

RECOMMENDED SERVICE BULLETIN

RSB 40-047/4

RSB D4-052/4

RSB F4-008/3

SUPERSEDES RSB40-047/3, RSBD4-052/3, RSBF4-008/2

I TECHNICAL DETAILS

I.1 Category

Recommended

I.2 Airplanes Affected

Type: DA 40 D

Serial Numbers: D4.001 through D4.258 with G 1000 installed

Note: DA 40 and DA 40 F aircraft stated in previous revisions of that service bulletin are considered to be not affected by this service bulletin.

I.3 Date of Effectivity

13-Sep-2006

I.4 Time of Compliance

At owners discretion.

I.5 Subject

To improve service reliability, if the "HDG FAIL" indication is occasionally displayed on the PFD Diamond Aircraft Industries recommends the replacement of the right hand aileron and the relocation of the GMU 44 magnetometer.

I.6 Reason

In the past some heading failure annunciations were triggered by interference of the aileron integrated mass balance with the magnetometer. If the "HDG FAIL" indication is occasionally displayed on the PFD, it is therefore recommended to install a new right hand aileron, which contains a brass counterweight instead of the previously used steel counterweight.

In addition it is recommended to relocate the GMU 44 magnetometer.

I.7 Concurrent Documents

None.

I.8 Approval

The technical information or instructions contained in this document relate to the Design Change Advisories No. MÄM 40-270 and OÄM 40-224/f, which has been approved under the authority of EASA Design Organization Approval No. EASA.21J.052.

The technical content of this document has been approved under the authority of EASA DOA No. EASA.21J.052.

I.9 Accomplishment/Instructions

Comply with WI-RSB-D4-052, latest effective revision.

I.10 Mass (Weight) and CG

n. a.

II PLANNING INFORMATION

II.1 Material & Availability

See WI-RSB D4-052, latest effective revision.

II.2 Special Tools

See WI-RSB D4-052, latest effective revision.

II.3 Labor effort

Approximately 4 hrs.

II.4 Credit

None.

II.5 Reference Documents

DA 40 Series Airplane Maintenance Manual Doc. No. 6.02.01, latest effective revision

III REMARKS

1. All measures may only be carried out by Diamond Aircraft Industries or certified Diamond Aircraft Service Centers.
2. Accomplishment of the measures must be confirmed in the log book.
3. In case of any doubt, contact Diamond Aircraft Industries.

WORK INSTRUCTION

WI-RSB-D4-052

„REPLACEMENT OF RH AILERON AND GMU 44 RELOCATION“

I GENERAL INFORMATION

I.1 Subject:

Replacement of the right hand aileron and the relocation of the GMU 44 magnetometer to improve service reliability of the HDG indication displayed on the PFD.

I.2 Reference Documents:

Diamond Aircraft DA 40 Series Airplane Maintenance Manual, Doc. No. 6.02.01, latest effective issue.

I.3 Remarks:

- a) The work must be carried out by Diamond Aircraft Industries or certified Diamond Aircraft Service Centers. In case of doubt, contact Diamond Aircraft.
- b) All works, particularly those that are not especially described in this work instruction, have to be carried out in accordance with the referenced maintenance manual.

II DRAWINGS, SPECIAL TOOLS & MATERIALS

II.1 Drawings:

D4D-5741-00-00x02
D4D-9231-60-01

II.2 Special Tools:

Marking template D4D-5741-00-SO-... (... for Serial Number of Template).

II.3 Material

Replacement of RH aileron:

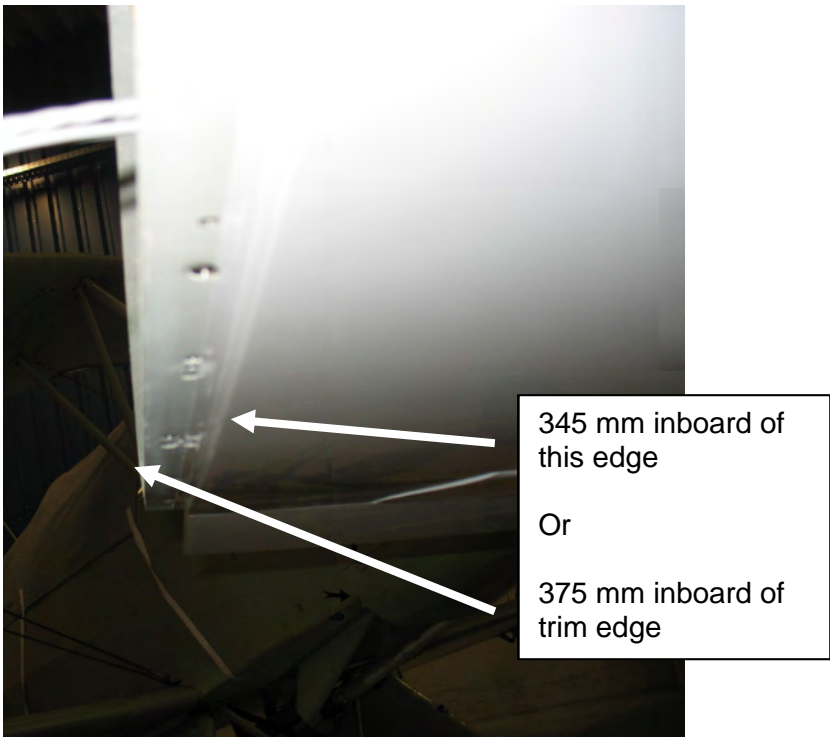
Qty	Description	Part Number
1	Right hand aileron	DA4-5762-00-00_1
5	Spring pin	DIN1481-1.5X10-A2
1	Hexagon nut, self locking	DIN985-M6-A2
4	Screws	DIN 7971-C3.5x13-A2

