Digital Readout Flashing 2222

LOSS OF "FOUL GAS" PRESSURE. **This usually means the pressure in the air separator chamber is below 80 psig (5.5 bar). Pressure gauge on the purger reads near suction pressure. The purger will not allow noncondensible gases to be released from the purger. However, the purger will continue to operate normally in all other functions.**

Reason 1: **A burned-out purge point solenoid coil.**
Check: **Check the remote purge point solenoid 3 amp fuse for continuity. Replace if necessary. Advance purge points one at a time with the purge point advance button, waiting approximately 2 minutes before advancing again. Wait until the fuse opens or the digital readout again flashes 2222. The faulty coil or wiring is now pinpointed.**
Action: Replace the coil or repair the wire, and replace the 3 amp fuse (p/n 20-1698).

Reason 2**: A remote purge point solenoid valve is jammed closed.**
Check: **Inspect the remote purge point solenoid valve which caused the diagnostic code to appear. Manually open the solenoid valve and recheck the pressure.**
Action: If the coil is energized, clean and replace any solenoid valve parts as necessary. See also the Caution section on page 12.

Reason 3: **"Foul gas" line restricted.**
Check: **Inspect the "Foul gas" line for a closed shut-off valve(s) or the plastic shipping cap still in "foul gas" line flange.**
Action: Open shut-off valves and/or remove the shipping cap. See also Caution section, page 12.

Reason 4: **Faulty pressure transducer.**
Check: **With the purger in any operational mode, check the pressure gauge reading. If it is above 80 psig, check pressure transducer plug-in connector terminals 27 & 30 for 10 volts DC. Then check terminals 28 & 29 for at least 13 mV.**
Action: If terminals 27 & 30 do not have 10 volts DC, check for faulty wiring. If terminals 28 & 29 do not have at least 13 mV, replace the pressure transducer (p/n 20-1857) with the purger at zero pressure. See also the Caution section on page 12.

Digital Readout Flashing 3333

PURGER TOO WARM. **If the purger evaporator temperature is 40°F (4.4°C) or warmer, the purger will not release noncondensible gas from the purger because excessive refrigerant would also escape. The purger will continue to operate normally in all other functions. This code is also displayed during initial start-up until the purger flooded evaporator is cooled down.**

Reason 1: **Suction temperature too high.**
Check: **Verify the pressure at the purger suction line connection.**
Action: Connect to a lower-temperature suction.

Reason 2: **Restriction in the suction line.**
Check: **Inspect the suction line and shut-off valves. These should be a minimum size of ¾". On new installations, also make sure the plastic shipping cap in suction line flange is removed.**
Action: Eliminate the restriction. See also the Caution section on page 12.

Reason 3: **The flooded evaporator inside the purger is not filled with refrigerant.**
Check: **Look for a closed liquid line shut-off valve, Also, check that the liquid line solenoid valve (B) is energized.**
Action: Open the liquid line shut-off valve. If not energized, check for voltage at the liquid line solenoid valve coil. Replace the coil if it is burned-out.

Reason 4: **Faulty temperature sensor.**
Check: **With the temperature sensor plug-in connector disconnected from power board (see Figure 4), check the electrical resistance of the sensor across the wire leads.**
Action : If the resistance is not between 30 K ohms and 486 K ohms, replace the temperature sensor (p/n 67-0052). See also Caution section on page 12.

Digital Readout Flashing 4444

PURGED OVER 60 MINUTE TIME LIMIT.
If noncondensibles are released from the purger for 60 minutes continuously, a time delay will close the purge gas solenoid valve (C). This limits the possibility of a substantial amount of refrigerant inadvertently being released into the water bubbler in the unlikely event of purger malfunction.

Reason 1: **A large volume of noncondensibles is continuously being removed from system.**
Action: Reset the time delay by momentarily turning the APM to Purger Switched Off and back to the desired operation mode. Delay is now reset for up to another hour of continuous purging. Otherwise, put the purger in New System Start-up mode for continuous purging without the 60 minute time limit.

Reason 2: **Purge gas solenoid valve (C) is not opening or the removable seat/orifice is blocked.**
Check: **Make sure purge gas solenoid valve (C) is energized. If not, check for voltage at solenoid coil.**
Action: Replace the coil if it is burned-out, otherwise clean or replace the removable seat/orifice inside the solenoid valve body. See also the Caution section on page 12.

Reason 3: **The shut-off valve located before the purge gas solenoid valve (C) is closed.**
Check: **Verify that purge gas is not being sent to the bubbler.**
Action: Open the valve.

