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DESCRIPTION

The Battery Standby/Charger (Option 9665) consists of a voltage regulator and relay switching circuit mounted on a printed board to provide a charging current for the storage battery when the station power supply is operating normally. The relay switching circuit switches to battery power and switches the power supply bleeder resistor from the circuit in the event of a power failure. Depending on the connections to TB1, the charger can be operated on 110/220 Volt 50/60 Hertz.

Option 9666 is the same as Option 9665 with the addition of an RF Relay and connecting cables. The operation is the same as Option 9665 in addition the RF Relay automatically switches the driver RF output directly to the antenna Relay, thereby bypassing the High Power RF Power Amplifier. The charger board mounts on the inside of

the rear panel of the driver power supply and all necessary leads for connection to the power supply and battery are hanging from the board. The RF Relay mounts on the power panel of the High Power Station.

ADJUSTMENT AND TEST

Adjustment

R4 is set at the factory and normally doesn't need adjustment but if the voltage at the black and red battery leads (with the battery disconnected) exceeds 14.5 Volts DC, adjust R4 for 14 Volts with the battery disconnected.

Test

To test the operation of the Relay switching circuit, turn off the station power supply. The relay K1 should drop out

and the station should now be operating on the battery supply.

CIRCUIT ANALYSIS

When the station power supply is operating normally, approximately 15 Volts AC appears at H3 and H4. This voltage provides the input voltage for the bridge rectifier CR1-CR4. The voltage and current regulator consists of Q1 (the pass transistor) and Q2 (the driver transistor). R2 is the current sensing resistor to limit the battery charge current to a maximum of 4.5 amps. A voltage divider network made up of R3, R4 and R5, provides a variable voltage adjusted with

R4 to set the bias on the base of Q2 which in turn controls the conduction of Q1 (the pass transistor). C1 provides filtering of the input voltage. The output of the regulator is fused through F1 to provide overload protection. The regulated voltage also provides the voltage to energize the K1 relay. When the station power supply is off for any reason the regulator is off because no input voltage is fed to it. With no voltage applied K1 de-energizes and the battery is switched in as the power source and the power supply bleeder resistor is switched out of the circuit. Refer to Figure 1 and Figure 2 for curves of RF Power output of the transmitter against time for intermittent and continuous duty stations.

