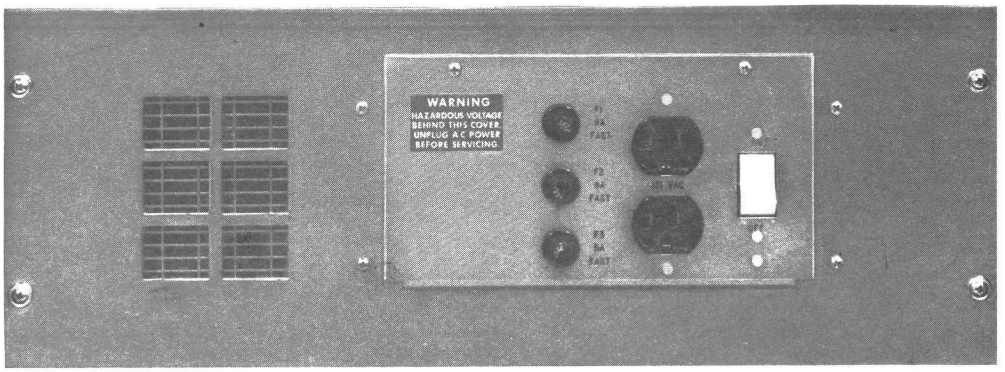
MOBILE RADIO

MASTR II MAINTENANCE MANUAL

BASE STATION 60 Hz POWER SUPPLY (OPTIONS 9647 THRU 9650)

Maintenance Manual LBI 4806 F

DATAFILE FOLDER - DF0072
DATAFILE FOLDER - DF0076 IMTS



BASE STATION 60 Hz POWER SUPPLY

SPECIFICATIONS *

OUTPUT VOLTAGE	TO P.A.	TO SYSTEM
30 Amp Model	12.3 VDC @ 27 Amperes	12.3 VDC @ 3 Amperes
18 Amp Model	12.2 VDC @ 15 Amperes	12.2 VDC @ 3 Amperes
INPUT VOLTAGE	121/242 VAC, 60 Hertz only	
LOAD DUTY CYCLE	Continuous @ ±10% Line Operable @ ±20% Line	
Dimensions (HxWxD)	7 1/4" x 19" x 10 1/2"	
Weight	65 lbs.	

*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

OPTION	DESCRIPTION
9647	Deletes the 18 amp 60 Hz supply 19E501149G2. Adds the 18 amp 60 Hz supply with Hum Suppression 19E501149G5.
9648	Deletes the 30 amp 60 Hz supply 19E501149G1. Adds the 30 amp 60 Hz supply with Hum Suppression 19E501149G4.
9649	Deletes the 18 amp 60 Hz supply with Hum Suppression 19E501149G5. Adds the 18 amp 60 Hz supply 19E501149G2.
9650	Deletes the 30 amp 60 Hz supply with Hum Suppression 19E501149G4. Adds the 30 amp 60 Hz supply 19E501149G1.

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.

High-level RF energy in the transmitter Power Amplifier assembly can cause RF burns. KEEP AWAY FROM THESE CIRCUITS WHEN THE TRANSMITTER IS ENERGIZED!

DESCRIPTION

General Electric MASTR®II Station 60 Hertz Power Supplies are provided in 18 Ampere or 30 Ampere chassis models for 60 Hz, 121 VAC operation. If a 242 VAC, 60 Hz source is to be used for the station, jumper connections located on the back of the front panel of the supply must be changed. The 30 Ampere model is designed for stations with 81-128 Watts RF power output. The 18 Ampere model is designed for stations with 16-66 Watts RF power output. Refer to the following chart.

CHASSIS (60 Hz)	POWER SUPPLY MODEL
18 Amperes	19E501149G2
30 Amperes	19E501149G1

The input voltage is stepped down to 12 Volts by a ferroresonant transformer which provides line regulation of ±2% for a ±20% primary change. A power switch, primary and secondary fuses and two AC outlets are located on the power supply front panel. A high-current fuse for the PA supply is located on the rear panel of the power supply chassis. The rear panel hinges to provide access to the power supply components for in-rack servicing.

CIRCUIT ANALYSIS

When the power supply ON-OFF switch S1 is in the ON position, 121 VAC is connected across the primary of power transformer T802 (on the 18 Ampere chassis) or T803 (on the 30 Ampere chassis). The power transformer is a ferroresonant type which has inherent good line regulation so that no additional high-current regulators are required (refer to Figure 1). C801 (on the 30 Ampere chassis) or C805 (on the 18 Ampere chassis) serves as a resonating capacitor across the secondary taps of the transformer. Optional supplies are available for operation from a 50 Hz source. Option 9500 provides a supply with an 18 Ampere chassis for 50 Hz operation and Option 9501 provides a supply with a 30 Ampere chassis for 50 Hz operation.

