLARITY PROTECTED</b>	Yes	
<b>POWER REQUIRED</b>	3 VA, approximately	
<b>DUTY CYCLE</b>	Continuous	
<b>TEMPERATURE RATING</b>	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
<b>LIFE EXPECTANCY</b>	Mechanical	10 million operations, minimum
	Electrical	100,000 Operations @ rated load
<b>INDICATORS</b>	LED glows when relay is energized.	
<b>ISOLATION</b>	1,500 volts, input/output	
<b>WEIGHT</b>	0.35 lbs.	

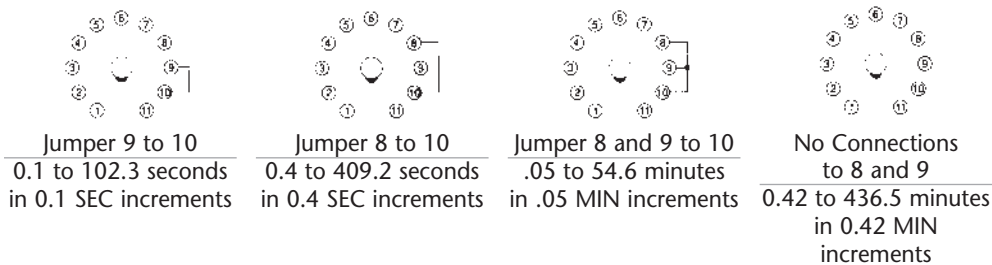


Programmable Multi-Mode DIP Switch TDR

TIME DELAY RANGE "P" SELECTION

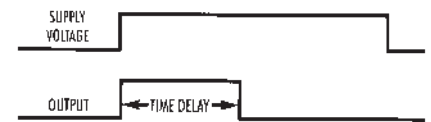
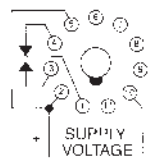
**CAUTION: DO NOT PROGRAM WITH POWER ON! WIRE FOR ONE TIMING RANGE ONLY!**

4 different ranges can be obtained by either leaving 2 designated terminals unconnected or by connecting them to the appropriate terminals shown below. Because the Time Delay programming is the same regardless of the mode of operation only the wiring connections affecting the Time Delay are shown here.

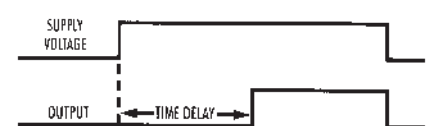
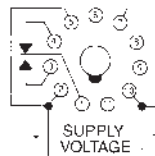


MODE OF OPERATION SELECTION –WIRE FOR ONE MODE ONLY!

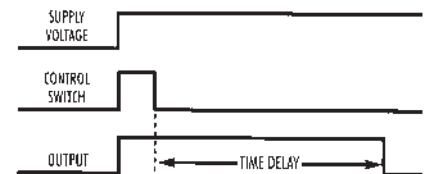
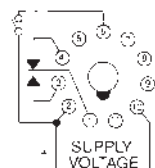
**INTERVAL:** When supply voltage is applied to the input terminals, the relay energizes and the time delay begins. Upon completion of the delay period, the relay de-energizes. Reset during or after the delay period is accomplished by removal of the supply voltage.



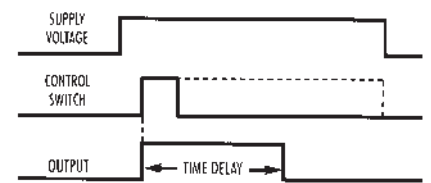
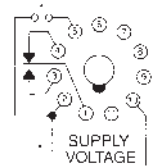
**ON-DELAY:** The time delay begins when supply voltage is applied to the input. Upon completion of the delay period, the relay energizes. Reset during or after the delay period is accomplished by removal of the supply voltage. The timer will not false transfer if supply voltage is removed prior to completion of the delay period.



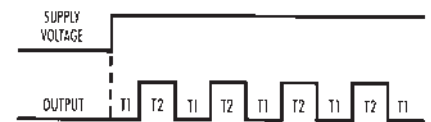
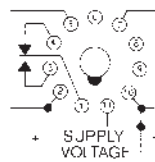
**OFF-DELAY:** Supply voltage is continuously applied to the input. An external isolated switch controls the timer. When closed, the relay energizes. Opening the switch initiates the delay period. Upon completion of the delay period, the relay de-energizes. If the control switch recloses during the delay period, the relay remains energized and the timer resets to zero.



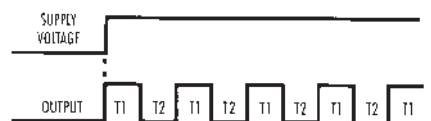
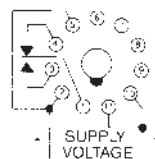
**SINGLE-SHOT:** Supply voltage is continuously applied to the input. An external isolated switch initiates the time delay. When closed (momentary or maintained), the relay energizes and the delay period begins. Upon completion of the delay period, the relay de-energizes.



**FLASHER—OFF TIME FIRST:** When supply voltage is applied to the input, the OFF time (T1) begins. Upon completion of the OFF time, the relay energizes and the ON time (T2) begins. Upon completion of the ON time, the relay de-energizes and one cycle is complete. This OFF/ON cycling continues until supply voltage is removed from the input. The OFF time always equals the ON time.

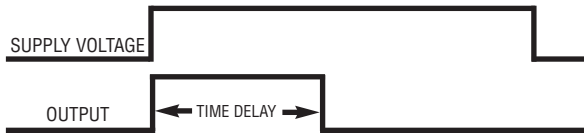


**FLASHER—ON TIME FIRST:** When supply voltage is applied to the input, the relay energizes and ON time (T1) begins. Upon completion of the ON time, the relay de-energizes and the OFF time (T2) begins. Upon completion of the OFF time, the relay energizes and one cycle is complete. This ON/OFF cycling continues until supply voltage is removed from the input. The ON time always equals the off time.

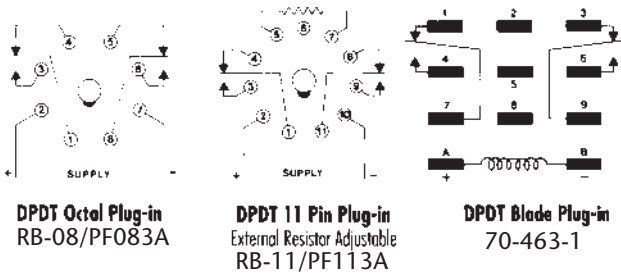


OPERATION

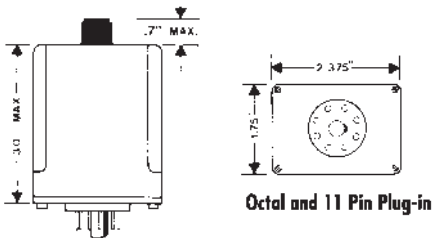
When voltage is applied to the input terminals, the relay energizes and the time delay begins. Upon completion of the delay period, the relay de-energizes. Reset during or after the delay period is accomplished by removal of the input voltage.



WIRING



DIMENSIONS (INCHES)



MODEL NUMBER >>>>>>	T	B	A
Series			
Relay output	D		
Relay Output with CSA	U*		
Supply Voltage			
24 Volts AC or DC		24	
110/120 Volts AC or DC		120	
Type of Operation			
Knob Adjustable			K
Lock Nut Adjustable			L
Fixed			F
External Resistor Adjustable			R**
Enclosure Style			
8 or 11-pin octal plug-in			A
Blade plug-in			B
Time Delay Period			

See page 84 for standard ranges available

Example:  
TUB-120-AKA-900—Interval on operate, 120 Volts AC or DC, knob adjustable from 9 to 900 seconds, 8-pin - octal plug-in

Notes:  
\* The TUB series is offered in 120 Volts, style A enclosure only with optional types of operation K, L, or F. CSA certified, File #LR40123  
\*\* TDB models using the "R" option are not UL Recognized. The "R" option is not offered in the TUB series or the style B enclosure.  
TDB models using "F", "K", or "L" options and in the 8-pin octal plug is only available in 24-volts.