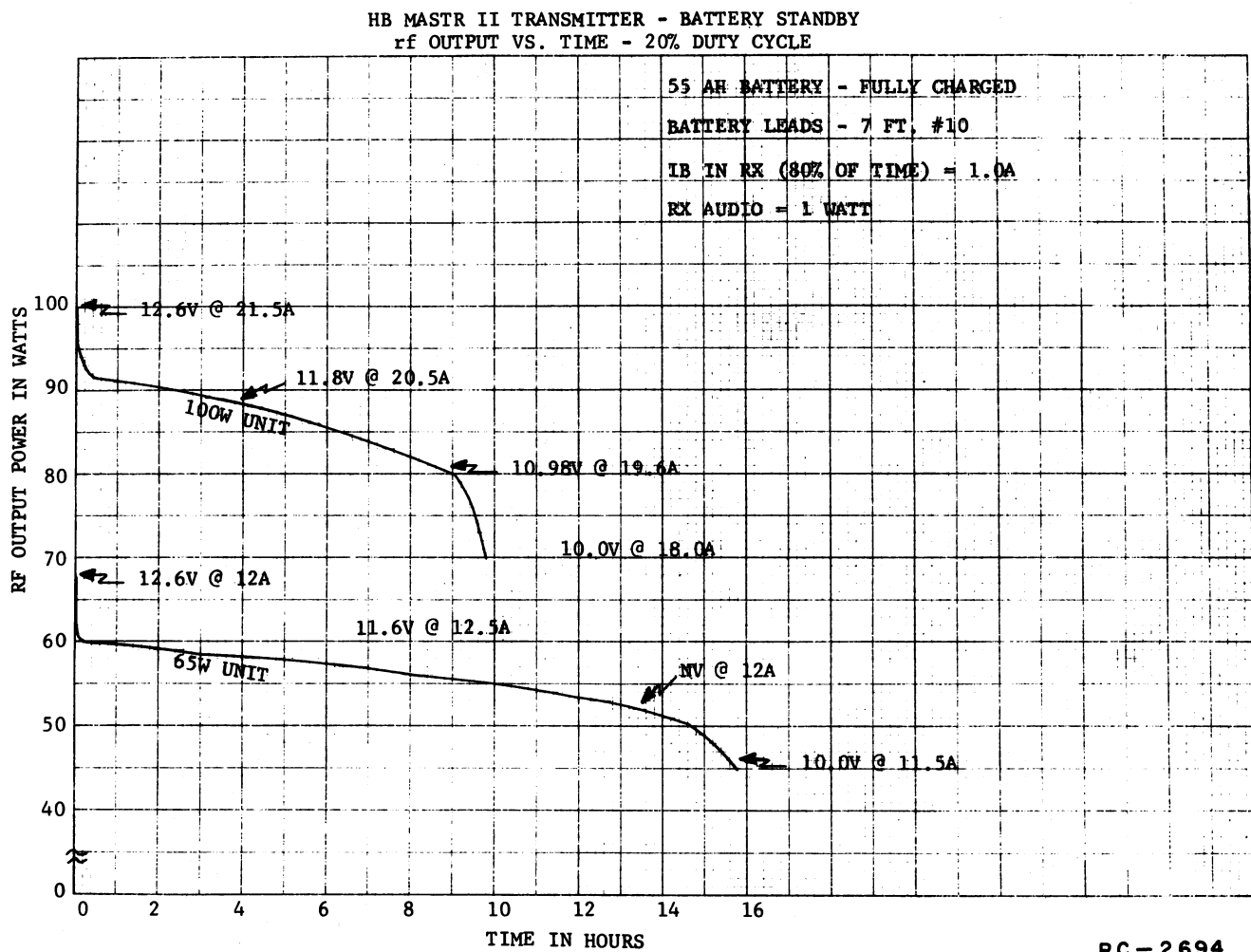


Figure 1 - RF Power Output Versus Time Intermittent Duty

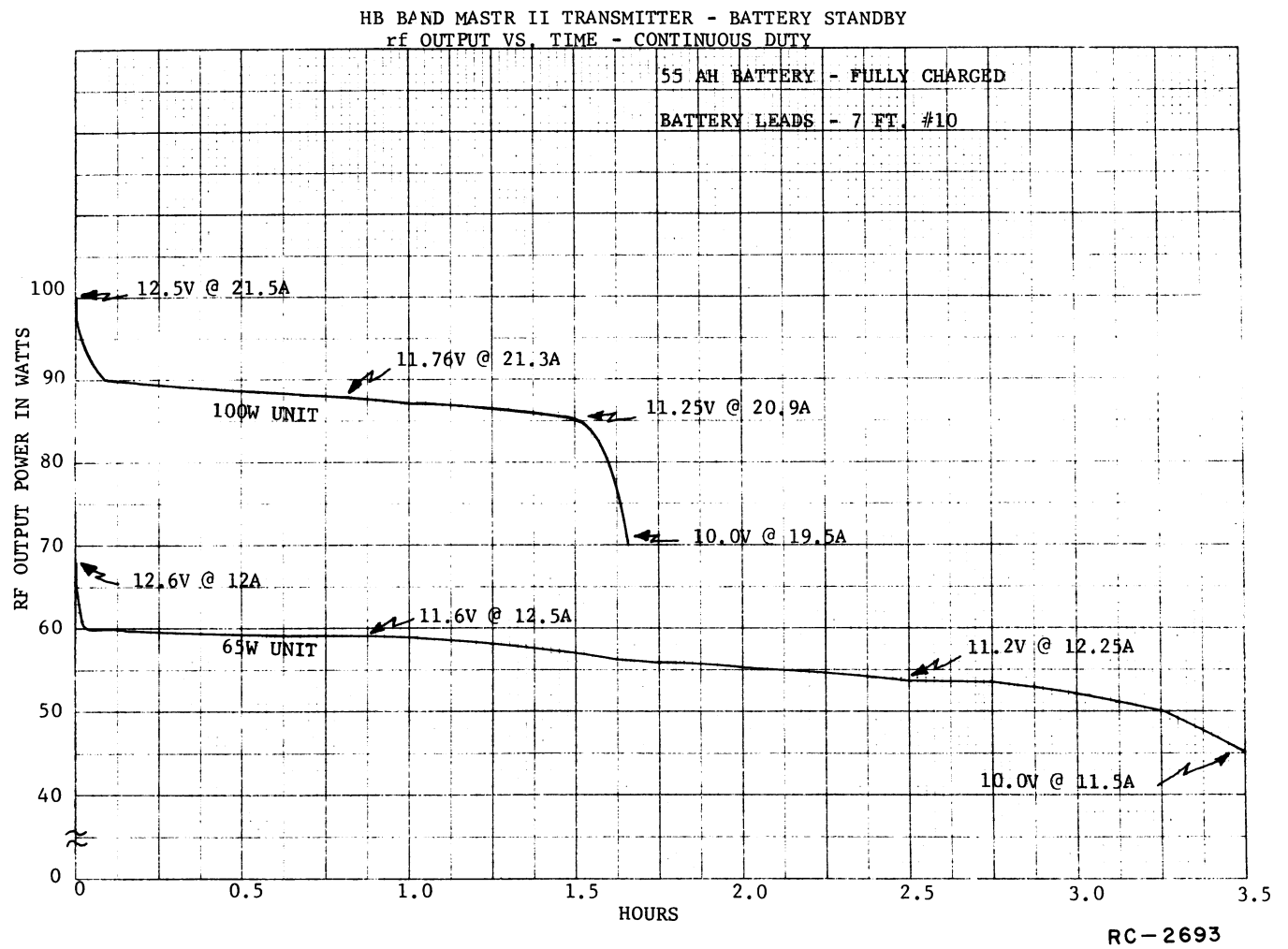
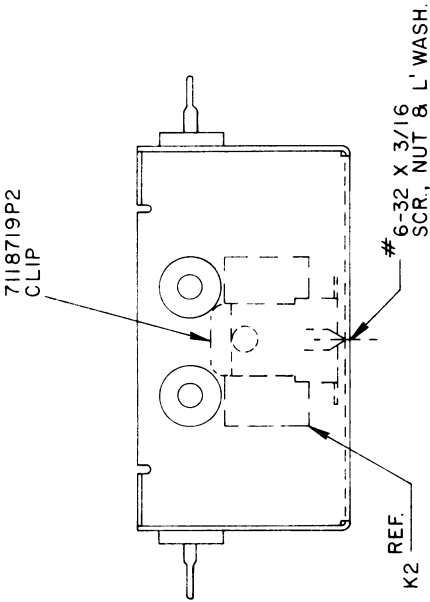
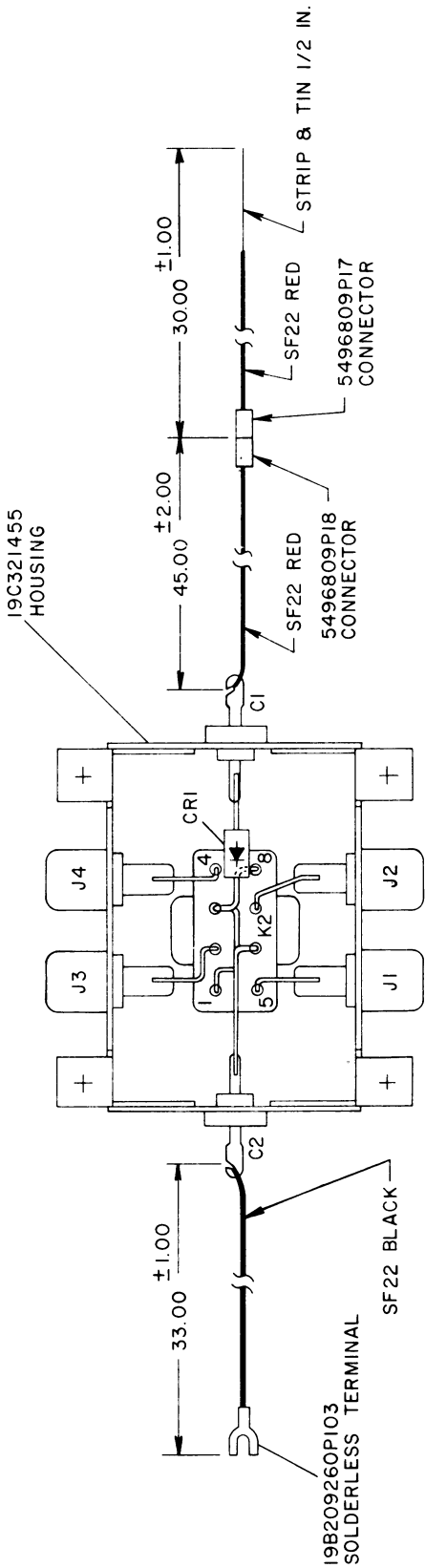


