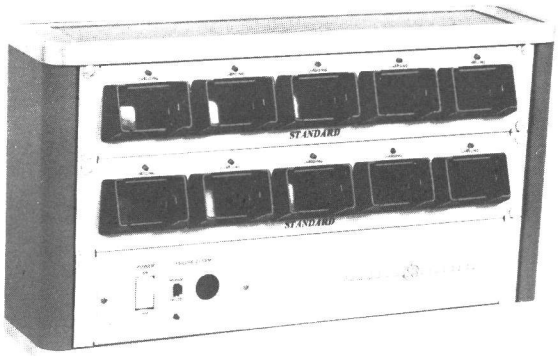
MOBILE RADIO

MASTR® Personal Series

PROGRESS LINE

PE 16-HOUR RACK CHARGERS

(Standard)



SPECIFICATIONS *

CABINETS

PL Numbers	19C321522G1	19C321522G2
Dimensions (H X W X D)	12" X 21.625" X 5.5"	26" X 21.625" X 5.5"
Capacity (charge panels) plus one power supply	2	6

CHARGE PANEL

PL Number	19D423211G1
Charge Time	16 hours
Dimensions (H X W X D)	3 1/2" X 19" X 3 1/2"
Number Inserts	5
Indicators/Insert	Amber CHARGING
Input Current	0.4 amperes

POWER SUPPLY

PL Number	19D42307G1 & G2
Dimensions (H X W X D)	3.5" X 19" X 4.5"
Weight	9.4 pounds
Output Current	4 amperes
Output Ripple	100%
Output Voltage	16 VDC

*These specifications are intended primarily for the use of the serviceman. Refer to the appropriate Specification Sheet for the complete specifications.

GENERAL ELECTRIC

TABLE OF CONTENTS

ILLUSTRATIONS

WARNING

No one should be permitted to handle any portion of the equipment that is supplied with high voltage; or to connect any external apparatus to the units while the units are supplied with power. KEEP AWAY FROM LIVE CIRCUITS.

EQUIPMENT INDEX

EQUIPMENT	PART NUMBER
Cabinets	
2 panel	19C321522G1
6 panel	19C321522G2
Panels	
Charge Panel	19D423211G1
Blank Panel	19D417978P4
4-Amp Power Supplies	
121 VAC	19D423207G1
220 VAC	19D423207G2
Control Unit	19C321566G2
Cables	
1 through 6 Charge Panels	19B226775G1
4, 5 and 6 Charge Panels	19B226775G2

COMBINATION NOMENCLATURE

1st Digit	2nd Digit	3rd Digit	4th Digit	5th Digit	6th Digit	7th Digit	8th Digit
Product Line	Application	Package	Input Voltage	Charge Time	Version	Type	Frequency Range
3 Charger	**6** PE (700 mAh Batt)	**2** Rack (2 Panel) **3** Rack (6 Panel)	**L** 121 VAC **M** 220 VAC	**1** 16 Hour	**C** 1 Charge Panel*	**1** Standard	**X** Not Range Sensitive

* Option 4642 adds at the factory, one additional standard (16 hour) Charge panel 19D423211G1 with five charging inserts.

DESCRIPTION

General Electric 16-Hour Rack Charger combinations will recharge battery packs used with MASTR® Personal PE Series, FM, two-way radios. A fully discharged, nickel-cadmium, 500 mAh or 700 mAh battery pack will recharge 100% in 16 hours at a C/10 constant current rate.

A rack charger combination consists of a cabinet with the capability of two or six charge panels. Each charge panel has five charging inserts, giving a maximum recharging capability of ten or thirty battery packs. The rack charger combination can have a 4-Amp power supply for 121 VAC operation or a 4-Amp power supply for 220 VAC operation. The combination also has a power supply control unit.

The power supply control unit provides AC switching, fusing and a failure alarm circuit. Anytime the AC power or DC output voltage from the power supply fails an audible alert will sound.

For a complete listing of charger components, refer to the Table of Contents for the Equipment Index.

OPERATION

Temperature characteristics of nickel-cadmium batteries, prevent a full charge at temperature extremes. For a maximum charge, recharge the battery pack at room temperatures of from 65° to 85° Fahrenheit whenever possible.

WARNING

General Electric Chargers are designed for charging GE 500 mAh battery pack 19D413522G1 and 700 mAh battery pack 19D413522G4 only. Charging any other battery pack or batteries may result in damage to equipment, leakage or explosion.

During shipment from the factory, connector P1 of battery BT1 is connected to J2 on the control unit. Before placing the rack charger into operation it is necessary to first remove the control unit from the power supply and move P1 to J1. See the Table of Contents for the schematic and outline diagrams of the control unit.

To use the rack charger, plug the power cable into the appropriate AC power source (121 VAC or 220 VAC, 50/60 Hertz). Place the POWER, OFF, ON switch on the control unit in the ON position. Place the NORMAL, FAILED switch on the control unit in the NORMAL position. LED indicator CR1, on the Control Unit, should light. Place the radio into a charging insert with the speaker facing down or place the battery pack into a charging insert with the arrow on the yellow label pointing up. The amber LED indicator, on the charging insert, labeled "CHARGING" will light. The battery pack is being charged.

To charge the battery pack to 100% capacity, let it stay in the charging insert for at least 16 hours. See Figure 1.

