

MANDATORY SERVICE BULLETIN**SUBJECT:** Alternator Sense Wire Installation**REVISION:** 00**DATE:** 3/18/2015**EFFECTIVITY:** KODIAK[®] 100 Series Airplane Serial Numbers 100-0001 thru 100-0147**SUMMARY**

QUEST[®] is mandating the installation of a 22 AWG wire between the ALT SENSE circuit breaker and the 50 amp fuse located in the control pedestal. This modification will allow the alternator control unit to more accurately monitor and control the current supplied to the Essential Bus by the alternator.

Document Number	Document Title
FSI-111	Alternator Sense Wire Installation

COMPLIANCE

This Service Bulletin must be complied with before the next 100 hour inspection following receipt.

FAA APPROVAL STATUS

The resultant alteration (or repair) to the affected airplane described above has been shown to comply with the applicable FAA regulations and is FAA approved.

SPECIAL INSTRUCTIONS


N/A

CREDIT AND WARRANTY INFORMATION

Quest Aircraft Company will supply one service kit FSI-111 per airplane in the serial number range stated above, at no cost to the owner, and reimburse costs for up to 1.5 hours of labor associated with implementing FSI-111. Refer to our web site at www.questaircraft.com for warranty claim reimbursement instructions.

Quest Customer Service**Phone:** (208) 263-1111 **Toll Free:** 1 (866) 263-1112**Email:** customerservice@questaircraft.com

Quest Aircraft Company, L.L.C., 1200 Turbine Drive, Sandpoint, ID 83864

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FIELD SERVICE INSTRUCTION

TITLE:

Alternator Sense Wire Installation

SERIAL RANGE: 100-0001 thru 100-0147

JASC CODE: 2421

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SUBJECT

This Field Service Instruction provides guidance for installing a 22AWG wire between the ALT SENSE circuit breaker and the 50 amp fuse block located within the control pedestal.

AFFECTED MANUALS AND PUBLICATIONS

None

INDUSTRY REFERENCES

None

WEIGHT AND BALANCE

Negligible

MANPOWER

The estimated man-hours and minimum number of persons required to perform this Field Service Instruction are listed below. The "Minimum Persons" refers only to maintenance personnel or installers, and unless otherwise specified within this instruction does not include additional personnel that may be needed solely to comply with safety requirements (for example, safety observers that are not performing tasks within this instruction). It is the responsibility of maintenance personnel to comply with safety requirements, including having a safety observer available as needed.

Estimated Man-hours: 1.5 hours

Minimum Persons: 1 person

If more than the minimum personnel perform this instruction, the actual man-hours required may be reduced due to increased efficiencies. As appropriate, Quest encourages the use of additional personnel; man-hour estimates are based on the minimum personnel required.

RECORD OF COMPLETION

- Update the appropriate airplane maintenance records
- Ensure the *KODIAK® 100 Pilot's Operating Handbook / Aircraft Flight Manual* is up-to-date with the current revision (Rev 16 or later)
- Ensure the *KODIAK® 100 Airplane Maintenance Manual* is up-to-date with the current revision (Rev 17 or later)

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REVISION RECORD

REV	PAGE	CHANGE DESCRIPTION
00	All	Initial Release

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1. Special Safety Instructions

1.1 Warnings

Failure to comply with “Warnings” contained in this instruction may result in financial loss, significant delay in the completion time, and/or serious injury to personnel.

1.2 Cautions

Failure to comply with “Cautions” contained in this instruction may result in the destruction of components, unnecessary complications, the need to reverse completed work, and/or delays in the completion time.

1.3 Notes

“Notes” are provided when additional information may lead to an increase in efficiency.

2. Parts, Tools, and Equipment

The following tables describe the parts, tools, and equipment necessary to successfully complete this instruction. Where applicable, reference to drawings provided with this instruction is provided.

