Diamond Aircraft Industries GmbH
N. A. Otto-Straße 5
A-2700 Wiener Neustadt
Austria

DAI OSB 40NG-021
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25-Feb-2015

OPTIONAL SERVICE BULLETIN
OSB 40NG-021

I TECHNICAL DETAILS

I.1 Category

Optional.

I.2 Airplanes affected

Type:	DA 40 NG
Serial numbers:	40.N001 through 40.N062
	All DA 40 NG converted via OSB 40-080 using WI-OSB 42-080 up to and including revision 7

I.3 Date of effectivity

25-Feb-2015

I.4 Time of Compliance

At holder's discretion

I.5 Subject

Installation of alternator regulator, Austro Engine P/N E4A-91-200-000.

ATA-Code: 24-30

I.6 Reason

Austro Engine GmbH developed and certified new alternator regulators for the E4 engine. This service bulletin describes the work necessary to retrofit the new alternator regulator on airplanes already in service.

I.7 Concurrent Documents

None.

I.8 Approval

The technical information or instructions contained in this document relate to the Design Change Advisory No. MÄM 40-551/a, which has been approved under the authority of EASA Design Organization Approval ref. EASA.21J.052.

The technical content of this document has been approved under the authority of DOA ref. EASA.21J.052.

I.9 Accomplishments / Instructions

Comply with WI-OSB 40NG-021, latest effective issue.

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I.10 <u>**Mass (Weight) and CG**</u>

The change in mass and CG is negligible.

II   <u>PLANNING INFORMATION</u>

II.1 <u>**Material and Availability**</u>

See WI-OSB 40NG-021, latest effective issue.

Materials including drawings are available from Diamond Aircraft Industries.

II.2 <u>**Special Tools**</u>

None.

II.3 <u>**Labour Effort**</u>

Approx. 10 hours.

II.4 <u>**Credit**</u>

None.

II.5 <u>**Reference Documents**</u>

DA 40 NG Airplane Maintenance Manual, Doc. No. 6.02.15, latest effective issue.

III   <u>REMARKS</u>

1. All work must be done by a certified aircraft service station or a certified aircraft maintenance mechanic.

2. All work, particular those that are not especially described in this Service Bulletin, must be done in accordance with the referenced Maintenance Manual.

3. Completion of all work must be recorded in the log book.

4. In case of doubt contact Diamond Aircraft Industries GmbH.

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EXECUTION REPORT TO
SERVICE BULLETIN
OSB 40NG-021

AIRPLANE DATA

Airplane Serial Number _____

Airplane Registration _____

Airplane Operator _____

Hours of operation of airplane _____

No. of landings _____

Hours of operation-engine   LH _____

                             RH _____

Typical operation of airplane   private, club, training, other _____

_____
Date, Name, Sign

Please fax the completed form to Fax No. +43-2622-26700-1369 or e-mail to airworthiness@diamond-air.at

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WORK INSTRUCTION

WI-OSB 40NG-021

I   GENERAL INFORMATION

I.1   Subject

Installation of alternator regulator, Austro Engine P/N E4A-91-200-000.

I.2   Reference Documents

DA 40 NG Airplane Maintenance Manual, Doc. No. 6.02.15, latest effective issue.

I.3   Remarks

a) All work must be done by a certified aircraft service station or a certified aircraft maintenance mechanic.

b) All work carried out must be of good workmanship strictly considering the guidelines of AC 43-13.1B.

c) All work, in particular if not described in this work instruction, must be done in accordance with the referenced maintenance manual.

d) For conversion factors between SI units and US/Imperial units refer to AMM Chapter 02.

e) In case of doubt, contact Diamond Aircraft Industries GmbH.