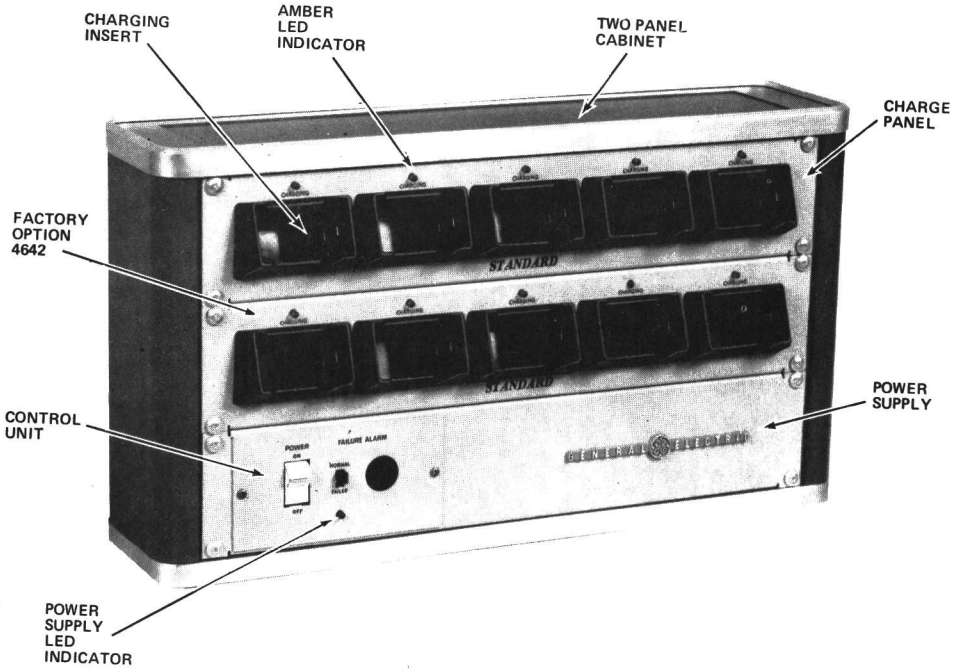


Figure 1 - Rack Charger

CIRCUIT ANALYSIS

The 16-Hour Rack Charger combination consist of charge panels and a power supply. References to symbols mentioned in the following text can be found on the applicable schematic and outline diagrams or parts list (see table of contents).

Charge Panel

Charge Panel 19D423211G1 has five parallel connected charging circuits. Each charging circuit has a series connected resistance to determine the C/10 constant current charge rate: 50 mA for 500 mAh battery packs and 70 mA for the 700 mAh battery packs. The charging current is applied to the battery pack when the pack is in the charging insert. The amber LED indicator labeled "CHARGING" lights when positive contact has been made with the battery pack contacts. Charging current for 500 mAh battery pack is applied through charging contacts 2 and 3 on the charging insert. Charging current for the 700 mAh battery pack is applied through charging contacts 4 and 6 on the charging insert.

4-Amp Power Supply

4-Amp Power Supply 19D423207G1 for 121 VAC operation and 19D423207G2 for 220 VAC operation provide a rectified, unfiltered charging voltage for standard 16-hour rack charger combinations.

AC voltage developed across the secondary of T801/T802 is rectified by full-wave rectifier circuit CR2 and CR3. The 16 Volt rectified output is connected to the charging panels through parallel connected Molex® connectors J1 and J2.

Control Unit

Control Unit 19C321566G2 provides an OFF, ON switch, fusing and a failure alarm circuit for the 4-Amp power supply. With P1 of the control unit plugged in J3 on A801 of the power supply, AC voltage is applied through POWER, OFF, ON switch S1 and Fuse F1 to the primary of transformer T801/T802. Diodes CR3, CR4, and Led indicator CR1 are connected to the output of the 4-Amp power supply through P1-8. LED indicator CR1 monitors the supply output and remains on as long as there is voltage. Trickle charge voltage is applied through CR8 and R14 to battery BT1. Bias for the base of transistor Q1 is applied through CR3 and CR4.

If there is a supply failure LED indicator CR1 will turn off. The failure alarm circuit will get supply voltage from BT1 and transistor Q1 will lose base bias. The loss of bias will cause Q1 to turn off, turning transistor Q2 on. With NORMAL, FAILED switch S2 in the NORMAL position, audio oscillator transistors Q3 and Q4 will turn on. The failure alarm will be heard from speaker LS1. With transistor Q2 conducting and S2 switched to the FAILED position, the audio oscillator will be off. When the supply voltage is restored, the failure alarm will again sound until S2 is switched back to the NORMAL position.

For a remote alarm speaker, remove the jumper between H8 and H9 on the control unit (see note 1 on the schematic diagram) With a maximum of 100 feet of number 22 AGW wire or larger, connect a remote 8-ohm speaker across TB801 on A801 of the power supply.

MAINTENANCE

Access

To gain access to the circuitry of a charger panel or power supply, first remove the AC power to the cabinet then remove the four screws holding the defective panel or power supply in the rack. Lift the panel or power supply from the rack disconnecting any Molex® connectors. A charger panel must be removed to replace any LED indicators. To replace a fuse it is necessary only to remove the control unit from the power supply.

Troubleshooting

Should a difficult service problem arise, the following Quick Check Troubleshooting Chart should provide assistance for the service technician.

QUICK CHECKS

SYMPTOM	QUICK CHECK
1. None of the LED indicators light.	1. Insure P1 of power supply control unit is securely plugged into J3 of the power supply. 2. Check fuse F1 in the control unit.
2. A single LED indicator does not light.	1. Insure the battery pack is secure in the charging insert. 2. Check for defective LED. 3. Check connections between charging circuit and charging insert.
3. Battery pack does not recharge in 16 hours.	1. Check for a defective battery pack. 2. Check for open diodes and resistors in the defective charging circuit.
4. LED indicators of a charge panel do not light.	1. Check connectors and cabling between the defective panel and the power supply.

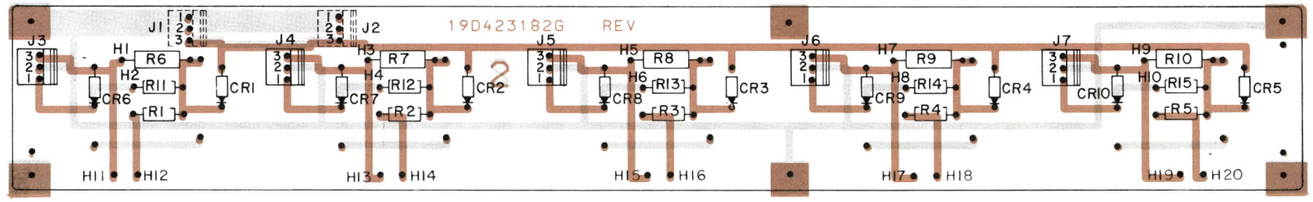
INSTALLATION

Rack chargers should be mounted on a wall close to a 121-Volt AC or 220-Volt AC (50/60 Hertz) source. Care should be taken when mounting to insure proper top and bottom ventilation. A minimum air space of two inches is required between the bottom of a rack charger and other surfaces.

In multiple rack charger installations, horizontal placement along a wall is recommended. Vertical placement will not allow proper ventilation.

