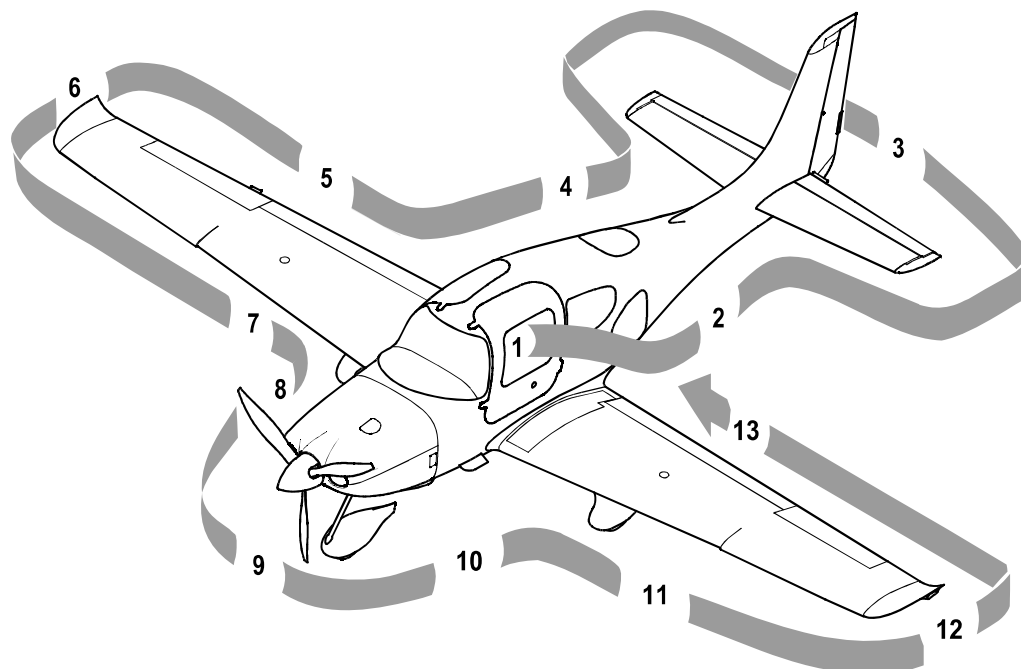


Normal Procedures

Preflight Inspection

Before carrying out preflight inspections, ensure that all required maintenance has been accomplished. Review your flight plan and compute weight and balance. Throughout the walk-around: check all hinges, hinge pins, and bolts for security; check skin for damage, condition, and evidence of delamination; check all control surfaces for proper movement and excessive free play; check area around liquid reservoirs and lines for evidence of leaking.

In cold weather, remove all frost, ice, or snow from fuselage, wing, stabilizers and control surfaces. Ensure that control surfaces are free of internal ice or debris. Check that wheel fairings are free of snow and ice accumulation. Check that Pitot probe warms within 30 seconds of setting Pitot Heat to ON.



SR22_FM04_1454

1. Cabin
 - a. Required Documents On Board
 - b. Avionics Power Switch OFF

(Continued on following page)

- c. Bat 2 Master SwitchON
- d. PFD Verify On
- e. Essential Bus Voltage..... 23-25 Volts
- f. Flap Position Light OUT
- g. Bat 1 Master SwitchON
- h. Avionics Cooling Fan..... Audible
- i. Oxygen Masks/Cannulas and HosesCheck Condition
- j. Oxygen SystemON
 - (1) Quantity..... Verify adequate supply for flight with reserve
 - (2) Flow Check flowmeter on all masks
 - (3) Oxygen System..... OFF
- k. Lights..... Check Operation
- l. Stall Warning Test

• Note •

Test stall warning system by applying suction to the stall warning system inlet and noting the warning horn sounds.

- m. Fuel QuantityCheck
 - n. Fuel SelectorSelect Fullest Tank
 - o. Flaps..... 100%, Check Light ON
 - p. Bat 1 and 2 Master Switches..... OFF
 - q. Circuit Breakers..... IN
 - r. Fire ExtinguisherCharged and Available
 - s. Emergency Egress HammerAvailable
 - t. CAPS Handle Pin Removed
2. Left Fuselage
- a. Door Lock Unlock
 - b. COM 1 Antenna (top)Condition and Attachment
 - c. Transponder Antenna (underside)... Condition and Attachment
 - d. Wing/Fuselage Fairing Check
 - e. COM 2 Antenna (underside) Condition and Attachment

(Continued on following page)

- f. Baggage Door Closed and Secure
 - g. Static Button Check for Blockage
 - h. Parachute Cover..... Sealed and Secure
3. Empennage
- a. Tiedown Rope..... Remove
 - b. Horizontal and Vertical Stabilizers Condition

• Note •

Verify tape covering the forward and aft inspection holes located on outboard ends of horizontal stabilizer is installed and securely attached.