II   DRAWINGS, SPECIAL TOOLS & MATERIALS

II.1   Drawings

D44-2433-01-00
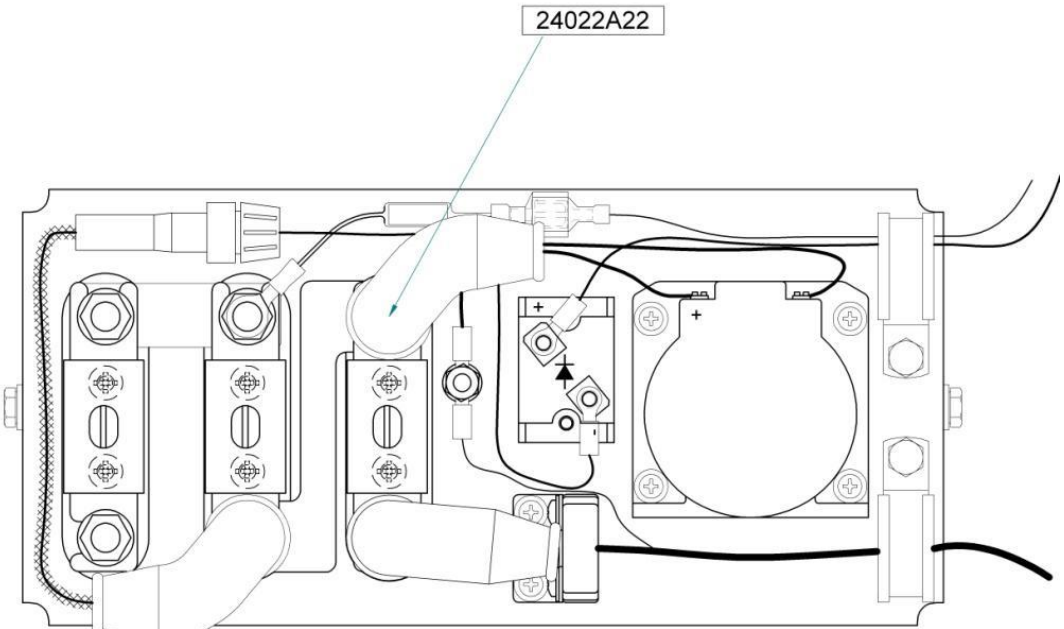D44-9224-30-01x02

II.2   Special Tools

None.

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II.3   Material

Quantity	Part Number	Description
1	E4A-91-200-000	Alternator Regulator
1	D44-2403-24-00x01	Alternator Regulator Harness
2	DIN 933-M6x35-A2	Screw
2	DIN 125-A6,4-A2	Washer
2	DIN 9021-A6,4-A2	Washer
2	DIN 985-M6-A2	Locknut
15	PLT1MM30	Cable Tie
10	PLT4SM30	Cable Tie
1	PR 812 Kit 25	Sealant

Material including drawings is available from Diamond Aircraft Industries.

III   INSTRUCTIONS

1	Disconnect the Main Battery for Maintenance i.a.w. AMM Section 24-31.
2	Disconnect ECU Backup Battery (refer to AMM Section 24-31).
3	Remove the pilot´s seat i.a.w. AMM Section 25-10.
4	Remove the instrument panel cover i.a.w. AMM Section 25-10.
5	Remove the alternator regulator and its harness.
6	Install the new alternator regulator P/N E4A-91-200-000 i.a.w. drawing D44-2433-01-00.
7	Connect the alternator regulator harness D44-2403-24-00x01 to the regulator and route it to the instrument panel along the left fuselage side with the engine harness. Secure the harness using cable ties.
The following steps (8 to 16) are only required for airplanes which have been converted via OSB 40-080 and for airplanes which have a conventional instrument panel installed.	
8	Remove the engine cowlings (refer to AMM Section 71-10).
9	Remove the Engine Intercooler i.a.w. AMM Section 81-00.
10	Remove the cover of the relay panel installed on the firewall.

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11	Carefully remove the sealant at the firewall feed-through for the wire harnesses.
12	Route the ring terminal of the alternator regulator harness D44-2403-24-00x01 through the firewall and connect it to the fuse holder as shown in the figure below. Secure the wire using cable ties. Figure 1
13	Install the cover of the relay panel.
14	Seal the firewall wiring hole with PR812. **CAUTION** **When handling chemical always obey the manufacturers health and safety instructions.**
15	Install the Engine Intercooler i.a.w. AMM Section 81-00.
16	Install the engine cowlings (refer to AMM Section 71-10).

