

DIEHL

Aerospace

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REVISION TRANSMITTAL SHEET (RTS)

TO: Holders of CMM 33-50-01 concerning 'Emergency Light Power Unit (ELPU)'

- PART No. 3400-22
- PART No. 3400-22-10

Revision No. 03 dated DEC 05/08 is attached.

FILING INSTRUCTIONS

Because of the number of affected pages please remove and destroy completely the previous issue (Rev. 02) dated JUL 20/07 and replace it by the attached issue.

REASON FOR ISSUE

- Incorporation of new part number 3400-22-10
(announced with Service Information Letter No. D1347-33-017).
- Incorporation of new modification status AMENDT 'A' for part number 3400-22-10.
- Incorporation of breakdown for Logic Module (Ref. IPL Fig. 4).
- Revision of functional test procedure.
- Correction of errors and complete editorial rework.

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REVISION TRANSMITTAL SHEET

TO: Holders of CMM 33-50-01 concerning 'Emergency Light Power Unit (ELPU)' PN 3400-22

Revision No. 02 dated JUL 20/07 is attached.

FILING INSTRUCTIONS

Because of the number of affected pages please remove and destroy completely the previous issue (Rev. 01) dated MAY 25/03 and replace it by the attached issue.

REASON FOR ISSUE

- Battery details transferred to new ACMM ATA reference 33-51-01.
- Incorporation of Amendment A and Amendment B.
- Incorporation of Temporary Revisions 33-50-01-001 (dated FEB 27/06) and 33-50-002 (dated JUN 30/06).
- Circuit diagram added.
- Repair information added.
- IPL Figure 2 (Printed Circuit Board) added.
- Vendor codes and addresses updated.
- Incorporation of new company name and company masthead.
- Correction of errors and complete editorial rework.

33-50-01

RTS 1
JUL 20/07

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COMPONENT MAINTENANCE MANUAL WITH ILLUSTRATED PARTS LIST

EMERGENCY LIGHT POWER UNIT (ELPU)

PNR: 3400-22

PNR: 3400-22-10

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RECORD OF REVISIONS

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PART No. 3400-22

SERVICE BULLETIN LIST

SB/AEB	R E V	TITLE	SB ISSUE DATE	INCLUDED IN REVISION	DATE OF INCORPORATION
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INTRODUCTION

TASK 33-50-01-879-801-A01

1. General Information

A. Legal Information

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This document is given in confidence and may not be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronically, mechanically, photocopying, recording or otherwise, without the prior written permission of DIEHL Aerospace GmbH.

Unless DIEHL Aerospace GmbH (the company) has accepted a contractual obligation in respect of the information and data contained herein, such information and data is provided without responsibility, and the company disclaim all liability arising from its use.

Users are kindly requested to notify DIEHL Aerospace GmbH of any discrepancy, omission or error found in this manual.

B. Management of Waste Materials

- (1) The items described in this manual are composed of different electronic and mechanical materials. They can be finished with lacquer and can contain other chemical material like glue etc. The relevant consumable materials are named in this manual as required.
- (2) The individual customer has to take care of the individual national laws and regulations when parts/items have to be wasted.

C. Specifications and Contents

- (1) This Component Maintenance Manual conforms to the ATA Specification 2200 (known as iSpec 2200). It is written in ASD-STE100 Simplified Technical English (formerly known as AECMA Simplified English).
- (2) SI units of measurement are used in this manual, with Imperial units in parentheses.
- (3) This manual gives data and shop-verified instructions to do maintenance, tests and repairs on the component in a workshop. It does not describe maintenance on the component when it is installed in the aircraft.
- (4) Only approved staff with the necessary skills is permitted to do the maintenance procedures described in this manual.
- (5) Maintenance Task Oriented Support System (MTOSS) task and subtask identification is used in this manual. The maintenance tasks and other data have special MTOSS numbers for the use of Electronic Data Processing (EDP). The MTOSS numbers can be ignored by the user of the manual.
- (6) This manual contains:
 - Technical data for the component,
 - Functional description,
 - Testing and fault isolation procedures,
 - Maintenance and repair procedures for the component,
 - An Illustrated Parts List (IPL) with data for the component parts. Parts are identified in all sections of the manual by the IPL figure and item number.

INTRO

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(7) Date of Shop Verification by Actual Performance:

- Testing and Fault Isolation: OCT 23/2008
- Disassembly: NOV 14/2002
- Assembly: NOV 14/2002

D. Revision Service

- (1) This manual will be revised when necessary to include current information.
- (2) Service Bulletins may be issued separately. If there is an effect of a Service Bulletin on this manual, the Service Bulletin will be recorded in the Service Bulletin List. The Service Bulletin List will be revised if necessary.

E. How to use the Manual

- (1) Make sure that the manual contains the information applicable to your component.
Look on the Title Page for the part number.
- (2) If you need to identify a part or find a part number, refer to the IPL, which has an introduction to show the procedure.
- (3) The instructions in this manual must be used for all the component maintenance.
Read the applicable WARNINGS and CAUTIONS before you do the work on the component.
- (4) DIEHL Aerospace GmbH is not responsible for maintenance done on this unit that is not performed in accordance to instructions detailed in this manual.

F. Manufacturing

The Emergency Light Power Unit is manufactured by:

DIEHL Aerospace GmbH
Cabin Customisation Interior
Donaustr. 120
D-90451 Nuernberg, GERMANY
FSCM: D1347

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G. List of DIEHL Aerospace Repair Facilities

The table that follows gives the repair facilities of DIEHL Aerospace GmbH.

NOTE: Contact the repair facility first by E-mail or fax, before you ship a unit for repair.

TRADE NAME	ADDRESS
DIEHL Aerospace GmbH CSC France	Centreda Avenue Didier Daurat F-31700 Blagnac, FRANCE Phone: +33 561 710 067 Fax: +33 561 300 098 E-mail: support.toulouse@diehl-aerospace.de
DIEHL Aerospace, Inc. American Support Center	12001 Highway 280 Birmingham-Sterrett, AL 35147, USA Phone: +1 205 678 7101 Fax: +1 205 678 7119 E-mail: support.bhm@diehlaerospace.com
DIEHL Aerospace Asia Pacific C/O SATAIR Pte Ltd.	27 Loyang Way Singapore 508728 Phone: +65 6543 0977 Fax: +65 6543 0737 E-mail: support.sin@diehl-aerospace.de

H. Warnings, Cautions and Notes

- (1) **WARNING:**
Calls attention to the use of materials, processes, methods, procedures or limits which must be followed precisely to avoid injury or death of persons.
- (2) **CAUTION:**
Calls attention to the use of materials, processes, methods, procedures or limits which must be followed precisely to avoid damage to aircraft or equipment.
- (3) **NOTE:**
Calls attention to methods which make the job easier or provide supplementary or explanatory information.

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2. Lists

A. Measurement

(1) Measurements given in this manual are taken from original manufacturing drawings.

(2) These units of measure are used in this manual:

A	Ampere(s)
Ah	Ampere Hour(s)
C	Celsius
daNm	Deca Newton Meter(s)
deg.	Degree(s)
F	Fahrenheit
ft	Foot (feet)
g	Gram(s)
h	Hour(s)
hPa	Hecto-Pascal(s)
Hz	Hertz
in.	Inch(es)
K	Kiloohm(s)
lb.	Pound(s)
lbf ft	Pound Force Feet
M	Megohm(s)
m	Meter(s)
N	Nanofarad
Nm	Newton Meter(s)
oz	Ounce
P	Picofarad
PPM	Parts Per Million
psi	Pound(s) Per Square Inch
R	Ohm(s)
sec.	Second(s)
U	Microfarad
V	Volt(s)
W	Watt(s)

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- (3) Conversion from SI System to Imperial System:

FROM SI SYSTEM	TO IMPERIAL SYSTEM
1 hPa (= 1 mbar)	0.0145038 psi
1 g	0.0022046 lb (= 0.035274 oz)
1 kg (= 1000 g)	2.2046226 lb
1 mm	0.03937 in.
1 m (= 1000 mm)	3.2808399 ft
1 Nm	0.7375622 lbf ft
1 daNm (= 10 Nm)	7.3756215 lbf ft (= 88.5074577 lbf in.)
deg. Celsius	deg. Fahrenheit = (deg. Celsius x 1.8) + 32

- (5) Conversion from Imperial System to SI System:

FROM IMPERIAL SYSTEM	TO SI SYSTEM
1 psi	68.94757 hPa (mbar)
1 oz	28.34952 g
1 lb	0.45359 kg
1 in.	25.4 mm
1 ft	0.3048 m
1 lbf ft	1.35582 Nm
1 lbf in.	0.11298 Nm (= 0.011298 daNm)
deg. Fahrenheit	deg. Celsius = (deg. Fahrenheit - 32) / 1.8

B. Abbreviations and Acronyms

The abbreviations and acronyms that follow are used in this manual.

AC	Alternating Current
AECMA	Association Européenne des Constructeurs de Matériel Aérospatial
AR	As Required
ASD	Aerospace and Defence Industries Association of Europe
ASSY	Assembly
ATA	Air Transport Association of America
AWG	American Wire Gauge
CMM	Component Maintenance Manual
CSK	Countersunk
DC	Direct Current
DET	Detail
DMM	Digital Multimeter
EDP	Electronic Data Processing
ELPU	Emergency Light Power Unit
EMI	Electromagnetic Interference

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ESDS	Electrostatic Discharge Sensitive
FIG.	Figure
FSCM	Federal Supply Code for Manufacturers
GND	Ground
IC	Integrated Circuit
IPL	Illustrated Parts List
LED	Light Emitting Diode
MTOSS	Maintenance Task Oriented Support System
NC	Not connected
NHA	Next Higher Assembly
NICD	Nickel/Cadmium
NO	Number
NP	Not Procured
NTC	Negative Temperature Coefficient
OPT	Optional
PCB	Printed Circuit Board
PNR	Part Number
PREF	Preferred
QTY	Quantity
REF.	Reference
REPLD	Replaced
REPLS	Replaces
REQ	Required
REV	Revision
RMS	Root Mean Square
RTN	Return
RTS	Return To Service
SI	Système International d'Unités
SMD	Surface Mounted Device
SUPSD	Superseded
SUPSDS	Supersedes
TC	Temperature Coefficient
TTL	Total
UUT	Unit Under Test
V _{CC}	Main Power Supply (Common Collector Voltage)

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DESCRIPTION AND OPERATION

TASK 33-50-01-872-801-A01

1. General Information

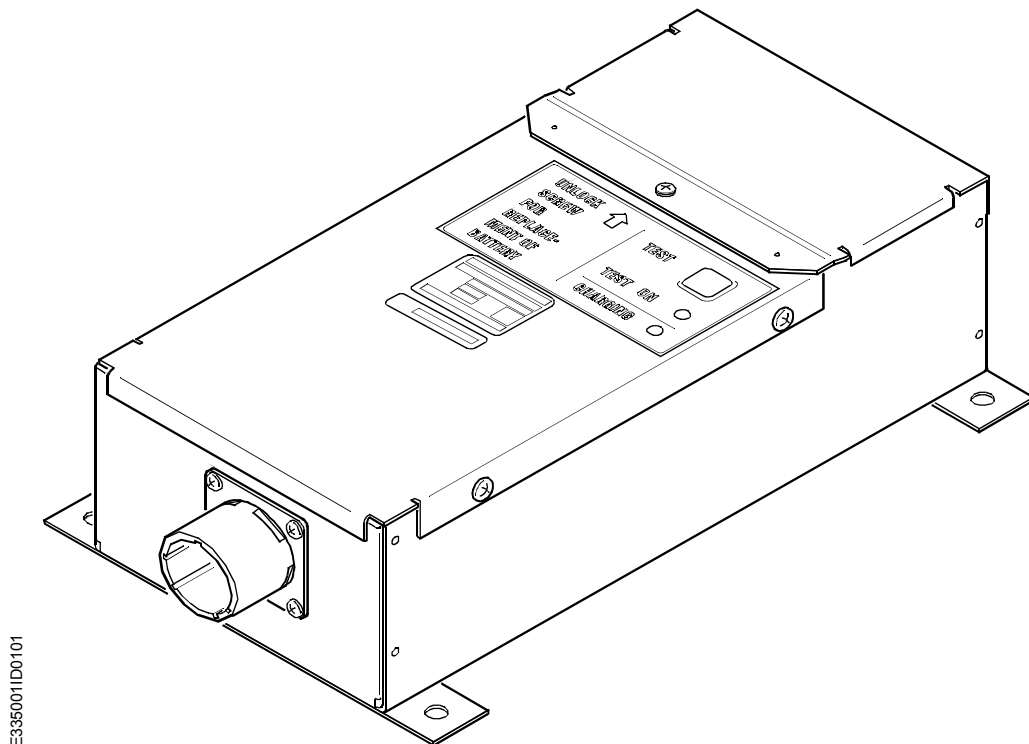
A. General

This page block gives the description and operation data for the Emergency Light Power Unit (ELPU).

NOTE: For detailed information on the battery refer to ACMM 33-51-01.

B. Purpose

- (1) The ELPU is part of the emergency lighting system of the aircraft. The integrated battery of the ELPU can supply the emergency lighting system for a period of at least 10 minutes, e.g. if the 28 V DC aircraft power fails.
- (2) The ELPU monitors the 28 V DC aircraft power. If the ARM/ON/OFF aircraft switch is set to ON or if the 28 V DC aircraft power is not available and the ARM/ON/OFF aircraft switch is set to ARM, the aircraft emergency lighting is supplied from the internal battery of the ELPU.
- (3) A battery management system controls the charge condition of the internal battery.
- (4) The figure that follows gives a general view of the unit.



EMERGENCY LIGHT POWER UNIT (ELPU)

Figure 1 /GRAPHIC 33-50-01-991-001-A01

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C. Part Number Overview

- (1) There are two different ELPU part numbers:
 - PNR 3400-22
 - PNR 3400-22-10
- (2) The two part numbers are fully interchangeable in form, fit and specified function. Part number 3400-22-10 has an improved internal timer module and an improved battery charging procedure.

TASK 33-50-01-872-802-A01

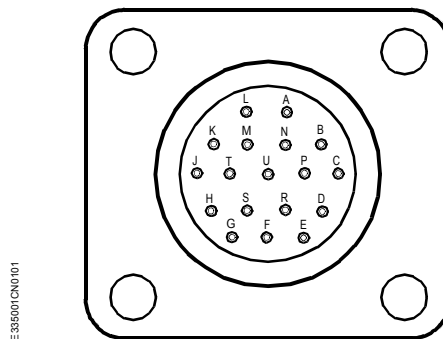
2. Description

A. General

- (1) The ELPU consists of a housing with a receptacle, a battery and a printed circuit assy. The aluminum housing is closed with the main cover and the battery cover.
- (2) The battery is connected to the printed circuit assy with two power pins and ten control pins. Three captive screws attach the battery to the housing.
- (3) The printed circuit assy is attached to the housing with four screws. It is subdivided into the main board, the logic module and the receptacle. The logic module consists of a TEST push button, a TEST ON LED, a CHARGING LED and electronic control circuits.

B. Unit Receptacle

- (1) The 18-pole receptacle of the unit is attached to the housing with four screws and a receptacle fixture.
- (2) The figure and the table that follow give the front face view and the pin allocation for the unit receptacle.



UNIT RECEPTACLE (FRONT FACE VIEW)

Figure 2 /GRAPHIC 33-50-01-991-002-A01

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Table 1 PIN ASSIGNMENT FOR UNIT RECEPTACLE

PIN NO	SIGNAL NAME
A	Cockpit Switch Position ON/ARM
B	Power Input (Operation, Retention Charge)
C	Cockpit switch position OFF
D	DC Return 1
E	Test Input
F	Status Output 1
G	Emergency 6 V DC (5 V...7 V), OUTPUT 1
H	Emergency 6 V DC (5 V...7 V), OUTPUT 2
J	Emergency 6 V DC (5 V...7 V), OUTPUT 3
K	Emergency 6 V DC (5 V...7 V), OUTPUT 4
L	Status Output 2
M	Emergency 6 V DC (5 V...7 V), OUTPUT 5
N	—
P	Battery Bridge 1
R	Battery Bridge 2
S	DC Return 2
T	Emergency ON
U	Power Unit (Heat, Quick Charge)

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C. Technical Data

The tables that follow give the technical data for the unit.

Table 2 ELECTRICAL DATA

FEATURE	SPECIFICATION
Part Number	• 3400-22 • 3400-22-10
<u>Supply Voltage:</u>	
• Nominal	28 V DC
• Steady State	18 to 32.5 V DC
Input Current (Steady State)	• 2.0 A max. • 0.2 A nominal, no battery heating • 0.9 A nominal, battery heating on • 0.6 A Quick Charge, no battery heating • 1.5 A Quick Charge, battery heating on
<u>Input Signals:</u>	
• 28 V DC	Open / 28 V DC with a threshold of 14 +/- 1 V DC for more than one second
• OFF	Open / Grounded with a threshold of less than 2 V DC for more than one second
• ARM	Open / Grounded with a threshold of less than 2 V DC for more than one second
<u>Output Signals:</u>	
• EML1	5 to 7 V DC protected by fuse
• EML2	5 to 7 V DC protected by fuse
• EML3	5 to 7 V DC protected by fuse
• EML4	5 to 7 V DC protected by fuse
• EML5	5 to 7 V DC protected by fuse
• Status #1	Open / Grounded 28 V DC / less than 2 V DC at 20 mA current limited to 50 mA typ.
• Status #2	Open / Grounded 28 V DC / less than 2 V DC at 20 mA current limited to 50 mA typ.
<u>Battery:</u>	
• Part Number	3301-31
• Cells	5 x NiCd
• Voltage	6 V DC nominal (5 to 7 V)
• Weight (max.)	0.460 kg [1.014 lb]

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Table 3 TEMPERATURE

FEATURE	SPECIFICATION
Temperature Range:	
•Operation	-15 to +55 deg. C [+5 to +131 deg. F] +70 deg. C [+158 deg. F] for 30 minutes (battery recharge suspended above +42 deg. C [+108 deg. F] max.)
•Storage	Refer to page block STORAGE

Table 4 DIMENSIONS / WEIGHT

FEATURE	SPECIFICATION
Dimensions:	
•Max. Length	215 mm [8.465 in]
•Max. Width	138 mm [5.433 in]
•Max. Height	237 mm [9.331 in]
Max. Weight (with battery)	1.0 kg [2.205 lb]

TASK 33-50-01-872-803-A01

3. Operation

A. Truth Table

- (1) The ELPU monitors the status of external input signals and enables the emergency light outputs EML1 thru EML5.
- (2) The status of the ARM input signal and the emergency light outputs is shown by the two status outputs Status #1 and Status #2:
 - Status #1 gives the status of the ARM aircraft switch (pin A of unit receptacle).
The status output is grounded when the ARM switch is open.
 - Status #2 gives the status of the emergency light outputs EML1 thru EML5.
The status output is grounded when the emergency light outputs are supplied by the battery.
- (3) The truth table that follows gives the input/output combinations the operation of the ELPU is based on.

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Table 5 TRUTH TABLE

SYSTEM STATUS	INPUTS					OUTPUTS		
	28 V DC ²⁾ [B] ¹⁾	ARM ³⁾ [A] ¹⁾	OFF ³⁾ [C] ¹⁾	TEST ^{3) 11)} [E] ¹⁾	FAP ON ³⁾ [T] ¹⁾	EML1-EML5 ⁴⁾ [G,H,J,K,M] ¹⁾	STATUS 1 ⁵⁾ [F] ¹⁾	STATUS 2 ⁵⁾ [L] ¹⁾
Armed	0	Open	Open	Open	Open	BATT	GND	GND
On	0	Open	GND	Open	Open	BATT	GND	GND
Invalid ⁶⁾	0	GND	Open	Open	Open	BATT	Open	GND
Off	0	GND	GND	Open	Open	–	Open	Open
Armed ^{8) 9)}	1	Open	Open	Open	Open	–	GND	Open
Invalid ⁷⁾	1	GND	Open	Open	Open	–	Open	Open
Off ^{8) 9)}	1	GND	GND	Open	Open	–	Open	Open
On ⁹⁾	1	Open	GND	Open	Open	BATT	GND	GND
Test ¹⁰⁾	X	X	X	GND	Open	BATT	X	GND
On (FAP)	X	X	X	X	GND	BATT	X	GND

¹⁾ Pin number of unit receptacle in brackets

²⁾ 1: Aircraft power supply available (> 14 V DC)
0: Aircraft power supply not available (< 14 V DC)
X: Any aircraft power supply state

³⁾ GND: Input grounded
Open: Input open
X: Any input state

⁴⁾ BATT: Outputs supplied by battery (5 to 7 V DC)
–: Outputs not supplied

⁵⁾ GND: Output grounded (ON)
Open: Output open (OFF)
X: Any output state

⁶⁾ Input configuration invalid (fault condition):
Aircraft power supply not available, emergency light outputs ON

⁷⁾ Input configuration invalid:
Aircraft power supply available, emergency light outputs OFF

⁸⁾ Quick charge possible

⁹⁾ Battery heating possible

¹⁰⁾ Test Mode: Regardless of input configuration outputs are ON for approx. 1 minute

¹¹⁾ Set with ELPU TEST button or with pin E

B. ARM/ON/OFF Aircraft Switch

- (1) The integrated battery supplies the five emergency light outputs EML1 thru EML5 with 6 V DC (5 to 7 V DC)
- if the ARM/ON/OFF aircraft switch is set to ON position or
 - if the 28 V DC aircraft power is not available and the ARM/ON/OFF aircraft switch is set to ARM position.

PART No. 3400-22

- OFF: Outputs are not supplied.
- ON: Outputs are supplied with 6 V DC (5 to 7 V DC) from internal battery.
- ARM: If 28 V DC input is available, outputs are not supplied. If 28 V DC input is not available, outputs are supplied with 6 V DC (5 to 7 V DC) from internal battery.

C. Block Diagram

- Refer to page block SCHEMATICS AND WIRING DIAGRAMS for details.



Figure 3 /GRAPHIC 33-50-01-991-003-A01

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- (2) Input/Output Protection
 - (a) Diodes in the input circuit of the unit protect the inputs against overvoltage spikes and provide an effective reverse polarity protection.
 - (b) The five emergency light outputs EML1 thru EML5 are protected by separate fuses each (Ref. IPL Fig. 2/90, 3/55).
 - (c) The two status outputs Status #1 and Status #2 are protected by diodes. The output current is limited to approx. 50 mA.
- (3) Internal Voltage Control and Supply
 - (a) The internal voltage control and supply circuit stabilizes the internal supply voltage.
 - (b) In addition it generates
 - the internal 12 V, 5 V and 2.5 V REF voltages required for the operation of the unit,
 - the charging voltage for the battery.
- (4) Output Control
 - (a) The output control circuit controls the status of all outputs according to the status of the input signals, the 28 V DC input and the battery voltage.
 - (b) Refer to the truth table for details.
- (5) Timer
 - (a) The timer contains
 - a standby timer,
 - an emergency timer,
 - a test timer.
 - (b) The standby timer counts the time the external 28 V DC is not present. After approx. 4.5 days, the standby timer sets the internal line CHG_NEC to high and the ELPU begins to recharge the battery if the external 28 V DC is available. The timer is reset after charge is completed.
 - (c) The emergency timer counts the total elapsed time of emergency conditions. Emergency conditions of a duration less than one minute are added up. When the added times are more than one minute, the ELPU begins to recharge the battery. The timer is reset after charge is completed.
 - (d) The test timer is started by a signal from the test control circuit. After approx. 1 minute the timer is stopped. The timer sets the internal line CHG_NEC to high and the ELPU begins to recharge the battery. The timer is reset after charge is completed.
- (6) Battery Charge Control
 - (a) The battery charge control operates according to
 - the charge state of the battery,
 - the battery voltage,
 - the availability of the external 28 V DC,
 - the battery temperature,
 - the signals of the standby timer and the emergency timer.
 - (b) When 28 V DC is present and the ELPU is not in the emergency mode, the battery charge control compensates the self discharge of the battery with a trickle charge current of approx. 10 mA.

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- (c) When a timer signal is received or when the battery undervoltage threshold of 5.0 V is reached, the charge control circuit charges the battery.

Example:

When the battery voltage is less than +5 V, the battery charge starts with a constant current of approx. 60 mA. The quick charge mode starts when the battery voltage is greater than +5 V. The quick charge current level is approx. 1.7 A.

(7) Battery Temperature Control

- (a) The battery temperature control monitors the temperature of the battery via the NTC resistor of the battery. If the battery temperature is less than +20 deg. C [68 deg. F] the battery heating comes on. The battery heating goes off when a temperature of +22 deg. C [71.6 deg. F] is reached.
- (b) If the battery temperature is more than +42 deg. C [108 deg. F] or less than +8 deg. C [46.4 deg. F] the battery charge is suspended and resumes when the temperature has reached the pre-defined range.

(8) Test Control

- (a) The test control starts operation when an impulse from the test input is received or when the TEST button at the ELPU is pushed. When a signal from the test control is received, the test timer starts. When the test timer is active, 6 V +/- 1 V DC is supplied to the outputs EML1 thru EML5.
- (b) The emergency lighting goes off when the test timer is stopped. During the test function, the TEST ON LED (yellow) comes on and the battery charge is suspended.
- (c) If an emergency condition occurs during the test, the output lines EML1 thru EML5 continue to supply 6 V +/- 1 V DC, although the test itself is stopped. The TEST ON LED (yellow) goes off if the test timer is stopped.

D. Battery Management

(1) General

- (a) The battery management is subdivided into
- Quick Charge Mode,
 - Trickle Charge Mode,
 - Battery Heating.

(2) Quick Charge Mode

- (a) The quick charge mode recharges the battery quickly after an emergency condition or after the installation of a discharged or partially discharged battery. If 28 V DC is available (pin U of unit receptacle), the quick charge mode starts automatically
- after battery replacement,
 - after a test,
 - after supply of the outputs for more than one minute in total.
- (b) The quick charge mode is terminated when the battery is fully charged. To do this, these parameters are monitored:
- maximum battery voltage,
 - negative voltage slope detection,
 - maximum charge time.

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- (c) In the quick charge mode, a totally discharged battery is recharged in approx. 90 minutes at an ambient temperature of 25 deg. C [77 deg. F].

NOTE: The ELPU suspends the charging process if the battery temperature is out of range. When the temperature returns to the specified range, the ELPU continues to charge the battery. Thus, in some situations (e.g. high ambient temperature) the charging time may considerably exceed 90 minutes.

(3) Status of CHARGING LED

- (a) The green CHARGING LED at the top of the unit gives information on the battery charging mode. The LED has these operating states:
- (b) **On:**
During the quick charge mode the CHARGING LED is continuously on.
- (c) **Fast Flashing:**
At the end of the quick charge mode the CHARGING LED flashes for approx. 5 seconds (pulse duration: 125 ms; interpulse period: 125 ms).
- (d) **Slow Flashing:**
If the battery voltage is less than +5 V the ELPU recharges the battery with approx. 60 mA to prepare the battery for the quick charge mode. During that time the CHARGING LED flashes slowly (pulse duration: 125 ms; interpulse period: 1.375 s).
- (e) **Off:**
If the quick charge mode is completed the CHARGING LED is off.

(4) Trickle Charge Mode

- (a) The trickle charge mode compensates the loss of capacity due to self-discharge of the battery. It is on as long as 28 V DC is present at pin B or U of the unit receptacle. The trickle charge current is approx. 10 mA at 28 V DC.

(5) Battery Heating

- (a) The automatic battery heating makes sure that
- maximum energy is available at low temperatures
 - the battery can be quick-charged.
- For that a heating mat is installed in the battery.
- (b) The battery heating starts at a battery temperature of less than 20 deg. C [68 deg. F] and when 28 V DC is present (pin U of unit receptacle). The maximum heating temperature of the battery is limited to approximately 22 deg. C [72 deg. F].
- (c) The battery temperature is controlled by a Negative Temperature Coefficient (NTC) sensor. In case of malfunction, the heating circuit is interrupted by an additional thermal switch at a battery temperature of approximately 45 deg. C [113 deg. F]. The thermal switch automatically resets at a battery temperature of less than approximately 25 deg. C [77 deg. F].

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TASK 33-50-01-872-804-A01

4. Modification Status

A. General

- (1) The identification label shows the modification status which is the sign AMENDT X next to the part number.
- (2) The table that follows gives the description of the modification code.

Table 6 MODIFICATION STATUS

CODE	DESCRIPTION	MANDATORY
<u>PNR 3400-22:</u>		
–	Amendt – units are available as of February 2002, serial numbers 001009 thru 002065.	—
A	Improved bonding resistance for mounting plate by adding a screwed joint (announced with SIL No. D1347-33-004). Off-the-shelf Amendt A units are not available.	No
B	PCB PNR 774-143-58 replaced by PNR 01006835 because of component discontinuation for power MOSFET V76 (announced with SIL No. D1347-33-005). Off-the-shelf Amendt B units are available as of November 2005, serial numbers 002066 thru 004114.	No
<u>PNR 3400-22-10:</u>		
–	PCB PNR 01006835 replaced by PNR 01009844 because of correction of battery charging procedure and extended parking/standby time (announced with SIL No. D1347-33-017). Modification changes PNR of unit from 3400-22 to 3400-22-10. Off-the-shelf PNR 3400-22-10 units are available as of May 2008 starting with serial number 00501.	Yes
A	PCB PNR 01009844 replaced by PNR 01011437.	No

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TESTING AND FAULT ISOLATION

TASK 33-50-01-700-801-A01

1. General Information

A. Reason for the Job

WARNING: **THE POWERED TEST EQUIPMENT CAN KILL YOU. READ THE MANUFACTURER'S INSTRUCTIONS BEFORE YOU OPERATE THE EQUIPMENT. MAKE SURE THAT THE EQUIPMENT IS SET TO THE CORRECT VOLTAGE.**

CAUTION: THE UNIT CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) COMPONENTS. USE APPLICABLE SAFETY PRECAUTIONS WHEN YOU DO MAINTENANCE ON OR NEAR COMPONENTS SENSITIVE TO ELECTROSTATIC DISCHARGE. IF YOU DO NOT THIS, YOU CAN CAUSE DAMAGE TO THE UNIT.