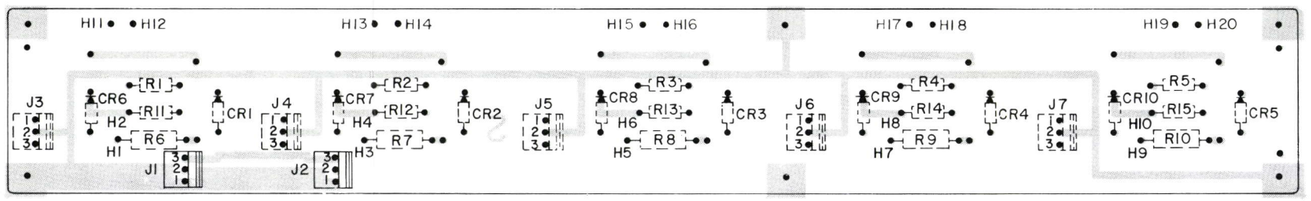
LBI30012

A1
COMPONENT SIDE



(19C321482, Sh. 1, Rev. 2)
(19C321482, Sh. 2, Rev. 2)

SOLDER SIDE



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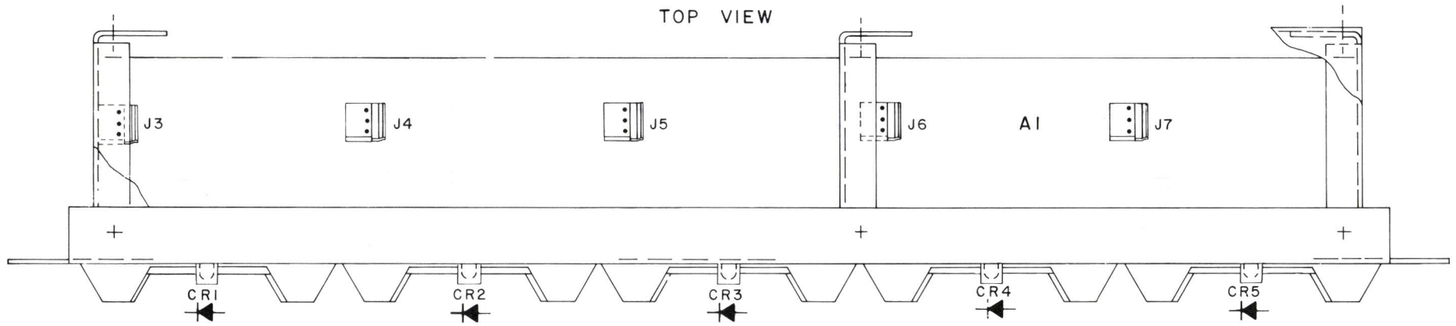
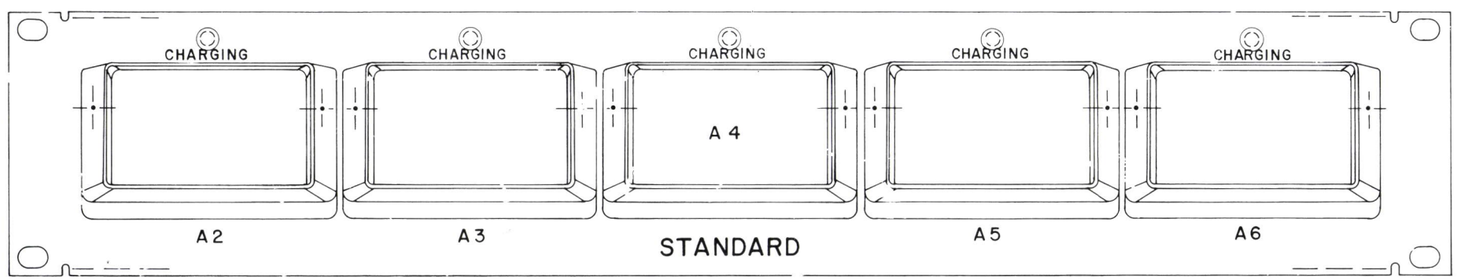
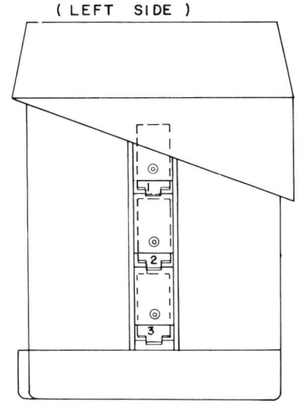
TOP VIEW



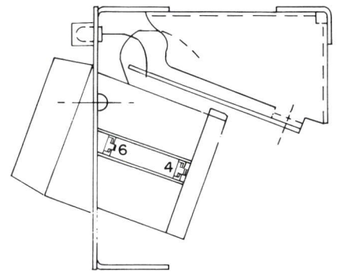
FRONT VIEW



CHARGING SLEEVE
(LEFT SIDE)

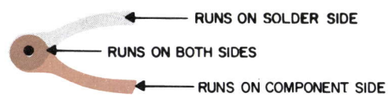


END VIEW



LEAD IDENTIFICATION
(FOR CR1 THROUGH CR5)

VIEW FROM LEAD END

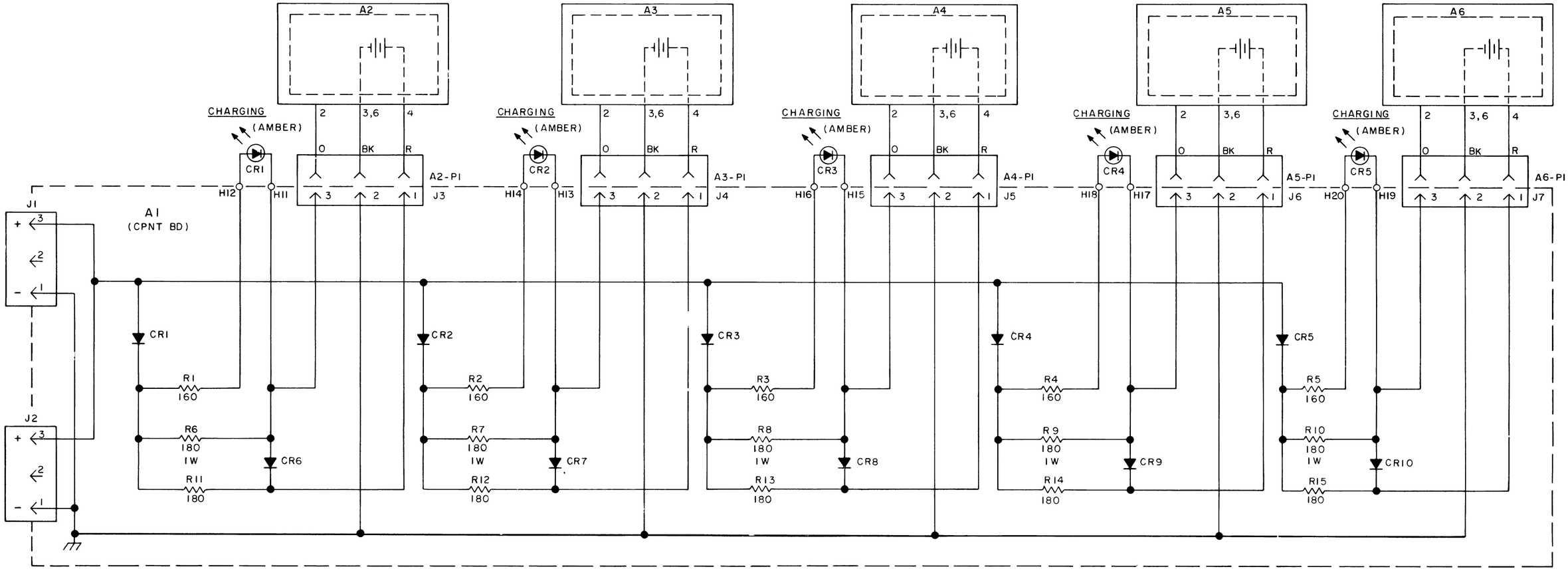


OUTLINE DIAGRAM

16 HOUR CHARGER PANEL

4 Issue 3

(19D423697, Rev. 1)



