

SERVICE BULLETIN NO. OSB817-066

I. TECHNICAL DETAILS

1.1 Category:

Optional

1.2 Airplanes affected:

G 109B all S/N

1.3 Time of Compliance:

On holders discretion

1.4 Subject:

ATA-Code: 34-40 Independent Position Determining
Provisions to install PowerFLARM

1.5 Reason:

On customer request, installation provisions for the optional installation of PowerFLARM units onto the glare shield is approved.

This Service Bulletin is intended to provide information for the optional installation of provisions for a PowerFLARM unit. The configuration of the aircraft is affected by this Service Bulletin.

Note:	This Service Bulletin does not approve the installation of the PowerFLARM unit itself. To install the unit, an installation approval by TRIEB GmbH, A-8643 Allerheiligen 38, AUSTRIA, has to be obtained.
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1.6 Concurrent documents:

Corresponding Aircraft Maintenance Manual

1.7 Approval Note:

The technical content of this document is approved under the authority of EASA Design Organization Approval No. EASA.21J.030.

These information or instructions relate to change no. OÄM817-039 which has been approved under the authority of EASA Design Organisation Approval No. EASA.21J.030.

1.8 Accomplishment/ Instructions

Note: The following instructions are only effective for RAF Vigilant aircraft (ÄM817-11). Installation in other aircraft may be done accordingly dependent of the respective aircraft configuration. Intercom functionality is dependent of the installed radio.

- 1.8.1 Make sure that the aircraft is safe for parking, refer to AP 101G-1101-1 Chap. 8.
- 1.8.2 Make the aircraft electrically safe, refer to AP 101G-1101-126 Chap.55 Paragraph 8.
- 1.8.3 Remove the right I-panel, refer to AP 101G-1101-126 Chap. 28 Paragraph 3.
- 1.8.4 Remove the radio, refer to AP 101G-1101-126 Chap. 28 Paragraph 3.
- 1.8.5 Remove the transponder, refer to AP 101G-1101-126 Chap. 28 Paragraph 3.
- 1.8.6 Release the Qty 4 DZUS type fasteners to remove the switch panel 109B-7045E with all switches from the centre instrument panel.

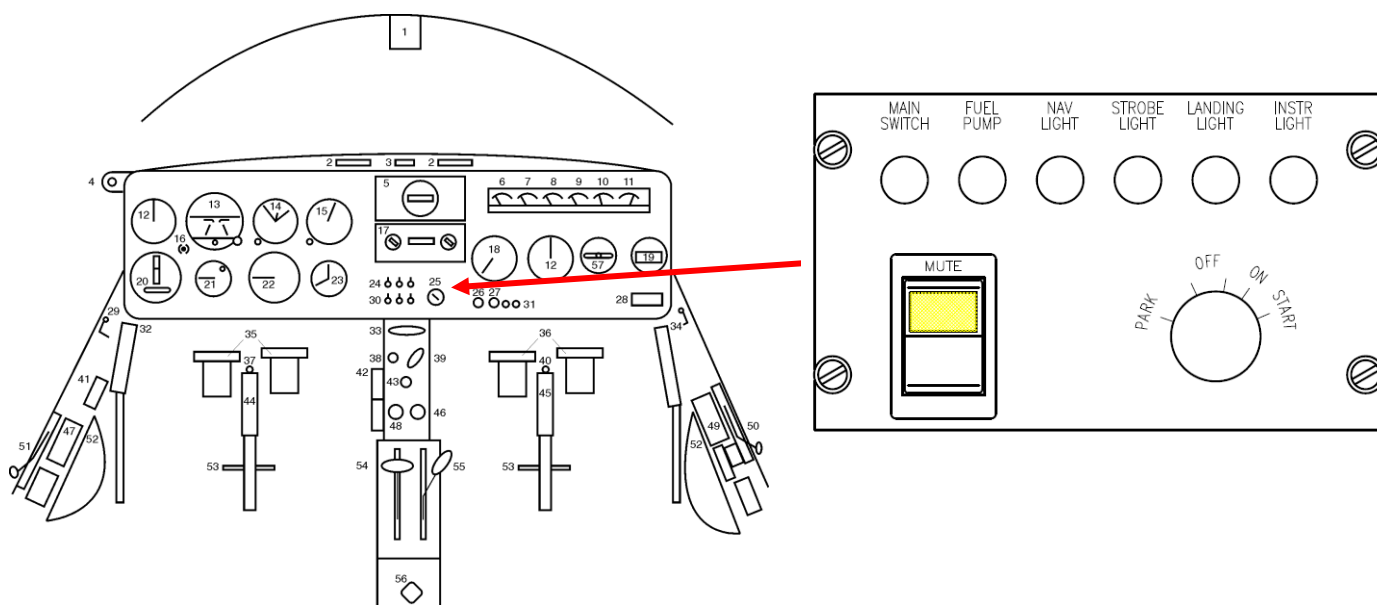


Figure 1 Instrument Panel, General Arrangement (with OÄM 817-15)