Interval Relay Output

SPECIFICATIONS

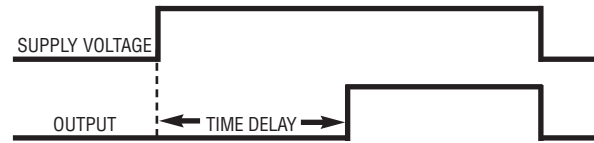
TIMING RANGES	Virtually unlimited. See page 84 for standard ranges available.	
OUTPUT RATING	DPDT, 10 A @ 250 VAC or 24 VDC, resistive; 211 VA @ 120 VAC, inductive	
TIMING TOLERANCES	Minimum Setting	+0-20%
	Maximum Setting	±10%
REPEATABILITY	1% maximum; no first cycle effect	
RESET TIMES	Before Time Out	100 mSEC
	After Time Out	50 mSEC
RECYCLE TIME	40 mSEC	
SUPPLY VOLTAGE	24 or 120 VAC or VDC, 50/60 Hz; ±10% (TUB Series available in 120 Volts only)	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER CONSUMPTION	3 watts (approximately)	
DUTY CYCLE	Continuous	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations (minimum)
	Electrical	100,000 operations @ rated load
WEIGHT	5 oz.	



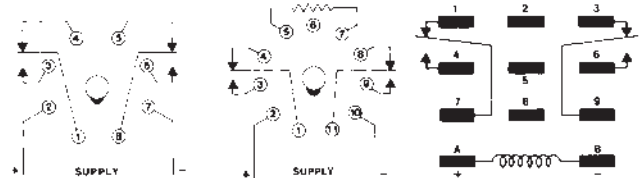
ON-Delay Relay Output

OPERATION

The time delay begins when power is applied to the input. Upon completion of the delay period, the relay energizes. Reset during or after the delay period is accomplished by removal of the input voltage. The TDC/TUC will not false transfer if voltage is removed prior to completion of the delay period. A fast recycle time permits accurate, high speed, continuous operation.



WIRING



DPDT Octal Plug-in  
RB-08/PF083A

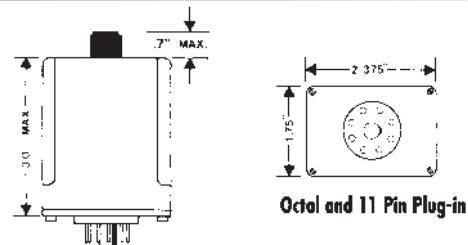
DPDT 11 Pin Plug-in  
External Resistor Adjustable only  
RB-11/PF113A

DPDT Blade Plug-in  
70-463-1

SPECIFICATIONS

TIMING RANGES	Virtually unlimited. See page 84 for standard ranges available.	
OUTPUT RATING	DPDT, 10 A @ 250 VAC or 24 VDC, resistive; 211 VA @ 120 VAC, inductive	
TIMING TOLERANCES	Minimum Setting	+0-20%
	Maximum Setting	±10%
REPEATABILITY	1% maximum; no first cycle effect	
RESET TIMES	Before Time Out	100 mSEC
	After Time Out	50 mSEC
RECYCLE TIME	40 mSEC	
SUPPLY VOLTAGE	24 or 120 VAC or VDC, 50/60 Hz; ±10% (TUC Series available in 120 Volts only)	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER CONSUMPTION	3 watts (approximately)	
DUTY CYCLE	Continuous	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations (minimum)
	Electrical	100,000 operations @ rated load
WEIGHT	5 oz.	

DIMENSIONS (INCHES)



Octal and 11 Pin Plug-in

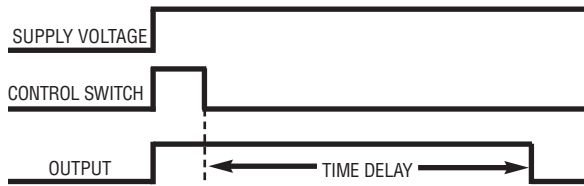
MODEL NUMBER >>>>>>>	T	C	A
Series			
Relay output	D		
Relay Output with CSA	U*		
Supply Voltage			
24 Volts AC or DC		24	
110/120 Volts AC or DC		120	
Type of Operation			
Knob Adjustable			K
Lock Nut Adjustable			L
Fixed			F
External Resistor Adjustable			R**
Enclosure Style			
8 or 11-pin octal plug-in			A
Blade plug-in			B
Delay Period			
See page 84 for standard ranges available			

Example:  
TUC-120-AKA-900—Delay on operate, 120 Volts AC or DC, knob adjustable from 9 to 900 seconds, 8-pin - octal plug-in

Notes:  
\* The TUC series is offered in 120 Volts, style A enclosure only with optional types of operation K, L, or F. CSA certified, File #LR40123  
\*\* TDC models using the "R" option are not UL Recognized. The "R" option is not offered in the TUC series or the style B enclosure.  
TDC models using "F", "K", or "L" options and in the 8-pin octal plug is only available in 24-volts.

**OPERATION**

Voltage is continuously applied to the input. An external isolated switch controls the timer. When closed, the relay energizes. Opening the switch initiates the delay period. Upon completion of the delay period, the relay de-energizes. If the control switch recloses during the delay period, the relay remains energized and the timer resets to zero.

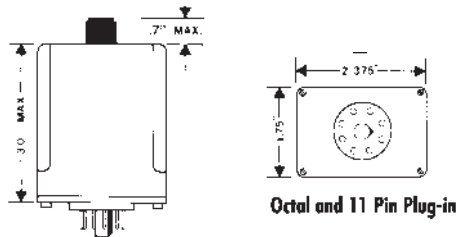


**WIRING**



DPDT 11 Pin Plug-in RB-11/PF113A  
 DPDT 11 Pin Plug-in External Resistor Adjustable RB-08/PF083A  
 SPDT Octal Plug-in RB-08/PF083A  
 DPDT Blade Plug-in 70-463-1

**DIMENSIONS (INCHES)**



MODEL NUMBER >>>>>	T	D	A
Series			
Relay output	D		
Relay Output with CSA U*			
Supply Voltage			
24 Volts AC or DC	24		
110/120 Volts AC or DC	120		
Type of Operation			
Knob Adjustable	K		
Lock Nut Adjustable	L		
Fixed	F		
External Resistor Adjustable R**			
Enclosure Style			
8 or 11-pin octal plug-in	A		
Blade plug-in	B		
Delay Period			
See page 84 for standard ranges available			

Example:  
 TDD-120-AKA-600—Delay on Release, 120 Volts AC or DC, knob adjustable from 6 to 600 seconds, 11-pin octal plug-in UL Recognized.

Notes:  
 \* The TUD series is offered in 120 Volts, octal plug-in (figure 17) style A enclosure only with optional types of operation K, L, or F. CSA certified: File #LR40123  
 \*\* TDD's using the "R" option are not UL Recognized. The "R" option is NOT offered in the TUD series or the style B enclosure.



OFF-Delay Relay Output

**SPECIFICATIONS**

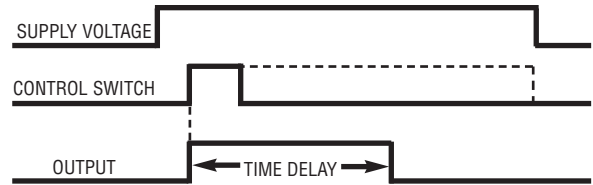
TIMING RANGES	Virtually unlimited. See page 84 for standard ranges available.	
OUTPUT RATING	DPDT	10 A @ 250 VAC or 24 VDC, resistive; 211 VA @ 120 VAC, inductive
	SPDT	10 A @ 120 VAC, resistive; 211 VA @ 120 VAC, inductive
TIMING TOLERANCES	Minimum Setting	+0-20%
	Maximum Setting	±10%
REPEATABILITY	1% maximum; no first cycle effect	
RESET TIMES	Before Time Out	100 mSEC
	After Time Out	50 mSEC
RECYCLE TIME	40 mSEC	
SUPPLY VOLTAGE	24 or 120 VAC or VDC, 50/60 Hz; ±10%	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER CONSUMPTION	3 watts (approximately)	
DUTY CYCLE	Continuous	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations (minimum)
	Electrical	100,000 operations @ rated load
WEIGHT	6 oz.	