- c. Elevator and Tab..... Condition and Movement
 - d. Rudder..... Freedom of Movement
 - e. Rudder Trim Tab..... Condition and Security
 - f. Attachment hinges, bolts and cotter pins..... Secure
4. Right Fuselage
- a. Static Button Check for Blockage
 - b. Wing/Fuselage Fairings..... Check
 - c. Door Lock Unlock
5. Right Wing Trailing Edge
- a. Flap and Rub Strips (if installed)..... Condition and Security
 - b. Aileron and Tab..... Condition and Movement
 - c. Aileron Gap Seal Security
 - d. Hinges, actuation arm, bolts, and cotter pins Secure
6. Right Wing Tip
- a. Tip..... Attachment
 - b. Strobe, Nav Light and Lens Condition and Security
 - c. Fuel Vent (underside) Unobstructed
7. Right Wing Forward and Main Gear
- a. Leading Edge and Stall Strips..... Condition
 - b. Fuel Cap Check Quantity and Secure
 - c. Fuel Drains (2 underside)..... Drain and Sample

(Continued on following page)

- d. Wheel Fairings Security, Accumulation of Debris
- e. Tire Condition, Inflation, and Wear

• Caution •

Serials 0442 thru 0656, 0658 thru 0689 before SB2X-32-21:
Clean and inspect temperature indicator installed to piston housing. If indicator center is black, the brake assembly has been overheated. The brake linings must be inspected and O-rings replaced.

- f. Wheel and Brakes Fluid Leaks, Evidence of Overheating, General Condition, and Security.
 - g. Chocks and Tiedown Ropes.....Remove
8. Nose, Right Side
- a. Vortex Generator Condition
 - b. Cowling.....Attachments Secure
 - c. Exhaust Pipe Condition, Security, and Clearance
 - d. Gascolator (underside).....Drain for 3 seconds, Sample
9. Nose gear, Propeller, and Spinner

• WARNING •

Keep clear of propeller rotation plane. Do not allow others to approach propeller.

- a. Tow Bar Remove and Stow
 - b. Strut Condition
 - c. Wheel Fairing Security, Accumulation of Debris
 - d. Wheel and Tire Condition, Inflation, and Wear
 - e. Propeller Check adequate Ground Clearance
 - f. Spinner Condition, Security, and Oil Leaks
 - g. Air Inlets Unobstructed
 - h. Alternator..... Condition
10. Nose, Left Side
- a. Landing Light..... Condition
 - b. Engine Oil..... Check 6-8 quarts, Leaks, Cap & Door Secure

(Continued on following page)

- c. Cowling Attachments Secure
 - d. External Power Door Secure
 - e. Vortex Generator Condition
 - f. Exhaust Pipe(s) Condition, Security, and Clearance
11. Left Main Gear and Forward Wing
- a. Wheel fairings Security, Accumulation of Debris
 - b. Tire Condition, Inflation, and Wear

• **Caution** •

I *Serials 0442 thru 0656, 0658 thru 0689 before SB2X-32-21:*
Clean and inspect temperature indicator installed to piston housing. If indicator center is black, the brake assembly has been overheated. The brake linings must be inspected and O-rings replaced.

- c. Wheel and Brakes Fluid Leaks, Evidence of Overheating, General Condition, and Security.
 - d. Chocks and Tiedown Ropes Remove
 - e. Fuel Drains (2 underside) Drain and Sample
 - f. Fuel Cap Check Quantity and Secure
 - g. Leading Edge and Stall Strips Condition
12. Left Wing Tip
- a. Fuel Vent (underside) Unobstructed
 - b. Pitot Mast (underside) Cover Removed, Tube Clear
 - c. Strobe, Nav Light and Lens Condition and Security
 - d. Tip Attachment
13. Left Wing Trailing Edge
- a. Flap And Rub Strips (If installed) Condition and Security
 - b. Aileron Freedom of movement
 - c. Aileron Gap Seal Security
 - d. Hinges, actuation arm, bolts, and cotter pins Secure