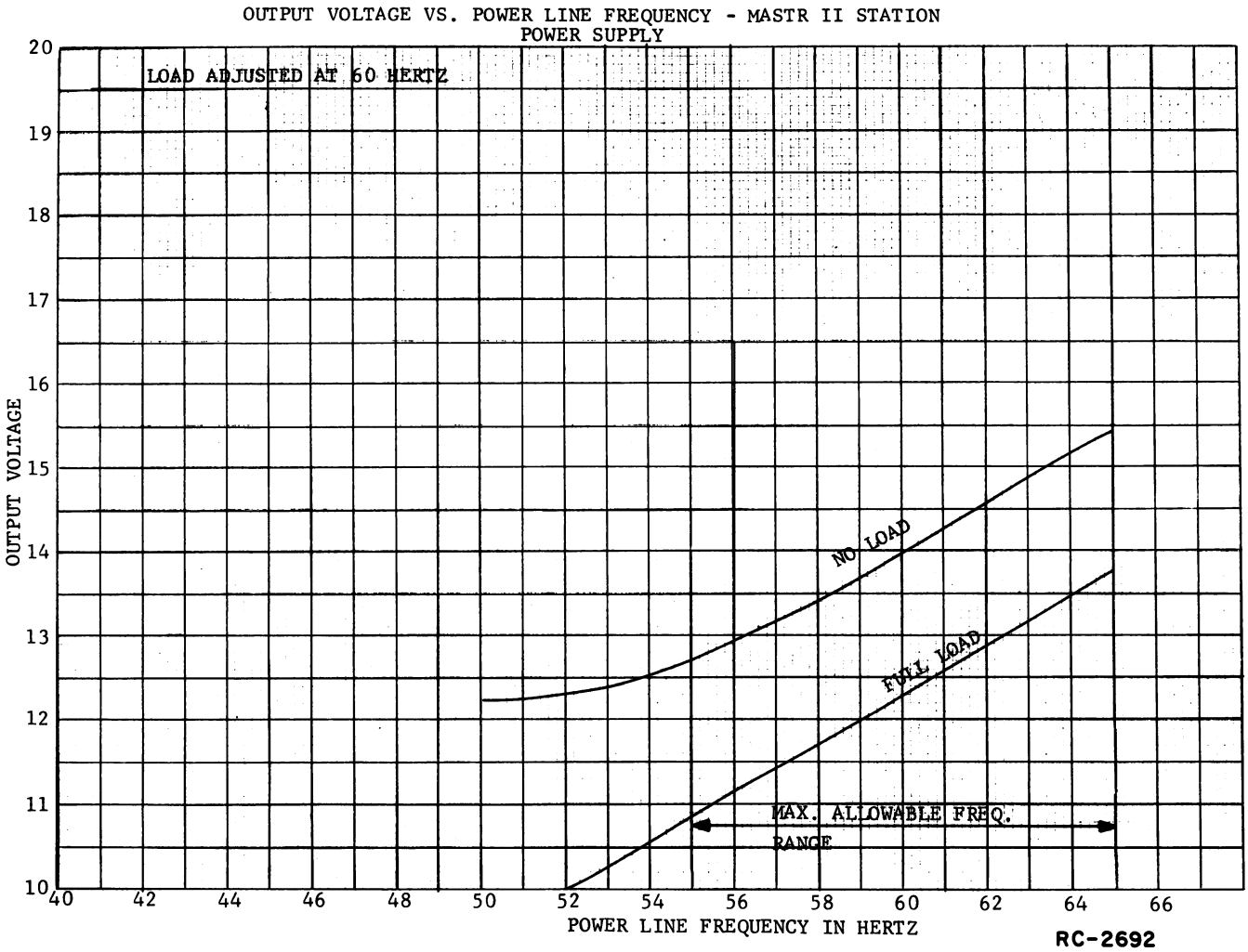


Figure 1 - Power Supply Line Regulation

The transformer steps the input voltage down to 12 Volts and this lower voltage is applied to the bridge rectifier composed of CR1, CR2 (mounted on heat sink A803) and CR801 and CR802. Connector P801 in the bridge circuit mates with the battery standby option connector P1. This option (Option 9502) mounts on the power supply rear panel.

The rectified output of the bridge is fed to the low and high current filters (see Figure 2). The high current filter consists of C802, C803 and L801 (on the 30 Ampere chassis) or L803 (on the 18 Ampere chassis). R801 serves as a bleeder for the high current supply, and the output of the filter is applied through the high current fuse (F801) to the station transmitter power amplifier. Output connections are made to terminals 2 and 3 of the high-current fuse block. The high current output is rated at 12.3 Volts, 27 Amperes.

The low current filter is composed of C802, L802 and C804. The low current supply is rated at 12 Volts, 3 Amperes and supplies the station transmitter exciter and receiver circuits. The output of the low current supply is fused by F3, located on front panel A801. External connections are made at J801. Diode CR803 helps to suppress high voltage transients in the high current supply.

The Relay Control Board uses L801/L803 as a current sensing device, with pins 1 and 4 of J2 connected across L801/L803. When the power supply load current is less than 5 amps, Q2 is biased on. With Q2 saturated Q3 is biased off, and cannot supply base current to turn on Q4. With Q4 off, no energizing current is supplied to K801 and the resonating capacitor C801/C805 is out of the circuit. This is the condition for quiet operation of the supply.

When the power supply load current is 5 amps or more, the increased voltage drop across L801/L803 is in the proper direction to turn Q2 off. Now Q3 is biased on through R4, and Q4 is biased on through Q3 and R6. With Q4 turned on K801 is energized. The capacitor C801/C805 is placed across the #9 and #10 winding of the transformer T802/T803.

At the instant Q3 turns off C2 and C6 are in a discharged condition. While they are charging up they furnish base current to keep Q4 turned on, and K801 energized, for a few seconds. This delay prevents excessive keying of the relay during fast transmit-receive exchanges.

The bridge rectifier, CR1 through CR4, is connected across the resonating capacitor C801/C805, and delivers a full wave unfiltered voltage to the divider R14 and R13. This voltage is delivered to the base of Q4 through C1 and does not allow Q4 to turn off until C801/C805 has maximum voltage across it. This action prevents the relay from opening with high current through C801/C805 and minimizes burning of the contacts.

The circuit comprised of VR3, Q5 and Q6 is for over-voltage protection and is normally inactive. It will be activated only if the power supply output voltage