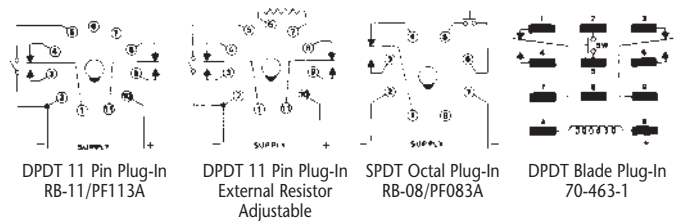
Single-Shot Relay Output

OPERATION

Voltage is continuously applied to the input. An external isolated switch controls the timer. When closed (momentary or maintained), the relay energizes and the delay period begins. Upon completion of the delay period, the relay de-energizes.



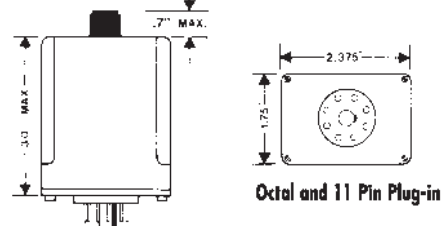
WIRING



SPECIFICATIONS

TIMING RANGES	Virtually unlimited. See page 84 for standard ranges available.	
OUTPUT RATING	DPDT	10 A @ 250 VAC or 24 VDC, resistive; 211 VA @ 120 VAC, inductive
	SPDT	10 A @ 120 VAC, resistive; 211 VA @ 120 VAC, inductive
TIMING TOLERANCES	Minimum Setting	+0-20%
	Maximum Setting	±10%
REPEATABILITY	1% maximum; no first cycle effect	
RESET TIMES	Before Time Out	100 mSEC
	After Time Out	50 mSEC
RECYCLE TIME	40 mSEC	
SUPPLY VOLTAGE	24 or 120 VAC or VDC, 50/60 Hz; ±10%	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER CONSUMPTION	3 watts (approximately)	
DUTY CYCLE	Continuous	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations (minimum)
	Electrical	100,000 operations @ rated load
WEIGHT	4.5 oz.	

DIMENSIONS (INCHES)



MODEL NUMBER >>>>>>	T	E	A
Series			
Relay output	D		
Relay Output with CSA U*			
Supply Voltage			
24 Volts AC or DC		24	
110/120 Volts AC or DC		120	
Type of Operation			
Knob Adjustable			K
Lock Nut Adjustable			L
Fixed			F
External Resistor Adjustable R**			
Enclosure Style			
8 or 11-pin octal plug-in			A
Blade plug-in			B
Delay Period			
See page 84 for standard ranges available			

Example:  
TUE-120-AKA-900—Single Shot, 120 Volts AC or DC, knob adjustable from 9 to 900 seconds, 8-pin octal plug-in (figure 19 and figure 23) UL and CSA.

Notes:  
\* The TUE series is offered in 120 Volts, octal plug-in (figure 23) style A enclosure only with optional types of operation K, L, or F. CSA certified: File #LR40123  
\*\* TDE's using the "R" option are not UL Recognized. The "R" option is NOT offered in the TUE series or the style B enclosure.

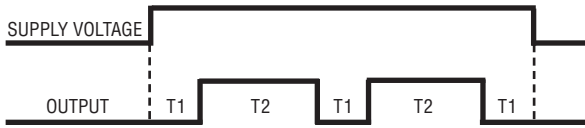
For UL/CSA Approved version specify TUE Series of On-Delay Relay Output Timers.

Sold by AA Electric 1-800-237-8274 Lakeland, FL • Lawrenceville, GA • Greensboro, NC • East Rutherford, NJ

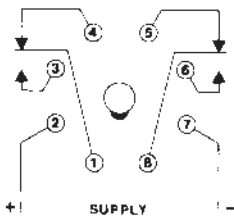
Web : www.A-Aelectric.com Email : njsales@a-aelectric.com

**OPERATION**

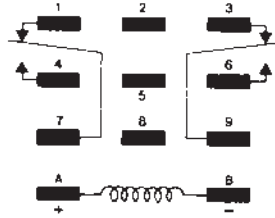
Application of voltage to the input of the timer initiates the OFF time. Upon completion of the OFF time, the relay energizes and the ON time begins. Upon completion of the ON time, the relay de-energizes and one cycle is completed. This OFF/ON cycling continues until voltage is removed from the input. The OFF/ON time periods are independently adjustable.



**WIRING**

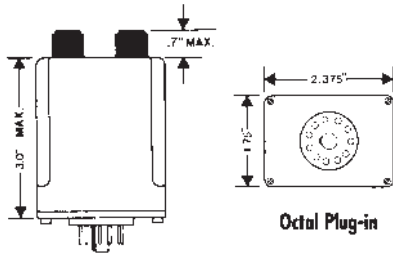


**DPDT Octal Plug-in**  
RB-08/PF083A



**DPDT Blade Plug-in**  
70-463-1

**DIMENSIONS (INCHES)**



**Octal Plug-in**

<b>MODEL NUMBER &gt;&gt;&gt;&gt;&gt;</b>	TDF	A		
<b>Supply Voltage</b>				
24 VAC or DC	24			
110/120 VAC or DC	120			
<b>Type of Operation</b>				
Knob Adjustable	K			
Lock Nut Adjustable	L			
Fixed	F			
<b>Enclosure Style</b>				
8-pin octal plug-in	A			
Blade plug-in	B			
<b>Delay Period</b>				
See page 84 for standard ranges available				
Example: TDF-120-ALA-300—Repeat cycle, 120 Volts AC or DC, both delays are independently adjustable from 3 to 300 seconds, 8-pin octal plug-in				

Repeat Cycle—OFF Time First Relay Output



**SPECIFICATIONS**

<b>TIMING RANGES</b>	Virtually unlimited. See page 84 for standard ranges available.	
<b>OUTPUT RATING</b>	DPDT, 10 A @ 250 VAC or 24 VDC, resistive; 211 VA @ 120 VAC, inductive	
<b>TIMING TOLERANCES</b>	Minimum Setting	+0–20%
	Maximum Setting	±10%
<b>REPEATABILITY</b>	1% maximum; no first cycle effect	
<b>RESET TIMES</b>	Before Time Out	100 mSEC
	After Time Out	50 mSEC
<b>RECYCLE TIME</b>	40 mSEC	
<b>SUPPLY VOLTAGE</b>	24 or 120 VAC or VDC, 50/60 Hz; ±10%	
<b>FALSE TRANSFER</b>	No	
<b>REVERSE POLARITY PROTECTED</b>	Yes	
<b>POWER CONSUMPTION</b>	3 watts (approximately)	
<b>TEMPERATURE RATING</b>	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
<b>LIFE EXPECTANCY</b>	Mechanical	10 million operations (minimum)
	Electrical	100,000 operations @ rated load
<b>WEIGHT</b>	6.4 oz.	

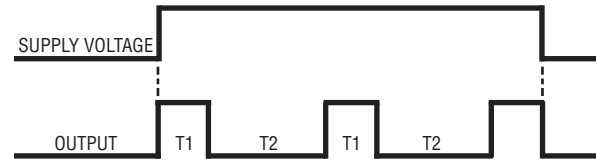
Time Delay Relays // TDF Series



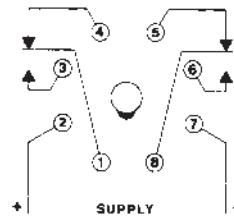
Repeat Cycle-ON Timer First Relay Output

OPERATION

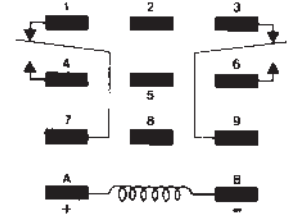
Application of voltage to the input of the timer energizes the relay and initiates the ON time. Upon completion of the ON time, the relay de-energizes and the OFF time begins. Upon completion of the OFF time, the relay energizes and one cycle is completed. This ON/OFF cycling continues until voltage is removed from the input. The ON/OFF time periods are independently adjustable.