Figure 2 - RF Power Output Versus Time Continuous Duty

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WORLD HEADQUARTERS • LYNCHBURG, VIRGINIA 24502 USA

GENERAL  ELECTRIC



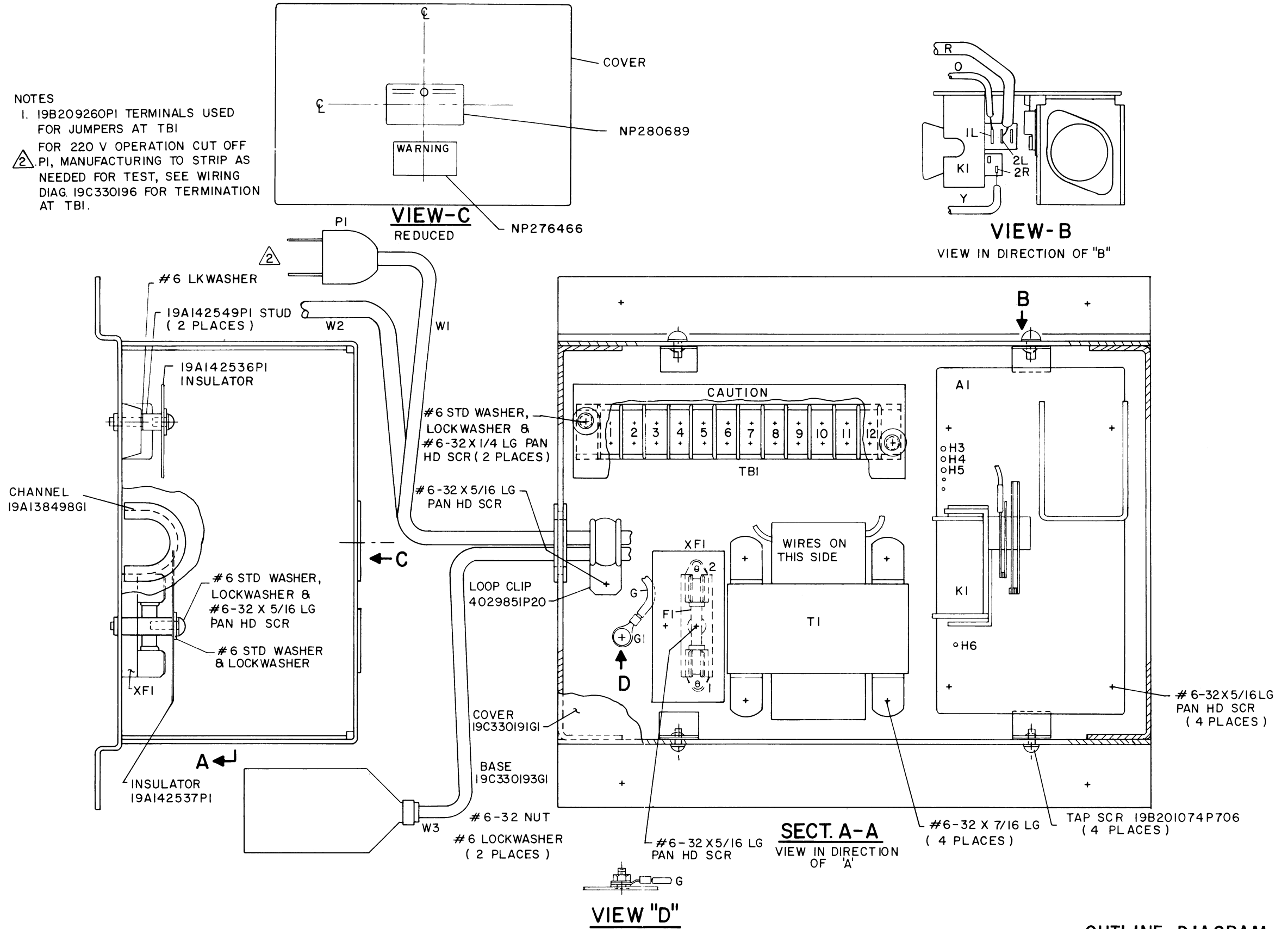
(19C321634, Rev. 0)

OUTLINE DIAGRAM

RF RELAY ASSEMBLY

NOTES

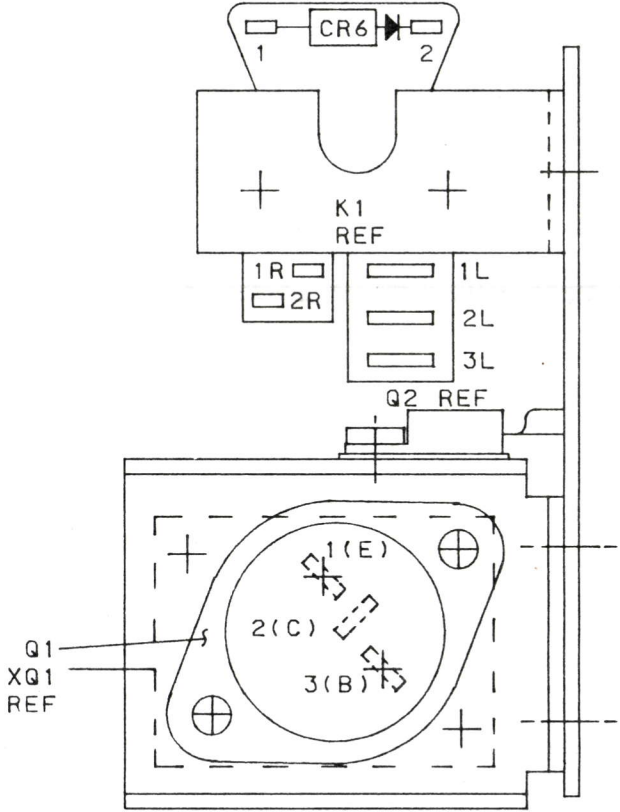
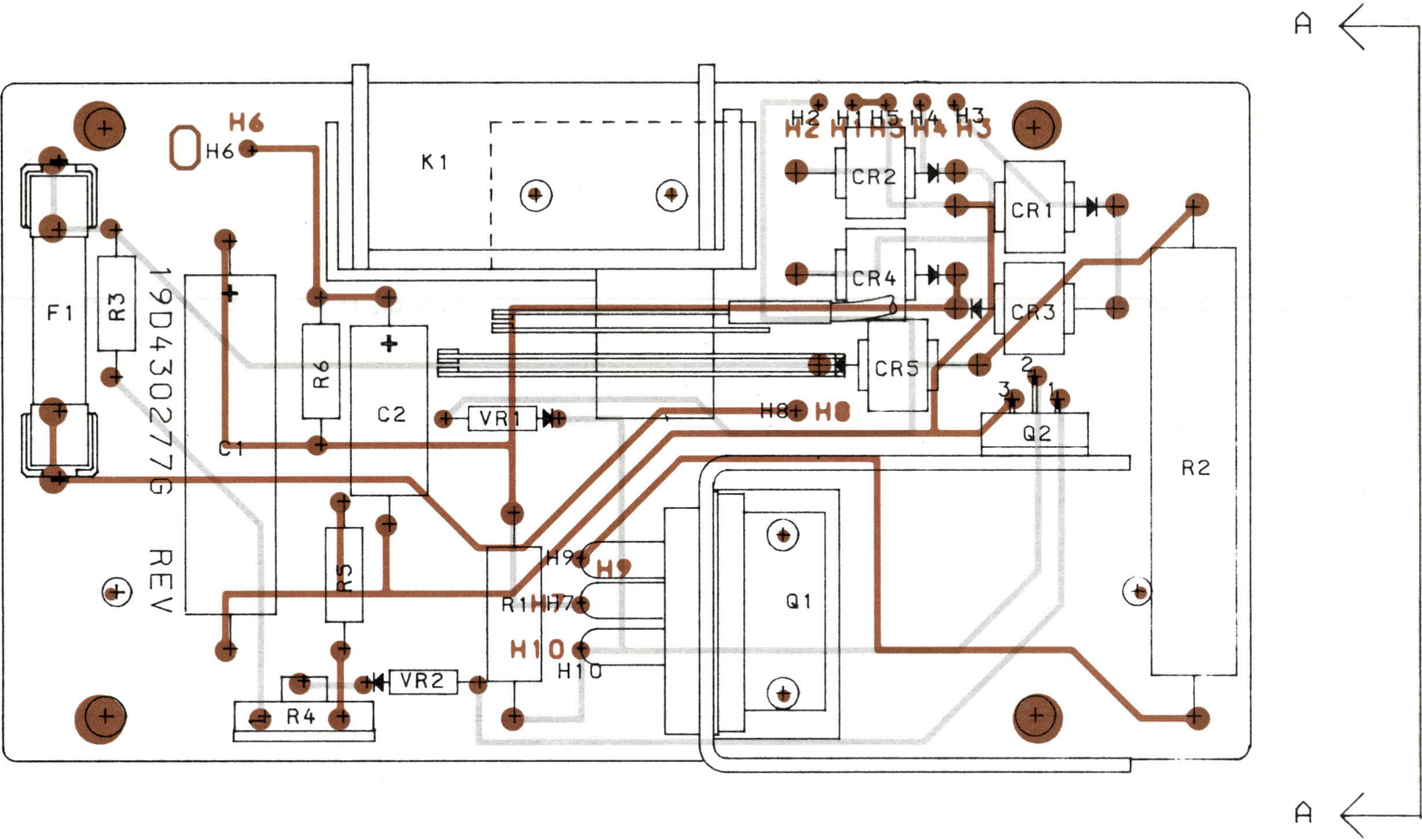
1. 19B209260PI TERMINALS USED FOR JUMPERS AT TBI
2. FOR 220 V OPERATION CUT OFF PI, MANUFACTURING TO STRIP AS NEEDED FOR TEST, SEE WIRING DIAG. 19C330196 FOR TERMINATION AT TBI.



