

Service Bulletin No: 34-038

Ref No: 305

Modification No: EC-13-0125

ATA Chapter: 34

**NAVIGATION - ATTITUDE AND DIRECTION
MODIFICATION TO THE ELECTRONIC STANDBY INSTRUMENT-SYSTEM (ESIS) POWER RETURN
WIRES****1. Planning Information****A. Effectivity**

PC-12/47E Series aircraft MSN 545, 1001 thru 1450.

MSN 1451 and up will have this modification incorporated during production.

NOTE: Throughout this Service Bulletin, Config. 1 aircraft are MSN 545 and MSN 1001 thru MSN 1270. Config. 2 aircraft are MSN 1271 thru MSN 1450.

B. Concurrent Requirements

None.

C. Reason

In order to minimize any possibility that the Apex displays can be affected together with the ESIS, the ESIS ground connection is relocated, improving isolation and separation from the main displays.

D. Description

This Service Bulletin gives the data and instructions necessary to do a modification to change the ground connection for the ESIS.

E. Compliance

Mandatory.

Accomplishment required not later than May 31/2013.

F. Approval

The technical content of this document is approved under the authority of DOA No. EASA. 21J. 357.

PILATUS advises Operators/Owners to check with their designated Airworthiness Authority for any changes, local regulations or sanctions that may affect the embodiment of this Service Bulletin.

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H. Manpower

Task	Man-hours (With Ground Point Ready)	Man-hours (Without Ground Point Ready)
Preparation	0.50	0.50
Modification	2.50	2.75
Close-Up	1.25	1.25
TOTAL MAN-HOURS	4.25	4.50

I. Weight and Balance

(1) Weight change:

None.

(2) Moment change:

None.

J. Electrical load Data

Not changed.

K. Software

Not changed.

L. References

Aircraft Maintenance Manual (AMM): 12-B-20-20-01-00A-040A-A, 12-B-20-31-00-00A-070A-A, 12-B-25-10-03-00A-920A-A, 12-B-34-26-40-00A-903A-A or 12-B-34-26-40-00A-903B-A, 12-B-46-30-00-00A-903A-A, 12-B-46-30-01-00A-920A-A, 12-B-46-30-03-00A-920A-A.

M. Publications Affected

Wiring Diagram Manual (WDM).

N. Interchangeability of Parts

One way interchangeable. Pre Service Bulletin parts must not be installed on Post Service Bulletin aircraft.

2. Material Information**A. Material - Price and Availability:**

If you require more information about this modification, please contact us as follows:

PILATUS AIRCRAFT LTD.,
CUSTOMER SUPPORT MANAGER,
CH-6371 STANS,
SWITZERLAND

General Aviation:
Tel: + 41 41 619 3333
Fax: + 41 41 619 7311
eMail: SupportPC12@pilatus-aircraft.com

PILATUS BUSINESS AIRCRAFT LTD.,
PRODUCT SUPPORT DEPARTMENT
11755 AIRPORT WAY
BROOMFIELD, CO 80021.
UNITED STATES OF AMERICA

Tel: +1 303 465 9099
Fax: +1 303 465 6040
eMail: Productsupport@PilBal.com

PILATUS AUSTRALIA (PTY.) LTD,
17 JAMES SCHOFIELD DRIVE,
ADELAIDE AIRPORT SA 5950,
AUSTRALIA

Tel: +61 (8) 8234 4433
Fax: +61 (8) 8234 4499
eMail: supportpc12@pilatus.com.au

Operators are requested to advise Pilatus Aircraft Ltd, of the Manufacturer's Serial Number (MSN) and the flying hours of aircraft which are affected by this Service Bulletin.

Modification Kit Number	Price	Availability
500.51.12.030	Contact address above	Contact address above

B. Warranty

Pilatus agrees to cover the costs for parts and labor of affected aircraft provided the work is accomplished by an Authorized Service Center within 6 months from the issue date of this Service Bulletin.

C. Material Necessary for one Aircraft

Modification Kit No. 500.51.12.030 has these parts:

New Part No.	Description	Old Part No.	Qty	Disp. Code	Fig	Item
591.30.12.031	GROUND STUD 12	-	1	-	1	1
511.36.12.986	PLACARD (GS125)	-	1	-	1	8
971.31.18.830	TERMINAL LUG	-	2	-	1	2
938.07.68.304	NUT	-	2	-	1	4 10
938.77.11.112	WASHER	-	2	-	1	3 9
971.32.18.105	RETAINING CLIP	-	3	-	1	6
919.79.41.302	WIRE, (F4H22N) 1500 MM AWG22	-	1		3	-
971.42.31.535	PIN MODULE	-	1		3	-

Disposition Codes: N - New / D - Discard / R - Return to Pilatus

NOTE: Config 1 aircraft requires new wire (P/N 919.79.41.302) and pin module (P/N 971.42.31.535).

