

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:

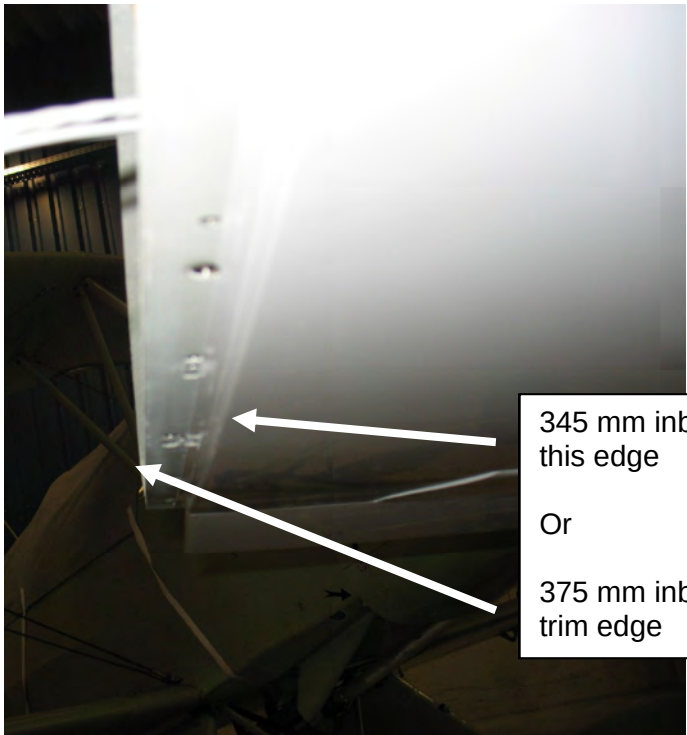
Qty	Description	Part Number
1	Right hand aileron	DA4-5762-00-00_1
5	Spring pin	DIN1481-1.5X10-A2
1	Hexagon nut, self locking	DIN985-M6-A2
4	Screws	DIN 7971-C3.5x13-A2

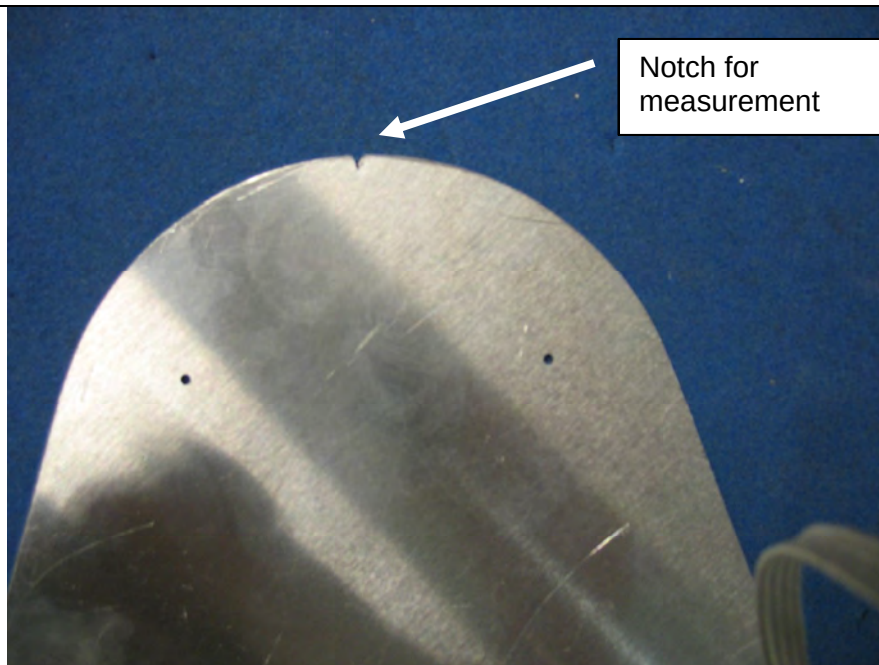
Relocation of GMU 44:

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.	Mark drillholes using marking template D4D-5741-00-SO. Refer to Drawing D4D-5741-00-00x02 and photos. Note: Use notch on Template for measuring. Caution: You must not use marking template as a drilling template!  345 mm inboard of this edge Or 375 mm inboard of trim edge



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.

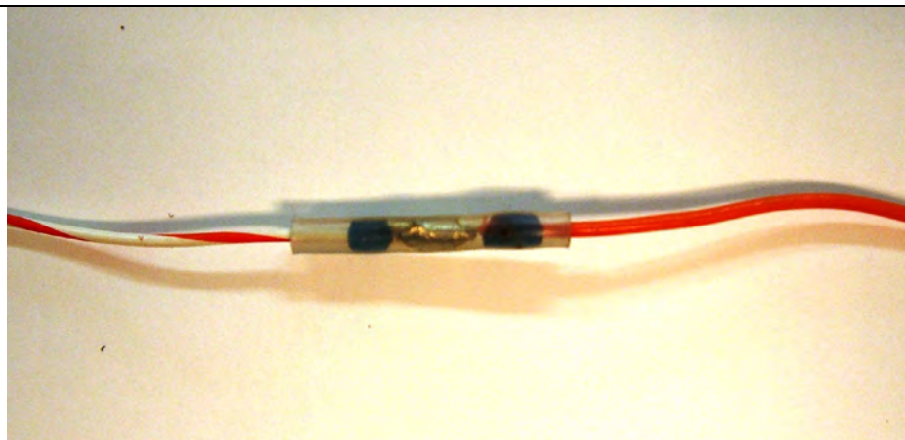
14. Drill holes for screws (3,7 mm, 0.144 inch) through inner laminate.