SEE APPLICABLE PRODUCTION CHANGE SHEETS IN INSTRUCTION BOOK SECTION DEALING WITH THIS UNIT, FOR DESCRIPTION OF CHANGES UNDER EACH REVISION LETTER.

THIS ELEM DIAG APPLIES TO	
MODEL NO	REV LETTER
PLI9D423211G1	
PLI9D423182G1 (CPNT BD)	

IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

ALL RESISTORS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG = 1,000,000 OHMS. CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF= MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH= MILLIHENRYS OR H= HENRYS.

(19D423213, Rev. 2)

SCHEMATIC DIAGRAM

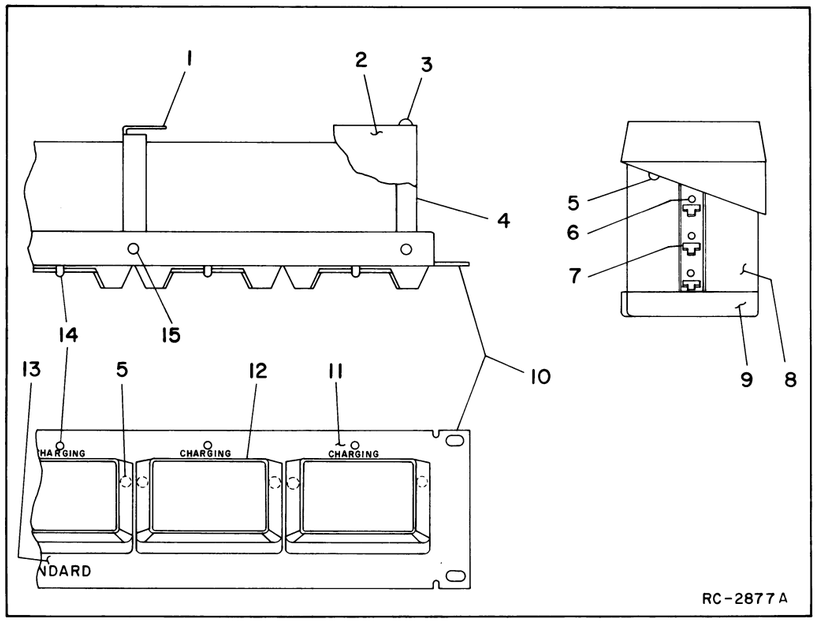
16 HOUR CHARGER PANEL

PARTS LIST

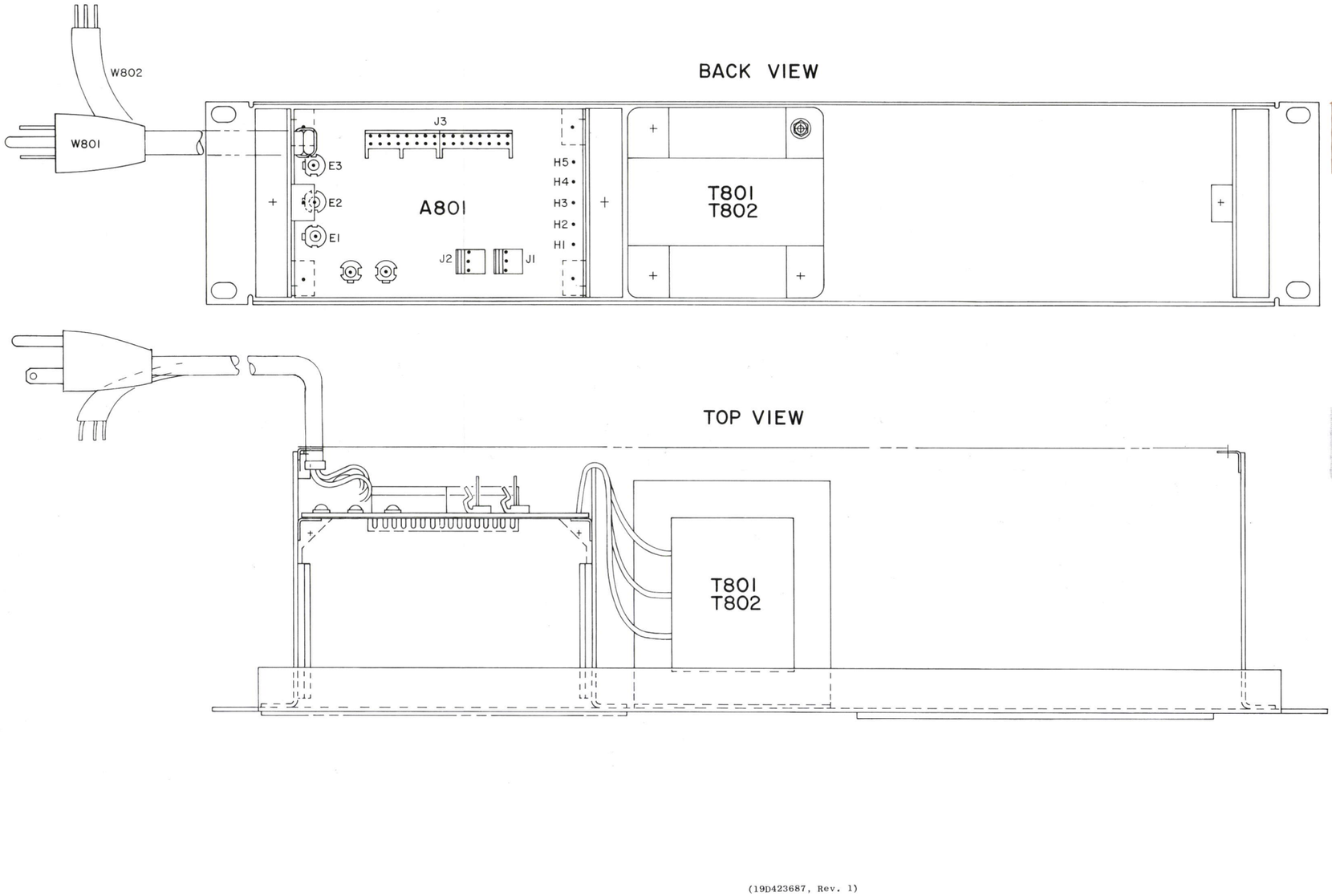
LBI30008B

STANDARD 16 HOUR CHARGER PANEL
19D423211G1

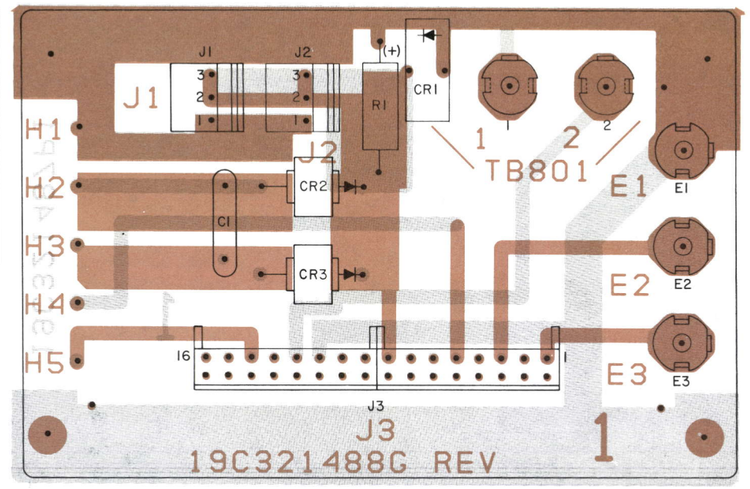
SYMBOL	GE PART NO.	DESCRIPTION
A1		COMPONENT BOARD 19D423182G1
		- - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR1 thru CR10	4037822P1	Silicon, 1000 mA, 400 PIV.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J1 thru J7	19A116659P55	Connector, printed wiring: 3 contacts; sim to Molex 09-65-1031.
		- - - - - - - - - - RESISTORS - - - - - - - - -
R1 thru R5	3R77P161J	Composition: 160 ohms ±5%, 1/2 w.
R6 thru R10	3R78P181J	Composition: 180 ohms ±5%, 1 w.
R11 thru R15	3R77P181J	Composition: 180 ohms ±5%, 1/2 w.