Table 2-1: Parts and Tools Included in the Service Kit

Item #	Part No.	Qty	Description	Drawing No.	Dwg Item #
2-1-1	31895	1	Ring Terminal	N/A	N/A
2-1-2	31890	1	Ring Terminal	N/A	N/A
2-1-3	M22759/16-22-9	25"	22 AWG Wire, White	N/A	N/A

Table 2-2: Consumables Included in the Service Kit

Item #	Part No.	Qty	Description	Drawing No.	Dwg Item #
2-2-1	-	-	-	N/A	N/A

Table 2-3: Serial-Number-Specific Parts Included in the Service Kit

Item #	Part No.	Qty	Description	Drawing No.	Dwg Item #
2-3-1	-	-	-	N/A	N/A

Table 2-4: Parts and Tools NOT Included in the Service Kit

Item #	Part No.	Qty	Description	Drawing No.	Dwg Item #
2-4-1	MS23053/5-103 ¹	3"	Heat Shrink Insulation, White	N/A	N/A
2-4-2	59824-1	1	Crimp Tool	N/A	N/A

1: Suitable substitutes acceptable.



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3. General

The purpose of these instructions is to install a wire between the ALT SENSE circuit breaker and the 50 AMP fuse block. All work is completed in the control pedestal.



Figure 3-1: Alternator Sense Wire Installation – Control Pedestal



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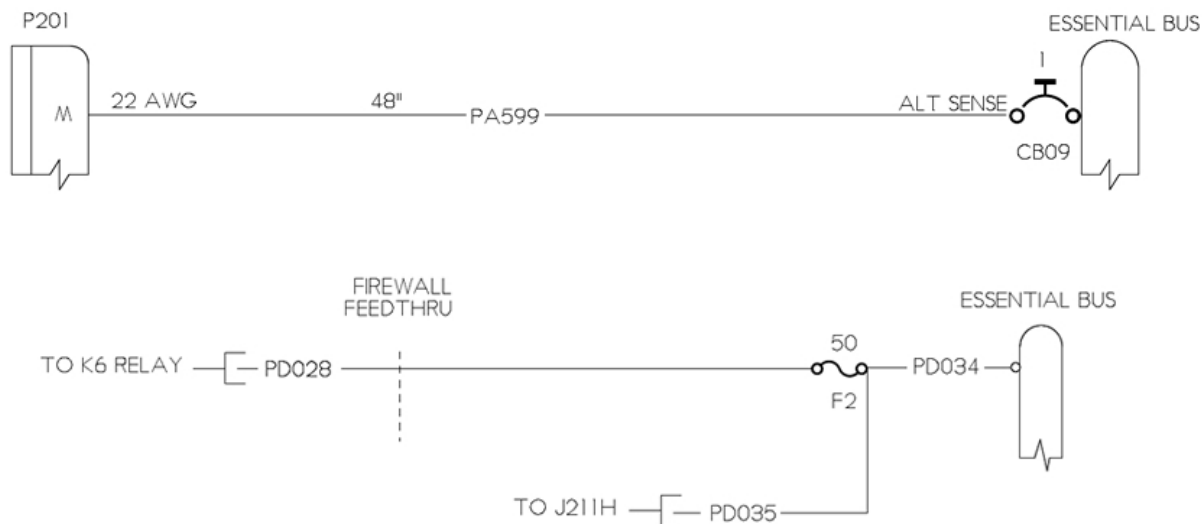
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BEFORE



