



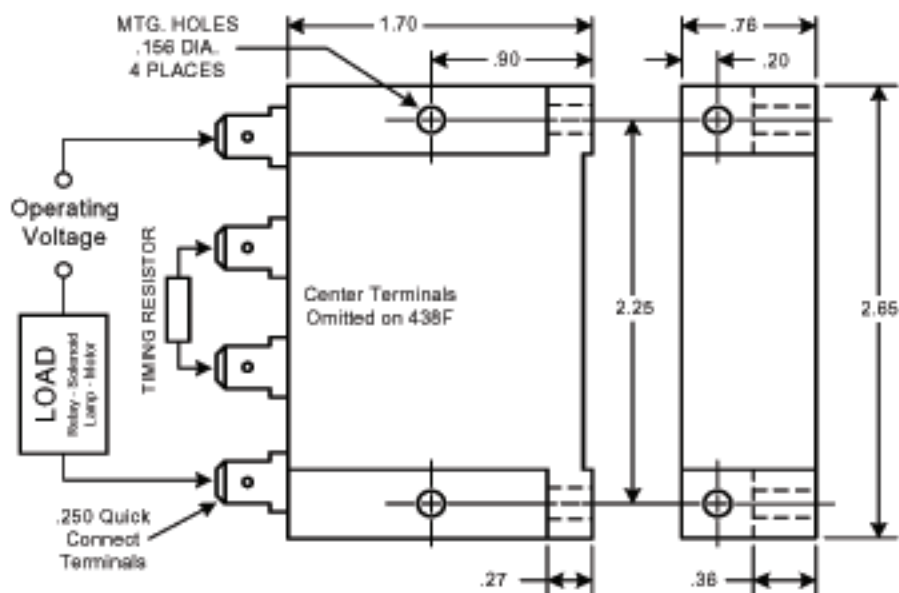
# 438

## Delay-On-Make Time Capsule®



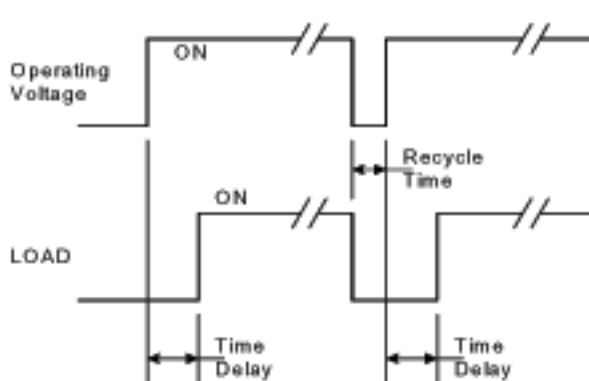
The Model 438 delay-on-make is another member of the Artisan Controls Corporation family of Time Capsules®. To use the model 438 connect the outer two terminals in series with any load circuit that draws between ten milliamperes and one ampere. Connect to the specified operating voltage between 12 and 240 volts either AC or DC. Connect the proper timing resistor across the center two terminals (on adjustable models) and apply operating voltage. When the operating voltage is applied a small amount of current will flow through the load and the timer. At the end of the delay period, the model 438 turns ON and full load current is permitted to flow. To recycle, remove the operating voltage for at least 50 milliseconds.

### Mechanical & Wiring



### Timing Diagram

### External Timing Resistance Chart



External Resistor (Ohms)	DASH NO.				
	-1	-2	-3	-4	-5
0	0.1	1	2	10	30
1 Meg	4	30	100	500	900
3 Meg	12	90	300	1,500	2,700
5 Meg	20	150	500	2,500	4,500
10 Meg	30	300	1,000	4,500	8,000

How The Chart Works. . . . .

The -2 range indicates a timing range of 1 to 30 seconds when the external timing resistance varies from 0 to 1 meg ohm. The -2 extended range of 300 seconds can be achieved by using a 0 to 10 meg ohm external resistance.

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# Solid State Timers and Controllers

## Specifications

- Operating Voltage:** 12V AC/DC, 24V AC/DC, 48V AC/DC, 115V AC/DC, 230V AC/DC.
- Voltage Tolerance:** ±20% at specified operating voltage.
- Timing Mode:** Delay-On-Make, external load energizes after preset timing period.
- Fixed Timing:** Factory fixed at any timing period from 0.1 seconds to 10,000 seconds.
- Tolerances On Fixed Timing:** 10%.
- Adjustable Timing Ranges:** Twenty (20) ranges from five (5) models of adjustable delay-on-make timing from 0.1 seconds to 8,000 seconds.
- Adjustable Timing Setting Accuracy:** Minimum time - 15%, +0%. Maximum time - 0%, +15%.
- Timing Resistor Rating:** Worst case power dissipation never exceeds 3 milliwatts.
- Timing vs External Timing Resistor:** See *External Timing Resistance Chart*.
- Timing Variation:** Less than 6% of set point over full temperature and voltage range.
- Repeatability Of Timing Period:** ±1% at stabilized operating voltage temperature.
- Recycle Time:** Operating voltage must be removed for a minimum of 50mS after timing period, 200 milliseconds during timing period to assure new cycle repeats to full time delay period.
- Output Rating:** 10mA to 1A inductive with inrush current to 25A for 8 milliseconds.
- Output Switch Characteristics:** 4 volt drop across output switch when ON, 3mA leakage when OFF.
- Transient Protection:** Protected by silicon transient suppressors responding to transients within  $1 \times 10^{-12}$  seconds to a peak pulse power dissipation of 1500 watts, with transient surge currents to 200 amperes for durations up to 1/120 second at 25°C. Maximum transient voltage protection is 6000 volts as delivered through a source resistance of 30 ohms with a maximum duration of 8.3ms.
- Dielectric:** 1500V<sub>rms</sub> all terminals to case.
- Operating Temperature:** -20°C to +85°C
- Construction:** Encapsulated module with .25 quick connect wiring terminals.
- Agency Recognitions:** UL File #E47858: Component - Appliance Controls, ATNZ2 (US) and ATNZ8 (Can), Component - Auxiliary Devices NKCR2 (US) and NKCR8 (Can)
- Data Sheet Revision Date:** October 12, 2006

## Ordering Information Fixed Timing Models

Part Number	Operating Voltage	Fixed Timing In Seconds
438F -	- 12	Specify the fixed timing period in seconds from 0.1 to 10,000
	- 24	
	- 48	
	- 115	
	- 230	
<i>Operates On Either AC Or DC</i>		

*Example: 438 F - 115 - 600*  
438, operating from 115V AC, or DC with fixed timing of 600 seconds.



## Ordering Information Adjustable Timing Models

Part Number	Operating Voltage	Timing Range In Seconds
438A -	- 12	-1 (0.1 - 30)
	- 24	-2 (1 - 300)
	- 48	-3 (2 - 1000)
	- 115	-4 (10 - 4500)
	- 230	-5 (30 - 8000)
<i>Operates On Either AC Or DC</i>		

*Example: 438 A - 24 - 2*  
438, operating from 24V AC, with adjustable timing from 1 to 300 seconds.

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