Serials 0954, 0963 & subs w/ MD302 Standby Attitude Module:

The MD302 Standby Attitude Module is mounted on the LH bolster panel and gives backup indication of flight attitude. Bank attitude is indicated by a pointer at the top of the indicator relative to the bank scale with index marks at 0° (triangle), 10°, 20°, 30°, 45° (small triangle), and 60° either side of the center mark. A fixed, user-configurable airplane symbol is superimposed over a movable background containing a white horizon bar that divides the attitude display into two sections: upper “blue sky” and lower “earth”. The pitch scale on the attitude display is graduated in 5° increments. Chevrons appear on the pitch scale at extreme pitch attitudes. The MD302 Standby Attitude Module is electrically driven. A red X indicates the attitude display is absent due to exceedance of internal rate sensors, loss of airspeed, or other reasons. Redundant circuits paralleled through diodes supply DC electrical power to the unit.

All Serials:

28 VDC for the standby attitude indicator is supplied through the 5-amp STDBY ATTD 1 circuit breaker on the ESS BUS 1 and the 5-amp STDBY ATTD 2 circuit breaker on the MAIN BUS 1.

Airspeed Indicator

Primary airspeed data is provided by the Air Data Computer and is shown as a vertical tape along the upper left side of the PFD. The airspeed scale is graduated with major tick marks at intervals of 10 knots and minor tick marks at intervals of 5 knots. Speed indication starts at 20 knots, with 56 knots of airspeed viewable at any time. The actual airspeed is displayed inside the black pointer. The pointer remains black until reaching the never-exceed speed (V_{NE}), at which point it turns red. Color coded bars are provided to indicate flap operating range, normal operating range, caution range, and never-exceed speed. Speeds above the never-exceed speed, appear in the high speed warning range, represented on the airspeed tape by red/white “barber pole” coloration. Calculated true airspeed is displayed in window at the bottom edge of the airspeed tape. Airspeed trend is also displayed as a bar along side of the airspeed tape.

Standby Airspeed Indicator

Serials w/o MD302 Standby Attitude Module:

The standby airspeed indicator is mounted on the LH bolster panel and displays indicated and true airspeeds on a dual-scale, internally lit

precision airspeed indicator installed in the pilot's instrument panel. The instrument senses difference in static and Pitot pressures and displays the result in knots on an airspeed scale. A single pointer sweeps an indicated airspeed scale calibrated from 40 to 220 knots. The 'zero' index is at the 12 o'clock position. A sub-scale aligns true airspeed with the corresponding indicated airspeed when the altitude/temperature correction is set in the correction window. A knob in the lower left corner of the instrument is used to rotate the pressure altitude scale in the correction window to align the current pressure altitude with the outside air temperature.

Serials 0954, 0963 & subs w/ MD302 Standby Attitude Module:

The MD302 Standby Attitude Module is mounted on the LH bolster panel and displays the current Indicated Airspeed (IAS). The instrument senses difference in static and pitot pressures and displays the result in knots in the Airspeed Window. The Airspeed Window/Pointer sweeps the indicated airspeed tape and denotes the current airspeed. Color coded bars are provided to indicate flap operating range, normal operating range, caution range, and never-exceed speed. The airspeed indication markings on the MD302 do not automatically compensate for changes in V_{NE} or V_{NO} at altitudes above 17,500 feet.

28 VDC for the MD302 Standby Attitude Module is supplied through the 5-amp STDBY ATTD 1 circuit breaker on the ESS BUS 1 and the 5-amp STDBY ATTD 2 circuit breaker on the MAIN BUS 1.

Altimeter

Primary altitude data is provided by the Air Data Computer and is shown as a vertical tape along the upper right side of the PFD. The altimeter scale is graduated with major tick marks at intervals of 100 feet and minor tick marks at intervals of 20 feet. Six hundred (600) feet of barometric altitude is viewable at any time.

The local barometric pressure is set using the barometric adjustment knob on the PFD. The selectable altitude reference bug is displayed on the altimeter tape and is set using the altitude selection knob on the Flight Management System Keyboard. Barometric minimum descent altitude (MDA, or Decision Height, DH), can be preset. Altimeter trend is also displayed as a bar along side of the altimeter tape.