AFTER

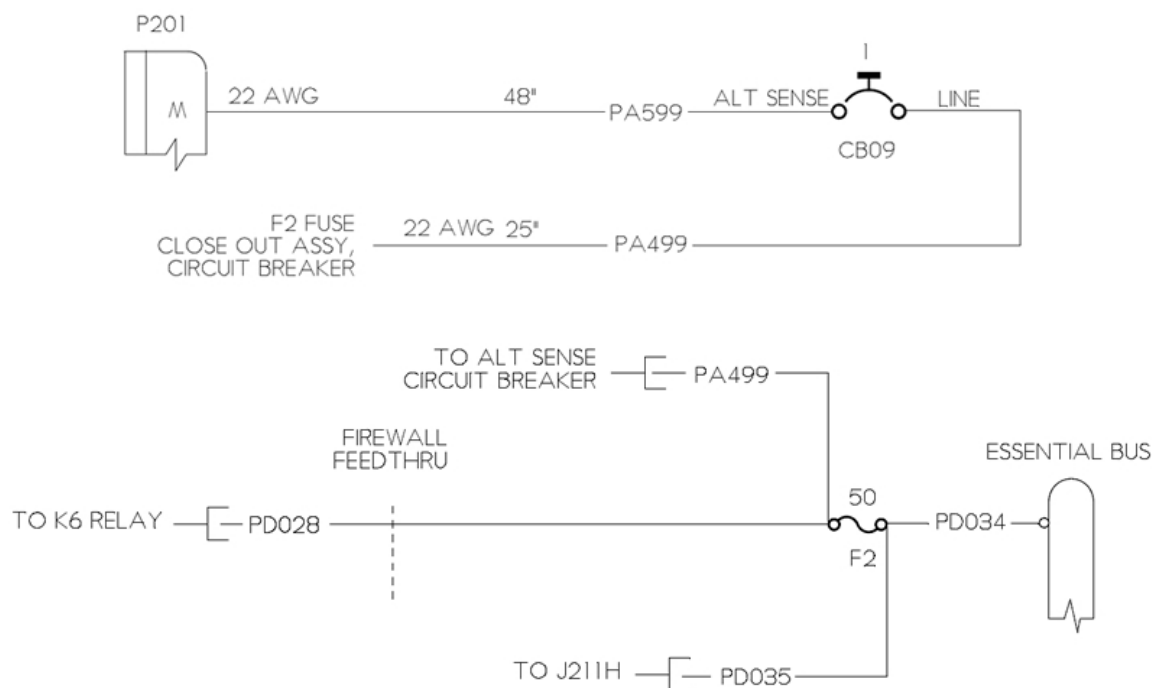


Figure 3-2: Alternator Sense Wiring – Before and After

4. Preparation

Remove electrical power from the airplane; disconnect both batteries.

5. Instructions

1. Remove the left side panel and right side panel from the pedestal.
2. Remove the twelve (12) screws securing the circuit breaker panel to the control pedestal. See **Figure 5-1**.

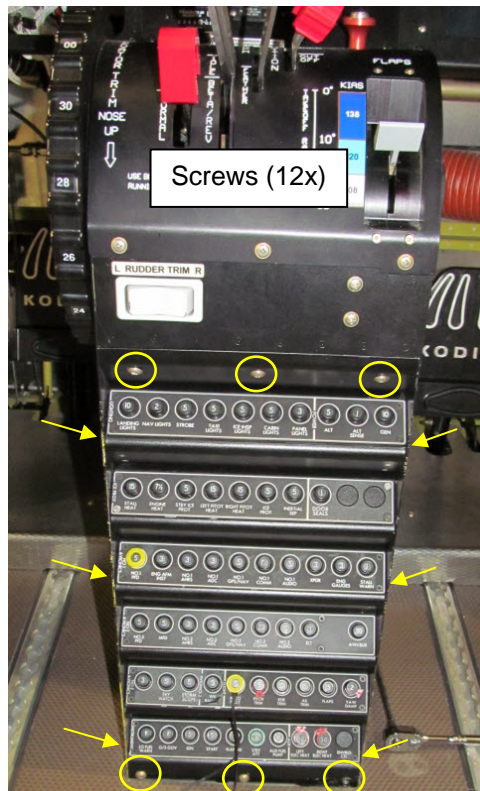


Figure 5-1: Circuit Breaker Panel Screws

3. Pull the circuit breaker panel aft to access the rear of the circuit breakers and associated wiring.
4. On Garmin autopilot equipped airplanes, the pitch trim servo will have to be moved in accordance with the *KODIAK® 100 Airplane Maintenance Manual*, Chapter 27 to permit access to the fuse cover. See **Figure 5-2**.