- 1.8.7 Record all switch positions and cable connections. Remove and keep all switches and the insulation angle 109B-7000.32 (between the top row of the toggle switches and the transponder unit) from the switch panel.
- 1.8.8 Apply the drilling template (Item 1 of List 2.3) onto the switch panel. Drill a hole with a 4mm drill.
- 1.8.9 Remove the template. Drill the new hole with a 12 mm drill in the switch panel.
- 1.8.10 Apply placard "FLARM ON OFF" (Item 1 of List 2.2) to the front side at the switch position. Install the new FLARM switch (Item 2 of List 2.2).

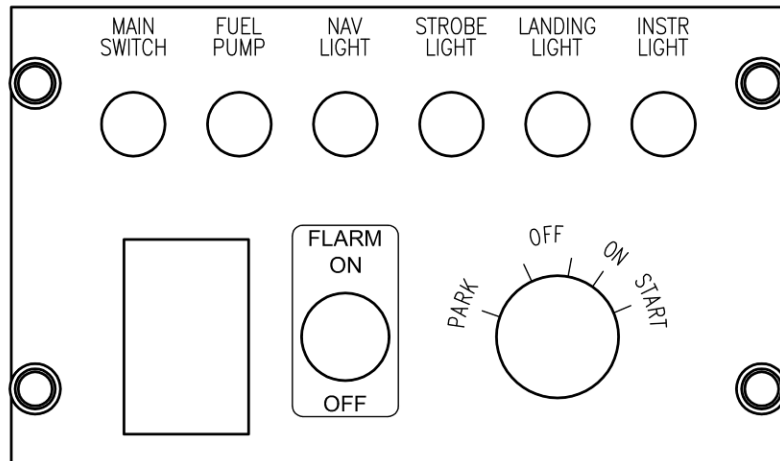


Figure 2 Switch Panel with new drilled hole and placard "FLARM ON OFF"

- 1.8.11 Install all toggle switches together with insulation angle 109B-7000.32. Install the ignition switch and mute switch into the switch plate, refer to Figure 2.
- 1.8.12 Install the new 2A "FLARM" Circuit Breaker (CB) (item 3 of List 2.2) to the CB-Panel at the third position from the left side in the front row. Remove and discard original installed plastic cap.
- 1.8.13 Connect the new circuit breaker to the main bus with the jumper cable 109B-9530 (Item 4 of List 2.2). Attach it to the existing cable loom with a cable tie, refer to Figure 3 and Figure 5 (orange line).



Figure 3 Connection of Circuit Breaker to Main Bus Bar

- 1.8.14 Safety the two screws at the CB's with inspection lacquer (not shown in Figure 3).
- 1.8.15 Apply placard "FLARM" (Item 5 of List 2.2) to the underside of the CB-Panel at the new "FLARM" CB position.



Figure 4 FLARM Circuit Breaker placard

- 1.8.16 Connect the wire WN 01E22-P (cable loom FLARM 2, 109B-9520, item 6 of List 2.2) to the other connector of FLARM CB and put it along the original loom to the FLARM switch (2WN) at the switch plate, refer to Figure 5 (green line). Safety the screw at the CB with inspection lacquer.