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.	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.) Note: For magnetic interference test sequence refer to Appendix A.
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

	8	7	6	5	4	3	2	1
--	---	---	---	---	---	---	---	---

F

E

D

C

B

A

NOTES:

1. UNLESS OTHERWISE NOTED, ALL STRANDED WIRE MUST CONFORM TO MIL-W-22759716 OR EQUIVALENT

2. UNLESS OTHERWISE NOTED, ALL SHIELDED WIRE MUST CONFORM TO MIL-C-27500 OR EQUIVALENT

3. UNLESS OTHERWISE NOTED, ALL WIRES ARE 24 GAUGE MINIMUM.

4. SYMBOL DESIGNATIONS
- SHIELDED SINGLE CONDUCTOR
SHIELD TERMINATED TO GROUND

SHIELDED SINGLE CONDUCTOR
SHIELD FLOATS

WHT
BLU

TWISTED SHIELDED PAIR
SHIELD TERMINATED TO GROUND

WHT
BLU

TWISTED SHIELDED PAIR
SHIELD FLOATS

WHT
BLU
DRN

TWISTED SHIELDED 3 CONDUCTOR
SHIELD TERMINATED TO GROUND

WHT
BLU
DRN

TWISTED SHIELDED 3 CONDUCTOR
SHIELD FLOATS

TWISTED SHIELDED 4 CONDUCTOR
SHIELD TERMINATED TO GROUND

TWISTED SHIELDED 4 CONDUCTOR
SHIELD FLOATS

AIRCRAFT GROUND

WIRE SPLICE CONNECTION

COAXIAL CABLE

N/C = NO CONNECTION

GARMIN SHIELD BLOCK GROUND REFER TO DOC. 190-00313-09

5. 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.

7. 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)

8. 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

9. FOR FAN FAIL OUTPUT: OPEN = ACTIVE = FAN FAIL, GROUND = INACTIVE = FAN OK
10. FOR TRIM FAIL OUTPUT: GROUND = ACTIVE = TRIM FAIL, OPEN = INACTIVE = TRIM OK
19. RELATED DOCUMENTS
- 190-00295-36 UNIT INTERCONNECT SUMMARY
- 190-00295-37 UNIT POWER.
- 190-00295-38 INTERCONNECT.
21. FOR GROUNDING PROCEDURES, REFER TO 190-00313-00 & 190-00313-04. ADDITIONAL FOR IFR OPERATION, REFER TO GARMIN DOCUMENT 190-00313-09.

- 22: 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

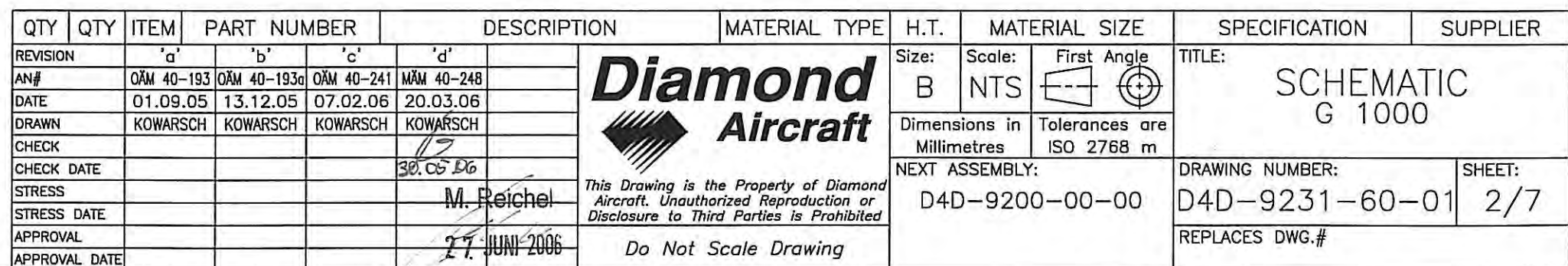
REV 2 UNITS HAVE SERIAL NUMBERS LESS THAN 46901600
REV 3 UNITS HAVE SERIAL NUMBERS OF 46901600 OR GREATER

QTY	QTY	ITEM	PART NUMBER		DESCRIPTION		MATERIAL TYPE	H.T.	MATERIAL SIZE		SPECIFICATION	SUPPLIER
REVISION		'a'	'b'	'c'	'd'	 Diamond Aircraft <i>This Drawing is the Property of Diamond Aircraft. Unauthorized Reproduction or Disclosure to Third Parties is Prohibited</i> <i>Do Not Scale Drawing</i>		Size:	Scale:	First Angle	TITLE: SCHEMATIC G 1000	
AN#		OAM 40-193	OAM 40-193a	OAM 40-241	MAM 40-248		B	NTS				
DATE		01.09.05	13.12.05	07.02.06	20.03.06		Dimensions in		Tolerances are			
DRAWN		KOWARSCH	KOWARSCH	KOWARSCH	KOWARSCH		Millimetres		ISO 2768 m			
CHECK							NEXT ASSEMBLY:		DRAWING NUMBER:		SHEET:	
CHECK DATE					30.05.06		D4D-9200-00-00		D4D-9231-60-01		1/7	
STRESS					M. Reichel					REPLACES DWG.#		
STRESS DATE												
APPROVAL												
APPROVAL DATE					27 JUN 2006							

