

## DUAL FAN & LIMIT CONTROL MODEL DFL

### INSTALLATION INFORMATION

#### SPECIFICATIONS

**SENSOR:** Thermistor  
Length (10 Ft.)

**ACCURACY:** +/- 3°F of set point

**POWER INPUT:** 24 Vac  
120 Vac or 230 Vac (Optional)

**CONTROL OPERATION:**  
LOW LIMIT – Closes on Rise  
HIGH LIMIT – Opens on Rise

**OUTPUT RATINGS:**  
Two - SPST Relays  
15 Amps @ 230 Vac  
(Resistive Load)  
OPTIONAL: Two SPDT Relays

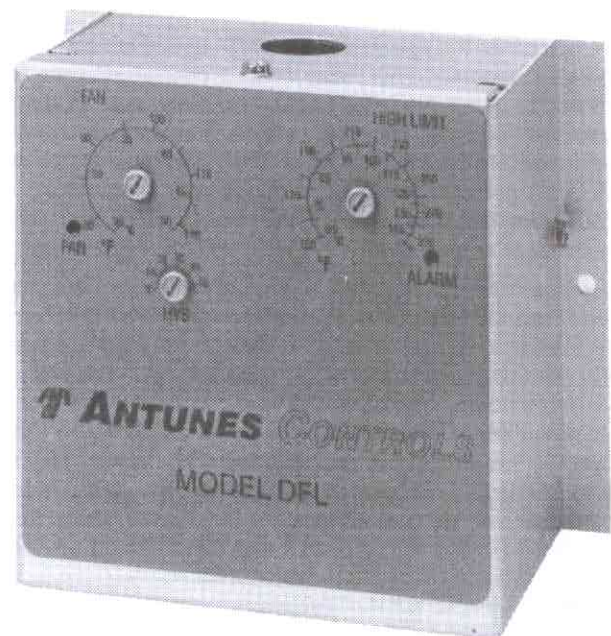
**TEMPERATURE RANGE:**  
FAN: 80° to 120°F (25° to 50°C)  
HIGH LIMIT: 150° to 300°F (65°C to 145°C)

**DIFFERENTIAL ADJUSTMENT RANGE:**  
FAN: 5 to 50°F  
HIGH LIMIT: 1° to 15°F

**OPERATING TEMPERATURE:**  
-30° TO 140°F (-35° TO 60°C)

**CONNECTIONS:** 1/4" Quick Connects  
6" Wire Leads (Optional)

**PACKAGE:** Aluminum 5.1"L x 5.9"W x 3.1"D  
"C" Bracket  
Enclosure w/conduit knockout (Optional)



THIS CONTROL IS COMPACT AND EASILY INSTALLED. PLEASE READ THIS FOLDER CAREFULLY TO ASSURE CORRECT INSTALLATION. PRIOR TO BEING PUT INTO OPERATION, CHECK ALL WIRING AND FUNCTION OF UNIT.

## CONNECTIONS

**Thermistor Inputs** – (100 Kohm @ 25°C)

FAN T7 & T8

HIGH LIMIT T4 & T5 (Optional)

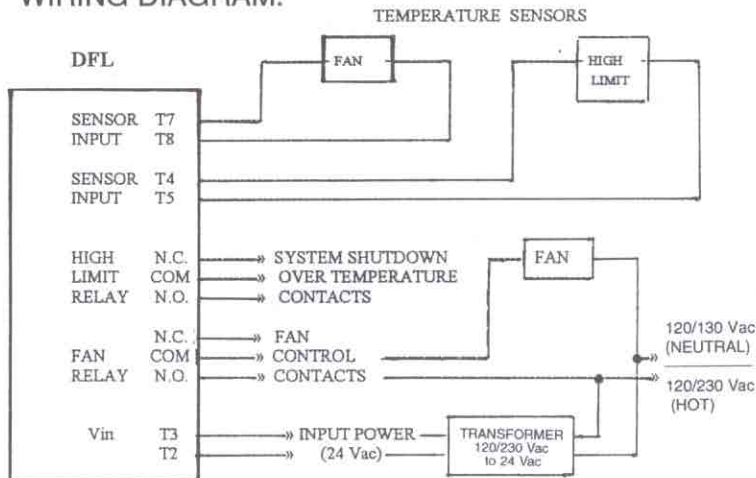
**Power Input** – 24 Vac (Optional 120 or 230 Vac)

