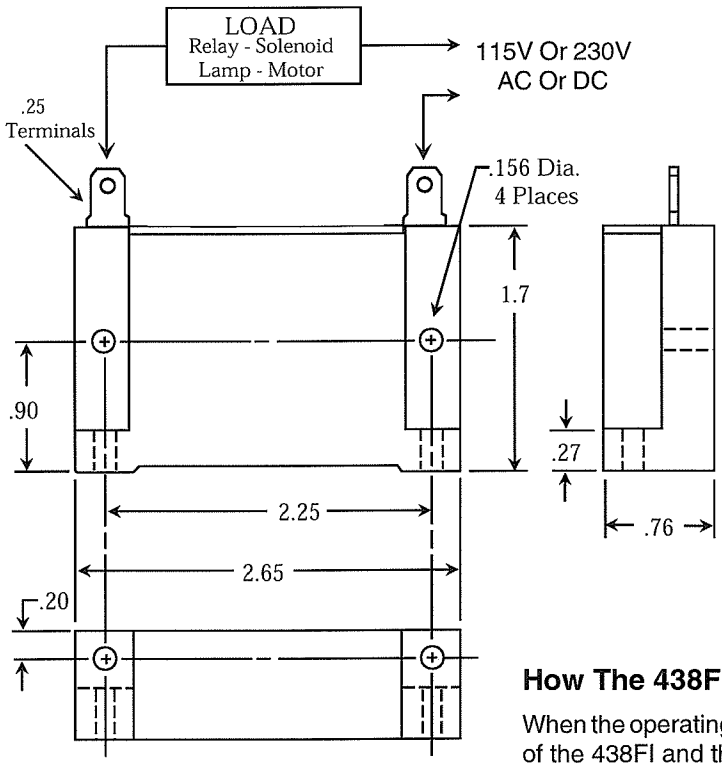
Solid State Timers and Controllers

438FI

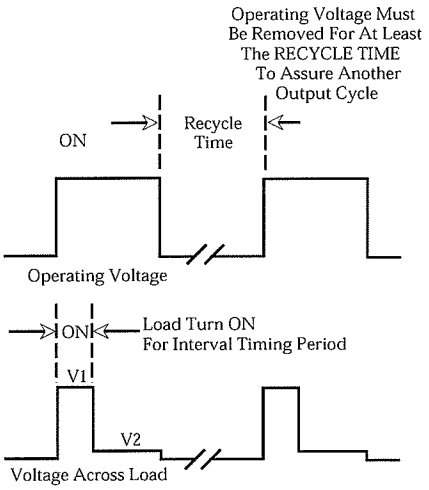
Fixed Interval Time Capsule®

The Model 438FI is an in-line timing device that performs as a two terminal interval timer. Operation is exactly the reverse of the standard Artisan Controls Corporation's 438F Time Capsule®. When connected in series with a load circuit, the 438FI will energize the load when operating voltage is first applied, turning off after the fixed interval time delay period. Fixed interval timing periods from 250 milliseconds to 1,000 seconds are available. The interval timing action can be repeated by removing and re-applying the operating voltage. The 438FI operates at fixed voltages of either 115V or 230V. Both the 115V and the 230V model can operate on both AC and DC voltages, can can operate a load circuit up to .25A.

Mechanical



Timing Diagram



How The 438FI Works

When the operating voltage is applied to the series combination of the 438FI and the load circuit, the 438FI turns ON, and the load will be energized. It is important to understand that the load current that flows is determined by the (Applied Voltage - 10 volts) divided by the load resistance. The 10 volts is the maximum voltage that will be dropped across the 438FI at a full .25A of load current. As an example: a 440Ω (ohm) relay coil that would normally draw 250mA at 110V DC will now only be permitted to draw 227mA. This is determined by the voltage across the relay which becomes 110 - 10, or 100V DC (V1). At 100V, the current becomes 100V/ 440Ω = 227mA. At the end of the timing interval the 438FI turns OFF, but leakage current continues to flow. This leakage current can be as high as 3mA. This would cause the relay to have 3mA x 440Ω = 1.32V (V2) across it. Always make certain that the dropout voltage of the load circuit is below the voltage caused by the residual leakage current.