NOTE: Config 2 aircraft only require one terminal lug (P/N 971.31.18.830).

NOTE: Part Numbers given in this Service Bulletin are correct at the time of approval. Pilatus Aircraft Ltd. reserves the right to change the part numbers as necessary. Part numbers of items delivered are correct when the part is dispatched.

D. Operator Supplied Materials (AMM 12-B-20-31-00-00A-070A-A)

MATERIAL NO.	DESCRIPTION	QTY	REMARKS
P01-010	SOLVENT	A/R	Or equivalent
P02-031	ABSORBENT PAPER	A/R	Or equivalent
P07-021	ALODINE 1132 TOUCH-N-PREP PEN	A/R	Or equivalent
P08-076	MASKING VARNISH	A/R	Glyptal G7526F (P/N 908.18.12.095)
Alternative P07-007	EPOXY PRIMER	A/R	AKZO NOBEL (P/N 910.02.05.031)
P09-005	CABLE TIE	A/R	Or equivalent
P09-008	CABLE TIE	A/R	Or equivalent
P09-014	CABLE TIE	A/R	Or equivalent
P09-026	MASKING TAPE	A/R	Or equivalent
-	RED PROTECTIVE TAPE	A/R	Pilatus P/N 917.40.60.311
-	BONDING TESTER	1	Local supply

E. Tooling - Cost and Availability

None.

3. Accomplishment Instructions**A. Preparation**

- (1) Remove the left bottom sidewall (Ref. AMM, 12-B-25-10-03-00A-920A-A).
- (2) Remove the pilot's PFD (Ref. AMM, 12-B-46-30-01-00A-920A-A).
- (3) Remove the upper MFD (Ref. AMM, 12-B-46-30-03-00A-920A-A).

B. Modification

- (1) Disconnect the wires from the ground point (Ref. Fig. 6 - Hook-Up Chart):
 - (a) Get access to the grounding block GB109 installed on the aft face of FR10. Do this through the location for the pilot's PFD.
 - (b) For Config. 1 aircraft (Ref. Fig. 2):
 - 1 Locate the wire F6A20N.
 - 2 Disconnect the wire from position 4 of the grounding block GB109 (Ref. Line 1 of the Hook-Up Chart).
 - 3 Remove the terminal pin from the wire.
 - 4 Locate the wire F4H22N.
 - 5 Disconnect the wire from position 1 of the grounding block GB109 (Ref. Line 2 of the Hook-Up Chart).
 - 6 Remove the terminal pin from the wire.
 - (c) For Config. 2 aircraft (Ref. Fig. 4):
 - 1 Locate the wire F81A22N.
 - 2 Disconnect the wire from position 4 of the grounding block GB109 (Ref. Line 5 of the Hook-Up Chart).
 - 3 Remove the terminal pin from the wire.
- (2) Install the ground stud GS125 (Ref. Fig. 1):
 - (a) Find the hole for the ground stud GS125 (1) (P/N 591.30.12.031) in FR12, LH.
 - (b) Remove the protective tape, if installed.
 - (c) If the hole has bare metal surrounding it for 14 mm (0.55 in.) diameter on the forward and the aft face, continue this Service Bulletin from Step 3.B.(2)(j).
 - (d) If the hole does not have bare metal surrounding it for 14 mm (0.55 in.) diameter on the forward and the aft face, continue with this Service Bulletin.
 - (e) Make a mark to show a circle of approximately 14 mm (0.55 in.) diameter on the forward face of FR12 with the same center as that of the hole.

- (f) Make another mark to show a circle of approximately 14 mm (0.55 in.) diameter on the aft face of FR12 with the same center as that of the hole.
 - (g) Put the masking tape (Material No. P09-026) on the edges of the marked circles on the forward and aft faces of FR12.
 - (h) Remove the surface finish from the area inside the masking tape (Material No. P09-026) circles.
 - (i) Remove the masking tape (Material No. P09-026).
 - (j) Use the absorbent paper (Material No. P02-031) made moist with the solvent (Material No. P01-010) to clean:
 - The area on the forward face of FR12
 - The area on the aft face of FR12.
 - (k) Apply a layer of Alodine (Material No. P07-021) to:
 - The bare area on the forward face of FR12
 - The bare area on the aft face of FR12.
 - (l) Wait approximately 10 minutes.
 - (m) Put the ground stud GS125 (1) (P/N 591.30.12.031) in position with the stud to the front of the aircraft.
 - (n) Install the washer (9) (P/N 938.77.11.112) and the nut (10) (P/N 938.07.68.304).
 - (o) Hold the ground stud GS125 (1) (P/N 591.30.12.031) and torque the nut (10) (P/N 938.07.68.304) to between 2,3 and 2,9 Nm (20 and 25 lb in.).