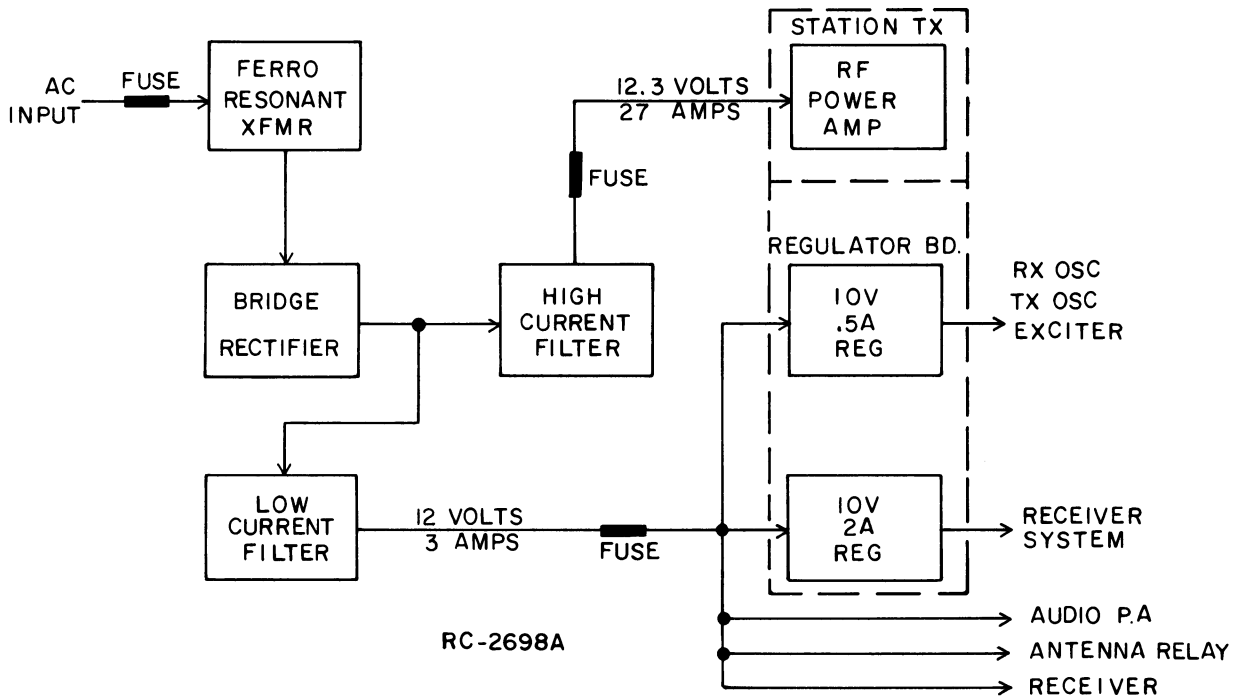


Figure 2 - Power Distribution

exceeds about 18 V. This could happen with excessive input voltage or lightning surges. When the voltage at the emitter of Q4 causes VR3 to conduct the resulting voltage at the junction of R8 and R10 will turn on Q6. The current through Q6 will turn on Q5 and Q5 will turn on Q4, thereby energizing K801. Once the circuit is activated C801/C805 will be locked into the resonating circuit and will remain in this condition until the input voltage to the supply is turned off and then on again. During this period all functions of the radio will be normal, but the power supply hum will be audible.

Zener VR1 provides stable base voltage for Q2, and Q1 provides temperature compensation for the emitter-base junction of Q2. The trip point of the circuit is adjusted by R1.

The relay trip point is normally adjusted at the factory, but if R1 becomes misadjusted it can be adequately set in the field as follows:

ADJUSTMENT

Adjust R1 all the way CCW. Unsquelch the receiver and set the volume control for maximum volume. Adjust R1 CW until the relay is energized (listen for a click or a change in power supply hum). Adjust R1 CCW until the relay just drops out. Turn the volume down.

POWER SUPPLY MODIFICATIONS

The power supply is modified as described below for use with a 242 VAC power source. Refer to Figure 3 for location of the following changes.

1. Remove P802 from power cable W801 and replace with the porper plug to mate with the 242 VAC receptacle.
2. Remove V16-R wire connected between A801-J1-3 and A801-S1-2.
3. Remove jumper (E2) between A801-TB1-1 and A801-TB1-2.
4. Remove jumper (E1) between A801-TB1-3 and A801-TB1-4.
5. Add jumpers (E1 & E2) between A801-TB1-2 and A801-TB1-3.

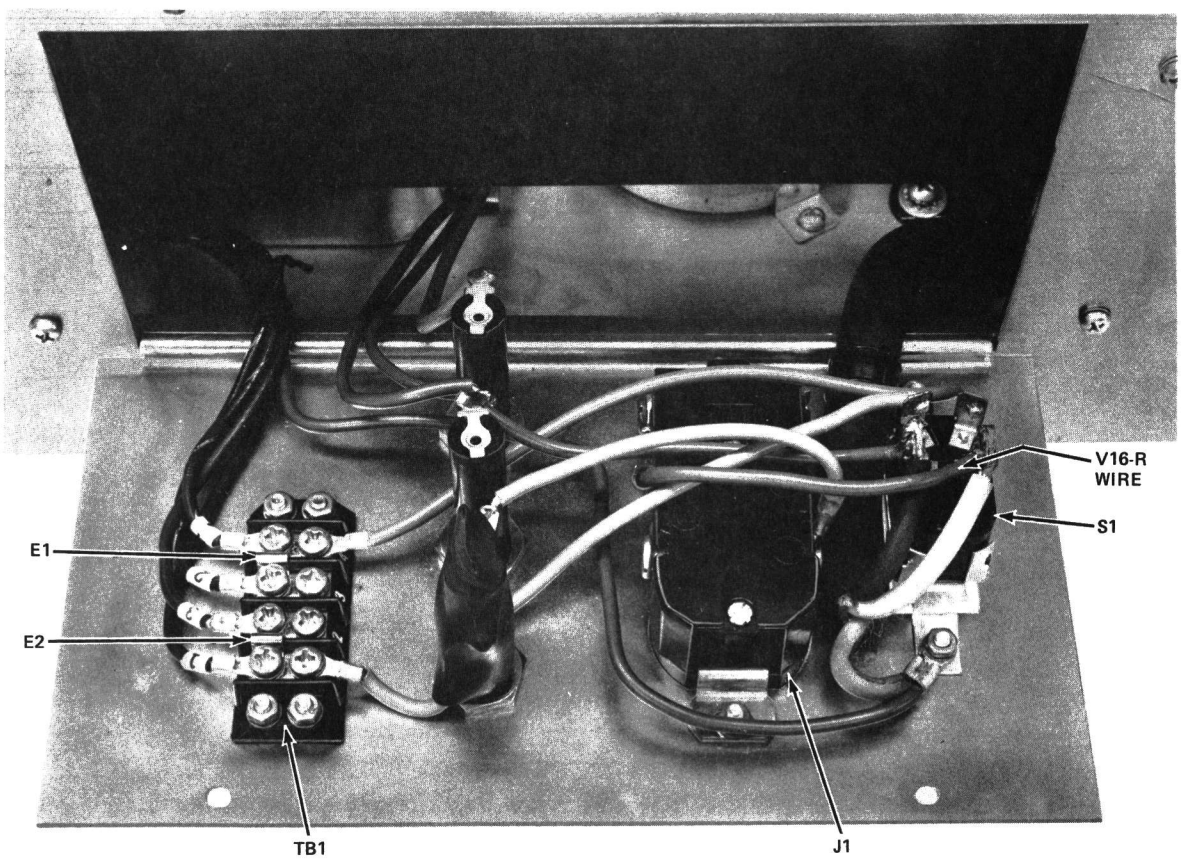
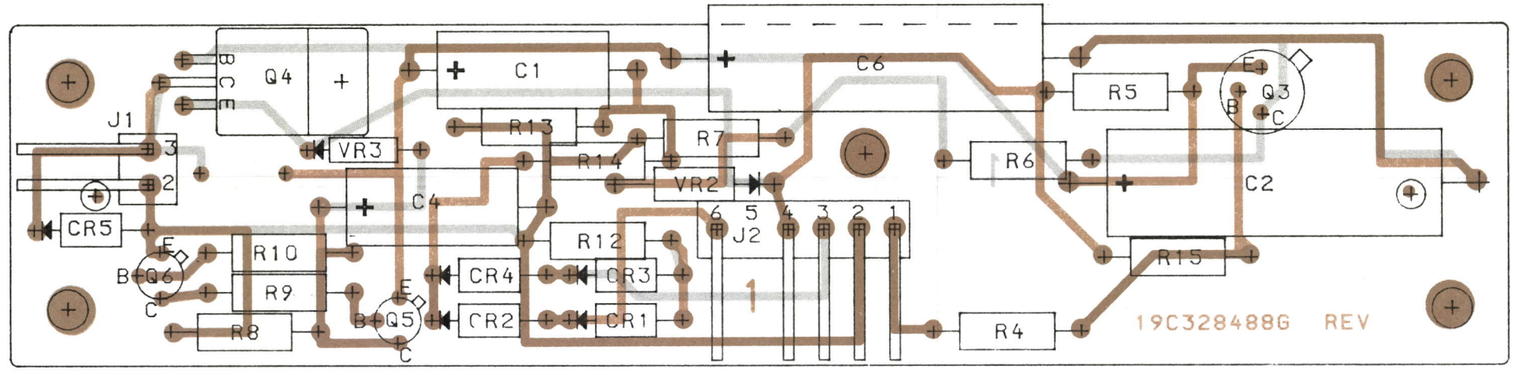


