AMETEK NCC
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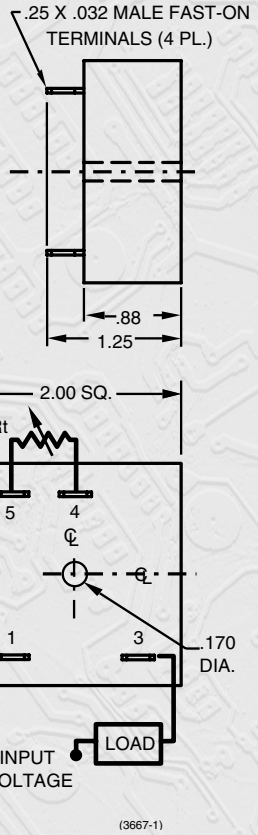
Features

- File #E65038
- Time Delays To 10 Hours Standard
- 100% Life Tested
- Solid-State Digital Timing
- 20:1 Maximum To Minimum Timing Ratio
- Low Cost
- Compact Size
- Superior Transient Protection
- Flame-Retardant and Solvent-Resistant Polyester Thermoplastic Housing
- Made in U.S.A.



(3667-1)

External Resistance/Time Delay Relationship

1 megohm external resistance is required to obtain the maximum time for all ranges. To determine the actual resistance needed to obtain the required time delay, use the following formula:

$$Rt = \frac{T\text{required} - T\text{minimum}}{T\text{maximum} - T\text{minimum}} \times 1{,}000{,}000 \text{ ohms}$$

Note: Due to component tolerances, the actual time obtained will normally be within 5% of desired time.

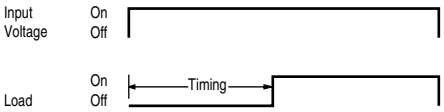
Solid-State Cube Timers

Delay on Make
(Series Load)
Q1F Series

Operating Logic: Upon application of input voltage, the delay starts. At the end of the time delay, the load is energized. Reset is accomplished by removing input voltage.

Note: 1) The load may be located on either side of the line; 2) Remote potentiometer leads should be shielded when running close to other wires; 3) The minimum time setting on external resistor-adjustable time delay relays is obtained by shorting together the external resistor terminals of the relay; 4) The maximum time setting within tolerance limits is obtained by using a 1 megohm resistor ; 5) Timing values between the minimum and maximum limits are linear with resistance within 10%; 6) Recommend 1/4 watt minimum resistor be used.

Logic Function Diagram:



Specifications

Time Delay
Adjustment: External resistor, factory fixed on special order (Minimum order requirement)
Range: 50 mS to 10 hours in 9 ranges
Repeatability: ±.5% + 8 mS maximum (0.25% typ) at constant temperature
Accuracy:
Maximum time ±2% at Rt = 1 megohms;
Minimum time +0%, -30% at Rt = 0 ohm

Input
Operating Voltage: 12, 24, 120, 240 VAC/DC ±10% (On DC models, unfiltered supply voltage must be full-wave rectified)
Frequency: 50/60 Hz

Output
Type: Solid-state, normally open series load
Rating: 1 amp. steady state maximum
Life: 100,000,000 operations

Protection
Transient Voltage: Metal oxide varistor, see ratings below
Dielectric Breakdown: 3000 VAC, RMS, terminals to mounting
Insulation Resistance: 100 megohms minimum between terminals and case

Mechanical
Termination: .25" x 032" male fast-on terminals
Mounting: Surface mount with one #8 screw

Environmental
Storage Temperature: -40°C to 85°C
Operating Temperature: -40°C to 85°C
Humidity: 95% relative

Ordering Information

Input Voltage and Appropriate Part Numbers				
Time Range	**12 VDC ± 10%**	**24 VAC/DC ± 10%**	**120 VAC ± 10%**	**240 VAC ± 10%**
.05-1 Second	Q1F-00001-316	Q1F-00001-317	Q1F-00001-311	Q1F-00001-315
.25-5 Seconds	Q1F-00005-316	Q1F-00005-317	Q1F-00005-311	Q1F-00005-315
.5-10 Seconds	Q1F-00010-316	Q1F-00010-317	Q1F-00010-311	Q1F-00010-315
3-60 Seconds	Q1F-00060-316	Q1F-00060-317	Q1F-00060-311	Q1F-00060-315
15-300 Seconds	Q1F-00300-316	Q1F-00300-317	Q1F-00300-311	Q1F-00300-315
30-600 Seconds	Q1F-00600-316	Q1F-00600-317	Q1F-00600-311	Q1F-00600-315
180-3600 Seconds	Q1F-03600-316	Q1F-03600-317	Q1F-03600-311	Q1F-03600-315
.25-5 Hours	Q1F-18000-316	Q1F-18000-317	Q1F-18000-311	Q1F-18000-315
.5-10 Hours	Q1F-36000-316	Q1F-36000-317	Q1F-36000-311	Q1F-36000-315

Reset: During Timing		125 mS	125 mS	125 mS	125 mS
Reset: After Time Out		10 mS	10 mS	10 mS	10 mS
Min. Load		10mA DC,60 mA AC	10mA DC,40 mA AC	10 mA	10 mA
Max. Leakage Current		2 mA	4 mA	2 mA	2 mA
Voltage Drop @ 1A		3.3 V Max.	3.3 V Max.	3.3 V Max.	3.3 V Max.
Power Consumption	During Timing	0.25 VA Max.	0.25 VA Max.	0.5 VA Max.	0.5 VA Max.
	After Time Out	3.0 VA	3.0 VA	3.0 VA	3.0 VA
Peak 1 Cycle Surge		20 Amp	20 Amp	20 Amp	20 Amp
Protection		8.8j. MOV	8.8j. MOV	30j. MOV	30j. MOV

Optional Potentiometer: Part Number ASY-0001M-450