- (1) This page block gives the test procedures for the unit without an installed battery. Refer to ACMM 33-51-01 for the test procedures applicable to the battery.
- (2) The procedures are functional tests only. For fault isolation details refer to the fault isolation chart at the end of this page block.
- (3) The results of the complete test procedures must be satisfactory before you can return the unit to service.
- (4) The tests have to be done to the unit
 - after maintenance work,
 - to make sure that the UUT is in Return To Service (RTS) condition.

B. Test Conditions

The necessary environmental conditions for the procedures are:

- Ambient Temperature: +15 to +35 deg. C [+59 to +95 deg. F]
- Relative Humidity: less than 85 %
- Atmospheric Pressure: 840 to 1070 hPa [12.2 to 15.5 psi]
- Supply Voltage: 28 V DC $\pm$ 1 V

NOTE: Obey the following recommendations, if possible:

- Do not test the unit immediately after storage if there is a considerable difference of temperature or humidity between the storage site and the site of test.
- Let the unit stay in the above conditions for approx. two hours before you do the test procedure.

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TASK 33-50-01-700-802-A01

2. Tools and Test Equipment

A. Tools

No special tools are necessary to test the unit.

B. Test Equipment

The table that follows gives the equipment necessary to test the unit.

Refer to page block SPECIAL TOOLS, FIXTURES, EQUIPMENT AND CONSUMABLES for details.

NOTE: You can use equivalent alternatives for listed items.

NOTE: Measuring instruments must be calibrated according to calibration plan.

Table 1001 TEST EQUIPMENT

DESCRIPTION	SPECIFICATION	MANUFACTURER	QTY
DC Power Supply 1	0 - 30 V adjustable / 2 A	Local Purchase	1
DC Power Supply 2	0 - 7 V adjustable / 0.1 to 10 A adjustable	Local Purchase	1
Test Battery	PNR 3301-31	D1347	1
Digital Multimeter (DMM1, DMM2)	e.g. FLUKE 87, 187 or 8840A	Local Purchase	2
Battery Adapter	Ref. Figure 1002	Make Locally	1
Timer	Range: 2 minutes, Tolerance: ± 1 s	Local Purchase	1
Test Circuitry with external loads	Ref. Figure 1003	Make Locally	1
• Load Resistor RL1 thru RL10	10 Ohm $\pm 10\%$, 10 W	Local Purchase	10
• Resistor R31 thru R35	470 Ohm $\pm 10\%$, 0.1 W	Local Purchase	5
• Resistor R1, R3, R6...R8, R10...R12, R20, R21	2.61 kOhm $\pm 5\%$, 0.1 W	Local Purchase	10
• Resistor R101	20 kOhm $\pm 10\%$, 0.1 W	Local Purchase	1
• Resistor R102	10 kOhm $\pm 10\%$, 0.1 W	Local Purchase	1
• Resistor R103	1.8 kOhm $\pm 10\%$, 0.1 W	Local Purchase	1
• Light Emitting Diode (LED) L1, L3, L6, L7, L8, L12, L101, EL1, EL2, EL3, EL4, EL5, ST1, ST2	15 mA	Local Purchase	14

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TASK 33-50-01-700-803-A01

3. Visual Check

A. Job Set-up

Not applicable.

B. Procedure

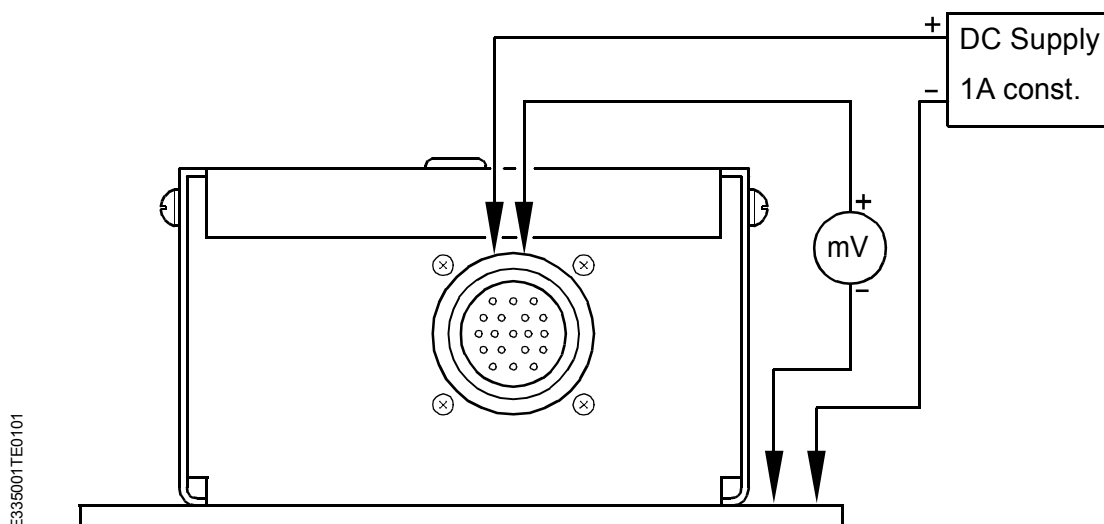
- (1) Examine the surface of the unit for mechanical damage and defective finish.
- (2) Examine the unit for completeness of parts.
- (3) Examine the unit receptacle for bent or broken pins and damage to the housing. Make sure that the receptacle is correctly attached to the housing.
- (4) Make sure that all screws are tight.
- (5) Move the unit in all three axes and shake lightly. Make sure that there are no loose parts inside the unit.
- (6) Examine the identification and modification labels. Make sure that
 - the labels are correctly attached,
 - you can read the labels.

TASK 33-50-01-700-804-A01

4. Bonding Test

A. Job Set-up

- (1) Refer to the figure that follows and install the bonding test circuitry.



BONDING TEST CIRCUITRY

Figure 1001 /GRAPHIC 33-50-01-991-101-A01

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- (2) Adjust the short circuit limitation of DC power supply 2 to $1\text{ A} \pm 0.02\text{ A}$.
- (3) Connect the UUT to the test equipment.
NOTE: Apply the 4-wire measuring method to compensate the inherent resistance of the test probes.
- (4) Make sure that there is good metallic contact at the bonding area of the unit housing and at the receptacle housing.

B. Procedure

- (1) Set DC power supply 2 to ON and note the voltage shown at the DMM.
- (2) Make sure that the voltage is less than or equal to 100 mV.
NOTE: A voltage drop of 100 mV at a measuring current of 1 A is equivalent to a bonding resistance of 100 Milliohms.
- (3) Remove the UUT from the test equipment.

TASK 33-50-01-700-805-A01

5. Insulation Test

A. Procedure

Not applicable.

TASK 33-50-01-700-806-A01

6. Functional Test

A. Job Set-up

CAUTION: INCORRECT TEST EQUIPMENT ADJUSTMENTS CAN CAUSE DAMAGE TO THE EQUIPMENT. MAKE SURE THAT THE POWER SUPPLY IS OFF BEFORE YOU CONNECT THE UUT TO THE TEST EQUIPMENT.

CAUTION: MEASURE WITH ELECTRICALLY INSULATED EQUIPMENT.

CAUTION: MAKE SURE THAT THE UUT OUTPUT CURRENT AT EACH EMERGENCY LIGHT OUTPUT (EML1 THRU EML5) IS 1.5 A MAXIMUM.

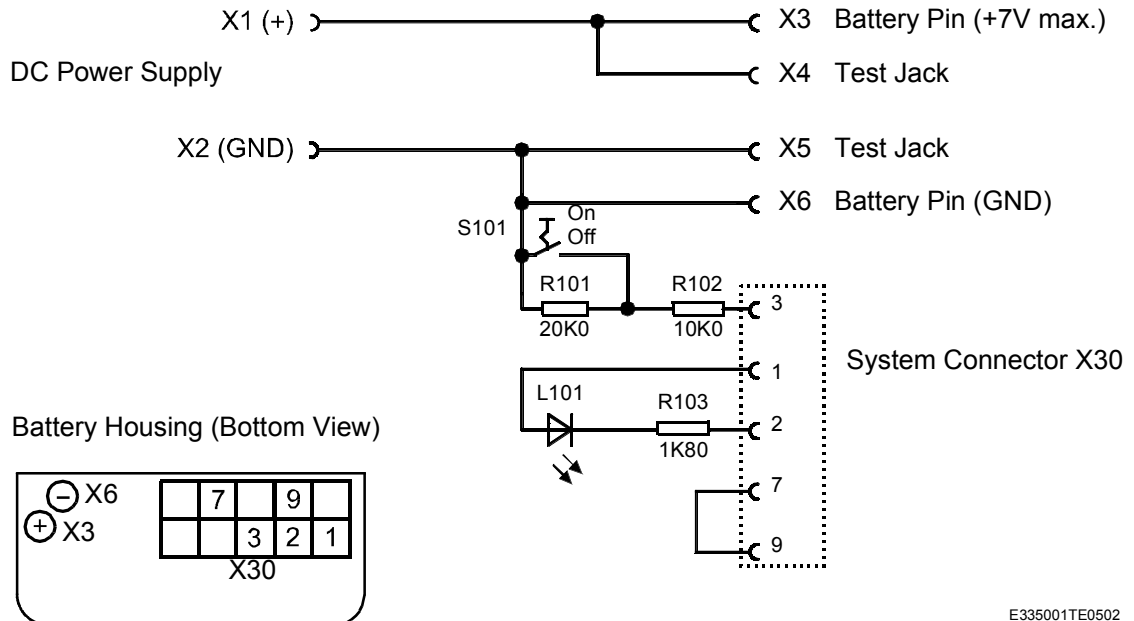
NOTE:: Make sure that the test battery is fully charged before you do the functional test.

NOTE:: The functional test procedure that follows is based on the current issue of the DIEHL Aerospace Acceptance Test Procedure (ATP) document no. 0102201 (for PNR 3400-22) and document no. 0800860 (for PNR 3400-22-10) that can be used as an alternative for DIEHL in-house tests with the test equipment given therein.

- (1) Refer to Figure 1002 and install the battery adapter.
Recommendation: Install the circuitry in an empty battery housing.
- (2) Refer to Figure 1003 and install the test circuitry.
- (3) Adjust DC power supply 1 to $28 \pm 1\text{ V DC}$.
- (4) Set these switches of the test circuitry to OFF position: S1, S3, S6, S7, S8, S10, S11, S12.
- (5) Connect DMM1 to the UI jacks for current measurement (DC current range $< 2\text{ A}$).

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- (6) Connect DMM2 to the BI jacks for current measurement (DC current range < 2 A).
- (7) Connect DC power supply 1 to the jacks 28 V DC and 28 V GND.
- (8) Insert the fully charged test battery into the UUT.
- (9) Connect the UUT to the test setup (unit receptacle). Make sure that LED ST1 is on.

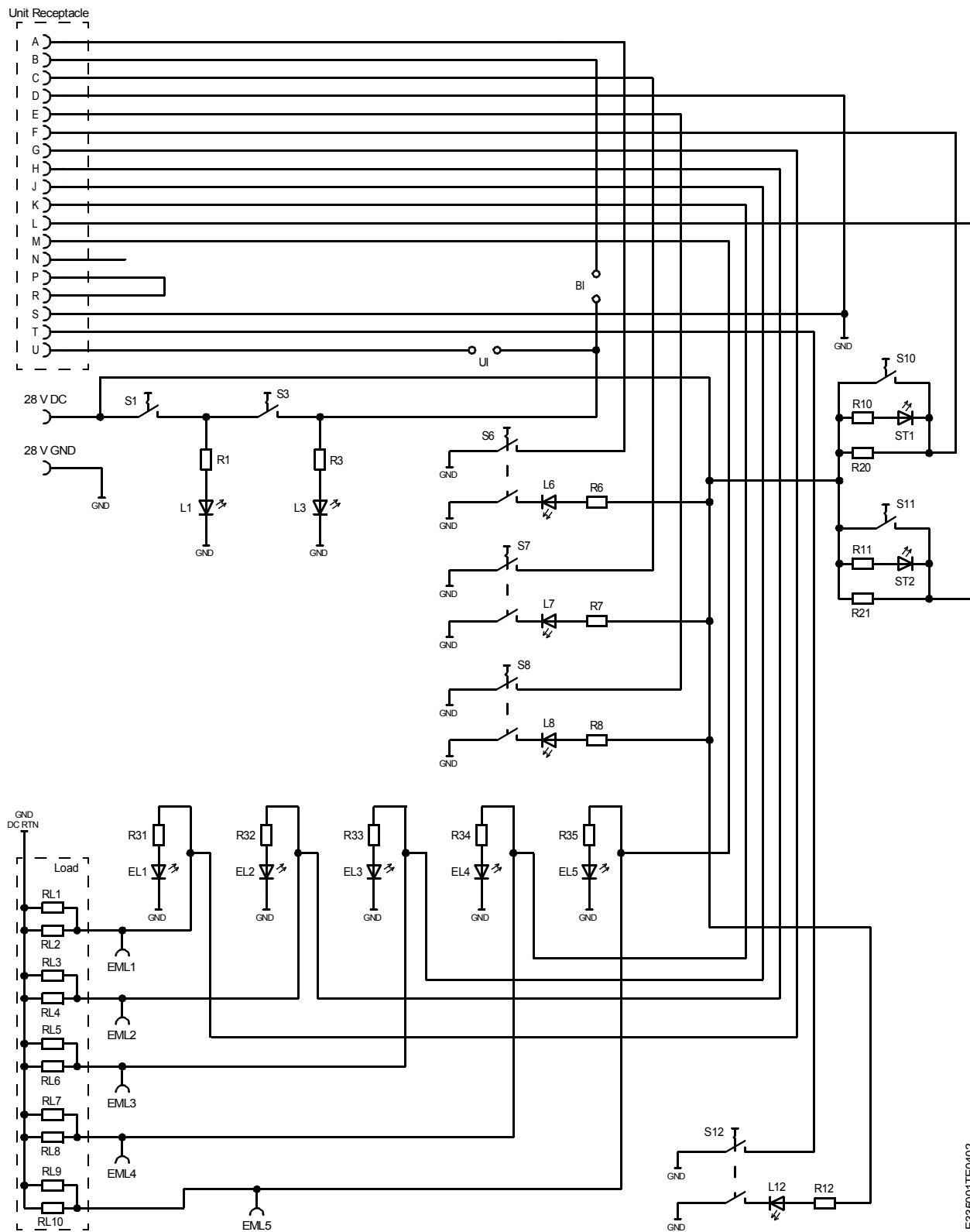


BATTERY ADAPTER

Figure 1002 /GRAPHIC 33-50-01-991-102-A01

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E335001TE0402

TEST CIRCUITRY
Figure 1003 /GRAPHIC 33-50-01-991-103-A01

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B. Truth Table Test

- (1) Set switches S1 and S3 to ON position. Make sure that the green CHARGING LED of the UUT is on (charge in process).
- (2) After an interval of 10 s minimum set S3 to OFF position.
- (3) Make sure that
 - the green CHARGING LED of the UUT is off without flashing,
 - LEDs EL1, EL2, EL3, EL4, EL5, ST1 and ST2 are on.
- (4) Do steps 1 thru 9 as per the truth table that follows and check the output signals.
- (5) Set switch S8 to OFF position.

Table 1002 TRUTH TABLE

STEP	INPUTS				OUTPUTS		
	28 V DC S3 ¹⁾	ARM S6 ¹⁾	OFF S7 ¹⁾	TEST S8 ¹⁾	EL1-EL5 6 V DC ²⁾	STATUS 1 ST1 ²⁾	STATUS 2 ST2 ²⁾
1	OFF	OFF	OFF	OFF	ON	ON	ON
2	OFF	OFF	ON	OFF	ON	ON	ON
3	OFF	ON	OFF	OFF	ON	OFF	ON
4	OFF	ON	ON	OFF	OFF	OFF	OFF
5	ON	OFF	OFF	OFF	OFF	ON	OFF
6	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF
8	ON	OFF	ON	OFF	ON	ON	ON
9	ON	ON	ON	ON ⁴⁾	ON ³⁾	OFF	ON ³⁾
¹⁾ ON: switch in upper position; OFF: switch in lower position ²⁾ ON: LED is on; OFF: LED is off ³⁾ Outputs are on for 60 ± 10 s ⁴⁾ Start timer at the same time							

C. Emergency Input Test

- (1) Set switches S1, S3, S6 and S7 to ON position. Set the other switches to OFF position.
- (2) Set switch S12 to ON position. Make sure that LEDs EL1, EL2, EL3, EL4, EL5 and ST2 are on.
- (3) Set switch S12 to OFF position. Make sure that all output LEDs are off.
- (4) Set switch S3 to OFF position.
- (5) Set switch S12 to ON position. Make sure that LEDs EL1, EL2, EL3, EL4, EL5 and ST2 are on.
- (6) Set switch S12 to OFF position. Make sure that all output LEDs are off.
- (7) Set switch S3 to ON position.

D. Input Current Test

- (1) Set switches S1, S3, S6 and S7 to ON position. Set the other switches to OFF position.
- (2) Make sure that
 - the current at DMM2 is less than or equal to 200 mA,
 - the current at DMM1 is between 480 mA and 680 mA.

NOTE: The input current value indicated by DMM1 is specified for a battery heating that is off. If the battery heating is on, the input current is approx. 1 A higher than the specified values. In this case please wait until battery heating is off.

- (3) Disconnect DMM1 and DMM2 from the test setup.
- (4) Put shorting bars into the jacks UI and BI.

E. Self Test

- (1) Set switches S1, S3, S6 and S7 to ON position. Set the other switches to OFF position.
- (2) Press TEST button at the UUT and start timer. Make sure that
 - the yellow TEST ON LED of the UUT is on,
 - LEDs EL1, EL2, EL3, EL4, EL5 and ST2 are on.
- (3) Measure the voltage between GND D/S and outputs EML1 thru EML5. Make sure that the EML output voltages are between 5 and 7 V DC.
- (4) After 60 ± 10 s make sure that
 - all output LEDs are off,
 - the green CHARGING LED of the UUT is on.

F. Voltage Test

- (1) Set switches S1, S3, S6 and S7 to ON position. Set the other switches to OFF position.
- (2) Set switch S7 to OFF position.
- (3) Decrease voltage of DC power supply 1 to 13 V - 0.3 V.
- (4) Make sure that
 - the LEDs EL1, EL2, EL3, EL4, EL5 and ST2 are on,
 - the green CHARGING LED of the UUT is off.
- (5) Increase voltage of DC power supply 1 to 15 V + 0.3V.
- (6) Make sure that
 - all output LEDs are off,
 - the green CHARGING LED of the UUT is off.
- (7) Set DC power supply 1 to 28 ± 1 V. Make sure that the green CHARGING LED of the UUT is on.
- (8) Set switch S7 to ON position.

G. Heating Function

- (1) Set switches S1, S3, S6 and S7 to ON position. Set the other switches to OFF position.
- (2) Set switch S3 to OFF position. Make sure that the green CHARGING LED of the UUT is off.
- (3) Remove the test battery from the UUT.
- (4) Insert the battery adapter into the UUT.
- (5) Adjust the DC power supply 2 to 7 V - 0.5 V and connect it to the jacks X1 (+) and X2 (GND) of the battery adapter.
- (6) Set switch S3 to ON position.
- (7) Set the HEATING switch S101 of the battery adapter to ON position. Make sure that the HEATING LED L101 is on.
- (8) Set the HEATING switch S101 of the battery adapter to OFF position. Make sure that the HEATING LED L101 is off.

H. Cut-off Voltage Test

- (1) Set all switches to OFF position.
- (2) Adjust the DC power supply 2 to 7 V - 1 V.
- (3) Make sure that LED ST1 is on.
- (4) Set the digital multimeter DMM1 to DC voltage range (less than or equal to 10 V) and connect it to the test jacks X4 (+) and X5 (GND) of the battery adapter.
- (5) Push the TEST button of the UUT.
- (6) Make sure that
 - the yellow TEST ON LED of the UUT is on,
 - all output LEDs are on.
- (7) Slowly and smoothly (within a period of 30 s) decrease the output voltage of DC power supply 2 to 5 ± 0.2 V.
- (8) Make sure that
 - the LEDs EL1 thru EL5 go off,
 - the yellow TEST ON LED of the UUT goes off.

I. Close-up

- (1) Disconnect the UUT from the test equipment.
- (2) Remove the battery adapter from the UUT.
- (3) Refer to ACMM 33-51-01 for the test procedures applicable to the battery.

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TASK 33-50-01-810-801-A01

7. Fault Isolation

A. General

WARNING: WHERE PRACTICABLE, THE ELECTRICAL POWER SUPPLY IS TO BE DISCONNECTED BEFORE ANY WORK IS CARRIED OUT ON THE UNIT.

BE EXTREMELY CAREFUL IF ADJUSTMENT OR OTHER MAINTENANCE HAS TO BE DONE WITH THE UNIT CONNECTED AND SWITCHED ON.

- (1) This section gives the fault isolation information for the uninstalled EMERGENCY LIGHT POWER UNIT, after the functional test has been done.
- (2) Examine the external wiring and the serviceability of the test set-up components first, before you start to disassemble the unit.

B. Fault Isolation Chart

- (1) The table that follows gives the fault isolation chart for the Emergency Light Power Unit.
- (2) The fault isolation chart helps you to find faulty components and gives information on the probable cause of different faults and recommendations for corrective action.

- NOTE:**
- Refer to the Illustrated Parts List (IPL) for the item numbers given in the fault isolation chart.
 - Refer to ACMM 33-51-01 for the fault isolation information applicable to the battery.

Table 1003 FAULT ISOLATION CHART

FAULT	PROBABLE CAUSE	CORRECTION
<u>A: BONDING TEST</u>		
Bonding resistance > 100 Milliohms	Bad connection between unit receptacle and housing.	• Examine unit receptacle. • Make sure that receptacle is correctly attached to housing. • Examine cabling from receptacle to PCB.
<u>B: FUNCTIONAL TEST</u>		
Emerg. Light Output 1 defective	Fuse F2 defective	Examine component and replace, if necessary.
Emerg. Light Output 2 defective	Fuse F3 defective	
Emerg. Light Output 3 defective	Fuse F4 defective	
Emerg. Light Output 4 defective	Fuse F5 defective	
Emerg. Light Output 5 defective	Fuse F6 defective	
Emerg. Light Outputs 1-5 defective	Relay K1 defective	
UUT does not heat battery	• Connector X30 defective • Transistor V72 defective • IC N4 defective	Examine components and replace, if necessary.
UUT does not charge battery	• Contact pin X51/X52 defective • Charge controller N5 defective	Examine components and replace, if necessary.

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SCHEMATICS AND WIRING DIAGRAMS

TASK 33-50-01-878-801-A01

1. Schematic Diagram for the Emergency Light Power Unit

A. General Information

- (1) This page block gives the component layouts and the circuit diagrams for these modules of the Emergency Light Power Unit:
- Main Board,
 - Logic Module.
- (2) These symbols are used in the diagram:

SYMBOL	MEANING
	Gives the related junction in multi-sheet circuit diagrams. The letters BI (bidirectional), IN and OUT give the signal flow.
x	Not connected

(4) Component Location Table

- (a) The Component Location Table gives the grid square coordinates of the electrical/ electronic parts on the printed circuit board.
- (b) The table has these columns:
- REFERENCE DESIGNATOR
 - GEOGRAPHIC LOCATION
 - IPL FIG. – ITEM NO.
- (c) REFERENCE DESIGNATOR
This column gives the equipment designators assigned to the electronic components in alpha-numeric sequence.
- (d) GEOGRAPHIC LOCATION
This column gives the grid square coordinates of the parts on the printed circuit board, e.g. 3A or 7CC. A single upper case letter (e.g. A) shows that the part is installed on the component side of the printed circuit board. Two upper case letters (e.g. CC) show that the part is installed on the solder side.
- (e) IPL FIG. – ITEM NO.
This column gives the applicable IPL figure and item number for the parts in the Detailed Parts List.

TASK 33-50-01-878-802-A01

2. Data for Main Board

A. Component Location Table

The table that follows gives the component location data for the Main Board of the ELP U PNR 3400-22-10 as of AMENDT A. For information on the component location of previous PCB versions refer to IPL Figure 2.

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Table 2001 COMPONENT LOCATION TABLE FOR MAIN BOARD

REFERENCE DESIGNATOR	GEOGRAPHIC LOCATION	IPL FIG. – ITEM NO.
C1	6C	3-65
C2	6C	3-70
C3	3B	3-70
C4	7BB	3-75
C5	6B	3-80
C6	5B	3-80
C7	5C	3-85
C8	5C	3-85
C10	6BB	3-90
C11	7BB	3-95
C12	6AA	3-95
C13	6BB	3-90
C14	5BB	3-95
C15	5BB	3-90
C16	6AA	3-95
C17	6AA	3-95
C18	2AA	3-90
C20	5CC	3-95
C21	5CC	3-100
C22	4CC	3-90
C23	4AA	3-95
C24	3CC	3-95
C26	3B	3-70
C27	3B	3-105
C28	2AA	3-95
C29	3AA	3-95
C30	6BB	3-90
C31	4AA	3-95
C32	3AA	3-95
C37	2BB	3-95
C38	3AA	3-110
C39	4BB	3-95
C40	2AA	3-115
C41	4AA	3-95
C42	6AA	3-95
C101	7DD	3-120
C102	7DD	3-120

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REFERENCE DESIGNATOR	GEOGRAPHIC LOCATION	IPL FIG. – ITEM NO.
C103	7DD	3-120
C401	3CC	3-125
C402	3CC	3-130
C403	2DD	3-130
C404	3DD	3-135
C405	6D	3-140
F1	8C	3-60
F2	8D	3-55
F3	8D	3-55
F4	8D	3-55
F5	8C	3-55
F6	8D	3-55
F101	7C	3-60
F102	4A	3-60
K1	3D	3-500
L1	6B	3-485
L3	5C	3-490
L801	3D	3-495
N1	6B	3-330
N2	6B	3-330
N4	4AA	3-335
N5	2AA	3-340
N6	2BB	3-345
N7	6A	3-350
R1	8CC	3-145
R3	8C	3-150
R5	7C	3-150
R7	7B	3-150
R9	7B	3-150
R10	7CC	3-155
R11	6BB	3-160
R12	4B	3-165
R13	7BB	3-155
R14	7A	3-170
R15	6AA	3-175
R16	6BB	3-155
R17	5AA	3-180
R18	7AA	3-155

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REFERENCE DESIGNATOR	GEOGRAPHIC LOCATION	IPL FIG. – ITEM NO.
R19	7AA	3-185
R20	7AA	3-190
R21	6A	3-195
R22	6C	3-195
R23	6CC	3-190
R24	6CC	3-155
R25	6CC	3-155
R26	3CC	3-155
R27	3CC	3-180
R30	5CC	3-200
R31	5CC	3-190
R32	5CC	3-205
R33	4DD	3-190
R34	4DD	3-155
R35	4DD	3-155
R36	5DD	3-185
R37	5CC	3-210
R38	4CC	3-210
R39	4DD	3-155
R40	5AA	3-155
R41	5A	3-215
R42	5A	3-215
R45	5BB	3-155
R46	5BB	3-180
R47	6A	3-170
R48	5BB	3-180
R49	5BB	3-155
R50	4AA	3-155
R51	4CC	3-155
R52	4CC	3-155
R53	4CC	3-190
R54	4CC	3-220
R55	4CC	3-155
R56	4CC	3-185
R57	4CC	3-225
R58	3BB	3-230
R59	4BB	3-180
R60	4BB	3-180

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REFERENCE DESIGNATOR	GEOGRAPHIC LOCATION	IPL FIG. – ITEM NO.
R61	4CC	3-180
R62	4BB	3-180
R63	4AA	3-235
R64	3AA	3-235
R65	3AA	3-235
R66	1AA	3-155
R67	1AA	3-240
R68	4AA	3-185
R69	5AA	3-180
R70	4AA	3-245
R71	4AA	3-250
R72	4AA	3-180
R73	3AA	3-155
R74	3CC	3-210
R77	3CC	3-255
R78	3BB	3-260
R79	3BB	3-190
R80	3BB	3-175
R81	4B	3-265
R82	4B	3-265
R83	2AA	3-155
R84	2AA	3-270
R85	3BB	3-235
R86	3AA	3-155
R87	3AA	3-180
R88	3AA	3-155
R89	2CC	3-245
R90	2AA	3-180
R91	2BB	3-180
R92	2BB	3-210
R93	2AA	3-155
R94	4BB	3-275
R95	4BB	3-155
R96	5BB	3-180
R97	5BB	3-180
R98	4BB	3-180
R99	5BB	3-155
R100	5BB	3-155

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REFERENCE DESIGNATOR	GEOGRAPHIC LOCATION	IPL FIG. - ITEM NO.
R101	5BB	3-160
R102	1AA	3-155
R103	2BB	3-180
R104	3BB	3-180
R105	2BB	3-210
R106	2C	3-280
R107	2B	3-285
R108	2B	3-290
R109	2B	3-295
R110	2BB	3-180
R111	2B	3-290
R112	2B	3-285
R113	2B	3-295
R114	2BB	3-275
R115	5BB	3-245
R116	5BB	3-210
R117	4BB	3-145
R118	5BB	3-300
R119	5AA	3-155
R120	5AA	3-305
R121	2BB	3-155
R122	3CC	3-155
R123	3CC	3-155
R124	7DD	3-310
R125	8CC	3-310
R127	7CC	3-255
R128	7DD	3-255
R130	7DD	3-255
R131	8AA	3-245
R401	3CC	3-315
R402	2CC	3-320
R403	3CC	3-255
R404	3CC	3-255
R405	3CC	3-255
R406	3BB	3-190
R943	3A	3-325
R944	4B	3-325
V1	8CC	3-355

