



## **D22-TF (Fresh Air Heater controller) :**

The first step in testing the D22-TF controller is to confirm that there is 24 VAC powering the board. (Top left connections on the board).

Set the push button room controller to 100% full-on. The airflow sensor is a device that protects the heater element section from overheating. If there is a lack of proper airflow, the controller and the airflow sensor will make the unit modulate proportionally with the airflow. This simply means that if the element section is getting half of the needed airflow, the heater will work at half the capacity. This prevents overheating of the elements which would damage them.

For testing purposes, remove the Airflow sensor from the terminals A and A. When that airflow sensor is removed, the heater will still operate normally but without element protection and the fan will be OFF and the damper will be closed (this is

only for testing). Make sure you reconnect the airflow sensor after testing.

With the built-in temperature sensor (located in the duct) connected to S and S, you can simply dial your set point on the blue potentiometer on the controller. If the red LED turns on, the controller is good. If the red LED never turns on (for version 3.2 and newer), remove the temperature sensor from S and S. If the red light is solid ON, the controller is good. Versions older than 3.2 require the temperature sensor connected to S and S to turn heater/LED on.

If the red light still stays off, temporarily disconnect the push button room controller and in its place short pins 1 and 3. If the red light still does not come on, the controller is defective and replacement is required. Re-connect the pushbutton room controller and sensors.

Please note that these controllers have power outputs. It is possible after many switching cycles that the built-in triacs will stay stuck in a closed or open position (indicated by the red LED). The control side of the board might still be good, but the power side will not operate. This applies for the heater element,

fan, and damper. Moreover, if the heater triac is stuck closed, the thermal cut-outs will cut power to the unit. If the heater triac is stuck open, the unit will not put out any heat even if there is a demand.

New Feature (V 3.2): When AF sensor detects  $< 0$  deg C, damper closes and the fan turns off.