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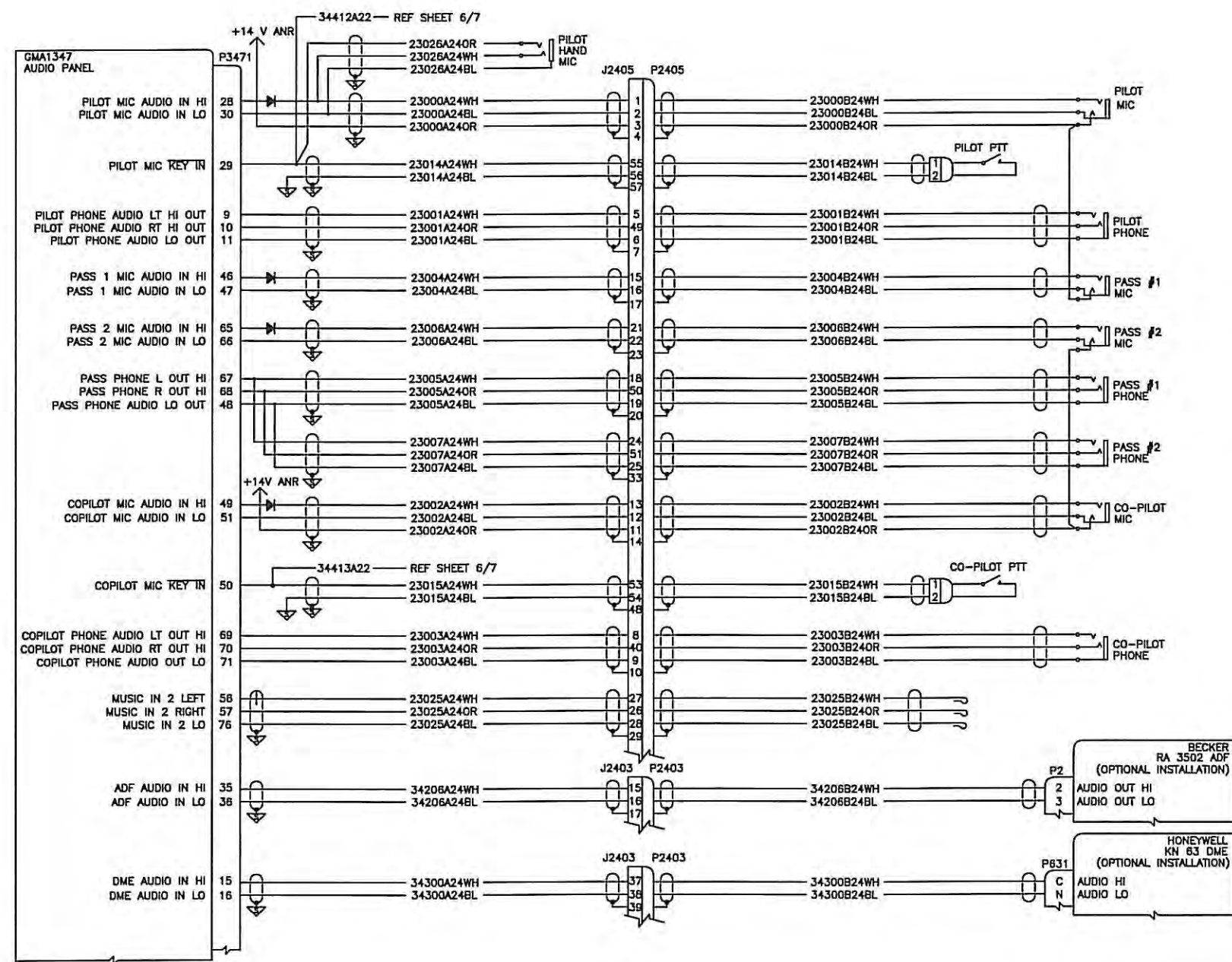
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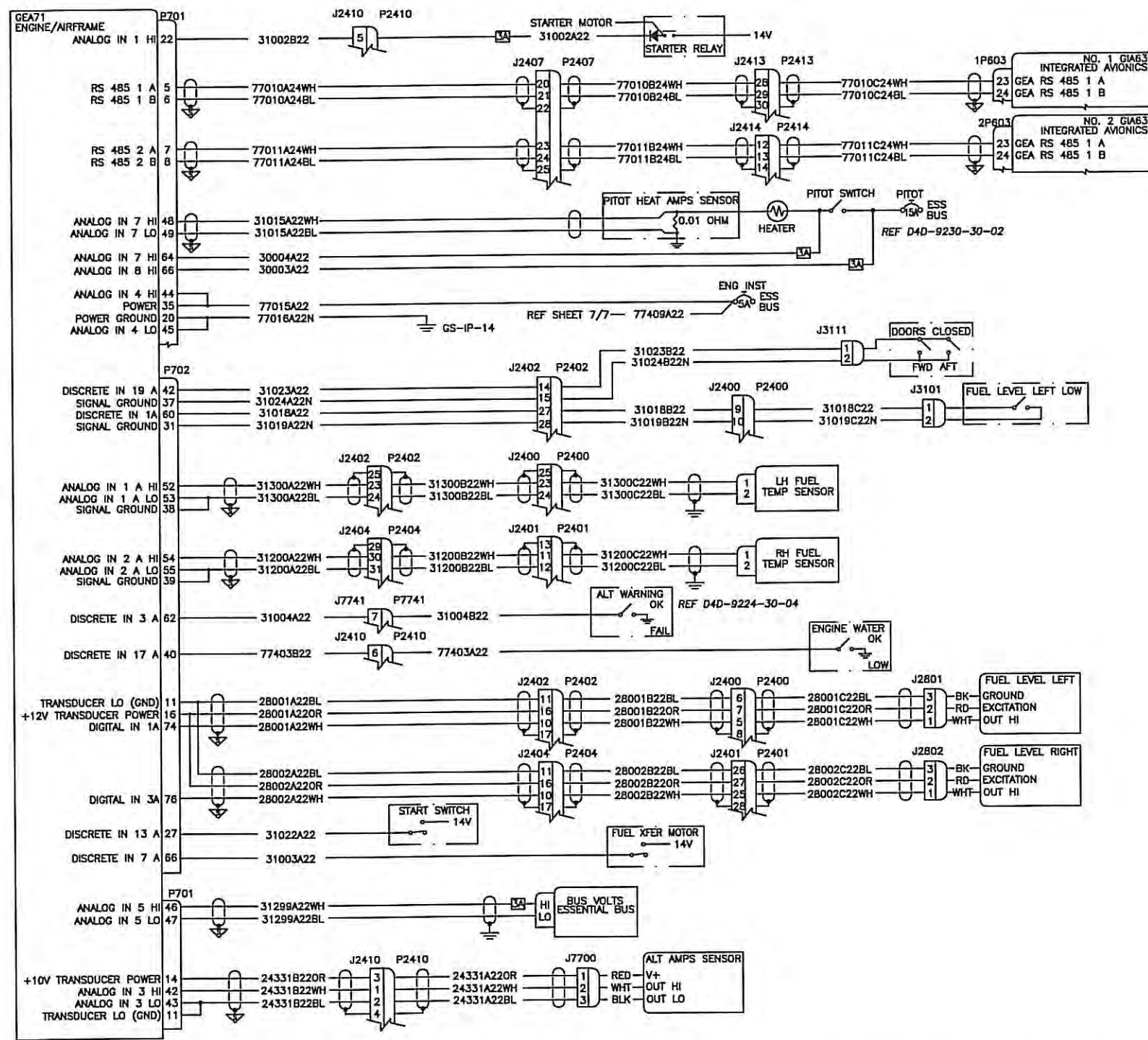
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REVISION			'a'	'b'	'c'	'd'				Size:	Scale:	First Angle	TITLE: SCHEMATIC G 1000
AN#			OAM 40-193	OAM 40-193a	OAM 40-241	MAM 40-248				B	NTS		
DATE			01.09.05	13.12.05	07.02.06	20.03.06				Dimensions in	Tolerances are		
DRAWN			KOWARSCH	KOWARSCH	KOWARSCH	KOWARSCH				Millimetres	ISO 2768 m		
CHECK										NEXT ASSEMBLY:		DRAWING NUMBER:	SHEET:
CHECK DATE										D4D-9200-00-00		D4D-9231-60-01	3/7
STRESS												REPLACES DWG.#	
STRESS DATE													
APPROVAL													
APPROVAL DATE													