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REFERENCE DESIGNATOR	GEOGRAPHIC LOCATION	IPL FIG. – ITEM NO.
V3	8CC	3-360
V5	8CC	3-360
V7	8BB	3-360
V9	8BB	3-360
V10	8AA	3-355
V11	7C	3-365
V12	6CC	3-360
V14	7CC	3-370
V15	5CC	3-360
V16	5BB	3-375
V17	7CC	3-360
V19	4B	3-365
V20	7C	3-365
V21	7C	3-365
V23	8C	3-380
V24	8C	3-380
V25	8B	3-380
V26	8B	3-380
V27	7B	3-385
V28	7C	3-385
V29	7B	3-385
V30	6B	3-390
V31	7AA	3-395
V32	7AA	3-370
V33	6AA	3-395
V34	6A	3-400
V35	6BB	3-405
V36	7AA	3-410
V37	7AA	3-405
V38	7B	3-415
V39	8B	3-365
V40	8B	3-365
V41	8B	3-385
V42	7A	3-385
V43	7B	3-385
V44	6B	3-415
V45	6CC	3-405
V46	6CC	3-370

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REFERENCE DESIGNATOR	GEOGRAPHIC LOCATION	IPL FIG. – ITEM NO.
V47	6CC	3-395
V48	3DD	3-395
V49	3CC	3-420
V50	3DD	3-425
V52	5CC	3-425
V53	5DD	3-395
V54	5DD	3-430
V55	4DD	3-435
V56	5CC	3-395
V57	4DD	3-405
V58	5D	3-440
V59	5D	3-445
V60	5AA	3-370
V61	5A	3-400
V62	5BB	3-425
V63	5BB	3-410
V64	4BB	3-435
V65	3CC	3-450
V66	4CC	3-410
V67	4BB	3-450
V68	4CC	3-405
V69	3CC	3-355
V70	4BB	3-405
V71	5AA	3-395
V72	2B	3-415
V73	3CC	3-395
V74	3BB	3-370
V75	3CC	3-355
V77	3CC	3-370
V78	3B	3-455
V79	3B	3-400
V80	3BB	3-425
V81	3BB	3-370
V82	3C	3-460
V83	2AA	3-425
V84	3BB	3-410
V85	4BB	3-435
V86	5BB	3-435

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REFERENCE DESIGNATOR	GEOGRAPHIC LOCATION	IPL FIG. - ITEM NO.
V87	3BB	3-405
V88	2CC	3-435
V89	2D	3-460
V90	2CC	3-435
V91	3BB	3-465
V92	3BB	3-425
V93	4BB	3-395
V100	8CC	3-360
V101	8CC	3-360
V102	8BB	3-360
V103	8BB	3-360
V104	5D	3-470
V105	7CC	3-360
V913	6B	3-475
V976	4C	3-480
X5	4A	3-5
X30	1A	3-25
X51	1D	3-30
X52	1D	3-30

B. Component Layout

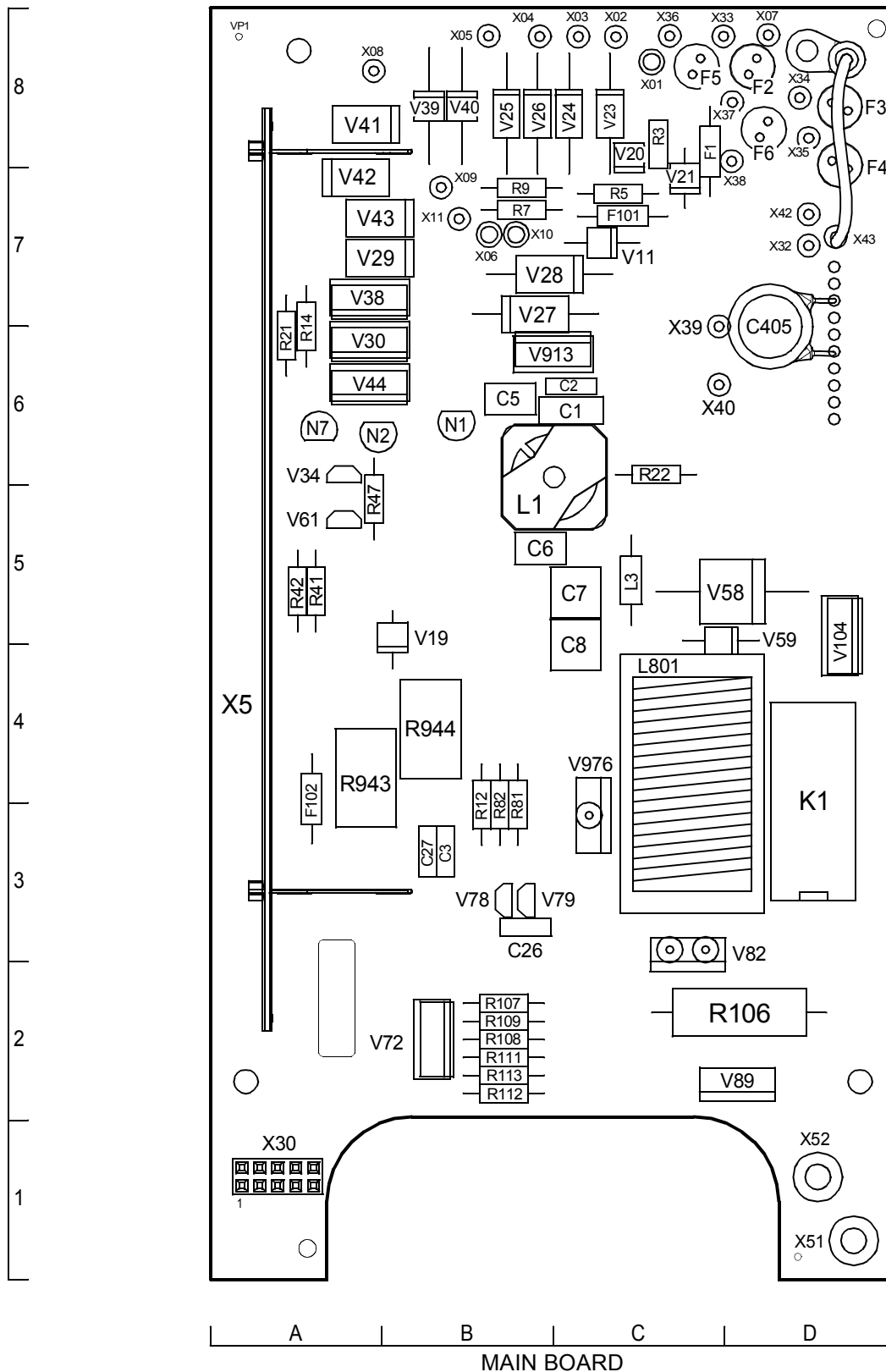
(1) Revision Reference Sheet

UPDATE NO.	DESCRIPTION	PART NUMBER EFFECTIVITY
—	—	—

(3) Component Layout Sheets

The figure that follows gives the component layout for the Main Board of the ELP
PNR 3400-22-10 as of AMENDT A. For information on the component location of previous
PCB versions refer to IPL Figure 2.

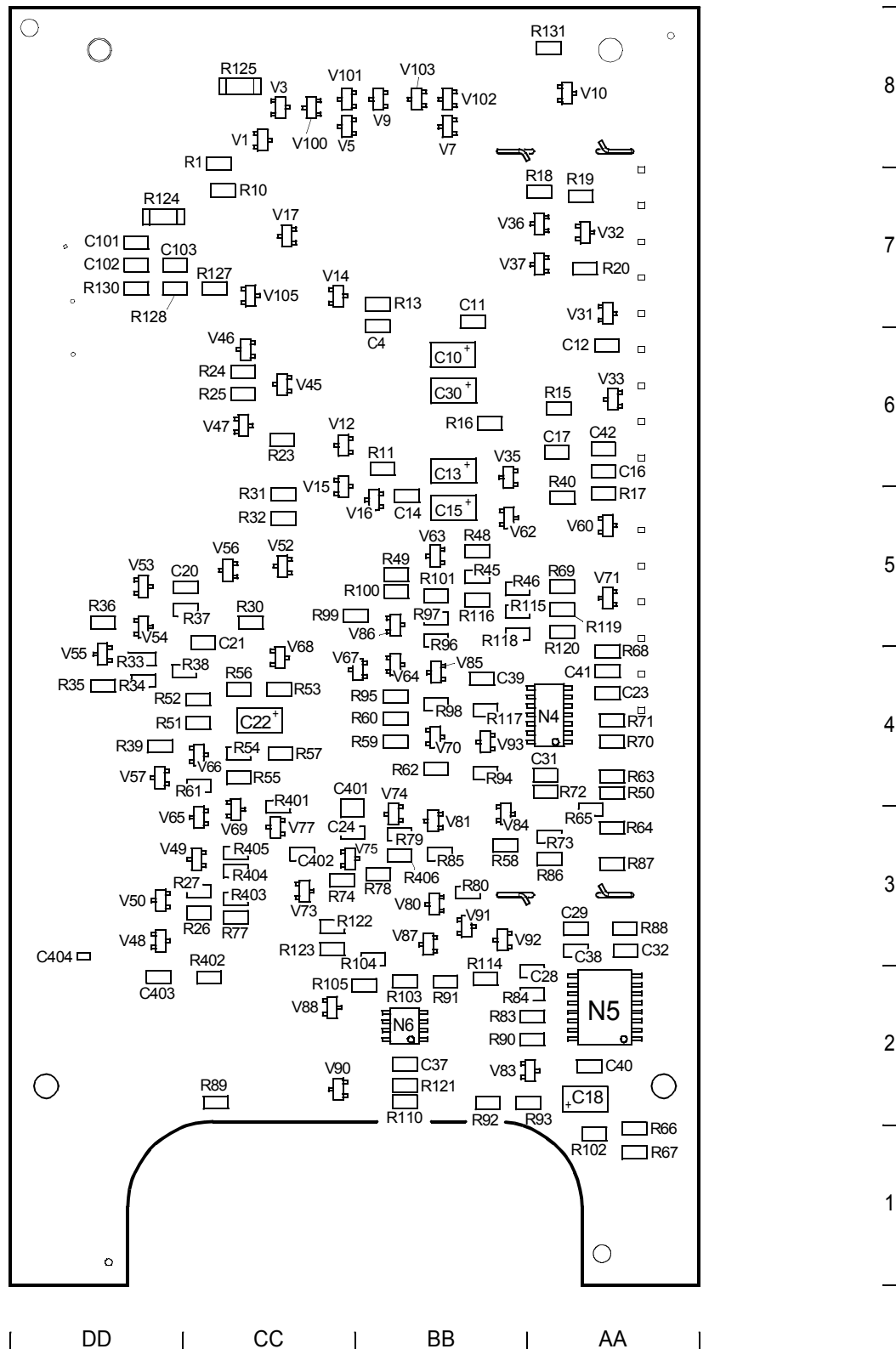
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SOLDER SIDE (sheet 02 of 2)

Figure 2001/GRAPHIC-33-50-01-991-202-A01

33-50-01

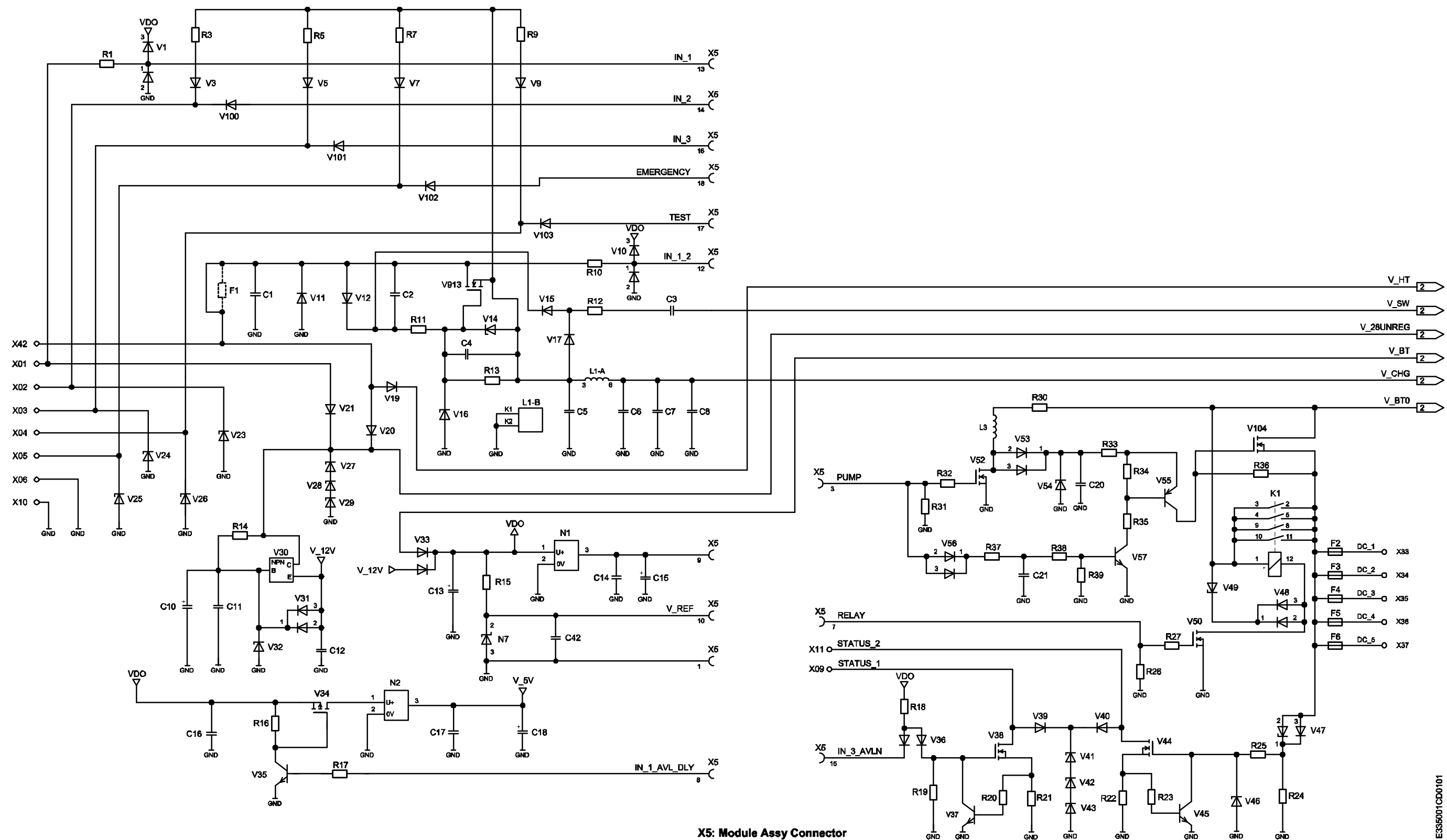
Page 2011
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C. Circuit Diagram

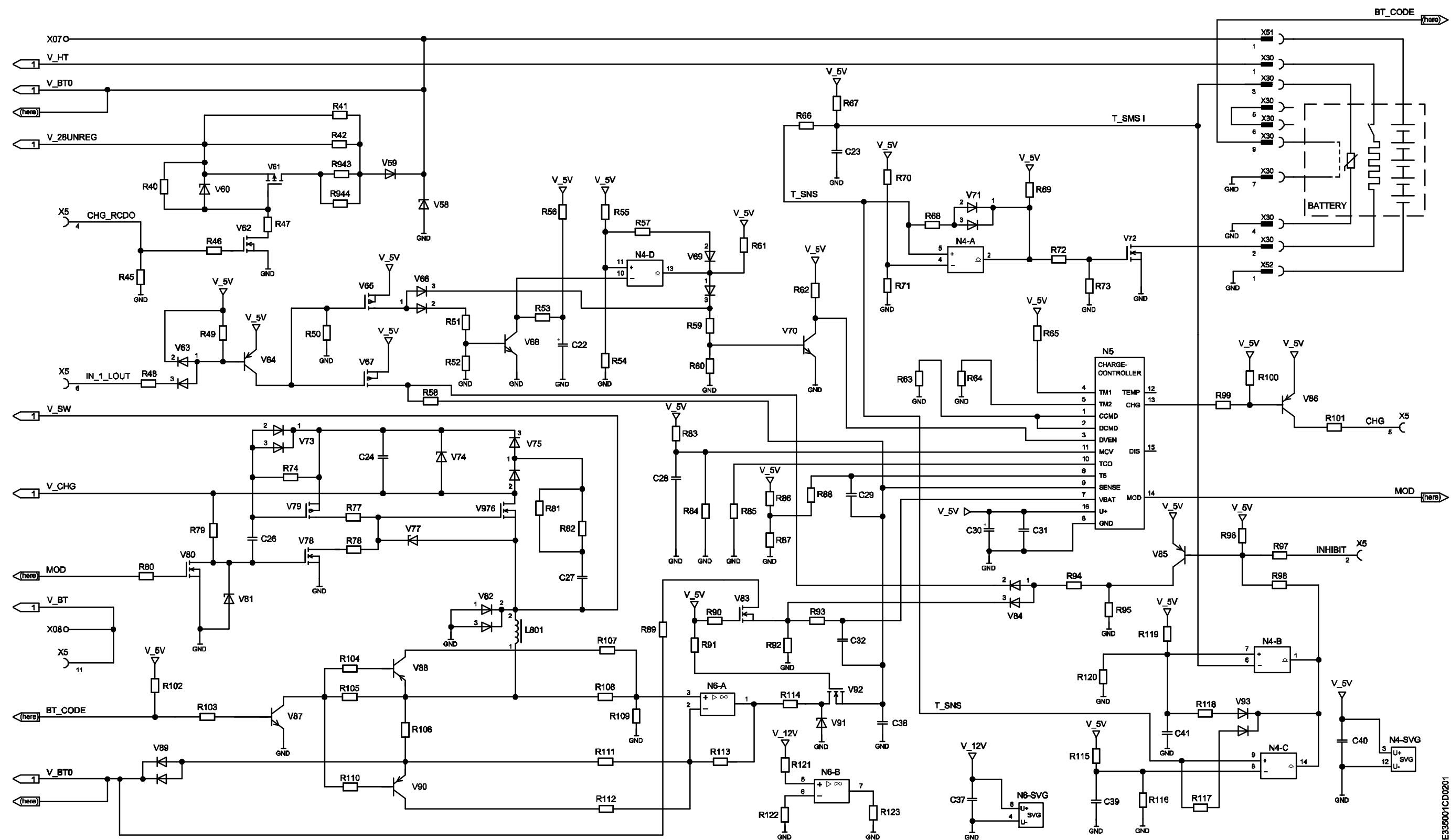
The figure that follows gives the circuit diagram for the Main Board of the Emergency Light Power Unit.

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CIRCUIT DIAGRAM FOR ELPU PNR 3400-22
MAIN BOARD (sheet 1 of 2)
Figure 2002/GRAPHIC-33-50-01-991-203-A01

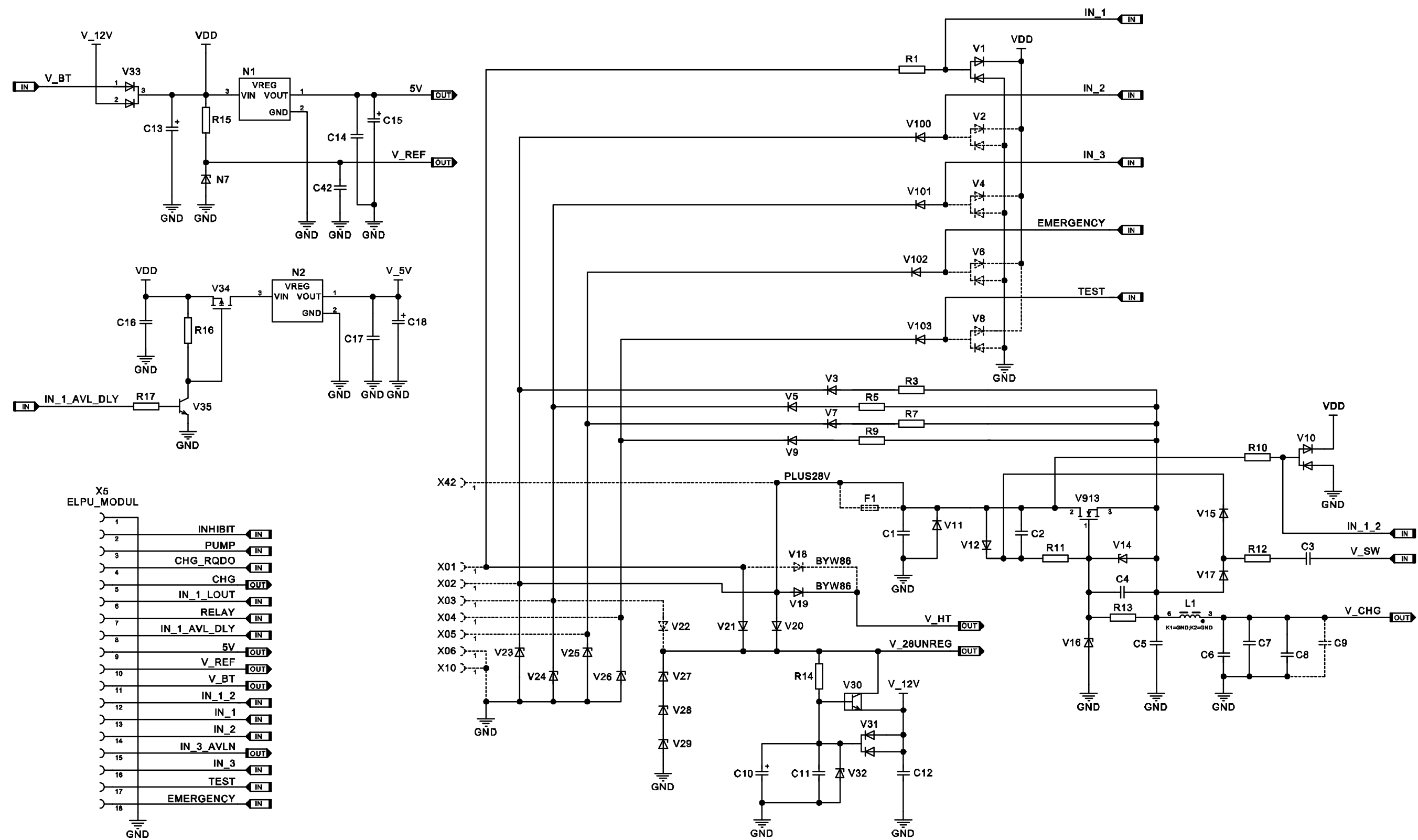
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CIRCUIT DIAGRAM FOR ELPU PNR 3400-22
MAIN BOARD (sheet 2 of 2)
Figure 2002/GRAPHIC-33-50-01-991-203-A01

33-50-01

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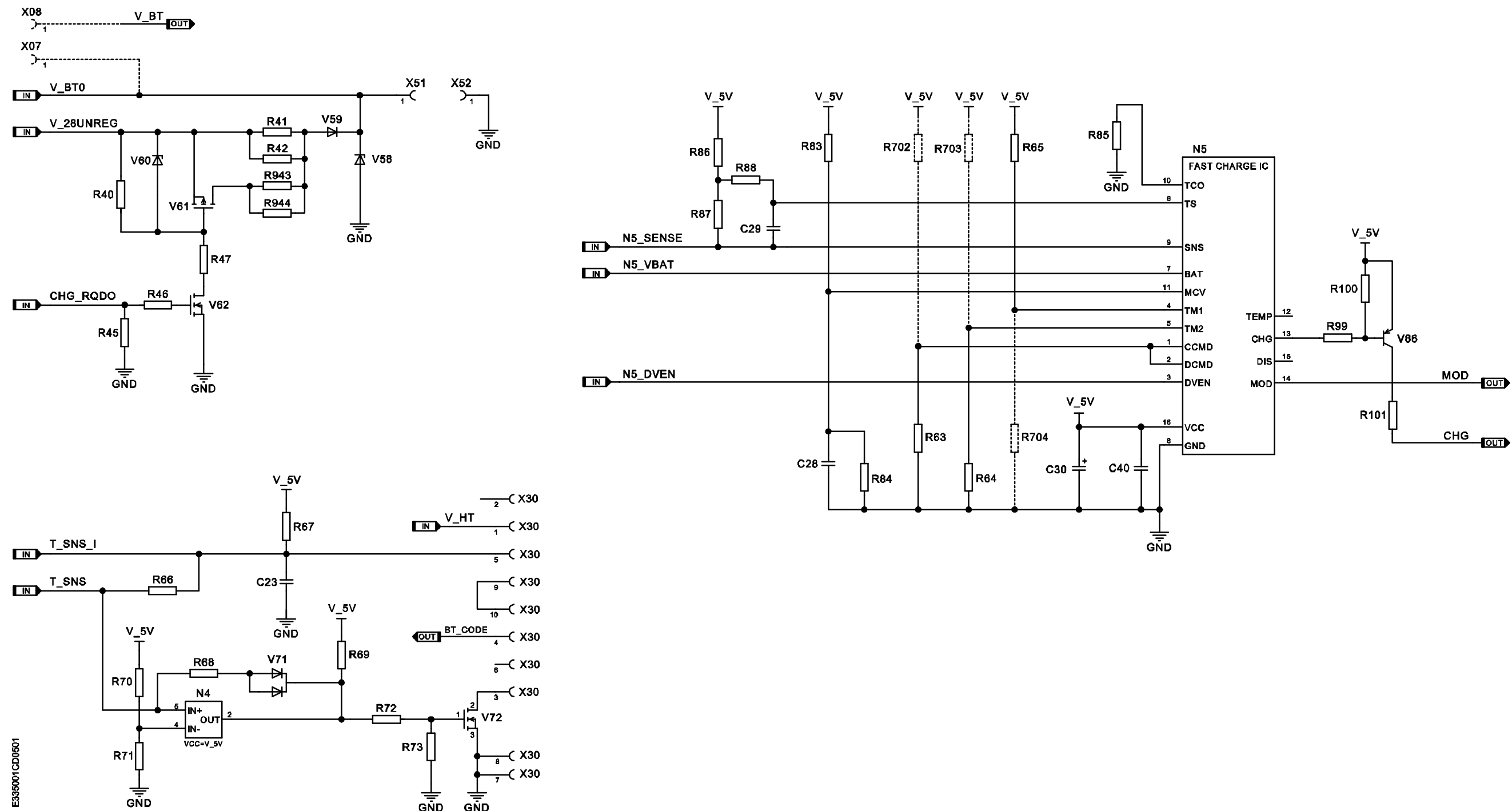


