

5.3 Initial Operation Check

After completing the mechanical and electrical installations, installer must verify EFIS-D10A operation.

To verify operation of the EFIS-D10A:

1. Turn ON unit's power source. Unit should start up.
2. If unit does not start up, press and hold Button #1 (first button on left).
3. If unit still does not start up, thoroughly check electrical connections, and retry.
4. Make sure display screen is bright and readable.
5. Make sure following indicators appear without a Red X covering them:
 - Airspeed,
 - Altitude,
 - Attitude.
6. If some indicators are not functional, check electrical and pneumatic connections, and retry.



Altimeter may take up to 30 seconds to appear.

7. Press and hold button Button #1 until unit shuts down.

6 Troubleshooting

The EFIS-D10A includes limited self-diagnostic capability. If a fault with the EFIS-D10A is detected, a message will be displayed on the screen. The following table provides a recommendation for each specific warning.

Table 4: EFIS-D10A Self-Diagnostic Messages

MESSAGE	POSSIBLE CAUSES	RESULT/ACTION
INTERNAL ERROR SERVICE UNIT	This error signifies that the EFIS-D10A has detected internal problems in its firmware or calibration tables.	Contact Dynon Avionics Technical Support. It may be possible to recover unit in the field. However, it is likely that the unit will have to be returned for service.
TEMPERATURE UNSTABLE	<p>When the unit is turned on after having been off for a long period of time, its internal temperature will rise above ambient temperature at a rapid rate.</p> <p>This rapid change in temperature can sometimes reduce the reliability of the sensors' outputs. Therefore, this alert is displayed, and the horizon indication is changed from blue/brown to grey/black.</p>	The screen remains normal color, but the message is displayed until the temperature within the unit has stabilized. This temperature instability should last no longer than 2 minutes. For this reason, it is a good idea to turn the unit on before you run through any of the preflight procedures, so that it will be ready by the time you are ready to fly.
TEMPERATURE OUT OF SPEC	The temperature inside the unit is outside of -22°F to 122°F (-30°C to 50°C).	The screen remains normal color, but the message is displayed until the temperature within the unit is within the specified range. This is most common in unventilated panels during hot periods. If you continue to see this alert, provide more airflow to the space around the EFIS-D10A.
INTERNAL BATTERY LOW	You will see this alert only when operating the unit solely off the internal backup battery. When its voltage has dropped below a certain threshold, you will see this alert. Additionally, the voltmeter will be displayed onscreen.	The alert will disappear when you press any button on the EFIS-D10A; however, it is advised that you do not ignore this alert, as it appears when the unit's internal battery has very little life left. This alert will also go away upon the application of external power. At that point, the battery will begin charging off the external power.

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7 Maintenance

This section provides information about maintaining and servicing the EFIS-D10A.



No special tools or facility are required to maintain or service the EFIS-D10A.

Table 5: Periodic Maintenance

ITEM	DESCRIPTION / PROCEDURE	INTERVAL
Component Troubleshooting, Removal, and Re-installation	See Section 6: Troubleshooting and Section 7.3: Unit Removal and Replacement .	On condition
Cleaning the Display	The front bezel and display can be cleaned with a soft cotton cloth dampened with clean water. DO NOT use any chemical-based cleaning agents. Take care to not scratch surface of display.	On condition
Display Backlight	The backlight lamp may dim over time, and the display may not perform as well in direct sunlight conditions. User must determine by observation when the display brightness is not suitable for intended use. Contact Dynon technical support.	On condition or every 24 calendar months.
Backup Battery	The battery must be tested every 12 calendar months; an alert will display if not done within that time period. See Section 7.1 for backup battery test. Regular planned replacement is not necessary.	On Condition, or every 12 calendar months.
Altimeter	Test in accordance with 14 CFR, Part 43, Appendix E and document in accordance with §43.9.	For IFR Operations, every 24 calendar months in accordance with §91.411
Visual Inspection	<p>The EFIS-D10A, wiring harness, and pneumatic connections should be inspected to ensure continued integrity of the installation (see below).</p> <ul style="list-style-type: none"> • Inspect for security of unit attachment. • Inspect for signs of corrosion. • Inspect all buttons for proper operation. • Inspect condition of wiring, shield terminations, routing and attachment/clamping, along with any airplane penetration points. • Inspect condition of pneumatic tubing, connectors/splices, routing and attachment, along with any airplane penetration points. 	Every 12 calendar months.