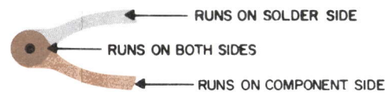
Figure 3 - Power Supply Front Panel A801 (Hinged Down)

TROUBLESHOOTING PROCEDURE

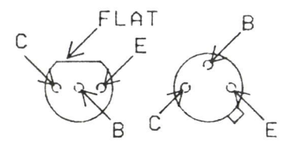
SYMPTON	PROCEDURE
No output voltage at J801-1 and J801-5	Check the following: A1. 121 VAC on TB1-1 and TB1-4. A2. Open F1 or F3. A3. Open T802 (T803), S1, CR1, CR2, CR801, CR802, or L802. A4. Shorted T802 (T803), C801, C802 or C804.
No output voltage at F801-2 & 3.	Check the following: B1. Open F1, F801, L801 (L803). B2. Shorted C802, C803.
Either output greater than 15.5 Volts.	Check the following: C1. Open C801, C805, R801. C2. Line Frequency.



(19C328490, Rev. 1)
(19B232763, Sh. 1, Rev. 1)
(19B232763, Sh. 2, Rev. 1)



LEAD IDENTIFICATION
FOR Q1-Q6



OR

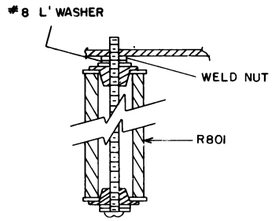
IN-LINE TRIANGULAR

TOP VIEW

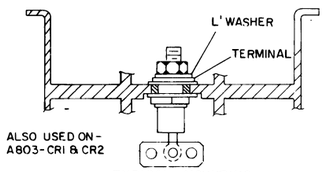
NOTE: LEAD ARRANGEMENT, AND NOT CASE SHAPE, IS DETERMINING FACTOR FOR LEAD IDENTIFICATION.

OUTLINE DIAGRAM

RELAY CONTROL BOARD
19C328488G1

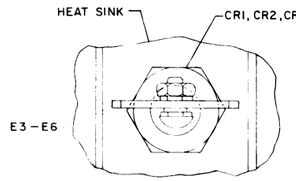


TYPICAL MOUNTING FOR R801

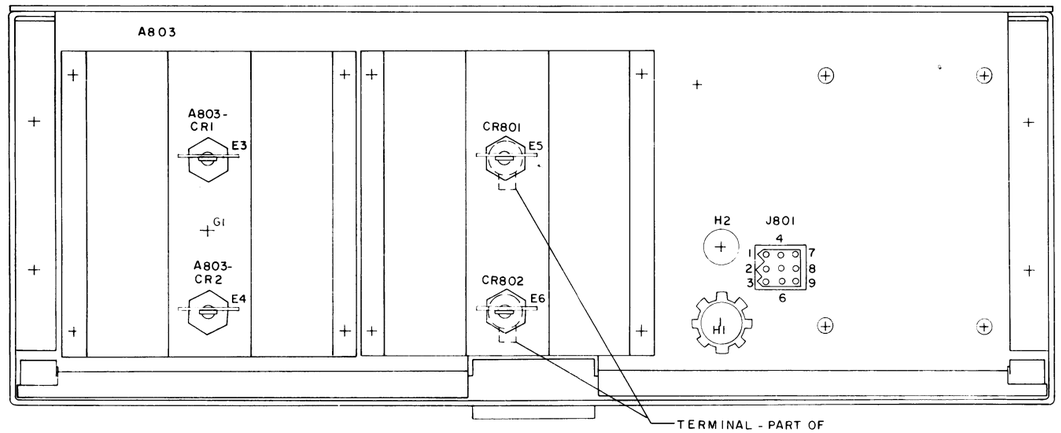


TYPICAL MOUNTING
FOR CR801 & CR802

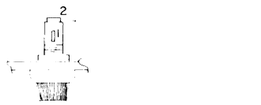
K



VIEW "K"
ENLARGED

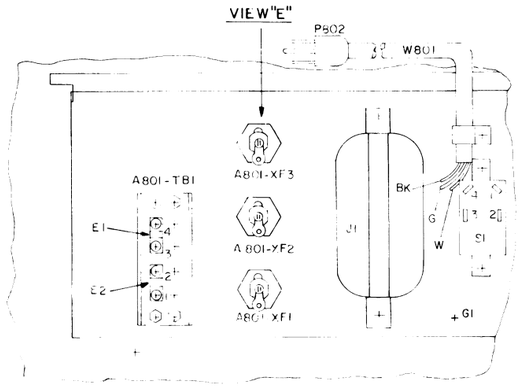


"VIEW A"