WIRING



DPDT Octal Plug-in  
RB-08/PF083A

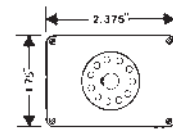
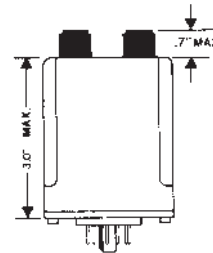


DPDT Blade Plug-in  
70-463-1

SPECIFICATIONS

TIMING RANGES	Virtually unlimited. See page 84 for standard ranges available.	
OUTPUT RATING	DPDT, 10 A @ 250 VAC or 24 VDC, resistive; 211 VA @ 120 VAC, inductive	
TIMING TOLERANCES	Minimum Setting	+0-20%
	Maximum Setting	±10%
REPEATABILITY	1% maximum; no first cycle effect	
RESET TIMES	Before Time Out	100 mSEC
	After Time Out	50 mSEC
RECYCLE TIME	40 mSEC	
SUPPLY VOLTAGE	24 or 120 VAC or VDC, 50/60 Hz; ±10%	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER CONSUMPTION	3 watts (approximately)	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations (minimum)
	Electrical	100,000 operations @ rated load
WEIGHT	6.4 oz.	

DIMENSIONS (INCHES)

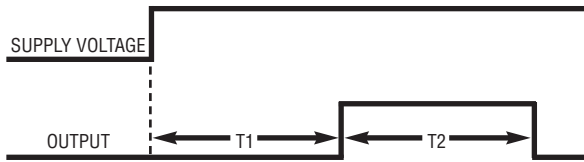


Octal Plug-in

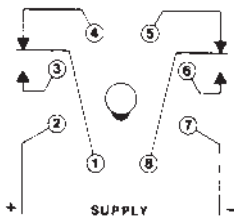
MODEL NUMBER >>>>>>	TDG	A		
Supply Voltage				
24 VAC or DC		24		
110/120 VAC or DC		120		
Type of Operation				
Knob Adjustable		K		
Lock Nut Adjustable		L		
Fixed		F		
Enclosure Style				
8-pin octal plug-in		A		
Blade plug-in		B		
Delay Period				
See page 84 for standard ranges available				

**OPERATION**

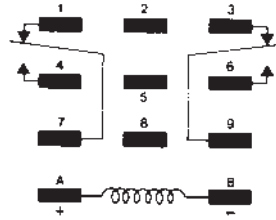
Application of voltage to the input of the timer initiates the OFF time. Upon completion of the OFF time, the relay energizes and the ON time begins. Upon completion of the ON time, the relay de-energizes and the cycle is complete. Reset during or after the time periods is accomplished by removal of the input voltage. The OFF/ON time periods are independently adjustable.



**WIRING**

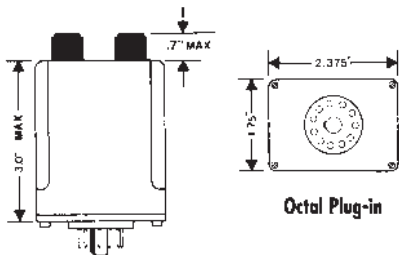


DPDT Octal Plug-in  
RB-08/PF083A



DPDT Blade Plug-in  
70-463-1

**DIMENSIONS (INCHES)**



Octal Plug-in

MODEL NUMBER >>>>>>	TDH	A		
Supply Voltage				
24 VAC or DC	24			
110/120 VAC or DC	120			
Type of Operation				
Knob Adjustable	K			
Lock Nut Adjustable	L			
Fixed	F			
Enclosure Style				
8-pin octal plug-in	A			
Blade plug-in	B			
Delay Period				
See page 84 for standard ranges available				
Example: TDH-120-ALA-300—Delayed interval, 120 Volts AC or DC, both delays are independently adjustable from 3 to 300 seconds, 8-pin octal plug-in (figure 29 and figure 31) UL Recognized.				

**SPECIFICATIONS**

TIMING RANGES	Virtually unlimited. See page 84 for standard ranges available.	
OUTPUT RATING	DPDT, 10 A @ 250 VAC or 24 VDC, resistive; 211 VA @ 120 VAC, inductive	
TIMING TOLERANCES	Minimum Setting	+0-20%
	Maximum Setting	±10%
REPEATABILITY	1% maximum; no first cycle effect	
RESET TIMES	Before Time Out	100 mSEC
	After Time Out	50 mSEC
RECYCLE TIME	40 mSEC	
SUPPLY VOLTAGE	24 or 120 VAC or VDC, 50/60 Hz; ±10%	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER CONSUMPTION	3 watts (approximately)	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations (minimum)
	Electrical	100,000 operations @ rated load
WEIGHT	6.4 oz.	



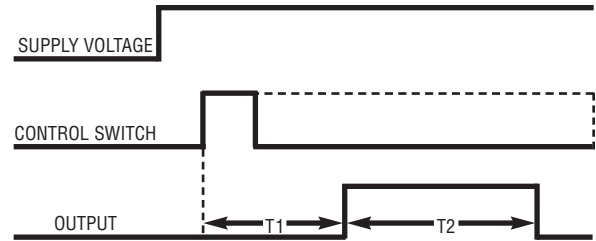
Delayed Interval Relay Output



Delayed Single Shot Relay Output

OPERATION

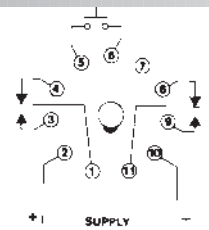
Voltage is continuously applied to the input. An external isolated switch controls the timer. When closed (momentary or maintained), the OFF time begins. Upon completion of the OFF time, the relay energizes and the ON time begins. Upon completion of the ON time, the relay de-energizes and the cycle is complete. Reset is accomplished by reclosing the control switch after the timing cycle has completed. The OFF/ON time periods are independently adjustable.



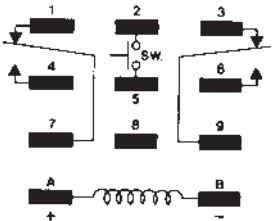
SPECIFICATIONS

TIMING RANGES	Virtually unlimited. See page 84 for standard ranges available.	
OUTPUT RATING	DPDT, 10 A @ 250 VAC or 24 VDC, resistive; 211 VA @ 120 VAC, inductive	
TIMING TOLERANCES	Minimum Setting	+0-20%
	Maximum Setting	±10%
REPEATABILITY	1% maximum; no first cycle effect	
RESET TIMES	Before Time Out	100 mSEC
	After Time Out	50 mSEC
RECYCLE TIME	40 mSEC	
SUPPLY VOLTAGE	24 or 120 VAC or VDC, 50/60 Hz; ±10%	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER CONSUMPTION	3 watts (approximately)	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations (minimum)
	Electrical	100,000 operations @ rated load
WEIGHT	6.4 oz.	

WIRING

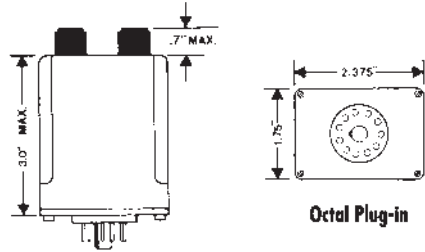


DPDT 11 Pin Plug-in  
RB-11/PF113A



DPDT Blade Plug-in  
70-463-1

DIMENSIONS (INCHES)



Octal Plug-in

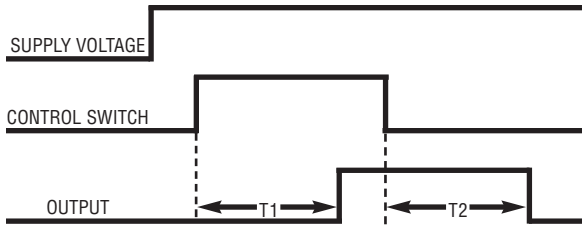
MODEL NUMBER >>>>>	TDI	A	
Supply Voltage			
24 VAC or DC	24		
110/120 VAC or DC	120		
Type of Operation			
Knob Adjustable	K		
Lock Nut Adjustable	L		
Fixed	F		
Enclosure Style			
11-pin octal plug-in	A		
Blade plug-in	B		
Delay Period			
See page 84 for standard ranges available			

Example:  
TDI-120-ALA-300—Delayed single shot, 120 Volts AC or DC, both delays are independently adjustable from 3 to 300 seconds, 11-pin octal plug-in UL Recognized.