The PFD Altitude is corrected for static source position error (normal static source / 0% flaps), the altitude calibration errors for the PFD are zero with flaps up and normal source (typical cruise flight). Calibration

corrections are only necessary when flaps are extended or the alternate static source is selected.

Standby Altimeter

Serials w/o MD302 Standby Attitude Module:

Airplane altitude is depicted on a conventional, three-pointer, internally lit barometric altimeter installed on the LH bolster panel. The instrument senses the local barometric pressure adjusted for altimeter setting and displays the result on the instrument in feet. The altimeter is calibrated for operation between -1000 and 20,000 feet altitude. The scale is marked from 0 to 10 in increments of 2. The long pointer indicates hundreds of feet and sweeps the scale every 1000 feet (each increment equals 20 feet). The short, wide pointer indicates thousands of feet and sweeps the scale every 10,000 feet (each increment equals 200 feet). The short narrow pointer indicates tens of thousands feet and sweeps from 0 (zero) to 2 (20,000 feet with each increment equal to 2000 feet). Barometric windows on the instrument's face allow barometric calibrations in either inches of mercury (in.Hg) or millibars (mb). The barometric altimeter settings are input through the barometric adjustment knob at the lower left of the instrument.

Serials 0954, 0963 & subs w/ MD302 Standby Attitude Module:

The MD302 Standby Attitude Module is mounted on the LH bolster panel and displays the current barometric corrected altitude. The instrument senses the local barometric pressure adjusted for altimeter setting and displays the result in the Altitude Window. The altitude units are user-configurable in feet or meters. The Altitude Window/Pointer sweeps the altitude tape and denotes the current BARO-corrected altitude. The BARO Window shows the currently selected barometric altitude. The BARO units are user-configurable in IN HG or MBAR. The barometric setting on the MD302 will automatically synchronize to the setting on the Garmin avionics, and can be manually adjusted by turning the Control Knob while in Flight Mode.

28 VDC for the MD302 Standby Attitude Module is supplied through the 5-amp STDBY ATTD 1 circuit breaker on the ESS BUS 1 and the 5-amp STDBY ATTD 2 circuit breaker on the MAIN BUS 1.

All Serials:

The standby altimeter does not have automatic position error corrections, calibration corrections are necessary. Because the PFD has automatic corrections and the standby does not, differences between the two indications are typical (difference is the greatest at

Stall Warning System

The airplane is equipped with an electro-pneumatic stall warning system to provide audible warning of an approach to aerodynamic stall. The system consists of an inlet in the leading edge of the right wing, a pressure switch and associated plumbing, and the avionics system aural warning system.

As the airplane approaches a stall, the low pressure on the upper surface of the wings moves forward around the leading edge of the wings. As the low pressure area passes over the stall warning inlet, a slight negative pressure is sensed by the pressure switch. The pressure switch then provides a signal to cause the warning horn to sound, the red STALL warning CAS annunciation to illuminate, and, if engaged, the autopilot system to disconnect.

The warning sounds at approximately 5 knots above stall with full flaps and power off in wings level flight and at slightly greater margins in turning and accelerated flight.

The system operates on 28 VDC supplied through the 2-amp STALL WARNING circuit breaker on the ESS BUS 2.

Pitot-Static System

The Pitot-Static system consists of a single heated Pitot tube mounted on the left wing and dual static ports mounted in the fuselage. The Pitot heat is pilot controlled through a panel-mounted switch. An internally mounted alternate static pressure source provides backup static pressure should that the primary static source becomes blocked. Water traps with drains, under the floor in the cabin, are installed at each Pitot and static line low point to collect any moisture that enters the system. The traps should be drained at the annual inspection and when water in the system is known or suspected.