NOTE: Do not forget to add the run down torque to the value given above (Ref. AMM, 12-B-20-20-01-00A-040A-A).
 - (p) Do an electrical continuity test between the ground stud GS125 and the aircraft structure (pilots seat rail or similar). The resistance must be less than 5 mΩ.
- (3) Connect the wires to the ground stud GS125 (Ref. Fig. 6 - Hook-Up Chart):
- (a) For Config. 1 aircraft (Ref. Fig. 1 and 3):
 - 1 For the wire F6A20N.
 - a Make a note of the position of the cable ties that attach this wire to other wires in the aircraft.
 - b Cut the cable ties, if necessary, to remove this wire from the other wires in the aircraft.
 - c Route the wire to the ground stud GS125 (1, Fig. 1) (P/N 591.30.12.031) (Ref. Fig. 3).
 - d Cut the wire to length and install a terminal lug (2) (P/N 971.31.18.830) (Ref. Line 3 of the Hook-Up Chart, Fig. 6).

- e Use the cable ties (Material No. P09-005, Material No. P09-008 or Material No. P09-014) to attach the cables you released in Step 3.B.(3)(a)1 b.
- 2 For the wire F4H22N.
 - a Make a note of the position of the cable ties that attach this wire to other wires in the aircraft.
 - b Cut the cable ties, if necessary, and remove this wire from the aircraft.
 - c Install pin module (P/N 971.42.31.535) to the wire (P/N 919.79.41.302) and connect to TB109-01 terminal X (Ref. Fig. 3).
 - d Route the wire from TB109-01 terminal X to the ground stud GS125 (1, Fig. 1) (P/N 591.30.12.031) (Ref. Fig. 3).
 - e Cut the wire to length and install a terminal lug (2, Fig. 1) (P/N 971.31.18.830) (Ref. Line 4 of the Hook-Up Chart, Fig. 6).
 - f Use the cable ties (Material No. P09-005, Material No. P09-008 or Material No. P09-014) to attach the cables you released in Step 3.B.(3)(a)2 b.
- 3 Put the two terminal lugs (2) (P/N 971.31.18.830) (complete with the wires F6A20N and F4H22N) on the ground stud GS125 (1, Fig. 1) (P/N 591.30.12.031).
- 4 Install the washer (3) (P/N 938.77.11.112) and the nut (4, Fig. 1) (P/N 938.07.68.304).
- 5 Apply a layer of the masking varnish (Material No. P08-076) to both sides of the ground stud GS125 (1, Fig. 1) (P/N 591.30.12.031).
- 6 Put the three retaining clips (6) (P/N 971.32.18.105) in position equally spaced along the wires F6A20N and F4H22N between FR11 and FR12, LH.
- 7 At these positions, wrap a piece of the protective tape (7) (P/N 917.40.60.311) around the wire F6A20N and the wire F4H22N.
- 8 Put the three retaining clips (6, Fig. 1) (P/N 971.32.18.105) in position on top of the VHF 1 antenna cable.
- 9 Put the wires F6A20N and F4H22N on top of the three retaining clips (6, Fig. 1) (P/N 971.32.18.105) and hold everything in position with cable ties (5, Fig. 1) (Material No. P09-005).

- (b) For Config. 2 aircraft (Ref. Fig. 1 and 5):
- 1 For the wire F81A22N.
 - a Make a note of the position of the cable ties that attach this wire to other wires in the aircraft.
 - b Cut the cable ties, if necessary, to remove this wire from the other wires in the aircraft.
 - c Route the wire to the ground stud GS125 (1, Fig. 1) (P/N 591.30.12.031) (Ref. Fig. 5).
 - d Cut the wire to length and install a terminal lug (2, Fig. 1) (P/N 971.31.18.830) (Ref. Line 6 of the Hook-Up Chart, Fig. 6).
 - e Use the cable ties (Material No. P09-005, Material No. P09-008 or Material No. P09-014) to attach the cables you released in Step 3.B.(3)(b)1 b.
 - 2 Put the terminal lug (2, Fig. 1) (P/N 971.31.18.830) (complete with the wire F81A22N) on the ground stud GS125 (1, Fig. 1) (P/N 591.30.12.031).
 - 3 Install the washer (3, Fig. 1) (P/N 938.77.11.112) and the nut (4, Fig. 1) (P/N 938.07.68.304).
 - 4 Apply a layer of the masking varnish (Material No. P08-076) to both sides of the ground stud GS125 (1, Fig. 1) (P/N 591.30.12.031).
 - 5 Put the three retaining clips (6, Fig. 1) (P/N 971.32.18.105) in position equally spaced along the wire F81A22N between FR11 and FR12, LH.
 - 6 At these positions, wrap a piece of the protective tape (7, Fig. 1) (P/N 917.40.60.311) around the wire F81A22N.
 - 7 Put the three retaining clips (6, Fig. 1) (P/N 971.32.18.105) in position on top of the VHF 1 antenna cable.
 - 8 Put the wire F81A22N on top of the three retaining clips (6) (P/N 971.32.18.105) and hold everything in position with cable ties (5, Fig. 1) (Material No. P09-005).
- (4) Install the placard (GS125) (8, Fig. 1) (P/N 511.36.12.986) adjacent to the ground stud GS125 (1, Fig. 1) (P/N 591.30.12.031) in a position it can be easily read.