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M. Reichel
27 JUN 2006



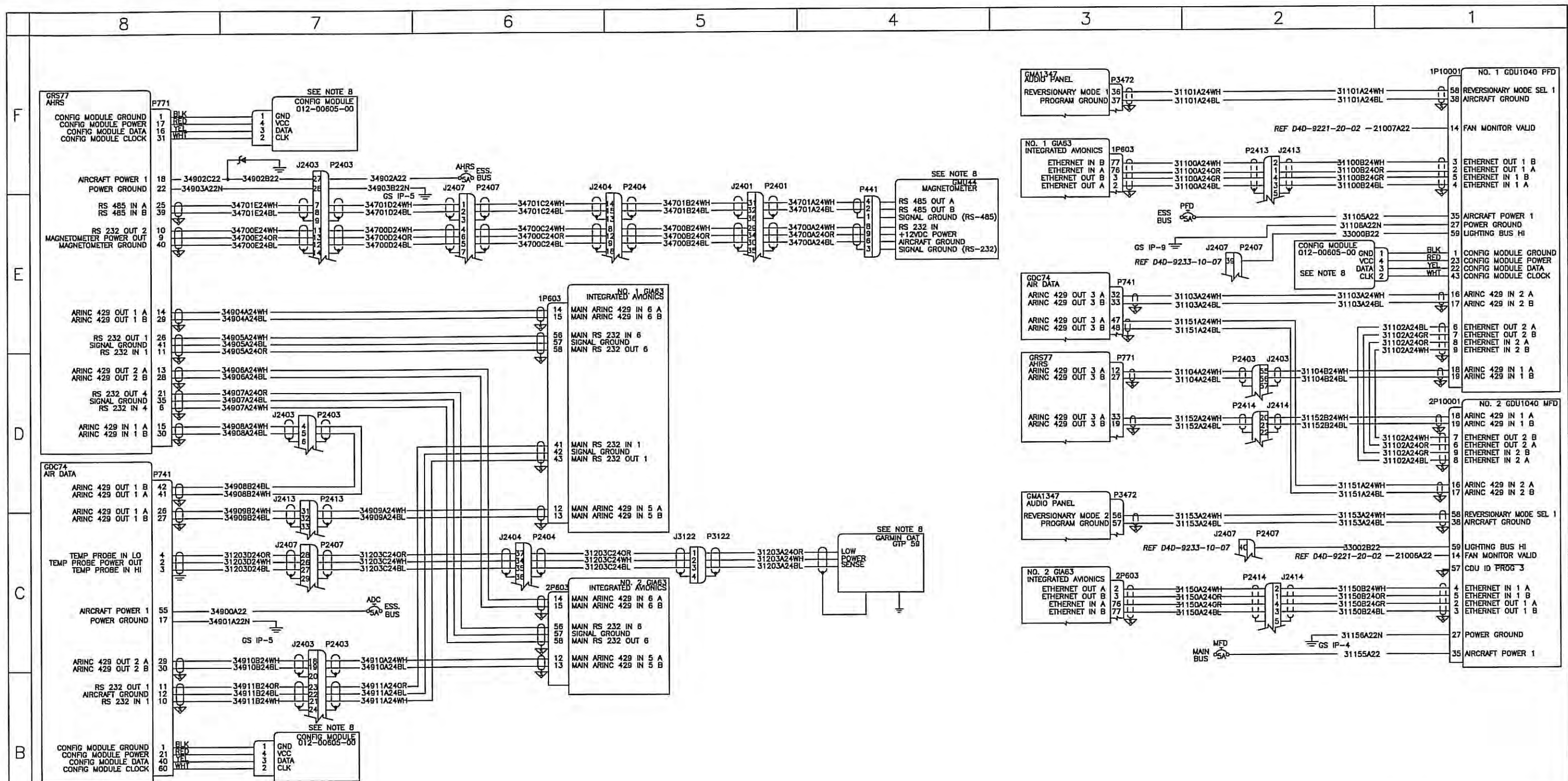
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AN#		OAM 40-193	OAM 40-193a	OAM 40-241	OAM 40-248				
DATE		01.09.05	13.12.05	07.02.06	20.03.06				
DRAWN		KOWARSCH	KOWARSCH	KOWARSCH	KOWARSCH				
CHECK									
CHECK DATE			M. Reichel	30.05.06					
STRESS									
STRESS DATE			27 JUN 2006						
APPROVAL									
APPROVAL DATE									