Pitot Heat Switch

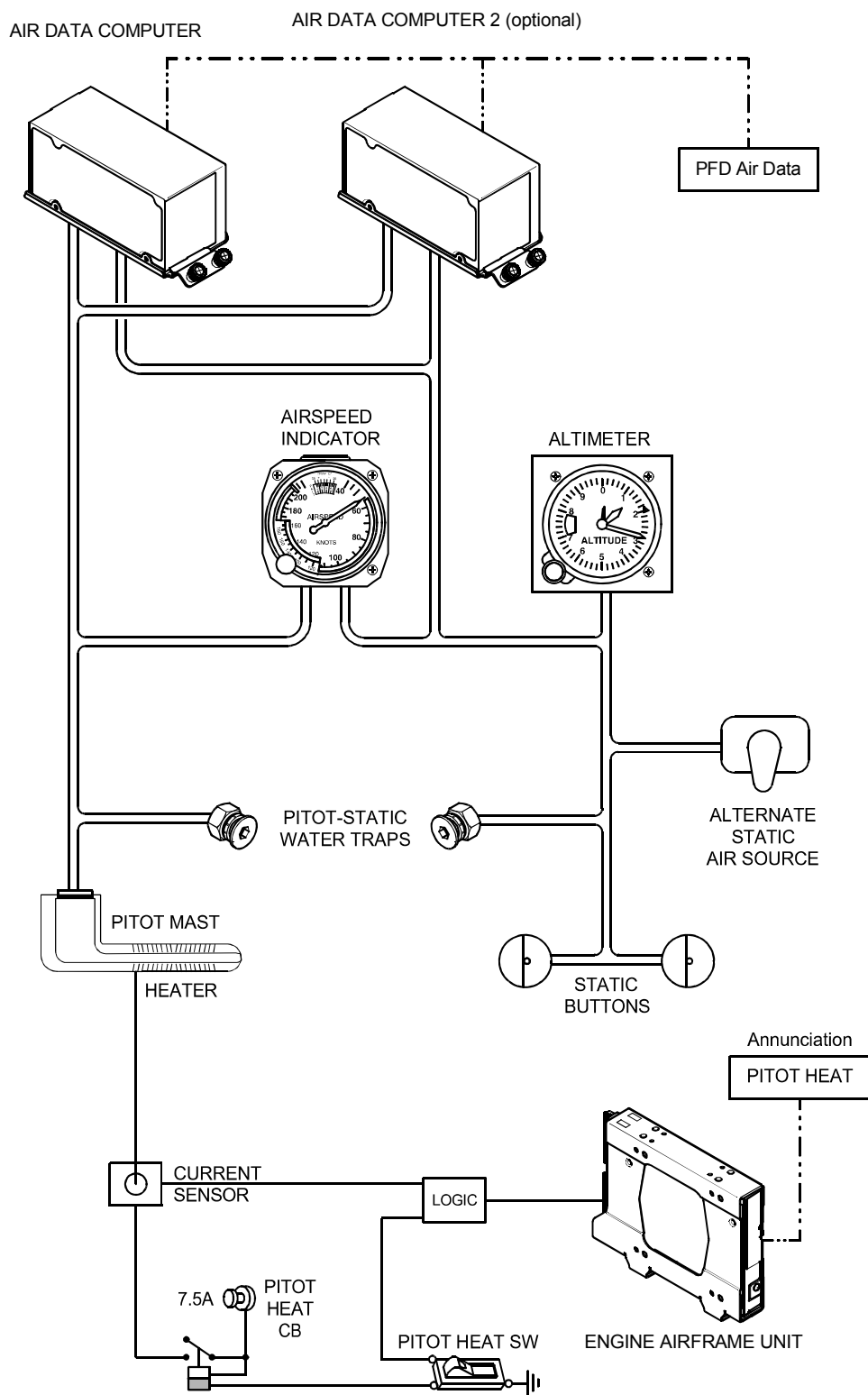
The heated Pitot system consists of a heating element in the Pitot tube, a rocker switch labeled PITOT HEAT, and associated wiring. The switch and circuit breaker are located on the left side of the switch and control panel. When the Pitot heat switch is turned on, the element in the Pitot tube is heated electrically to maintain proper operation in possible icing conditions. The Pitot heat system operates on 28 VDC supplied through the 7.5-amp PITOT HEAT circuit breaker on the NON-ESSENTIAL BUS.

Pitot Heat Annunciation

Illumination of the PITOT HEAT FAIL Caution indicates that the Pitot Heat switch is ON and the Pitot heater is not receiving electrical current. Illumination of PITOT HEAT REQD Caution indicates the system detects OAT is less than 41°F (5°C) and Pitot Heat Switch is OFF. A current sensor on the Pitot heater power supply wire provides current sensing.

Alternate Static Source

An alternate static pressure source valve is installed on the switch and control panel to the right of the pilot's leg. This valve supplies static pressure from inside the cabin instead of the external static port. If erroneous instrument readings are suspected due to water or ice in the pressure line going to the standard external static pressure source, the alternate static source valve should be turned on. Pressures within the cabin will vary with open heater/vents. Whenever the alternate static pressure source is selected, refer to [Section 5: Performance Data](#) for airspeed calibration and altitude corrections to be applied.



