

E-TES SD AIR FLOW SENSOR OPERATION

For continuous reliable operation of the new E-TES SD LP the Air Flow Sensor must sense and measure the air flow from the air mover to know when the heater should turn on and off.

Part of this process involves the how the air mover sits in the E-TES SD Low Profile box.

The measured range of air flow can vary greatly with small changes in the air flow from the air mover snout. A more narrow range of air flow detection may not matter in open flow operation, but when the E-TES SD output air flow is restricted by ducting or the weight of a carpet being floated, a narrow range may cause the heater to turn on & off during operation.

E-TES SD Air Flow Terminology:

- ◆ **OFF Set Point:** This is the resistance reading of the air flow sensor with the fan off.
- ◆ **ON Set Point:** This is the resistance reading of the air flow sensor with the fan on.
- ◆ **Air Flow Trigger:** This is the resistance reading of the air flow sensor at which the heater will turn on and off. During the calibration process the E-TES SD automatically calculates and sets the Air Flow Trigger half way between the Off Set Point and ON Set Point.
- ◆ **254:** An off reading of 254 indicates the wires to the air flow sensor have been cut or the air flow sensor has come unplugged from the circuit board. The E-TES SD will not function and the air flow sensor must be connected correctly, repaired or replaced. A reading off 254 when the fan is on indicates the sensor has reached its maximum reading. Increasing the air flow at this point will not increase the sensor reading.
- ◆ **0:** An off reading of 0 indicates the wires to the air flow sensor have been shorted out or the air flow sensor connection to the circuit board has been reversed. The E-TES SD will not function and the air flow sensor must be connected correctly, repaired or replaced.



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To get the best Air Flow Sensor operation make sure the entire snout opening of the air mover is inside the gasket on the E-TES SD.

Air Mover Installation:

Place the snout of the air mover through the sealing gasket into the opening on the back of the E-TES SD.

Different models of air movers have shorter snouts or large handles which can prevent the gasket from sealing around the air mover snout. Without a good seal the air leakage may reduce the air flow sensor reading. The air mover may even slide backwards when the air mover is turned on, further reducing the air flow. A bungee cord can be used to hold the air mover in place to maintain air flow with these kinds of air movers.

Connect ducting, Flexi-Dry, snout adapter with ducts, or place the E-TES SD snout under the carpet to be floated before calibrating the air flow sensor.

E-TES SD gasket sealed securely around snout of an OmniDry 2.9 air mover



Short snout of air mover with large handle just barely sealed by E-TES SD gasket



A bungee cord can be used to secure the air mover and maintain sufficient air flow



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Air Flow Setup Screen: This allows you to recalibrate the Air Flow Sensor to maintain proper Air Flow Sensor function for reliable heater operation.



Press **SELECT** to set the Air Flow Sensor trigger point. Follow the screen directions using the **DOWN** button to set the levels with the air mover OFF & ON.



1. First turn the air mover OFF. When the fan is off and the number stops changing, press **DOWN**.

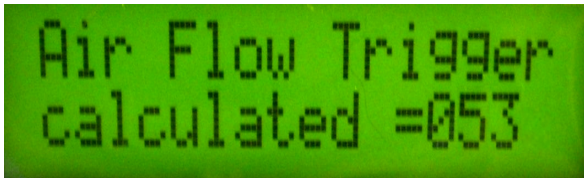
This is the Off Set Point.

(Shown as 033 in this example)

2. Then turn the air mover ON at low speed. When the number increase to a point 40-50 points higher than the OFF Set Point, press **DOWN**. This is the ON Set Point. (Shown as 076 in this example)



With the fan on and no restriction on the outlet, the numbers on the screen, will go up quickly, even reaching the maximum of 254. If you press **DOWN** as soon as the fan on number is about 40-50 points higher than the Off Set Point, the On Set Point and Air Flow Trigger a little lower, so the unit turns on quicker and will stay on even if there is fluctuation in the air flow or the flow is restricted.



3. The Air Flow Trigger point is now set. The Air Flow Trigger is approximately half way between the Off Set Point and the On Set Point.

(Shown as 053 in this example)

Press **SELECT**, to exit the Air Flow Setup and return to the Air Flow Setup Screen in the main menu.

Ideally the Off Set Point will be between 15 & 55, but as the E-TES SD is used, the air flow sensor will become more flexible and may get some bend memory. This will cause the Off Set Point to rise. With a larger difference between the Air Flow Trigger and the ON and OFF Set Points the heater operation will be more reliable, but as long as the ON set point is higher than the Air Flow Trigger setting the heater will run.

If the OFF set point is too high, over 100, replacement of the Air Flow Sensor should be considered.

The ON Set Point will be higher with a more powerful air mover with more air flow or the same air mover on medium or high setting compared to the low setting. In some cases you may need to turn the air mover to medium or high to get enough air flow for your drying application. Set the Air Flow Trigger using the low speed and then turn the air mover to medium or high speed if needed.

The ON Set Point will be much lower when a Flexi-Dry or other restriction is placed on the E-TES SD snout. Connect the Flexi-Dry or other ducting or place the snout of the E-TES SD under the carpet to be floated and then set the Air Flow Trigger as described above. Try to set the Air Flow trigger using low speed. You should have at least a 40 point difference between your OFF Set Point & ON Set Point. You will probably need to open one end of the Flexi-Dry to increase the air flow, and if you need a higher speed to properly inflate the Flexi-Dry or ducting, or to float the carpet, it is OK to use the higher speed to set the Air Flow Trigger.