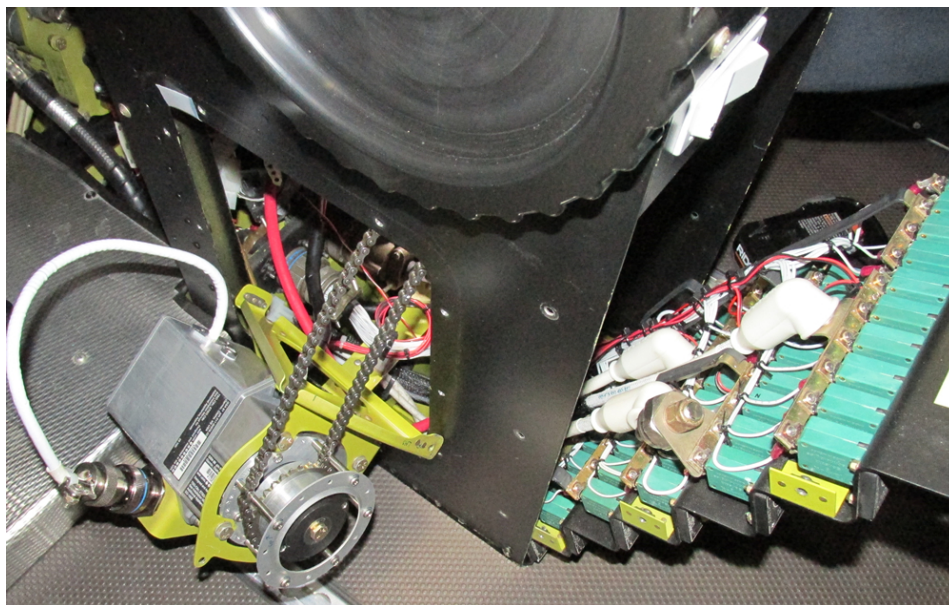


Figure 5-2: Garmin Autopilot Equipped Airplane, Pitch Trim Servo

5. Remove the fuse cover from the forward side of the circuit breaker closeout panel.
6. Remove the jumper bar connecting the essential bus and the three position bus bar connecting the PANEL LIGHTS, ALT, and ALT SENSE circuit breakers. See **Figure 5-3**.