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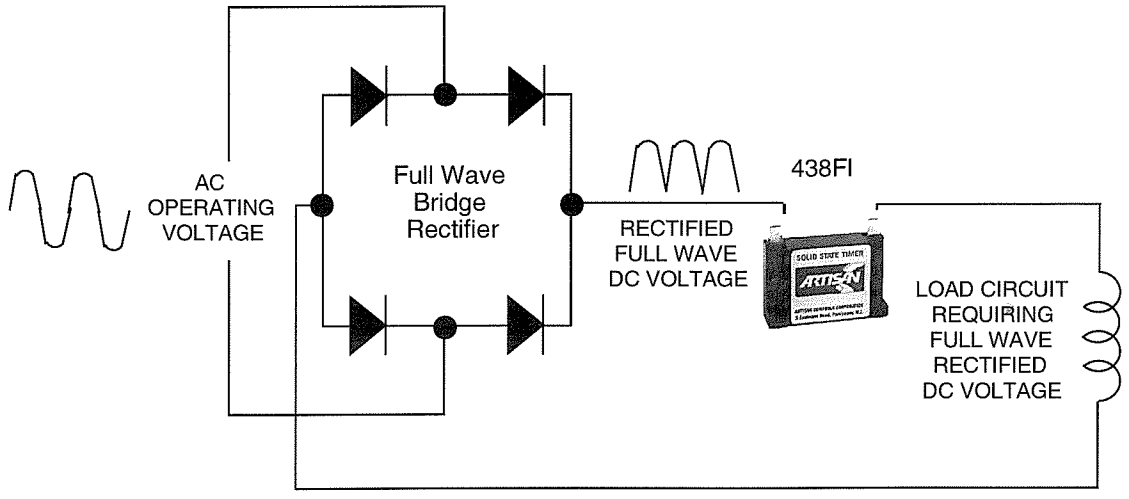
Specifications

Operating Voltage:	115V or 230V AC/DC 50/60Hz. Specify when ordering.
Voltage Tolerance:	115V model operates over the voltage range of 105V to 135V AC or DC. The 230V model operates over the voltage range of 200V to 288V AC or DC.
Timing Mode:	Interval - Load turns ON with application of operating voltage then turns OFF after delay period.
Fixed Timing:	Specify when ordering any interval timing period from 250 milliseconds to 1000 seconds.
Purchased Tolerance On Timing:	±10%.
Timing Variation:	±5% at any combination of operating voltage and temperature.
Repeatability Of Timing Period:	±1% nominal.
Recycle Time:	200 milliseconds.
Output Rating:	.25 ampere inductive with inrush current to 8 amperes for 8 milliseconds.
Output Voltage Drop in "ON" State:	10 volts maximum voltage drop across the 438FI at any operating voltage and load current to .25 ampere during an interval timing cycle.
Leakage Current in "OFF" State:	3 milliamperes maximum at any operating voltage and load circuit.
Transient Protection:	Maximum transient voltage protection is 6000 volts as delivered through a source resistance of 30 ohms with a maximum duration of 8.3 milliseconds.
Operating Temperature:	-20˚C to +85˚C
Humidity:	95% condensing
Terminations:	Two (2) .25 Faston type.
Data Sheet Revision Date:	September 28, 1995

Operating From Full Wave Rectified DC

The 438FI series can also operate from full wave rectified DC voltage and does not require any externally filtering to provide an output for the full wave DC load.



Ordering Information

Part Number	Time Range	Operating Voltage
438FI - 115	Specify In Seconds	105V - 135V AC or DC
438FI - 230	From .25 To 1,000	200V - 288V AC or DC