



***EMERGENCY EGRESS LIGHTING  
POWER SUPPLY with BATTERY***

***PART NO.  
5822-2***

***COMPONENT MAINTENANCE MANUAL  
WITH  
ILLUSTRATED PARTS LIST***

**V32890**

**33-51-52**

Mar 31/2011







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COMPONENT MAINTENANCE MANUAL  
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## INTRODUCTION

### 1. General

This manual has been compiled in accordance with the requirements set out in specification ATA 100. It is intended to provide such data as is necessary for an approved repairer to return an unserviceable power supply with battery to a serviceable condition.

### 2. Manufacturing

The power supply is manufactured and supported by:

Luminescent Systems Inc.  
4 Lucent Drive  
Lebanon, NH 03766  
USA

Telephone: (603) 643-7766  
Telefax: (603) 643-5947

### 3. Layout of Manual

This manual contains general description and operation followed by data for maintenance, repair, disassembly and assembly of the power supply with battery unit. This is followed by an illustrated parts list which gives detailed information.

### 4. Shop Verification

The sections within this manual have been verified at the manufacturer's facility by actually performing the functions such as disassembly, assembly and testing.

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## DESCRIPTION AND OPERATION

### 1. General

This manual contains information and instructions to maintain and repair this power supply with battery.

This power supply is a component for the aircraft emergency egress lighting system. It provides the interface between the aircraft power system and the emergency egress exit markers and floor pathmarking lights.

### 2. Technical Data

CHARACTERISTICS	SPECIFICATION		
Dimensions:	Length: 7.65 in (194.3 mm) Height: 1.96 in (49.8 mm) Width: 1.79 in (45.5 mm)		
Weight:	Approx.:	1.03 lb. (468.0 g)	
Power Requirements:	Input Voltage	27.5vdc	+/-10%
	Input Current	50mA	Maximum
	Output Voltage	100 Vac	Minimum
	Output Current	100mA	Maximum
	Output Frequency	400Hz	Minimum
	Battery Charge	40-48mA	
	Battery Voltage	9.6vdc	Nominal
Battery Current	460mA	Maximum	
Environmental:	Humidity	90% @ +40°C (+104°F)	
	Operating Temp.	-15°C - +55°C (5°F - 131°F)	
Connector:	AMP 1-480708-0		
Load:	Rated at 12 to 40 sq. in. of Electroluminescent lamps.		
Test Load:	Simulated Lamp Load (Resistor & Capacitor in Parallel)		
	Resistance:	9.1K Ohm	+/-5% (2 watt)
	Capacitance:	.165 µF	+/-10% (400 V)
	Physical Lamp load 30 sq. in. of Electroluminescent lamps.		



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## CONNECTOR PIN OUT:

PIN #	LOGIC ID	WIRE COLOR
1	GROUND CHARGE	ORANGE
2	AIRCRAFT CHARGE	YELLOW
3	DISARM	BROWN
4	GROUND	BLACK
5	SHUNT B+	RED
6	SHUNT	RED
10	LAMP-A	WHITE
11	LAMP-B	WHITE

## LOGIC:

STEP #	1 ORANGE GROUND CHARGE	2 YELLOW AIRCRAFT CHARGE	3 BROWN DISARM	LOGIC STATE	LAMP STATE	BATTERY STATE
1	OPEN	OPEN	OPEN	N/D	N/D	N/D
2	OPEN	OPEN	+28V	DISARM	OFF	NULL
3	OPEN	OPEN	OPEN	DISARM	OFF	NULL
4	+28V	OPEN	OPEN	DISARM	OFF	CHARGE
5	OPEN	OPEN	OPEN	DISARM	OFF	NULL
6	OPEN	+28V	OPEN	ARM	OFF	CHARGE
7	OPEN	OPEN	OPEN	ARM	ON	DISCHARGE
8	+28V	OPEN	OPEN	ARM	OFF	CHARGE
9	OPEN	OPEN	OPEN	ARM	ON	DISCHARGE
10	OPEN	OPEN	+28V	DISARM	OFF	NULL
11	OPEN	OPEN	OPEN	DISARM	OFF	NULL

