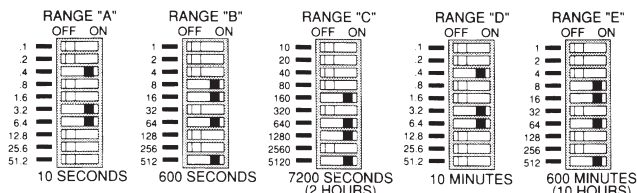


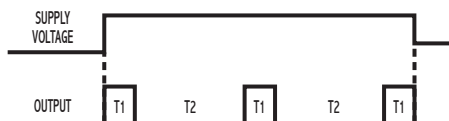
OPERATION

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.

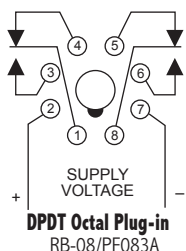
DIP SWITCH OPERATION



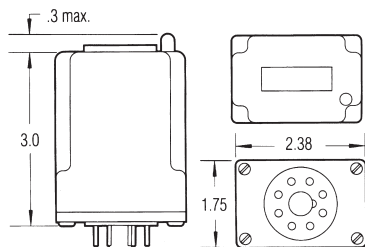
Digital selection of the time delay is accomplished by the use of ten (10) binary switches, each marked with a time increment. The time periods, of which there are five (5) ranges, represented by each switch in the ON position is added together to obtain the desired time delay.



WIRING

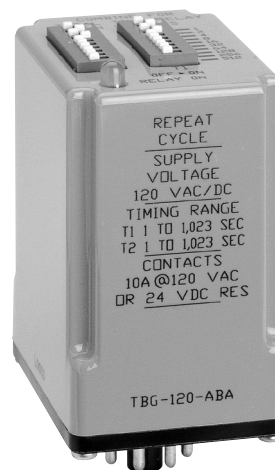


DIMENSIONS



MODEL NUMBER

MODEL NUMBER	TBG				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	
HOUSING					A



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 $\pm 2\%$ or ± 50 mSEC; whichever is greater
Repeat $\pm 0.1\%$ 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; $\pm 10\%$

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.

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; an M indicates minutes; and an H indicates hours.

STANDARD DELAY RANGE CHART

PART NUMBER SUFFIX	MINIMUM SETTING	MAXIMUM SETTING
010	0.1 seconds	10 seconds
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.

MODEL NUMBER

MODEL NUMBER	T						
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 Round 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.