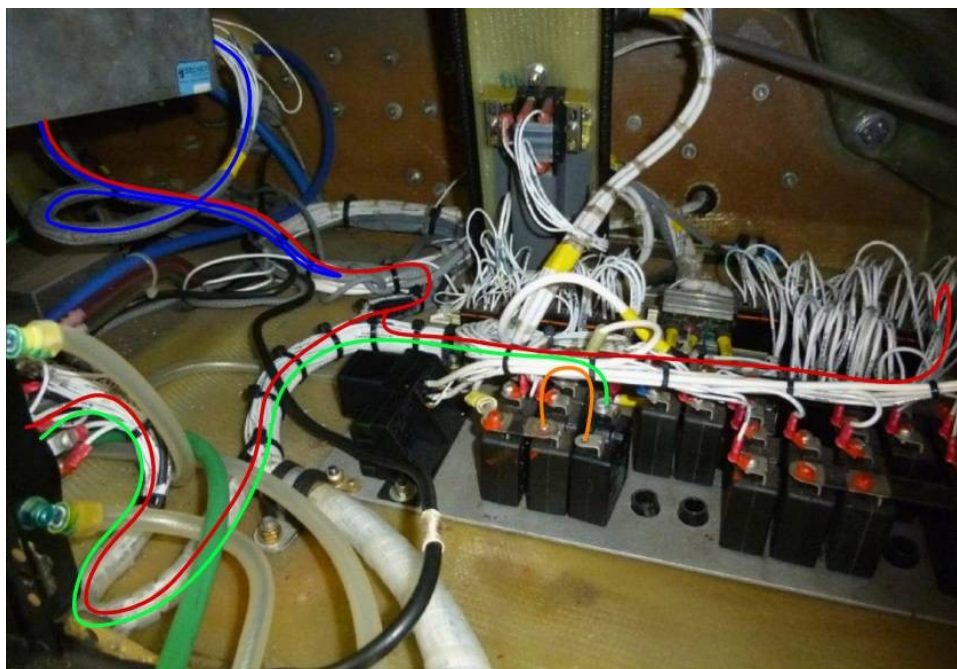


Figure 5 Cable Routing inside instrument compartment

- 1.8.17 Cut the wire WN 01E22-P to correct length and strip the insulation of the wire. Crimp the contact AMP 160773-6 (positive lock receptacle, item 7 of List 2.2) onto the wire. Use the hand crimping tool AMP 354940-1 with Die Set AMP 90575-2 or equivalent. Install an insulator AMP 154719-2 (positive lock receptacle insulator, red, item 8 of List 2.2) to the crimped contact. Connect cable to the bottom connector of the FLARM switch (2WN) (refer to Figure 6 – green line).

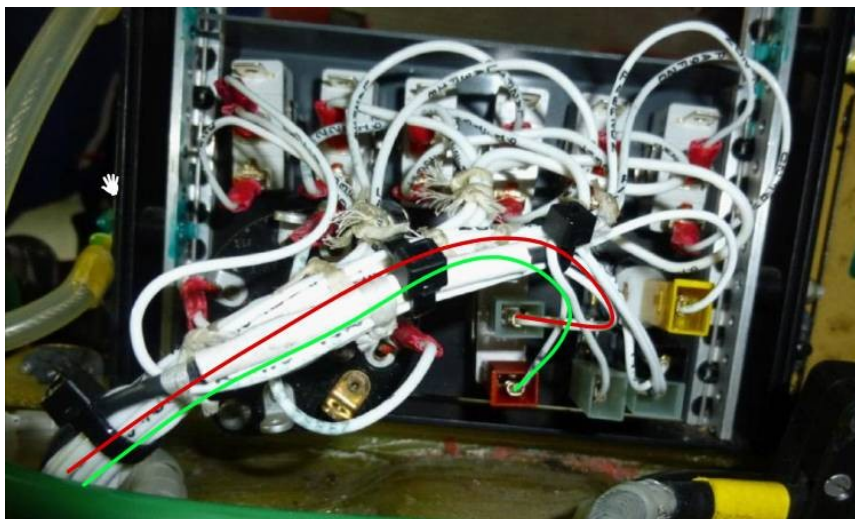


Figure 6 Connection at back side of 2WN switch

- 1.8.18 Apply the drilling template (Item 2 of List 2.3) onto the glare shield at the front edge between the vent holes. Make sure that it touches the compass swing table, refer to Figure 7. Align the template in the middle position between the vent holes. Carefully drill all three holes with a 4 mm drill.



Figure 7 Drilling Template on the glare shield

- 1.8.19 Remove the drilling template from the glare shield.
1.8.20 Carefully drill hole number 3 with a 10 mm drill. Insert a grommet (Item 9 of List 2.2) into the hole.
1.8.21 Attach mounting plate (Item 10 of List 2.2) to the glare shield with two lentil screws, washers and self-locking nuts (Items 11 to 13 of List 2.2).