OUTLINE DIAGRAM

BATTERY STANDBY/CHARGER 19C330203G1

Issue 1



VIEW IN DIRECTION
OF ARROW A-A

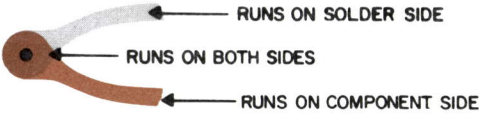
PARTIAL

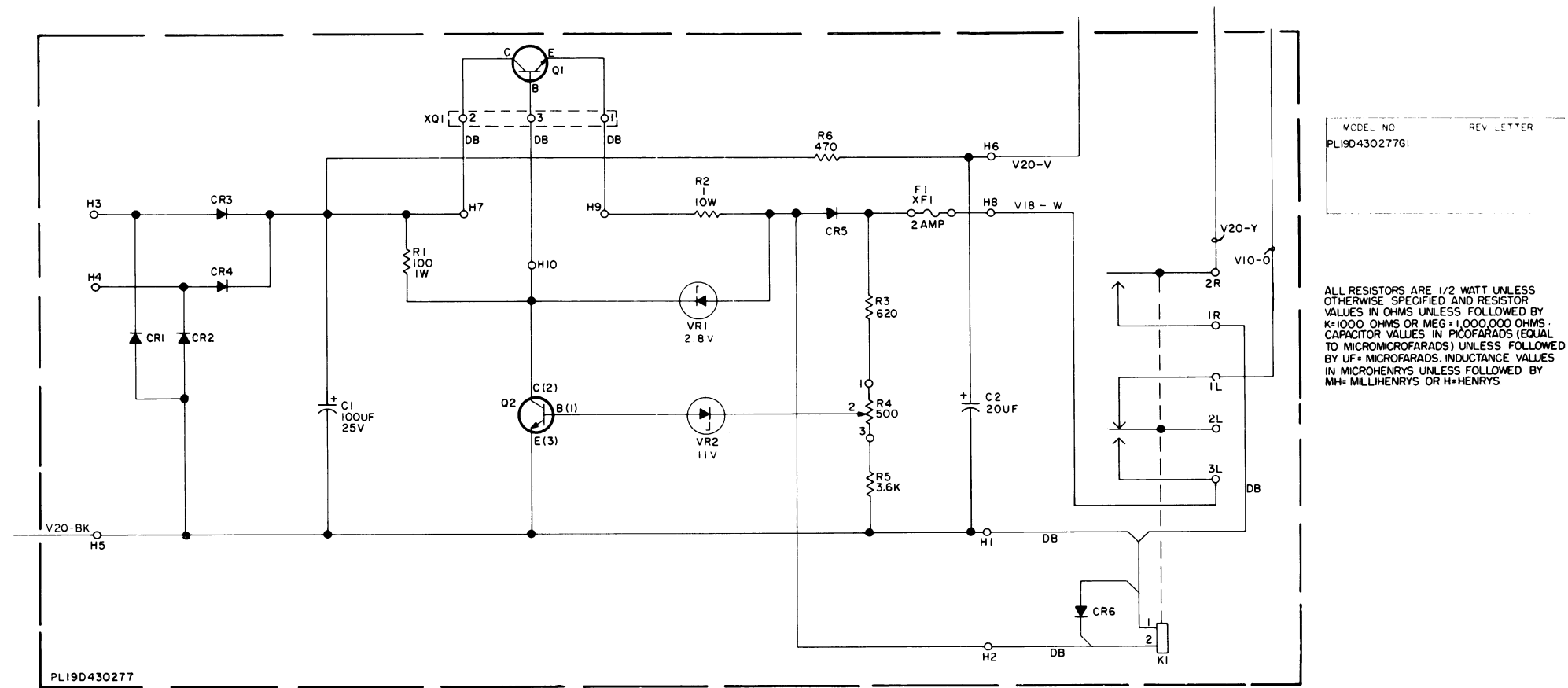
CONNECTION CHART					
FROM	TERMINATE 1ST END	TO	TERMINATE 2ND END	WIRE	LENGTH ±.05
K1-1		H1		DB	
K1-1		K1-1R		↑	
K1-2		H2			
XQ1-2		H7		↓	
XQ1-1		H9			
XQ1-3		H10		DB	
K1-3L	ITEM 15	H8	STRIP & TIN	V18-W	2.50 L6
H6	STRIP & TIN	LET HANG	ITEM 16	V20-V	4.00 L6
H5	STRIP & TIN	LET HANG	ITEM 14	V20-BK	20.00 L6
K1-1L	ITEM 17 & 18	LET HANG	ITEM 19	V10-O	10.00 L6
K1-2R	STRIP & TIN	LET HANG	STRIP & TIN	V20-Y	22.00 L6

(19D430279, Rev. 0)
(19A138355, Sh. 1, Rev. 0)
(19A138355, Sh. 2, Rev. 0)

