

From: Larry Visoski <[REDACTED]>
To: Je vacation <jeevacation@gmail.com>
Subject: Voltages
Date: Wed, 30 Mar 2016 03:11:10 +0000

Jeffrey
From Pete:

Hi Larry,
I got the video and do see the 'tick' in the voltage on the right side for the precooler.
I didn't get to see the pressure changes from the video.

The broken wire found during the inspection was on the left precooler input sensor.
correct me I am wrong, but I believe that you told me that this was taken at a time that the issue was not felt, and at .84M.

I don't have access to what we have changed and/or swapped from Westfield.
It has been documented on the aircraft database at TEB.

We have never been able to produce the issue, or obvious readings on the ground doing runs.
I don't expect to be able to reproduce them here either-

As a refresher-

The voltage reading is that going to the Torque motor-

The voltage then changes the amount of air supplied to the LP air valve- read on the PSI gauge (delayed reaction).

Higher voltage causes higher pressure, which closes the valve, limiting the air going across the precooler.
The system is 'electrically controlled, pneumatically operated', and no voltage= no pressure= valve open.
Fail Safe to open.

More voltage, more pressure, valve closes more, less air over the precooler and then overboard from the lower pylon.

From the video, it looks like the right side valve was being commanded to open and or close more every few seconds.

That would change the airflow output under the pylon.

The voltage is generated by a Controller- basically a low tech computer.

Each one- left and right-are independent of each other, there is no cross talk.

Each has numerous functions, and inputs, to come up with the required output to the torque motor.

The torque motor, and valve only do what has been commanded by the controller.

The controller is sent information from-

Bleed air switch position- on/off

Wing heat on/off

Sensors- precooler input and output (400 degree output)

Anticipator- to judge the rate of change and prevent over/undershooting.

There are also other conditions that are monitored, I believe-

Engine running, not shutdown by fire handle, bleed overheat, etc.

The controller output voltage is what is being read on the gauge.

Many components have been swapped, or replaced.

I don't think that we will be able to pinpoint any items while here.

My next recommendation is to swap the torque motors-

If one is sticking (they only move internally to vary the airflow supply to the valves through 1/4 inch lines, like the one we replaced),

it could cause the controller to over respond first one way, then the other.

There are no external indications of the unit position.

The ticking of the voltage seen in the video?

The units only control supply air to the precooler LP air valves.

They are about the size of the a baseball, easily held in your hand.

Both are located in the tail compartment.

Regards,

Pete

Sent from my iPhone