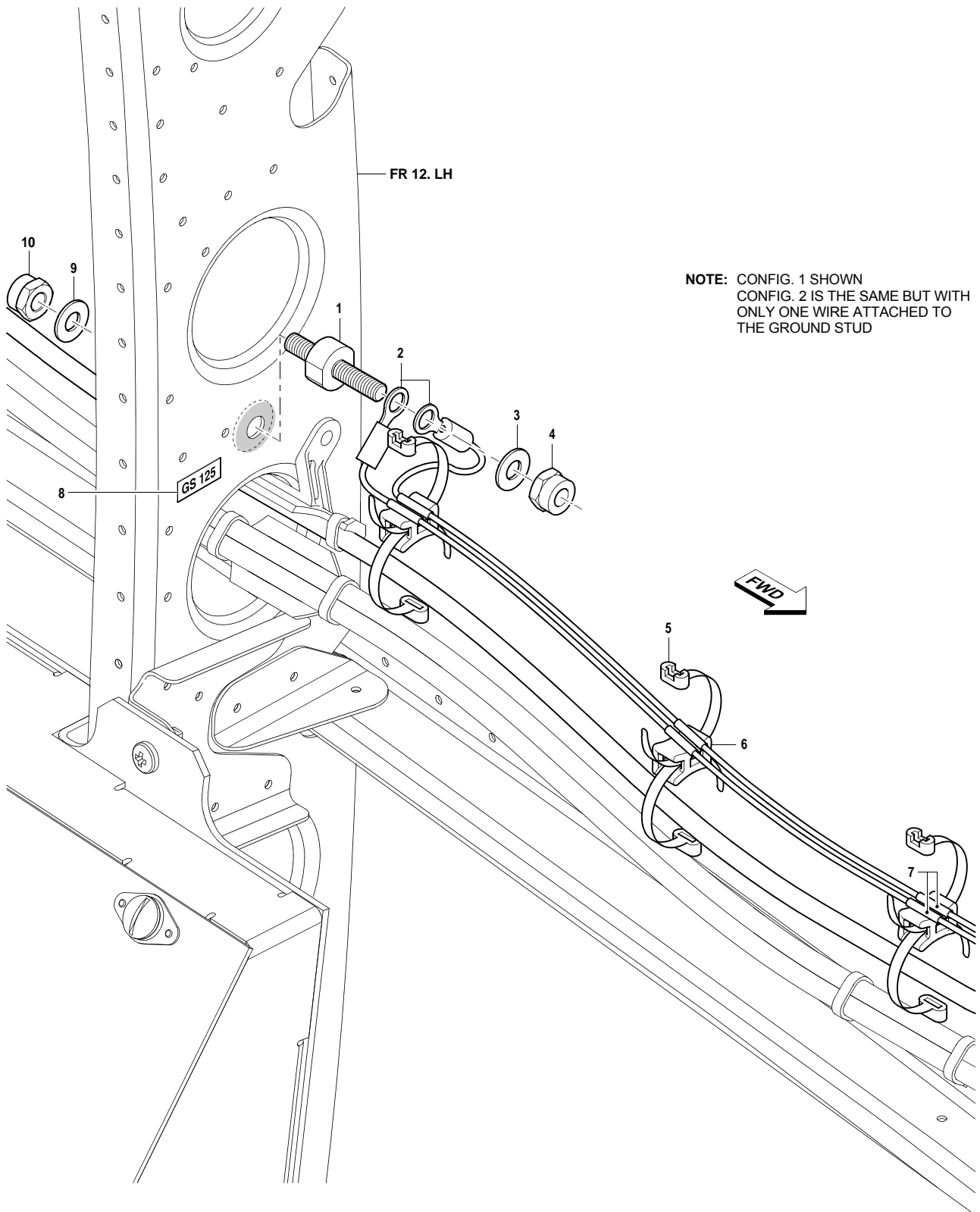
C. Close-Up

- (1) Remove all equipment, materials and tools from the work area. Make sure that the work area is clean.
- (2) Install the upper MFD (Ref. AMM, 12-B-46-30-03-00A-920A-A).
- (3) Install the pilot's PFD (Ref. AMM, 12-B-46-30-01-00A-920A-A).
- (4) Do a Power On Check (Ref. AMM, 12-B-46-30-00-00A-903A-A).

