



D21-TSSR
(PCB color blue)
(FW THF-1906 and newer)

Safety features:

1- SSR+ output is short protected, short current 60mA max.

2- Low air-flow modulation/shut-off:

If the heater's air-flow sensor senses a temperature higher than 44°C (111°F) threshold, the output's pulse width will be reduced from the actual down to zero (at approximately 51°C threshold), proportionally by the sensor's temperature.

In this mode the yellow (or red) warning light is continuously ON. (44°C-51°C D21-PS like). Accuracy: $\pm 2^{\circ}\text{C}$ ($\pm 4^{\circ}\text{F}$).

Shorted or broken Air-Flow sensor detection:

If the air-flow sensing Thermistor connection (A-A) of the D21-PSSR controller is shorted, or open, the controller will continue to work normally for about 60 seconds.

While in this 60 second counting, the yellow (or red) light begins to quickly blink indicating this warning mode.

If the normal air-flow condition is reinstated within that 60 seconds, the controller goes back to normal operation and the yellow (or red) light turns OFF.

If the normal air-flow condition does NOT come back within the 60 second timeframe, the yellow (or red) Warning LED light begins to flash with a pattern of 1-second ON and 2-seconds OFF, and the controller switches off the SSR output (i.e. lockdown).

To cancel: fix the short or open air-flow sensor connection, and then turn the controller's power OFF and then ON.

Useful diagnostic/ testing process:

To force **FULL** power to the elements to verify the load current, operation etc. without requiring thermostat control.

1. Turn the Power ON.
2. Remove one of the air-flow connections. The yellow (or red) light begins to blink quickly.
3. Short together the air-flow sensor connections (A-A) momentarily for 2-seconds. The program goes to a “Diagnose Heater” process.

The Yellow (or red) light keeps blinking.

The heater instantly turns Full ON, regardless of the 0-10V input voltage.

After 1 minute with Full ON, the controller turns OFF the elements and the yellow (or red) warning LED light flashes with a pattern of 1-second ON and 2-seconds OFF.

4. To put to normal operation: Remove the short, connect back the air-flow sensor and then turn controller's power off and on (to reset).

Some important notes:

- **LOW:** -15°C (5°F) to 27°C (80.6°F)
- **STD:** 14°C (57.2°F) to 55°C (131°F)
- Range switch is underneath the board as per diagram.