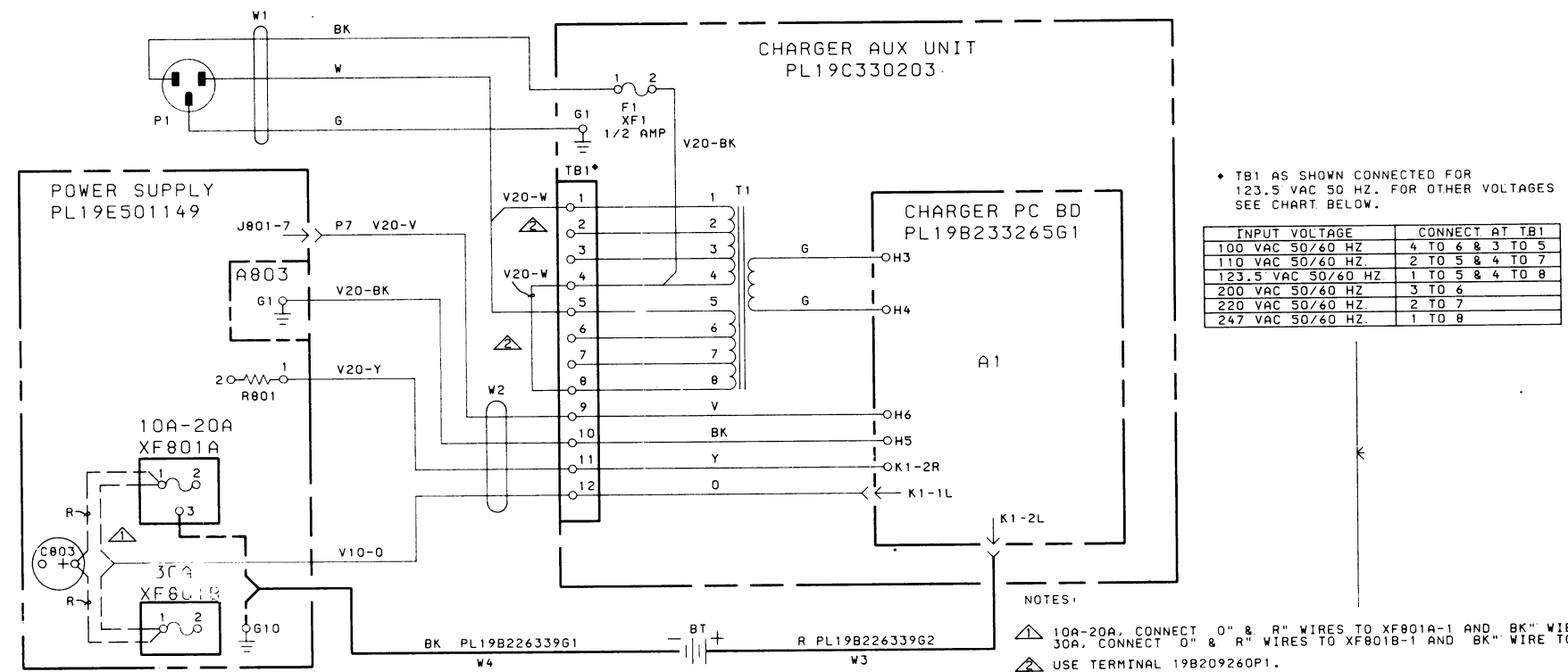
OUTLINE DIAGRAM

CHARGER BOARD A1 19D430277G1





(19D430280, Rev. 0)