- (5) Do a test of the ESIS (Ref. AMM, 12-B-34-26-40-00A-903A-A or AMM, 12-B-34-26-40-00A-903B-A).
- (6) Install the left bottom sidewall (Ref. AMM, 12-B-25-10-03-00A-920A-A).

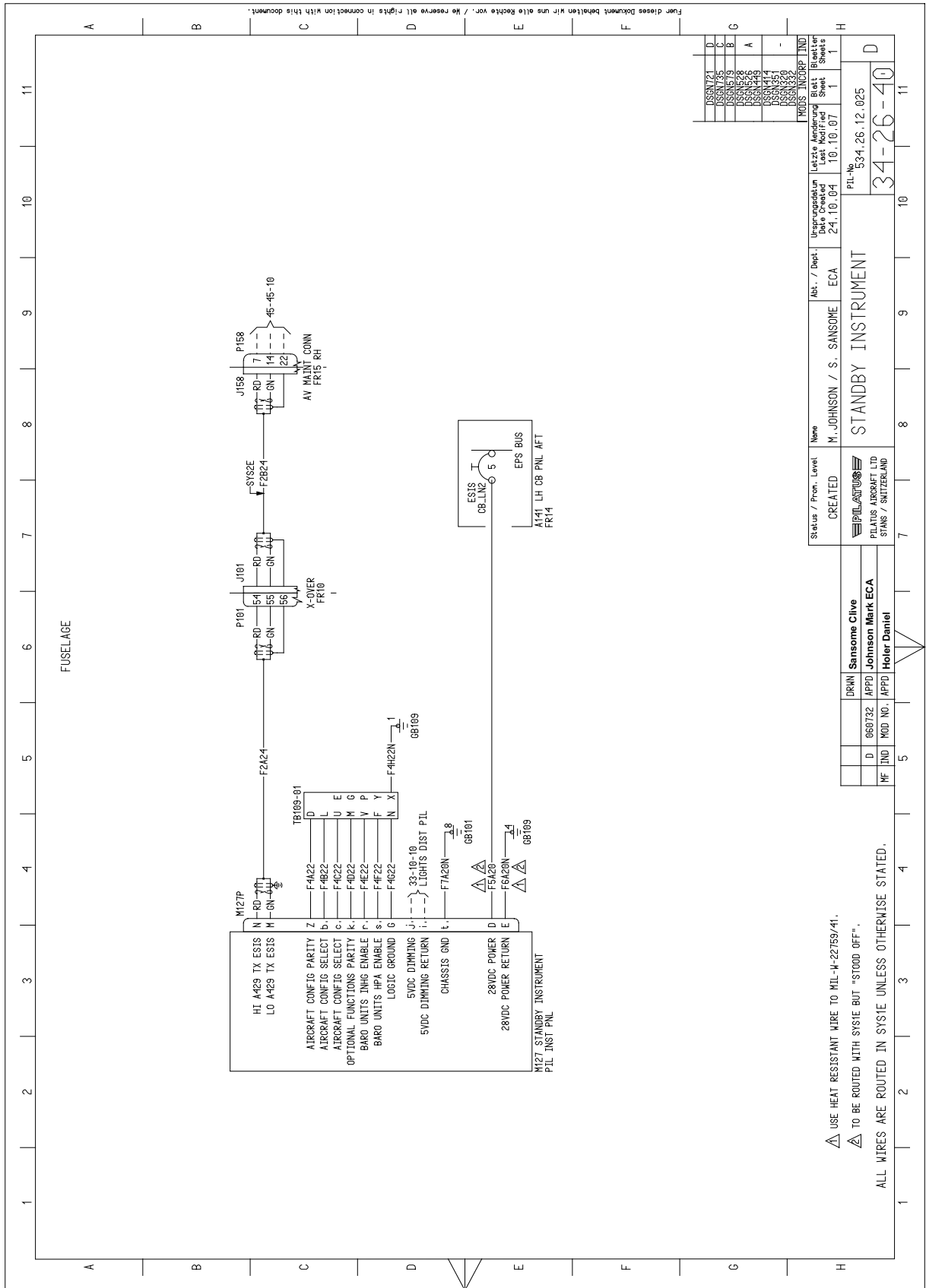
D. Documentation

- (1) Record in the aircraft logbook and the Aircraft Flight Manual that this Service Bulletin has been accomplished.
- (2) Use the Service Bulletin Evaluation Sheet to report your results to PILATUS.

