

# Delay On Break (Retriggerable)

## Q3F Series

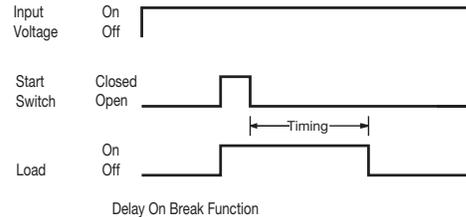
### FEATURES

- 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 closure of a normally open isolated start switch, the load energizes and remains energized as long as the switch is closed. When the start switch opens, the timing cycle starts. At the end of the preset time delay, the load de-energizes and the timer is ready for a new timing cycle. (Start switch supplied by customer.)

*Note: 1) Do not apply voltage or ground to start switch; 2) remote start switch leads should be shielded when running close to other wires; 3) If the start switch is re-closed during timing, the delay will reset and will not start timing until the start switch is opened; 4) Remote potentiometer leads should be shielded when running close to other wires; 5) The minimum time setting on external resistor-adjustable time delay relays is obtained by shorting together the external resistor terminals of the relay; 6) The maximum time setting within tolerance limits is obtained by using a 1 megohm resistor; 7) Timing values between the minimum and maximum limits are linear with resistance within 10%; 8) Recommend 1/4 W minimum resistor be used.*

### LOGIC FUNCTION DIAGRAM



### SPECIFICATIONS

#### TIME DELAY

**Adjustment:** External resistor, factory fixed on special order (min. order required)  
**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  $R_t = 1$  megohm  
 Minimum time +0%-30% at  $R_t = 0$  ohm

#### INPUT

**Operating Voltage:** 120, 240 VAC; 12 VDC; 24 VAC/DC ±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

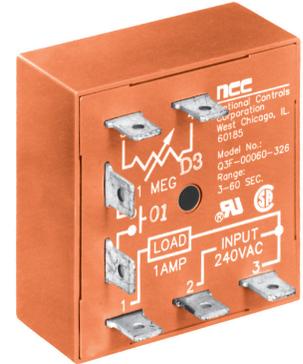
**Rating:** 1 A steady state

**Life:** 100,000,000 cycles

#### PROTECTION

**Transient Voltage:** 30 joule metal oxide varistor, see ratings below

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



**Isolation Resistance:** 100 megohms min. between terminals and case

#### MECHANICAL

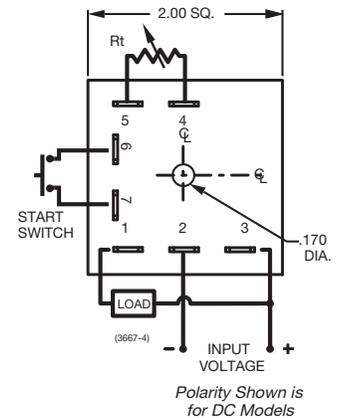
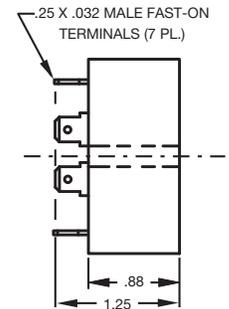
**Termination:** .25" x .032" male fast-on terminals

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

#### ENVIRONMENTAL

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

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



### ORDERING INFORMATION

TIME RANGE	12 VDC ±10%	24 VAC/DC ±10%	120 VAC ±10%	240 VAC ±10%
.05 to 1 sec.	Q3F-00001-326	Q3F-00001-327	Q3F-00001-321	—
.25 to 5 sec.	Q3F-00005-326	—	Q3F-00005-321	—
.5 to 10 sec.	Q3F-00010-326	Q3F-00010-327	Q3F-00010-321	Q3F-00010-325
3 to 60 sec.	Q3F-00060-326	Q3F-00060-327	—	—
15 to 300 sec.	—	Q3F-00300-327	Q3F-00300-321	Q3F-00300-325
30 to 600 sec.	—	Q3F-00600-327	—	—
180 to 3600 sec.	Q3F-03600-326	Q3F-03600-327	Q3F-03600-321	Q3F-03600-325
.25 to 5 hrs.	—	Q3F-18000-327	Q3F-18000-321	—
.5 to 10 hrs.	Q3F-36000-326	—	—	—

Trigger time (start switch closure)	20 ms	20 ms	20 ms	20 ms
Reset time	200 ms	300 ms	200 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 max.	3.2 V max.	3.3 V max.	3.3 V max.
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

#### 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:

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

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).