SCHEMATIC DIAGRAM

BATTERY STANDBY/CHARGER 19C330203G1

Issue 1

7

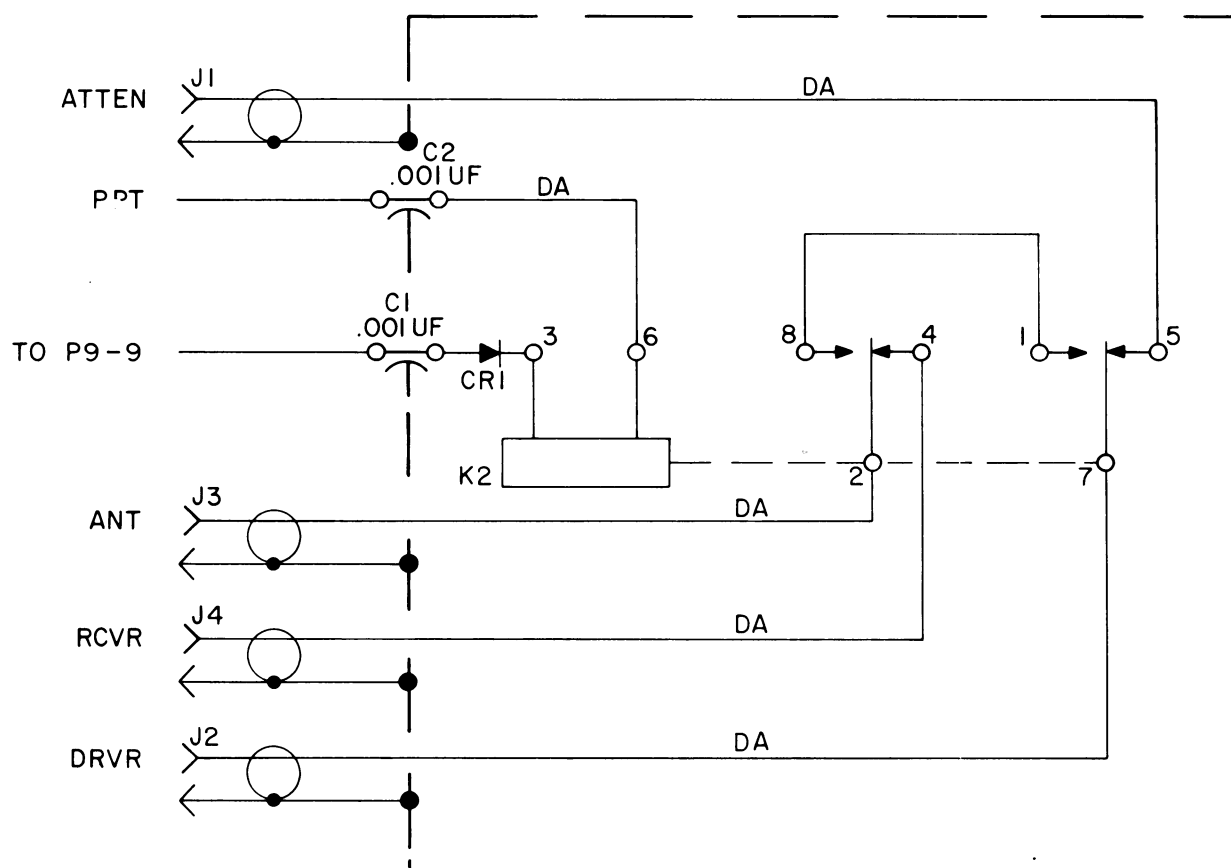
PARTS LIST

BATTERY STANDBY CHARGER
OPTIONS 9665 x 9666
19C330203G1
ISSUE 1

SYMBOL	GE PART NO.	DESCRIPTION
A1		COMPONENT BOARD 19B430277G1
		----- CAPACITORS -----
C1	19A115680P5	Electrolytic: 100 μ f +150% -10%, 25 VDCW; sim to Mallory Type TTX.
C2	19A115680P3	Electrolytic: 20 μ f +130% -10%, 25 VDCW; sim to Mallory Type TTX.
		----- DIODES AND RECTIFIERS -----
CR1 thru CR5	19A115783P1	Rectifier, silicon: 100 VDC blocking, 6 amps.
CR6	4037822P1	Silicon, 1000 mA, 400 PIV.
		----- FUSES -----
F1	1R16P5	Quick blowing: 2 amp at 250 v; sim to Littelfuse 312002 or Bussmann AGC-2.
		----- RELAYS -----
K1	19B209492P1	Relay, open: 80 ohms $\pm$ 10%, 12.6 VDC nominal, 1 form C, 1 form A, 15 amps at 28 VDC; sim to Magnecraft 22RX134A.
		----- TRANSISTORS -----
Q1	19A115753P1	Silicon, NPN; sim to Type 2N5302.
Q2	19A116118P1	Silicon, NPN.
		----- RESISTORS -----
R1	3R78P101J	Composition: 100 ohms $\pm$ 5%, 1 w.
R2	5493035P28	Wirewound: 1 ohms $\pm$ 10%, 10 w; sim to Hamilton Hall Type HH.
R3	3R77P621K	Composition: 620 ohms $\pm$ 10%, 1/2 w.
R4	19B209358P102	Variable, carbon film: approx 25 to 500 ohms $\pm$ 10%, 0.2 w; sim to CTS Type X-201.
R5	3R77P362K	Composition: 3.6K ohms $\pm$ 10%, 1/2 w.
R6	3R77P471J	Composition: 470 ohms $\pm$ 5%, 1/2 w.
		----- VOLTAGE REGULATORS -----
VR1	4036887P2	Zener: 500 mW, 2.8 v. nominal.
VR2	4036887P8	Zener: 500 mW, 11.0 v. nominal.
		----- SOCKETS -----
XF1	19A116688P1	Clip, electrical: sim to Littlefuse, Inc. 102068. (Quantity 2).
XQ1	5491888P1	Transistor, power, phen: sim to Cinch 133-92-10-034.
		----- FUSES -----
F1	7487942P3	Slow blowing: 1/2 amp at 250 v; sim to Bussmann MDL-1/2.
		----- TRANSFORMERS -----
T1	19B233263G1	Power, step-down: Input: 100/110/123.5/200/220/247 VRMS, 50/60 Hz, Output: 21.0 VDC $\pm$ 3% at 2.0 amps, 60 Hz.
		----- TERMINAL BOARDS -----
TB1	19C301087P10	Phen: 12 terminals; sim to GE CR151D.

SYMBOL	GE PART NO.	DESCRIPTION
		----- CABLES -----
W1	19A138496G1	Power: approx 6 feet long. (Includes 2 solderless terminals 19B209260P1).
		INTERCONNECT CABLE 19B233266G1
	19B209260P1	Terminal, solderless: sim to AMP 41472. (Located on violet, black, & yellow wires).
	7491824P9	Terminal, solderless: wire size No. 12-10. (Located on orange wire).
	7491823P9	Terminal, solderless: wire size No. 12-10. (Located on orange wire).
	19B203260P8	Terminal, solderless: sim to AMP 41582. (Located on black wire).
	19B209288P1	Connector: sim to Molex 02-09-1101. (Located on violet wire).
	19A115185P2	Retainer strap: sim to Thomas & Betts TY-525M.
W3		BATTERY CABLE (RED) 19B226339G2
	19A104024P1	Clamp, terminal post.
	4029484P3	Contact, electrical: sim to AMP 41450.
	19B201414P1	Terminal cover.
	19A115185P5	Retainer strap: sim to Panduit Corp. SST-1.
W4		BATTERY CABLE (BLACK) 19B226339G1
	19A104024P1	Clamp, terminal post.
	7491823P9	Terminal, solderless: wire size No. 12-10.
XF1	7141008P1	Fuseholder: 30 amps at 125 v; sim to Bussman 2863.
		----- MISCELLANEOUS -----
	19C330193G1	Base assembly.
	7483709P8	Nut, cinch: No. 6-32; sim to Penn CL-632-2. (Secures F1, T1, TB1 & W1-W3 cable clamp).
	4035656P1	Spacer, threaded. (Secures A1).
	4033902P2	Angle support. (Secures cover).
	19B200525P153	Rivet, tubular. (Secures cover supports).
	19C333191G1	Cover.
	4029851P20	Cable clamp. (W1-W3).
	19A138498G1	Channel, rubber. (Located in wall of battery charger at W1-W3).
	19B201074P706	Tap screw, Phillips POZIDRIVE: No. 6-32 x 3/8. (Secures cover).
	NP276466	Nameplate. (WARNING).
	19A142549P1	Stud. (Mounts TB1).
	19A142536P1	Insulator. (Located over TB1).
	N80P13004C6	Machine screw: No. 6-32 x 1/4. (Secures TB1).
	N80P13005C6	Machine screw: No. 6-32 x 5/16. (Secures W1-W3 cable clamp, XF1, & A1).
	N80P13007C6	Machine screw: No. 6-32 x 7/16. (Secures T1).
	N402P37C6	Washer, steel: No. 6. (Secures TB1).
	N404P13C6	Lockwasher, internal tooth: No. 6. (Secures TB1).
	19C320294P1	Support. (Q1 on A1).
	19A129799P1	Support. (K1 on A1).
	N130P1208C6	Tap screw: No. 6-20 x 1/2. (Secures Q1 on support).
	19A116022P1	Insulator, bushing. (Used with Q2 on A1).

SYMBOL	GE PART NO.	DESCRIPTION
	19A116023P1	Insulator, plate. (Used with Q2 on A1).
	4029974P1	Insulator, plate. (Used with Q1 on A1).
	7491823P2	Terminal, solderless: wire size No. 24-20. (Hung in wiring from H5).
	4029484P2	Contact, electrical: sim to AMP 41274. (Located at K1-3L).
	19B209260P1	Connector: sim to AMP 41472. (Located at H5, H6, K1-2R).
	4029484P3	Contact, electrical: sim to AMP 41450. (Located at K1-1L).
	7491823P9	Terminal, solderless: wire size No. 12-10. (Located at K1-1L).



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 PL19C321398G1 REV LETTER

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 PICO FARADS (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.