CIRCUIT DIAGRAM FOR ELPU PNR 3400-22-10 AMENDMENT –
MAIN BOARD (sheet 1 of 4)
Figure 2003/GRAPHIC-33-50-01-991-204-A01

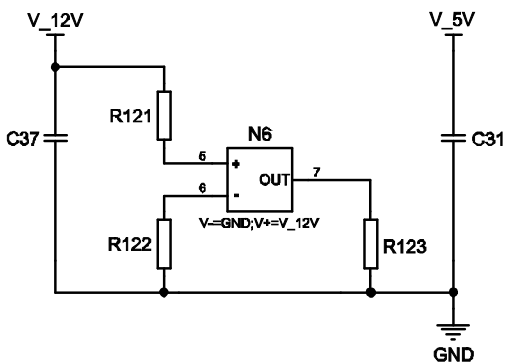
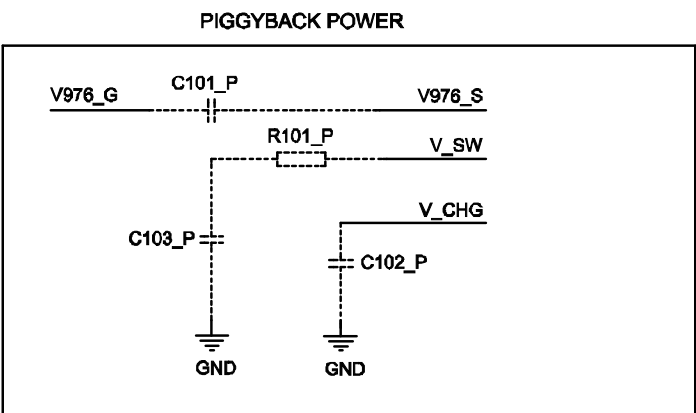
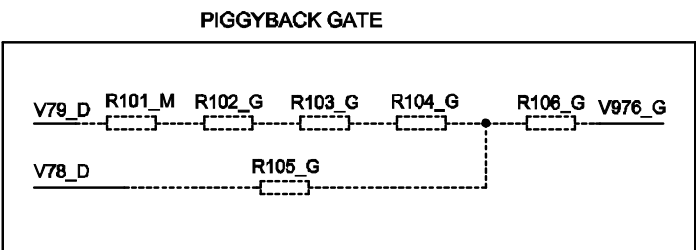
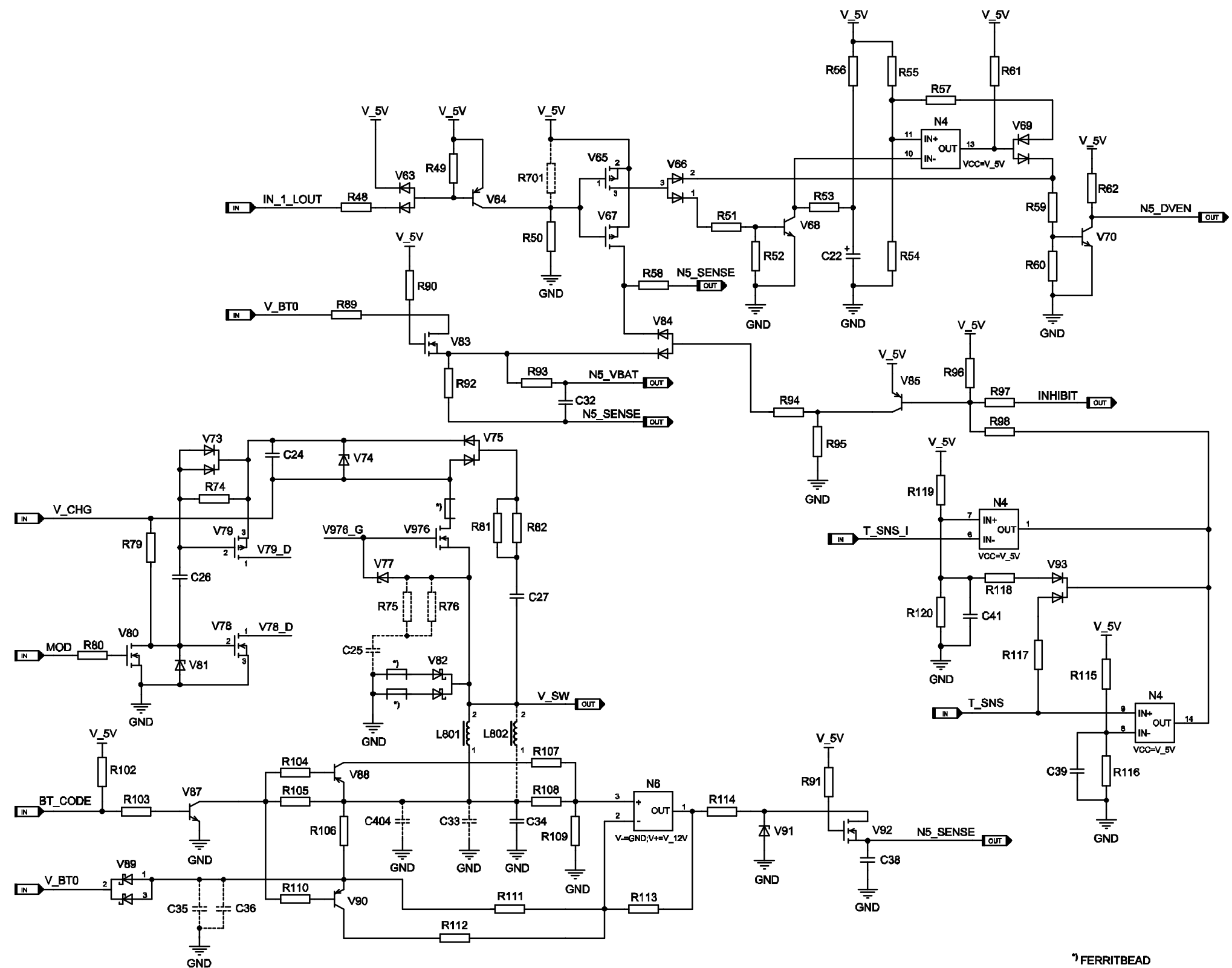
33-50-01



Figure 2003/GRAPHIC-33-50-01-991-204-A01



CIRCUIT DIAGRAM FOR ELPU PNR 3400-22-10 AMENDMENT –
MAIN BOARD (sheet 3 of 4)
Figure 2003/GRAPHIC-33-50-01-991-204-A01



CIRCUIT DIAGRAM FOR ELPU PNR 3400-22-10 AMENDMENT -
MAIN BOARD (sheet 4 of 4)
Figure 2003/GRAPHIC-33-50-01-991-204-A01

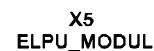
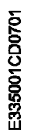
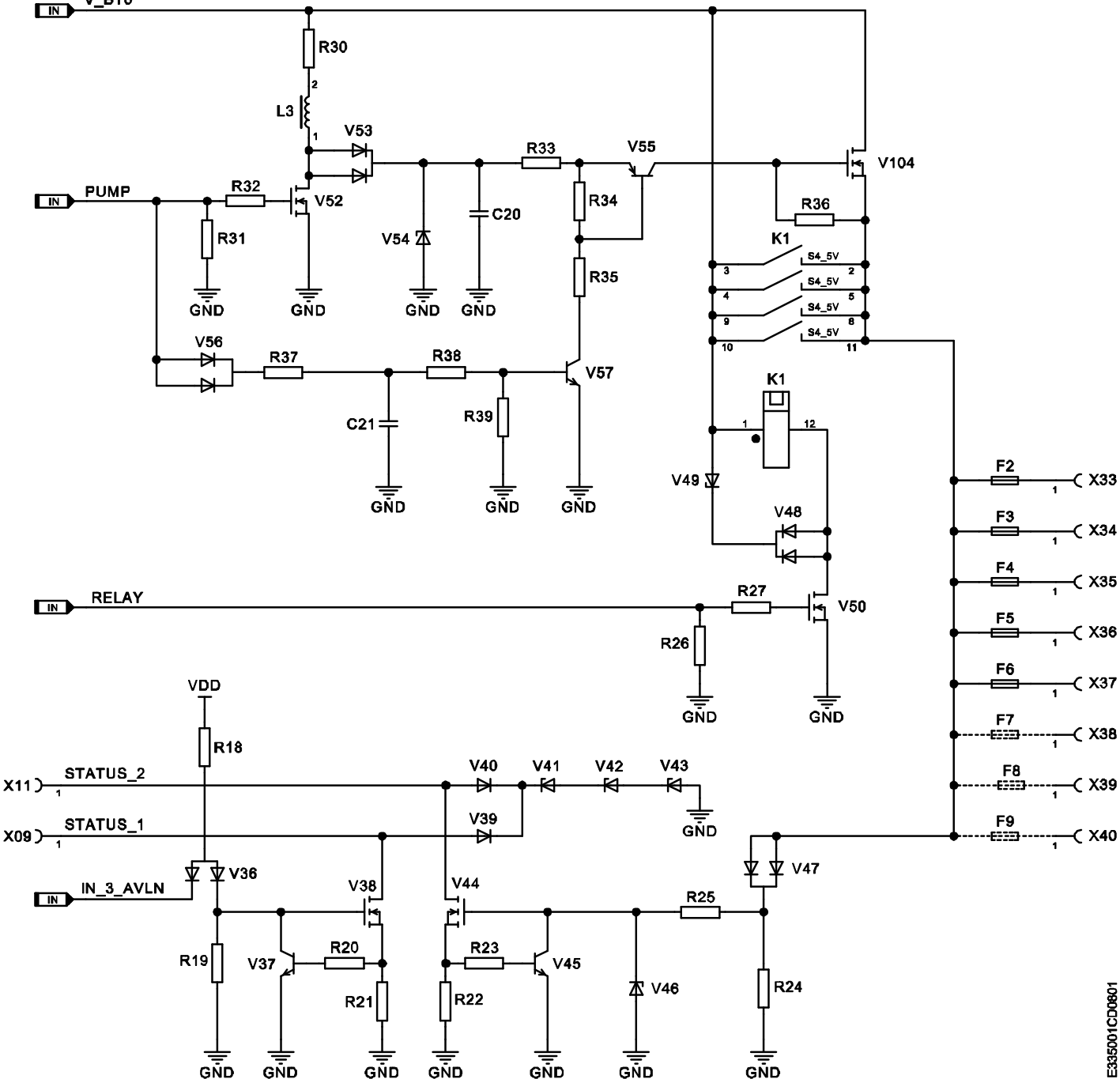
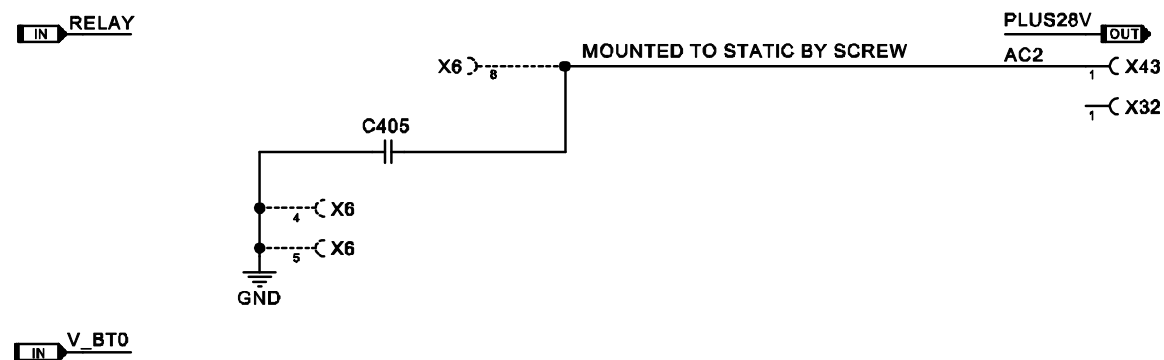


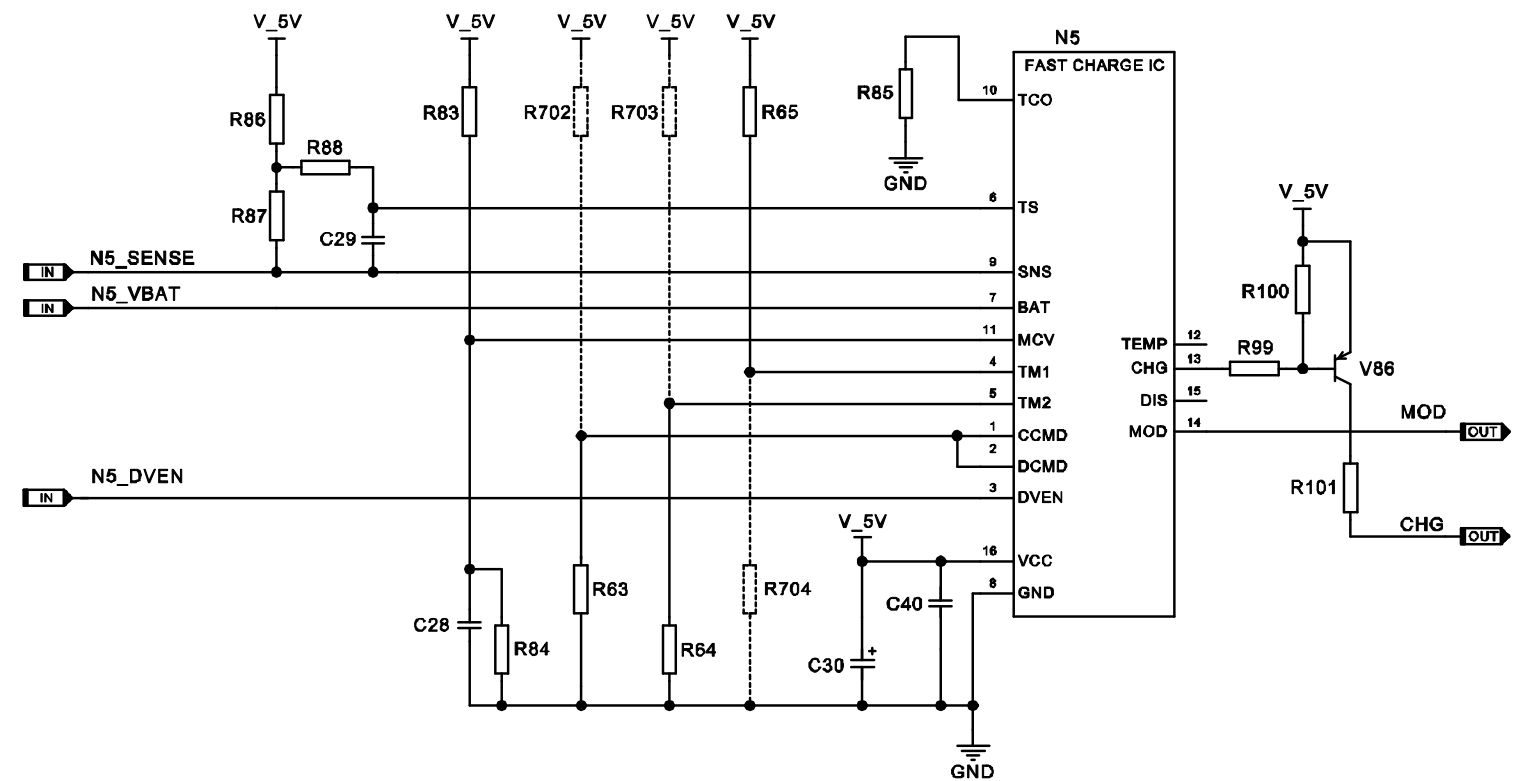
Figure 2004/GRAPHIC-33-50-01-991-205-A01



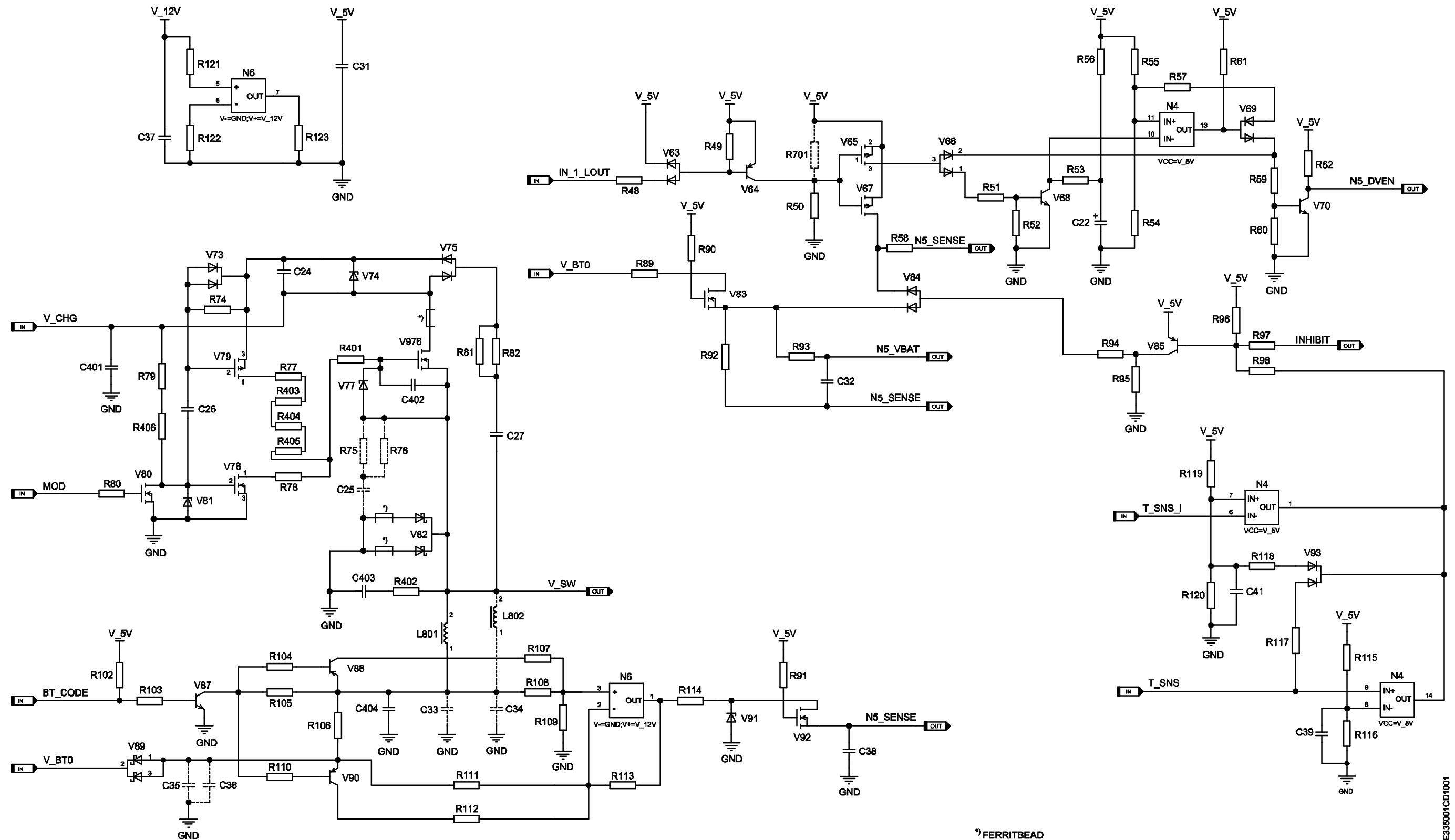


CIRCUIT DIAGRAM FOR ELPD PNR 3400-22-10 AMENDMENT A
MAIN BOARD (sheet 2 of 4)
Figure 2004/GRAPHIC-33-50-01-991-205-A01

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E335001CD0901



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TASK 33-50-01-878-803-A01

3. Data for Logic Module

A. Component Location Table

Table 2002 COMPONENT LOCATION TABLE FOR LOGIC MODULE

REFERENCE DESIGNATOR	GEOGRAPHIC LOCATION	IPL FIG. – ITEM NO.
C202	5B	4-50
C203	5BB	4-50
C204	6C	4-50
C205	2CC	4-50
C206	3CC	4-50
C207	7A	4-50
C208	2C	4-50
C212	4B	4-60
C213	4A	4-60
C214	3A	4-50
C215	7BB	4-50
C216	7CC	4-50
C217	6CC	4-50
C218	5CC	4-50
C219	6C	4-60
C220	5CC	4-70
C221	5CC	4-50
C222	6CC	4-50
C223	6B	4-60
C224	6BB	4-50
C225	5BB	4-50
C226	6A	4-60
C227	6C	4-60
C228	6CC	4-50
C229	5CC	4-50
C230	8BB	4-80, 4-80A
C231	7BB	4-50
C232	7C	4-50
C234	7A	4-50
C235	7A	4-70
C236	2C	4-60
C237	3CC	4-50
C238	1C	4-50

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REFERENCE DESIGNATOR	GEOGRAPHIC LOCATION	IPL FIG. – ITEM NO.
C239	4C	4-50
C240	2CC	4-80, 4-80A
C241	3CC	4-70
C242	5C	4-50
C243	7B	4-50
C244	3AA	4-50
C245	3AA	4-50
C246	2AA	4-50
C248	1AA	4-50
C249	1A	4-50
D202	5C	4-280
D203	6B	4-290
D204	4B	4-300
D205	7A	4-290
D206	8A	4-280
D207	8B	4-310
D208	2C	4-320
N200	5B	4-330
N201	3C	4-330
N202	2C	4-330
R200	3CC	4-90
R202	4CC	4-100, 4-100A
R204	4CC	4-90
R205	5CC	4-90
R206	4CC	4-90
R207	4BB	4-100, 4-100A
R208	3BB	4-100, 4-100A
R209	3BB	4-90
R210	3A	4-90
R211	4CC	4-100, 4-100A
R212	4BB	4-110
R213	4CC	4-100, 4-100A
R214	4BB	4-120
R215	8C	4-90
R216	8C	4-90
R217	8BB	4-90
R218	7CC	4-130
R219	7CC	4-100, 4-100A

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REFERENCE DESIGNATOR	GEOGRAPHIC LOCATION	IPL FIG. – ITEM NO.
R220	7C	4-90
R221	8CC	4-90
R222	8CC	4-90
R223	4AA	4-140
R224	5CC	4-90
R225	5BB	4-120
R226	5BB	4-150
R227	4C	4-110
R228	4C	4-100, 4-100A
R229	5C	4-90
R230	6CC	4-160
R231	5CC	4-90
R232	5CC	4-100, 4-100A
R233	5CC	4-90
R234	7C	4-100, 4-100A
R235	6CC	4-110
R236	5BB	4-110
R237	7BB	4-100, 4-100A
R238	6BB	4-90
R239	4AA	4-90
R240	4AA	4-100, 4-100A
R241	4A	4-90
R242	4AA	4-170
R243	3AA	4-180
R244	4AA	4-90
R245	5BB	4-120
R246	5AA	4-150
R247	5AA	4-120
R248	6AA	4-100, 4-100A
R249	5AA	4-90
R250	5AA	4-100, 4-100A
R251	5AA	4-90
R252	5AA	4-90
R253	6BB	4-140
R254	5AA	4-190, 4-190A
R255	4BB	4-90
R256	6BB	4-100, 4-100A
R257	4AA	4-100, 4-100A

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REFERENCE DESIGNATOR	GEOGRAPHIC LOCATION	IPL FIG. – ITEM NO.
R258	6CC	4-200
R259	7CC	4-90
R260	7CC	4-210, 4-210A
R261	6AA	4-150
R262	6AA	4-90
R263	5A	4-220
R264	8BB	4-270, 4-270A
R265	8BB	4-90
R266	7A	4-110
R267	8BB	4-100, 4-100A
R268	8AA	4-100, 4-100A
R269	8AA	4-220
R270	6B	4-90
R271	7A	4-170
R272	7BB	4-100, 4-100A
R273	7BB	4-90
R274	7BB	4-90
R275	6AA	4-100, 4-100A
R276	6AA	4-160
R277	7BB	4-90
R278	8C	4-90
R279	7A	4-200
R280	7AA	4-100, 4-100A
R281	6AA	4-100, 4-100A
R282	6A	4-90
R283	5AA	4-170
R284	7AA	4-100, 4-100A
R285	6AA	4-100, 4-100A
R286	6AA	4-90
R287	6AA	4-170
R290	2CC	4-200
R291	2CC	4-100, 4-100A
R292	3BB	4-90
R293	3CC	4-90
R295	1B	4-90
R296	1BB	4-90
R297	1B	4-90
R298	4AA	4-160

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REFERENCE DESIGNATOR	GEOGRAPHIC LOCATION	IPL FIG. – ITEM NO.
R299	4A	4-100, 4-100A
R300	1C	4-200
R301	1CC	4-90
R302	2C	4-90
R304	2CC	4-270, 4-270A
R305	3A	4-100, 4-100A
R306	3AA	4-90
R307	3AA	4-150
R308	3AA	4-230
R309	4AA	4-110
R310	4BB	4-90
R311	3B	4-90
R312	5AA	4-90
R313	3BB	4-100, 4-100A
R314	2A	4-90
R315	2AA	4-140
R316	3B	4-100, 4-100A
R317	2B	4-190, 4-190A
R319	2BB	4-240
R320	3AA	4-240
R324	3A	4-110
R325	3BB	4-90
R327	4BB	4-250
R328	2A	4-90
R329	2AA	4-140
R340	2B	4-100, 4-100A
R341	2B	4-190, 4-190A
R343	2BB	4-240
R344	2AA	4-240
R347	2A	4-110
R348	2BB	4-90
R350	2BB	4-250
R351	2A	4-90
R352	2AA	4-140
R353	2B	4-100
R354	2B	4-190, 4-190A
R356	2BB	4-240
R357	2AA	4-240

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REFERENCE DESIGNATOR	GEOGRAPHIC LOCATION	IPL FIG. – ITEM NO.
R359	2A	4-190A
R360	2A	4-110
R361	2BB	4-90
R362	1A	4-90
R363	1AA	4-140
R364	1B	4-100, 4-100A
R365	1B	4-190, 4-190A
R367	1BB	4-240
R368	1AA	4-240
R371	1A	4-110
R372	1BB	4-90
R374	3AA	4-100, 4-100A
R375	3B	4-260
R376	3B	4-150
R377	3BB	4-240
R380	3AA	4-230
R381	3A	4-110
R383	3BB	4-90
R385	3BB	4-250
S1	8C	4-20, 4-20A
V202	3BB	4-340
V203	6C	4-340
V204	7B	4-350
V205	5C	4-340
V206	6B	4-340
V207	6BB	4-340
V208	6BB	4-340
V209	4A	4-360
V210	5A	4-340
V211	5C	4-340
V212	6B	4-340
V213	5A	4-360
V215	6A	4-340
V216	6BB	4-370
V217	8CC	4-340
V218	8B	4-340
V219	8A	4-340
V220	7BB	4-340

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REFERENCE DESIGNATOR	GEOGRAPHIC LOCATION	IPL FIG. – ITEM NO.
V222	6BB	4-370
V223	7BB	4-340
V224	6B	4-380
V225	5A	4-350
V226	6A	4-390
V227	3C	4-340
V228	1C	4-340
V229	5A	4-350
V230	1BB	4-350
V231	2CC	4-340
V232	3A	4-340
V233	4A	4-350
V234	2B	4-340
V235	2B	4-340
V236	2B	4-340
V237	1B	4-340
V238	3B	4-340
V239	2BB	4-340
V250	4A	4-400
V914	6C	4-410, 4-410A
V921	7C	4-420, 4-420A

B. Component Layout

(1) Revision Reference Sheet

UPDATE NO.	DESCRIPTION	PART NUMBER EFFECTIVITY
—	—	—

(3) Component Layout Sheets

The figure that follows gives the component layout for the Logic Module.

VP1 ○

8

7

6

5

4

3

2

1

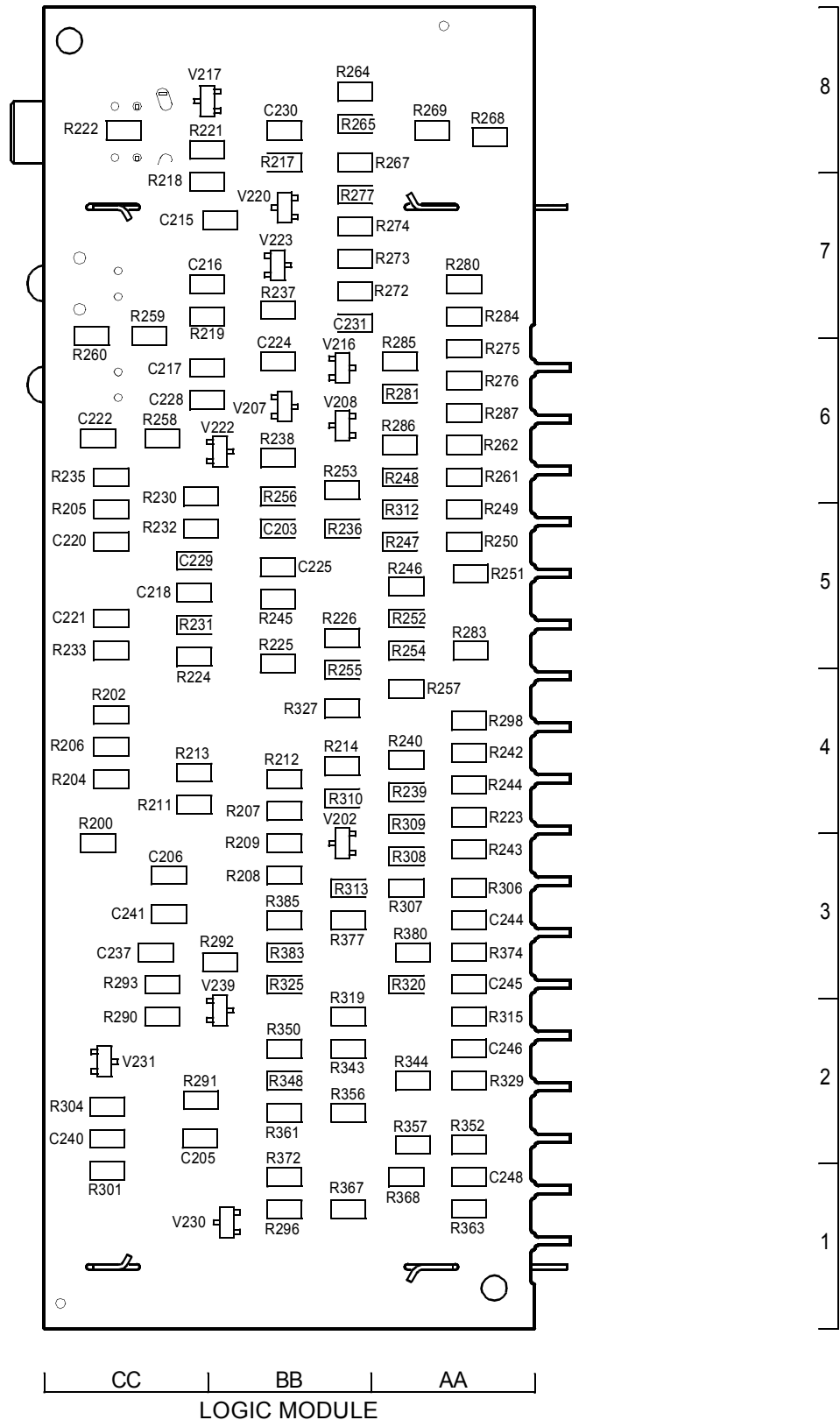
A B C

LOGIC MODULE

E335001PB0501

33-50-01

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SOLDER SIDE (sheet 02 of 2)