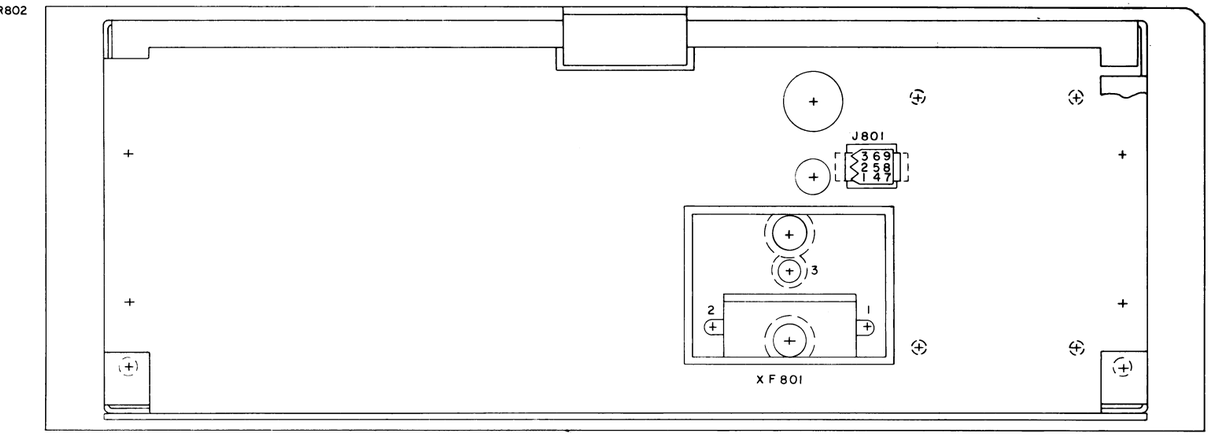


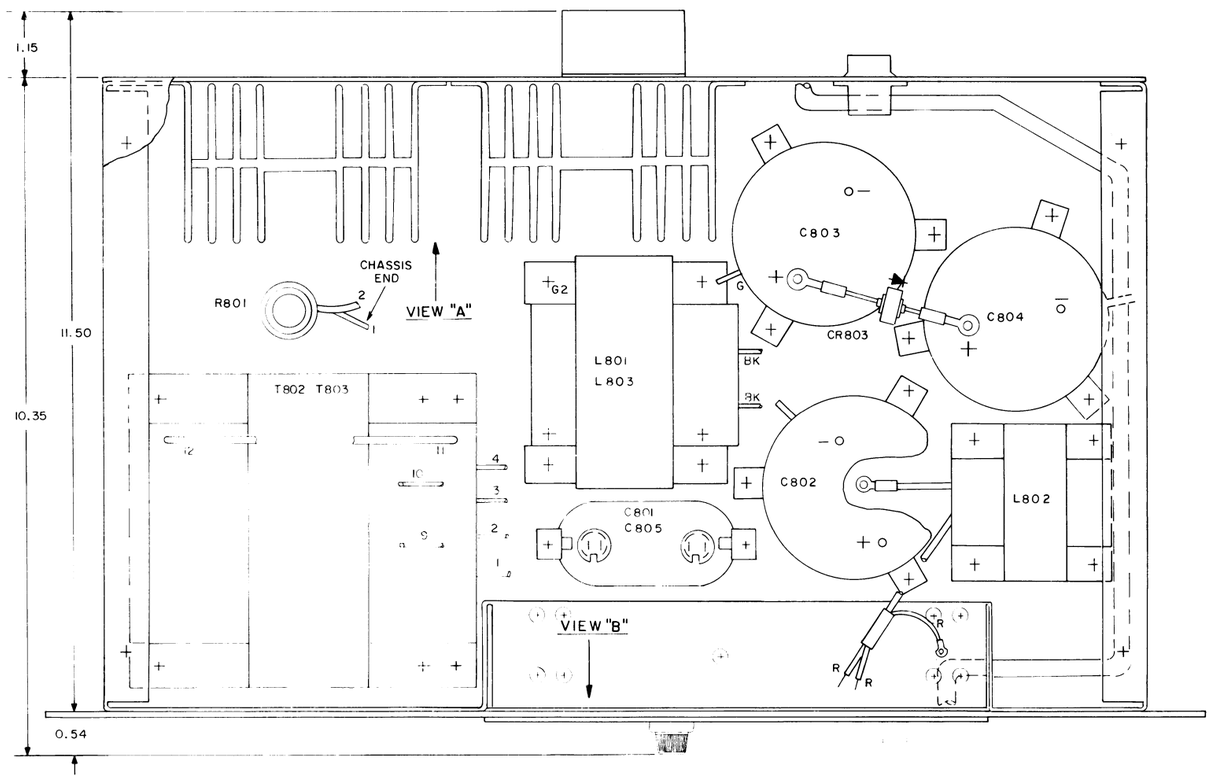
TERMINAL IDENTIFICATION
FOR A801 XF3, A801-XF2 & A801-XF1

VIEW "E"



VIEW "B"

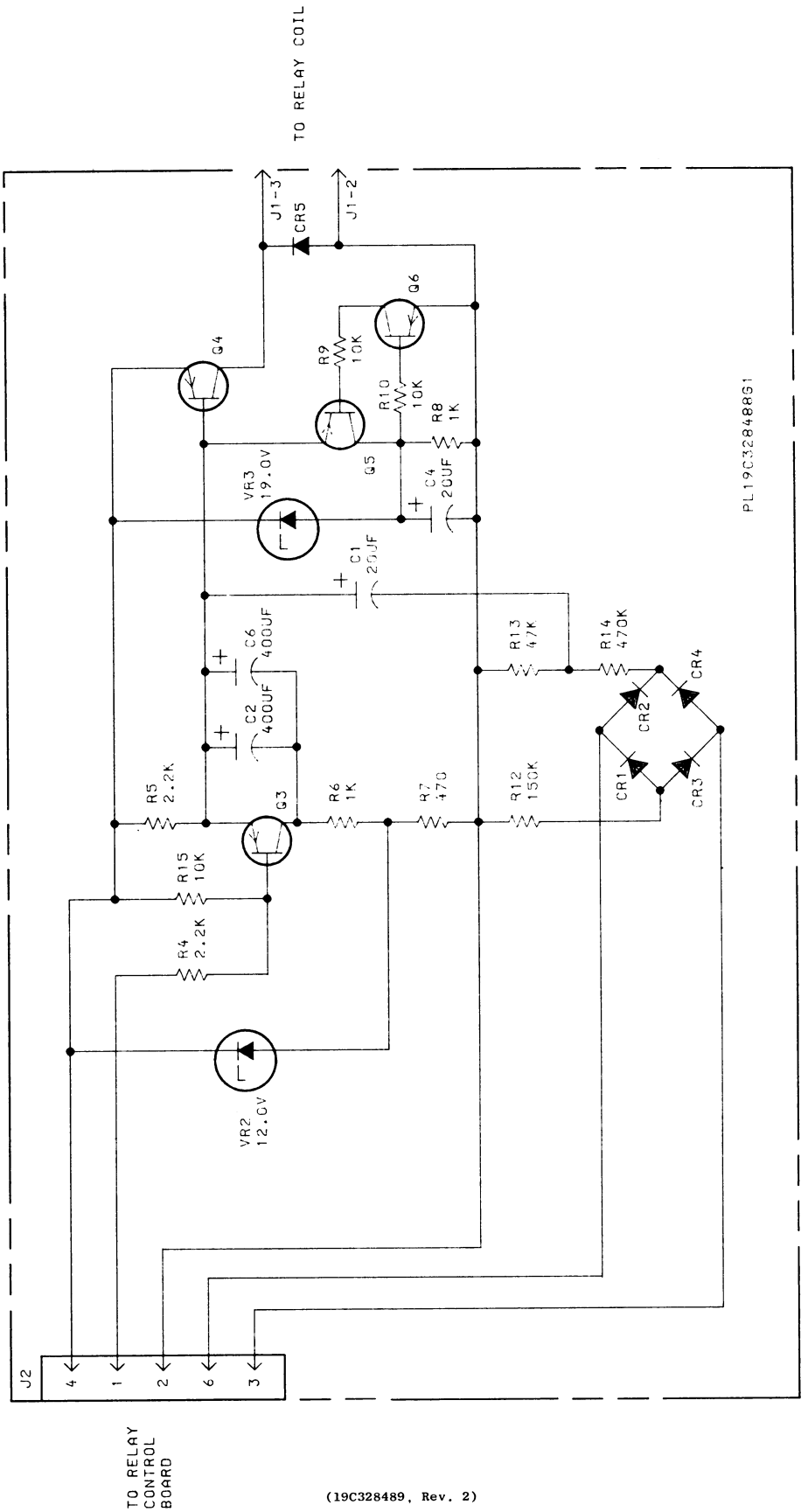




(19R622162, Rev. 4)

