

## Special Purpose HVAC/R Controls

### SERIES HBLS—Post-Purge Fan Delay Timer

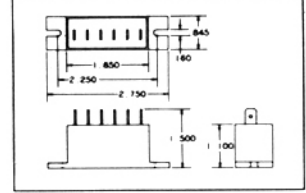


The HBLS is specifically designed to control the circulating fan in HVAC/R systems. Featuring a factory fixed or field adjustable OFF delay timing function, the HBLS continues to run the circulating fan at the end of the heating/cooling cycle. This delayed fan operation purges ducts of residual air, increasing the system's overall energy efficiency.

#### FEATURES

- ☐ Solid state reliability
- ☐ Epoxy-encapsulated circuitry
- ☐ Fixed or adjustable OFF delay range: 2–6.5 minutes (12–390 seconds)
- ☐ Standard 1 sec. initiate delay
- ☐ Replaces thermal delays
- ☐ Increases energy efficiency
- ☐ Rugged and compact housing
- ☐ Low cost, high performance
- ☐ recognized component

#### DIMENSIONS



#### SPECIFICATIONS

##### Time Delay

- ☐ Type: Fixed, local or remote adjustment.
- ☐ Range: 2–6.5 min. (12–390 sec.)
- ☐ Tolerance:  $\pm 5\%$  under fixed conditions
- ☐ Time Delay vs. Temperature:  $\pm 10\%$  max
- ☐ Time Delay vs. Voltage:  $\pm 5\%$

##### Reset & Initiate Time

- ☐ Reset time: During & after timing: 100 ms
- ☐ Initiate Time: 32 ms
- ☐ Reset during timing without false output

##### Protection

- ☐ Transient:  $\pm 1400$  V for 100 $\mu$ s

##### Environmental

- ☐ Operating Temperature:  $-40^{\circ}\text{C}$  to  $+65^{\circ}\text{C}$
- ☐ Storage Temperature:  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$

##### Input

- ☐ Nominal Voltage: 24 VAC
- ☐ Tolerance:  $\pm 15\%$  of nominal
- ☐ Frequency: 50/60 Hz
- ☐ Power Consumption: 1 Watt max.

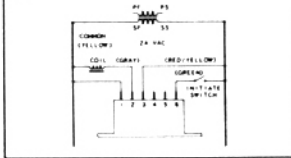
##### Output

- ☐ Type: Solid State
- ☐ Form: SPST, Normally open
- ☐ Ratings:
  - max.—25 amp
  - min.—20 milliamps
  - inrush—5 amps
- ☐ Life: 100,000,000 operations
- ☐ Leakage Current: 5 ma max

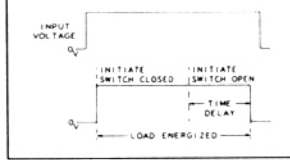
##### Mounting Specifications

- ☐ Mounting: Surface mount with 2 #8 self-tapping screws.
- ☐ Center to center: 2.2–2.26
- ☐ Termination: .25" male quick connect terminals.
- ☐ Weight: 1.74 ounces (50 grams)

#### CONNECTION DIAGRAM



#### TIME DIAGRAM



#### MODE OF OPERATION

Power must be applied to the input terminals of the delay on break before and during the time delay period. When the initiate contact closes the load energizes, and remains energized as long as the initiate contact is closed. When the initiate contact opens, the time delay period begins. At the end of the time delay, the load is turned off. If the initiate contact recloses during timing, the load remains energized and the time delay is reset to zero. Removal of the input power during timing turns off the load and resets the time delay period to zero.

### SERIES BLKS—Anti-Short Cycle With Lockout & Brownout

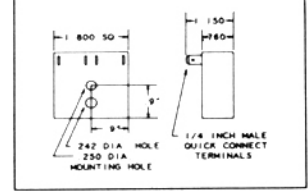


The BLKS is a rugged anti-short cycle timer featuring both lockout control and brownout protection in one compact unit. Ideal for HVAC/R applications, the lockout delay prevents the rapid short cycling of compressors while the brownout function prevents compressor startup due to low line voltage or power failure. All Solid State with epoxy-encapsulated circuitry, the BLKS was designed for reliability and performance in a broad range of HVAC/R applications.