Steps must be performed in the order shown

N/D: Initial state is not defined

Logic Data and Connector Pin

Table #1

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### TESTING AND FAULT ISOLATION

#### 1. General

- A. This section provides information for the detection and isolation of faults which result in removal of unit or component and the testing required to ensure, after repair, that the unit or component is serviceable and acceptable for installation.
- B. Unit testing is required if a unit is received from line maintenance personnel with no definite fault localization or after unit repair.
- C. Unit fault isolation is required if a unit fault is detected on the unit test or if a unit is received from line maintenance personnel with an exact localized fault.
- D. Power supplies in service should have the battery removed and reconditioned per CMM 33-51-93 every eighteen (18) months.
- E. There is only one serviceable part within this power supply. The battery is the only item which can be replaced.

#### 2. List of Test Equipment

- A. Volt meter
- B. Current meter
- C. Frequency meter
- D. Power supply
- E. Simulated load or actual lamp load as described in "Description and Operation" section of this manual
- F. Fully charged battery (IPL, Fig. 1, Item 30)

#### 3. Testing

- A. Preparation:
  - (1) Disassemble power supply by removing the six (6) Philips head screws. Remove cover to access battery. Remove battery.
  - (2) Connect new fully charged battery to **ONLY** one of the battery clip snaps. Connect a DC current meter between the other battery terminal snap and the battery clip snap. This will allow for visual determination of charging or discharging current.
  - (3) Attach a simulated load or actual lamp load to the lamp load terminals as described in "Description & Operation" section of this manual. Also attach an AC voltmeter and or an AC frequency meter across the lamp load.

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- (4) Connect appropriate shunt terminals together.
- (5) Connect DC power supply ground to appropriate ground terminal.

### B. Procedure

- (1) Verify logic by applying and/or removing power or ground according to the logic Table #1 described in "Description & Operation" section of this manual.

#### Note:

Lamp state is verified by checking the correct output voltage and frequency across the simulated lamp load or actual lamp load depending on which is used. Verify electrical values of output voltage & output frequency from "Description & Operation" section of this manual.

Battery State is verified by checking the correct current draw or charge current through the battery. Verify electrical values of current draw for discharge and battery charge for charge state from "Description & Operation" section of this manual. The battery may be reconditioned and tested separately - see CMM 33-51-93.

TEST RESULT	PROBABLE CAUSE	CORRECTION
Lamp state output voltage and frequency is out of tolerance.	Defective power supply	Replace power supply
Battery state current draw and charge current is out of tolerance.	Defective power supply	Replace power supply
Power supply unit checks OK.	Defective battery	Replace battery

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### DISASSEMBLY

#### 1. General

Disassemble the power supply only when repair is necessary and only to the extent necessary to effect repair. Procedures are in order of disassembly.

CAUTION: DO NOT OPERATE THE POWER SUPPLY WITH THE BATTERY DISCONNECTED. DAMAGE TO THE INTERNAL LOGIC MAY RESULT.

CAUTION: DO NOT SHORT CIRCUIT BATTERY TERMINALS. BURNS MAY OCCUR.

#### 2. Procedure (Refer to IPL. Fig. #1)

Reference "Illustrated Parts List" section of this manual.

- A. Remove six (6) Philips head screws (10).
- B. Remove power supply cover (20).
- C. Remove Battery (30). Un-snap battery clip from battery terminal.

### CLEANING

#### 1. Polycarbonate Housing & Cover

- A. Clean as required using isopropyl alcohol.

CAUTION: DO NOT USE OTHER CHEMICALS IN ORDER TO AVOID ANY DAMAGE TO OTHER COMPONENTS.

#### 2. Electrical Contacts

- A. Electrical contacts should not require cleaning for the life of this unit. However, if it becomes necessary to clean electrical contacts, clean with small non-metallic brush and isopropyl alcohol.

