



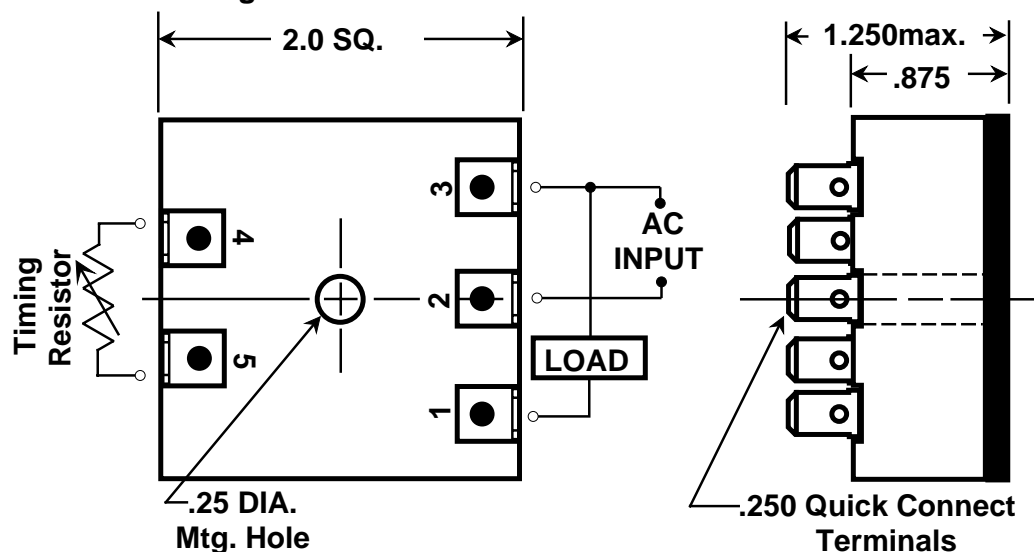
## Solid State Timers and Controllers

# 4410

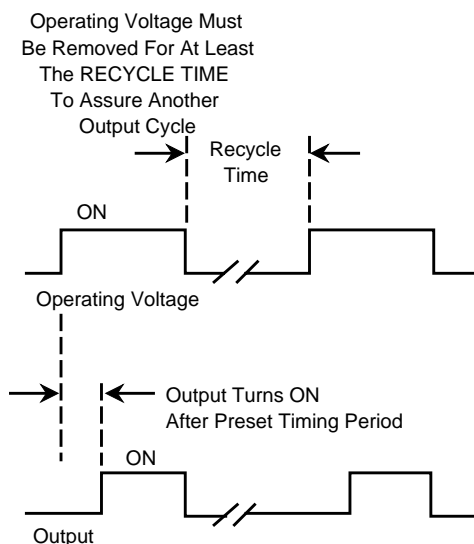
## Delay-On-Make Solid State Timing Module

The model 4410 is a delay-on-make timer that switches AC load circuits up to 10 amperes employing zero voltage switching techniques. Zero voltage switching reduces electrical noise as a result of the load circuit being energized at zero degrees in the AC cycle. In addition most load circuits will provide longer life as a result of zero voltage turn on. This model employs transient protection devices that permits operation with inductive loads, such as motors and contactors. An integral heat sink assure safe operation up to 5 amperes without additional heat sinking. By mounting the model 4410 to a metal surface operation up to 10 amperes can be realized. Available in both fixed and adjustable timing models.

### 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	5,000
10 Meg	30	300	1,000	5,000	8,000

How The Chart Works. . . . .

The -3 range indicates a timing range of 2 to 100 seconds when the external timing resistance varies from 0 to 1 meg ohm. The -3 extended range of 1000 seconds can be achieved by using a 0 to 10 meg ohm external resistance.

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**Artisan Controls Corporation, 5 Eastmans Road, Suite 100, Parsippany, New Jersey 07054, USA**



## Solid State Timers and Controllers

### Specifications .....

- Operating Voltage:** 24V AC (20V - 28V AC) (-6),  
48V AC (42V - 52V AC) (-7),  
115V AC (105V - 135V AC) (-8),  
230V AC (208V - 250V AC) (-9) See *Ordering Information*.
- Operating Current:** Less than 20 milliamperes plus external load current.
- Timing Mode:** Delay-On-Make.
- Fixed Timing:** Factory fixed at any timing period from 0.1 seconds to 8,000 seconds.
- Tolerances On Fixed Timing:** 2%, 5%, 10%, and 20% available, see *Ordering Information*.
- Adjustable Timing Ranges:** Twenty (20) ranges from five (5) models of adjustable delay-on-break timing from 0.1 seconds to 8,000 seconds. See *Ordering Information*.
- Adjustable Timing Setting Accuracy:** Timing ranges shown on the *External Timing Resistance Chart* are guaranteed to be achieved using the external resistance range shown.
- 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:**  $\pm 1\%$  at stabilized operating voltage temperature.
- Recycle Time:** Operating voltage must be removed for a minimum of 200 milliseconds to assure that the timing and output circuits are reset.
- Output Rating:** 50mA to 5A inductive with inrush current to 40A for 8 milliseconds.
- Extending Rating:** Operation to 10A by mounting the timer heat sink base on a metal surface and maintaining timer heat sink temperature to less than 90°C.
- AC Zero Voltage Switching:** Output turns ON within  $\pm 50$  microseconds of line voltage 0°.
- Output Switch Characteristics:** 3 volt drop across output switch when ON, 4mA leakage when OFF.
- Transient Protection:** Output Switch 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 rms all terminals to case.
- Operating Temperature:** -20°C to +85°C
- Construction:** Encapsulated module with .25 quick connect wiring terminals.
- Data Sheet Revision Date:** November 15, 1999.

### Ordering Information Fixed Timing Models .....

Part Number	Operating Voltage	Fixed Timing In Seconds	Fixed Timing Tolerance
4410 F -	-6 (24V AC)	Specify the fixed timing period in seconds from 0.1 to 8000	-A 2% <i>Fixed Timing</i>
	-7 (48V AC)		-B 5% <i>Tolerance</i>
	-8 (115V AC)		-C 10 % <i>required only</i>
	-9 (230V AC)		-D 20 % <i>on fixed timing units</i>

### Ordering Information Adjustable Timing Models .....

Part Number	Operating Voltage	Timing In Seconds
4410 A -	-6 (24V AC)	-1 (0.1 - 30 )
	-7 (48V AC)	-2 (1 - 300)
	-8 (115V AC)	-3 (2 - 1000)
	-9 (230V AC)	-4 (10 - 5000)
		-5 (30 - 8000)
<i>Timing remotely adjustable by resistor across timing terminals</i>		

*Example: 4410 F - 8 - 60 - B*  
4410, operating from 115V AC,  
with fixed timing of 60 seconds  
to a tolerance of 5%.

*Example: 4410 A - 6 - 2*  
4410, operating from 24V AC, with  
adjustable timing from 1 to 300  
seconds.

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