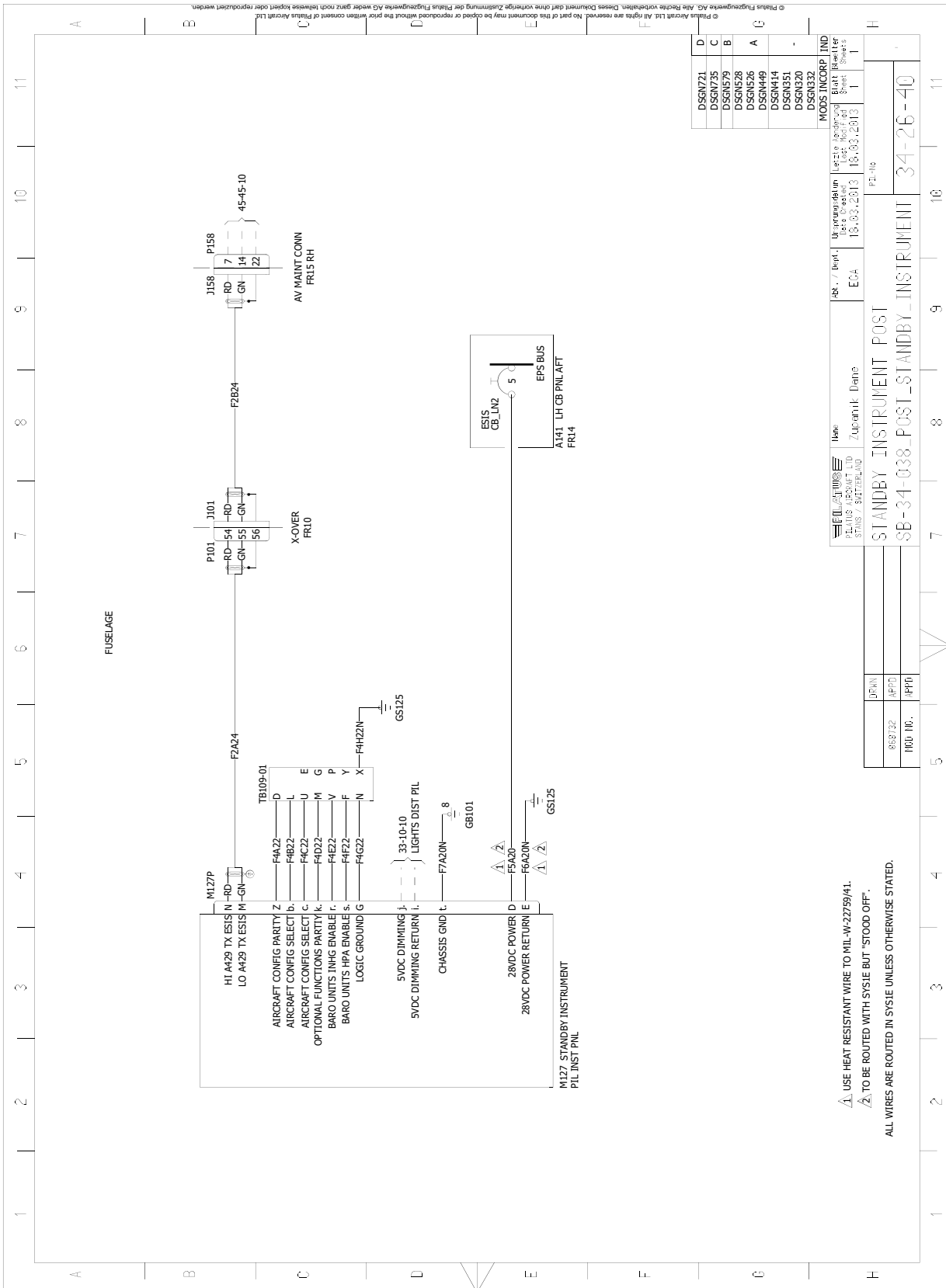


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