

## Chapter 4- Troubleshooting

ERROR #	MEANING	CAUSE(S)	ACTION(S)
7	1.0 V Thermistor reference voltage is out of 0.95V - 1.049V range.	ADC out of calibration. Defective control board.	Recalibrate the ADC. If the failure still persists replace control board.
8	No Line Frequency	Defective cable between the control board and the relay board. Defective relay board. Defective control board.	Measure the signal on the control board between J9 pin 43, and TP1-6 (Ground). It should be a 120 or 100 hertz square wave. If the signal is OK replace the control board. If no signal check the 50 pin cable, pin 43. If bad replace the cable. If cable is OK, replace relay board.
11	The ADC on the control board is not operating to spec. (too slow)	The humidifier sensor or cable is shorted. Bad control board.	Disconnect J1 on the control board. If the error persists replace the control board. If it powers up OK either the cable or the humidity sensor is bad. Reconnect J1 and disconnect the humidity sensor at the compartment probe. If the unit now powers up OK the humidity sensor is bad, or the cable is bad.
12	Bad Checksum	Defective control board PROM	Change socketed IC U42 on the control board. If failure persists, replace control board.
13	Bad SRAM	Defective SRAM circuit on control board	If the error occurs occasionally, may be random causes; e.g., static discharge. If failure persists, replace control board.
14	Bad WDOG	Defective control board Watch Dog	Replace control board.
15	Heater Safety Relay test failure. Unable to turn incubator heater on or off by switching the safety relay.	Bed in incubator mode, but having relay timing problems  Air temperature sensor is above 40C at powerup.  Air display sensor is shorted.  Defective relay board  Defective DAC circuit on control board.  If the error occurs during ADC calibration it could be caused by failure to unplug the probes during calibration.	Replace eeprom with 1.6 software or higher.  If the unit was shut off when the heater was hot, allow the fan to run for several minutes to cool to below 40 then power down and back up.  Check the air sensor. See tips.  If failure persists, replace relay board.  If failure persists, replace control board.  Make sure J1, J2 and J4 on the control board are disconnected. Verify JP1 is correctly positioned then recalibrate.
16	Unable to turn the incubator heater on or off by switching the solid state relay.	The bed Tstat is open (possibly because the unit was shut down when the heater was hot) or the heater or t-stat is defective.	If the unit was shut off when the heater was hot, allow the fan to run for several minutes to cool to below 40 then power down and back up. If the failure still persists check the t-stat and heater resistance. See tips.