

# Delay On Make (Series Load)

## Q1F Series

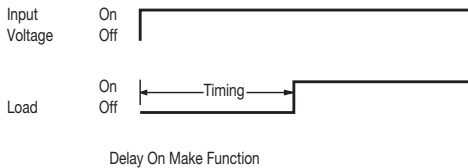
### FEATURES

- 100% functionally tested
- Time delays to 10 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 linear with resistance within 10%; 6) Recommend 1/4 W minimum resistor be used.*

### LOGIC FUNCTION DIAGRAM



### ORDERING INFORMATION

TIME RANGE	12 VAC/DC ±10%	24 VAC/DC ±10%	120 VAC/DC ±10%	240 VAC/DC ±10%
.05 to 1 sec.	Q1F-00001-316	Q1F-00001-317	Q1F-00001-311	—
.25 to 5 sec.	Q1F-00005-316	Q1F-00005-317	Q1F-00005-311	Q1F-00005-315
.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-00300-317	Q1F-00300-311	Q1F-00300-315
30 to 600 sec.	—	—	Q1F-00600-311	—
180 to 3600 sec.	Q1F-03600-316	Q1F-03600-317	Q1F-03600-311	Q1F-03600-315
.25 to 5 hrs.	Q1F-18000-316	Q1F-18000-317	Q1F-18000-311	—
.5 to 10 hrs.	Q1F-36000-316	—	Q1F-36000-311	Q1F-36000-315

Reset time, during timing	125 ms	125 ms	125 ms	125 ms
Reset time, after timeout	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 at 1 A	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.
Power consumption, after timeout	3.0 VA max.	3.0 VA max.	3.0 VA max.	3.0 VA max.
Peak 1 cycle surge	20 A	20 A	20 A	20 A
Protection	8.8j. MOV	8.8j. MOV	30j. MOV	30j. MOV

Optional Potentiometer: Part Number ASY-0001M-450

### SPECIFICATIONS

#### TIME DELAY

**Adjustment:** External resistor, factory fixed on special order (min. order requirement)

**Range:** 50 ms to 10 hours in 9 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, 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 A steady state max.

**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 min. between terminals and case

#### MECHANICAL

**Termination:** .25" x .032" male fast-on terminals

**Mounting:** Surface mount with one #8 screw

#### ENVIRONMENTAL

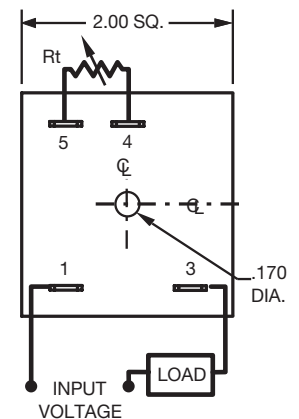
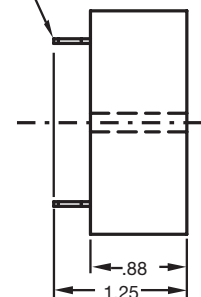
**Storage Temperature:** -40°C to 85°C

**Operating Temperature:** -40°C to 85°C

**Humidity:** 95% relative



.25 X .032 MALE FAST-ON TERMINALS (4 PL.)



#### 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:

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

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

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