Figure 2005/GRAPHIC-33-50-01-991-206-A01

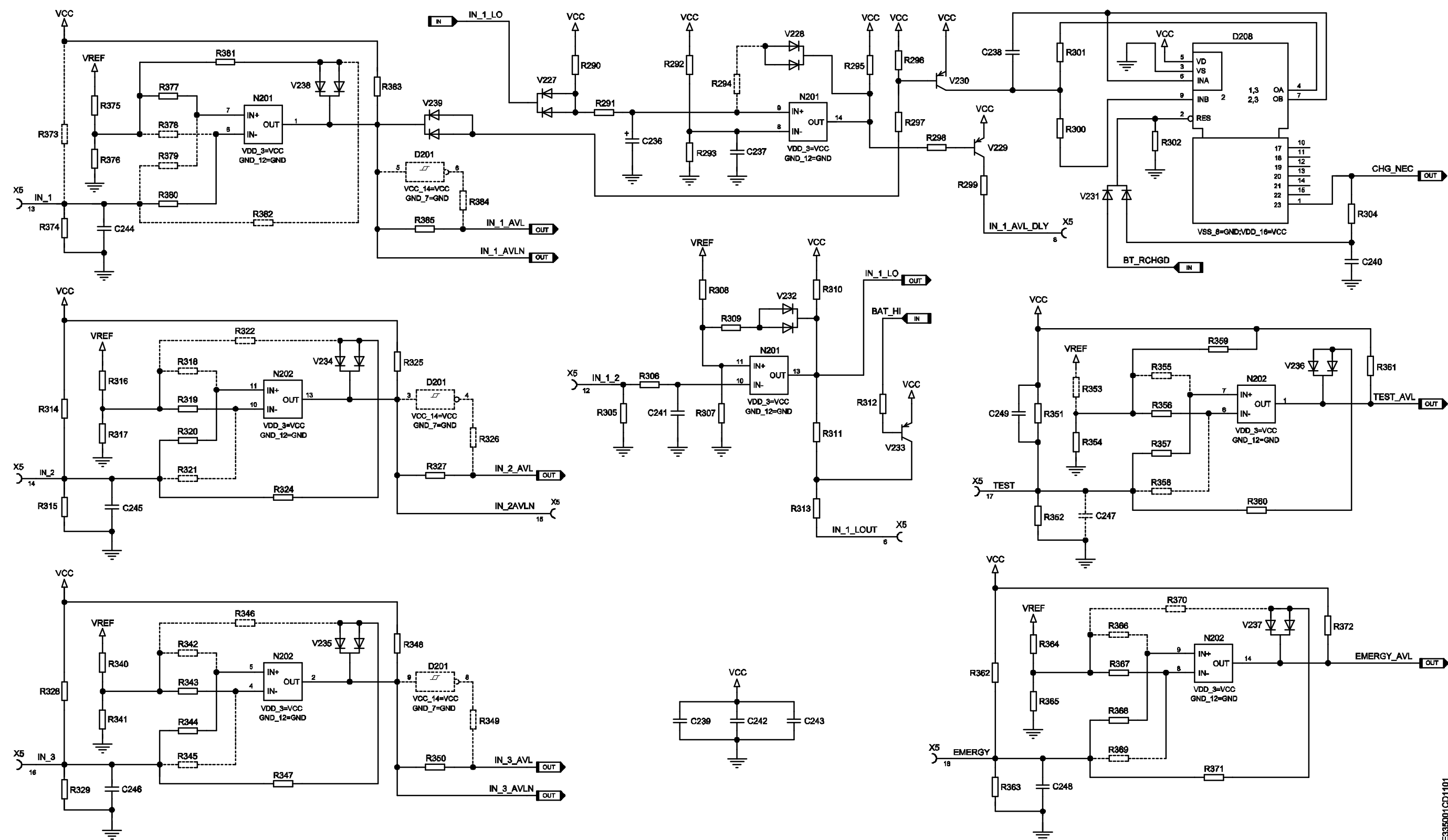
E335001PB0601

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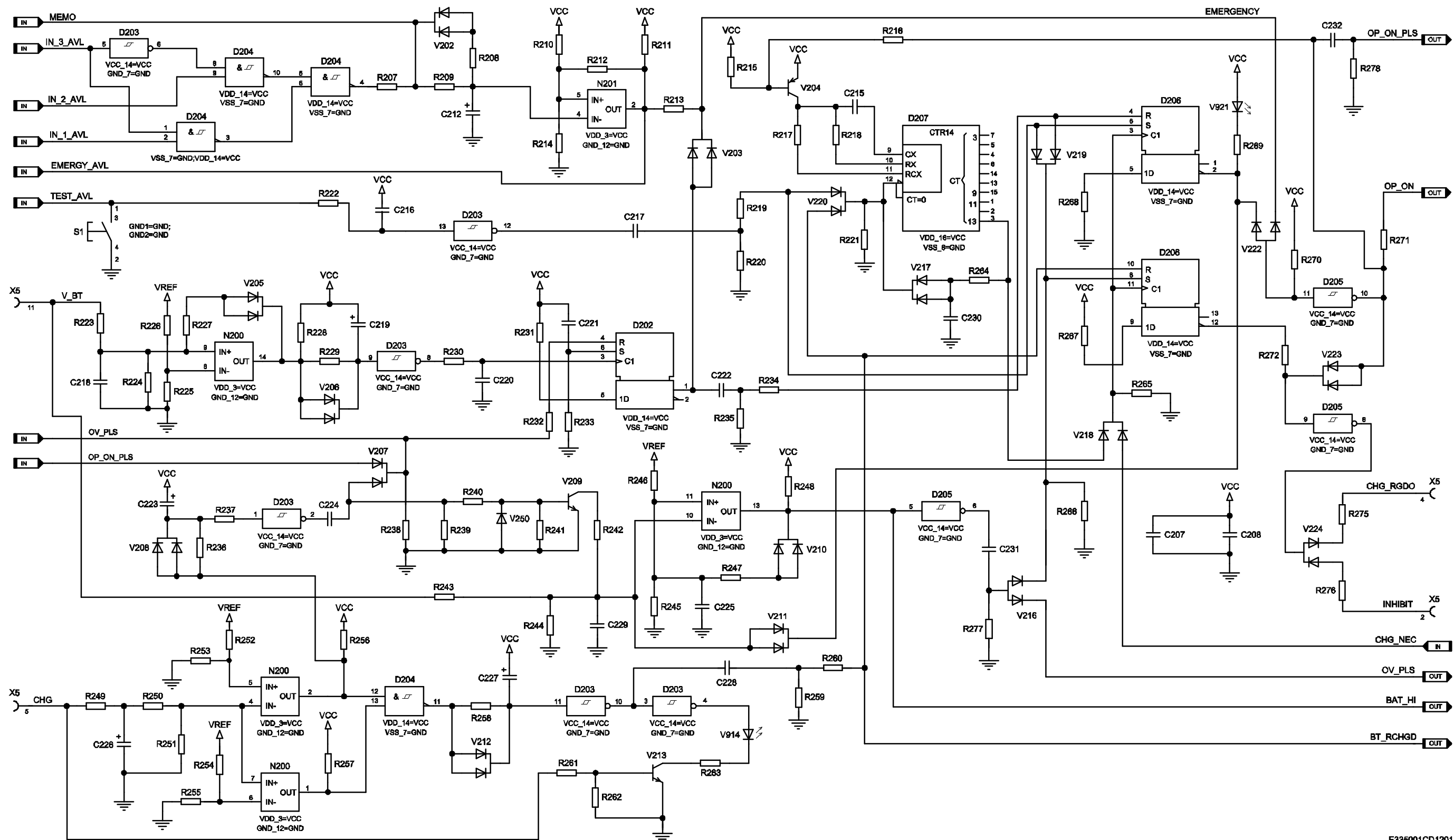
C. Circuit Diagram

The figure that follows gives the circuit diagram for the Logic Module.

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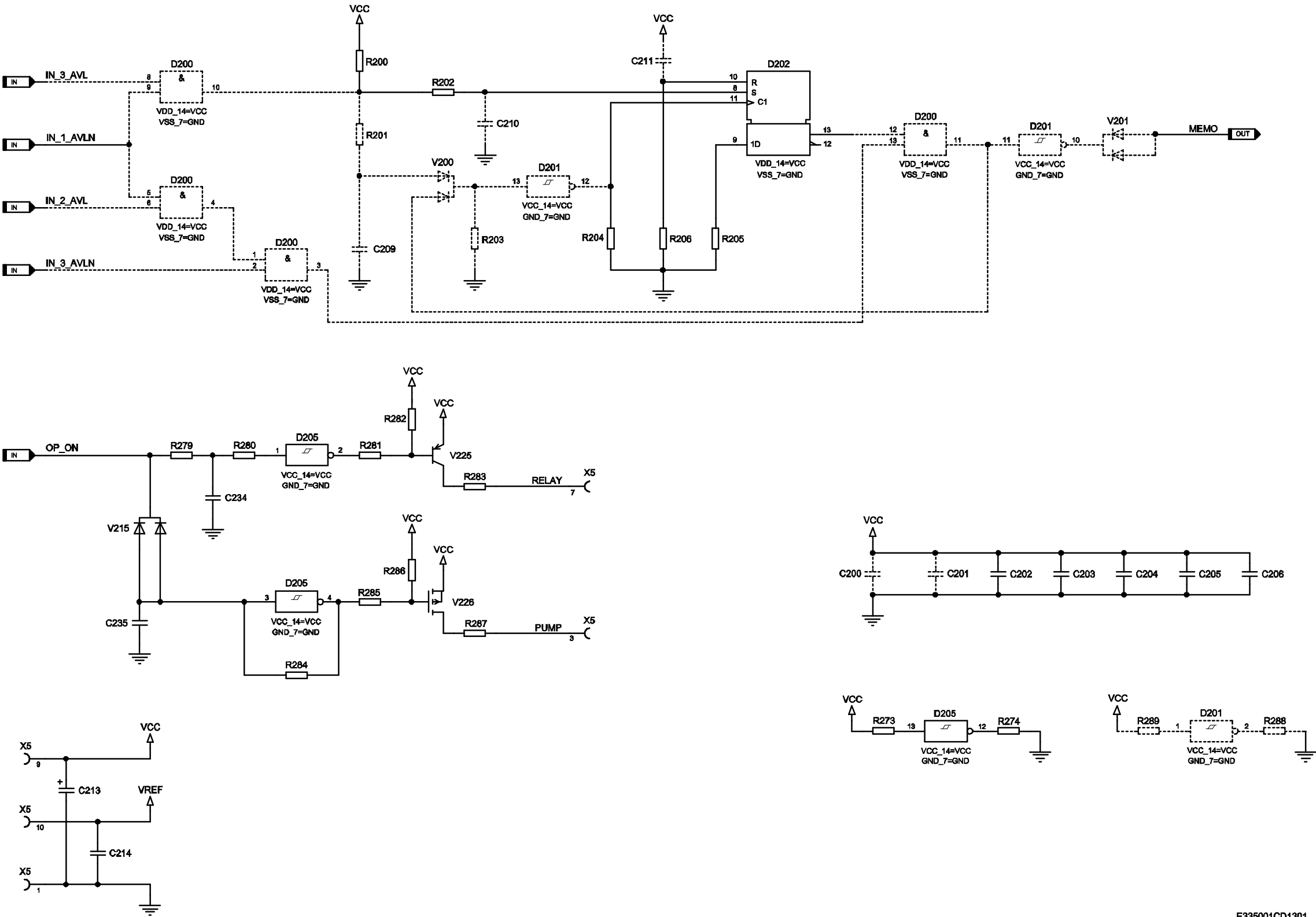
CIRCUIT DIAGRAM FOR ELPU PNR 3400-22 AND 3400-22-10
LOGIC MODULE (sheet 1 of 3)
Figure 2006/GRAPHIC-33-50-01-991-207-A01



CIRCUIT DIAGRAM FOR ELPU PNR 3400-22 AND 3400-22-10

LOGIC MODULE (sheet 2 of 3)

Figure 2006/GRAPHIC-33-50-01-991-207-A01



CIRCUIT DIAGRAM FOR ELPU PNR 3400-22 AND 3400-22-10
LOGIC MODULE (sheet 3 of 3)
Figure 2006/GRAPHIC-33-50-01-991-207-A01

E335001CD1301

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PART No. 3400-22
DISASSEMBLY

TASK 33-50-01-000-801-A01

1. Disassembly of the Unit

A. Reason for the Job

This page block gives detailed step-by-step instructions on how to disassemble the unit into its individual parts for maintenance and repair purposes.

B. Job Set-up Information

WARNING: **STRICTLY OBEY THE INSTRUCTIONS AND THE MATERIAL SAFETY DATA SHEET OF THE SUPPLIERS WHEN YOU USE THE TOOLS AND MATERIALS. PAY ATTENTION TO APPLICABLE INTERNATIONAL CHEMICAL SAFETY CARDS.**

CAUTION: FULLY CLEAN THE UNIT BEFORE DISASSEMBLY TO PREVENT CONTAMINATION OF INTERNAL PARTS (REFER TO PAGE BLOCK CLEANING).

- (1) The disassembly is based on the Illustrated Parts List (IPL) of this manual. Refer to the IPL for the item numbers given in the disassemble procedure.
- (2) No fixtures, special tools and equipment are necessary for disassembly.
- (3) Referenced Information

Table 3001 REFERENCED INFORMATION

REFERENCE	DESIGNATION
IPL Figure 1	Emergency Light Power Unit – Hardware Breakdown

C. Job Set-up

Subtask 33-50-01-020-001-A01

(1) Preparation

- (a) If applicable, disconnect the unit from the power supply or the test equipment before disassembly.
- (b) Refer to page blocks TESTING AND FAULT ISOLATION and INSPECTION/CHECK to find the condition or the probable cause of a malfunction and to estimate the level of disassembly and repair.
- (c) For an easy and correct reassembly
 - identify components during disassembly,
 - tag unmarked wires.

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D. Procedure

CAUTION: READ THE WARRANTY CONDITIONS BEFORE YOU DISASSEMBLE THE UNIT. THE WARRANTY CAN BE CANCELLED IF THE CONDITIONS ARE NOT OBEYED.

CAUTION: THE UNIT CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) COMPONENTS. USE APPLICABLE SAFETY PRECAUTIONS WHEN YOU DO MAINTENANCE ON OR NEAR COMPONENTS SENSITIVE TO ELECTROSTATIC DISCHARGE. IF YOU DO NOT THIS, YOU CAN CAUSE DAMAGE TO THE UNIT.

USE AN ANTI-STATIC CONTAINER TO PROTECT THE PRINTED CIRCUIT BOARD.

CAUTION: ONLY DISASSEMBLE THE UNIT

- IN A STANDARD WORKSHOP ENVIRONMENT,
- TO A LEVEL NECESSARY FOR REPAIR.

Subtask 33-50-01-020-002-A01

(1) Removal of Battery

- (a) Loosen the fastener (1-110) and remove the cover assy (1-100).
- (b) Loosen the three captive screws of the battery (1-10).
- (c) Carefully remove the battery (1-10) from the housing (1-20).

Subtask 33-50-01-020-003-A01

(2) Removal of Printed Circuit Board

CAUTION: THE PRINTED CIRCUIT BOARD CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) COMPONENTS WHICH CAN EASILY BE DAMAGED. ALL PERSONS WHO TOUCH THESE COMPONENTS OR PARTS WHICH CONTAIN THESE COMPONENTS MUST REFER TO THE APPLICABLE LOCAL PROCEDURES.

NOTE:: Remove the battery (1-10) first before you remove the printed circuit board (1-30).

- (a) Remove the four screws (1-90) and the cover (1-80).
- (b) Remove the four screws (1-60), the receptacle and the receptacle fixture (1-50) from the housing (1-20).
- (c) For PNR 3400-22 AMENDT - only:
Remove the four screws (1-40).
- (d) For PNR 3400-22 AMENDT A or later and PNR 3400-22-10 only:
Remove the four screws (1-40A, 1-41).
- (e) Remove the printed circuit board (1-30) from the housing (1-20).

E. Close-up

Not applicable.

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CLEANING

TASK 33-50-01-100-801-A01

1. Cleaning of the Unit

A. Reason for the Job

This page block gives detailed step-by-step instructions on how to clean the assembled or disassembled unit, specific areas of the unit and its parts.

B. Job Set-up Information

WARNING: STRICTLY OBEY THE INSTRUCTIONS AND THE MATERIAL SAFETY DATA SHEET OF THE SUPPLIERS WHEN YOU USE THE TOOLS AND MATERIALS. PAY ATTENTION TO APPLICABLE INTERNATIONAL CHEMICAL SAFETY CARDS.

NOTE:: You can use equivalent alternatives for listed items.

NOTE:: For more information refer to page block SPECIAL TOOLS, FIXTURES, EQUIPMENT AND CONSUMABLES.

(1) Fixtures, Tools, Test and Support Equipment

Table 4001 FIXTURES, TOOLS, TEST AND SUPPORT EQUIPMENT

REFERENCE	QTY	DESIGNATION
No specific	1	Soft-bristle brush (anti-static)
No specific	1	Dry lint-free cotton cloth

(2) Consumable Materials

Table 4002 CONSUMABLE MATERIALS

REFERENCE	DESIGNATION
No specific	Low-pressure dry compressed air
No specific	Isopropyl Alcohol

C. Job Set-up

Subtask 33-50-01-160-001-A01

(1) Parts Protection

- (a) If applicable, disconnect the unit from the power supply or the test equipment before cleaning.
- (b) If you do not examine the cleaned parts immediately, protect the parts from damage and contamination.

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D. Procedure

WARNING: DO NOT GET CLEANING AGENTS ON YOUR SKIN, IN YOUR EYES, OR NEAR A FLAME. DO NOT BREATHE THE FUMES. USE ONLY IN WELL VENTILATED AREAS.

CLEANING AGENTS ARE POISONOUS AND FLAMMABLE. DO NOT DRINK SOLVENTS AND CLEANING AGENTS. FLUSH IRRITATED EYES WITH WATER. DO NOT SMOKE.

WEAR SAFETY GOGGLES OR GLASSES WHEN YOU USE COMPRESSED AIR. POINT THE AIR STREAM AWAY FROM OTHER PEOPLE.

CAUTION: USE ONLY SPECIFIED CLEANING MATERIALS OR APPROVED ALTERNATIVES. OBEY THE MANUFACTURER'S INSTRUCTIONS. THE USE OF NOT APPROVED MATERIALS CAN DAMAGE THE SURFACE PROTECTION.

CAUTION: REMOVE ALL CLEANING AGENTS FROM THE PARTS BEFORE YOU DO THE ASSEMBLE PROCEDURE. CLEANING AGENTS CAN CAUSE CORROSION.

CAUTION: THE UNIT CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) COMPONENTS. USE APPLICABLE SAFETY PRECAUTIONS WHEN YOU DO MAINTENANCE ON OR NEAR COMPONENTS SENSITIVE TO ELECTROSTATIC DISCHARGE. IF YOU DO NOT THIS, YOU CAN CAUSE DAMAGE TO THE UNIT.

CAUTION: CLEAN THE PRINTED CIRCUIT BOARDS, THE ELECTRICAL COMPONENTS AND THE CONNECTORS CAREFULLY TO PREVENT DAMAGE. DO NOT REMOVE THE COMPONENT IDENTIFICATION.

Subtask 33-50-01-140-001-A01

(1) Cleaning of Printed Circuit Boards

- (a) Use a dry, nonmetallic soft-bristle brush (anti-static) to loosen and remove dust and other unwanted material.
- (b) Remove the unwanted material.

Subtask 33-50-01-140-002-A01

(2) Cleaning of Electrical Contacts

- (a) Electrical contacts do not need cleaning for the life of the unit.
- (b) However, if it becomes necessary to clean electrical contacts, clean with a small, nonmetallic soft-bristle brush (anti-static) and isopropyl alcohol.

Subtask 33-50-01-140-003-A01

(3) Cleaning of Housing and Cover

- (a) Remove stubborn deposits by rubbing with a clean, lint-free cloth or a nonmetallic soft-bristle brush and isopropyl alcohol.
- (b) Clean and dry the housing by using filtered, compressed air.

E. Close-up

Not applicable.

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PART No. 3400-22
INSPECTION / CHECK

TASK 33-50-01-200-801-A01

1. Visual Inspection

A. Reason for the Job

This page block gives detailed step-by-step instructions that are necessary during shop maintenance of the disassembled unit to determine the

- serviceability of the parts,
- correct inter-relationship of the parts.

B. Job Set-up Information

- (1) For repair of damaged modules refer to page block REPAIR.
- (2) For replacement of components refer to page blocks DISASSEMBLY and ASSEMBLY.

C. Job Set-up

Not applicable.

D. Procedure

CAUTION: DO THE VISUAL CHECK OF THE COMPONENTS BEFORE YOU ASSEMBLE THE UNIT.

Subtask 33-50-01-210-001-A01

(1) Check of Housing, Cover and Unit Receptacle

- (a) Examine the housing for dents, nicks, cracks, cuts, corrosion and other obvious defects. Make sure that there are no signs of effects caused by handling.
- (b) Examine the mechanical components for loose or defective attaching parts.
- (c) Make sure that the bonding area is clean.
- (d) Examine the unit receptacle for damage and bent or broken pins. Make sure that
 - the inside of the receptacle is clean,
 - the receptacle and its contacts are correctly attached,
 - there are no signs of distortion and corrosion at the contacts.
- (e) Examine the identification and modification labels. Make sure that
 - the labels are correctly attached,
 - you can read them.

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Subtask 33-50-01-210-002-A01

(2) Check of Printed Circuit Boards

- (a) Examine the printed circuit boards for cracks and broken or lifted tracks.
- (b) Examine the soldering joints for corrosion. Make sure that the soldering joints are correctly attached.
- (c) Examine the printed circuit boards and the components for signs of overheating, corrosion and mechanical damage.
- (d) Examine the connectors for damage, distortion, corrosion and bent or broken pins. Make sure that
 - the inside of the connectors is clean,
 - the connectors are correctly attached to the boards.

E. Close-up
Not applicable.

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PART No. 3400-22
REPAIR

TASK 33-50-01-300-801-A01

1. Repair of the Unit

A. Reason for the Job

This page block gives detailed instructions and specifications necessary to restore a worn, defective or damaged unit to a serviceable condition.

B. Job Set-up Information

WARNING: STRICTLY OBEY THE INSTRUCTIONS AND THE MATERIAL SAFETY DATA SHEET OF THE SUPPLIERS WHEN YOU USE THE TOOLS AND MATERIALS. PAY ATTENTION TO APPLICABLE INTERNATIONAL CHEMICAL SAFETY CARDS.

NOTE: You can use equivalent alternatives for listed items.

NOTE: Refer to page block SPECIAL TOOLS, FIXTURES, EQUIPMENT AND CONSUMABLES for more information.

- (1) The repair procedure gives the instructions for the replacement of unserviceable components found during the INSPECTION/CHECK and FAULT ISOLATION procedures. It does not give standard practices, for example soldering and track repair or replacement of surface mounted devices (SMD). Use approved local procedures.
- (2) Obey the applicable specifications given in the table that follows, when you do the repair instructions.

Table 6001 REPAIR SPECIFICATIONS

Specification	Title
IPC-A-610 ¹⁾	Acceptability of Electronic Assemblies
IPC-7711/21 ¹⁾	Rework and Repair Guide
IPC-J-STD-001	Requirements for Soldered Electrical and Electronic Assemblies
IPC-J-STD-006	Requirements for Electronic Grade Solder Alloys and Fluxed and Non-Fluxed Solid Solders for Electronic Soldering Applications.

¹⁾ Appropriate Class = Class 3 (High Performance Electronic Products)

- (3) The repair is based on the Illustrated Parts List (IPL) of this manual. Refer to the IPL for the item numbers given in the repair procedure.
- (4) These standard tools are necessary for the repair of printed circuit boards:
 - Solder/unsolder station applicable for the processing of electrostatic discharge sensitive components,
 - SMD work station.
- (5) No fixtures, special tools and equipment are necessary for repair.

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(6) Consumable Materials

Table 6002 CONSUMABLE MATERIALS

REFERENCE	DESIGNATION
No specific	Solder Sn63Pb37 or Sn60Pb40 according to IPC-J-STD-006
SL 1309 N-FLZ	Varnish (Coating for Printed Circuit Boards) MIL-I-46058 type UR (CAGE C2387)
V 1309 N	Solvent for Varnish (CAGE C2387)
No specific	Isopropyl Alcohol
UHU PLUS 300	Two-Component Adhesive (CAGE D0026)
OR	or
ARALDITE 2011	Two-Component Adhesive (CAGE ST205)
ELASTOSIL N2199	Silicone Elastomer (CAGE D2650)

(a) Referenced Information

Table 6003 REFERENCED INFORMATION

REFERENCE	DESIGNATION
IPL Figure 1	Emergency Light Power Unit – Hardware Breakdown

C. Job Set-up

Subtask 33-50-01-350-001-A01

(1) Disconnect Unit

- (a) If applicable, disconnect the unit from the power supply or the test equipment before repair.
- (b) Refer to page blocks TESTING AND FAULT ISOLATION and INSPECTION/CHECK to find the condition or the probable cause of a malfunction and to estimate the level of repair.

D. Procedure

CAUTION: READ THE WARRANTY CONDITIONS BEFORE YOU REPAIR THE UNIT.
THE WARRANTY CAN BE CANCELLED IF THE CONDITIONS ARE NOT OBEYED.

CAUTION: THE UNIT CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) COMPONENTS. USE APPLICABLE SAFETY PRECAUTIONS WHEN YOU DO MAINTENANCE ON OR NEAR COMPONENTS SENSITIVE TO ELECTROSTATIC DISCHARGE. IF YOU DO NOT THIS, YOU CAN CAUSE DAMAGE TO THE UNIT.
USE AN ANTI-STATIC CONTAINER TO PROTECT THE PRINTED CIRCUIT BOARDS.

CAUTION: ONLY REPAIR THE UNIT IN A STANDARD WORKSHOP ENVIRONMENT.

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Subtask 33-50-01-350-002-A01

(1) General Instructions for Electronic Components

WARNING: THE INSTALLATION OF AN ELECTROLYTIC CAPACITOR WITH THE INCORRECT POLARITY CAN CAUSE IT TO EXPLODE AND CAUSE INJURY TO PERSONNEL OR DAMAGE TO THE EQUIPMENT. MAKE SURE THAT THE POLARITY IS CORRECT BEFORE YOU CONNECT POWER TO THE PRINTED CIRCUIT BOARD.

CAUTION: IF THE STORAGE TIME OF A COMPONENT IS MORE THAN 12 MONTHS, MAKE THE LEADS OF THE COMPONENT FREE OF OXIDE BEFORE YOU SOLDER IT.

CAUTION: MAKE SURE THAT YOU DO NOT DAMAGE ADJACENT COMPONENTS DURING REMOVAL AND INSTALLATION OF SOLDERED COMPONENTS. DO NOT USE MORE HEAT THAN NECESSARY TO UNSOLDER OR SOLDER COMPONENTS.

CAUTION: REMOVE REMAINING FLUX IMMEDIATELY WHEN YOU HAVE COMPLETED THE SOLDER WORK. FLUX CAUSES CORROSION AND PREVENTS CORRECT ADHESION OF THE PROTECTIVE VARNISH.

CAUTION: NEVER REUSE SELF-LOCKING SCREWS OR NUTS. ALWAYS INSTALL NEW FASTENING ELEMENTS TO MAKE SURE THAT THE SELF-LOCKING IS OPTIMUM.

CAUTION: DO NOT USE LEAD-FREE SOLDER FOR PCB REPAIR. REFER TO TABLE "CONSUMABLE MATERIALS" FOR DETAILS.

- (a) Remove the protective varnish around the area of the soldered connection, before you unsolder the joint.
- (b) Make a note of the orientation of the component for correct installation, before you replace a component.
- (c) Always clean and dry the area around the replacement component position on both sides of the board, before you install the component.
- (d) Make sure that the leads of replacement components are properly tinned.
- (e) If necessary, carefully bend the leads of components until the connections are aligned with the holes in the board. Make sure that you do not damage the wire junctions of the component.
- (f) Always install the component so that you can easily read the value, the tolerance and, where applicable, the polarity.
- (g) Make sure that you install diodes and electrolytic capacitors with the correct polarity and transistors with the correct orientation.
- (h) Cut the leads to the necessary length before you solder the component in position. The wire must be 1 to 2 mm [0.04 to 0.08 in.] above the board.

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Subtask 33-50-01-360-001-A01

(2) How to Bond Replacement Components with Two-Component Adhesive

- (a) The table that follows gives the electronic components bonded with two-component adhesive to the adjacent components and/or to the printed circuit board.

Table 6004 BONDED COMPONENTS (TWO-COMPONENT ADHESIVE)

COMPONENT	IPL FIG./ITEM
Inductor L801	2/880, 3/495
Diode V20	2/620, 3/365

- (b) Unsolder bonded component to be replaced.
- (c) Unfix component with a heat gun at +125 deg. C [+257 deg. F].
- (d) Remove rests of adhesive compound from printed circuit board.
- (e) Install replacement component and solder it to the printed circuit board.
- (f) Mix the two constituents of the adhesive. The ratio of mixture is 1:1.
- (g) Apply a small quantity of the mixture to bond the replacement component.
- (h) Let the adhesive cure for 24 hours at room temperature or 5 to 7 hours at +40 deg. C [+104 deg. F].

Subtask 33-50-01-360-002-A01

(3) How to Bond Replacement Components with Silicone Elastomer

- (a) The table that follows gives the electronic components bonded with silicone elastomer to the adjacent components and/or to the printed circuit board.

Table 6005 BONDED COMPONENTS (SILICONE ELASTOMER)

COMPONENT	IPL FIG./ITEM
Heat sink for transistor V976	2/110, 3/45 (V976: 2/850, 3/475)
Transistor V83	2/740, 3/425
Fuses F2 thru F6	2/90, 3/55

- (b) Unsolder bonded component to be replaced.
- (c) Unfix component mechanically.
- (d) Remove rests of silicone elastomer from printed circuit board.
- (e) Install replacement component and solder it to the printed circuit board.
- (f) Apply a small quantity of silicone elastomer to bond the component.

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Subtask 33-50-01-350-003-A01

(4) Replacement of Unit Receptacle

- (a) Unsolder the wires of the unit receptacles from the printed circuit board.
- (b) Remove the receptacle.
- (c) Refer to the table that follows and solder the wires of the replacement receptacle to the printed circuit board.