OUTLINE DIAGRAM

BASE STATION 60 Hz POWER SUPPLY
19E501149G1, 2, 4 and 5



(19C328489, Rev. 2)

SCHEMATIC DIAGRAM

RELAY CONTROL BOARD 19C328488G1

PARTS LIST

RELAY CONTROL BOARD A804
19C328488G1
ISSUE 2

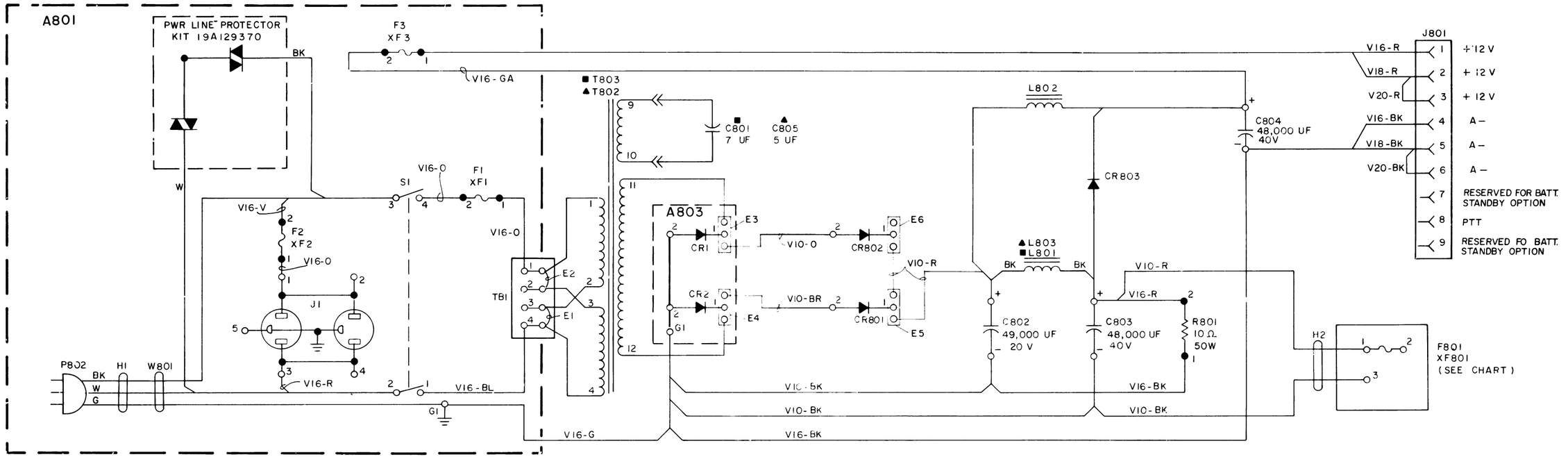
SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - CAPACITORS - - - - - - - - -
C1	19A115680P3	Electrolytic: 20 µf +150% -10%, 25 VDCW; sim to Mallory Type TTX.
C2	19A115680P24	Electrolytic: 400 µf +150% -10%, 18 VDCW; sim to Mallory Type TTX.
C4	19A115680P3	Electrolytic: 20 µf +150% -10%, 25 VDCW; sim to Mallory Type TTX.
C6	19A115680P24	Electrolytic: 400 µf +150% -10%, 18 VDCW; sim to Mallory Type TTX.
		- - - - - - - - DIODES AND RECTIFIERS - - - - - -
CR1 thru CR4	4037822P7	Silicon, 1000 mA, 800 PIV.
CR5	4037822P2	Silicon, 1000 mA, 600 PIV.
		- - - - - - - JACKS AND RECEPTACLES - - - - - -
J1	19A137733G2	Connector: 2 terminals.
J2	19A137733G1	Connector: 6 terminals.
		- - - - - - - - - TRANSISTORS - - - - - - - - -
Q1* and Q2*	19A115852P1	Silicon, PNP; sim to Type 2N3906. Deleted by REV A.
Q3	19A115562P2	Silicon, PNP; sim to Type 2N2904A.
Q4	19A116375P1	Silicon, PNP.
Q5	19A115852P1	Silicon, PNP; sim to Type 2N3906.
Q6	19A115910P1	Silicon, NPN; sim to Type 2N3904.
		- - - - - - - - - - RESISTORS - - - - - - - - -
R1*	19A116559P101	Variable, cermet: 1K ohms ±20%, .5 w; sim to CTS Series 360. Deleted by REV A.
R2*	3R77P471J	Composition: 470 ohms ±5%, 1/2 w. Deleted by REV A.
R3*	3R77P102J	Composition: 1K ohms ±5%, 1/2 w. Deleted by REV A.
R4 and R5	3R77P222J	Composition: 2.2K ohms ±5%, 1/2 w.
R6	3R77P102J	Composition: 1K ohms ±5%, 1/2 w.
R7	3R77P471J	Composition: 470 ohms ±5%, 1/2 w.
R8	3R77P102J	Composition: 1K ohms ±5%, 1/2 w.
R9 and R10	3R77P103J	Composition: 10K ohms ±5%, 1/2 w.
R12	3R77P154J	Composition: 150K ohms ±5%, 1/2 w.
R13	3R77P473J	Composition: 47K ohms ±5%, 1/2 w.
R14	3R77P474J	Composition: 470K ohms ±5%, 1/2 w.
R15*	3R77P103J	Composition: 10K ohms ±5%, 1/2 w. Added by REV A.
		- - - - - - - VOLTAGE REGULATORS - - - - - - - -
VR1	19A116325P16	Zener: 5 w, 5.1 v. nominal.
VR2	19A116325P4	Zener: 5 w, 12 v. nominal.
VR3*	4036887P16	Zener: 500 mW, 19 v. nominal. Deleted by REV A.
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	4036555P1	Insulator, washer: nylon. (Used with Q3).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PRODUCTION CHANGES

Changes in the equipment to improve performance or to simplify circuits are identified by a "Revision Letter," which is stamped after the model number of the unit. The revision stamped on the unit includes all previous revisions. Refer to the Parts List for descriptions of parts affected by these revisions.