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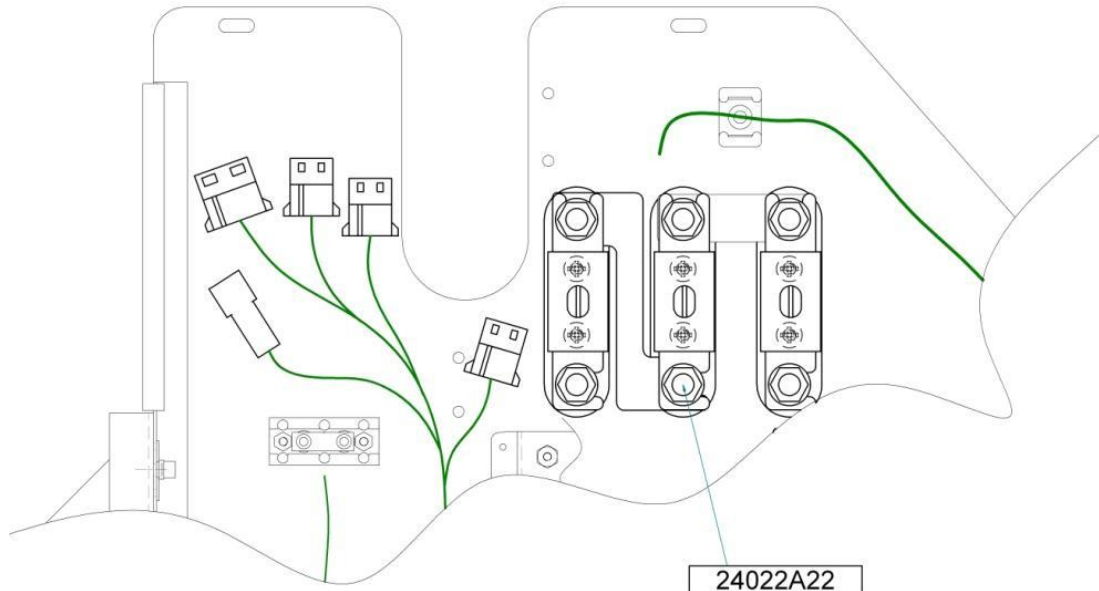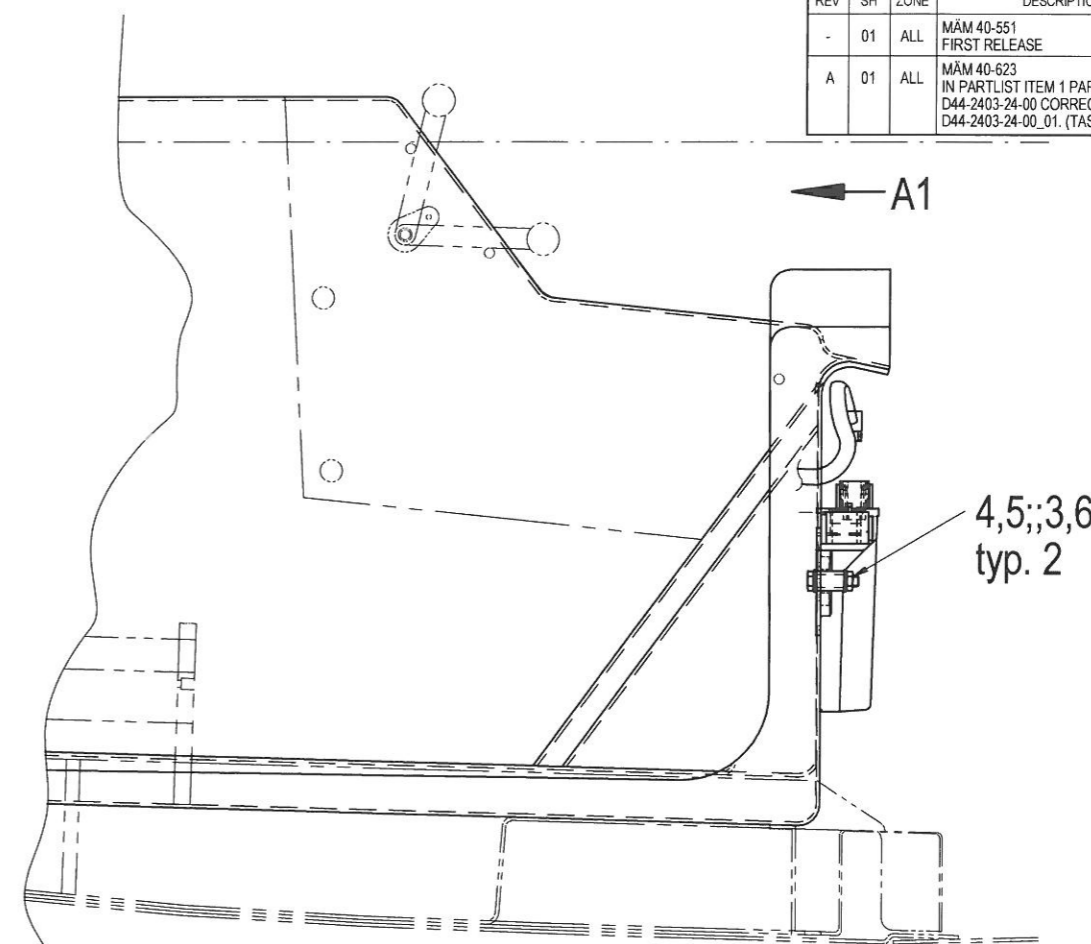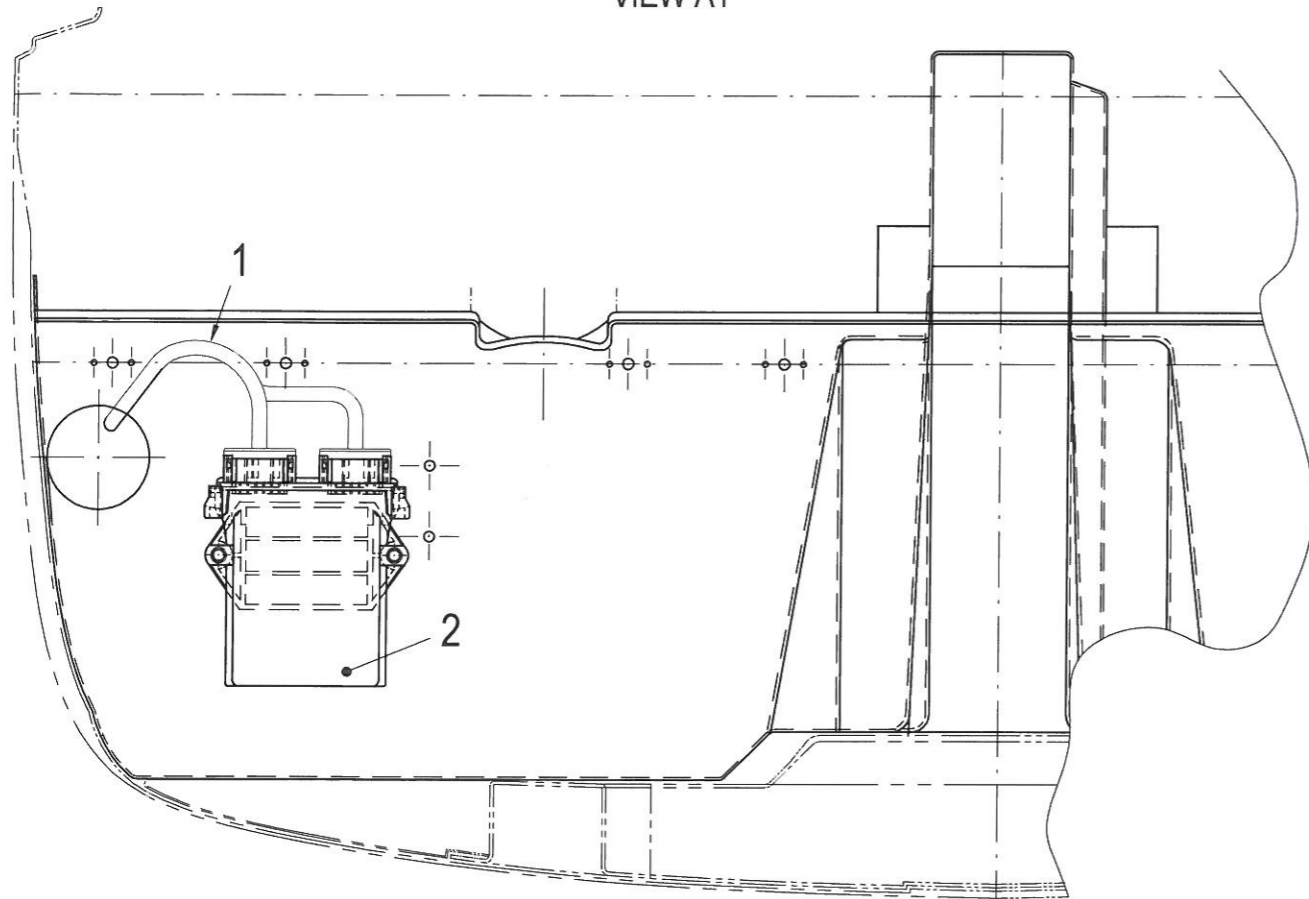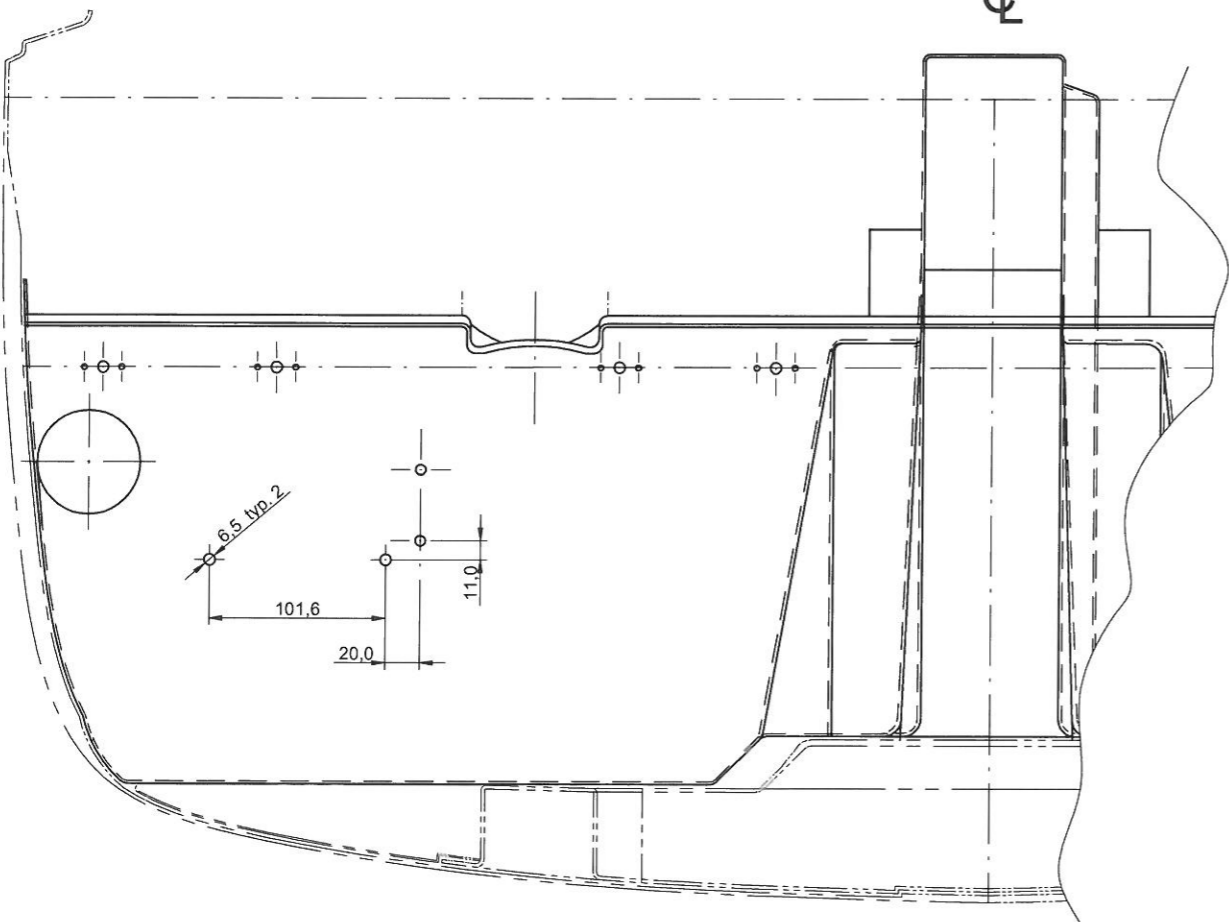| 17	For airplanes **NOT** converted via OSB 40-080, connect the ring terminal of the alternator regulator harness to the fuse holder as shown in the figure below.
	24022A22 Figure 2
18	Connect the connector P2424 of the alternator regulator harness to the connector J2424 of the instrument panel harness.
19	Install the instrument panel cover i.a.w. AMM Section 25-10.
20	Install the pilot´s seat i.a.w. AMM Section 25-10.
21	Connect the ECU Backup Battery (refer to AMM Section 24-31).
22	Connect the Main Battery i.a.w. AMM Section 24-31.
23	Incorporate TR-MÄM 40-551 into the Airplane Flight Manual according to instructions given on the cover sheet of the TR-MÄM 40-551.
24	Clean working areas, check for foreign objects.
25	Check all altered, replaced, repaired parts for proper function.
26	Test all systems in working area for function.
27	Make all necessary entries in the airplane logs.