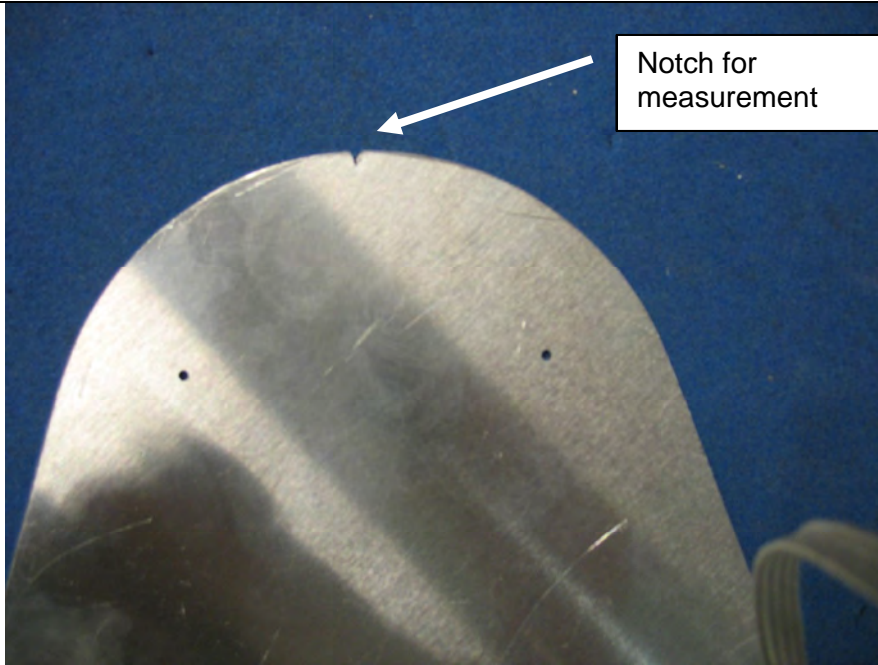
Relocation of GMU 44:

Qty	Description	Part Number
1	Access cover	DA4-5741-23-00
1	Harness extension	D4D-3143-63-00-SB
3	Screw	MS 35214-29
3	Washer	DIN 125A-M4-PA
1	Clamp	187-7700
1	Screw	MS 35214-25
3	Collar bush	D4D-5741-00-30
2	Tie wrap base	EMS-A-D0
3	Tie wrap	PLT2SM30
2	Tie wrap	PLT1MM30
7	Solder sleeve	666-054
1	Terostat MS 9380	MS9380

III INSTRUCTIONS

1.	If RSB D4-052, RSB D4-052/1 or RSB D4-052/2 has been complied with, proceed with item 8.
2.	Remove right hand aileron according to the instructions given in AMM Section 57-60.
3.	Install aileron p/n DA4-5762-00-00_1 according to the instructions given in AMM Chapter 57.
4.	Carry out aileron control system test procedure according to AMM Section 27-10.
5.	Carry out aileron adjustment procedures if out of tolerance.

6.	Remove the GMU 44 magnetometer in accordance with the instructions given in the AMM.
7.	Replace the 4 screws of the strain relief of the GMU 44 connector and harness connector with DIN 7971-C3.5x13-A2 screws.
8.	Remove RH wing-tip.
9.	<p>Mark drillholes using marking template D4D-5741-00-SO. Refer to Drawing D4D-5741-00-00x02 and photos.</p> <p>Note: Use notch on Template for measuring.</p> <p>Caution: You must not use marking template as a drilling template!</p> 



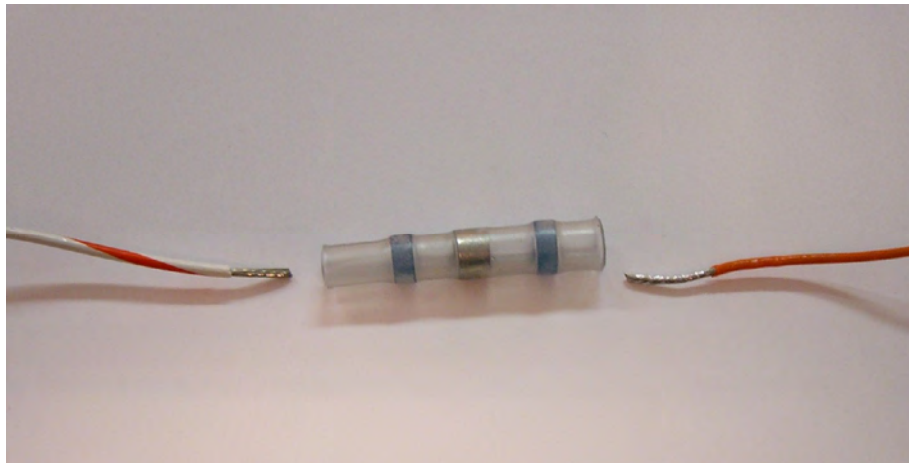
10. Drill 3 times 7.1mm hole (0.281 inch) through outer laminate of lower shell on marked positions.
11. Remove residual foam to allow the bushing fitting flush into the drillhole.
12. Try fit bushings.
13. Bond in bushings with Terostat MS 9380 and allow for curing.

