

# Single Shot Q2F Series

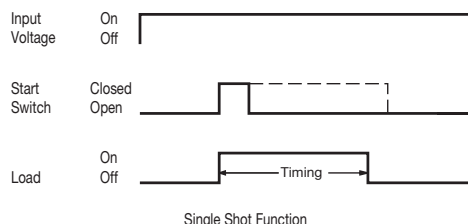
## FEATURES

- 100% functionally tested
- Solid state digital timing
- Time delays to 10 hours standard
- 20:1 maximum to minimum timing ratio
- Low cost
- Compact size
- Superior transient protection
- Flame-retardant and solvent-resistant polyester thermoplastic housing
-  File #E65038

**Operating Logic:** Input voltage is applied to the timer at all times. Upon a momentary or maintained closure of a normally open isolated start switch, the load energizes and the time delay starts. At the end of the pre-set time delay, the load de-energizes and the timer is ready for a new timing cycle. (Start switch supplied by customer)

*Note: 1) Remote start switch leads should be shielded when running close to other wires; 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



## SPECIFICATIONS

### TIME DELAY

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

**Range:** 50 ms to 10 hours in 9 ranges

**Repeatability:**  $\pm 5\%$  +8 ms max. (0.25% typical) at constant temperature

### Accuracy:

Maximum time  $\pm 2\%$  at  $R_t = 1$  megohms

Minimum time +0%, -30% at  $R_t = 0$  ohm

### INPUT

**Operating Voltage:** 120, 240 VAC; 12 VDC; 24 VAC/DC  $\pm 10\%$  (DC models have reverse polarity protection; unfiltered input voltage to them must be full-wave rectified)

**Frequency:** 50/60 Hz

### OUTPUT

**Type:** Solid state, normally open

**Rating:** 1 A steady state

**Life:** 100,000,000 operations

### PROTECTION

**Transient Voltage:** Metal oxide varistor, see ratings below

**Dielectric Breakdown:** 3000 VAC, RMS, terminals to mounting

## ORDERING INFORMATION

| TIME RANGE       | 12 VDC $\pm 10\%$ | 24 VAC/DC $\pm 10\%$ | 120 VAC $\pm 10\%$ | 240 VAC $\pm 10\%$ |
|------------------|-------------------|----------------------|--------------------|--------------------|
| .05 to 1 sec.    | Q2F-00001-326     | Q2F-00001-327        | Q2F-00001-321      | Q2F-00001-325      |
| .25 to 5 sec.    | Q2F-00005-326     | Q2F-00005-327        | Q2F-00005-321      | Q2F-00005-325      |
| .5 to 10 sec.    | Q2F-00010-326     | Q2F-00010-327        | Q2F-00010-321      | Q2F-00010-325      |
| 3 to 60 sec.     | Q2F-00060-326     | Q2F-00060-327        | Q2F-00060-321      | Q2F-00060-325      |
| 15 to 300 sec.   | Q2F-00300-326     | Q2F-00300-327        | Q2F-00300-321      | —                  |
| 30 to 600 sec.   | Q2F-00600-326     | Q2F-00600-327        | Q2F-00600-321      | Q2F-00600-325      |
| 180 to 3600 sec. | Q2F-03600-326     | Q2F-03600-327        | Q2F-03600-321      | —                  |
| .25 to 5 hrs.    | Q2F-18000-326     | Q2F-18000-327        | Q2F-18000-321      | Q2F-18000-325      |
| .5 to 10 hrs.    | Q2F-36000-326     | —                    | Q2F-36000-321      | —                  |

|                                     |           |             |             |             |
|-------------------------------------|-----------|-------------|-------------|-------------|
| Trigger time (start switch closure) | 20 ms     | 20 ms       | 20 ms       | 20 ms       |
| Reset time                          | 200 ms    | 300 ms      | 300 ms      | 200 ms      |
| Min. load                           | 5 mA      | 5 mA        | 2 mA        | 2 mA        |
| Max. leakage current                | 10 uA     | 10 uA       | 200 uA      | 300 uA      |
| Voltage drop at 1 A                 | 2.1 V     | 3.2 V       | 3.3 V       | 3.3 V       |
| Power consumption                   | 2.6 W     | 3.7 VA max. | 4.3 VA max. | 5.8 VA max. |
| Peak 1 cycle surge                  | 4 A       | 4 A         | 20 A        | 20 A        |
| Protection                          | 8.8j. MOV | 8.8j. MOV   | 30j. MOV    | 30j. MOV    |

Optional Potentiometer: Part Number ASY-0001M-450

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



**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

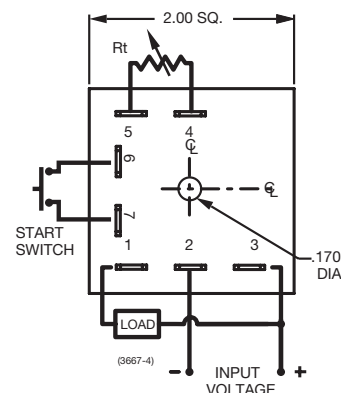
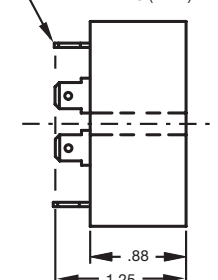
### ENVIRONMENTAL

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

**Operating Temperature:** -40°C to 65°C

**Humidity:** 95% relative

.25 X .032 MALE FAST-ON  
TERMINALS (7 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.*