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Size: B	Scale: NTS	First Angle	TITLE: SCHEMATIC G 1000
Dimensions in Millimetres	Tolerances are ISO 2768 m		
NEXT ASSEMBLY: D4D-9200-00-00	DRAWING NUMBER: D4D-9231-60-01	SHEET: 4/7	
	REPLACES DWG.#		



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		B	NTS		SCHEMATIC G 1000
DATE	01.09.05	13.12.05	07.02.06	20.03.06		Dimensions in Millimetres	Tolerances are ISO 2768 m		
DRAWN	KOWARSCH	KOWARSCH	KOWARSCH	KOWARSCH		NEXT ASSEMBLY:		DRAWING NUMBER:	SHEET:
CHECK						D4D-9200-00-00		D4D-9231-60-01	5/7
CHECK DATE		M. Reicher	30.05.06						
STRESS									
STRESS DATE		27 JUN 2006							
APPROVAL									
APPROVAL DATE									



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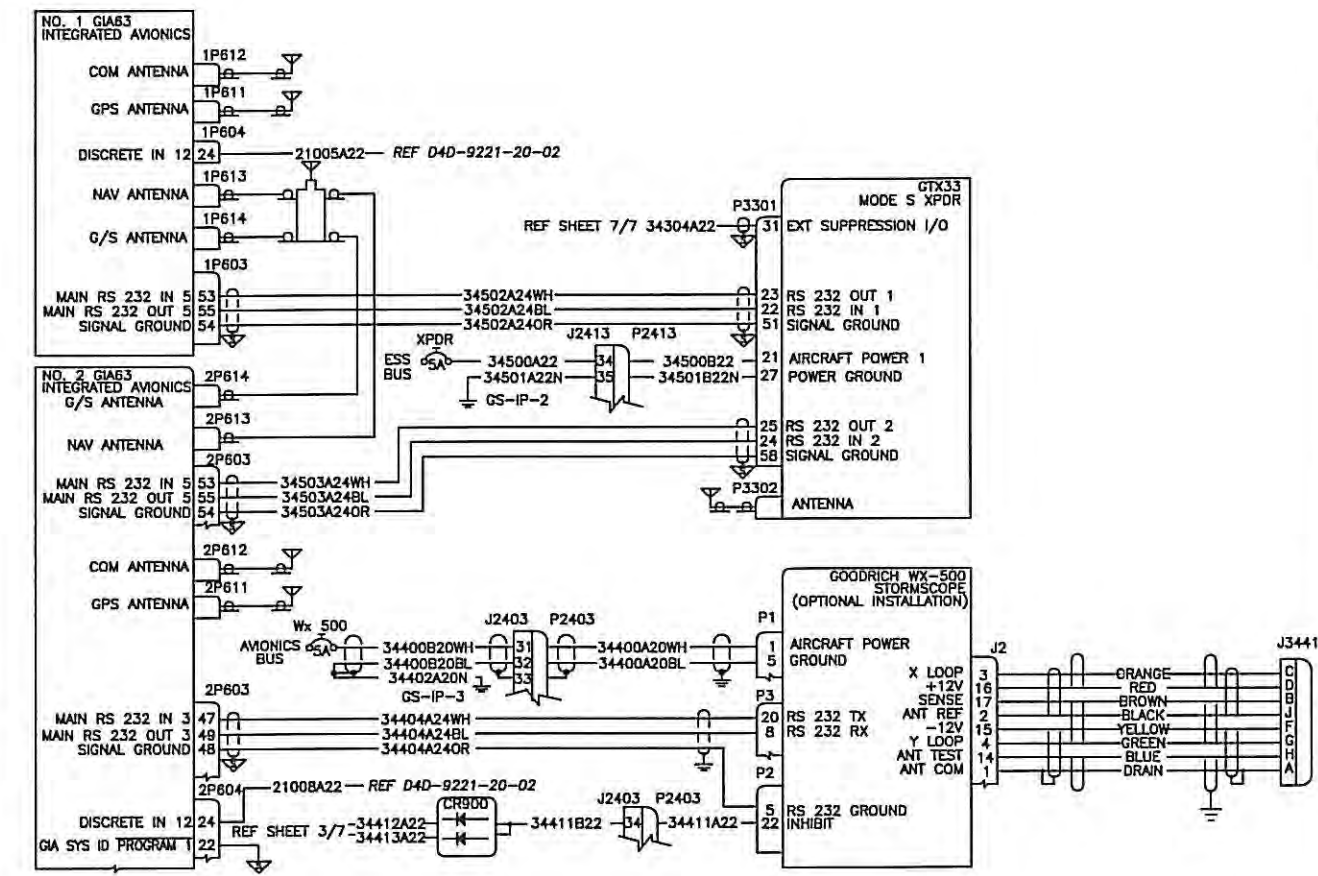
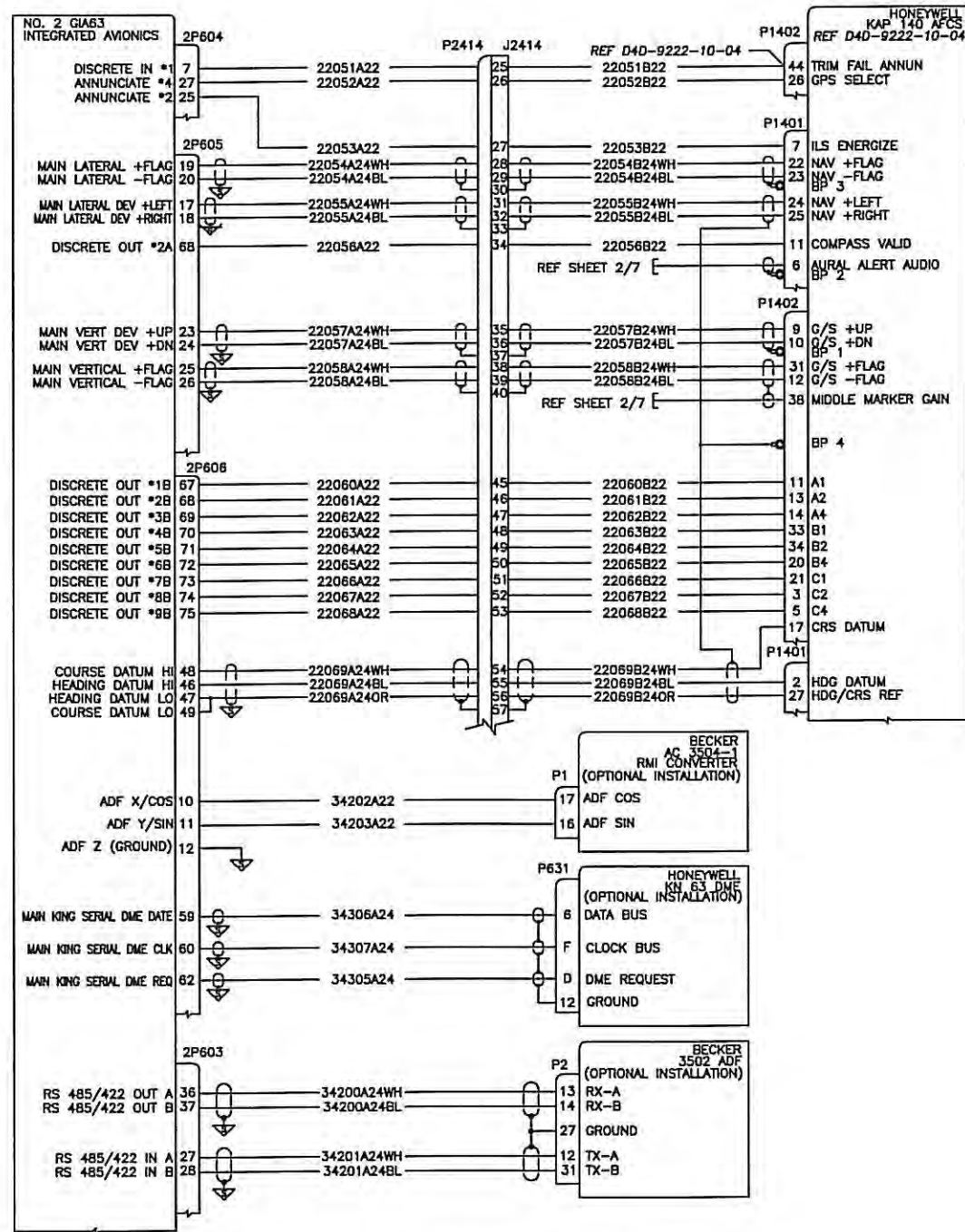
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QTY	QTY	ITEM	PART NUMBER	DESCRIPTION	MATERIAL TYPE	H.T.	MATERIAL SIZE	SPECIFICATION	SUPPLIER
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AN#		OAM 40-193	OAM 40-193	OAM 40-241	MAM 40-248				
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DRAWN		KOWARSCH	KOWARSCH	KOWARSCH	KOWARSCH				
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APPROVAL DATE									

