



APPLICATION ENGINEERING BULLETIN Number # AE-008-06

■ TOPIC: Air Proving In the Millennium Unit

■ SCOPE & PURPOSE: To explain how the Air proving cycle works on the Millennium

■ CONTENT:

■ **APS (Air Proving Switch)**

- When the control commands the fan on, it will wait for 90 seconds for 24 VAC to be sensed. If the voltage is not sensed after 90 seconds, it will turn off all outputs. It will retry the Fan output every 30 minutes for three retries. If after three retries it still cannot qualify the Fan, it will Alarm and lock all heating and cooling operation out. When the control is a VAV unit, it will also try to qualify the fan using the static pressure sensor. If the control reads more than .05 inches of water column, it will only flag a bad APS and continue to operate the equipment. If 24 VAC is sensed after an alarm has been flagged, the control will resume normal operation and clear the active alarm.
- After the control has turned off the fan, it will wait 90 seconds for the switch to open. If the switch does not open after 90 seconds, the control will flag a failed switch and flash the alarm. The control will stage up equipment normally.
- When the control is running the fan and the APS has already been proven, and then it opens, (flutter) the control will wait 2 seconds before shutting down heating, cooling, and locking out. It will alarm and retry as if it happened during start-up.
- During this time the duct pressure sensor is working in harmony with the APS to insure fan operation.

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Supply Duct Static Pressure Sensor (DPS)

- This is a 0 – 5 volt dc input
- The control will operate the Fan relay and drive the VFD to +/- 5% of the Duct Static Pressure set point. This will be the dead band. This means the fan will run continuously during any occupied or warm up period, as well as when equipment is turned on for other reasons. This holds true for Intelli Start as well.
- Remember that the duct static sensor can hold the unit on even if the APS fails during normal operation. You will receive a alarm of failure but unit will continue to operate.
- It's a case of either or in 90 seconds to PROVE fan.
- If fault code 42 appears check VAV boxes minimum position and or adjust drive in 5% increments to make it go away to build up duct static to a point that will make the duct static sensor produce enough voltage to prove fan operation.
- Refer to bulletin # for proper instruction on how to set up drive.

■ SUMMARY/CONCLUSION:

- This bulletin is to help understand the result of the Fault code 42 that may appear during start up

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■ KEY WORDS: (For searches)

- APS
- ALARM
- DPS
- Millennium