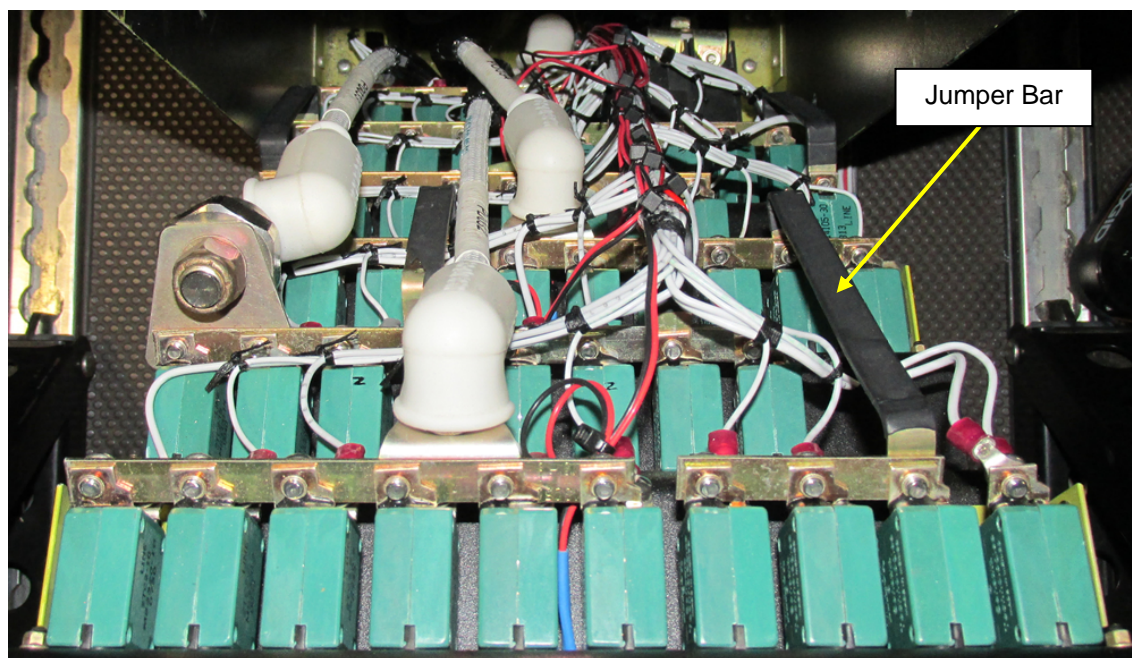


Figure 5-3: Jumper Bar in Original Position

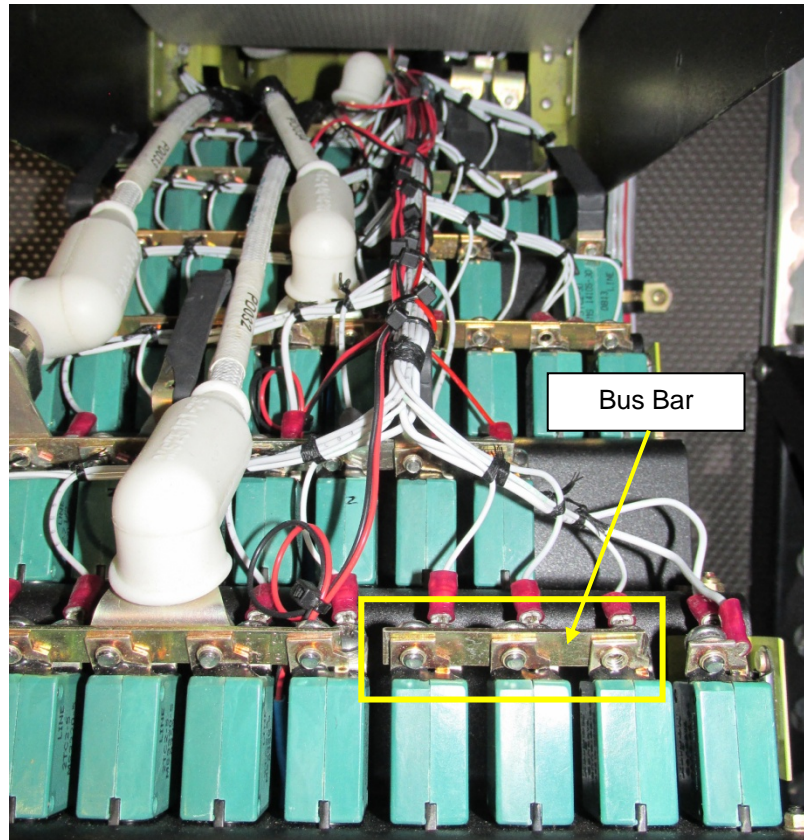


Figure 5-4: Original Bus Bar

7. Remove the three (3) position bus bar connecting the PANEL LIGHTS, ALT, and ALT SENSE circuit breakers.
8. Cut the three (3) position bus bar to remove one position in accordance with specification MS25226-10-2 *Link, Terminal, Connecting*. See **Figure 5-5**.

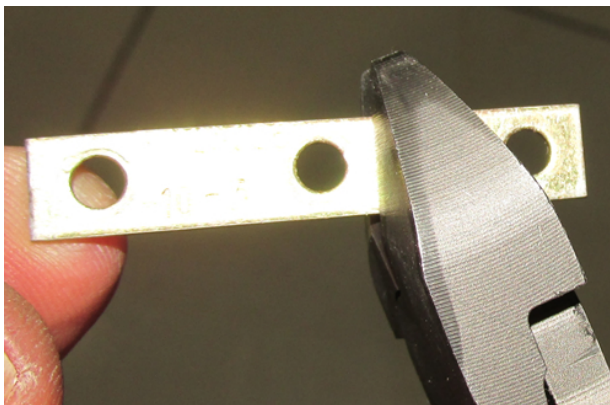


Figure 5-5: Bus Bar Modification

9. Install the cut down bus bar between the PANEL LIGHTS and ALT circuit breaker.
10. Install the jumper bar from the ALT circuit breaker to the XPDR circuit breaker.
See **Figure 5-6**.