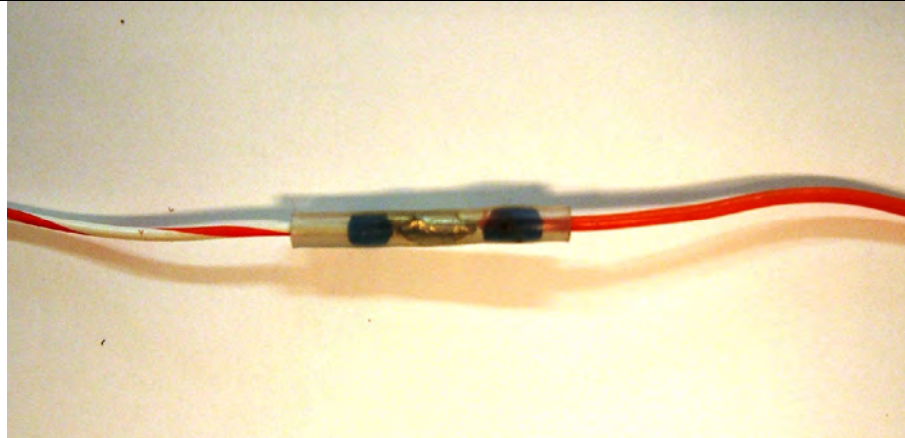
14. Drill holes for screws (3,7 mm, 0.144 inch) through inner laminate.

15. Extend GMU-44 harness using D4D-3143-63-00-SB harness extension.
Caution: Pay special attention to the shields and white wires (both wires are white)– refer to drawing D4D-9231-60-01.



- Disassemble the GMU connector of the aircraft harness.
- Cut-off the wires as close as possible at the connector
- Extend the cables using solder sleeves and an appropriate heat gun (refer to the photos).





16.	Install clamp 187-7700 using screw MS 35214-25 on magnetometer and clamp harness plug. Refer to drawing D4D-5741-00-00x02.
17.	Secure harness using a tie wrap socket and a tie wrap. Bond base to wing shell using either bonding paste or 5-min-epoxy.
18.	Install the GMU 44 – assembly in new location using screws MS 35214-29. Secure screws with Loctite 262.
19.	Clean working area and check for foreign objects.
20.	Install access cover DA4-5741-23-00 on access hole at old GMU 44 location.
21.	Install RH wing-tip.
22.	Perform functional check of altered, repaired and new parts.
23.	Test all systems in working area for proper function.
24.	<p>The GRS/GMU calibration must be done in accordance with the instructions given in the G1000 Line Maintenance and Configuration Manual, section 6.4.3. (Only the calibration procedures B (magnetometer calibration), D (engine run-up vibration test) and E (magnetic interference test) must be performed.)</p> <p>Note: For magnetic interference test sequence refer to Appendix A.</p>
25.	Make all necessary entries in the aircraft logs.

APPENDIX A

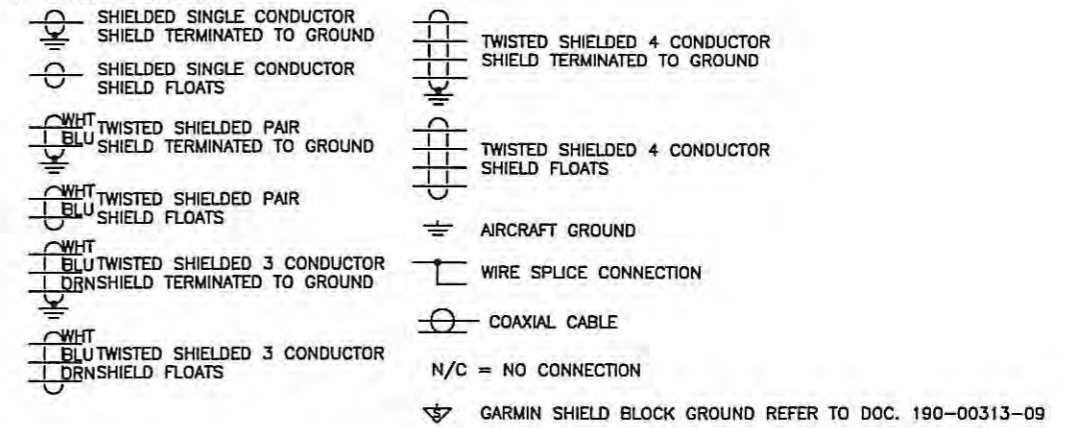
Magnetic interference test sequence:

Elapsed Time since Start of Test [min:secs]	Action
0:00	Test begins
0:10	Aileron full right
0:20	Aileron full left
0:30	Aileron level
0:40	Flaps down (LDG)
0:50	Flaps up (UP)
1:00	Position lights on
1:10	Position lights off
1:20	Strobe lights on
1:30	Strobe lights off
1:40	End of test

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NOTES:

- UNLESS OTHERWISE NOTED, ALL STRANDED WIRE MUST CONFORM TO MIL-W-22759716 OR EQUIVALENT
- UNLESS OTHERWISE NOTED, ALL SHIELDED WIRE MUST CONFORM TO MIL-C-27500 OR EQUIVALENT
- UNLESS OTHERWISE NOTED, ALL WIRES ARE 24 GAUGE MINIMUM.
- SYMBOL DESIGNATIONS



- UNLESS OTHERWISE NOTED, ALL SHIELD GROUNDS MUST BE MADE TO THE RESPECTIVE UNIT BACKSHELL. ALL OTHER GROUNDS SHOULD BE TERMINATED TO AIRCRAFT GROUND AS CLOSE TO THE RESPECTIVE UNIT AS POSSIBLE.
- USE AIRCRAFT GRADE CATEGORY 5 ETHERNET CABLE

MANUFACTURER	P/N
PIC WIRE AND CABLE	E10422 (22 GAUGE)
PIC WIRE AND CABLE	E10424 (24 GAUGE)
ELECTRONIC CABLE SPECIALIST	392404 (24 GAUGE)

- INSTALLATION INSTRUCTIONS FOR OAT PROBE, GMU 44, GND HARNESS, CONFIGURATION MODULES, AND THERMOCOUPLES.