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Figure 7-16
Pitot-Static System - Serials w/o MD302 (1 of 2)

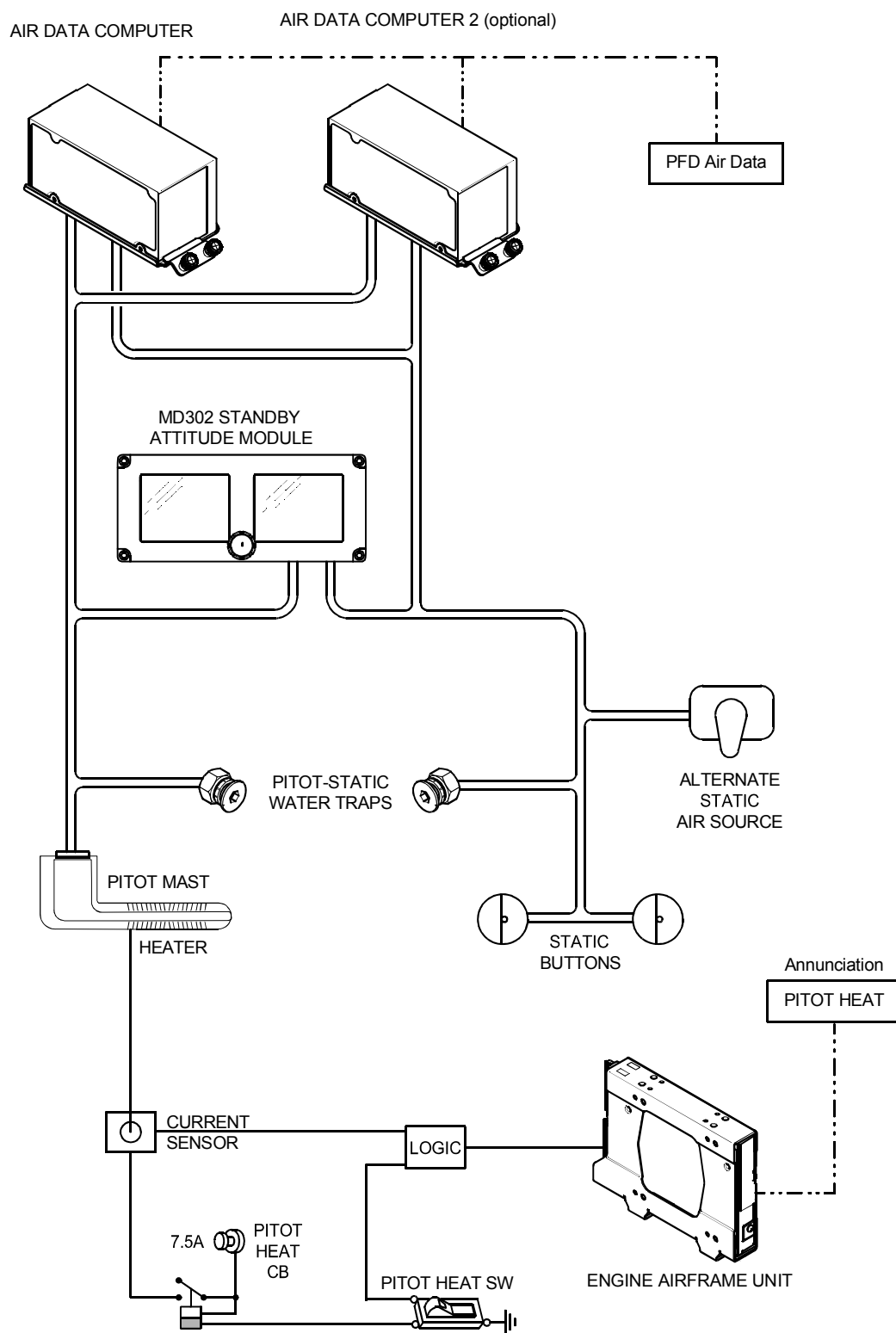


Figure 7-16

Pitot-Static System - Serials 0954, 0963 & subs w/ MD302 (2 of 2)

P/N 13772-005

Revision 1

7-79