(19B226680, Rev. 1)

SCHEMATIC DIAGRAM

RELAY ASSEMBLY 19C321398G1

Issue 1

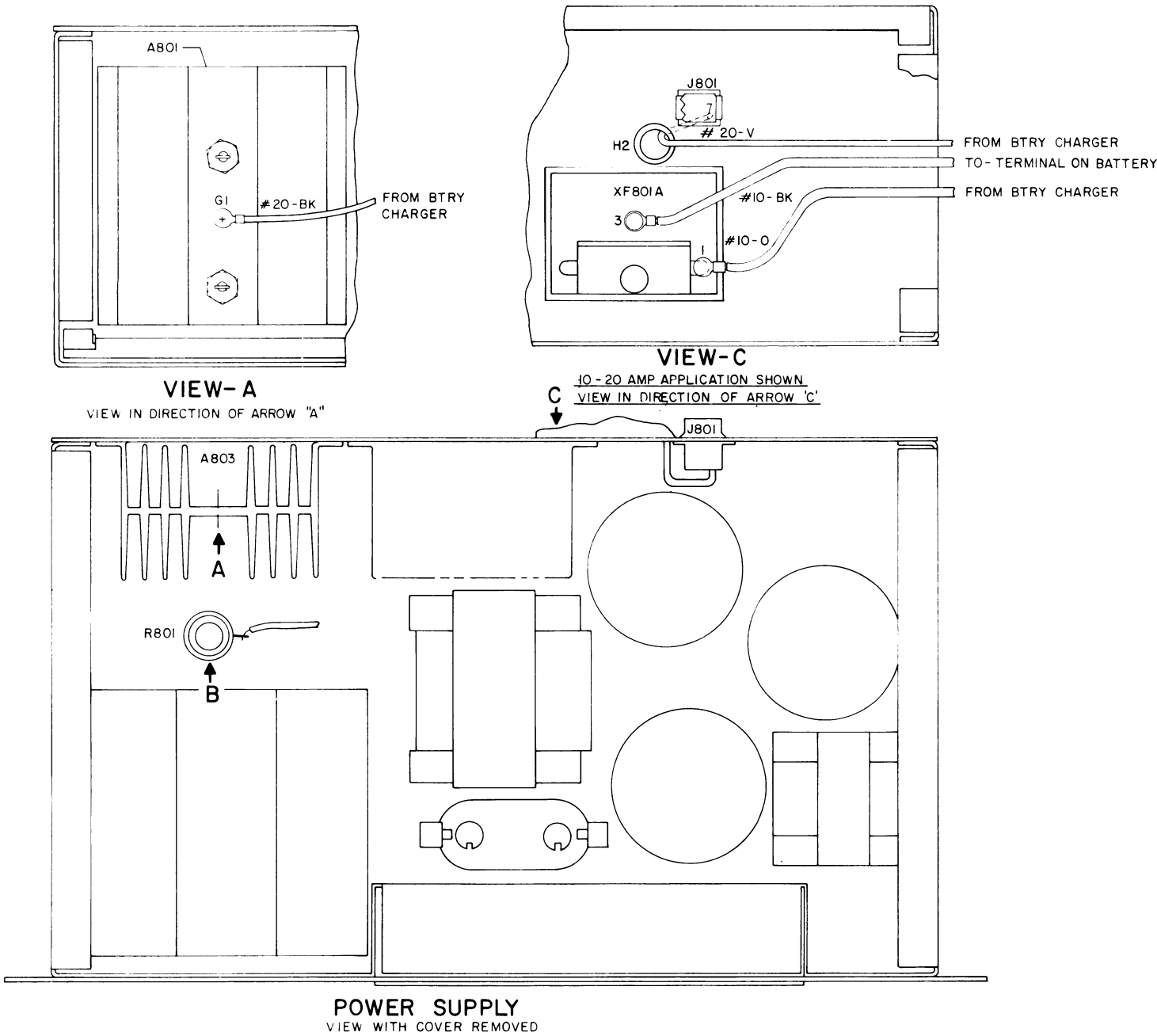
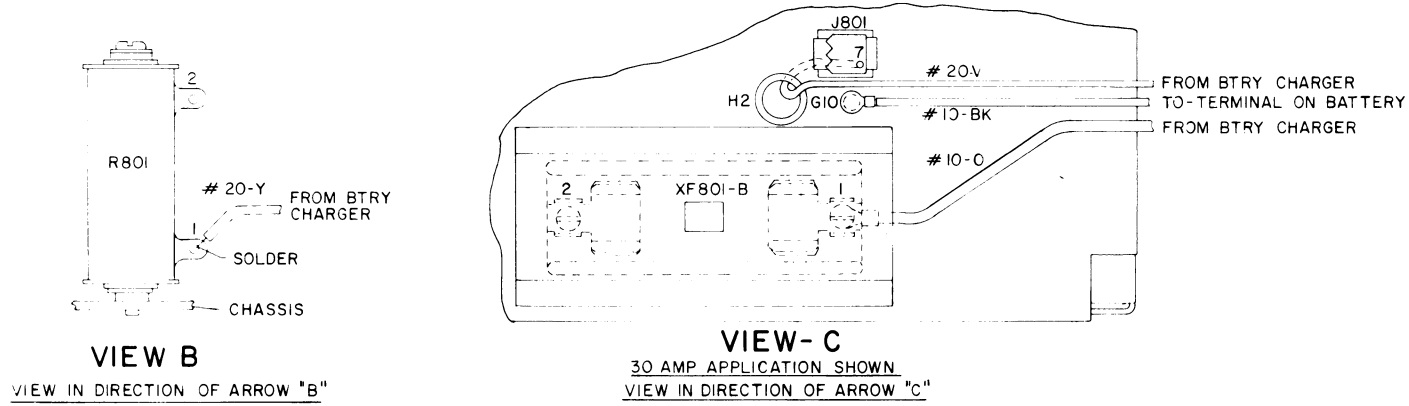
9

PARTS LIST

LBI4906B

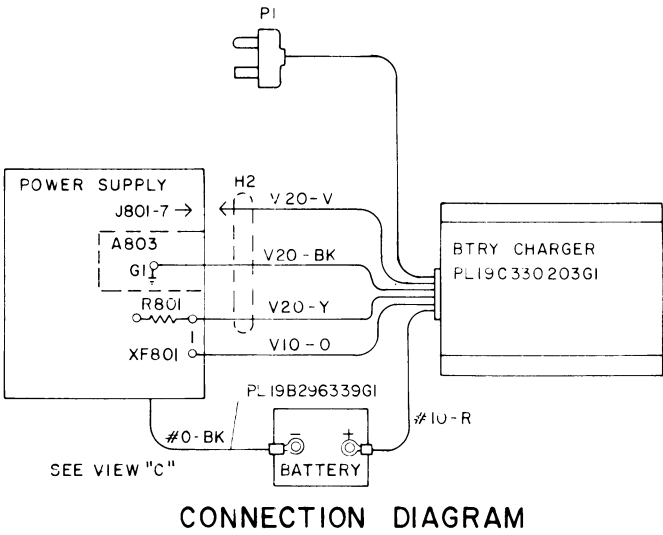
COAXIAL RELAY AND CABLE 19C321398G1
 RF CABLE 19A130449G1, G2
 RF CABLE 5491689P117

SYMBOL	GE PART NO.	DESCRIPTION
		RELAY ASSEMBLY 19C321398G1
		- - - - - DIODES AND RECTIFIERS - - - - -
CR1	4037822P2	Silicon, 1000 mA, 600 PIV.
		- - - - - RELAYS - - - - -
K2	19B209558P1	Hermetic sealed: 180-330 ohms coil res, 2 form C contacts, 8.0-16.3 VDC; sim to GE 35AV1760A2.
		- - - - - MISCELLANEOUS - - - - -
	7118719P2	Clip, spring tension. (Used with K2).
	19B209260P103	Spade terminal.
	5496809P17	Connector, electrical: female, wire size No. 18-28 AWG; sim to Molex Products 1381-T.
	5496809P18	Connector, electrical: male, wire size No. 18-28 AWG; sim to Molex Products 1380-T.
		RF CABLE ASSEMBLY 19A130449G1
	19A116979P1	Plug, coaxial: sim to Amphenol 83-822.
	7105381P2	Adapter: sim to UG-176/U.
	5491689P116	RF cable: approx 43 inches long.
		RF CABLE ASSEMBLY 19A130449G2
	19B209018P5	Receptacle: sim to Automatic Metal Products Corp. 100-N1000A or UG-536B/U.
	5491689P116	RF cable: approx 43 inches long.
		RF CABLE 5491689P117