DESCRIPTION	DRAWING NUMBER
INSTR SHEET, OAT PROBE	190-00313-00
INSTR SHEET, GMU 44	190-00313-04
INSTR SHEET, CONFIG MODULE	190-00313-02
INSTR SHEET, THERMOCOUPLE	190-00313-01

- FOR FAN FAIL OUTPUT: OPEN = ACTIVE = FAN FAIL, GROUND = INACTIVE = FAN OK
- FOR TRIM FAIL OUTPUT: GROUND = ACTIVE = TRIM FAIL, OPEN = INACTIVE = TRIM OK

- RELATED DOCUMENTS
 190-00295-36 UNIT INTERCONNECT SUMMARY
 190-00295-37 UNIT POWER.
 190-00295-38 INTERCONNECT.

- FOR GROUNDING PROCEDURES, REFER TO 190-00313-00 & 190-00313-04. ADDITIONAL FOR IFR OPERATION, REFER TO GARMIN DOCUMENT 190-00313-09.

- NOTE THE FOLLOWING PIN DIFFERENCES IN REV 2 AND REV 3 GIA 63 P603

PIN NAME	REV 2 PIN	REV 3 PIN
CAN BUS 1 TERMINATION	35	34
CAN BUS 2 HI	29	32

REV 2 UNITS HAVE SERIAL NUMBERS LESS THAN 46901600
 REV 3 UNITS HAVE SERIAL NUMBERS OF 46901600 OR GREATER

QTY	QTY	ITEM	PART NUMBER				DESCRIPTION	MATERIAL TYPE	H.T.	MATERIAL SIZE			SPECIFICATION	SUPPLIER
REVISION			'a'	'b'	'c'	'd'								
AN#			OAM 40-193	OAM 40-193a	OAM 40-241	MAM 40-248								
DATE			01.09.05	13.12.05	07.02.06	20.03.06								
DRAWN			KOWARSCH	KOWARSCH	KOWARSCH	KOWARSCH								
CHECK														
CHECK DATE						30.05.06								
STRESS														
STRESS DATE														
APPROVAL														
APPROVAL DATE														

Diamond Aircraft

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Do Not Scale Drawing

Size: B	Scale: NTS	First Angle
Dimensions in Millimetres		Tolerances are ISO 2768 m
NEXT ASSEMBLY: D4D-9200-00-00		

TITLE: SCHEMATIC G 1000	
DRAWING NUMBER: D4D-9231-60-01	SHEET: 1/7
REPLACES DWG.#	

27 JUN 2006

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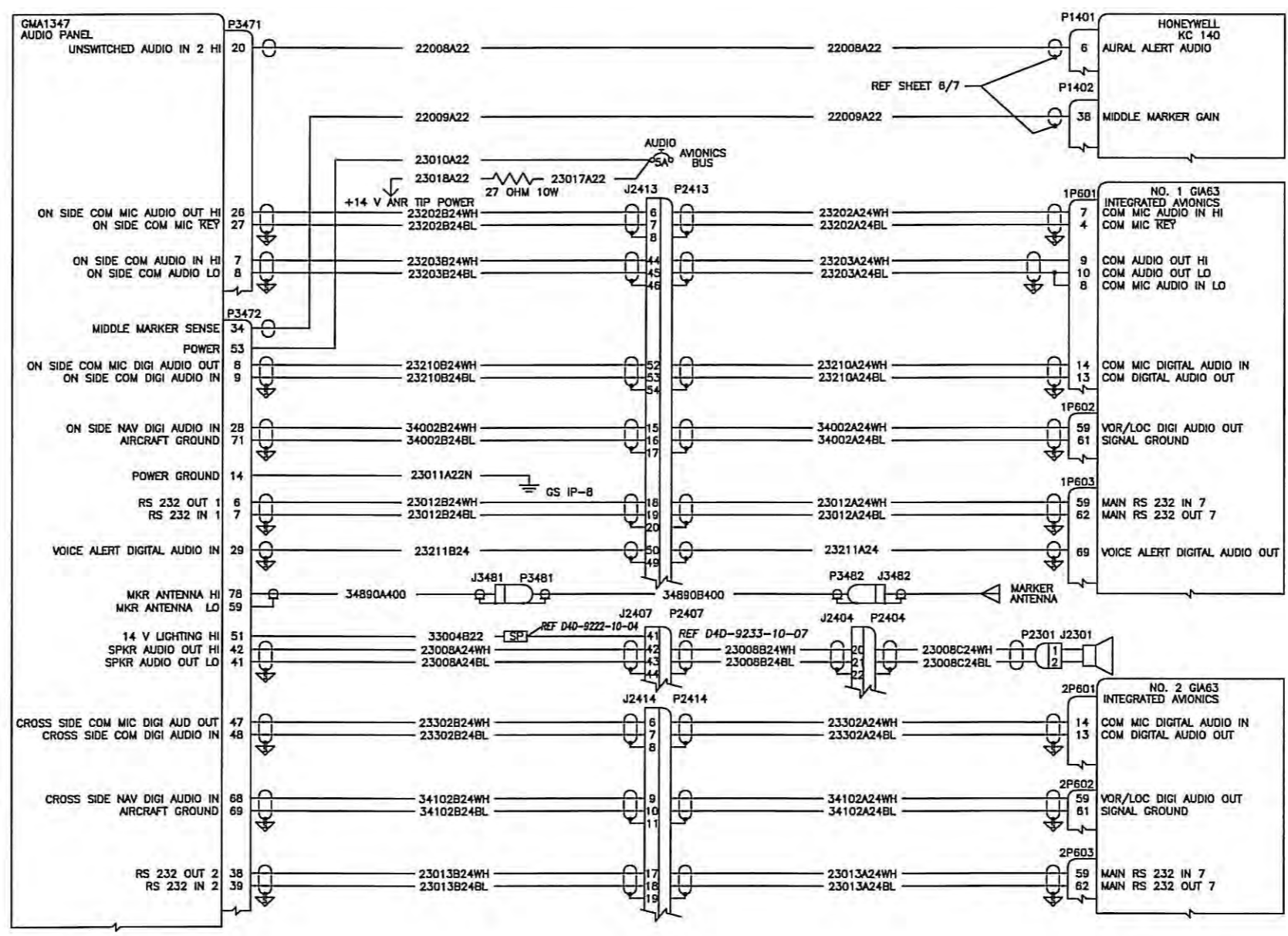
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QTY	QTY	ITEM	PART NUMBER	DESCRIPTION	MATERIAL TYPE	H.T.	MATERIAL SIZE	SPECIFICATION	SUPPLIER
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AN#		OAM 40-193	OAM 40-193a	OAM 40-241	MAM 40-248				
DATE		01.09.05	13.12.05	07.02.06	20.03.06				
DRAWN		KOWARSCH	KOWARSCH	KOWARSCH	KOWARSCH				
CHECK									
CHECK DATE					30.05.06				
STRESS					M. Reichel				
STRESS DATE					27 JUNI 2006				
APPROVAL									
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NEXT ASSEMBLY:
D4D-9200-00-00