Digital Readout Flashing 5555

PURGER SHUT-OFF REMOTELY. **This code indicates that the optional interlock remote relay contacts are open. These contacts are connected to the purger via the power/interlock plug-in connector terminals 11 and 12.**

Reason 1: **The purger is temporarily shut-off due to the interlocked compressor (or other device) being shut down by temperature controls or safety devices.**
Check: **Wait until the interlocked compressor (or other device) begins to operate. If digital readout does not stop flashing diagnostic code 5555, then check the interlock relay for proper operation.**

Digital Readout Flashing 6666

LEVEL CONTROL OUT OF RANGE. **This Flashing 6666 code will alternate with either a 6661, 6662, or 6663 code. The second code indicates which level sensor is out of the normal sensing range. This may indicate a mechanical or electrical problem with the drainer level sensor (6661), the low side level sensor (6662), or the high side level sensor (6663).**

Reason 1: **Discontinuity in the coaxial wire from the probe to the control board.**
Check: **Verify that the level sensor coaxial connectors at the control board are tight.**
Action: **If the connections appear proper, replace the suspected level sensor, with the purger isolated from the system and pressure at zero. See also the Caution section on page 12.**

Digital Readout Flashing 7777

LOSS OF HIGH PRESSURE LIQUID. **If the liquid line solenoid valve remains energized for more than 30 minutes, it indicates there is insufficient high-pressure liquid available to maintain an adequate level in the flooded evaporator of the purger. The purger will not purge air until this is corrected.**

Reason 1: **Liquid line solenoid valve (B) is not opening or the removable seat/orifice is blocked.**
Check: **Make sure the liquid line solenoid valve (B) is energized. If not, check for voltage at the solenoid coil.**
Action: **Replace the coil if it is burned-out, otherwise clean or replace the removable seat/orifice inside the solenoid valve body. See also the Caution section on page 12.**

Reason 2: **Liquid line restricted.**
Check: **Look for closed shut-off valves in the liquid line, plugged strainers, or the plastic shipping cap still in the liquid line flange.**
Action: **Inspect piping for a closed shut-off valve. Open the shut-off valves, clean the strainer, or remove the shipping cap. See also the Caution section on page 12.**

Reason 3: **Flooded evaporator is full of oil.**
Check: **Look for oil at the drain valves.**
Action: Drain the oil according to safe refrigeration practices.

Purger not operating and the Digital Readout blank

Reason 1: **One or both of the replaceable 3 amp fuses is blown. (APM's shipped before January 1997 have circuit breakers instead of fuses.)**
Check: **Check for a blown fuse.**
Action: **Replace the blown fuse.**

Reason 2: **Condensation inside the flexible electric conduit is causing a short in the DIN plug connector. Note: This only applies to APM purgers shipped before December 9, 1996.**
Check: **Remove the DIN plug connector from the solenoid valve and inspect for moisture or condensation.**
Action: Replace the solenoid, flexible conduit, and (if necessary) the power board. Contact the factory for an upgrade kit including the solenoid and flexible conduit. The power board must be ordered separately. Refer to drawing 2001-80 for power board replacement procedures.

Reason 3: **A short or open on the low voltage side of the power board.**
Check: **With power to the APM use a voltmeter to check for approximately 10V DC across terminals 27 and 30.**
Action: **If there is no voltage across the terminals, replace the power board. Refer to drawing 2001-80 for power board replacement procedures.**

Reason 4: **One or both solid state fuses (F6A and F6B) are blown.**
Action: **Disconnect power and verify continuity across the fuses. Replace board if no continuity.**

Noncondensibles are not being released.

(See also page 10; Digital Readout Flashing 3333)

Reason 1: **Noncondensibles not present in system.**
Check: **Compare the refrigerant liquid temperature from condenser exit with the condensing pressure. The pressure/temperature relationship should be within 2 or 3 psig (0.14 to 0.21 bar).**
Action: None at this time.

Reason 2: **Strainer/orifice plugged.**
Symptom: **The purger appears to be operating properly, however, the liquid feed line is not frosted.**
Check: Look for a restriction in the strainer/orifice.

Reason 3: **"Foul gas" line is flooded with liquid.**
Symptom: **The line from the bottom of the liquid drainer solenoid valve (A) to the inlet of the purger evaporator often remains frosted.**
Check: **Inspect condenser and "foul gas" piping. In many cases, the problem is liquid refrigerant being drawn from the purge point. To prevent this from happening, select purge point locations above liquid surfaces and make sure purge point lines are installed so that only vapor, and not liquid, can be drawn in. Refer to Piping Instructions in Section I of this bulletin.**
Action: **Correct condenser and "foul gas" piping**.

Ammonia instead of noncondensibles released from purger.

(See also page 10; Digital Readout Flashing 3333)

Reason 1: **Purge gas solenoid valve (C) leaking at seat.**
Symptom: **A slow leak of noncondensibles to the bubbler when the Purging status light is off.**
Check: **Look for dirt or a worn seat in the purge gas solenoid valve (C).**
Action: **Remove, clean, or replace the seat/orifice and solenoid tube plunger. See also the Caution section on page 12.**

Reason 2**: Oil in purger.**
Symptom: **No frost around the low side oil drain valve.**
Action: Remove oil through both the low side and high side drain valves (See Figure 1) per safe refrigeration procedures and suggested oil removal instructions describe in the Oil Drain section, page 4.

Water bubbler develops excessive mineral coating.

Reason 1: **Hard water.**
Action: **Add vinegar to the bubbler water. Then, clean with the supplied brush. Use a water conditioning housing and cartridge in the water supply line to the purger.**