Table 6006 WIRING OF UNIT RECEPTACLE

Receptacle Pin No.	PCB Terminal	Receptacle Pin No.	PCB Terminal
A	X02	K	X36
B	X01	L	X11
C	X03	M	X37
D	X06	N	X32
E	X04	P	X07
F	X09	R	X08
G	X33	S	X10
H	X34	T	X05
J	X35	U	X42

Subtask 33-50-01-350-004-A01

(5) Repair of Fuses

- (a) Disassemble the unit as necessary to get access to the fuses on the component side of the printed circuit board.
- (b) Remove silicone elastomer from the fuse to be replaced.
- (c) Remove the defective fuse from the related plug-socket fuse holder.
- (d) Put the replacement fuse (2/90, 3/55) into the fuse holder.
- (e) Apply a small quantity of silicone elastomer to the replacement fuse, to the adjacent components and to the printed circuit board.

Subtask 33-50-01-350-005-A01

(6) Post Repair Procedure for Printed Circuit Boards

CAUTION: THE PROTECTIVE VARNISH MUST NOT TOUCH UNSOLDERED ELECTRICAL CONTACTS. THE VARNISH CAN PREVENT ELECTRICAL CONTINUITY.

- (a) Examine the printed circuit board and components for signs of heat-damage caused by the soldering process.
- (b) Carefully remove solder splashes.
- (c) Clean the board with the cleaning fluid. Let the surface of the board dry before you apply protective varnish.
- (d) Apply protective varnish to the replaced electrical components and to the soldered connections of the replacement components.

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E. Close-up

Subtask 33-50-01-350-006-A01

(1) Modification Status Check

- (a) Check in the IPL if the repair has an effect on the modification status of the unit.
- (b) If applicable, mark the identification label of the unit with the correct AMENDT/MOD letter.

Subtask 33-50-01-350-007-A01

(2) Final Test

- (a) Refer to page block TESTING AND FAULT ISOLATION and do the tests before you
 - return the unit to service,
 - store the unit.

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ASSEMBLY

TASK 33-50-01-400-801-A01

1. Assembly of the Unit

A. Reason for the Job

This page block gives detailed step-by-step instructions on how to assemble the disassembled unit during shop maintenance and/or after repair.

B. Job Set-up Information

WARNING: STRICTLY OBEY THE INSTRUCTIONS AND THE MATERIAL SAFETY DATA SHEET OF THE SUPPLIERS WHEN YOU USE THE TOOLS AND MATERIALS. PAY ATTENTION TO APPLICABLE INTERNATIONAL CHEMICAL SAFETY CARDS.

- (1) The assembly is based on the Illustrated Parts List (IPL) of this manual. Refer to the IPL for the item numbers given in the assemble procedure.
- (2) No fixtures, special tools, equipment and materials are necessary for assembly.
- (3) Referenced Information

Table 7001 REFERENCED INFORMATION

REFERENCE	DESIGNATION
IPL Figure 1	Emergency Light Power Unit – Hardware Breakdown

C. Job Set-up

Subtask 33-50-01-420-001-A01

(1) Examine Parts

- (a) Examine the parts and make sure that they are serviceable and clean.
- (b) Make sure that the parts have the correct part number.

D. Procedure

CAUTION: THE UNIT CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) COMPONENTS. USE APPLICABLE SAFETY PRECAUTIONS WHEN YOU DO MAINTENANCE ON OR NEAR COMPONENTS SENSITIVE TO ELECTROSTATIC DISCHARGE. IF YOU DO NOT THIS, YOU CAN CAUSE DAMAGE TO THE UNIT.

CAUTION: ONLY ASSEMBLE THE UNIT IN A STANDARD WORKSHOP ENVIRONMENT. DO THE ASSEMBLY ON A SOFT, CLEAN WORK SURFACE TO PREVENT DAMAGE TO THE COMPONENTS.

CAUTION: NEVER REUSE SELF-LOCKING SCREWS OR NUTS. ALWAYS INSTALL NEW FASTENING ELEMENTS TO MAKE SURE THAT THE SELF-LOCKING IS OPTIMUM.

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Subtask 33-50-01-420-002-A01

(1) Installation of Printed Circuit Board

- (a) Put the printed circuit board (1-30) in position in the housing (1-20).
- (b) Attach the printed circuit board.
 - 1 For PNR 3400-22 AMENDT - only:
Attach the printed circuit board with the four screws (1-40).
 - 2 For PNR 3400-22 AMENDT A or later and PNR 3400-22-10 only:
Attach the printed circuit board with the four screws (1-40A, 1-41).
- (c) Attach the receptacle with the four screws (1-60) and the receptacle fixture (1-50).
- (d) Attach the cover (1-80) with the four screws (1-90).

Subtask 33-50-01-420-003-A01

(2) Installation of Battery

- (a) Carefully put the battery (1-10) into the housing (1-20).
- (b) Attach the battery with the three captive screws of the battery.
- (c) Attach the cover assy (1-100) with the fastener (1-110).

E. Close-up

Subtask 33-50-01-420-004-A01

(1) Final Test

- (a) Refer to page block TESTING AND FAULT ISOLATION and do the tests before you
 - return the unit to service,
 - store the unit.

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SPECIAL TOOLS, FIXTURES, EQUIPMENT AND CONSUMABLES

TASK 33-50-01-940-801-A01

1. Special Tools, Fixtures and Equipment

A. Table Contents

- (1) The table that follows gives detailed information on the special tools, fixtures and equipment referenced in page blocks containing maintenance procedures.
- (2) You can use equivalent alternatives for listed items.

Table 9001 SPECIAL TOOLS, FIXTURES AND EQUIPMENT LIST

PART NO.	DESCRIPTION	SUPPLIER CODE OR NAME AND ADDRESS	PAGE BLOCK WHERE USED
–	DC Power Supply 0 - 30 V adjustable / 2 A	Local Purchase	1000
–	DC Power Supply 0 - 7 V adjustable / 0.1 to 10 A adjustable	Local Purchase	1000
3301-31	Test Battery	D1347	1000
–	Digital Multimeter (e.g. FLUKE 87, 187 or 8840A) DCV: 0 - 500 V $\pm$ (1 % + 1 digit) ACV: 0 - 250 V $\pm$ (1 % + 5 digits) DCA: 0 - 2 A $\pm$ (1 % + 5 digits) ACA: 0 - 2 A $\pm$ (1.5 % + 5 digits)	Local Purchase	1000
–	Battery Adapter (Ref. Figure 1002)	Make Locally	1000
–	Timer/Stop-Watch (Range: 120 $\pm$ 1 sec.)	Local Purchase	1000
–	Test Circuitry with external loads	Make Locally	1000
–	• Load Resistor 10 Ohm $\pm$ 10%, 10 W	Local Purchase	1000
–	• Resistor 470 Ohm $\pm$ 10%, 0.1 W	Local Purchase	1000
–	• Resistor 2.61 kOhm $\pm$ 5%, 0.1 W	Local Purchase	1000
–	• Resistor 20 kOhm $\pm$ 10%, 0.1 W	Local Purchase	1000
–	• Resistor 10 kOhm $\pm$ 10%, 0.1 W	Local Purchase	1000
–	• Resistor 1.8 kOhm $\pm$ 10%, 0.1 W	Local Purchase	1000
–	• LED 15 mA	Local Purchase	1000
–	Soft-Bristle Brush anti-static	Local Purchase	4000
–	Lint-free Cotton Cloth	Local Purchase	4000, 15000
–	Plastic Cap for Unit Receptacle	Local Purchase	15000
–	Air-cushion Polyethylene Sheeting	Local Purchase	15000
–	Original Unit Container	D1347	15000
–	Identification Label	Local Purchase	15000

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2. Consumables

A. Table Contents

- (1) The table that follows gives detailed information on the consumable materials referenced in page blocks containing maintenance procedures.
- (2) You can use equivalent alternatives for listed items.

Table 9002 CONSUMABLE MATERIALS

MATERIAL NO.	DESIGNATION AND/OR SPECIFICATION	SUPPLIER CODE OR NAME AND ADDRESS	PAGE BLOCK WHERE USED
–	Low pressure dry compressed air	Local Purchase	4000
–	Isopropyl Alcohol	Local Purchase	4000, 6000
–	Solder Sn63Pb37 or Sn60Pb40 according to IPC-J-STD-006	Local Purchase	6000
SL 1309 N-FLZ	Varnish, MIL-I-46058 TYPE UR	C2387	6000
V 1309 N	Solvent (for varnish)	C2387	6000
UHU PLUS 300 OR ARALDITE 2011	Two-Component Adhesive	D0026	6000
–	Silicone Elastomer, ELASTOSIL N2199	D2650	6000
–	Adhesive Tape	Local Purchase	15000

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ILLUSTRATED PARTS LIST

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1. General Information

A. Purpose

- (1) The Illustrated Parts List (IPL) gives illustrations and parts breakdown for all parts of the unit that can be disassembled for maintenance or repair purposes.
- (2) The IPL is intended only for use in identifying, provisioning, requisitioning, storing and issuing replaceable parts.

NOTE: To place purchase orders, use only part numbers listed in this IPL.
Do not use references marked on components.

B. How to Use the IPL

- (1) If you know the part number:
 - (a) Find the part number in the Numerical Index and note the figure number and the item number.
 - (b) Go to the appropriate figure.
 - (c) Locate the part on the illustration and in the parts list by the item number.
- (2) If you do not know the part number:
 - (a) Refer to Figure 1 of the Detailed Parts List.
 - (b) Find the appropriate part.
 - (c) Refer to the corresponding illustration and item number in the parts list.

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2. Plan of the IPL

A. IPL Sub Sections

The IPL has these sub sections:

- IPL Introduction,
- Equipment Designator Index,
- Numerical Index,
- Detailed Parts List.

B. IPL Introduction

The IPL Introduction gives this information:

- Purpose of the IPL,
- How to use the IPL,
- Explanation of the indentation system,
- Explanation of the DIEHL Aerospace numbering system for vendor code D1347,
- Vendor list.

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C. Equipment Designator Index

- (1) The Equipment Designator Index (EDI) gives the equipment designators assigned to the electrical/electronic parts given in page block SCHEMATICS AND WIRING DIAGRAMS and in the Detailed Parts List.
- (2) The Equipment Designator Index has these columns:
 - EQUIPMENT DESIGNATOR,
 - GEO LOC,
 - SHEET,
 - IPL FIGURE,
 - IPL ITEM.
- (3) EQUIPMENT DESIGNATOR Column
The EQUIPMENT DESIGNATOR column gives the equipment designators assigned to the parts in alpha-numeric sequence.
- (4) GEO LOC Column
The GEO LOC column gives the grid square of the printed circuit board (Ref. page block SCHEMATICS AND WIRING DIAGRAMS) which shows the part, e.g. 3A or 7CC. A single upper case letter (e.g. A) shows that the part is installed on the component side of the printed circuit board. Two upper case letters (e.g. CC) show that the part is installed on the solder side.

NOTE: This manual gives Geo Location data only for PNR 3400-22-10 units as of AMENDT A.
- (5) SHEET Column
The SHEET column gives the sheet of the IPL figure which shows the part. In multisheet figures the related sheet and the total number of sheets are separated by a slash, e.g. 1/2.
- (6) IPL FIGURE/ITEM Column
The IPL FIG. and IPL ITEM columns give the applicable figure number and the item number for the part in the Detailed Parts List.

D. Numerical Index

The Numerical Index (NI) gives all part numbers listed in the Detailed Parts List sorted by the part number in this sequence:

- Letters A thru Z,
- Numerals 0 thru 9.

E. Detailed Parts List

- (1) Use the Detailed Parts List (DPL) to identify the parts of the unit and their relationship to each other. The DPL gives figures with exploded views to show detail parts. Each figure has a list of parts.
- (2) The Detailed Parts List has these columns:
 - Figure/Item,
 - Part Number,
 - Airline Stock Number,
 - Nomenclature,
 - Usage Code (Effectivity),
 - Units per Assembly.

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- (3) **FIGURE/ITEM Column**
The FIG and ITEM column gives the applicable figure and item number for each assembly or part of the DPL in disassembly order.
- (4) **PART NUMBER Column**
The PART NUMBER column gives the original equipment manufacturer (OEM) part number for each assembly or part in the DPL.
- (5) **AIRLINE STOCK NUMBER Column**
The AIRLINE STOCK NUMBER column is left blank. It is for airline use only.
- (6) **NOMENCLATURE Column**
- (a) **General**
The NOMENCLATURE column gives this information:
- Identifying noun or keyword and description,
 - Indenture to show the relationship to other items,
 - Vendor code (CAGE code) for supplier parts,
 - Parts replacement data,
 - Reference to another figure or to another CMM for further breakdown.
- (b) **Indentation System**
The indentation system shows the relationship of one part to another. For a given item, the number of indentures depicts the relationship of the item to the associated next higher assembly as follows:
- Assembly
Attaching Parts for Assembly
.Detailed Parts for Assembly
.Subassembly
..Attaching Parts for Subassembly
..Detailed Parts for Subassembly
..Sub-Subassembly
..Attaching Parts for Sub-Subassembly
...Detailed Parts for Sub-Subassembly
- (c) **Attaching Parts**
- 1 Attaching parts are listed immediately below the parts grouping or assembly to which they attach and at the same indenture level.
- 2 The separation symbol *** follows the listing of attaching parts.
- (d) **Vendor Code Identification (VCI)**
- 1 Parts manufactured by companies other than DIEHL Aerospace GmbH, Cabin Customisation Interior (D1347), are identified by a vendor code (CAGE Code) that follows the part nomenclature.
- 2 Vendor codes comply with the current issues of the Federal Supply Codes for Manufacturers Cataloging Handbooks H4-1 and H4-3. The codes are preceded by the capital letter V, e.g. VD1347.

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(e) Parts Replacement Data

These terms show the interchangeability relationship between parts:

TERM	ABBREVIATION	DEFINITION
Optional	OPT	This part is optional to and interchangeable with other parts in the same item number variant group or other item number as designated.
Preferred	PREF	This part is preferred and interchangeable with other parts in the same item number variant group.
Superseded by	SUPSD BY	The part in the part number column is replaced by and is not interchangeable with the item number shown in the notation.
Supersedes	SUPSDS	The part in the part number column replaces and is not interchangeable with the item number shown in the notation.
Replaced by	REPLD BY	The part in the part number column is replaced by and interchangeable with the item number shown in the notation.
Replaces	REPLS	The part in the part number column replaces and is interchangeable with the item number shown in the notation.

(g) Service Bulletin Information

- 1 (PRE SB XXXX) in the NOMENCLATURE column identifies the initial configuration.
2 (POST SB XXXX) identifies the assemblies and the parts after the Service Bulletin modification is completed.

(7) USAGE CODE (EFFECTIVITY) Column

The USAGE CODE column is used for figures with more than one end item. The code (letters A thru Z, without I and O) links the part to the highest assembly on the same figure.

(8) UNITS PER ASSY Column

The UNITS PER ASSY column gives the quantity of a specific item number used on one next higher assembly (NHA) or next higher subassembly.

F. DIEHL Aerospace Part Numbering System for Vendor Code D1347

(1) General

- (a) The leading digits of a DIEHL Aerospace end item part number (vendor code D1347) characterize the family of the unit. Separated by dashes, follows the specific number for the unit, e.g. 3400-22-10.
 (b) Assemblies and items are identified by ciphers arranged in one of the following forms: 774-256-19 or 01000200.

(2) Modified Part Number Identification

- (a) Because of a new software there are modified part numbers on the identification labels of DIEHL Aerospace assemblies and items. The new software implicates the replacement of the leading 77 with 00 and the loss of the dashes.
 (b) Example:
 The part number 00408601 on a PCB is identical to the previous part number 774-086-01 given in this CMM.

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Vendor List

Vendor Code	Vendor Names and Addresses
01295	TEXAS INSTRUMENTS INCORPORATION SEMICONDUCTOR GROUP 12500 T I BOULEVARD DALLAS TX 75243-0592, USA
01961	PULSE ENGINEERING INCORPORATION 12220 WORLD TRADE DRIVE P.O. BOX 1 22 35 SAN DIEGO CA 92128-3797, USA
07263	FAIRCHILD SEMICONDUCTOR CORPORATION 333 WESTERN AVENUE SOUTH PORTLAND ME 04106, USA
14936	GENERAL SEMICONDUCTOR INCORPORATION 10 MELVILLE PARK ROAD SUFFOLK MELVILLE NY 11747, USA
18324	PHILIPS SEMICONDUCTORS INCORPORATION 811 E ARQUES AVENUE SUNNYVALE SANTA CLARA CA 94088-3409, USA
3A9H3	OSRAM OPTO SEMICONDUCTORS INCORPORATION 2650 SAN TOMAS EXPY STE 200 SANTA CLARA CA 95051-0961, USA
59993	INTERNATIONAL RECTIFIER CORPORATION 233 KANSAS STREET EL SEGUNDO CA 90245-4315, USA
C0151	MURATA ELEKTRONIK GMBH HOLBEINSTRASSE 21 D-90441 NUERNBERG, GERMANY
C0935	FISCHER ELEKTRONIK GMBH & CO. KG P.O. BOX: 15 90 LUEDENSCHIED, GERMANY
C1083	PANASONIC ELECTRIC WORKS DEUTSCHLAND GMBH RUDOLF-DIESEL-RING 2 D-83607 HOLZKIRCHEN, GERMANY

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C1362	THOMAS & BETTS VERTRIEBS GMBH LINDBERGHSTRASSE 5 D-64625 BENSHEIM, GERMANY
C2817	VISHAY SEMICONDUCTOR GMBH VISHAY INTERTECHNOLOGY THERESIENSTRASSE 2 P.O. BOX: 35 35 D-74072 HEILBRONN, GERMANY
C4308	AVX ELEKTRONISCHE BAUELEMENTE GMBH NUSSBAUMSTRASSE 2-4 D-85757 KARLSFELD, GERMANY
C4683	WUERTH ELEKTRONIK GMBH & CO. KG P.O. BOX: 12 43 OEHRINGEN, GERMANY
C4751	EPCOS AG P.O. BOX: 80 17 09 MUENCHEN, GERMANY
C6489	INFINEON TECHNOLOGIES AG P.O. BOX: 80 09 49 MUENCHEN, GERMANY
C7263	EAO SECME GMBH P.O. BOX: 13 17 TAUFKIRCHEN, GERMANY
D1347	DIEHL AEROSPACE GMBH CABIN CUSTOMISATION INTERIOR DONAUSTRASSE 120 D-90451 NUERNBERG, GERMANY
D2616	STMICROELECTRONICS GMBH P.O. BOX: 11 22 GRASBRUNN, GERMANY
D3841	WICKMANN WERKE GMBH P.O. BOX: 25 20 WITTEN, GERMANY
D4509	FUTURE ELECTRONICS DEUTSCHLAND GMBH MUENCHENER STRASSE 18 D-85774 UNTERFOEHRING, GERMANY
D8286	DIN DEUTSCHES INSTITUT FUER NORMUNG BURGGRAFENSTRASSE 6 D-10787 BERLIN, GERMANY
D8512	TYCO ELECTRONICS AMP GMBH P.O. BOX: 12 40 LANGEN, GERMANY

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D9188	YAGEO EUROPE GMBH DR. BERND SCHROEDER QUALITY & ENVIRONMENT RAMSKAMP 70 D-25337 ELSHORN, GERMANY
K1196	ZETEX PLC ZETEX TECHNOLOGY PARK CHADDERTON OLDHAM, OL9 8NP UNITED KINGDOM
SL765	ISO CENTRAL SECRETARIAT 1 RUE DE VAREMBE CH-1211 GENEVA, SWITZERLAND

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EQUIPMENT DESIGNATOR INDEX (for Main Board of PNR 3400-22 and 3400-22-10 Amendment –)

EQUIPMENT DESIGNATOR	GEO LOC	SHEET	IPL	
			FIG.	ITEM
C1			2	130
C2			2	140
C3			2	140
C4			2	150
C5			2	160
C6			2	160
C7			2	170
C8			2	170
C10			2	180
C11			2	190
C12			2	190
C13			2	180
C14			2	190
C15			2	180
C16			2	190
C17			2	190
C18			2	180
C20			2	190
C21			2	200
C22			2	180
C23			2	190
C24			2	190
C26			2	140
C27			2	210
			2	210A
C28			2	190
C29			2	190
C30			2	180
C31			2	190
C32			2	190
C34			2	900
C37			2	190
C38			2	200

EQUIPMENT DESIGNATOR	GEO LOC	SHEET	IPL	
			FIG.	ITEM
C39			2	190
C40			2	195
			2	195A
C41			2	190
C42			2	190
C405			2	910
F1			2	80
F2			2	90
F3			2	90
F4			2	90
F5			2	90
F6			2	90
K1			2	890
L1			2	860
L3			2	870
L801			2	880
N1			2	550
N2			2	550
N4			2	560
N5			2	570
N6			2	580
N7			2	590
R1			2	220
R3			2	230
R5			2	230
R7			2	230
R9			2	230
R10			2	220
R11			2	240
R12			2	250
R13			2	260
R14			2	270
R15			2	280

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EQUIPMENT DESIGNATOR	GEO LOC	SHEET	IPL	
			FIG.	ITEM
R16			2	260
R17			2	290
R18			2	260
R19			2	300
R20			2	310
R21			2	320
R22			2	320
R23			2	310
R24			2	260
R25			2	260
R26			2	260
R27			2	290
R30			2	330
R31			2	310
R32			2	340
R33			2	310
R34			2	260
R35			2	260
R36			2	300
R37			2	350
R38			2	350
R39			2	260
R40			2	260
R41			2	360
R42			2	360
R45			2	260
R46			2	290
R47			2	270
R48			2	290
R49			2	260
R50			2	260
R51			2	260
R52			2	260
R53			2	310
R54			2	370

EQUIPMENT DESIGNATOR	GEO LOC	SHEET	IPL	
			FIG.	ITEM
R55			2	260
R56			2	300
R57			2	380
R58			2	295
			2	295A
R59			2	290
R60			2	290
R61			2	290
R62			2	290
R63			2	390
R64			2	390
R65			2	390
R66			2	260
R67			2	400
R68			2	300
R69			2	290
R70			2	410
R71			2	420
R72			2	290
R73			2	260
R74			2	350
R77			2	430
R78			2	440
			2	440A
R79			2	450
			2	450A
R80			2	280
R81			2	460
R82			2	460
R83			2	260
R84			2	470
			2	470A
R85			2	390
R86			2	260
R87			2	290
R88			2	260

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EQUIPMENT DESIGNATOR	GEO LOC	SHEET	FIG.	IPL ITEM
R89			2	410
R90			2	290
R91			2	290
R92			2	350
R93			2	260
R94			2	315
			2	315A
R95			2	260
R96			2	290
R97			2	290
R98			2	290
R99			2	260
R100			2	260
R101			2	240
R102			2	260
R103			2	290
R104			2	290
R105			2	350
R106			2	480
R107			2	490
R108			2	500
R109			2	510
R110			2	290
R111			2	500
R112			2	490
R113			2	510
R114			2	315
			2	315A
R115			2	410
R116			2	350
R117			2	220
R118			2	520
R119			2	260
R120			2	530
R121			2	260
R122			2	260

EQUIPMENT DESIGNATOR	GEO LOC	SHEET	FIG.	IPL ITEM
R123			2	260
R943			2	540
			2	540A
R944			2	540
			2	540A
V1			2	600
V3			2	610
V5			2	610
V7			2	610
V9			2	610
V10			2	600
V11			2	620
V12			2	610
V14			2	630
V15			2	610
V16			2	640
			2	640A
V17			2	610
V19			2	620
V20			2	620
V21			2	620
V23			2	650
V24			2	650
V25			2	650
V26			2	650
V27			2	660
V28			2	660
V29			2	660
V30			2	670
V31			2	680
V32			2	630
V33			2	680
V34			2	690
V35			2	700
V36			2	710
V37			2	700

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EQUIPMENT DESIGNATOR	GEO LOC	SHEET	IPL	
			FIG.	ITEM
V38			2	720
			2	720A
			2	720B
V39			2	620
V40			2	620
V41			2	660
V42			2	660
V43			2	660
V44			2	720
			2	720A
			2	720B
V45			2	700
V46			2	630
V47			2	680
V48			2	680
V49			2	730
V50			2	740
V52			2	740
V53			2	680
V54			2	750
V55			2	760
V56			2	680
V57			2	700
V58			2	770
V59			2	780
V60			2	630
V61			2	690
V62			2	740
V63			2	710
V64			2	760
V65			2	790
			2	790A
V66			2	710
V67			2	790
			2	790A
V68			2	700
V69			2	600

EQUIPMENT DESIGNATOR	GEO LOC	SHEET	IPL	
			FIG.	ITEM
V70			2	700
V71			2	680
V72			2	720
			2	720A
			2	720B
V73			2	680
V74			2	630
V75			2	600
V77			2	630
V78			2	800
V79			2	690
V80			2	740
V81			2	630
V82			2	810
V83			2	740
V84			2	710
V85			2	760
V86			2	760
V87			2	700
V88			2	760
V89			2	810
V90			2	760
V91			2	820
V92			2	740
V93			2	680
V100			2	610
V101			2	610
V102			2	610
V103			2	610
V104			2	830
			2	830A
			2	830B
V913			2	840
			2	840A
V976			2	850
			2	850A
			2	850B

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EQUIPMENT DESIGNATOR	GEO LOC	SHEET	FIG.	IPL ITEM
X5			2	10
			2	10A
X30			2	60
X51			2	70
X52			2	70

EQUIPMENT DESIGNATOR	GEO LOC	SHEET	FIG.	IPL ITEM

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Part Number	Airline Stock No.	Fig	Item	Total Required
BDX53C		2	670	1
		3	-390	1
BSS84T1		2	-790A	2
		3	-450	2
BZW50-10		2	770	1
		3	-440	1
B82141A1105J		2	870	1
		3	-490	1
C67078A5001A3		2	-830A	1
C67078A5013A2		2	-830B	1
		3	-470	1
DH3R		4	40	2
DIN965M3X16		1	-41	2
DIN985M3A2		1	-42	2
FK224MI220-1		2	-110A	2
		2	-115A	1
		3	45	3
FK224MI220-2		2	-110	2
		2	-115	1
GCM31CR71C475KA		2	-195A	1
		3	-115	1
GCM32ER71H475KA		3	-125	1
GL34J		4	-400	1
HUF75343P3		2	-850B	1
		3	-480	1
IRFZ44		2	840	1
		2	850	1
		3	-475	1
IRFZ44N		2	830	1
		2	-840A	1
		2	-850A	1
IS07045M3X6A270		1	90	4
KSL0V431LFT		4	-20A	1
LG3369FH		4	-410A	1
LY3369FH		4	-420	1
MC12555-00		4	-20	1
PE51515		2	880	1
		3	-495	1
Q62703Q1749		4	-420A	1
Q62703Q1750		4	-410	1
SK041C155KA		2	130	1
		3	-65	1
SMA0207100R1TK5		2	250	1
		3	-165	1
S4-5V		2	890	1
		3	-500	1
TLC272BID		2	580	1
		3	-345	1
TLC339ID		4	-330	3
TR3		2	-100	5

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Part Number	Airline Stock No.	Fig	Item	Total Required
		3	50	5
TYB23M		2	-50	1
		3	-20	1
WY0472MCMCRBK		2	910	1
		3	-140	1
ZC0207FKE07-0R		3	-310	2
ZVN2110A		2	800	1
		3	-455	1
ZVP2110A		2	690	3
		3	-400	3
0-829394-5		2	60	1
		3	-25	1
01000670		3	-135	1
01006835		1	-30A	1
		2	-1A	RF
01009844		1	-30B	1
		2	-1B	RF
01010044		2	-930	1
01010045		2	-940	1
01010113		2	-10A	1
		4	-1A	RF
01010116		2	-20A	1
		3	-10	1
01010122		2	-20B	1
		3	-10A	1
01010691		2	-45	1
		3	-15	1
01011437		1	-30C	1
		3	-1	RF
01011484		3	-5	1
		4	-1B	RF
01011638		4	-10A	1
15KE27P		2	660	6
		3	-385	6
255-0-750R2		2	540	2
		3	-325	2
256-0-750R2		2	-540A	2
3301-31		1	10	1
3400-22		1	-1	RF
		1	-1A	RF
		1	-1B	RF
3400-22-10		1	-1C	RF
		1	-1D	RF
350-8R051-1		2	480	1
		3	-280	1
74270010		2	-920	3
		3	35	3
774-026-73		2	70	2
		3	-30	2
774-065-31		2	-120	6

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Part Number	Airline Stock No.	Fig	Item	Total Required
		3	40	6
774-084-55		1	50	1
774-102-72		1	100	1
774-102-75		1	20	1
774-102-84		4	30	2
774-106-21		1	80	1
774-108-60		2	10	1
		4	-1	RF
774-108-87		1	130	1
774-108-88		2	860	1
		3	-485	1
774-109-55		2	-30	3
774-109-56		2	-40	15
774-143-58		1	30	1
		2	-1	RF
779-022-02		2	270	2
		3	-170	2
779-023-47		2	-440A	1
779-026-20		2	320	2
		3	-195	2
779-027-60		2	230	4
		3	-150	4
779-027-76		2	360	2
		3	-215	2
779-029-01		2	430	1
		2	440	1
779-042-30		2	460	2
		3	-265	2
779-052-37		2	500	2
		3	-290	2
779-052-38		2	510	2
		3	-295	2
779-052-39		2	490	2
		3	-285	2
779-102-42		2	900	1
779-102-83		2	140	3
		2	210	1
		3	-70	3
779-102-92		2	-210A	1
		3	-105	1
779-104-11		2	170	2
		3	-85	2
779-104-12		2	160	2
		3	-80	2
779-195-33		2	-720B	3
779-202-37		2	-720A	3
779-213-61		2	810	2
		3	-460	2
779-214-09		2	780	1
		3	-445	1