TITLE:
SCHEMATIC
G 1000

DRAWING NUMBER:
D4D-9231-60-01

SHEET:
2/7

REPLACES DWG.#

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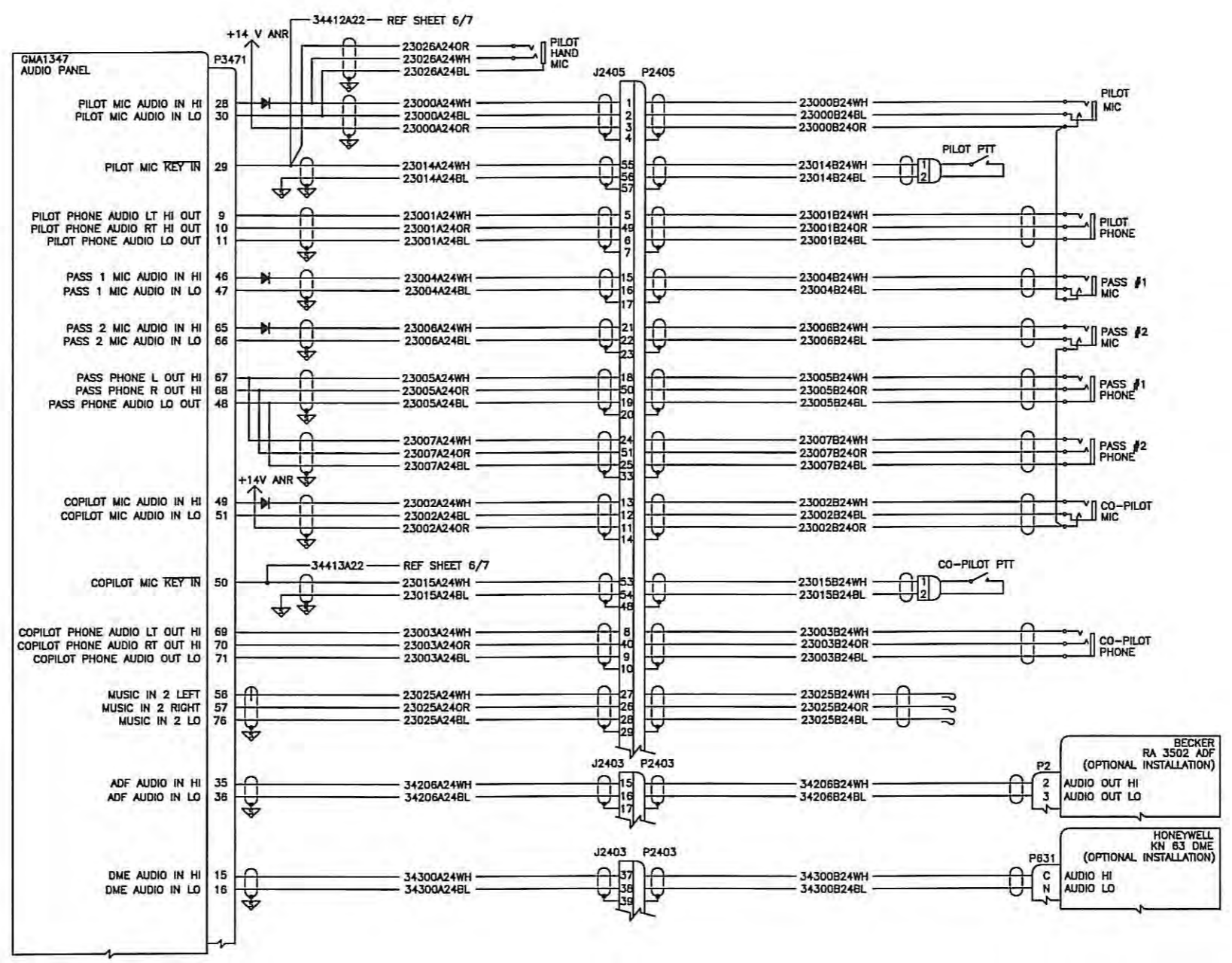
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DRAWN		KOWARSCH	KOWARSCH	KOWARSCH	KOWARSCH				
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		Dimensions in Millimetres	Tolerances are ISO 2768 m		
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		REPLACES DWG.#			