VIEW A1

1

2

← A1

4,5;:3,6
typ. 2

VIEW A1

CL

Ø 6,5 typ. 2

101,6

20,0

11,0

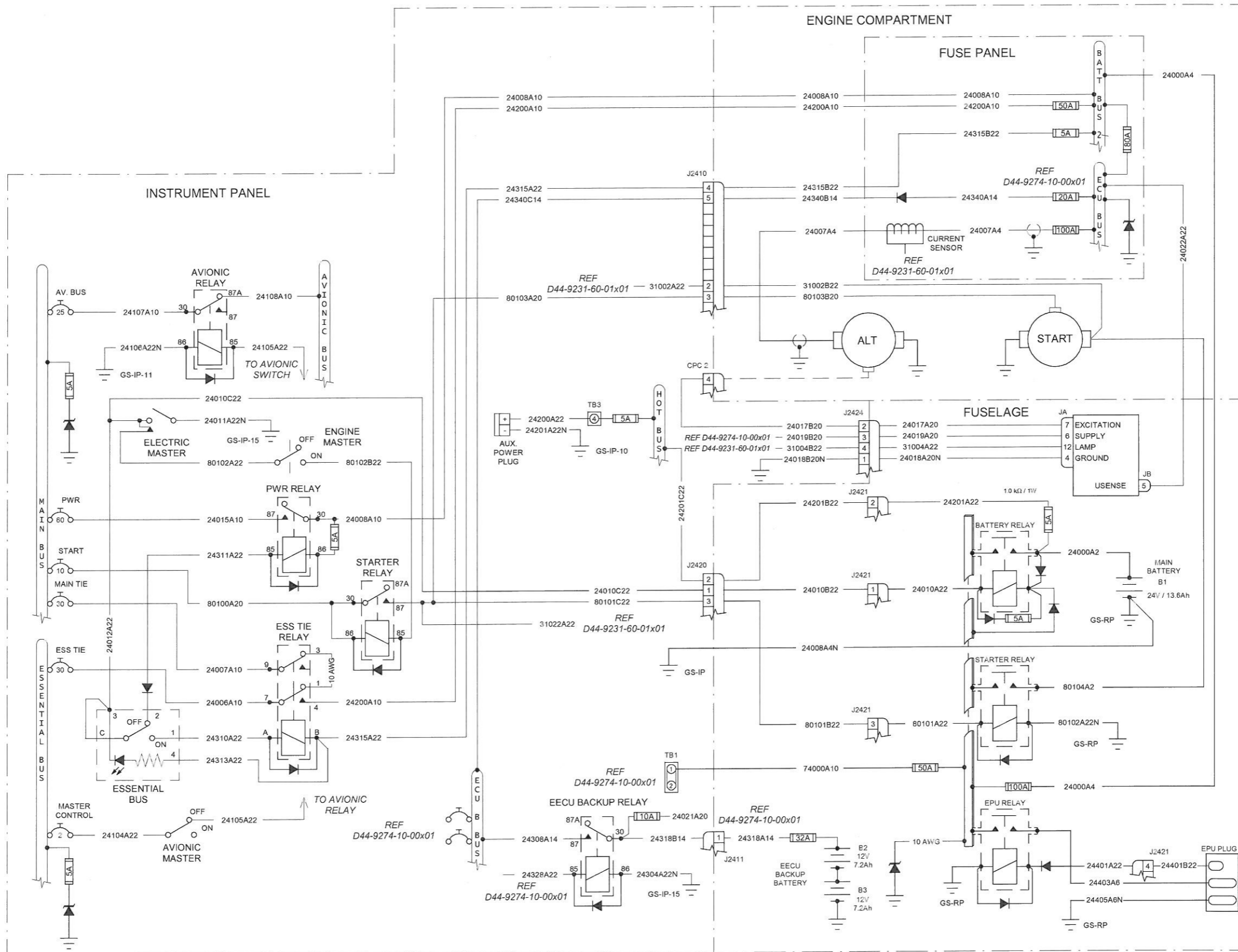|		REVISION			
REV	SH	ZONE	DESCRIPTION	DATE	APPROVAL
-	01	ALL	MÄM 40-551 FIRST RELEASE	20.10.11	BURGER
A	01	ALL	MÄM 40-623 IN PARTLIST ITEM 1 PART NUMBER D44-2403-24-00 CORRECTED TO D44-2403-24-00_01. (TASKLIST 186.)	19.12.12	SEE TB

ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL TYPE	H.T.	MATERIAL SIZE	SPECIFICATION	REMARK
6	2	DIN 985-M6-A2	SELF-LOCKING NUT					
5	2	DIN 9021-M6-A2	WASHER					
4	2	DIN 933-M6x35-A2	HEXAGON SCREW					
3	2	DIN 125-A6,4-A2	WASHER					
2	1	E4A-91-200-000	ALTERNATOR REGULATOR					
1	1	D44-2403-24-00_01	ALTERNATOR REGULATOR HARNESS					

DIMENSIONS	METRIC	IDENTIFICATION MARKINGS	DP-S-17-00001	-	Diamond Aircraft Industries GmbH	Diamond Aircraft Industries	N. A. Otto-Straße 5 A-2700 Wiener Neustadt		