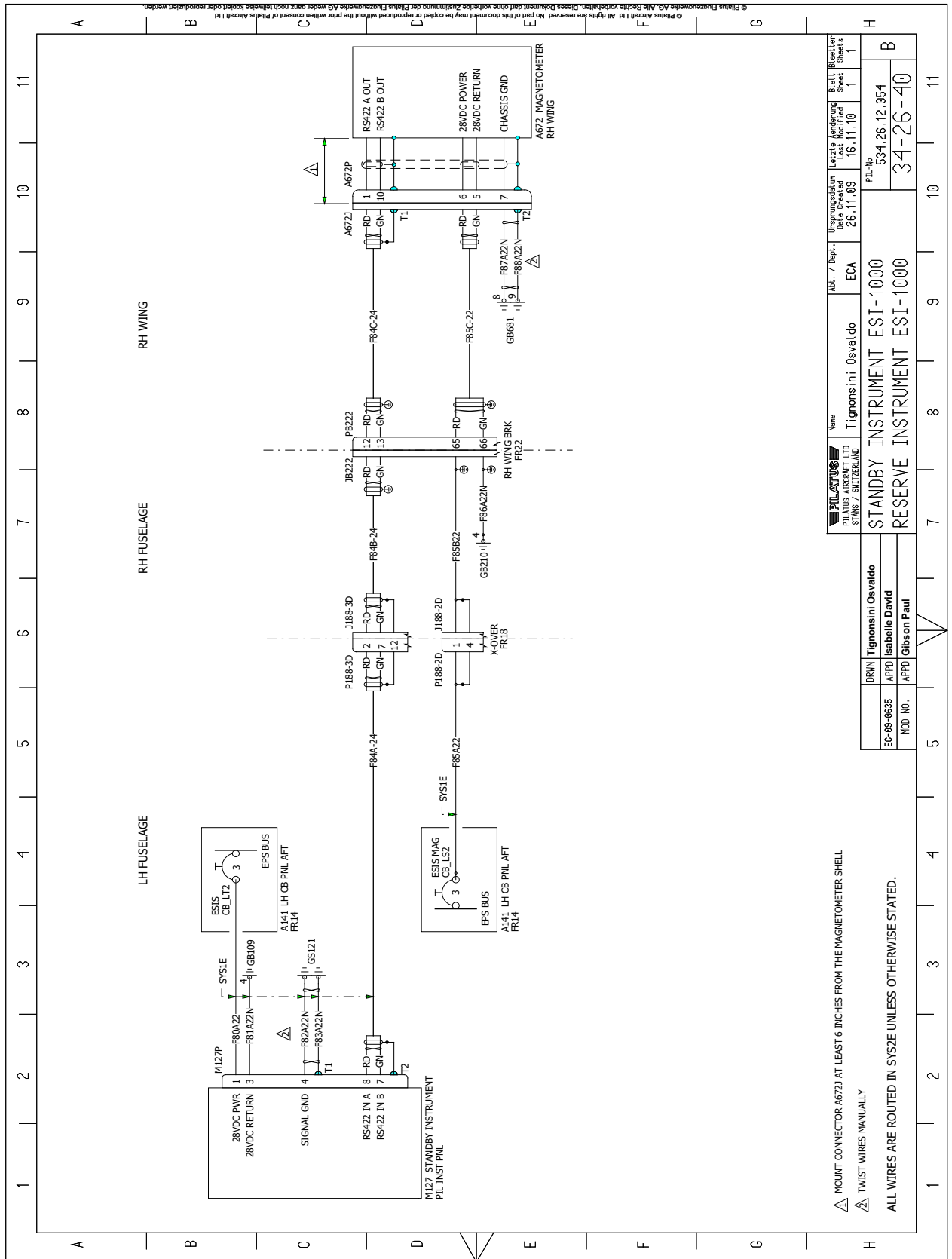
Installation of the Ground Stud GS125
Figure 1