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### CHECK

1. General

This section presents instructions necessary to verify the condition of the disassembled power supply.

2. Procedure

- A. Examine all equipment for physical damage and deterioration.
- B. The only serviceable part of this power supply is the battery. If any other items are damaged or defective, replace power supply.

Possible Defect	ITEMS				
	Electrical Connectors	Battery	Housing	Screws	Grommet
Deformation	X	X	X	X	X
Corrosion	X	X	X		
Broken Leads	X	X			

### INSPECTION GUIDE FOR CASING AND ELECTRICAL COMPONENTS

Table #2

### REPAIR

1. General

- A. There is no component which is repairable. The battery is the only serviceable item in this power supply. Replace if battery is found defective.

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### ASSEMBLY AND STORAGE

1. Procedure (Refer to IPL. Fig. #1)

Reference "Illustrated Parts List" section of this manual.

- A. Attach battery (30) terminal to battery clip.
- B. Attach power supply cover (20).
- C. Attach six (6) Philips head screws (10).

2. Battery Storage

- A. Battery packs stored within power supply units are subject to various leakage currents depending upon the particular power supply logic circuit as well as natural self discharge.
- B. Battery packs stored in power supply, at 25°C ambient, must be recharged for 20 hours at 23°C ambient at 56 day intervals.
- C. Battery packs stored in power supply, at 0°C ambient, must be recharged for 20 hours at 23°C ambient at 149 day intervals.
- D. See CMM 33-51-93 for specifics concerning battery packs stored external to the power supply.
- E. Storage temperature range is 0°C to +30°C.

### FITS AND CLEARANCES

1. General (Refer to IPL. Fig #1)

- A. Torque value for Item (10) is 6.0 in/lbs +/-1.5 in/lbs.

### SPECIAL TOOLS, FIXTURES & EQUIPMENT

1. General

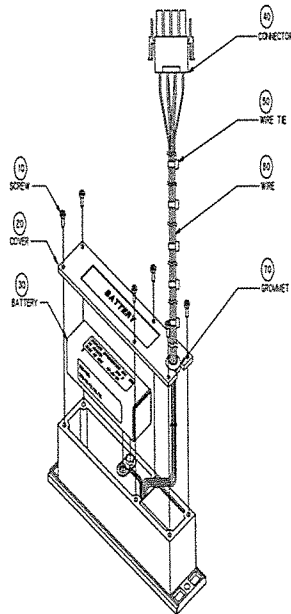
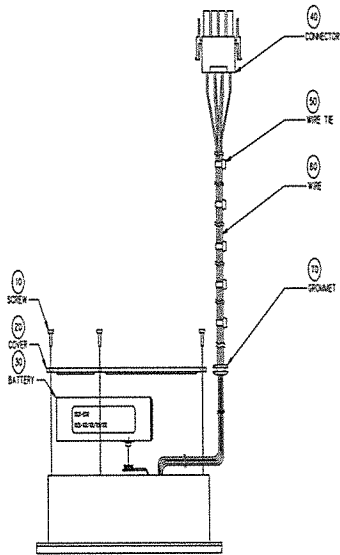
- A. No special tools, fixtures or equipment are required.

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### ILLUSTRATED PARTS LIST



POWER SUPPLY  
EMERGENCY EXIT LIGHTING  
FIGURE 111

11/10/05

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Fig-ITEM	PART NUMBER	AIRLINE STOCK NO.	NOMENCLATURE	EFF. CODE	QTY.
1-1	5822-2		Power Supply		REF
10	60105		Screw Philips Head		6
20	5756-1		Cover, Power Supply		1
30	5776-1		Battery		1
40	60049 AMP 1-480708-0		Connector		1
50	60163		Wire Tie		5
60	Aircraft MIL-22759/34-22, MIL- 22759/34-24		Cable (Recommended Length: 9.00 in. ± 1.00 in., 228.6 mm ± 25.4 mm)		AR
70	60102		Grommet		1