A2 thru A6		SLEEVE ASSEMBLY 19C321506G2
		- - - - - - - - - - PLUGS - - - - - - - - - -
P1		(Part of W2).
		- - - - - - - - - - CABLES - - - - - - - - - -
W2	19B226769G2	Cable: approx 10 inches long. Includes (P1) 19A116659P14 connector.
		- - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR1 thru CR5	19A134354P2	Diode, optoelectronic: yellow; sim to Hew. Packard 4555.
		MECHANICAL PARTS (SEE RC2877)
1	19C321490P1	Support.
2	19B226756P1	Cover.
3	19B201074P304	Tap screw, Phillips POZIDRIV®: No. 6-32 x 1/4.
4	19C321490P2	Support.
5	19B201074P205	Tap screw, Phillips POZIDRIV®: No. 4-40 x 5/16.
6	N330P603F22	Eyelet, metalic: 1/16 x 3/32.
7	19B216916P1	Contact.
8	19E500915P1	Sleeve.
9	19C321020P2	Cover.
10	19D417978P3	Panel.
11	NP279946P1	Nameplate, decal. (CHARGING).
12	19C321506G2	Sleeve Assembly. (Includes items 6-9).
13	NP279946P4	Nameplate, decal. (STANDARD).
14	19A134521P4	Lens, panel light: sim to Visual Comm. CLF-280-YTP.
15	19B209382P304	Tap screw, Phillips POZIDRIV®: No. 6-32 x 1/4.



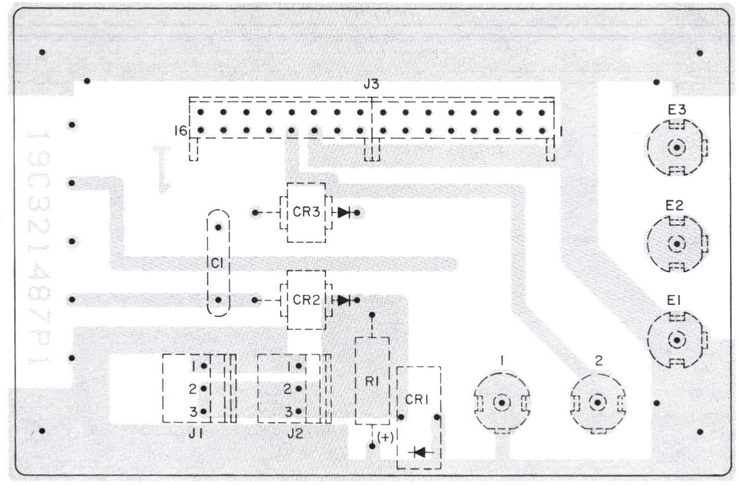
*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES



(19D423687, Rev. 1)



(19B226762, Sh. 1, Rev. 1)
(19B226762, Sh. 2, Rev. 1)

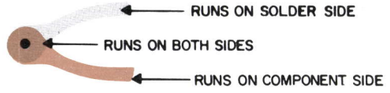


(19B226762, Sh. 2, Rev. 1)