M. Reichel

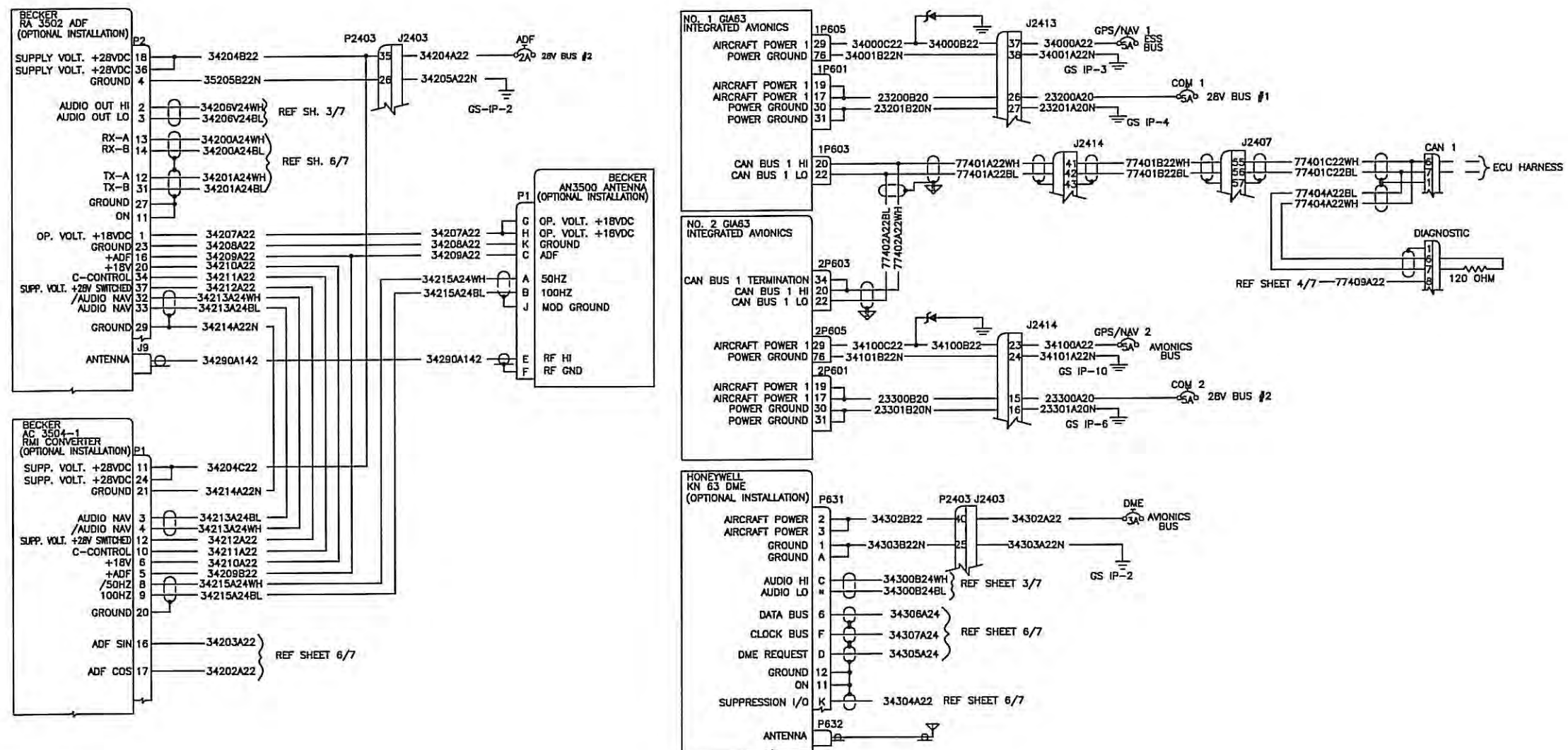
27 JUN 2006

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Do Not Scale Drawing

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NEXT ASSEMBLY: D4D-9200-00-00				REPLACES DWG.#		



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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									
APPROVAL DATE									



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Size: B
Scale: NTS
First Angle

Dimensions in Millimetres
Tolerances are ISO 2768 m

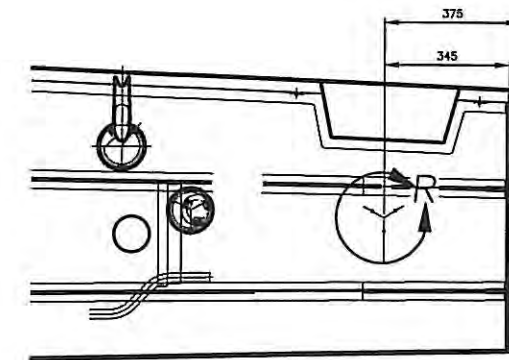
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SCHEMATIC
G 1000

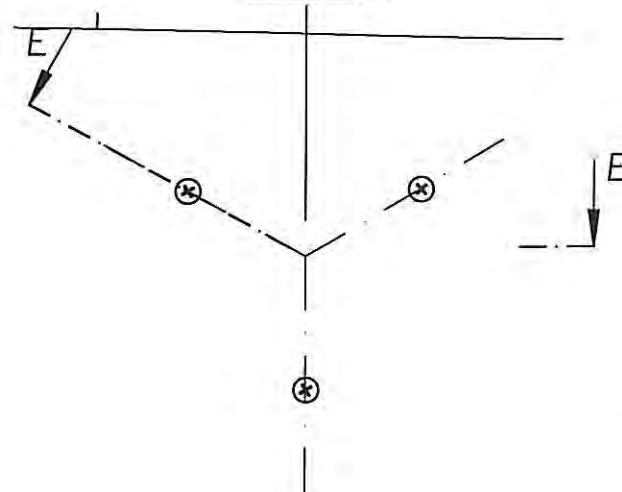
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7/7