7.1 Backup Battery Test

The EFIS-D10A backup battery must be tested once every 12 months to ensure it is operational and meets the nominal 45-minute expected backup operation period. The backup battery must be fully charged prior to beginning the test.

To ensure the EFIS-D10A backup battery is fully charged:

1. Allow unit to draw power from airplane. Backup battery must be charged to at least 16.0 volts.
2. Enter menu system by pressing any button (except far left and right buttons) on an EFIS page, and then press EFIS > MORE > INFO > LEFT > VMETER.
3. Make sure backup battery is charged to at least 16.0 volts. Backup battery may charge up to 16.8 volts, but it is only necessary to charge it to 16.0 volts for the test.

To test the EFIS-D10A backup battery:

1. Remove all sources of external power from unit. When power is lost, a red bar will appear with a 30-second countdown timer.
2. Press STAY ON to allow unit to continue operating off its backup battery.
3. Enter menu system by pressing any button (except far left and right buttons) on EFIS page, and then press MORE > DIM > BRTTR and fully increase brightness level.
4. Let the unit remain on.
5. After 45 minutes, if unit has not turned off and does not display the INTERNAL BATTERY LOW warning, the backup battery passes test.
6. If backup battery did not pass test, then it must be replaced (see Section [7.2 Backup Battery Replacement](#) for instructions).
7. If backup battery passed test, restore power to unit and charge backup battery until voltage is above 15.0 volts before returning to service.

7.2 Backup Battery Replacement

This section provides replacement procedures for the EFIS-D10A backup battery.



Replacement EFIS-D10A backup batteries are available from Dynon Avionics or authorized dealers and can be replaced in the field.

Location:

The backup battery is internal to the EFIS-D10A.

To replace the EFIS-D10A backup battery:

1. If needed, remove unit from instrument panel (see Section 7.3 Unit Removal and Replacement for instructions). Not removing Pitot and Static tubes allows unit to return to service without a leak check.
2. Open backup battery door by removing hex screws (see Figure 6). Do not remove other screws.
3. Unplug electrical connection between backup battery and unit and gently pull backup battery out of unit.
4. Insert new backup battery so side of battery where wires attach point upward, towards internal protective foam.
5. Plug backup battery electrical connector into matching unit electrical connector.
6. Verify new backup battery is operational by pressing Button #1 on EFIS-D10A page. Unit should boot up and present the display. Press and hold Button #1 until unit powers off.
7. Position electrical connectors so they centered on end of backup battery. Make sure electrical connectors will not interfere with bottom hex screw (see Figure 6).
8. Position backup battery door over opening on unit.
9. Insert bottom hex screw (see Figure 6) and tighten. DO NOT over-tighten.
10. Insert upper hex screws (see Figure 6) and tighten while gently pressing on door. DO NOT over-tighten. The upper hex screws thread into unit casing, where it is easy to over-tighten and strip hole threads.

7.3 Unit Removal and Replacement

This section provides removal and installation procedures for the EFIS-D10A.

Location:

The EFIS-D10A is typically located on the left side of the instrument panel.

To remove the EFIS-D10A:

1. Turn off aircraft power.
2. Remove lock nuts and washers from mounting studs that secure unit to instrument panel (see Figure 6). Keep hardware for re-installation.
3. Carefully slide unit out.
4. Disconnect and cap 1/8" NPT Pitot and Static fittings on unit (see Figure 6). AoA fitting should already be capped.
5. Cap Pitot and Static tubes.
6. Remove (2) retention screws on D25 connector and disconnect wire harness from unit (see Figure 6).

To install the EFIS-D10A:

1. Connect wire harness to D25 connector on unit (see [Figure 6](#)) and secure with (2) retention screws.
2. Attach Pitot and Static tubes to 1/8" NPT fittings on unit (see [Figure 6](#)).
3. Line-up mounting studs to holes and insert unit into instrument panel.
4. Secure unit to instrument panel with original lock nuts and washers (see [Figure 6](#)).



If original mounting hardware is lost, use AN365-632 (lock nut) and AN960-6 (washer) for replacement.