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 27 JUN 2006

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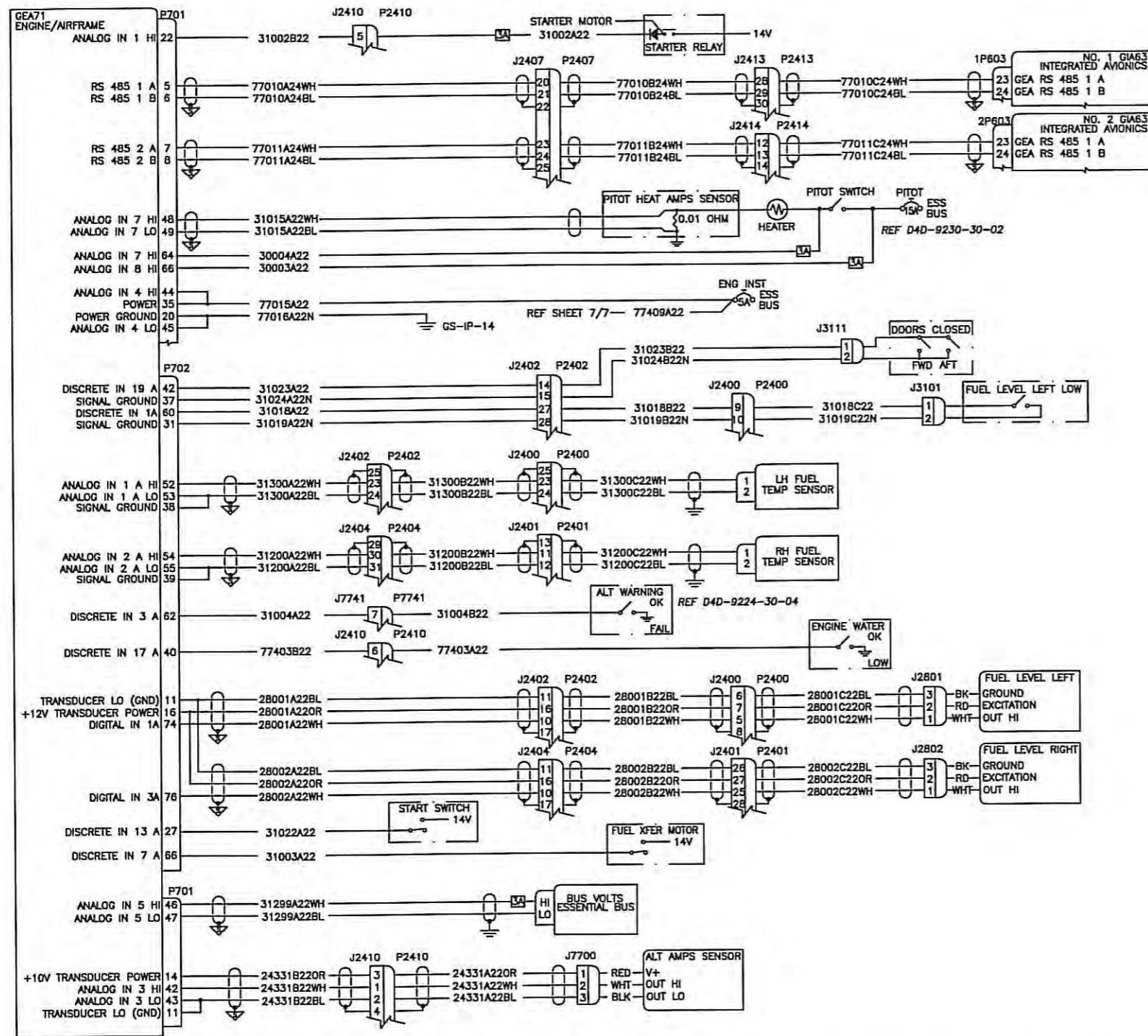
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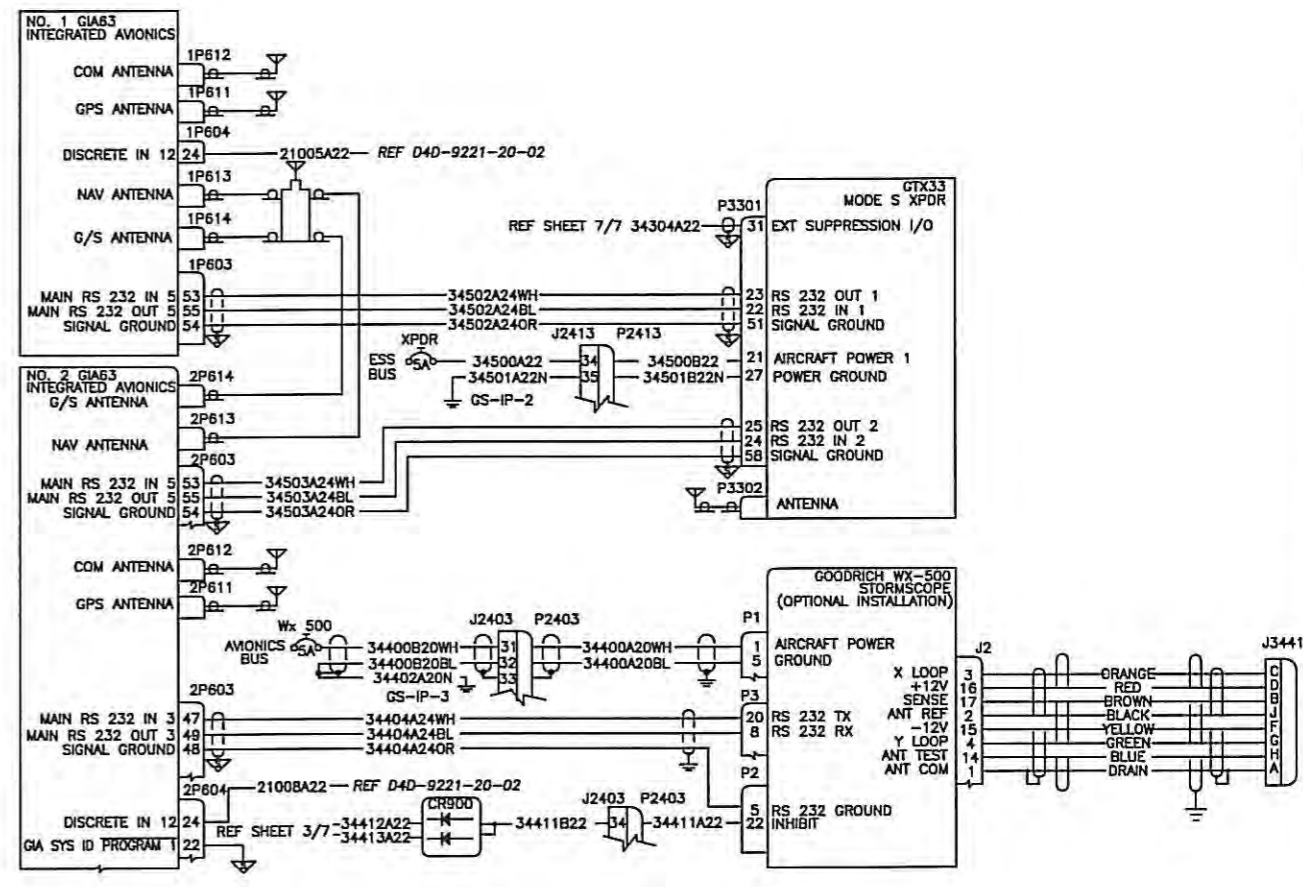