Time Delay Relays // TDI Series

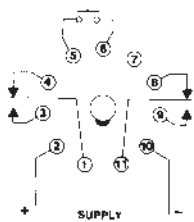
**OPERATION**

Voltage is continuously applied to the input. An external isolated switch controls the timer. When closed, the ON delay (T1) begins. Upon completion, the relay energizes. When the switch opens, the OFF delay (T2) begins. Upon completion, the relay de-energizes and the cycle is complete. Reset is accomplished by reclosing the control switch after the timing cycle has completed. If the switch opens during the ON delay mode, the relay will remain de-energized and (T1) will reset. If the switch is reclosed during the OFF delay mode, the relay will remain energized and (T2) will reset. Both delay periods are independently adjustable.

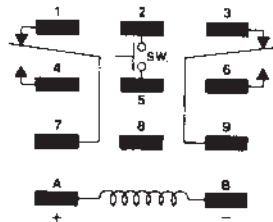


ON-Delay/OFF-Delay Relay Output

**WIRING**

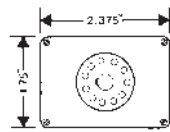
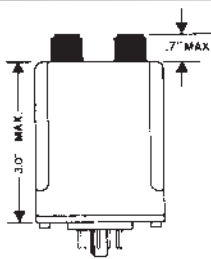


**DPDT 11 Pin Plug-in**  
RB-11/PF113A



**DPDT Blade Plug-in**  
70-463-1

**DIMENSIONS (INCHES)**



**Octal Plug-in**

**SPECIFICATIONS**

TIMING RANGES	Virtually unlimited. See page 84 for standard ranges available.	
OUTPUT RATING	DPDT, 10 A @ 250 VAC or 24 VDC, resistive; 211 VA @ 120 VAC, inductive	
TIMING TOLERANCES	Minimum Setting	+0-20%
	Maximum Setting	±10%
REPEATABILITY	1% maximum; no first cycle effect	
RESET TIMES	Before Time Out	100 mSEC
	After Time Out	50 mSEC
RECYCLE TIME	40 mSEC	
SUPPLY VOLTAGE	24 or 120 VAC or VDC, 50/60 Hz; ±10%	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER CONSUMPTION	3 watts (approximately)	
DUTY CYCLE	Continuous	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations (minimum)
	Electrical	100,000 operations @ rated load
WEIGHT	6.4 oz.	

<b>MODEL NUMBER &gt;&gt;&gt;&gt;&gt;&gt;</b>	<b>TDJ</b>	<b>A</b>	
Supply Voltage	24	120	
24 VAC or DC			
110/120 VAC or DC			
Type of Operation			
Knob Adjustable	K		
Lock Nut Adjustable	L		
Fixed	F		
Enclosure Style			
11-pin octal plug-in	A		
Blade plug-in	B		
Delay Period			
See page 84 for standard ranges available			

Example:  
TDJ-120-ALA-300—Delay on Operate/Delay on Release, 120 Volts AC or DC, both delays are independently adjustable from 3 to 300 seconds, 11-pin octal plug-in.

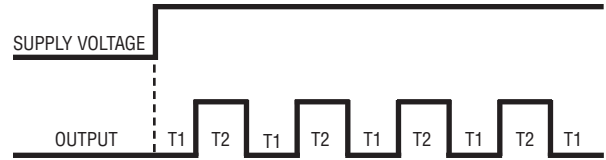


Flasher Relay Output

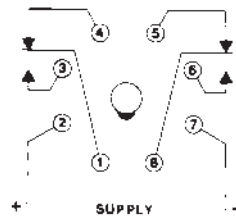
OPERATION

When power is applied to the input, the OFF time begins. Upon completion of the OFF time, the relay energizes and the ON time begins. Upon completion of the ON time, the relay de-energizes and one cycle is complete. This OFF/ON cycling continues until the voltage is removed from the input.

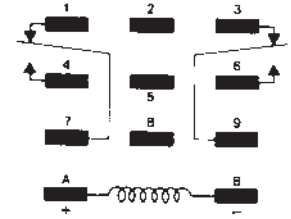
THE OFF TIME ALWAYS EQUALS THE ON TIME.



WIRING



DPDT Octal Plug-in  
RB-08/PF083A

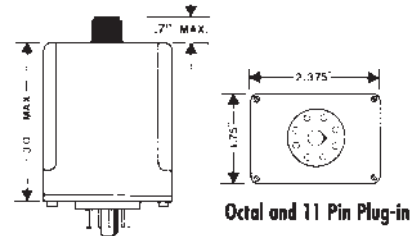


DPDT Blade Plug-in  
70-463-1

SPECIFICATIONS

TIMING RANGES	Virtually unlimited. See page 84 for standard ranges available.	
OUTPUT RATING	DPDT, 10 A @ 250 VAC or 24 VDC, resistive; 211 VA @ 120 VAC, inductive	
DUTY CYCLE	50%	
SUPPLY VOLTAGE	24 or 120 VAC or VDC, 50/60 Hz; ±10%	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER CONSUMPTION	3 watts (approximately)	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations (minimum)
	Electrical	100,000 operations @ rated load
WEIGHT	5.6 oz.	

DIMENSIONS (INCHES)

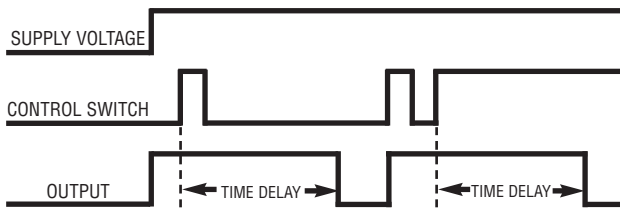


MODEL NUMBER >>>>>	TDL	A		
Supply Voltage				
24 VAC or DC		24		
110/120 VAC or DC		120		
Type of Operation				
Knob Adjustable			K	
Lock Nut Adjustable			L	
Fixed			F	
Enclosure Style				
8-pin octal plug-in			A	
Blade plug-in			B	
Delay Period				
See page 84 for standard ranges available				
Example: TDL-120-ALA-300—Flasher, 120 Volts AC or DC, lock nut adjustable from 3 to 300 seconds, 8-pin octal plug-in				

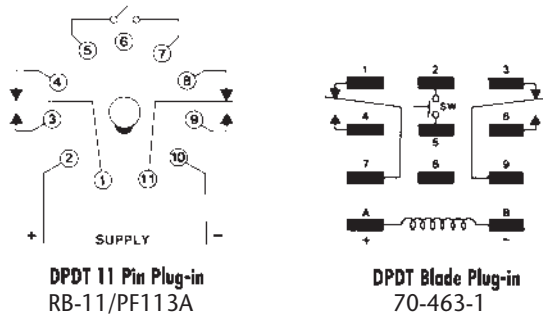
Time Delay Relays // TDL Series

**OPERATION**

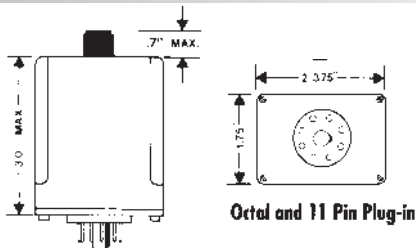
When voltage is applied to the input, the internal relay picks up and the time delay begins regardless of the position of the control switch. With the switch in the open position, when voltage is applied, the timer will complete its time delay period and the internal relay will drop out if the switch is not closed before the completion of the time delay period. With the switch in the closed position, when voltage is applied, the timer will complete its time delay period and the internal relay will drop out if the switch is not opened and reclosed before the completion of the time delay period. After voltage has been applied, closing of the control switch initiates the time delay period. Reset is accomplished by interrupting the supply voltage or re-closing the control switch.