5. Restore power to main bus.
6. Check system for leaks (see airplane manufacturer's maintenance manual for instructions).
7. Ensure airspeed, altitude, and attitude indicators are working (see [Section 5.3 Initial Operation Check](#) for instructions).

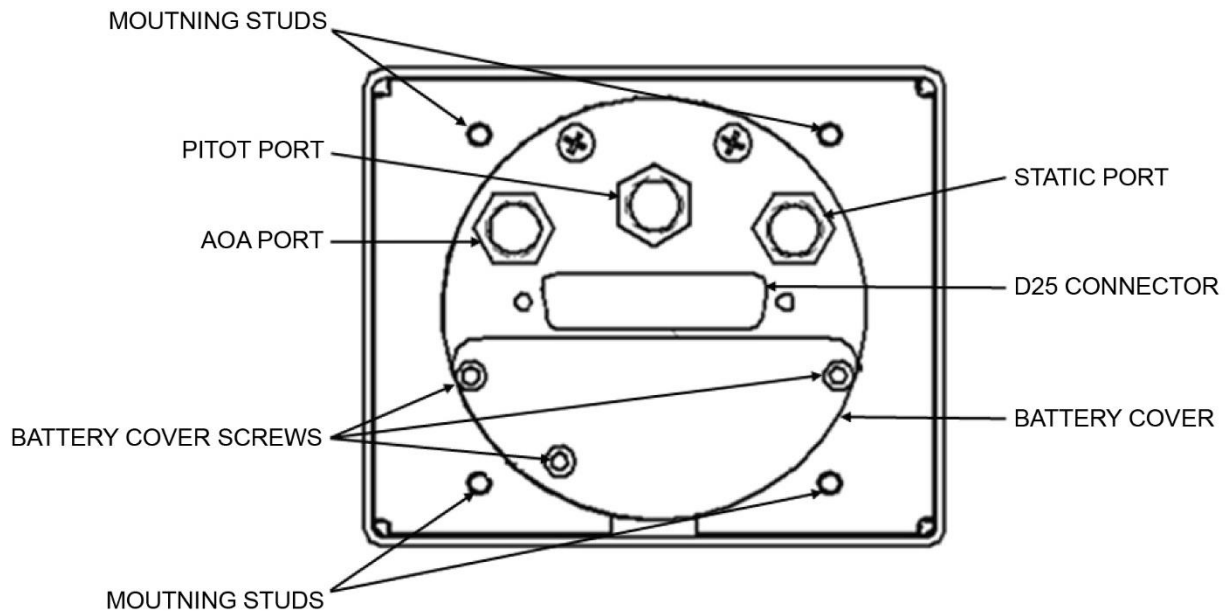


Figure 6: EFIS-D10A, Rear View

7.4 Altimeter Function Test

Prior to calibration, the EFIS-D10A's altimeter function must be tested in accordance with 14 CFR, Part 43, Appendix E by a certified technician or facility.



When performing the Altimeter Function Test, turn OFF the EFIS-D10A before changing the test equipment's static pressure/altitude setting. Not doing so can corrupt the EFIS-D10A's internal calibrations.

To test the EFIS-D10A's altimeter:

1. Turn EFIS-D10A OFF.
2. Set test equipment's static pressure/altitude.
3. Turn EFIS-D10A ON and note indicated altitude.
4. Repeat Steps 1-3 as required to complete testing in accordance with 14 CFR, Part 43, Appendix E.

7.5 Altimeter Adjustment

If the altimeter function is determined to be out of specification, the certified technician can adjust it up to 500 feet up or down in the Altimeter Adjustment menu.

To adjust the EFIS-D10A's altimeter after testing:

1. Enter menu system by pressing any button (except far left and right buttons) on EFIS page, and then press MORE > SETUP > MORE > ALTADJ.
2. Press INC - or DEC + until altimeter meets allowed tolerances between 0 and 30,000 feet.
3. When finished, press BACK > EXIT.



If adjustment does not bring the altimeter to within specification, contact Dynon Avionics to return unit for service.

7.6 Firmware Updates

Version 5.4.1 is the latest and final firmware version for the EFIS-D10A. If the unit is running an older version, contact Dynon Avionics Technical Support for help upgrading.

To check EFIS-D10A firmware version:

- Press any button (except far left and right buttons) on EFIS page, and then press MORE > SETUP > MORE > VRSION.

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