REV. A - To improve operation of the power supply with Hum Suppression, Removed Q1, Q2, R1, R2 & R3 and added R15.



FUSE APPLICATION CHART (F801)		
BAND	POWER	FUSE
LOW	50 W	15 A
LOW	70 W	20A
LOW	100 W	30 A
HIGH	35 W	15 A
HIGH	65 W	20A
HIGH	110 W	30A
450	30 W	10A
450	40W	15A
450	75W	20A
450	100W	30A

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
PLI9E501149G1	D
PLI9E501149G2	C

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.

■ DENOTES GROUP 1 ONLY
▲ DENOTES GROUP 2 ONLY

POWER SUPPLY IS WIRED FOR 121 VAC, 60HZ OPERATION. FOR 242 VAC 60HZ OPERATION REMOVE P802. REMOVE V16-R WIRE BETWEEN A801-J1-3 AND A801-S1-2. REMOVE JUMPERS (E1 & E2) FROM A801-TB1-1 TO A801-TB1-2 AND A801-TB1-3 TO A801-TB1-4. ADD JUMPERS (E1 & E2) BETWEEN A801-TB1-2 AND A801-TB1-3.

CHANGES TO THIS DRAWING MAY AFFECT WIRING DIAGRAM 19D417229, & 19D429778

(19D423217, Rev. 8)

DF-0072

SCHEMATIC DIAGRAM

BASE STATION 60 Hz POWER SUPPLY 19E501149G1 & G2

PARTS LIST

LBI4892D

MASTR II STATION POWER SUPPLY
19E501149G1 30 AMP 60 Hz
19E501149G2 18 AMP 60 Hz

SYMBOL	GE PART NO.	DESCRIPTION
A801		60 Hz POWER SUPPLY 19C320779G1
		- - - - - - - - - - FUSES - - - - - - - - - -
F1 and F2	7484390P4	Quick blowing: 8 amp 250 v; sim to Littelfuse 314008 or Bussmann ABC-8.
F3	1R16P8	Quick blowing: 5 amps at 250 v; sim to Littelfuse 312005 or Bussmann MTH-5.
		- - - - - - - JACKS AND RECEPTACLES - - - - - -
J1	19B209395P1	Receptacle, power: 3 wire grounding type, 15 amps at 125 v; sim to Circle F Mfg. 1517-2.
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S1	19B209498P1	Push: DPST, 20 amps and 220 VRMS; sim to McGill 0811-0188.
		- - - - - - - - - TERMINAL BOARDS - - - - - - -
TB1	19C301087P2	Phen: 4 terminals; sim to GE CR151D.
		- - - - - - - - - - SOCKETS - - - - - - - - -
XF1 thru XF3	4037402P2	Fuseholder: 15 amps at 250 v; sim to Littelfuse 342001.
A803		HEAT SINK 19C320836G1
		- - - - - - - DIODES AND RECTIFIERS - - - - - -
CR1 and CR2	19A116524P2	Silicon: sim to Type N2158R, includes N210P20C6 nut.
		- - - - - - - - - - CAPACITORS - - - - - - - - -
C801	19A134574P2	Quick disconnect: 7 µf ±6%, 660 VDCW; sim to GE26F6624FB. (Used in G1 only).
C802	19A134033P1	Electrolytic: 49,000 µf +50% -10%, 20 VDCW; sim to GE 92F180AMA.
C803 and C804	5496520P19	Electrolytic: 48,000 µf +100% -10%, 40 VDCW; sim to GE Type 86F561M.
C805	19A134574P1	Quick disconnect: 5 µf ±6%, 660 VDCW; sim to GE26F6622FB. (Used in G2 only).
		- - - - - - - DIODES AND RECTIFIERS - - - - - -
CR801 and CR802	19A116524P2	Silicon: sim to Type 1N2158R, includes N210P20C6 nut.
CR803	19B226282G2	Rectifier, silicon.
		- - - - - - - - - - FUSES - - - - - - - - - -
F801A*		(See Fuse Kit 19B216021). Added by REV C.
F801*		(See Fuse Kit 19B216021). Deleted by REV C.
F801B*	1R11P8	Quick blowing: 35 amps, 250 v; sim to Bussmann NON35. Added by REV C.
		- - - - - - - JACKS AND RECEPTACLES - - - - - -
J801	19B209288P3	Receptacle: sim to Molex Products 1292R.
		- - - - - - - - - - INDUCTORS - - - - - - - - -
L801	19B209497P1	Reactor: 1 mh ind. min at 27 amps, 0.010 ohms DC res max. (Used in G1 only).
L802	19B226151G1	Reactor: 10 mh ind min, 2.50 amps, 0.100 ohms DC res max.
L803	19B209496P1	Reactor: 1 mh ind min at 15 amps, 0.010 ohms DC res max. (Used in G2 only).
		- - - - - - - - - - RESISTORS - - - - - - - - -
R801	2R17P21	Wirewound: 10 ohms ±5%, 50 w; sim to Ward Leonard K41389-1.
		- - - - - - - - - - TRANSFORMERS - - - - - - - -
T802	19C320835G2	Transformer, power: Pri input: 121/242 VRMS ±20%, 60 Hz, Sec A output: 3.0 amp, Sec B output: 12.3 VDC at 15.0 amp. (Includes P801). (Used in G2 only).
T803	19C320835G1	Transformer, power: Pri input: 121/242 VRMS ±20%, 60 Hz, Sec A output: 3.0 amp, Sec B output: 12.3 VDC at 27.0 amp. (Includes P801). (Used in G1 only).
		- - - - - - - - - - CABLES - - - - - - - - -
W801	5490059P6	Cable, RF: 3 conductor, approx 10 feet long. (Includes P802).
		- - - - - - - - - - SOCKETS - - - - - - - - -
XF801A*	19B216021G7	Fuse Holder. (Includes 19D413045P1 base, (2) 19B205950P1 chips, (2) N117P15006C13 tap screws. Added by REV C.
XF801*	19B216021G7	Fuse Holder. (Includes 19D413045P1 base, (2) 19B205950P1 chips, (2) N117P15006C13 tap screws. Deleted by REV C.
XF801B*	19A134675P1	Fuse Holder: 31-60 amps at 250 v; sim to Bussmann No. 1B0013. Added by REV C.
		- - - - - - - - - - MISCELLANEOUS - - - - - - -
	19B226097G1	Cover. (A801).
	19B226005P1	Heat sink. (Used with A803).
	19A115275P2	Insulator, disc. (Used with CR1, CR2 on A803).
	19A115276P2	Insulator, washer. (Used with CR1, CR2 on A803).
		FUSE KIT 19B216021G8 15 AMP 19B216021G9 20 AMP 19B216021G10 30 AMP 19B216021G11 10 AMP
		- - - - - - - - - - FUSES - - - - - - - - - -
F801A	1R11P4	Quick blowing: 15 amps, 250 v; sim to Bussmann NON15. (Used in G8).
	1R11P5	Quick blowing: 20 amps, 250 v; sim to Bussmann NON20. (Used in G9).
	1R11P7	Quick blowing: 30 amps, 250 v; sim to Bussmann NON30. (Used in G10).
	1R11P3	Quick blowing: 10 amps, 250 v; sim to Bussmann NON10. (Used in G11).
	19D413046P1	Cover.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PRODUCTION CHANGES

