



## Solid State Timers and Controllers

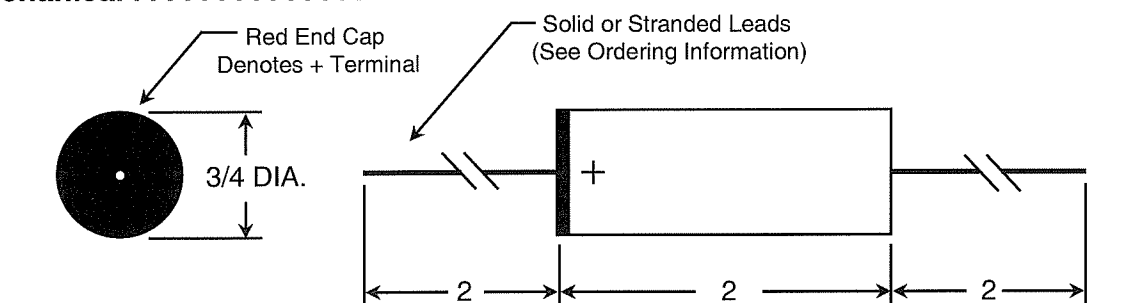
# 437

## Delay-On-Make Timing Module



The Model 437 in-line delay-on-make timing module was originally developed for the telephone industry to solve the problem of slowing down the pick up time of one relay while another was being energized from the same signal. Ease of installation permits the model 437 to be connected in either leg of the relay or load circuit. When a DC operating voltage is applied only a small amount of current is permitted to flow through the load circuit. At the end of the delay period, the model 437 turns on and energizes the load circuit. To recycle, remove the operating voltage for at least 50 milliseconds then re-apply. The model 437 can handle as much as 2 amperes continuously at any specified operating voltage from 5 to 200 volts DC.

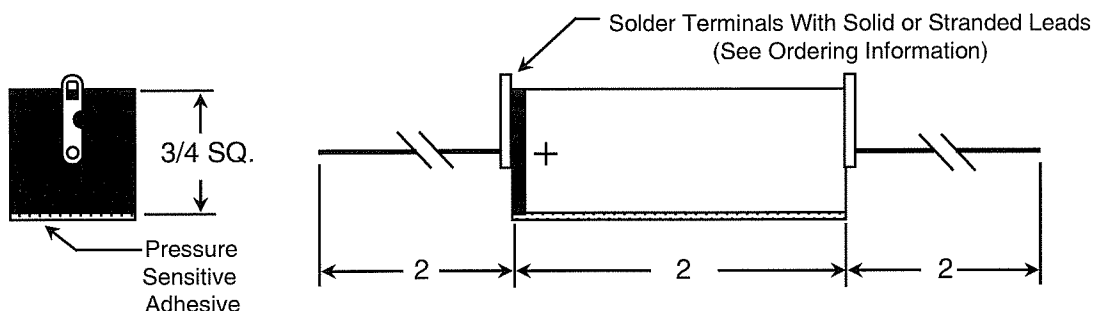
### Mechanical



### CASE STYLES

A & B

A - #20 Ga. Solid Wire (Shown) B - #20 Ga. (6") Stranded Wire

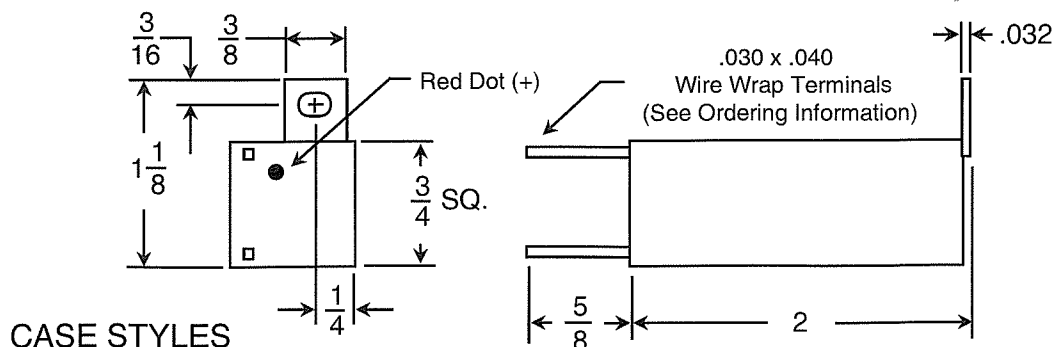


### CASE STYLES

C & D

C - #20 Ga. Solid Wire & Solder Terminals (Shown)

