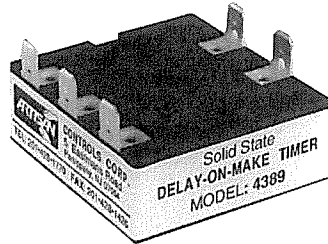




Solid State Timers and Controllers

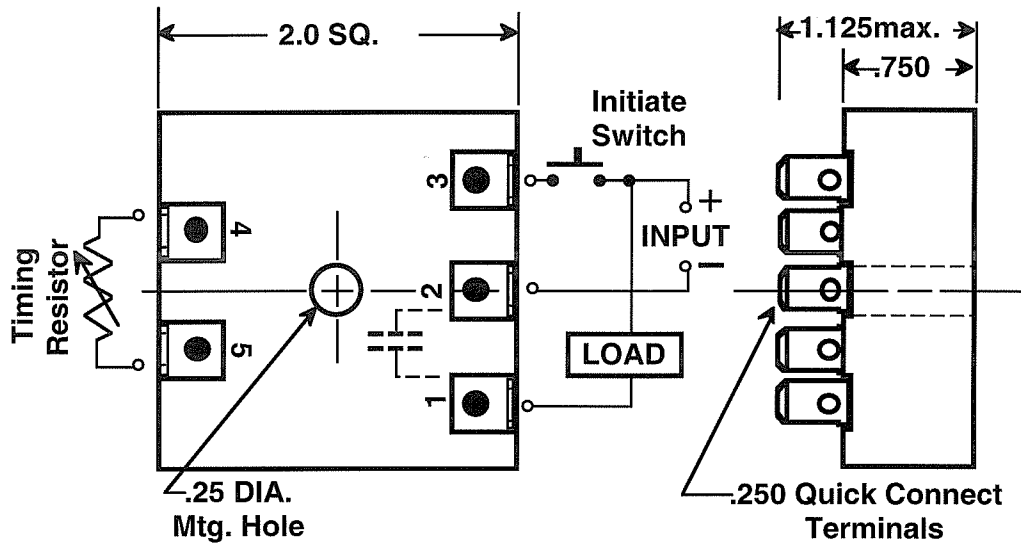
4389

Delay-On-Make Timing Module

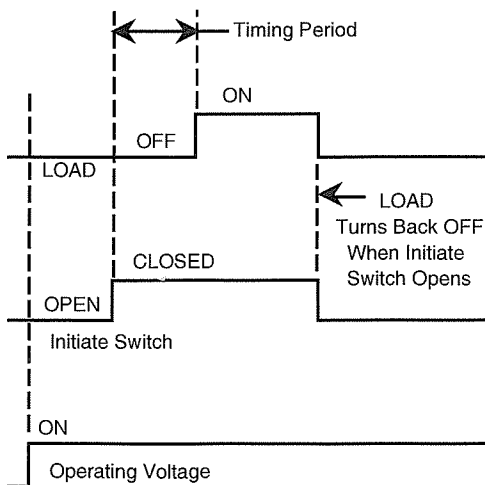


The model 4389 is a delay-on-make timer with the output contacts normally open. When operating voltage is applied to a load connected to the model 4389 the load circuit will remain Off. The load circuit will remain Off until an initiate switch closes and a preset timing period expires. At the end of the preset timing period the output contacts close and the load circuit is turned On. When the initiate switch is opened, the output contacts open and the load circuit is turned back Off. The model 4389 is available in both fixed timing and adjustable timing models. All 4389 models are rated for 8 amperes service on the output contacts.

Mechanical



Timing Diagram



External Timing Resistance Chart

External Resistor (Ohms)	Timing Period vs Timing Resistor				
	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	5,000	8,000

The External Timing Resistance Chart indicates the range of timing that can be achieved with the external resistance value shown. I.E. 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.





Solid State Timers and Controllers

Specifications

Operating Voltage: 5VDC, 12V DC, 24V DC, 48V DC, 12V AC, 24V AC, 48V AC, 115V AC, and 230V AC. (See *Ordering Information*)

Voltage Tolerance: ±20% AC & DC models, AC 50/60Hz.

Operating Current: 30 mA maximum all models.

Timing Mode: Delay-On-Make - Output contacts normally open.

Fixed Timing: Factory fixed at any timing period from 1 seconds to 8,000 seconds.

Tolerances On Fixed Timing: ±10% of specified timing period.

Adjustable Timing Ranges: 5 models provide for remotely adjustable timing from 0.1 to 8000 seconds.

Purchase Tolerances On (see *Ordering Information*).

Adjustable Timing Ranges: Minimum Time - 15%, +0%. Maximum Time - 0%, +15%

Timing Resistor Rating: Worst case power dissipation never exceeds 15 milliwatts for external timing resistors.

Timing Variation: Less than 5% of set point over full temperature and voltage range.

Repeatability Of Timing Period: ±1% nominal.

Recycle Time: Initiate switch must be open for a minimum of 200 milliseconds to assure all timing and output circuits are reset.

Initiate Switch: SPST rated for 30 mA service at maximum operating line voltage.

Output: Relay contacts SPST-NO.

Output Rating: 1/4 HP, 125, 250V AC; 8A 125, 250V AC, 8A 30V DC.

Life: 50,000,000 mech., 100,000 electrical operations minimum at 250V AC..

Transient Protection: Protected by silicon transient suppressors responding to transients within 1×10^{-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: May 15, 1995

Ordering Information Fixed Timing Models

Part Number	Operating Voltage	(X) Fixed Timing In Seconds
4389F - 1 - X	5V DC	Specify the fixed timing period in seconds from 0.1 to 8000
4389F - 2 - X	12V DC	
4389F - 3 - X	24V DC	
4389F - 4 - X	48V DC	
4389F - 5 - X	12V AC	
4389F - 6 - X	24V AC	
4389F - 7 - X	48V AC	
4389F - 8 - X	115V AC	
4389F - 9 - X	230V AC	

Example: 4389F - 9 - 45

Is a model 4389F with 230V AC operating voltage with a fixed time of 45 seconds ±10%.

The 45 seconds is measured from the time the initiate switch is closed.

Ordering Information Adjustable Timing Models

Part Number	Operating Voltage	(X) Timing Range In Seconds
4389A - 1 - X	5V DC	-1 (0.1-30) -2 (1-300) -3 (2-1000) -4 (10-4500) -5 (30-8000)
4389A - 2 - X	12V DC	
4389A - 3 - X	24V DC	
4389A - 4 - X	48V DC	
4389A - 5 - X	12V AC	
4389A - 6 - X	24V AC	
4389A - 7 - X	48V AC	
4389A - 8 - X	115V AC	
4389A - 9 - X	230V AC	

Example: 4389A - 8 - 2

Is a model 4389A with 115V AC operating voltage with a adjustable time of 1 - 300 seconds

The adjustable timing period is measured from the time the initiate switch is closed.