OUTLINE DIAGRAM

4 AMP POWER SUPPLY

8 Issue 2



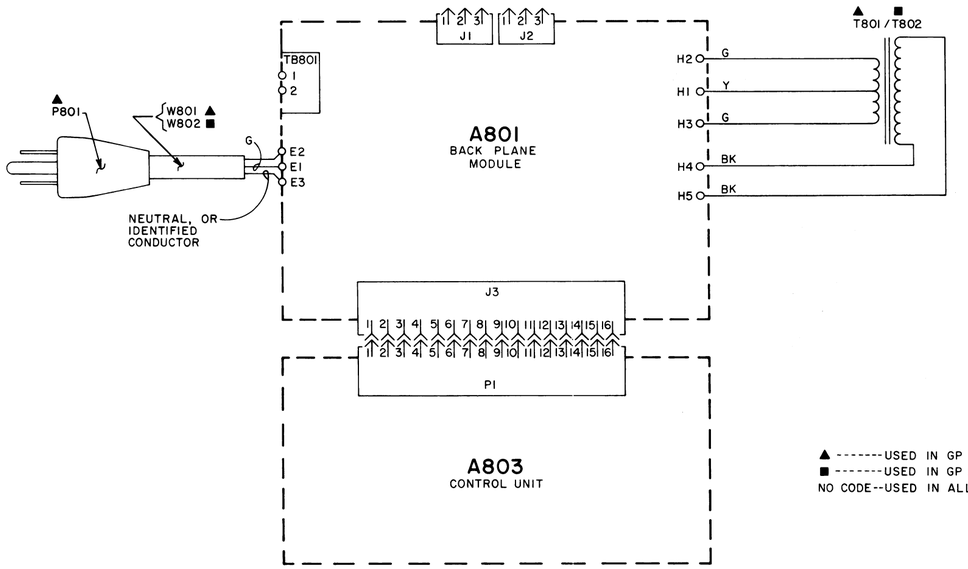
PARTS LIST

LBI-30004

4 AMP POWER SUPPLY
19D423207G1 121 VAC
19D423207G2 220 VAC

SYMBOL	GE PART NO.	DESCRIPTION
A801		BACK PLANE BOARD 19C321488G1
		- - - - - - - - - CAPACITORS - - - - - - - - -
C1	7774750P13	Ceramic disc: .01 µf +100% -0%, 500 VDCW.
		- - - - - - - - DIODES AND RECTIFIERS - - - - - - - -
CR1	19A116062P2	Selenium.
CR2 and CR3	19A116783P1	Silicon.
		- - - - - - - - - - TERMINALS - - - - - - - - - -
E1 thru E3	19A116667P3	Plate nut.
		- - - - - - - - JACKS AND RECEPTACLES - - - - - - - -
J1 and J2	19A116659P55	Connector, printed wiring: 3 contacts; sim to Molex 09-65-1031.
J3	19A116659P3	Connector, printed wiring: 8 contacts; sim to Molex 09-52-3082.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1	3R78P391J	Composition: 390 ohms ±5%, 1 w.
		- - - - - - - - TERMINAL BOARDS - - - - - - - -
TB801	19A116667P3	Plate nut. (Quantity 2).
		- - - - - - - - - - TRANSFORMERS - - - - - - - - -
T801	19A116218P1	Power, step-down: Pri: 117 VRMS, 50/60 Hz, Sec: 15.25 VRMS each side of CT (no load).
T802	19A116218P2	Power, step-down: Pri: 220 VRMS, 50/60 Hz, Sec: 15.25 VRMS each side of CT (no load).
		- - - - - - - - - - - CABLES - - - - - - - - - -
W801	19A130534G1	Power: 3 wire.
W802	19A130534G2	Power: 3 wire.
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	19C321399P1	Cover.
	19B226804P1	Insulator. (Used with cover).
	4035449P4	Rubber bumper. (Located on cover).
	19B209572P2	Identification plate.
	19C307038P7	Nut, push-on: sim to Palnut PS094032. (Used with identification plate).
	19A115185P4	Retainer block. (Used with retainer strap).
	19A115185P5	Retainer strap. (Used with retainer block).
	NP279972	Nameplate, aluminum foil. 65 watt, .53 amp, 50-60 Hz, 109-133 VAC.
	NP279974	Nameplate, aluminum foil. 65 watt, .29 amp, 50-60 Hz, 198-242 VAC.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES



▲ -------USED IN GP 1 ONLY
■ -------USED IN GP 2 ONLY
NO CODE--USED IN ALL GPS

SEE APPLICABLE PRODUCTION CHANGE SHEETS IN INSTRUCTION BOOK SECTION DEALING WITH THIS UNIT, FOR DESCRIPTION OF CHANGES UNDER EACH REVISION LETTER.

THIS ELEM DIAG APPLIES TO

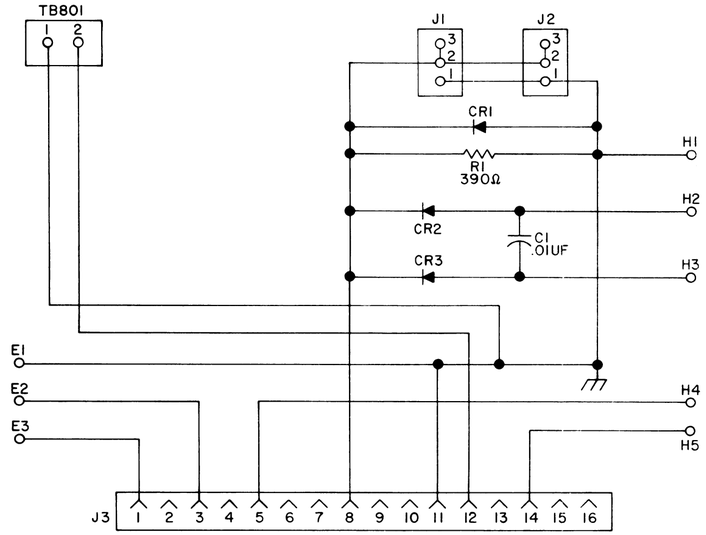
MODEL NO. REV LETTER

PL19D423207G1
121 VAC

PL19D423207G2
220 VAC

IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

(19C321531, Rev. 1)



SEE APPLICABLE PRODUCTION CHANGE SHEETS IN INSTRUCTION BOOK SECTION DEALING WITH THIS UNIT, FOR DESCRIPTION OF CHANGES UNDER EACH REVISION LETTER.

THIS ELEM DIAG APPLIES TO

MODEL NO REV LETTER

PL19321488G1

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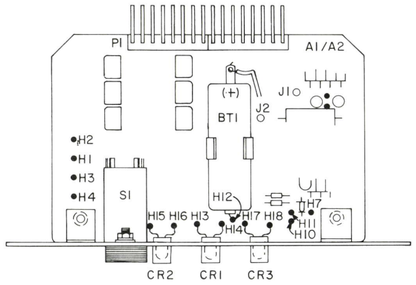
(19B226669, Rev. 1)