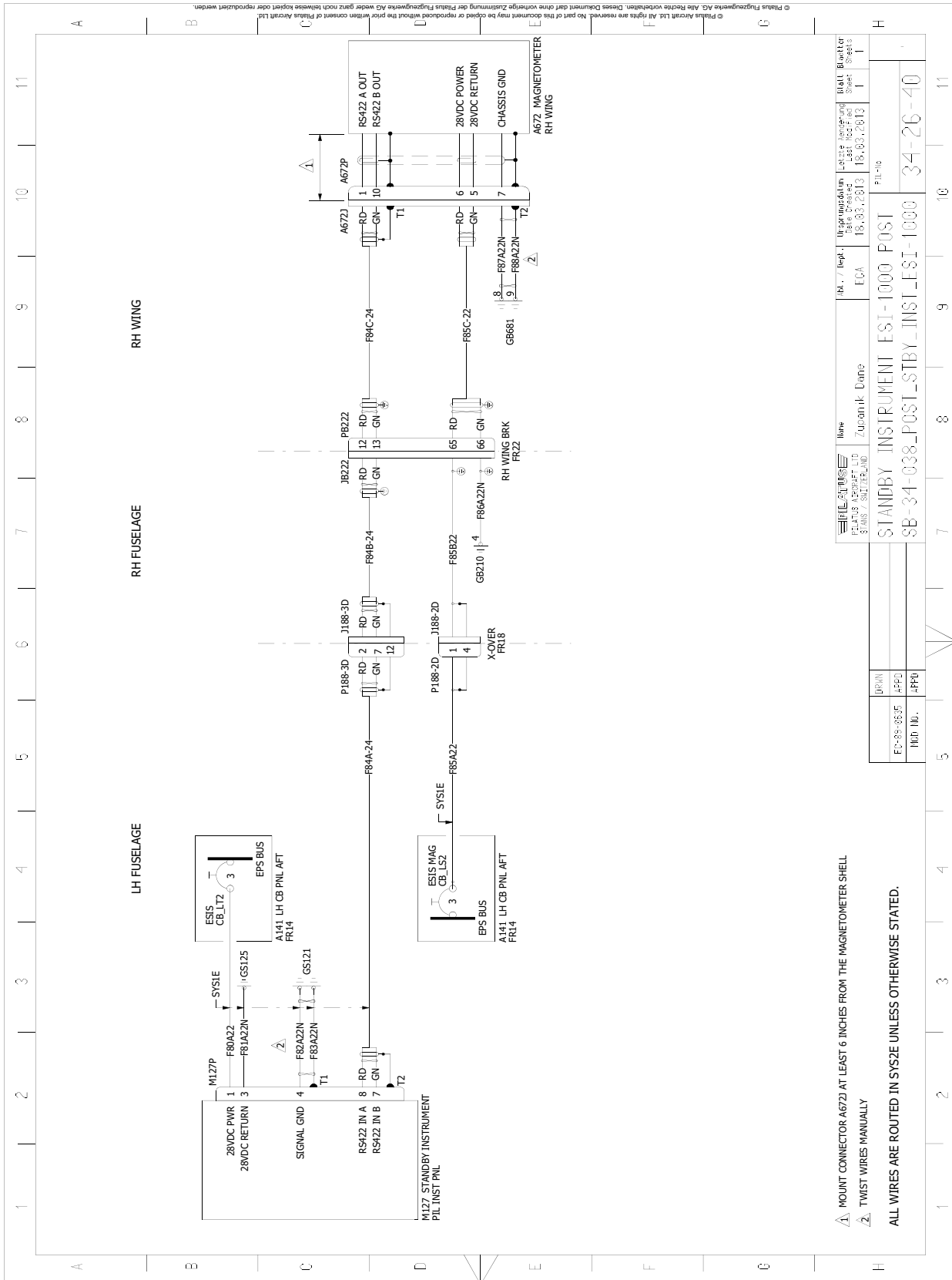
Wiring Diagram - Config 1 Aircraft - Pre Service Bulletin
Figure 2



Wiring Diagram - Config 1 Aircraft - Post Service Bulletin
Figure 3



Wiring Diagram - Config 2 Aircraft - Pre Service Bulletin
Figure 4



Wiring Diagram - Config 2 Aircraft - Post Service Bulletin
 Figure 5

Line	End 1			Wire No.	End 2			Remarks
	Ident. No.	Terminal No.	Terminal P/N.		Terminal P/N.	Terminal No.	Ident. No.	
For Config. 1 Aircraft								
1	M127P	E	-	F6A20N	-	4	GB109	Disconnect End 2 and remove the terminal pin
2	TB109-01	X	-	F4H22N	-	1	GB109	Remove completely
3	M127P	E	-	F6A20N	971.31.18.830	-	GS125	Connect End 2
4	TB109-01	X	971.42.31.535	F4H22N	971.31.18.830	-	GS125	Install new
For Config. 2 Aircraft								
5	M127P	3	-	F81A22N	-	4	GB109	Disconnect End 2 and remove the terminal pin
6	M127P	3	-	F81A22N	971.31.18.830	-	GS125	Connect End 2

Hook-Up Chart (Config 1 and 2 Aircraft)
Figure 6

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The purpose of this Feedback Form is to allow you, the customer, to comment on this Service Bulletin. Your comments will be used to further improve our Service Bulletin program. It also provides Pilatus Aircraft with current information on each individual aircraft.

FEEDBACK SHEET FOR ACCOMPLISHMENT OF

SB No: _____ **Ref No:** _____

Aircraft MSN		Aircraft Registration		Total Airframe Hours	
Owner				Total Landings	
Operator					
Service Center					
<input type="checkbox"/> We have embodied/accomplished this SB			<input type="checkbox"/> Fully		
<input type="checkbox"/> We will not embody/accomplish this SB			<input type="checkbox"/> Partially		
The undersigned confirms the accomplishment of this Service Bulletin					
Date of accomplishment	Name	Signature			
Comments (procedure, kit quality, suggested improvements etc.)					

Important Note: If a parts replacement are involved, please provide the applicable work card including the component details (part number(s) and serial number(s)) together with the feedback sheet.

Please forward this form to:

PILATUS AIRCRAFT LTD,
 CUSTOMER SUPPORT PC-12 (GC)
 CH 6371 Stans, Switzerland
 Fax: +41 41 619 73 11
 Email: supportpc12@pilatus-aircraft.com