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Part Number	Airline Stock No.	Fig	Item	Total Required
779-214-61		2	620	6
		3	-365	6
779-214-69		2	650	4
		3	-380	4
779-216-13		2	720	3
		3	-415	3
779-223-84		2	550	2
		3	-330	2
779-223-85		2	590	1
		3	-350	1
779-419-64		2	-20	1
779-435-51		2	80	1
		3	-60	3
779-435-72		2	90	5
		3	-55	5
779-508-65		1	60	4
779-508-83		1	40	4
		1	-40A	2
779-540-12		1	120	1
779-540-59		1	110	1
779-800-01		2	340	1
		3	-205	1
		4	-170	4
779-800-02		3	-315	1
779-800-04		2	310	5
		2	315	2
		3	-190	7
		4	-160	3
779-800-05		2	280	2
		3	-175	2
		4	-220	2
779-800-06		2	240	2
		2	450	1
		3	-160	2
		4	-240	9
779-800-07		2	290	19
		2	295	1
		3	-180	19
		4	-100	32
		4	-100A	31
		4	-210	1
		4	-270A	2
779-800-10		2	400	1
		3	-240	1
779-800-11		2	350	6
		3	-210	6
		4	-150	5
779-800-17		2	260	30
		3	-155	31
		4	-90	54

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Part Number	Airline Stock No.	Fig	Item	Total Required
779-800-20		4	-270	2
		2	220	3
		3	-145	2
		4	-180	1
779-800-23		2	380	1
		3	-225	1
		4	-200	4
		2	300	4
779-800-24		3	-185	4
		4	-110	11
		4	-260	1
		2	420	1
779-800-30		3	-250	1
		2	410	3
		3	-245	4
		4	-120	4
779-800-38		2	390	4
		3	-235	4
		4	-250	3
		2	-450A	1
779-800-44		3	-320	1
		3	-260	1
		3	-255	7
		2	-315A	2
779-800-46		3	-275	2
		2	330	1
		3	-200	1
		2	-295A	1
779-801-15		3	-230	1
		4	-210A	1
		4	-130	1
		2	470	1
779-801-32		2	-470A	1
		3	-270	1
		2	530	1
		3	-305	1
779-801-79		4	-230	2
		2	370	1
		3	-220	1
		4	-140	6
779-802-35		2	520	1
		3	-300	1
		4	-190	5
		4	-190A	6
779-802-92		2	190	16
		2	-195	1
		3	-95	16
		4	-50	31
779-803-82		2	200	2
		3	-100	1
779-803-97				
779-804-02				
779-804-23				
779-804-29				
779-804-43				
779-840-05				
779-840-07				

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Part Number	Airline Stock No.	Fig	Item	Total Required
		4	-70	3
		4	-80	2
779-840-08		2	150	1
		3	-75	1
		4	-80A	2
779-840-17		3	-110	1
779-840-18		3	-130	2
779-840-62		3	-120	3
779-855-05		2	180	6
		3	-90	6
		4	-60	7
779-860-02		2	600	4
		3	-355	4
		4	-380	1
779-860-03		2	710	4
		3	-410	4
		4	-370	2
779-860-04		2	680	9
		3	-395	9
		4	-340	25
779-860-05		2	610	11
		3	-360	12
779-861-01		2	820	1
		3	-465	1
779-861-10		2	630	7
		3	-370	7
779-861-13		2	730	1
		3	-420	1
779-861-16		2	750	1
		3	-430	1
779-861-18		2	640	1
779-861-20		2	-640A	1
		3	-375	1
779-865-04		2	740	6
		3	-425	6
779-865-05		2	760	6
		3	-435	6
		4	-350	5
779-865-06		2	700	7
		3	-405	7
		4	-360	2
779-865-07		2	790	2
		4	-390	1
779-870-32		4	-310	1
779-870-42		4	-280	2
779-870-43		4	-320	1
779-881-11		4	-300	1
779-881-12		4	-290	2
779-886-14		2	570	1
		3	-340	1

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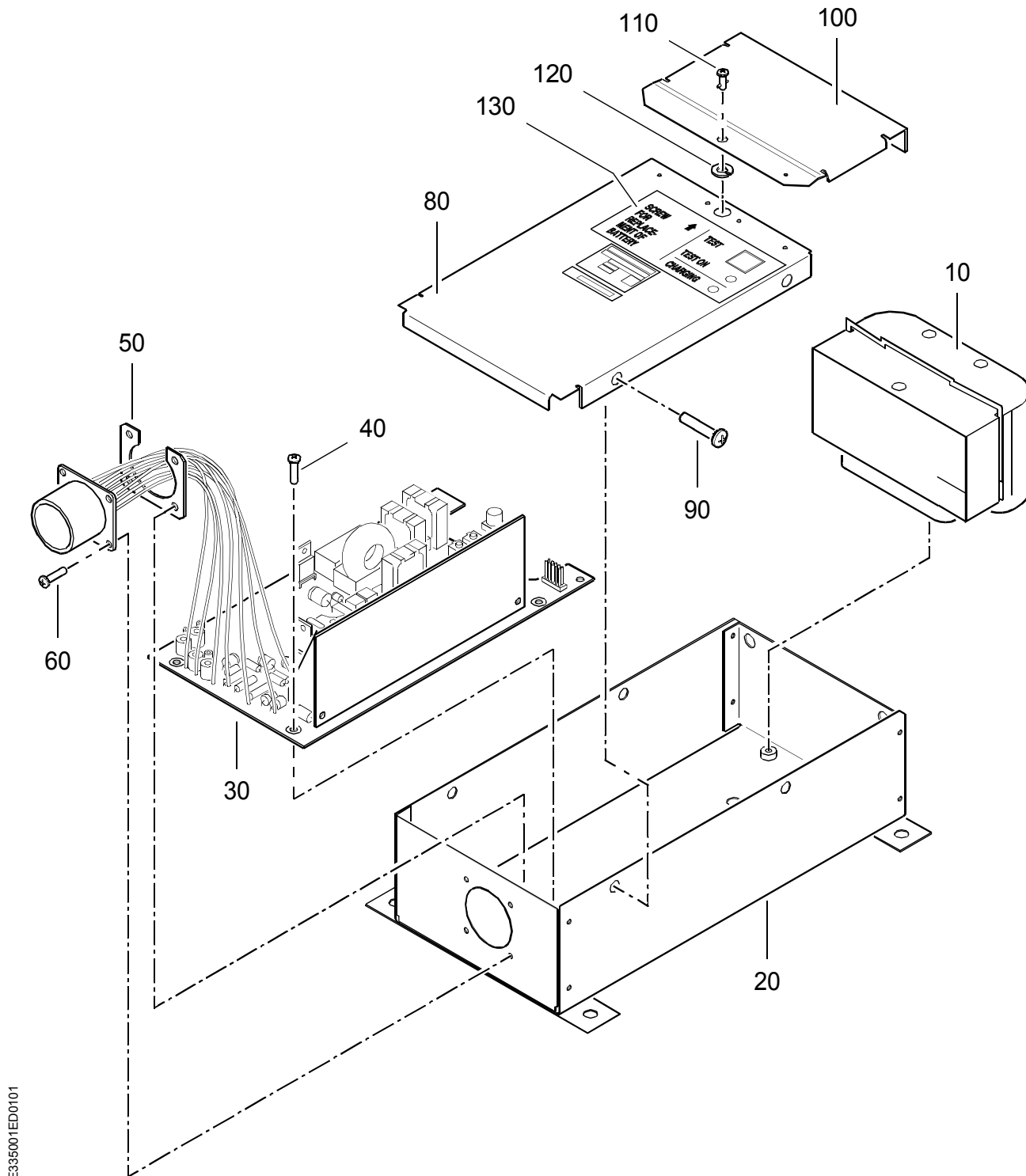
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Part Number	Airline Stock No.	Fig	Item	Total Required
779-886-17		2	560	1
		3	-335	1
805700097		4	10	1

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EMERGENCY LIGHT POWER UNIT



E335001ED0101

EMERGENCY LIGHT POWER UNIT: EXPLODED VIEW (DESIGN SAMPLE)

Figure 1/GRAPHIC 33-50-01-950-001-A01

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
1 -1	3400-22		ELPU (D1347) SUPSD BY ITEM 1A	A	RF
-1A	3400-22		ELPU AMENDT A (D1347) SUPSDS ITEM 1 SUPSD BY ITEM 1B	B	RF
-1B	3400-22		ELPU AMENDT B (D1347) SUPSDS ITEM 1A SUPSD BY ITEM 1C	C	RF
-1C	3400-22-10		ELPU (D1347) SUPSDS ITEM 1B SUPSD BY ITEM 1D	D	RF
-1D	3400-22-10		ELPU AMENDT A (D1347) SUPSDS ITEM 1C	E	RF
10	3301-31		.BATTERY (D1347) REF ACMM 33-51-01 FOR DET		1
20	774-102-75		.HOUSING (D1347)		1
30	774-143-58		.BOARD PRINTED CIRCUIT (ESDS) D1347 SEE IPL FIG. 2 FOR DET	AB	1
-30A	01006835		.BOARD PRINTED CIRCUIT (ESDS) D1347 SEE IPL FIG. 2 FOR DET	C	1
-30B	01009844		.BOARD PRINTED CIRCUIT (ESDS) D1347 SEE IPL FIG. 2 FOR DET	D	1
-30C	01011437		.BOARD PRINTED CIRCUIT (ESDS) D1347 SEE IPL FIG. 3 FOR DET	E	1
40	779-508-83		ATTACHING PARTS .SCREW PAN HEAD, SELF-LOCKING M3X6 (D1347)	A	4
-40A	779-508-83		.SCREW PAN HEAD, SELF-LOCKING M3X6 (D1347)	BCDE	2
-41	DIN965M3X16		.SCREW CSK HEAD (D8286) OPT 779-551-81 D1347	BCDE	2
-42	DIN985M3A2		.NUT SELF-LOCKING (D8286) OPT 779-531-62 D1347	BCDE	2

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
1 50	774-084-55		.FIXTURE RECEPTACLE (D1347) SIZE 16		1
60	779-508-65		.SCREW PAN HEAD, ISO 7045-M3X10-A2-70 (D1347) ***		4
80	774-106-21		.COVER (D1347)		1
90	IS07045M3X6A270		ATTACHING PARTS .SCREW PAN HEAD, ISO 7045-M3X6-A2-70 (SL765) OPT 779-508-67 D1347 ***		4
100	774-102-72		.COVER ASSY (D1347)		1
110	779-540-59		..FASTENER (D1347) (NOT PROCURABLE)		1
120	779-540-12		..WASHER (D1347) (NOT PROCURABLE)		1
130	774-108-87		.FOIL (D1347)		1

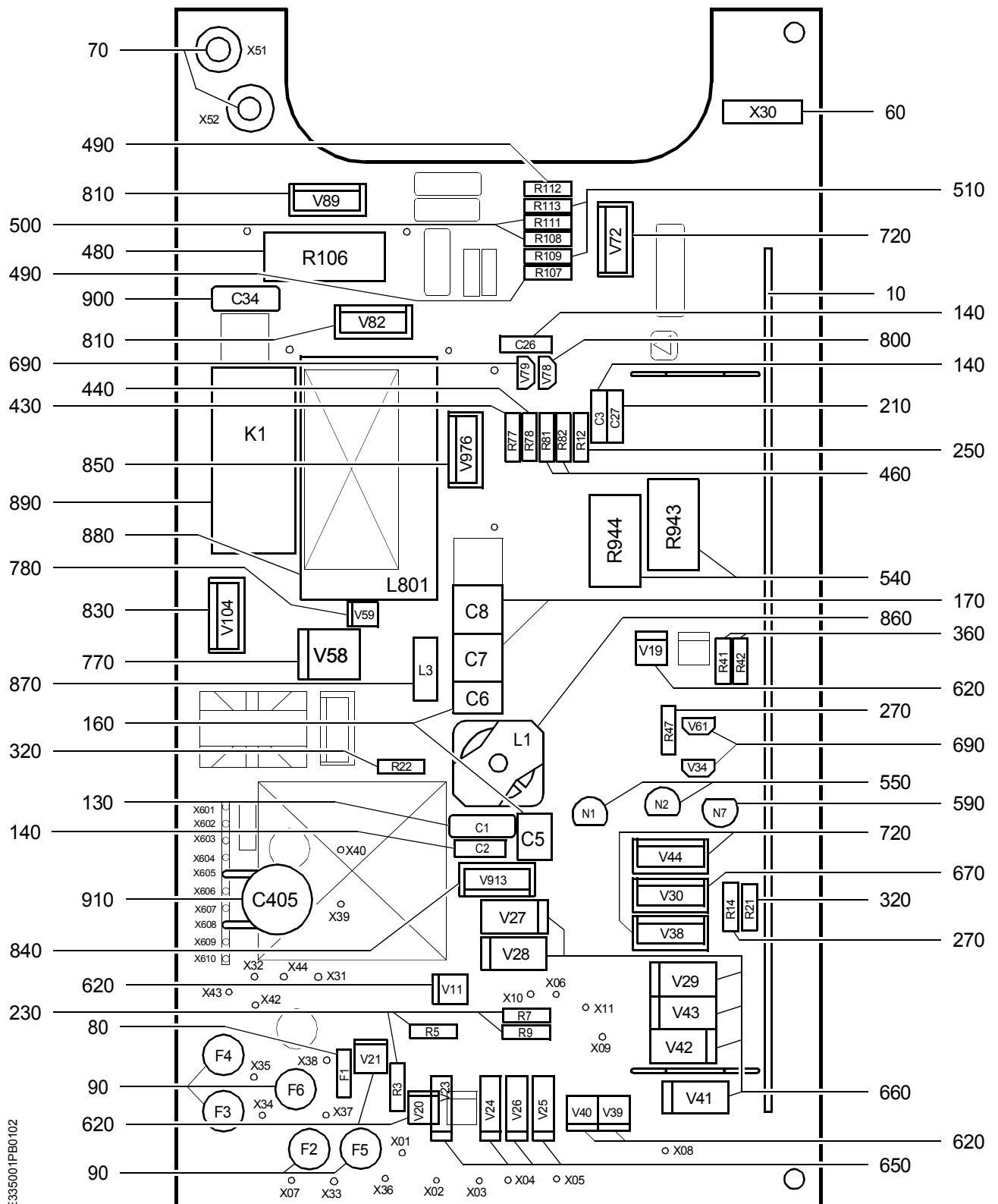
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MAIN BOARD



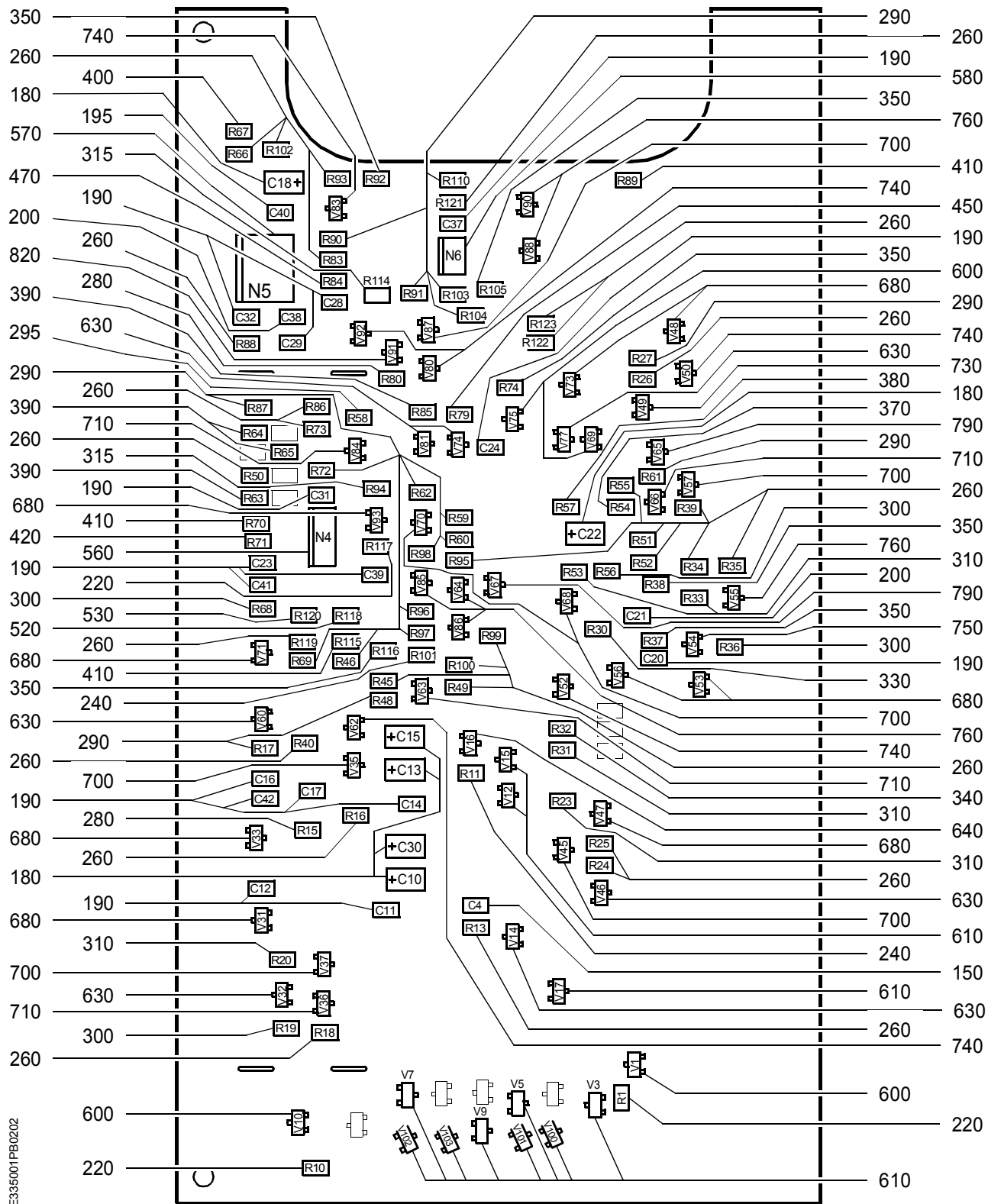
MAIN BOARD
COMPONENT SIDE (sheet 1 of 2)
Figure 2/GRAPHIC 33-50-01-950-002-A01

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E335001 PB0202

MAIN BOARD
 SOLDER SIDE (sheet 2 of 2)
 Figure 2/GRAPHIC 33-50-01-950-002-A01

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
2 -1	774-143-58		BOARD PRINTED CIRCUIT (ESDS) D1347	A	RF
-1A	01006835		SEE IPL FIG. 1 FOR NHA BOARD PRINTED CIRCUIT (ESDS) D1347	B	RF
-1B	01009844		SEE IPL FIG. 1 FOR NHA BOARD PRINTED CIRCUIT (ESDS) D1347	C	RF
10	774-108-60		SEE IPL FIG. 1 FOR NHA .MODULE ASSY (ESDS) D1347	AB	1
-10A	01010113		SEE IPL FIG. 4 FOR DET .MODULE ASSY (ESDS) D1347	C	1
-20	779-419-64		SEE IPL FIG. 4 FOR DET .HOUSING CONNECTOR (D1347) SIZE 15	AB	1
-20A	01010116		.CONNECTOR ASSY (D1347)	C	1
-20B	01010122		.CONNECTOR ASSY (D1347) OPT TO ITEM 20A	C	1
-30	774-109-55		.WIRE ASSY (D1347)	AB	3
-40	774-109-56		.WIRE ASSY (D1347)	AB	15
-45	01010691		.WIRE ASSY (D1347)	C	1
-50	TYB23M		.WRAP TIE (C1362) OPT 779-490-91 D1347		1
60	0-829394-5		.CONNECTOR 10-POLE, MALE (D8512) OPT 779-417-81 D1347		1
70	774-026-73		.PIN CONTACT 1-POLE (D1347)		2
80	779-435-51		.FUSE 10 A (D1347) FOR REPAIR ONLY		1
90	779-435-72		.FUSE 3 A (D1347)		5

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
2 -100	TR3		.HOLDER FUSE (D3841) OPT 556 D3841 OPT 779-432-17 D1347 FOR ITEM 90		5
-110	FK224MI220-2		.SINK HEAT (C0935) OPT 779-260-24 D1347 FOR V82 AND V976	AB	2
-110A	FK224MI220-1		.SINK HEAT (C0935) OPT 01010092 D1347 FOR V82 AND V976	C	2
-115	FK224MI220-2		.SINK HEAT (C0935) OPT 779-260-24 D1347 FOR V89 OPT TO ITEM 115A FOR EFF C		1
-115A	FK224MI220-1		.SINK HEAT (C0935) OPT 01010092 D1347 FOR V89	C	1
-120	774-065-31		.FIXTURE TRANSISTOR (D1347) FOR ITEMS 670, 720, 830, 840		6
130	SK041C155KA		.CAPACITOR 1U50 (C4308) OPT 779-102-93 D1347		1
140	779-102-83		.CAPACITOR 100N ±10%, 100 V (D1347)		3
150	779-840-08		.CAPACITOR 10N0 ±10%, 50 V (D1347) SIZE 1206		1
160	779-104-12		.CAPACITOR 1U00 ±20%, 50 V (D1347)		2
170	779-104-11		.CAPACITOR 4U70 ±20%, 50 V (D1347)		2
180	779-855-05		.CAPACITOR 10U0 ±20%, 16 V (D1347)		6
190	779-840-05		.CAPACITOR 100N ±10%, 50 V (D1347) SIZE 1206		16
-195	779-840-05		.CAPACITOR 100N ±10%, 50 V (D1347) SIZE 1206	AB	1
-195A	GCM31CR71C475KA		.CAPACITOR 4U70 ±15%, 16V (C0151) OPT 01007189 D1347 GCM31CR71C475KA37L SIZE 1206	C	1
200	779-840-07		.CAPACITOR 1N00 ±10%, 50 V (D1347) SIZE 1206		2

- ITEM NOT ILLUSTRATED

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
2 210	779-102-83		.CAPACITOR 100N ±10%, 100 V (D1347)	A	1
-210A	779-102-92		.CAPACITOR 33N0 ±20%, 50 V (D1347)	BC	1
220	779-800-20		.RESISTOR 301K ±1%, TC ±100 PPM (D1347) SIZE 1206		3
230	779-027-60		.RESISTOR 2K74 ±1%, TC ±50 PPM (D1347) SIZE 0207		4
240	779-800-06		.RESISTOR 4K99 ±1%, TC ±100 PPM (D1347) SIZE 1206		2
250	SMA0207100R1TK5		.RESISTOR 100R ±1%, TC ±50 PPM (C2817) OPT 779-024-30 D1347 SMA 0207, 100R, 1%, TK50 SIZE 0207		1
260	779-800-17		.RESISTOR 100K ±1%, TC ±100 PPM (D1347) SIZE 1206		30
270	779-022-02		.RESISTOR 10K0 ±1%, TC ±50 PPM (D1347) SIZE 0207		2
280	779-800-05		.RESISTOR 2K00 ±1%, TC ±100 PPM (D1347) SIZE 1206		2
290	779-800-07		.RESISTOR 10K0 ±1%, TC ±100 PPM (D1347) SIZE 1206		19
295	779-800-07		.RESISTOR 10K0 ±1%, TC ±100 PPM (D1347) SIZE 1206	AB	1
-295A	779-802-92		.RESISTOR 2K21 ±1%, TC ±100 PPM (D1347) SIZE 1206	C	1
300	779-800-24		.RESISTOR 1M00 ±1%, TC ±100 PPM (D1347) SIZE 1206		4

- ITEM NOT ILLUSTRATED

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
2 310	779-800-04		.RESISTOR 1K00 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		5
315	779-800-04		.RESISTOR 1K00 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206	AB	2
-315A	779-801-79		.RESISTOR 121R $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206	C	2
320	779-026-20		.RESISTOR 10R0 $\pm 1\%$, TC ± 50 PPM (D1347) SIZE 0207		2
330	779-802-35		.RESISTOR 475R $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
340	779-800-01		.RESISTOR 100R $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
350	779-800-11		.RESISTOR 49K9 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		6
360	779-027-76		.RESISTOR 4K02 $\pm 1\%$, TC ± 50 PPM (D1347) SIZE 0207		2
370	779-804-29		.RESISTOR 150K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
380	779-800-23		.RESISTOR 499K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
390	779-800-46		.RESISTOR 0R00 (D1347) SIZE 1206		4
400	779-800-10		.RESISTOR 20K0 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1

- ITEM NOT ILLUSTRATED

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
2 410	779-800-44		.RESISTOR 200K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		3
420	779-800-38		.RESISTOR 115K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
430	779-029-01		.RESISTOR 49R9 $\pm 1\%$, TC ± 50 PPM (D1347) SIZE 0207	AB	1
440	779-029-01		.RESISTOR 49R9 $\pm 1\%$, TC ± 50 PPM (D1347) SIZE 0207	A	1
-440A	779-023-47		.RESISTOR 21R5 $\pm 1\%$, TC ± 50 PPM (D1347)	B	1
450	779-800-06		.RESISTOR 4K99 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206	A	1
-450A	779-800-65		.RESISTOR 2K15 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206	BC	1
460	779-042-30		.RESISTOR 200R $\pm 1\%$, TC ± 50 PPM (D1347) SIZE 0207		2
470	779-803-97		.RESISTOR 46K4 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206	AB	1
-470A	779-804-02		.RESISTOR 54K9 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206	C	1
480	350-8R051-1		.RESISTOR R051 $\pm 5\%$, TC +250 PPM, 4W (D9188) Altered or modified from: (350-8 R051 1%) D9188 OPT 779-052-40 D1347		1
490	779-052-39		.RESISTOR 2K61 $\pm 0.1\%$, TC ± 25 PPM (D1347) SIZE 0207		2

- ITEM NOT ILLUSTRATED

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
2 500	779-052-37		.RESISTOR 1K00 $\pm 0.1\%$, TC ± 25 PPM (D1347) SIZE 0207		2
510	779-052-38		.RESISTOR 2K00 $\pm 0.1\%$, TC ± 25 PPM (D1347) SIZE 0207		2
520	779-804-43		.RESISTOR 249K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
530	779-804-23		.RESISTOR 127K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
540	255-0-750R2		.RESISTOR 750R $\pm 2\%$ (D9188) Altered or modified from: (255-0 750R 2%) D9188 OPT 779-031-02 D1347		2
-540A	256-0-750R2		.RESISTOR 750R (D9188) Altered or modified from: (256-0 750R 2%) D9188 OPT 779-031-15 D1347 OPT TO ITEM 540	AB	2
550	779-223-84		.IC VOLTAGE REG. (ESDS) D1347		2
560	779-886-17		.IC QUAD VOLTAGE COMP. (ESDS) D1347		1
570	779-886-14		.IC NICD/NIMH CHARGE MANAG. (ESDS) D1347		1
580	TLC272BID		.IC DUAL OP AMP (ESDS) 01295 OPT 779-886-16 D1347		1
590	779-223-85		.IC VOLTAGE REFERENCE (ESDS) D1347		1
600	779-860-02		.DIODE DUAL (D1347)		4

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
2 610	779-860-05		.DIODE GENERAL PURPOSE (D1347)		11
620	779-214-61		.DIODE AVALANCHE (D1347)		6
630	779-861-10		.DIODE ZENER, 12 V, 5% (D1347)		7
640	779-861-18		.DIODE ZENER, 39 V, 5% (D1347) OPT TO ITEM 640A FOR EFF C		1
-640A	779-861-20		.DIODE ZENER, 39 V, 5% (D1347)	C	1
650	779-214-69		.DIODE SUPPRESSOR (D1347)		4
660	15KE27P		.DIODE SUPPRESSOR (D2616) Altered or modified from: (1.5KE27P) D2616 OPT 779-214-40 D1347		6
670	BDX53C		.TRANSISTOR POWER DARLINGTON (D2616) OPT 779-202-54 D1347		1
680	779-860-04		.DIODE DUAL (D1347)		9
690	ZVP2110A		.TRANSISTOR MOSFET (K1196) OPT 779-201-65 D1347		3
700	779-865-06		.TRANSISTOR NPN GENERAL PURPOSE (D1347)		7
710	779-860-03		.DIODE DUAL (D1347)		4
720	779-216-13		.TRANSISTOR TEMPERATURE FET (D1347)		3
-720A	779-202-37		.TRANSISTOR TEMPERATURE FET (D1347) OPT TO ITEM 720		3
-720B	779-195-33		.TRANSISTOR TEMPERATURE FET (D1347) OPT TO ITEM 720		3
730	779-861-13		.DIODE ZENER, 6.8 V, 5% (D1347)		1
740	779-865-04		.TRANSISTOR MOSFET (D1347)		6
750	779-861-16		.DIODE ZENER, 18 V, 5% (D1347)		1
760	779-865-05		.TRANSISTOR PNP GENERAL PURPOSE (D1347)		6

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
2 770	BZW50-10		.DIODE TRANSIL (D2616) OPT 779-212-39 D1347		1
780	779-214-09		.DIODE AVALANCHE (D1347)		1
790	779-865-07		.TRANSISTOR MOSFET (D1347) OPT TO ITEM 790A FOR EFF C		2
-790A	BSS84T1		.TRANSISTOR MOSFET (18324) OPT 01002879 D1347		2
800	ZVN2110A		.TRANSISTOR MOSFET (K1196) OPT 779-201-67 D1347		1
810	779-213-61		.DIODE DUAL SCHOTTKY (D1347)		2
820	779-861-01		.DIODE ZENER, 3.0 V, 5% (D1347)		1
830	IRFZ44N		.TRANSISTOR POWER MOSFET (59993) OPT 779-202-86 D1347	AB	1
-830A	C67078A5001A3		.TRANSISTOR TEMPERATURE FET (C6489) OPT 779-216-33 D1347 OPT TO ITEM 830 FOR EFF A, B OPT TO ITEM 830B FOR EFF C		1
-830B	C67078A5013A2		.TRANSISTOR BTS129 (C6489) OPT 01005235 D1347 OPT TO ITEM 830 FOR EFF A, B		1
840	IRFZ44		.TRANSISTOR POWER MOSFET (59993) OPT 779-202-75 D1347		1
-840A	IRFZ44N		.TRANSISTOR POWER MOSFET (59993) OPT 779-202-86 D1347 OPT TO ITEM 840	AB	1
850	IRFZ44		.TRANSISTOR POWER MOSFET (59993) OPT 779-202-75 D1347	A	1
-850A	IRFZ44N		.TRANSISTOR POWER MOSFET (59993) OPT 779-202-86 D1347 OPT TO ITEM 850	A	1
-850B	HUF75343P3		.TRANSISTOR POWER MOSFET (07263) OPT 779-195-26 D1347	BC	1
860	774-108-88		.INDUCTION ASSY (D1347)		1