**WIRING**



**DIMENSIONS (INCHES)**



Energy Conservation Timer Relay Output

**SPECIFICATIONS**

TIMING RANGES	Virtually unlimited. See page 84 for standard ranges available.	
OUTPUT RATING	DPDT, 10 A @ 250 VAC or 24 VDC, resistive; 211 VA @ 120 VAC, inductive	
TIMING TOLERANCES	Minimum Setting	+0-20%
	Maximum Setting	±10%
REPEATABILITY	1% maximum; no first cycle effect	
RESET TIMES	Before Time Out	100 mSEC
	After Time Out	50 mSEC
RECYCLE TIME	40 mSEC	
SUPPLY VOLTAGE	24 or 120 VAC or VDC, 50/60 Hz; ±10%	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER CONSUMPTION	3 watts (approximately)	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations (minimum)
	Electrical	100,000 operations @ rated load
WEIGHT	5.6 oz.	

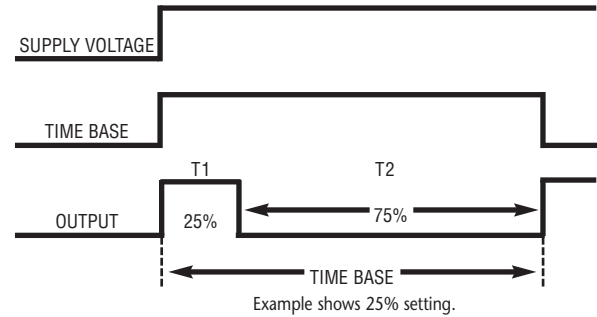
MODEL NUMBER >>>>>>	TDM	A
Supply Voltage	24 VAC or DC	24
	110/120 VAC or DC	120
Type of Operation		
	Knob Adjustable	K
	Lock Nut Adjustable	L
	Fixed	F
Enclosure Style		
	11-pin octal plug-in	A
	Blade plug-in	B
Delay Period		
See page 84 for standard ranges available		
Example: TDM-120-ALA-060—Energy conservation timer, 120 Volts AC or DC, lock nut adjustable from 0.6 to 60 seconds, 11-pin octal plug-in.		



Percentage Timer Relay Output

**OPERATION**

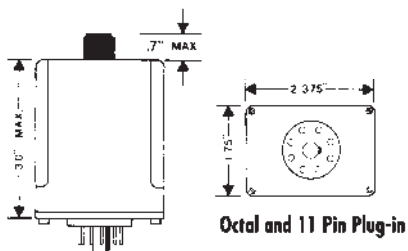
When voltage is applied to the input, the internal relay energizes and the ON time (T1) begins. Upon completion of the ON time, the relay de-energizes and the OFF time (T2) begins. At the completion of the OFF time, one ON/OFF cycle is completed. This cycling action continues until voltage is removed from the input. The ON/OFF ratio is adjustable from 0 to 100 percent of time base. 0% is OFF; 100% is ON. Reset is accomplished by interrupting the input voltage.



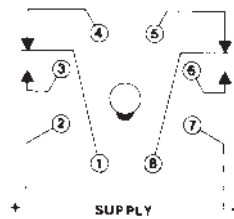
**SPECIFICATIONS**

OUTPUT RATING	DPDT, 10 A @ 250 VAC or 24 VDC, resistive; 211 VA @ 120 VAC, inductive	
TIME BASE TOLERANCES	±10%	
REPEATABILITY	0.5% typical	
ADJUSTABILITY	0 to 100% of time base	
TIME BASE	See ordering information	
SUPPLY VOLTAGE	24 or 120 VAC or VDC, 50/60 Hz; ±10%	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER CONSUMPTION	2 watts	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations (minimum)
	Electrical	100,000 operations @ rated load
WEIGHT	5.6 oz.	

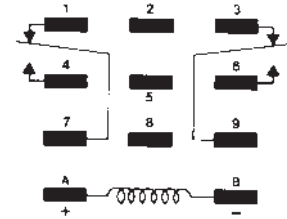
**DIMENSIONS (INCHES)**



**WIRING**



DPDT Octal Plug-in  
RB-08/PF083A



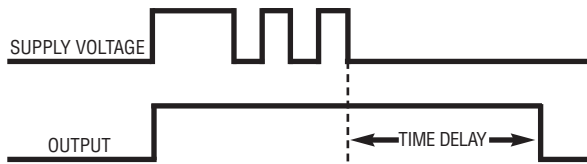
DPDT Blade Plug-in  
70-463-1

MODEL NUMBER >>>>>	TDP	A	
Supply Voltage			
	24		24 VAC or DC
			110/120 VAC or DC
Type of Operation			
		K	Knob Adjustable
		L	Lock Nut Adjustable
Enclosure Style			
		A	8-pin octal plug-in
		B	Blade plug-in
Time Base			
		060	60 SEC
		300	300 SEC
		600	600 SEC
		900	900 SEC
		30M	30 MIN
		60M	60 MIN

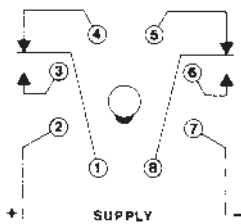
**OPERATION**

When voltage is applied to the input, the relay energizes. When voltage is removed, the OFF delay begins. Upon completion of the delay period, the relay de-energizes. Reset is accomplished by reapplying voltage to the input terminals.

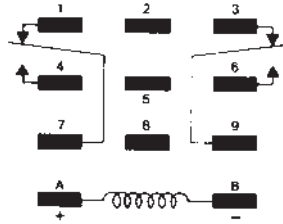
NOTE: If voltage is reapplied during the delay period, the relay remains picked up and the timer resets to zero. VOLTAGE MUST BE APPLIED FOR A MINIMUM OF 0.5 SECONDS TO ASSURE PROPER OPERATION.



**WIRING**



**DPDT Octal Plug-in**  
RB-08/PF083A



**DPDT Blade Plug-in**  
70-463-1

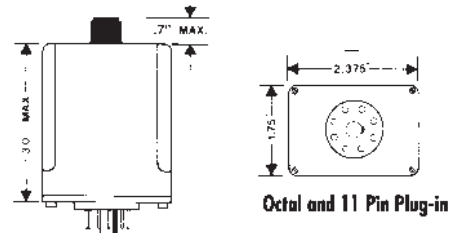


True OFF-Delay Relay Output

**SPECIFICATIONS**

OUTPUT RATING	DPDT, 10 A 1/6 HP @ 240 VAC; 211 VA @ 120 VAC, inductive	
TIMING TOLERANCES	Minimum Setting	+0-20%
	Maximum Setting	±10%
REPEATABILITY	1%	
RESET TIMES	.5 seconds	
SUPPLY VOLTAGE	24 or 110/120 or 208/240 VAC, 50/60 Hz, or VDC; and 48 VDC; ±10%	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER CONSUMPTION	3 watts (approximately)	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations (minimum)
	Electrical	100,000 operations @ rated load
WEIGHT	4.5 oz. (approximately)	

**DIMENSIONS (INCHES)**



Octal and 11 Pin Plug-in

MODEL NUMBER >>>>>>	TDT			
<b>Supply Voltage</b>				
24 VAC or DC	24			
48 Volts DC	48			
110/120 VAC or DC	120			
208/240 VAC or DC	240			
<b>Type of Voltage</b>				
AC and DC operation	A			
DC operation only (D Designation used for 48V model only)	D			
<b>Type of Operation</b>				
Knob Adjustable	K			
Lock Nut Adjustable	L			
Fixed	F			
<b>Enclosure Style</b>				
8-pin octal plug-in	A			
Blade plug-in	B			
<b>Delay Period</b>				
010 = .1 to 10 SEC	010			
030 = .3 to 30 SEC	030			
060 = .6 to 60 SEC	060			
100 = 1 to 100 SEC	100			
200 = 2 to 200 SEC	200			
300 = 3 to 300 SEC	300			

Example:  
TDT-120-ALA-300—True delay on release, 110/120 Volts AC or DC, lock nut adjustable from 3 to 300 seconds, 8-pin octal plug-in.