D - #20 Ga. (6") Stranded Wire Without Solder Terminals



### CASE STYLES

E & F

E - #20 Ga. Solid Wire (Shown) F - #20 Ga. (6") Stranded Wire

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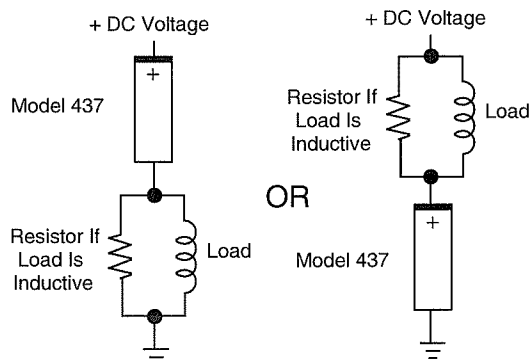


## Solid State Timers and Controllers

### Specifications

- Operating Voltage:** Any specified DC voltage from 5V DC to 200V DC.  
**Voltage Tolerance:**  $\pm 20\%$  at specified operating voltage.  
**Timing Mode:** Delay-On-Make - load energizes after preset timing period.  
**Fixed Timing:** Factory fixed at any timing period from 25 milliseconds to 600 seconds.  
**Tolerances On Fixed Timing:** 10%.  
**Timing Variation:**  $< 15\%$  of set point over specified temperature and voltage range.  
**Repeatability Of Timing Period:**  $\pm 5\%$  nominal.  
**Recycle Time:** 50 milliseconds after the timing period with the output ON, 2 seconds during a timing cycle while output is OFF.  
**Output Rating:** 20 milliamperes to 2 amperes resistive or inductive with inrush currents to 25 amperes for 1 second.  
**Output Switch Characteristics:** 2.2V DC voltage drop when ON, and 3mA leakage when OFF.  
**Transient Protection:** 1000V transients for durations up to 10 milliseconds will not destroy the timer. Severe transients may cause the timer to turn on prior to the end of the fixed delay period.  
**Inductive Load Warning:** Inductive loads present a very high resistance to the output switch at the instant of turn on and as a result may not latch. To assure turn on when operating into inductive loads connect a resistor across the load circuit to assure that the output switch will turn on. The value of the resistor is shown below in the *Wiring Diagram*.  
**Operating Temperature:**  $-20^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .  
**Construction:** Six (6) case styles available.  
**Data Sheet Revision Date:** June 3, 2000

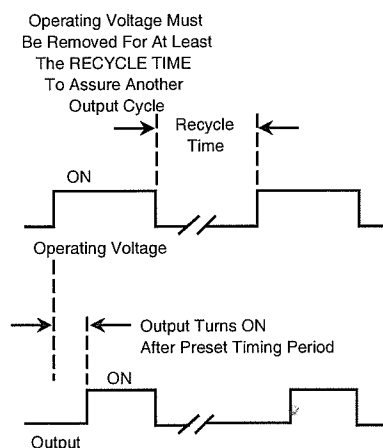
### Wiring Diagram



To Find Resistor Value For Inductive Load:

Resistor Value In Ohms = Operating Voltage / .02  
Ex: Operating Voltage = 48V DC Resistor =  $48 / .02 = 2400$  ohms.

### Timing Diagram



### Ordering Information

| Part Number | Operating Voltage   | Fixed Timing In Seconds | Case Style |
|-------------|---------------------|-------------------------|------------|
| 437 -       | Specify The Nominal | Specify The Nominal     | -A         |
|             | Operating Voltage   | Time Delay Period       | -B         |
|             | From                | From                    | -C         |
|             | 5V DC to 200V DC    | 25mS To 600 Seconds     | -D         |
|             |                     |                         | -E         |
|             |                     |                         | -F         |

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