SCHEMATIC DIAGRAM

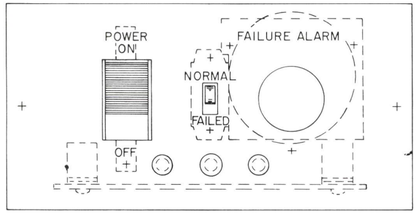
4 AMP POWER SUPPLY

A801

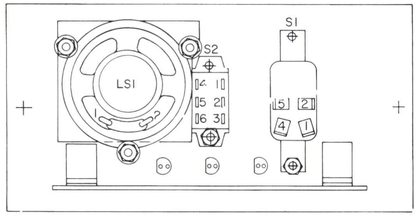
TOP VIEW



FRONT VIEW

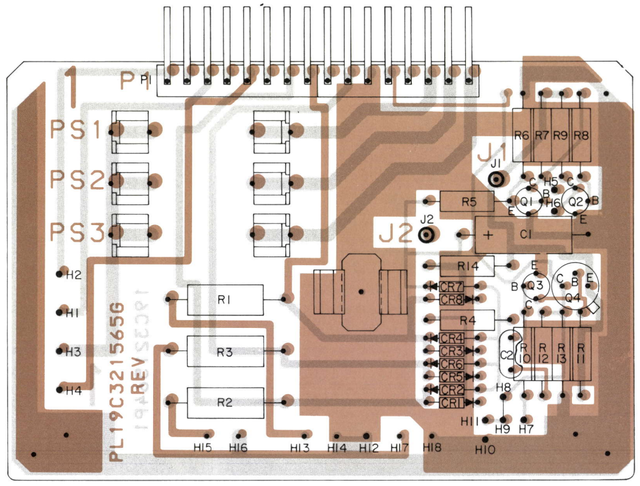


BACK VIEW



A1/A2

COMPONENT SIDE



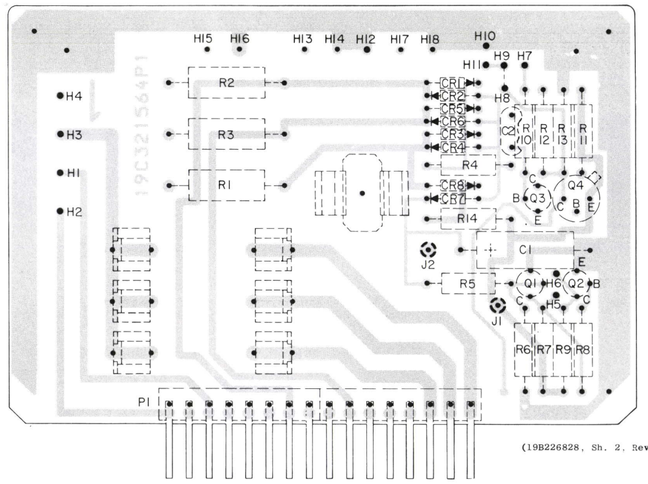
(19B226828, Sh. 1, Rev. 1)
(19B226828, Sh. 2, Rev. 1)

LEAD IDENTIFICATION FOR CR1, CR2 AND CR3

(CATHODE TO H14, H16, & H18 ON B

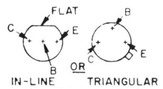
FLAT DENOTES CATHODE

SOLDER SIDE



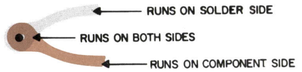
(19B226828, Sh. 2, Rev. 1)

LEAD IDENTIFICATION FOR Q1 THRU Q3



IN-LINE TRIANGULAR
VIEW FROM CASE END

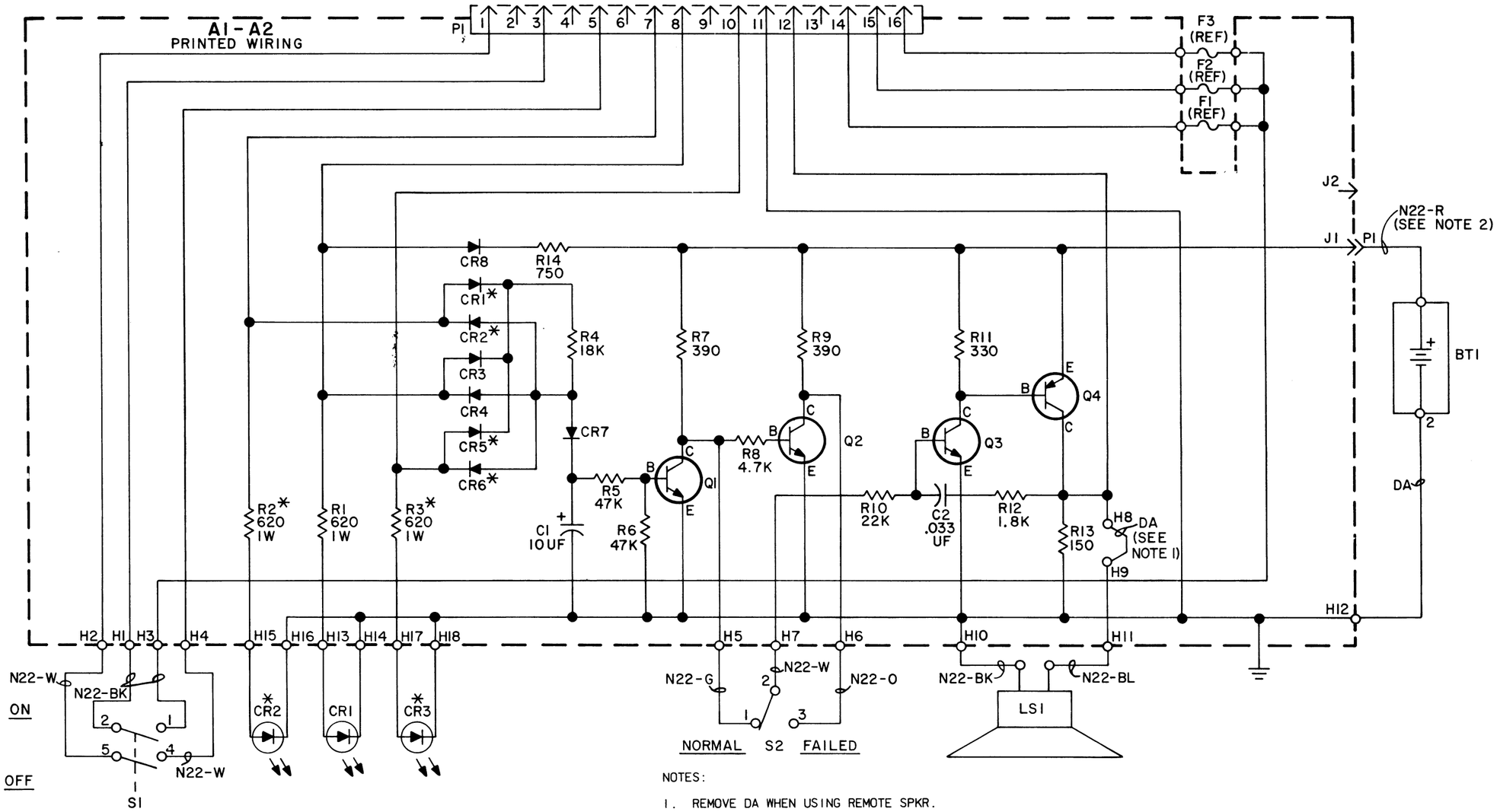
NOTE: LEAD ARRANGEMENT, AND NOT CASE SHAPE, IS DETERMINING FACTOR FOR LEAD IDENTIFICATION. TAB INDICATES EMITTER LEAD.