- 1.8.22 Put the cable loom FLARM 1, P/N 109B-9510 (Item 14 of List 2.2), with the open end through the grommet. Put along the original cable harness of the BECKER AR3201 transceiver to the bottom of the instrument panel. Attach the new cable loom to the original harness with cable ties, where necessary.
- 1.8.23 Put the wires WN 01F22-E and WN 01G22-E of the cable loom FLARM 1 along the original loom to the FLARM switch 2WN. Cut them to length and strip the insulation of the wire.
- 1.8.24 Crimp the two wires together into one contact AMP 160773-6 (positive lock receptacle, Item 7 of List 2.2). Use the hand crimping tool AMP 354940-1 with Die Set AMP 90575-2 or equivalent. Install an insulator AMP 154719-1 (positive lock receptacle insulator, natural, Item 15 of List 2.2) to the crimped contact. Connect the cable to the top connector of the FLARM switch (2WN) (refer to Figure 5 and Figure 6 – red lines).
- 1.8.25 Put the wires WN 02E22N-P and WN 03E22N-P of cable loom FLARM 1 along the original cables to ground module VV1, Terminal 5. Cut them to length and strip the insulation of the wires (Figure 5 – right red line).
- 1.8.26 Crimp contacts, items 16 of List 2.2, onto the two wires. Use the hand crimping tool M22520/1-01 with locator M22520/1-02 or equivalent. Put the wire WN 02E22N-P into position E and the wire WN 03E22N-P into position F of the module VV1, terminal 5. Use the insert/extraction tool M81969/14-11.
- 1.8.27 If VHF radio BECKER AR3201 is installed, continue with step 1.8.28.
If other radio or an intercom panel is installed, refer to manufacturer's installation guide to connect the PowerFLARM audio accordingly.
If no intercom shall be connected, continue with step 1.8.36.
- 1.8.28 Put the wire WN 04E22-S of cable loom FLARM 1 inside the grey braided sleeving to the BECKER AR3201 transceiver (Figure 5 – blue line).
- 1.8.29 Disconnect connector 2RV-a from the BECKER AR3201 transceiver. Remove the backshell and the associated parts and unsolder wire RV 2F20N from pin 2 of the connector 2RV-a.
- 1.8.30 Bend one lead of the 680 Ohm resistor (Item 17 of List 2.2) by 180° and cut straight lead to the same length. Cut two heat shrinkable tubes (Item 18 of List 2.2) to the length of the leads, refer to Figure 8.
- 1.8.31 Cut the wire WN 04E22-S of cable loom FLARM 1 to length and strip the insulation of the wire. Put this wire with one lead of the prepared resistor through one heat shrinkable tube. Solder wire and resistor to pin 1 of connector 2RV-a (Figure 8, left side).
- 1.8.32 Put RV 2F20N with the other lead of the resistor through one heat shrinkable tube. Solder wire and resistor to pin 2 of connector 2RV-a (see Figure 8, right side).
- 1.8.33 Shrink the two heat shrinkable tubes over the pins, wire and lead with a heating gun.
- 1.8.34 Put the third heat shrinkable tube over the remaining parts of the resistor as protection (refer to Figure 8). Shrink it with a heating gun. Cut remaining tube, if necessary.
- 1.8.35 Assemble the connector 2RV-a. Connect it to the VHF radio.