#### FEATURES

- ☐ Solid State reliability
- ☐ Epoxy-encapsulated circuitry
- ☐ Fixed or locally adjustable time delays covering .1–600 seconds
- ☐ Industry standard wiring configuration
- ☐ Provides lockout control
- ☐ Offers brownout protection
- ☐ Rugged and compact housing
- ☐ High performance, low cost
- ☐ recognized component

#### DIMENSIONS



#### SPECIFICATIONS

##### Time Delay

- ☐ Type: Factory fixed or local adjust.
- ☐ Range: 0–600 seconds
- ☐ Tolerance:  $\pm 10\%$  under fixed conditions
- ☐ Time Delay vs. Temperature:  $\pm 10\%$  max

##### Reset & Initiate Time

- ☐ Initiate Time: 32 ms

##### Protection

- ☐ Transient:  $\pm 1400$  V for 100 $\mu$ s

##### Environmental

- ☐ Operating Temperature:  $-40^{\circ}\text{C}$  to  $+75^{\circ}\text{C}$
- ☐ Storage Temperature:  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$

##### Input

- ☐ Nominal voltage: 18–30 VAC
- ☐ Frequency: 50/60 Hz
- ☐ Power Consumption: 2 Watts max.

##### Brownout

- ☐ Voltage: 18 V  $\pm 1$  V

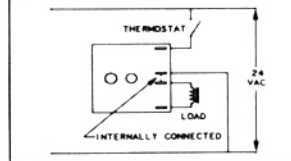
##### Output

- ☐ Type: Solid State
- ☐ Form: SPST, Normally open
- ☐ Ratings:
  - max.—1 amp
  - min.—100 ma
  - inrush—10 amps
- ☐ Life: 100,000,000 operations
- ☐ Voltage Drop: 1.25 Volts
- ☐ Leakage Current: 70 ma max

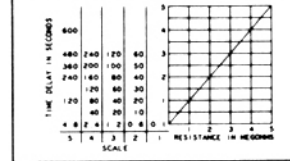
##### Mounting Specifications

- ☐ Mounting: Surface mount with #8 or #10 screw.
- ☐ Hole center: .25"
- ☐ Termination: .25" male quick-connect terminals.
- ☐ Weight: 4 ounces (70 grams)

#### CONNECTION DIAGRAM



#### TIME CURVE



#### MODE OF OPERATION

When power is first applied through the thermostat (a pressure or other type of switch), the compressor contactor is energized. When the switch opens or when there is a loss of power (momentary or maintained—longer than the 32 millisecond initiate time) the lockout time delay is initiated. During the delay the anti-short cycle timer will not allow the compressor contactor to energize. At the end of the time delay period the compressor contactor is energized if the input power is present. The brownout function prevents compressor startup due to low line voltage or power failure.

#### ORDERING INFORMATION

**Post-Purge Fan Delay Timer Series-HBLS**

HBLS 24A 2 X 390

Type: Input Voltage 24A = 24 VAC

Control Method: 1 = Factory fixed—external, 2 = Local potentiometer adjustable, 3 = Factory fixed—internal

Time Delay In Seconds: Adjustable time range = 2–6.5 min. (12–390 sec.)

Time Delay Tolerance: X =  $\pm 20\%$

NOTE: For remote and local adjust the following applies:  
1. The time delay tolerance applies only to the maximum time delay setting  
2. The short time shall be equal or less than the value specified

**Anti-Short Cycle With Lockout & Brownout Series-BLKS**

BLKS 24A 1 X 600 A

Type: Input Voltage 24A = 24 VAC

Control Method: 1 = Factory fixed—external, 2 = Local potentiometer adjustable, 3 = Factory fixed—internal

Time Delay In Seconds: 600 = 180–600

Time Delay Tolerance: X =  $\pm 20\%$

Mounting: A = Surface Mount

NOTE: For remote and local adjust the following applies:  
1. The time delay tolerance applies only to the maximum time delay setting  
2. The short time shall be equal or less than the value specified