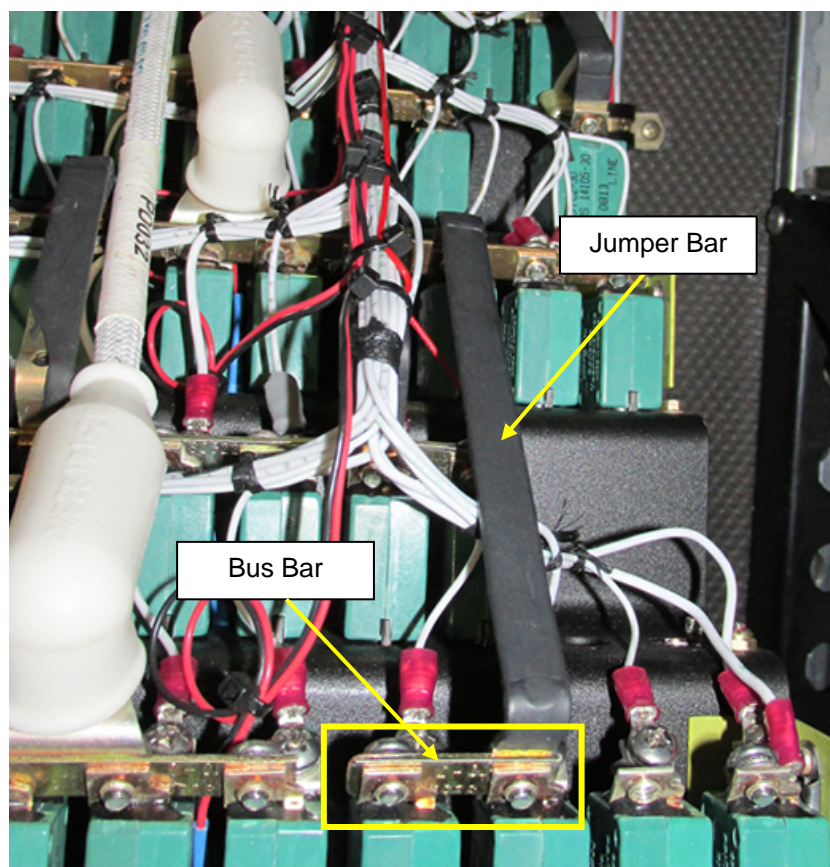


Figure 5-6: Jumper Bar Installed in New Position

11. Label the 22 AWG white wire (P/N: M22759/16-22-9):
 - a. Cut three (3) one (1) inch lengths of white heat shrink insulation.
 - b. Write "PA499" on each piece of heat shrink.
 - c. Install one label in the middle of the white wire.
 - d. Install the other two (2) labels close to the ends of the wire, leaving room to install ring terminals.
12. Crimp a ring terminal (P/N 31890) on one end of the PA499 wire using crimp tool (P/N 59824-1) in accordance with manufacturer's instructions.