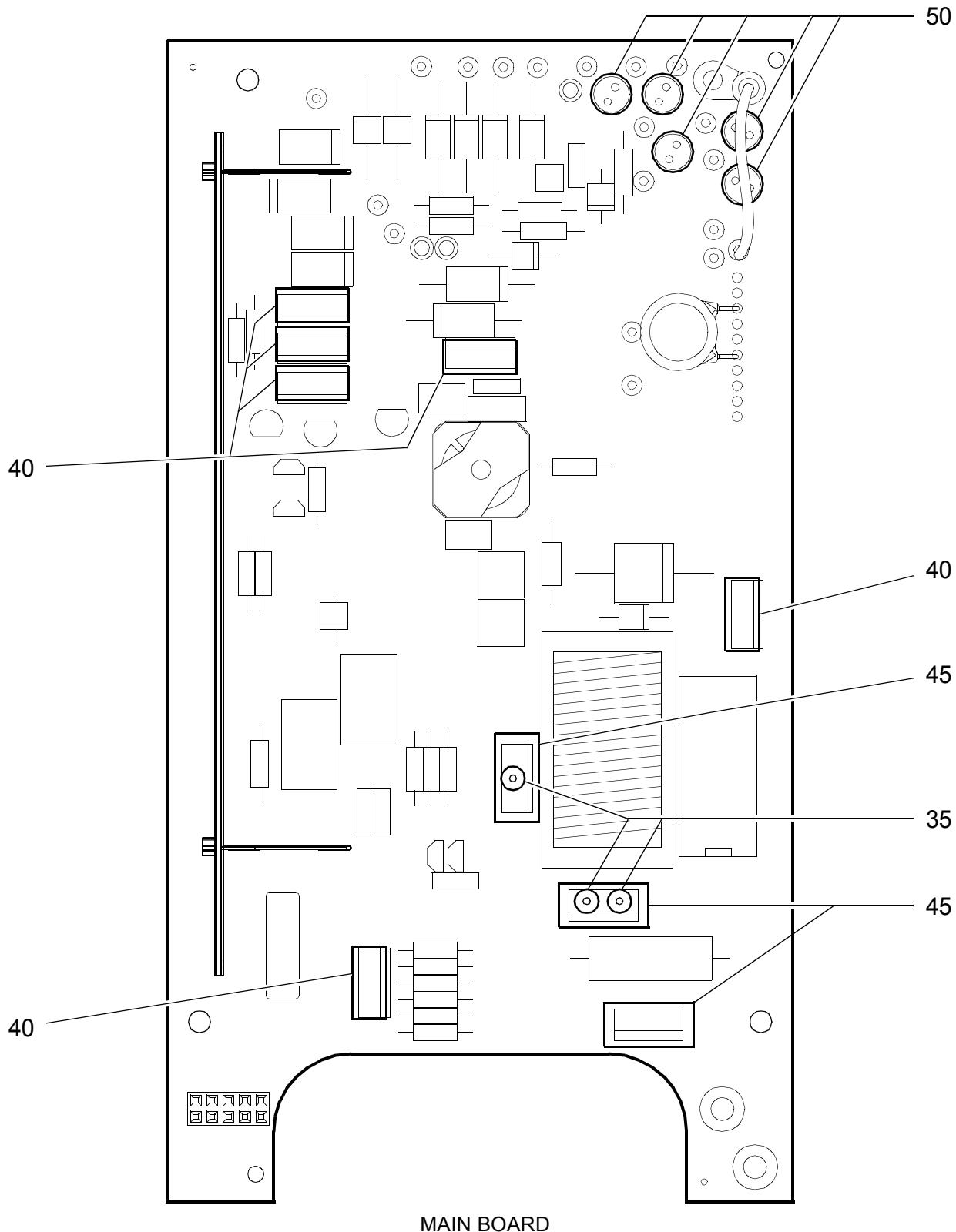
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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
2 870	B82141A1105J		.INDUCTOR 1.0 MH (C4751) OPT 779-172-33 D1347		1
880	PE51515		.INDUCTOR 52 UH (01961) OPT 779-172-38 D1347		1
890	S4-5V		.RELAY MINIATURE (C1083) OPT 779-481-06 D1347 5A, S4, 5V		1
900	779-102-42		.CAPACITOR 2N20 ±10%, 100 V (D1347)	C	1
910	WY0472MCMCRBK		.CAPACITOR 4N70 (C2817) OPT 779-104-06 D1347		1
-920	74270010		.BEAD FERRIT (C4683) OPT 01010091 D1347 FOR V82 AND V976	C	3
-930	01010044		.GATE ASSY (D1347)	C	1
-940	01010045		.POWER ASSY (D1347)	C	1

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MAIN BOARD



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MAIN BOARD
Figure 3/GRAPHIC 33-50-01-950-003-A01

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
3 -1	01011437		BOARD PRINTED CIRCUIT (ESDS) D1347		RF
-5	01011484		SEE IPL FIG. 1 FOR NHA .MODULE ASSY (ESDS) D1347		1
-10	01010116		SEE IPL FIG. 4 FOR DET .CONNECTOR ASSY (D1347)		1
-10A	01010122		.CONNECTOR ASSY (D1347) OPT TO ITEM 10		1
-15	01010691		.WIRE ASSY (D1347)		1
-20	TYB23M		.WRAP TIE (C1362) OPT 779-490-91 D1347		1
-25	0-829394-5		.CONNECTOR 10-POLE, MALE (D8512) OPT 779-417-81 D1347		1
-30	774-026-73		.PIN CONTACT 1-POLE (D1347)		2
35	74270010		.BEAD FERRIT (C4683) OPT 01010091 D1347 FOR V82 AND V976		3
40	774-065-31		.FIXTURE TRANSISTOR (D1347) FOR ITEMS 390, 415, 470, 475		6
45	FK224MI220-1		.SINK HEAT (C0935) OPT 01010092 D1347 FOR V82, V89, V976		3
50	TR3		.HOLDER FUSE (D3841) OPT 556YYY D3841 OPT 779-432-17 D1347 FOR ITEM 55		5
-55	779-435-72		.FUSE 3 A (D1347)		5
-60	779-435-51		.FUSE 10 A (D1347)		3
-65	SK041C155KA		.CAPACITOR 1U50 (C4308) OPT 779-102-93 D1347		1
-70	779-102-83		.CAPACITOR 100N ±10%, 100 V (D1347)		3
-75	779-840-08		.CAPACITOR 10N0 ±10%, 50 V (D1347) SIZE 1206		1
-80	779-104-12		.CAPACITOR 1U00 ±20%, 50 V (D1347)		2

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
3 -85	779-104-11		.CAPACITOR 4U70 $\pm 20\%$, 50 V (D1347)		2
-90	779-855-05		.CAPACITOR 10U0 $\pm 20\%$, 16 V (D1347)		6
-95	779-840-05		.CAPACITOR 100N $\pm 10\%$, 50 V (D1347) SIZE 1206		16
-100	779-840-07		.CAPACITOR 1N00 $\pm 10\%$, 50 V (D1347) SIZE 1206		1
-105	779-102-92		.CAPACITOR 33N0 $\pm 20\%$, 50 V (D1347)		1
-110	779-840-17		.CAPACITOR 4N70 $\pm 10\%$, 50 V (D1347) SIZE 1206		1
-115	GCM31CR71C475KA		.CAPACITOR 4U70 $\pm 15\%$, 16V (C0151) OPT 01007189 D1347 GCM31CR71C475KA37L SIZE 1206		1
-120	779-840-62		.CAPACITOR 100N $\pm 10\%$, 100 V (D1347)		3
-125	GCM32ER71H475KA		.CAPACITOR 4U70 $\pm 15\%$, 50V (C0151) OPT 01007169 D1347 GCM32ER71H475KA55L SIZE 1210		1
-130	779-840-18		.CAPACITOR 2N20 $\pm 10\%$, 50 V (D1347) SIZE 1206		2
-135	01000670		.CAPACITOR 2N20 $\pm 10\%$, 50 V (D1347) SIZE 0603		1
-140	WY0472MCMCRBK		.CAPACITOR 4N70 (C2817) OPT 779-104-06 D1347		1
-145	779-800-20		.RESISTOR 301K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		2
-150	779-027-60		.RESISTOR 2K74 $\pm 1\%$, TC ± 50 PPM (D1347) SIZE 0207		4
-155	779-800-17		.RESISTOR 100K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		31

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
3 -160	779-800-06		.RESISTOR 4K99 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		2
-165	SMA0207100R1TK5		.RESISTOR 100R $\pm 1\%$, TC ± 50 PPM (C2817) OPT 779-024-30 D1347 SMA 0207, 100R, 1%, TK50 SIZE 0207		1
-170	779-022-02		.RESISTOR 10K0 $\pm 1\%$, TC ± 50 PPM (D1347) SIZE 0207		2
-175	779-800-05		.RESISTOR 2K00 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		2
-180	779-800-07		.RESISTOR 10K0 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		19
-185	779-800-24		.RESISTOR 1M00 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		4
-190	779-800-04		.RESISTOR 1K00 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		7
-195	779-026-20		.RESISTOR 10R0 $\pm 1\%$, TC ± 50 PPM (D1347) SIZE 0207		2
-200	779-802-35		.RESISTOR 475R $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
-205	779-800-01		.RESISTOR 100R $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
-210	779-800-11		.RESISTOR 49K9 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		6
-215	779-027-76		.RESISTOR 4K02 $\pm 1\%$, TC ± 50 PPM (D1347) SIZE 0207		2

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
3 -220	779-804-29		.RESISTOR 150K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
-225	779-800-23		.RESISTOR 499K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
-230	779-802-92		.RESISTOR 2K21 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
-235	779-800-46		.RESISTOR 0R00 (D1347) SIZE 1206		4
-240	779-800-10		.RESISTOR 20K0 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
-245	779-800-44		.RESISTOR 200K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		4
-250	779-800-38		.RESISTOR 115K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
-255	779-801-32		.RESISTOR 34R0 $\pm 1\%$, TC ± 200 PPM (D1347) SIZE 1206		7
-260	779-801-15		.RESISTOR 22R1 $\pm 1\%$, TC ± 200 PPM (D1347) SIZE 1206		1
-265	779-042-30		.RESISTOR 200R $\pm 1\%$, TC ± 50 PPM (D1347) SIZE 0207		2
-270	779-804-02		.RESISTOR 54K9 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
-275	779-801-79		.RESISTOR 121R $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		2

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
3 -280	350-8R051-1		.RESISTOR R051 $\pm 5\%$, TC +250 PPM, 4W (D9188) Altered or modified from: (350-8 R051 1%) D9188 OPT 779-052-40 D1347		1
-285	779-052-39		.RESISTOR 2K61 $\pm 0.1\%$, TC ± 25 PPM (D1347) SIZE 0207		2
-290	779-052-37		.RESISTOR 1K00 $\pm 0.1\%$, TC ± 25 PPM (D1347) SIZE 0207		2
-295	779-052-38		.RESISTOR 2K00 $\pm 0.1\%$, TC ± 25 PPM (D1347) SIZE 0207		2
-300	779-804-43		.RESISTOR 249K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
-305	779-804-23		.RESISTOR 127K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
-310	ZC0207FKE07-0R		.RESISTOR 0R00 (D9188) OPT 01000214 D1347 SIZE 0207		2
-315	779-800-02		.RESISTOR 221R $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
-320	779-800-98		.RESISTOR 15R0 $\pm 1\%$, TC ± 200 PPM (D1347) SIZE 1206		1
-325	255-0-750R2		.RESISTOR 750R $\pm 2\%$ (D9188) Altered or modified from: (255-0 750R 2%) D9188 OPT 779-031-02 D1347		2
-330	779-223-84		.IC VOLTAGE REG. (ESDS) D1347		2

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
3 -335	779-886-17		.IC QUAD VOLTAGE COMP. (ESDS) D1347		1
-340	779-886-14		.IC NICD/NIMH CHARGE MANAG. (ESDS) D1347		1
-345	TLC272BID		.IC DUAL OP AMP (ESDS) 01295 OPT 779-886-16 D1347		1
-350	779-223-85		.IC VOLTAGE REFERENCE (ESDS) D1347		1
-355	779-860-02		.DIODE DUAL (D1347)		4
-360	779-860-05		.DIODE GENERAL PURPOSE (D1347)		12
-365	779-214-61		.DIODE AVALANCHE (D1347)		6
-370	779-861-10		.DIODE ZENER, 12 V, 5% (D1347)		7
-375	779-861-20		.DIODE ZENER, 39 V, 5% (D1347)		1
-380	779-214-69		.DIODE SUPPRESSOR (D1347)		4
-385	15KE27P		.DIODE SUPPRESSOR (D2616) Altered or modified from: (1.5KE27P) D2616 OPT 779-214-40 D1347		6
-390	BDX53C		.TRANSISTOR POWER DARLINGTON (D2616) OPT 779-202-54 D1347		1
-395	779-860-04		.DIODE DUAL (D1347)		9
-400	ZVP2110A		.TRANSISTOR MOSFET (K1196) OPT 779-201-65 D1347		3
-405	779-865-06		.TRANSISTOR NPN GENERAL PURPOSE (D1347)		7
-410	779-860-03		.DIODE DUAL (D1347)		4
-415	779-216-13		.TRANSISTOR TEMPERATURE FET (D1347)		3

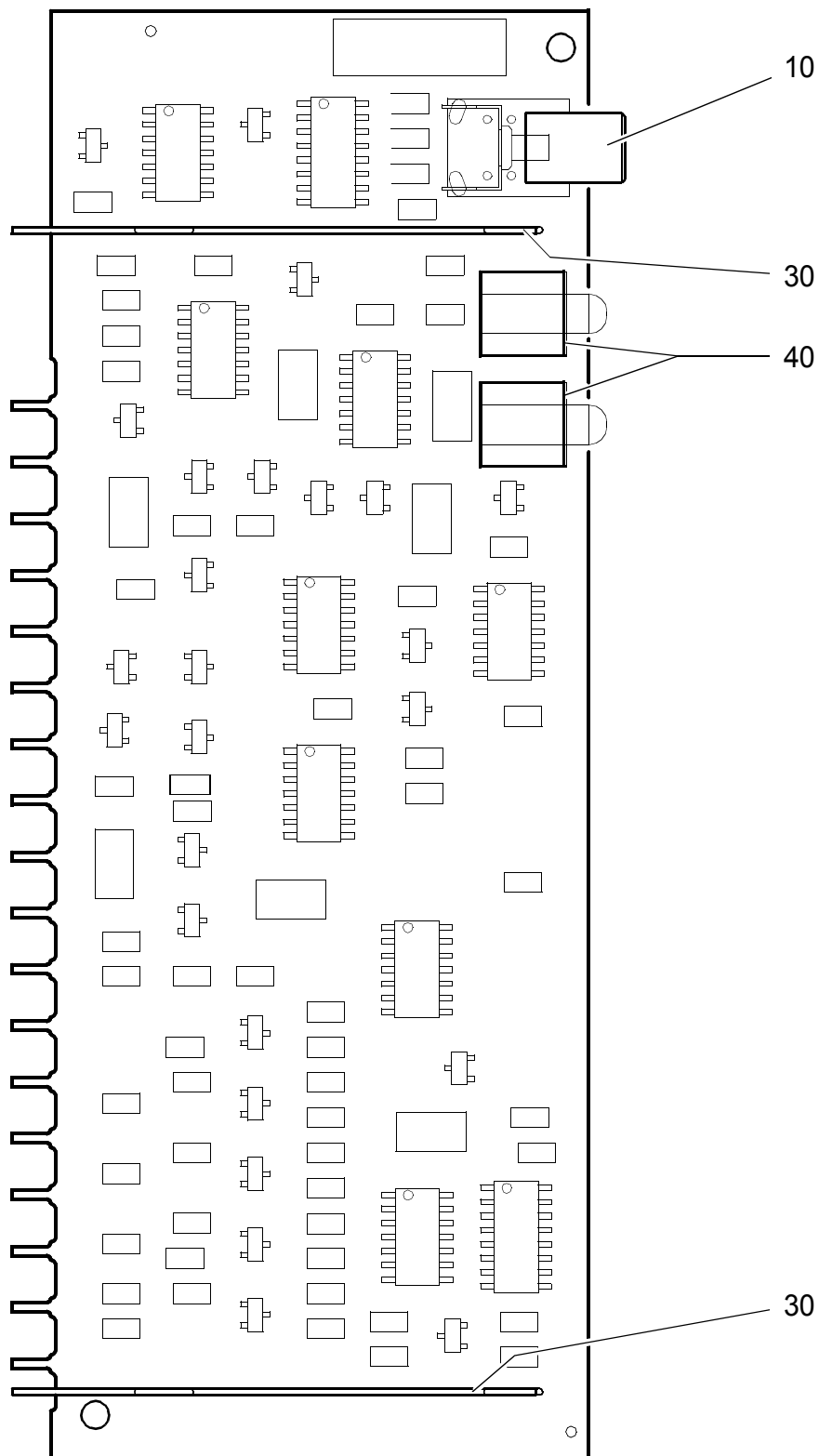
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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
3 -420	779-861-13		.DIODE ZENER, 6.8 V, 5% (D1347)		1
-425	779-865-04		.TRANSISTOR MOSFET (D1347)		6
-430	779-861-16		.DIODE ZENER, 18 V, 5% (D1347)		1
-435	779-865-05		.TRANSISTOR PNP GENERAL PURPOSE (D1347)		6
-440	BZW50-10		.DIODE TRANSIL (D2616) OPT 779-212-39 D1347		1
-445	779-214-09		.DIODE AVALANCHE (D1347)		1
-450	BSS84T1		.TRANSISTOR MOSFET (18324) OPT 01002879 D1347		2
-455	ZVN2110A		.TRANSISTOR MOSFET (K1196) OPT 779-201-67 D1347		1
-460	779-213-61		.DIODE DUAL SCHOTTKY (D1347)		2
-465	779-861-01		.DIODE ZENER, 3.0 V, 5% (D1347)		1
-470	C67078A5013A2		.TRANSISTOR TEMPERATURE FET (C6489) OPT 01005235 D1347		1
-475	IRFZ44		.TRANSISTOR POWER MOSFET (59993) OPT 779-202-75 D1347		1
-480	HUF75343P3		.TRANSISTOR POWER MOSFET (07263) OPT 779-195-26 D1347		1
-485	774-108-88		.INDUCTION ASSY (D1347)		1
-490	B82141A1105J		.INDUCTOR 1.0 MH (C4751) OPT 779-172-33 D1347		1
-495	PE51515		.INDUCTOR 52 UH (01961) OPT 779-172-38 D1347		1
-500	S4-5V		.RELAY MINIATURE (C1083) OPT 779-481-06 D1347 5A, S4, 5V		1

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LOGIC MODULE



LOGIC MODULE

Figure 4/GRAPHIC 33-50-01-950-004-A01

E335001PB0801

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
4 -1	774-108-60		MODULE ASSY (ESDS) D1347	A	RF
-1A	01010113		SEE IPL FIG. 1 FOR NHA MODULE ASSY (ESDS) D1347	B	RF
-1B	01011484		SEE IPL FIG. 1 FOR NHA MODULE ASSY (ESDS) D1347	C	RF
10	805700097		SEE IPL FIG. 1 FOR NHA .CAP (C7263)		1
-10A	01011638		OPT 779-402-10 D1347 FOR ITEM 20 ONLY .CAP (D1347)	C	1
-20	MC12555-00		OPT TO ITEM 10 FOR ITEM 20A ONLY .PUSH-BUTTON (C7263)		1
-20A	KSL0V431LFT		OPT 779-402-08 D1347 .PUSH-BUTTON (D4509)	C	1
30	774-102-84		OPT 01011637 D1347 OPT TO ITEM 20 .SUPPORT (D1347)		2
40	DH3R		.LED-HOLDER (C0935)		2
-50	779-840-05		OPT 779-431-22 D1347 FOR V914 AND V921 .CAPACITOR 100N ±10%, 50 V (D1347)		31
-60	779-855-05		SIZE 1206 .CAPACITOR 10U0 ±20%, 16 V (D1347)		7
-70	779-840-07		.CAPACITOR 1N00 ±10%, 50 V (D1347)		3
-80	779-840-07		SIZE 1206 .CAPACITOR 10N0 ±10%, 50 V (D1347)	A	2
-80A	779-840-08		SIZE 1206 .CAPACITOR 10N0 ±10%, 50 V (D1347)	BC	2
			SIZE 1206		

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
4 -90	779-800-17		.RESISTOR 100K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		54
-100	779-800-07		.RESISTOR 10K0 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206	A	32
-100A	779-800-07		.RESISTOR 10K0 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206	BC	31
-110	779-800-24		.RESISTOR 1M00 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		11
-120	779-800-44		.RESISTOR 200K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		4
-130	779-803-82		.RESISTOR 31K6 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
-140	779-804-29		.RESISTOR 150K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		6
-150	779-800-11		.RESISTOR 49K9 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		5
-160	779-800-04		.RESISTOR 1K00 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		3
-170	779-800-01		.RESISTOR 100R $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		4
-180	779-800-20		.RESISTOR 301K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
-190	779-804-43		.RESISTOR 249K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206	A	5

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
4 -190A	779-804-43		.RESISTOR 249K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206	BC	6
-200	779-800-23		.RESISTOR 499K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		4
-210	779-800-07		.RESISTOR 10K0 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206	A	1
-210A	779-802-92		.RESISTOR 2K21 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206	BC	1
-220	779-800-05		.RESISTOR 2K00 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		2
-230	779-804-23		.RESISTOR 127K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		2
-240	779-800-06		.RESISTOR 4K99 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		9
-250	779-800-46		.RESISTOR 0R00 (D1347) SIZE 1206		3
-260	779-800-30		.RESISTOR 226K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206		1
-270	779-800-17		.RESISTOR 100K $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206	A	2
-270A	779-800-07		.RESISTOR 10K0 $\pm 1\%$, TC ± 100 PPM (D1347) SIZE 1206	BC	2
-280	779-870-42		.IC DUAL FLIP-FLOP (ESDS) D1347		2

- ITEM NOT ILLUSTRATED

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
4 -290	779-881-12		.IC HEX SCHMITT TRIGGER (ESDS) D1347		2
-300	779-881-11		.IC SCHMITT TRIGGER (ESDS) D1347		1
-310	779-870-32		.IC BINARY COUNTER (ESDS) D1347		1
-320	779-870-43		.IC FREQUENCY DIVIDER (ESDS) D1347		1
-330	TLC339ID		.IC QUAD COMPARATOR (ESDS) 01295 OPT 779-870-30 D1347		3
-340	779-860-04		.DIODE DUAL (D1347)		25
-350	779-865-05		.TRANSISTOR PNP GENERAL PURPOSE (D1347)		5
-360	779-865-06		.TRANSISTOR NPN GENERAL PURPOSE (D1347)		2
-370	779-860-03		.DIODE DUAL (D1347)		2
-380	779-860-02		.DIODE DUAL (D1347)		1
-390	779-865-07		.TRANSISTOR MOSFET (D1347)		1
-400	GL34J		.DIODE RECTIFIER (14936) OPT 779-860-21 D1347	BC	1
-410	Q62703Q1750		.LED GREEN 3 MM (3A9H3) OPT 779-217-10 D1347		1
-410A	LG3369FH		.LED GREEN 3 MM (3A9H3) OPT 779-215-33 D1347 OPT TO ITEM 410		1
-420	LY3369FH		.LED YELLOW 3 MM (3A9H3) OPT 779-217-05 D1347		1

- ITEM NOT ILLUSTRATED

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FIG.-ITEM	PART NUMBER	AIRLINE STOCK NUMBER	NOMENCLATURE 1234567	USAGE CODE	UNITS PER ASSY
4 -420A	Q62703Q1749		.LED YELLOW 3 MM (3A9H3) OPT 779-217-12 D1347 OPT TO ITEM 420		1

- ITEM NOT ILLUSTRATED

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STORAGE (INCLUDING TRANSPORTATION)

TASK 33-50-01-500-801-A01

1. Storage

A. Reason for the Job

This page block gives detailed information related to preparation for transportation, special handling, packaging, storage and preservation of the Emergency Light Power Unit after assembly or test.

B. Job Set-up Information

NOTE: You can use equivalent alternatives for items listed in the tables that follow.

(1) Fixtures, Tools, Test and Support Equipment

Table 15001 FIXTURES, TOOLS, TEST AND SUPPORT EQUIPMENT

REFERENCE	QTY	DESIGNATION
No specific	1	Plastic cap for unit receptacle
No specific	1	Dry lint-free cotton cloth
No specific	1	Air-cushion Polyethylene sheeting
No specific	1	Original unit container
No specific	1	Identification label

(2) Consumable Materials

Table 15002 CONSUMABLE MATERIALS

REFERENCE	DESIGNATION
No specific	Adhesive tape

(3) Referenced Information

Table 15003 REFERENCED INFORMATION

REFERENCE	DESIGNATION
CMM 33-50-01 page block 1000	Testing And Fault Isolation
ACMM 33-51-01 page block 15000	Details applicable to the battery

C. Job Set-up

- (1) Remove the battery from the unit.
- (2) For detailed storage information applicable to the battery refer to ACMM 33-51-01.
- (3) Clean the unit with a clean, dry and lint-free cloth.

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D. Procedure

Subtask 33-50-01-530-001-A01

(1) Packing

- (a) Put a plastic cap on the unit receptacle to protect it.
- (b) Put the unit in an air-cushion polyethylene sheeting or equivalent cushion material.
- (c) Put the unit in its initial container. Use the initial material for the protection of the unit.
- (d) If the initial container is not available:
 - Refer to page block DESCRIPTION AND OPERATION for the weight of the unit.
 - Use an applicable different container.
Use only approved materials for the protection of the unit.
 - Put cushioned material into the container.
Make sure that the unit cannot move inside the container.
- (e) Seal the container with self-adhesive tape.
- (f) Put an identification label on the outside of the container. Make sure that
 - the identification label has all the related data of the unit,
 - you can read the label easily.

Subtask 33-50-01-550-001-A01

(2) Storage

CAUTION: MAKE SURE THAT THERE IS NOT TOO MUCH WEIGHT ON THE CONTAINER, IF YOU USE THE STACK STORAGE METHOD. TOO MUCH WEIGHT ON THE CONTAINER CAN CAUSE DAMAGE TO THE UNIT.

CAUTION: DO NOT KEEP THE CONTAINER NEAR FLUIDS THAT CAN CAUSE CORROSION OR DAMAGE. DO NOT KEEP THE CONTAINER NEAR SOURCES THAT MAKE HEAT OR OZONE.

- (a) Keep the container in a shelf of a clean, dry room with a good supply of air. Make sure that the air in the room is free of aggressive vapors or gases which can affect the packing material and cause corrosion of the unit.
- (b) Keep the room temperature between -55 and +85 deg C [-67 to +185 deg. F] with an annual average of +10 to +25 deg. C [+50 to +77 deg. F].
- (c) Keep the relative humidity at an annual average of max. 60 %.
- (d) Make sure that you can read easily the identification label of the stored container.

Subtask 33-50-01-510-001-A01

(3) Shipping

For transport, put the unit in its initial container or an applicable different container as specified in paragraph PACKING.

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E. Close-up

NOTE: Obey the following recommendations, if possible:

- Do not use the unit immediately after storage if there is a considerable difference of temperature or humidity between the storage site and the site of use.
- Let the unit stay in the environmental conditions at the site of use for approx. two hours before you return it to service.

Subtask 33-50-01-540-001-A01

(1) Removal from Storage

- (a) Unpack the unit from the storage container.

NOTE: If the container is not damaged, you can keep it and use it again.

- (b) If the storage time of the unit is less than or equal to the specified maximum storage time (120 months) do these steps:

- 1 Refer to page block TESTING AND FAULT ISOLATION and do the functional test.
- 2 Return the unit to service.

NOTE: Do not return the unit to storage if the maximum storage time of the unit has expired.

- (c) If the maximum storage time of the unit has expired, disposal of the unit is recommended. Alternatively you can do these steps:

- 1 Put the unit to a standard workshop environment.
- 2 Disassemble the unit to a level necessary to get satisfactory view to the components installed on the printed circuit board(s).
- 3 Do a visual check of the printed circuit boards and the electronic components.
 - Make sure that there are no signs of dust, corrosion and humidity.
 - Examine electrolytic capacitors for leaks.
 - Examine electrical contacts for tarnish and corrosion.
- 4 Refer to page block TESTING AND FAULT ISOLATION and do the functional test.
- 5 Return the unit to service.

NOTE: Do not return the unit to storage if the maximum storage time of the unit has expired.

- (d) If the maximum lifetime (shelf life) of the unit has expired, disposal of the unit is strongly recommended.

Subtask 33-50-01-540-002-A01

(2) Return to Service

Refer to page block TESTING AND FAULT ISOLATION and do the tests before you return the unit to service.

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