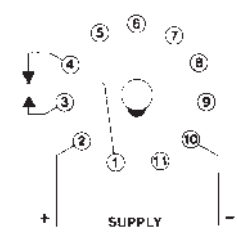
The TDU Series is one of the most versatile single timers available today. One model replaces forty-eight industry standard devices; 4 wide delay ranges x 6 most common modes of operation x 2 supply voltages—since they will operate on both AC and DC. The CMOS digital circuitry provides high accuracy, repeatability and fast reset times. The heavy duty relays are rated for continuous operation at 10 amps. All programming is easily accomplished externally by using one or more jumpers between designated base pins—no trap doors to open, no switches to set, no disassembly required.

Programmable Multi-Mode Relay Output

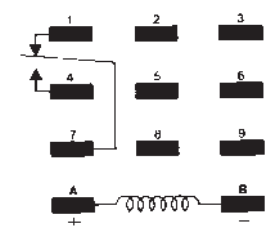
SPECIFICATIONS

TIMING RANGES	1	0.15 to 15 SEC
	2	0.6 to 60 SEC
	3	5 to 480 SEC
	4	0.6 to 64 MIN
OPERATING MODES	1	Interval
	2	ON-Delay
	3	OFF-Delay
	4	Single Shot
	5	Flasher – OFF First
	6	Flasher – ON First
OUTPUT RATING	SPDT, 10 A @ 24 VDC or 250 VAC, resistive; 211 VA @ 120 VAC, inductive	
TIMING TOLERANCES	Minimum Setting	+0–20%
	Maximum Setting	±10%
REPEATABILITY	0.1% typical; 0.5% maximum	
RESET TIMES	Before Time Out	100 mSEC
	After Time Out	50 mSEC
RECYCLE TIME	40 mSEC	
SUPPLY VOLTAGE	24, 120 or 240 VAC, 50/60 Hz; or 12, 24, 48 or 110 VDC, ±10%	
FALSE TRANSFER	No	
REVERSE POLARITY PROTECTED	Yes	
POWER CONSUMPTION	3 watts (approximately)	
TEMPERATURE RATING	Operate	32° to 131°F (0° to +55°C)
	Storage	-49° to 185°F (-45° to +85°C)
LIFE EXPECTANCY	Mechanical	10 million operations (minimum)
	Electrical	100,000 operations @ rated load
WEIGHT	5 oz.	

WIRING

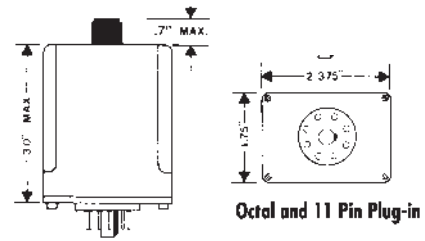


SPDT 11 Pin Plug-in  
RB-11/PF113A



SPDT Blade Plug-in  
70-463-1

DIMENSIONS (INCHES)



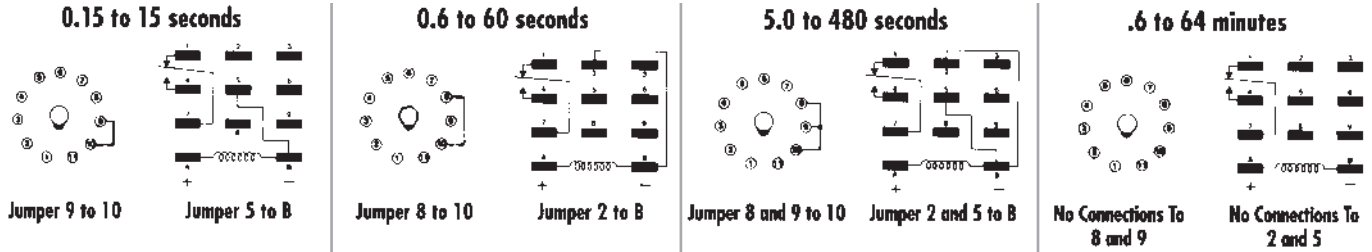
Octal and 11 Pin Plug-in

MODEL NUMBER >>>>>>	TDU			
Supply Voltage				
	12 VDC	12	D	
	24 VAC or DC	24	A	
	48 VDC	48	D	
	110/120 VAC or DC	120	A	
	240 VAC	240	A	
Type of Operation				
	Knob Adjustable	K		
	Lock Nut Adjustable	L		
Enclosure Style				
	11-pin octal plug-in	A		
	Blade plug-in	B		

### TIMING RANGE SELECTION

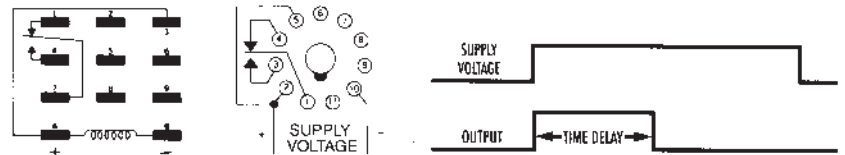
CAUTION: DO NOT PROGRAM WITH POWER ON! WIRE FOR ONE TIMING RANGE ONLY!

4 different ranges can be obtained by either leaving 2 designated terminals unconnected or by connecting them to the appropriate terminals shown below. Because the Time Delay programming is the same regardless of the mode of operation only the wiring connections affecting the Time Delay are shown here.

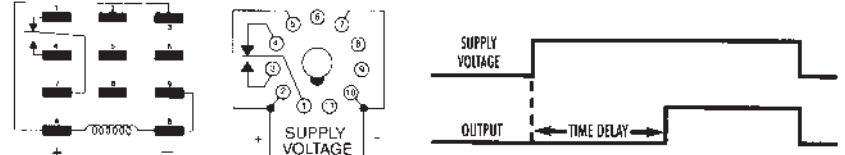


### OPERATION—WIRE FOR ONE MODE ONLY!

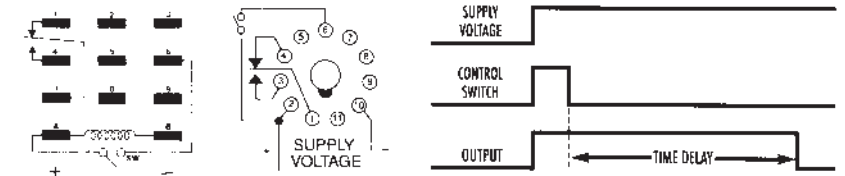
**INTERVAL:** When voltage is applied to the input terminals, the relay energizes and the time delay begins. Upon completion of the delay period, the relay de-energizes. Reset during or after the delay period is accomplished by removal of the supply voltage.



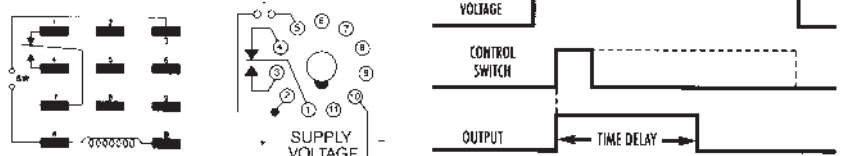
**ON-DELAY:** The time delay begins when power is applied to the input. Upon completion of the delay period, the relay energizes. Reset during or after the delay period is accomplished by removal of the input voltage. The timer will not false transfer if supply voltage is removed prior to completion of the delay period.



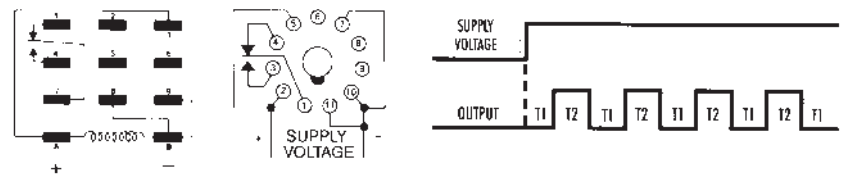
**OFF-DELAY:** Voltage is continuously applied to the input. An external isolated switch controls the timer. When closed, the relay energizes. Opening the switch initiates the delay period. Upon completion of the delay period, the relay de-energizes. If the control switch recloses during the delay period, the relay remains energized and the timer resets to zero.



