Delay On Make *(Series Load)*

Q1F Series

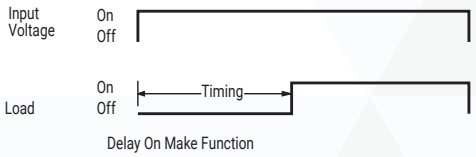
FEATURES

- *100% functionally tested*
- *Time delays to 5 hours standard*
- *Solid state digital timing*
- *20:1 maximum to minimum timing ratio*
- *Compact size*
- *Low cost*
- *Superior transient protection*
- *Flame-retardant and solvent-resistant polyester thermoplastic housing*
- *File #E65038*

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 liner with resistance within 10%; 6) Recommend 1/4 W minimum resistor be used

LOGIC FUNCTION DIAGRAM



Delay On Make Function

SPECIFICATIONS

TIME DELAY

Adjustment: External resistor, factory fixed on special order (min. order requirement)
Range: 50 ms to 5 hours in 8 ranges
Repeatability: ±.5% +8 ms max. (0.25% typical) 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 VAC/DC ±10%
Frequency: 50/60 Hz

OUTPUT

Type: Sold state, normally open series load
Rating: 1 A steady state max
Life: 100,000,000 cycles

PROTECTION

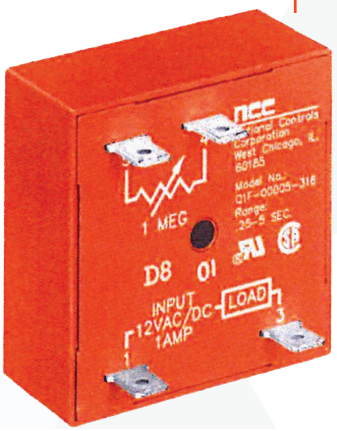
Transient Voltage: Metal oxide varistor, see ratings below
Dielectric Breakdown: 3000 VAC. RMS, terminals to mounting
Insulation Resistance: 100 megohms min. between terminals and case

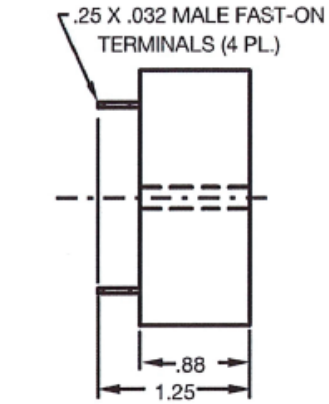
MECHANICAL

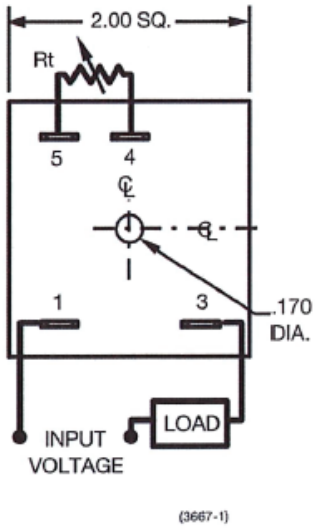
Termination: 25” x .032” male fast-on terminals
Mounting: Surface mount with one #8 screw

ENVIRONMENTAL

Storage Temperature: -40°C to 85°C
Operating Temperature: -40°C to 65°C
Humidity: 95% relative







External Resistance/Time Delay Relationship

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

$$Rt = \frac{\text{Trequired - Tminimum}}{\text{Tmaximum - Tminimum}} \times 1{,}000{,}000 \text{ ohms}$$

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

Consult factory for any special requirements not listed in catalog (minimum order requirement may apply)

ORDERING INFORMATION

TIME RANGE	12 VAC/DC +10%	24 VAC/DC ±10%	120 VAC/DC ±10%
.05 to 1 sec.	—	Q1F-00001-317	Q1F-00001-311
.25 to 5 sec.	Q1F-00005-316	Q1F-00005-317	Q1F-00005-311
.5 to 10 sec.	Q1F-00010-316	Q1F-00010-317	Q1F-00010-311
3 to 60 sec.	Q1F-00060-316	Q1F-00060-317	Q1F-00060-311
15 to 300 sec.	Q1F-00300-316	—	Q1F-00300-311
30 to 600 sec.	—	—	Q1F-00600-311
180 to 3600 sec.	Q1F-03600-316	—	Q1F-03600-311
.25 to 5 hrs.	—	Q1F-18000-317	—

Reset time, during timing	125 ms	125 ms	125 ms
Reset time, after timeout	10 ms	10 ms	10 ms
Min. load	10mA DC, 60 mA AC	10mA DC, 60 mA AC	10mA
Voltage drop at 1 A	3.3 VA max.	3.3 VA max.	3.3 V max.
Max power consumption	0.25 VA max.	0.25 VA max.	0.5 VA max.
Peak 1 cycle surge	20 A	20 A	20 A
Protection	8.8j. MOV	8.8j. MOV	30j. MOV