OUTLINE DIAGRAM

CONTROL PANEL

(19D423682, Rev. 1)



NOTES:

1. REMOVE DA WHEN USING REMOTE SPKR.
2. P1 OF BT-1 CONNECTED TO J2 OF A1-A2 DURING SHIPMENT.
3. OMIT COMPONENTS MARKED * IN GP 2.

SEE APPLICABLE PRODUCTION CHANGE SHEETS IN INSTRUCTION BOOK SECTION DEALING WITH THIS UNIT, FOR DESCRIPTION OF CHANGES UNDER EACH REVISION LETTER.

THIS ELEM DIAG APPLIES TO

MODEL NO	REV LETTER
PLI9C321565G1 (P.C. BD ASM)	
PLI9C321566G1 (MODULE ASM)	

ALL RESISTORS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG=1,000,000 OHMS. CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF=MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH=MILLIHENRYS OR H=HENRYS.

IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

(19C321582, Rev. 2)

SCHEMATIC DIAGRAM

CONTROL UNIT (A803)

PARTS LIST

LBI30007A

3 AND 7 PANEL CABINETS
19C321522G1 3 PANEL
19C321522G2 7 PANEL

SYMBOL	GE PART NO.	DESCRIPTION
	19B226790G1	Support, cabinet siding. (3 Panel).
	19B226790G2	Support, cabinet siding. (7 Panel).
	19C321507P1	Cover. (Top and bottom).
	19C321510G1	Frame. (Quantity 4).
	4037460P6	Stud, self-clinching: No. 6-32; sim to Penn FH-632-6CI.
	N210P16C6	Hex nut: No. 10-32. (Used to secure cabinet covers).
	N403P19C6	Lockwasher, external tooth: No. 10. (Used to secure cabinet covers).
	N402P9C6	Flatwasher, narrow: No. 10. (Used to secure cabinet covers).
	19D417978P4	Blank panel.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PARTS LIST

LBI30037A

CONTROL UNIT
19C321566G1 12 AMP
19C321566G2 4 AMP

SYMBOL	GE PART NO.	DESCRIPTION
A1 and A2		COMPONENT BOARD A1 19C321565G1 12 AMP A2 19C321565G2 4 AMP
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1	19A115680P8	Electrolytic: 10 µf +150% -10%, 25 VDCW; sim to Mallory Type TTX.
C2	19A116080P104	Polyester: 0.033 µf ±10%, 50 VDCW.
		- - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR1 thru CR8	19A115250P1	Silicon, fast recovery, 225 mA, 50 PIV.
		- - - - - - - - - - TERMINALS - - - - - - - - - -
E1 thru E6	4031537P1	Terminal: sim to Alden Products 654T.
		- - - - - - - - - - - FUSES - - - - - - - - - - -
F1 thru F3	7487942P26	Slow blowing: 1.6 amp at 125 v; sim to Bussmann MDL-1.6. (121 VAC, 4 and 12 AMP).
F1 thru F3	7487942P4	Slow blowing: 3/4 amp at 250 v; sim to Bussmann MDL-3/4. (220 VAC, 4 and 12 AMP).
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J1 and J2	4033513P4	Contact, electrical: sim to Bead Chain L93-3.
		- - - - - - - - - - - PLUGS - - - - - - - - - - -
P1	19A116659P30	Connector, printed wiring: 8 contacts; sim to Molex 2373-8A.
		- - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q1 thru Q3	19A115910P1	Silicon, NPN; sim to Type 2N3904.
Q4	19A115562P2	Silicon, PNP: sim to Type 2N2904A.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1 thru R3	3R78P621J	Composition: 620 ohms ±5%, 1 w.
R4	3R77P183J	Composition: 18K ohms ±5%, 1/2 w.
R5 and R6	3R77P473J	Composition: 47K ohms ±5%, 1/2 w.
R7	3R77P391J	Composition: 390 ohms ±5%, 1/2 w.
R8	3R77P472J	Composition: 4.7K ohms ±5%, 1/2 w.
R9	3R77P391J	Composition: 390 ohms ±5%, 1/2 w.
R10	3R77P223J	Composition: 22K ohms ±5%, 1/2 w.
R11	3R77P331J	Composition: 330 ohms ±5%, 1/2 w.
R12	3R77P182J	Composition: 1.8K ohms ±5%, 1/2 w.
R13	3R77P151J	Composition: 150 ohms ±5%, 1/2 w.
R14	3R77P751J	Composition: 750 ohms ±5%, 1/2 w.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - BATTERIES - - - - - - - - - -
BT1	19A130557G1	Battery: Nickel Cadmium, rechargeable, 1.2 volt, 0.6 ampere hour; sim to GE 41B907AA07-11.
		- - - - - - - DIODES AND RECTIFIERS - - - - - -
CR1 thru CR3	19A134354P3	Diode, optoelectronic: green; sim to Hew. Packard 5082-4955.
		- - - - - - - - - LOUDSPEAKERS - - - - - - - - -
LS1	19A116090P1	Permanent magnet: 2.00 inch, 8 ohms ±10% voice coil imp, 450 Hz ±112 Hz resonant; freq range 400 to 3000 Hz.
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S1	19B209498P1	Push: DPST, 20 amps and 220 VRMS; sim to McGill 0811-0188.
S2	7145098P1	Slide: DPDT, 0.75 amp at 125 VAC or 0.5 amp at 125 VDC; sim to Stackpole SS-150.
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - - -
	19B226677G3	Cover. (Used with 12 AMP).
	19B226677G4	Cover. (Used with 4 AMP).
	19B201074P304	Tap screw, Phillips POZIDRIV©: No. 6-32 x 1/4. (Secures A1, A2 component board to module).
	19A130555P1	Screen. (Used with LS1).
	NP279976	Decal. (POWER, ON-OFF; FAILURE ALARM, NORMAL-FAILED).
	19A116688P1	Clip, electrical. (Fuse clips).
	7118719P3	Clip, spring tension: sim to Prestole E-50003-003. (Battery).
	19B200525P153	Rivet, tubular. (Secures battery clip).
	4036555P1	Insulator, washer: nylon. (Used with Q4 on A1, and A2).
	19A134521P2	Lens. (Used with CR1-CR3).