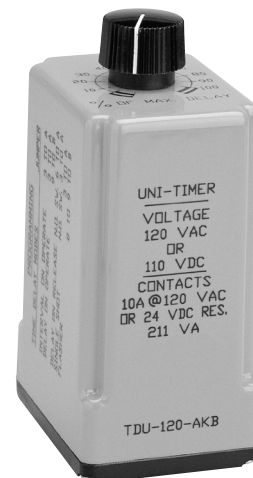
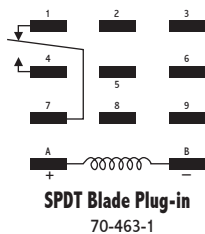
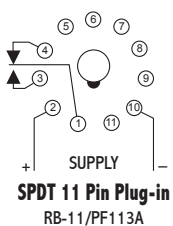


The TDU Series is one of the most versatile single timers available today. One model replaces forty-eight industry standard devices; 4 wide delay ranges x 6 most common modes of operation x 2 supply voltages—since they will operate on both AC and DC. The CMOS digital circuitry provides high accuracy, 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.

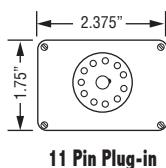
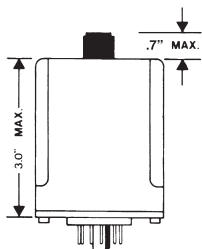


**WIRING**



*Programmable Multi-Mode Relay Output*

**DIMENSIONS (INCHES)**



**MODEL NUMBER**

MODEL NUMBER	TDU				
<b>SUPPLY VOLTAGE</b>					
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			
<b>TYPE OF OPERATION</b>					
Knob Adjustable				K	
Lock Nut Adjustable				L	
<b>ENCLOSURE STYLE</b>					
11-pin Round Plug-in					A
Blade Plug-in					B

Example: TDU-120-AKA—Multi mode, 120 Volts AC or DC, knob adjustable, 11-pin round plug-in, multi range .15 seconds to 64 minutes.

**SPECIFICATIONS**

<b>TIMING RANGES</b>	1	0.15 to 15 SEC
	2	0.6 to 60 SEC
	3	5 to 480 SEC
	4	0.6 to 64 MIN

<b>OPERATING MODES</b>	1	Interval
	2	ON-Delay
	3	OFF-Delay
	4	Single Shot
	5	Flasher – OFF First
	6	Flasher – ON First

<b>OUTPUT RATING</b>	SPDT, 10 A @ 24 VDC or 250 VAC, resistive; 211 VA @ 120 VAC, inductive
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<b>TIMING TOLERANCES</b>	Minimum Setting	+0 – 20%
	Maximum Setting	±10%

<b>REPEATABILITY</b>	0.1% typical; 0.5% maximum
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<b>RESET TIMES</b>	Before Time Out	100 mSEC
	After Time Out	50 mSEC

<b>RECYCLE TIME</b>	40 mSEC
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<b>SUPPLY VOLTAGE</b>	24, 120 or 240 VAC, 50/60 Hz; or 12, 24, 48 or 110 VDC, ±10%
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<b>FALSE TRANSFER</b>	No
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<b>REVERSE POLARITY PROTECTED</b>	Yes
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<b>POWER CONSUMPTION</b>	3 watts (approximately)
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<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>	5 oz.
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## 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

<b>MODEL NUMBER</b>	T							
<b>TIME DELAY</b>								
<b>SERIES</b>								
Relay Output		D,U						
Solid State Output		S						
<b>MODE OF OPERATION</b>								
<b>SUPPLY VOLTAGE</b>								
24 Volts			24					
120 Volts			120					
240 Volts			240					
<b>TYPE OF VOLTAGE</b>								
AC				A				
DC				D				
<b>TYPE OF OPERATION</b>								
Knob Adjustment					K			
Lock Nut Adjustment					L			
Fixed (Factory Preset)					F			
External Resistor Adjustable					R			
<b>ENCLOSURE STYLE</b>								
8 or 11-pin Round Plug-in						A		
Blade Plug-in						B		
Potted Cube						C		
<b>DELAY PERIOD</b>								
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.