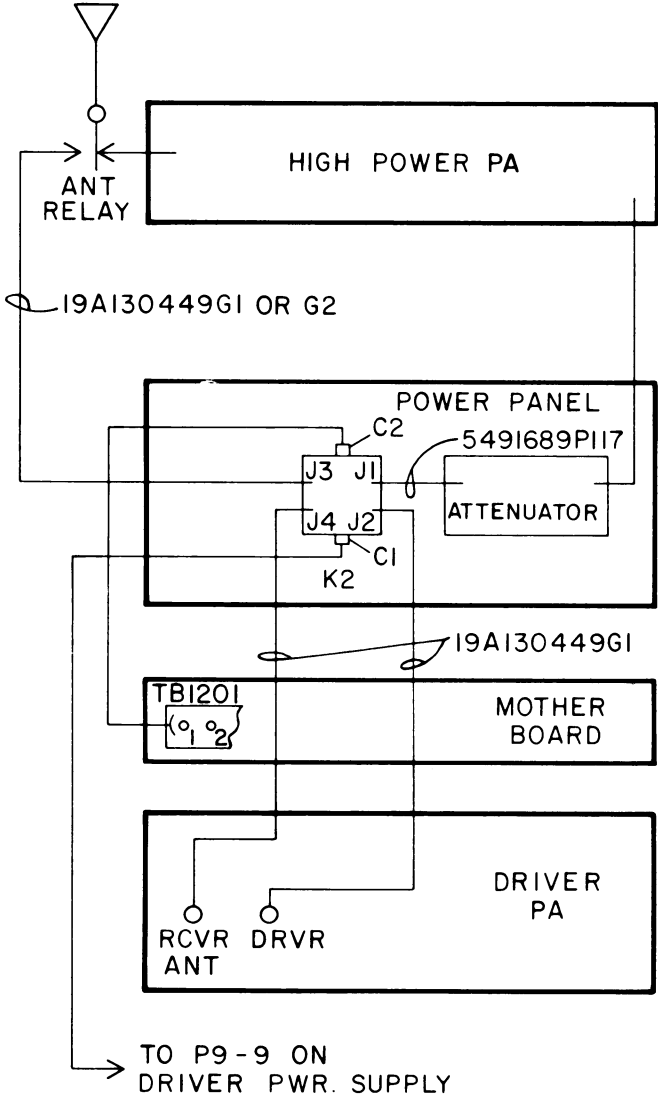
THESE INSTRUCTIONS COVER THE INSTALLATION OF THE BATTERY CHARGER PL19C330203G1 TO THE POWER SUPPLY PL19E501149. THE FOLLOWING MATERIAL IS SUPPLIED:
BATTERY CHARGER PL19C330203G1, QTY 1
MOUNTING SCREWS PL19A134011P1, QTY 4
CABLE (BLACK) PL19B226339G1, QTY 1

- INSTRUCTIONS:
1. IT IS DESIRABLE TO MOUNT THE BTRY CHARGER AS NEAR AS POSSIBLE TO THE POWER SUPPLY & BATTERY. FOUR MOUNTING SCREWS SUPPLIED MAY BE USED TO SECURE CHARGER IF DESIRED.
 2. CONNECT 10 RED CABLE TO "+" SIDE OF BATTERY.
 3. CONNECT ORANGE WIRE TO XF801A-1 OR XF801B-1 IN ACCORDANCE WITH VIEW "C" APPLICATION.
 4. INSERT YELLOW WIRE THRU HOLE (H2) AND CONNECT TO R801-1 (SEE VIEW "B").
 5. INSERT 20 BLACK WIRE THRU HOLE (H2) AND CONNECT TO A803-G1. (SEE VIEW "A")
 6. INSERT 20 VIOLET WIRE THRU HOLE (H2) AND PLUG TERMINAL INTO J801-7. (SEE VIEW "C")
 7. CONNECT 10 BLACK WIRE TO XF801A-3 OR G10 ON POWER SUPPLY (SEE VIEW "C") AND OTHER END TO "-" TERMINAL ON BATTERY.
 8. PLUG IN P1 ON POWER CABLE TO 121 V OUTLET.
 9. FOR 220 V OPERATION, CUT OFF P1 AND TERMINATE TO OPERATE WITH POWER SOURCE.



INSTALLATION INSTRUCTIONS

BATTERY STANDBY/CHARGER
19C330203G1 (OPTION 9665)



THESE INSTRUCTIONS COVER THE INSTALLATION OF THE BATTERY
STANDBY/CHARGER OPTION (NO. 9666) FOR THE MASTR II HIGH
POWER BASE STATION.

1. INSTALL THE BATTERY STANDBY/CHARGER OPTION (NO. 9665) PER
INSTALLATION INSTRUCTION 19D430322
2. DISCONNECT ALL rf CABLES FROM THE BACK OF THE RADIO EXCEPT THE
CABLE FROM THE HIGH POWER PA TO THE ATTENUATOR.
3. MOUNT THE rf RELAY ASM. K2 (19C321398) ON THE POWER PANEL, USING THE
HARDWARE PROVIDED.
4. CONNECT THE SF22 BK WIRE FROM C2 TO TB1201-1 ON THE MOTHER BOARD.
5. INSERT CONTACT ON END OF SF-22 R WIRE FROM C1 INTO P9-9 ON THE DRIVER
POWER SUPPLY CHASSIS.
6. INSERT CONTACT ON 30 INCH LENGTH OF SF22 R WIRE INTO J801-9 ON THE
DRIVER POWER SUPPLY CHASSIS AND CONNECT OTHER END TO R801-1.
7. CONNECT THE 8" rf CABLE (5491689P117) BETWEEN J1 ON THE rf
RELAY AND THE ATTENUATOR PAD (IN-LINE CONNECTOR ON UHF UNITS).
8. CONNECT THE 19A130449G1 CABLES AS FOLLOWS:
A. J2 ON rf RELAY TO DRIVER rf OUTPUT.
B. J4 ON rf RELAY TO RECEIVER ANTENNA CONNECTOR.
C. J3 ON rf RELAY TO ANTENNA SWITCHING RELAY ON THE
HIGH POWER PA. (ON UHF BAND, THIS CABLE IS 19A130449G2).
WHEN TWO ANTENNAS ARE USED OMIT B ABOVE AND CONNECT RCVR ANTENNA
DIRECTLY TO RCVR ANTENNA CONNECTOR.

(19B226736, Rev. 3)

INSTALLATION INSTRUCTIONS

BATTERY STANDBY/CHARGER
HIGH POWER COMBINATION (OPTION 9666)