Vin T3 & T4

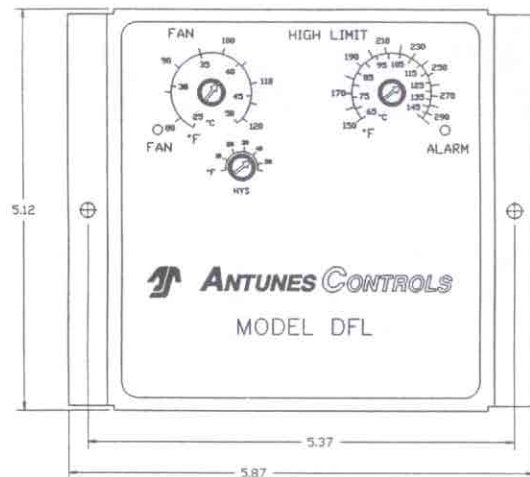
**Fan Relay** – N.O. & COM. on relay body (Optional N.C.)

**HIGH LIMIT Relay** – N.O. & COM. on relay body (Optional N.C.)

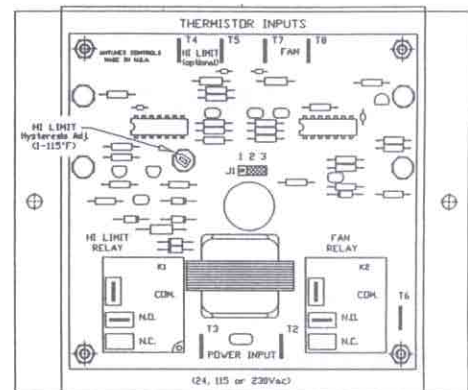
## WIRING DIAGRAM:



## FRONT VIEW



## BACK VIEW



## UNIT OPERATION:

The DFL combines the operation of a single speed fan control with that of a warm air high limit control. The fan section of the control activates a p.c. mounted FAN Relay which is controlled by the Fan Thermistor Sensor. During the initial power-up state the sensor temperature will be below the setting set by the front panel potentiometer labeled FAN LIMIT and the FAN Relay will be activated and a front panel FAN LED will light. Once the thermistor temperature rises above the FAN LIMIT temperature then the FAN Relay is de-activated and the FAN LED will not be lit. The FAN Relay will be re-activated once the Fan Thermistor Sensor temperature drops below the FAN LIMIT potentiometer setting minus front panel HYS potentiometer setting. As an example, if the FAN LIMIT potentiometer is set to 110°F, and the HYS potentiometer is set to 20°F, then the FAN relay will re-activate once the Fan Thermistor drops below 90°F. The temperature range of the FAN LIMIT potentiometer is from 80 to 120°F. The HYS potentiometer adjustment range is 5 to 50°F.

The operation of the HIGH LIMIT section of the control is similar in operation to the FAN LIMIT except that the HIGH LIMIT Relay is activated when the High Limit Thermistor Sensor temperature is below the setting of the front panel HIGH LIMIT set-point potentiometer. Once the HIGH LIMIT potentiometer temperature setting has been exceeded the High Limit Relay will be de-activated and a second front panel LED labeled ALARM will light. The High Limit relay will stay de-activated until the High Limit Thermistor temperature drops below the HIGH LIMIT set-point potentiometer minus an internally mounted hysteresis potentiometer. This internally mounted potentiometer has an adjustment range of 1 to 15°F and is accessible only from inside the control. See figure showing back view of unit for location of this potentiometer. The control also has an option of using either 1 or 2 thermistors to control the FAN and HIGH LIMIT Relays. This selection is determined by the position of a 2 pin jumper plug inserted onto the connector labeled J1. If the jumper plug is inserted so that positions 2 & 3 are shorted together then only the Fan thermistor sensor is needed. If however the jumper is placed between positions 1 and 2 then both Fan and High Limit thermistors are needed.

**LIMITATION OF LIABILITY.** It is understood and agreed that seller's liability whether in contract, in tort, under any warranty, in negligence or otherwise shall not exceed the return of the amount of the purchase price paid by purchaser and under no circumstances shall seller be liable for

special, indirect or consequential damages. The price stated for the equipment is a consideration in limiting seller's liability. No action, regardless of form, arising out of the transactions may be brought by purchaser more than one year after the cause of action has accrued.

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