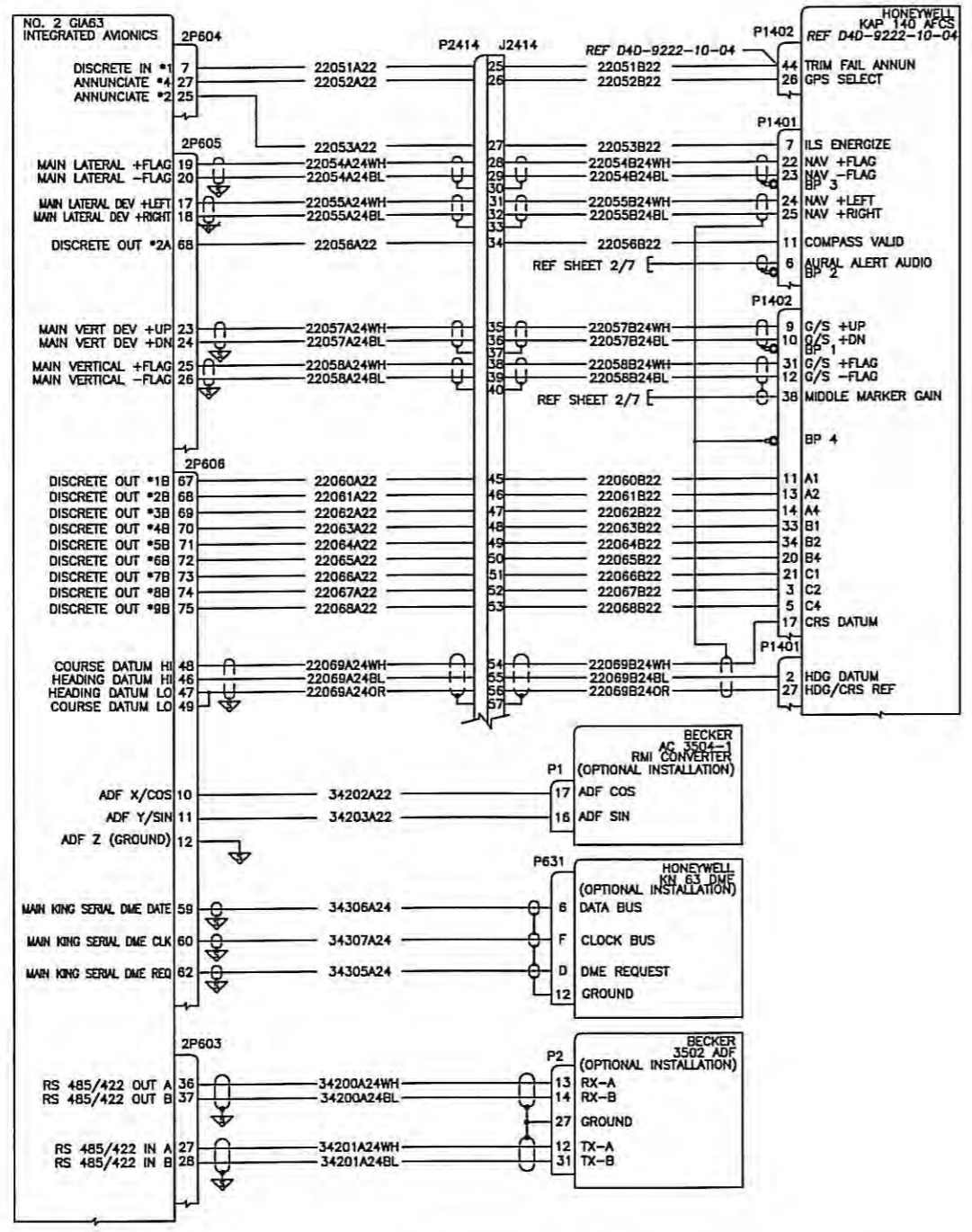
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Size: B	Scale: NTS	First Angle	TITLE: SCHEMATIC G 1000
Dimensions in Millimetres	Tolerances are ISO 2768 m		
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	REPLACES DWG.#		