13. Connect PA499 to the upper terminal of the ALT SENSE circuit breaker with the ring terminal. See **Figure 5-7**.

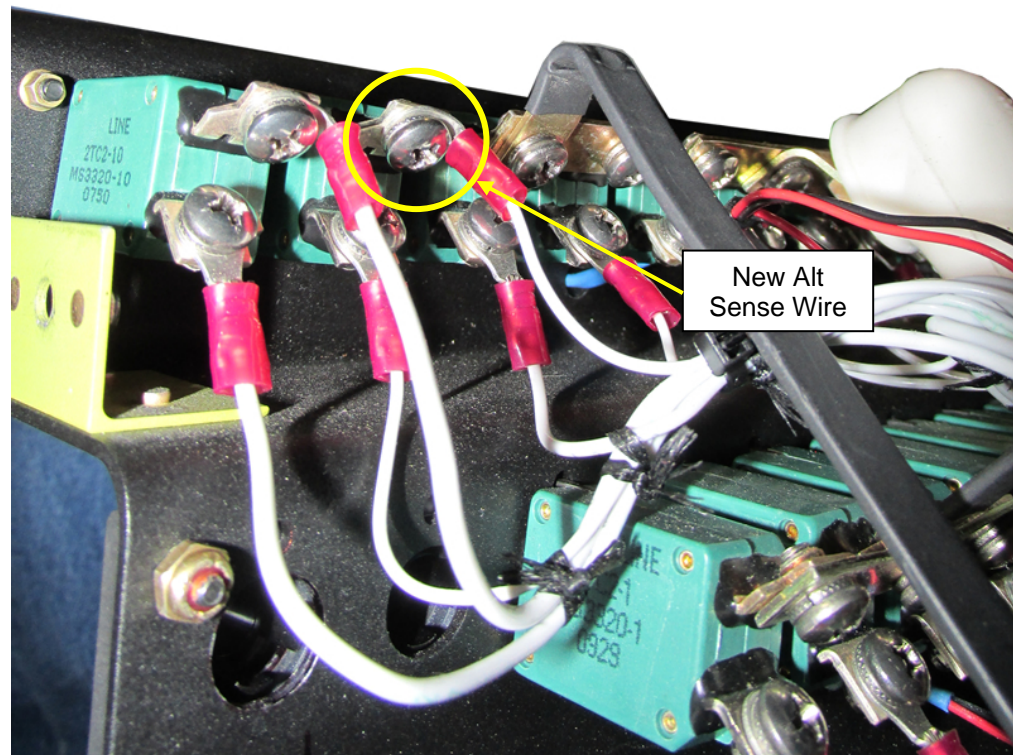


Figure 5-7: New Alt Sense Wire Circuit Breaker Connection

14. Route the other end of the wire along the existing wiring bundle and down under the circuit breaker closeout panel and up the forward side of the closeout panel.
15. Secure the wire to the existing wire bundle on the aft side of the closeout panel.

16. Remove the protective boot over the PD028 cable connection to the 50 AMP fuse on the fuse block. See **Figure 5-8**.

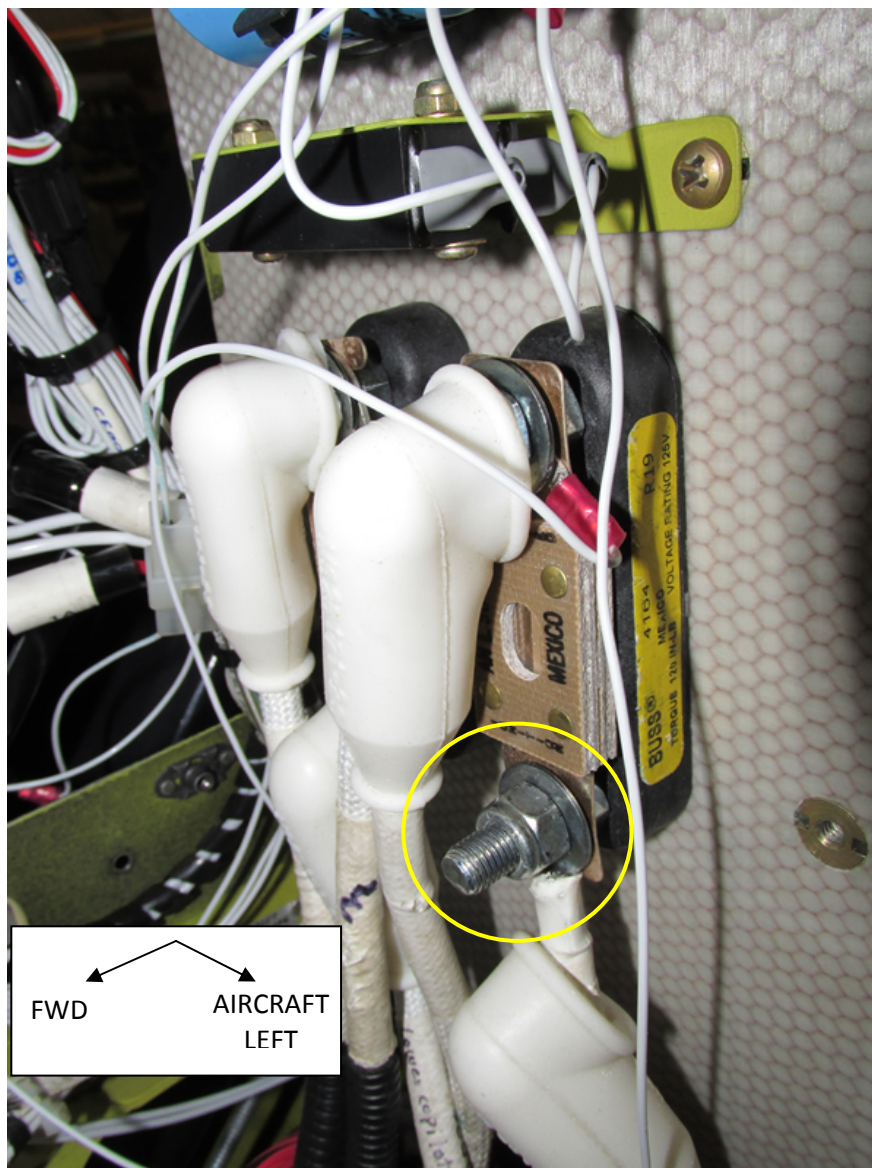


Figure 5-8: Exposed Fuse Block Terminal

17. Remove the nut securing the PD028 cable to the fuse block.
18. Feed the PA499 wire through the protective boot and next to the PD028 cable.
19. Crimp a ring terminal (P/N 31895) on the end of the PA499 wire using crimp tool (P/N 59824-1) in accordance with manufacturer's instructions.