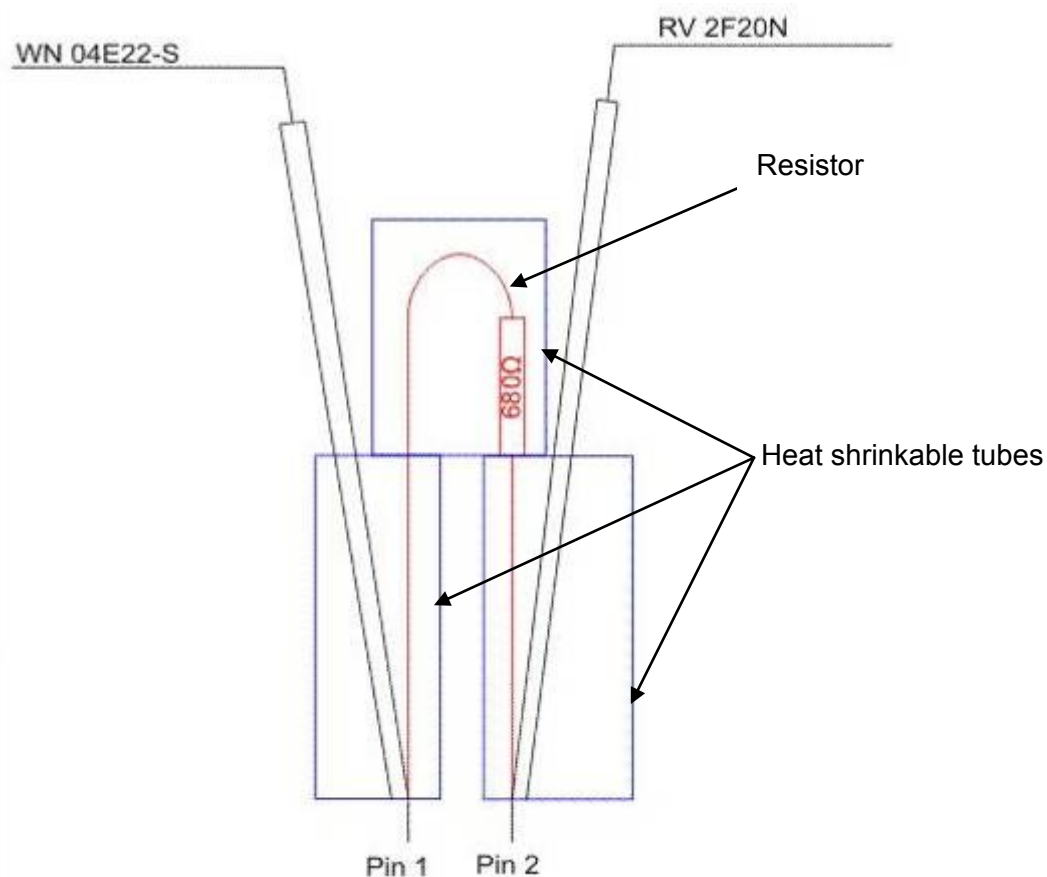


Figure 8 Installation of Resistor between Pin 1 and 2 of Plug 2RV-a.

- 1.8.36 Attach all loose cables to the original cable routes with cable ties, where necessary.
- 1.8.37 Install the radio and the transponder.
- 1.8.38 Install the right instrument panel.
- 1.8.39 Do a functional check of :
- Fuel Pump
 - Exterior Lighting
 - Instrument Light
 - Transponder
 - VHF Transceiver (AP101G-1101-126)
- 1.8.40 Release aircraft into service in accordance with national requirements.

Note:	For installation of the PowerFLARM, refer to EOMD003 Installation Instructions by Trieb GmbH. Attach the unit with countersunk screws (items 19 of List 2.2). Use placard 109B-7000.170 (item 20 of List 2.2)
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1.9 Repetitive Actions

None

II. PLANNING INFORMATION

2.1 Weight and CG

N/A

2.2 Material and Availability

Item	P/N	Description	Qty. / A/C
1	109B-7000.171	Sticker Flarm Switch	1
2	GS942003-6-3-6-H/2	Switch	1
3	W58-XC4C12A-2 (Tyco)	2 Ampere Circuit Breaker	1
4	109B-9530	Cable harness FLARM 3	1
5	109B-7000.172	Sticker Flarm CB	1
6	109B-9520	Cable harness FLARM 2	1
7	160773-6 (Tyco)	Receptacle	2
8	154719-2 (Tyco)	Insulator (red)	1
9	GS513021-100-060-40	Grommet	1
10	109B-2001.10	Mounting Plate	1
11	DIN 7985-M4x16-4.8 SZ	Lentil screw	2
12	DIN 9021-4.3 A2	Washer	2
13	DIN 985-M4 A2	Self-locking nut	2
14	109B-9510	Cable harness FLARM 1	1
15	154719-1 (Tyco)	Insulator (natural)	1
16	001104 200 02 (Air LB)	Contact	2
17	14E445 (Bürklin)	Resistor 680 Ohm	1
18	GS247007-030-0-0300	Heat shrinkable tubing	3
19	DIN 965-M4x10-4.8 SZ	Countersunk screw	2
20	109B-7000.170	Sticker Flarm	1
21	Commercial	Cable Tie	AR
22	Commercial	Inspection Lacquer	AR

2.3 Special Tools

Item	P/N	Description	Qty. / A/C
1	109B-W-7045/1	Drilling Template Cover Plate	1
2	109B-W-2001.10	Drilling Template	1

2.4 Labor costs

N/A

2.5 Reference documents

EOMD003 Installation Instructions, Trieb GmbH

2.6 Credit

N/A

III. REMARKS

The instructions in paragraph 1.8 have to be accomplished and certified in the logbook by authorized staff:

- in EASA countries according to Article 5 VO EG 2042/03 (VO EG 1056/2008) Appendix III – Part 66
- in non-EASA countries according to national regulations with respect to maintenance.

If you have sold your aircraft in the meantime, we kindly ask you to forward this information to the new owner and to provide us with the name and address of the new owner as well as with the respective serial number.

For questions and assistance please contact:

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