



TROUBLESHOOTING GUIDE

Fan/Air Flow

1. No Airflow

Verify	Corrective Action
Check that fan switch is in the "ON" (I) position.	Turn the fan switch in the "ON" (I) position.
Check to make sure the power cord is fully plugged in to both the power outlet and the fan electrical box.	Plug the power cord in to both the power outlet and the fan electrical box.
Check to verify filters are properly installed and that no packing material is obstructing airflow path	Remove any material obstructing the airflow path.
Check that the variable speed control is not over rotated in the counter clockwise direction. Turning the adjustment screw beyond the maximum setting, until it clicks, will turn the fan OFF. (NOTE – This check not applicable to 220VAC models)	Mark the adjustment screws position before making any change. Turn the variable speed control in the clockwise direction. If it clicks the variable speed control was in the OFF position. Reset the variable speed control until the correct face velocity is achieved.
Check the internal fuse and verify that it is still good.	With the unit unplugged use a small screw driver to press in and turn counter clockwise to remove the fuse in the side of the fan electrical box. Replace if necessary and repeat test.

2. Low Airflow

Verify	Corrective Action
Check that fan is properly seated on the filter	Move fan housing until it rests properly on top of the filter.
Check/Inspect filters to see if they have become clogged	Replace if necessary.
Check for restriction on the fan discharge and verify that nothing is impeding airflow at this point	Remove any blockage from airflow path.
Check that top and rear plenums are properly installed	Properly seat the plenums in their correct position.
Check to verify filters are properly installed and that no packing material is obstructing airflow path	Remove any material obstructing the airflow path.

3. Hi Airflow

Verify	Corrective Action
Check that variable speed control is not over rotated in the counter clockwise direction.	Turn the variable speed control in the clockwise direction. Adjust the variable speed control until proper face velocity is achieved.

Check for cross drafts from any HVAC diffusers, open doors and windows	Remove the cause for the draft or move the enclosure to a new location.
Check discharge to verify that any other house exhaust does not influence discharge rate	Remove the cause for the draft or move the enclosure to a new location.
Check that top and rear plenums are properly installed	Properly seat the plenums in their correct position.

4. Unstable Airflow

Verify	Corrective Action
Check for cross drafts from any HVAC diffusers, open doors and windows	Remove the cause for the draft or move the enclosure to a new location.
Check that fan is properly seated on the filter	Move fan housing until it rests properly on top of the filter.
Check for balance across multiple fans if so equipped	Measure discharge velocity from each individual fan to see if they are all moving the same amount of air. Adjust individual fans until they are all operating at the same level. Verify face velocity is still correct, and if required adjust all fans until correct face velocity is achieved.
Check that top and rear plenums are properly installed.	Properly seat the plenums in their correct position.

Filter Sealing

1. Leakage

Verify	Corrective Action
Check that the filter is sitting flat on its mount or filter frame.	Move the filter until it rests properly on its mount or filter frame.
Check to make sure clamping levers on the primary HEPA filter are in their lowered position pressing down on the filter	Twist the clamping levers until they drop into their slots.
Check to see the filter is installed in right orientation with the arrow pointing toward the fan	Flip the filter over if the arrow does not point toward the fan.
Check to see if the filter pleats look undisturbed and no damage has happened to the filter media during installation	Replace the filter if it is damaged.

Alarm

Don't just assume the problem is the alarm. Once the alarm parameters are set they are not likely to change. What is more likely to change are the variables associated with airflow. The lower limit of sensitivity of the alarm is 40 FPM. The higher limit is around 140 FPM. Because of variability of electronic components use of the alarm at either extreme is not recommended.

1. Face velocity good, alarm in "RED" alarm condition continuously on

Verify	Corrective Action
Check that face velocity is correct.	Use an anemometer to verify that the fan is still set at the correct speed. Reset fan speed if necessary.
Sensor lead plugged in.	Make sure the lead from the sensor is fully plugged into the coupling block.
Broken wire or thermistor on sensor.	A quick visual check may be performed to verify that the thermistors and wires are not broken or shorted.
Sensitivity set too low for proper operation	Adjust set point on alarm circuit board. See alarm manual.
Obstructions ahead of and behind the sensor that are disturbing airflow	Remove obstruction form in front of and behind sensor.

2. Face velocity good, alarm in “RED” alarm condition intermittently on/off

Verify	Corrective Action
Obstructions ahead of and behind the sensor that are disturbing airflow	Remove obstruction from in front of and behind sensor.
Fluctuations in the exhaust HVAC systems that affect the airflow entering the enclosure	Operate system when no fluctuations are occurring to establish cause and effect relationship. Examine HVAC piping and correct.
Room pressure fluctuations due to door openings	Operate system when no fluctuation are occurring to establish cause and effect relationship. Locate in area that is free from frequent door openings.
Room pressure fluctuations due to opening and closing fume hood sashes, creating sudden demands for both make-up air and exhaust capacity	Operate system when no fluctuations are occurring to establish cause and effect relationship. Locate in area that is free from frequent and sudden air changes.

3. Face velocity bad, alarm in “GREEN” normal condition

Verify	Corrective Action
Alarm never indicates low air flow.	Block sensor to eliminate airflow. If alarm goes off, adjust set point on alarm circuit board. See alarm manual.
Alarm never indicates low air flow and sensor is blocked to eliminate airflow.	Replace alarm

Sensor appearance

A quick visual check may be performed to verify that the thermistors are not broken or shorted. This is most common with the center measuring thermistor. It may be become broken from damage that occurred during installation or cleaning. Due to its small size and sensitivity, the wires connecting it to the sensor’s PCB can become broken or bent. If the measuring thermistor has a broken wire, this will result in an open circuit. If the wires beneath the bead are touching, this will result in a shorted circuit. Either condition will cause a continuous alarm.

Sensor Measurement

If an electrical multi-meter is available, initial resistance can be measured to give an indication of the integrity of the thermistor. When checking the thermistor, remember that the meter is applying current

through the components and resistance values will change as it heats up. One needs to note only the initial value for this test. Values for the thermistors are as follow:

Reference Thermistor – 100K Ohms (85K – 105K possible)

Measuring Thermistor – 5K Ohms (4.5K – 7K possible range)

Access Door, Raised Position Retention

1. Mechanical set-up

Verify	Corrective Action
Door does not stay in raised position	Replace pneumatic arms