

**NOTICE:**

**POWER MUST BE REMOVED FROM THE CONTROLLER WHENEVER CONNECTIONS OR DISCONNECTIONS ARE BEING MADE. FAILURE TO DO SO COULD RESULT IN IRREPARABLE DAMAGE.**

**NOTICE:**

**BEFORE PROCEEDING WITH ANY ADDITIONAL TROUBLESHOOTING, ENSURE THAT THE POLARITY OF THE 24 VAC SUPPLY TO THE CONTROLLER IS CORRECT. (SEE FIGURE 1). IF THE POLARITY IS NOT CORRECT, REMOVE THE CONNECTORS AND RECONNECT OBSERVING PROPER POLARITY. RECHECK THE SYSTEM FOR PROPER OPERATION.**

1. Inspect the unit to make sure that there are no foreign objects blocking fan operation. Turn the wheel by hand to verify that it moves freely.
2. Energize the unit at the unit disconnect switch. Adjust the controls to call for the fan motor to run.

### Setting the Fan Airflow in the Manual Mode

1. Attach the leads of a DC voltmeter to the "METER" and "COM" terminals on the volume controller card. Read the DC volts.
2. Refer to the Fan Calibration Table inside the line voltage enclosure. Select the voltage that corresponds to the desired airflow (cfm or l/s) set point.
3. Adjust the potentiometer on the ECM card to the desired voltage.

### Troubleshooting

1. Confirm the jumper on the ECM card is in the correct position. The jumper should be in the "MAN" position for adjustment of fan speed at the unit.
2. If the motor does not run, turn off the power to the unit and verify that the power plug and the control plug are firmly and correctly attached to the motor. Then, turn the unit power back on and wait for the motor to start. If it has not started within 20 seconds, turn off power and repeat this step.
3. If the motor still does not start, unplug both wiring harnesses from the motor. **IMPORTANT: Do not jam the voltmeter leads into the connectors. This will swage out the connectors and cause them to not make contact when the unit is plugged back in. Insert the probes into the plugs until they touch the pins. Do not penetrate the pins.**

4. Energize the unit. Check the AC voltage at the power plug. You should have full voltage between the neutral and power lines, or between the two power lines in case of 240 VAC. If this is the case, go to step 5. If there is not a full voltage signal at this point, check the voltage at the incoming power terminal block. If there is not a full voltage signal at this point, turn off the power to the box and fix the problem with the electrician. If there is a full voltage signal at the incoming terminal block, turn off the power to the box and reinstall the power cable harness.
5. If there is a full voltage signal, and if the ground wire is properly connected, check the voltage at the ECM card. Be sure that you have 24 - 28.5 VAC at the 24 VAC terminals. If you do not have voltage at this point, check the transformer.
6. If you have the correct input voltage, place meter on the "GND" and "VDC" meter terminals where you should be reading a magnitude between 0 and 10 VDC. Using a screwdriver, move the potentiometer to verify that the magnitude varies. If you do not have the proper voltages, replace the ECM card.
7. If all the voltages check out, it is possible that the pins may not be connecting properly and it may be a good idea to recheck them at the plug near the motor.

The ECM card provides a visual airflow indicator. A green LED located on the controller circuit board flashes in response to the airflow indicator pulses provided by the control board located in the motor. Each pulse is 100 cfm (47.2 l/s). The last pulse is scaled.

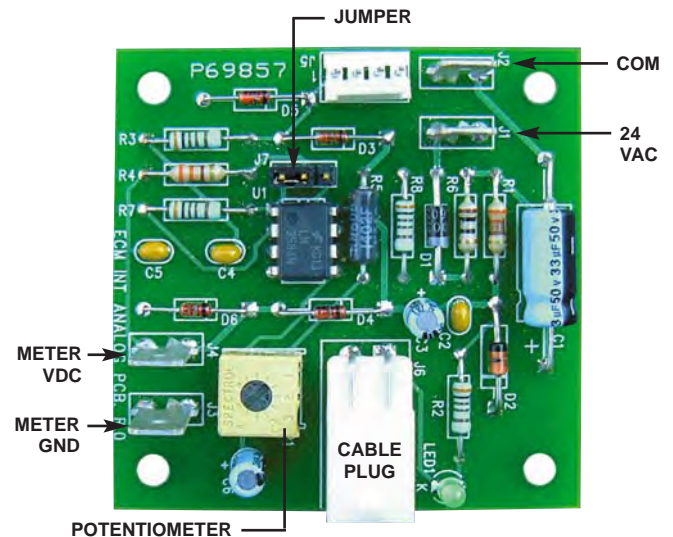


Figure 1. AO Smith ECM Card.

Contractors check box to confirm steps 1-7 have been addressed. After addressing 1-7 please return to manufacturer for warranty action.

**Inspectors Signature:** \_\_\_\_\_