FIRST ANGLE PROJECTION

FORMAT A2

CLASSIFICATION: NONE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM

DIMENSION TOLERANCES

3.2

2 DECIMAL ±0,25
1 DECIMAL ±0,5
DECIMAL ±1
ANGLE ±1°
RAD ±0,5

FINISH IN MICRO- METER

IDENTIFICATION MARKINGS DP-S-17-00001 -

INTERCHANGEABLE PART NO

THIS DRAWING WAS PRODUCED USING SOFTWARE: SOLID EDGE V18

FILENAME D44-2433-01-00a.dft

DEPARTMENT	SIGN	DATE	PROJECT DA 40 NG
DRAWN Schuster		19.12.12	TITLE
CHECKED: Scheikl		28-Dec-2013	ALTERNATOR REGULATOR INSTALLATION
QA: N/A			
STRESS: N/A			
MANUF.: N/A			
SYSTEM: Kowarsch		20.03.201	
APPROVED: Burger		20.03.2013	

DWG.ORIG. DAIA	DWG.NO. D44-2433-01-00	REV "A"
CODE 710197	SCALE NTS	SH 01 OF 01

ENGINE COMPARTMENT

FUSE PANEL

BATT BUS

24008A10
24200A10
24008A10
24200A10
24008A10
24200A10
50A
24000A4

24315B22
24315B22
5A
80A

REF
D44-9274-10-00x01

ECU BUS

24315A22
24340C14
24315B22
24340B14
24340A14
20A

J2410

31002A22
31002B22

24007A4
CURRENT SENSOR
24007A4
100A

REF
D44-9231-60-01x01

24022A22

INSTRUMENT PANEL

AVIONIC RELAY

AV. BUS
25
24107A10
24108A10
87A
87
30

AVIONIC BUS

REF
D44-9231-60-01x01

80103A20
80103B20

24106A22N
86
85
24105A22

GS-IP-11

TO AVIONIC SWITCH

ALT

START

CPC 2

FUSELAGE

JA

24010C22
24011A22N

ELECTRIC MASTER
GS-IP-15
OFF
ENGINE MASTER
ON

AUX. POWER PLUG
+
-
24200A22
24201A22N
TB3
5A
HOT BUS

GS-IP-10

J2424
24017B20
24019B20
31004B22
24017A20
24019A20
31004A22
7 EXCITATION
6 SUPPLY
12 LAMP
4 GROUND

REF D44-9274-10-00x01
REF D44-9231-60-01x01
24018B20N
24018A20N

JB
5 USENSE

80102A22
80102B22

PWR RELAY

MAIN BUS

PWR
60
24015A10
87
30
24008A10
5A

START
10
24311A22
85
86

MAIN TIE
20
80100A20
80101C22

J2421
24201B22
24201A22

1.0 kΩ / 1W

STARTER RELAY
87A
87
30

J2420
24010C22
80101C22

24010B22
J2421
24010A22

BATTERY RELAY

24000A2
MAIN BATTERY B1
24V / 13.6Ah

REF
D44-9231-60-01x01
31022A22

5A
GS-RP

ESS TIE RELAY

ESSENTIAL BUS

ESS TIE
30
24007A10
9
3

24008A4N
GS-IP

24012A22

24006A10
7
4
24200A10

STARTER RELAY
80104A2

OFF
ON
24310A22
A
B
24315A22

C
3
2
1
4
24313A22

80101B22
J2421
3
80101A22
80102A22N
GS-RP

TB1
REF
D44-9274-10-00x01
74000A10
50A

100A
24000A4

MASTER CONTROL
2
24104A22
OFF
ON
24105A22

ESSENTIAL BUS

AVIONIC MASTER

TO AVIONIC RELAY

REF
D44-9274-10-00x01

ECU BUS

EECU BACKUP RELAY
87A
10A
24021A20
30
87

REF
D44-9274-10-00x01

24318B14
24318A14
32A

1
J2411

B2 12V 7.2Ah
EECU BACKUP BATTERY
B3 12V 7.2Ah

EPU RELAY
10 AWG

24308A14

24328A22
85
86
24304A22N

REF
D44-9274-10-00x01
GS-IP-15

J2421
24401A22
24403A6
4
24401B22

GS-RP

24405A6N

EPU PLUG

GS-RP

GS-RP

5A