20. Secure the ring terminal and the PD028 cable onto the 50 AMP fuse block. See **Figure 5-9**.

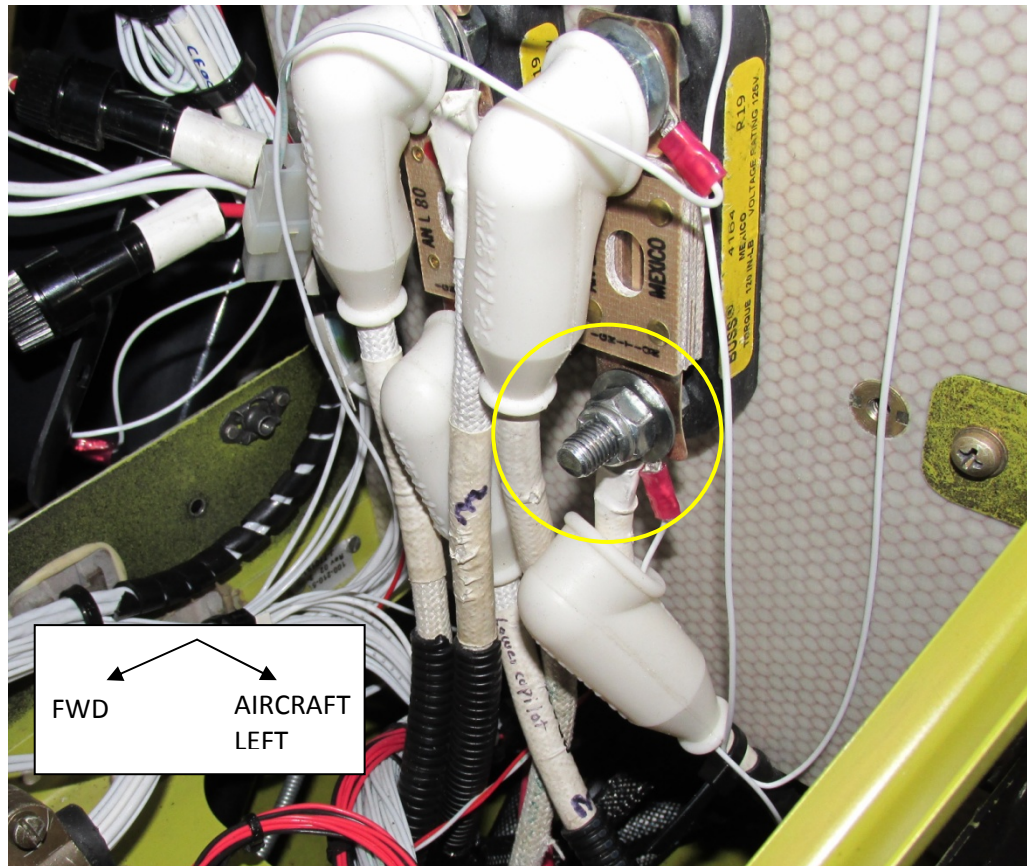


Figure 5-9: Fuse Block Connection

21. Push the protective boot back into position over the fuse block terminal.
22. Install the fuse block cover.
23. On Garmin autopilot equipped airplanes, return the pitch trim servo to its original position in accordance with the *KODIAK® 100 Airplane Maintenance Manual*, Chapter 27.
24. Install the left side panel and right side panel on the control column.
25. Push the circuit breaker panel back into position and secure it with the twelve (12) screws removed previously.

6. Completion

1. Restore electrical power; reconnect both batteries.
2. Record work in the appropriate maintenance records.

---END---