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Dimensions in Millimetres Tolerances are ISO 2768 m

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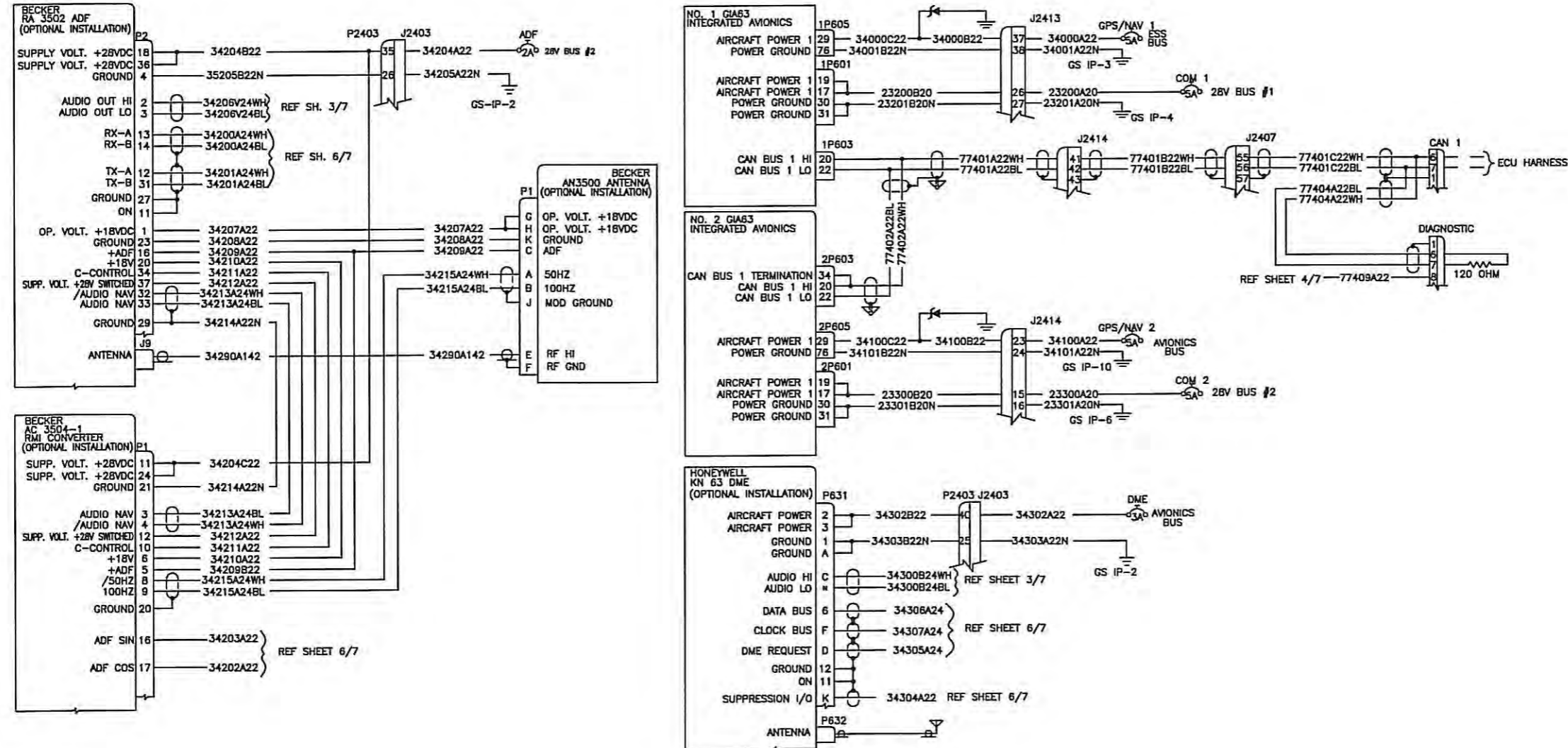
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DRAWING NUMBER: D4D-9231-60-01

SHEET: 7/7

REPLACES DWG.#