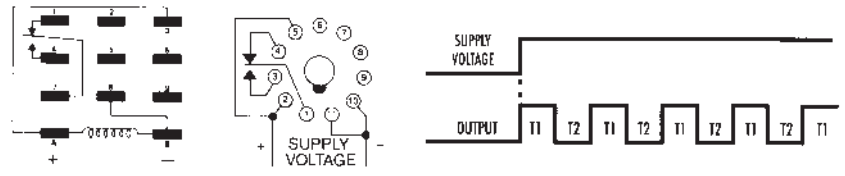
**SINGLE-SHOT:** Voltage is continuously applied to the input. An external isolated switch controls the timer. When closed (momentary or maintained), the relay energizes and the delay period begins. Upon completion of the delay period, the relay de-energizes.



**FLASHER—OFF TIME FIRST:** When supply voltage is applied to the input, the OFF time begins. Upon completion of the OFF time, the relay energizes and the ON time begins. Upon completion of the ON time, the relay de-energized and one cycle is complete. This OFF/ON cycling continues until supply voltage is removed from the input. The OFF time always equals the ON time.



**FLASHER—ON TIME FIRST:** When power is applied to the input, the relay energizes and ON time begins. Upon completion of the ON time, the relay de-energizes and the OFF time begins. Upon completion of the OFF time, the relay energizes and one cycle is complete. This ON/OFF cycling continues until supply voltage is removed from the input. The ON time always equals the off time.



Time Delay Relays // TDU Series

## STANDARD DELAY RANGES AVAILABLE

The chart below shows the standard adjustable time delay ranges available. The part number suffix equals the maximum adjustable delay period of the timer. No letters following the suffix number indicates the delay period in seconds; and M indicates minutes; and an H indicates hours.

### STANDARD DELAY RANGE CHART

PART NUMBER SUFFIX	MINIMUM SETTING	MAXIMUM SETTING
030	0.3 seconds	30 seconds
060	0.6 seconds	60 seconds
100	1 second	100 seconds
200	2 seconds	200 seconds
300	3 seconds	300 seconds
600	6 seconds	600 seconds
900	9 seconds	900 seconds
30M	18 seconds	30 minutes
60M	36 seconds	60 minutes
90M	54 seconds	90 minutes
2H	1.2 Minutes	2 hours
4H	2.4 Minutes	4 hours
8H	4.8 Minutes	8 hours
12H	7.2 Minutes	12 hours
16H	9.6 Minutes	16 hours
20H	12 Minutes	20 hours
24H	14.4 Minutes	24 hours
Longer delays available upon request. Consult Factory		

## EXTERNAL RESISTANCE SELECTION

On models specified as having the external resistor adjustability feature, the delay period is set by placing resistance across designated pins or terminals. One meg ohm resistance provides the maximum delay on all models. The minimum delay is obtained by jumping the terminals together.

The resistor or potentiometer chosen should be a 1/4 watt or larger.

To determine the resistor value required for a specific time delay, use the following formula:

$$R_{ext} = (T_{des}/T_{max}) \times 1000$$

$R_{ext}$  = Resistance value required to obtain  $T_{des}$  (in K ohms)

$T_{des}$  = Desired time delay

$T_{max}$  = Maximum delay period of the timer

Example: Model TDC-120-ARC-300; find the external resistance value required for a 240 second delay:

$$R_{ext} = \frac{240}{300} \times 1000 = 800 \text{ K ohms}$$

## "FIXED" DELAY OPTION

Most ATC Diversified timers are available with the delay period factory preset ("fixed") for some specified duration. When this option is ordered, the part number should have an "F" in the Type of Operation designation: and the last digits should specify the desired time delay in seconds (S), minutes (M), or hours (H).

Example: TDC 120-AFA-30M—delay-on-operate, 120 Volts AC or DC, 8-pin octal plug-in package with a 30 minute fixed delay.

## OFF/ON DELAY TIMERS

Included in ATC Diversified's broad line of timers are six (6) models that feature independent OFF/ON delay adjustments. They are TDF, TDH, TDI, TSF, and TSH. Notice in the ordering information section on each of their respective pages the timing range is specified by a three (3) digit suffix. This indicates that both the OFF and ON delay periods have the same timing ranges. Example: TDF-120-ALA-300: Both OFF and ON delay periods are independently adjustable from 3 to 300 seconds.

In the event that two (2) separate delay ranges would be required, the part number is modified to add a slash(/) followed by three (3) more digits. Since the OFF delay (TI) is first in all models, it is specified first in the part number. Example: TDF-120-ALA-12H/30M: the OFF delay is adjustable from 7.2 minutes to 12 hours and the ON delay is adjustable from 18 seconds to 30 minutes.

NOTE: Combinations of various "types of operation" are available: fixed/adjustable, knob/lock nut, etc. Consult factory.

## GENERAL ORDER INFORMATION

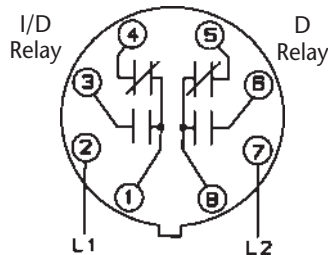
MODEL NUMBER >>>>>>	T			X	X			
Time Delay								
Series								
Relay Output	D, U							
Solid-State Output	S							
Mode of Operation								
Supply Voltage								
24 Volts	24							
120 Volts	120							
240 Volts	240							
Type of Voltage								
AC	A							
DC	D							
Type of Operation								
Knob Adjustment	K							
Lock Nut Adjustment	L							
Fixed (Factory Preset)	F							
External Resistor Adjustable	R							
Enclosure Style								
8 or 11-Pin octal plug-in	A							
Blade plug-in	B							
Potted Cube	C							
Delay Period								
See Standard Delay Range Chart								

**NOTE: Not all time delays are available with each option shown above. The specific options for each timer type are described on their respective pages.**

## OPERATION

The 657-8-4000 timer has two (2) user selectable modes of operation; ON Delay and Interval. In either operation mode the user can select from 2 output contact configurations; 2 timed contacts or 1 timed contact and 1 instantaneous contact. Selection of the operating mode and contact output configuration choice provides the user with timing control versatility.

## WIRING



## SPECIFICATIONS

TIMING RANGES	0.1—12.7 SEC
	0.1—12.7 MIN
	0.1—12.7 HR
	1.0—127 SEC
	1.0—127 MIN
TIMING MODES—SELECTABLE	ON Delay W/2 Timed Contacts
	ON Delay W/1 Timed and 1 Instantaneous Contact.
	Interval Timer 2 Timed Contacts
	Interval Timer 1 Timed Contact & 1 Instantaneous Contact
TIME SETTING METHOD	DIP Switches Located On Top
RESET TIMES	50 mSEC Max.
OPERATING POWER	Universal, 85-240 VAC or VDC
REPEAT ACCURACY	±0.002% of Timed Setting
RELAY OUTPUTS	2 Each, SPDT Form C 10A @ 120 VAC, 5A @ 240 VAC / 30 VDC
POWER CONSUMPTION	30mA Max.
TEMPERATURE RATING	Operate 32° - 122°F (0 - 50°C)
TERMINATION—MOUNTING	8 Pin, Plug-In Socket
LED INDICATORS	Green LED ON Steady when powered but not timing. Flashing when timing
	Red LED ON when relay outputs are on
WEIGHT	4 oz. (approximately)



CAUS

Universal 2-Mode Timer

- 2 SPDT 10A @ 120 VAC Relays
- Universal Input Power 85-240 VAC/DC
- LED Indicators—Show Operating Status and Relay Contact Status
- Six (6) Time Bases From 0.1 Second to 127 Hours
- Convenient Top Mounted Time Setting Switches
- Extremely Cost Effective

## ORDERING INFORMATION

MODEL NUMBER	Description
657-8-4000	Universal 2 Mode timer