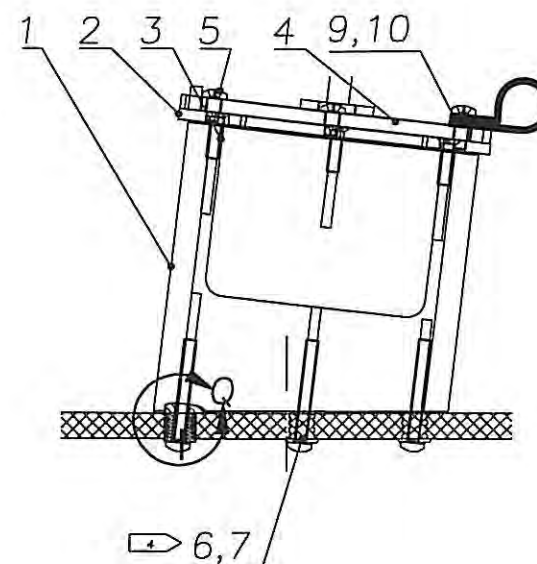
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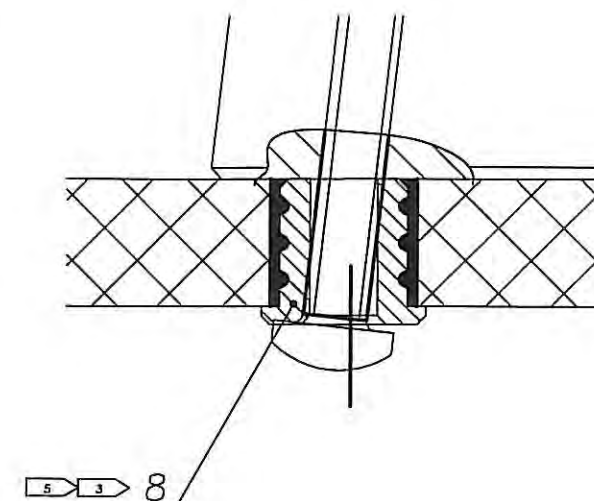
Detail R
Scale 1:1



Section (Schnitt) E-E
Scale 1:1



Detail Q
Scale 5:1



- 

Diese Zeichnung ist nur gültig wenn im Detail R KEIN Wartungsausschnitt vorhanden ist.
This drawing is only valid if there is no access hole in Detail R
- 

Für das Markieren der Bohrungsposition ist die Schablone D40-5741-00-SO zu verwenden.
To mark the drillhole position use template D40-5741-00-SO
- 

Inneres Laminat der Sandwich-Konstruktion stehen lassen nur Loch für Schraube bohren
keep inner laminate of sandwich-structure drill only hole for screw
- 

Mit Loctite 262 sichern
Secure with Loctite 262
- 

Buchse mit Terostat MS 9380
Band in bushing with Terostat MS 9380

Bemaßungen und weitere Informationen siehe D4D-5741-00-00_1

Measures and further information gives drawing D4D-5741-00-00_1

10	-	3	MS35214-25	Linienknaube				
9	-	1	187-7700	Schelle				
8	-	3	D4D-5741-00-30	Coilair Bush				
7	-	3	MS35214-20	Linienknaufschraube				
6	-	3	DIN 125A-M4-PA	Schelte				
5	-	2	MS35214-23	Linienknaufschraube				
4	-	1	D11-00870-00	Magnetometer, GMU 44				
3	-	3	MS24893-BB28	Senkknaufschraube				
2	-	1	15-00481-00	GMU 44 Mounting Ring				
1	-	1	D60-3427-02-51	Dietanzring, GMU 44				
D4D-5742-00-00x01				Füßschendekel ZSB RH				
D4D-5741-00-00x01				Füßschendekel ZSB LH				
Pos.	Stk. L	Stk. R	Teil-Nr.	Benennung		Ortlenkung/Vormessungen		Lieferant/Bemerkungen
BEZUGSVERWEISUNG: DIESE ZEICHNUNG BEZUGT SICH AUF DIE ZEICHNUNG D4D-5741-00-00-01. DIESE ZEICHNUNG BEZUGT SICH AUF DIE ZEICHNUNG D4D-5741-00-00-01. DIESE ZEICHNUNG BEZUGT SICH AUF DIE ZEICHNUNG D4D-5741-00-00-01.					Maßstab: NTS	Flüchsendekel ZSB Wing cap Assemblies		
BRUCH NICHT BEZUGSVERWEISUNG					Benennung:			
					AIRCRAFT Industries GmbH A-2700 Wiener Neustadt, N. O. Str. 5			
D4D-5741-00-00-01				Zeichnung Nr.:	D4D-5741-00-00x02			
Nr.	Blatt	OS	Bohm	Diam	Name	Kreuzschlitz		Blatt
1	1	1	1	1	1	1		1
TECHNISCHER D4D-5741-00-00-02								

M. Volck
22 NOV. 2006

T. Krassnitzer
22 NOV. 2006