Changes in the equipment to improve performance or to simplify circuits are identified by a "Revision Letter," which is stamped after the model number of the unit. The revision stamped on the unit includes all previous revisions. Refer to the Parts List for descriptions of parts affected by these revisions.

19E501149G1 & G2

REV. A - For hum suppression. Added Groups 4 & 5.

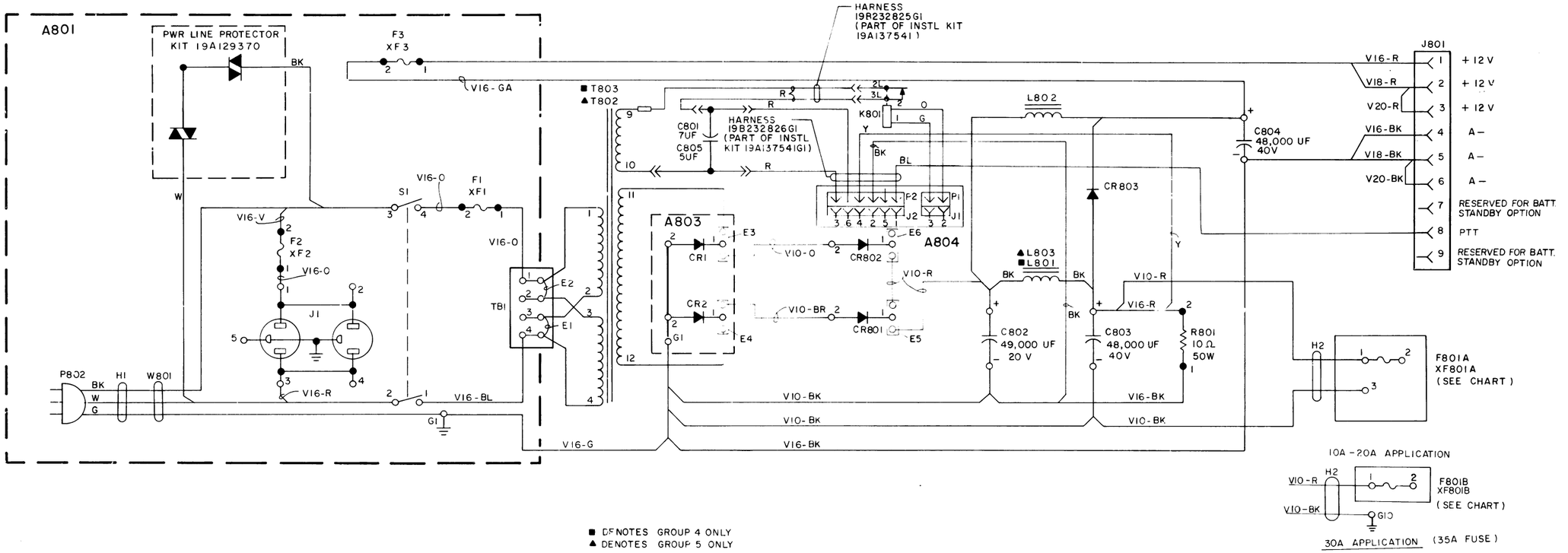
REV. B - To comply with CSA specifications. Changed location of G1 (chassis ground) connection.

19E501149G1

REV. C - To stop fuse from blowing. Changed fuse F801 and fuse holder FX801.

19E501149G1 - Rev. D
19E501149G2 - Rev. C

To stop in line connector (19A116849P1-3) failure. Deleted 19A116849P1-3 in line connectors, added E3-E5, and rewired power supply.



FUSE APPLICATION CHART (F801)		
BAND	POWER	FUSE
LOW	50 W	15 A
LOW	70 W	20A
LOW	100 W	35A
HIGH	35 W	15 A
HIGH	65 W	20A
HIGH	110 W	35A
450	20 W	10A
450	40W	15A
450	75W	35A
450	100W	35A

THIS ELEM DIAG APPLIES TO	
MODEL NO	REV LETTER
PLI9E501149G4	F
PLI9E501149G5	F

■ DENOTES GROUP 4 ONLY
▲ DENOTES GROUP 5 ONLY

POWER SUPPLY IS WIRED FOR 121 VAC 60HZ OPERATION. FOR 242 VAC 60HZ OPERATION REMOVE P802. REMOVE V16-R WIRE BETWEEN A801-J1-3 AND A801-S1-2. REMOVE JUMPERS (E1 & E2) FROM A801-TB1-1 TO A801-TB1-2 AND A801-TB1-3 TO A801-TB1-4. ADD JUMPERS (E1 & E2) BETWEEN A801-TB1-2 AND A801-TB1-3

CHANGES TO THIS DRAWING MAY AFFECT WIRING DIAGRAM 19D417229, 19D429778, & 19D429857

SCHEMATIC DIAGRAM

BASE STATION 60 Hz POWER SUPPLY 19E501149G4 & G5

Issue 2

PARTS LIST

MASTR II STATION POWER SUPPLY
19E501149G4 30 AMP 60 Hz WITH HUM SUPPRESSION
19E501149G5 18 AMP 60 Hz WITH HUM SUPPRESSION

ISSUE 2

SYMBOL	GE PART NO.	DESCRIPTION
A801		60 Hz POWER SUPPLY 19C20779G1
		- - - - - - - - - - - FUSES - - - - - - - - - -
F1 and F2	7484390P4	Quick blowing: 8 amp 250 v; sim to Littelfuse 314008 or Bussmann ABC-8.
F3	1R16P8	Quick blowing: 5 amps at 250 v; sim to Littelfuse 312005 or Bussmann MTH-5.
		- - - - - - - - JACKS AND RECEPTACLES - - - - - -
J1	19B209395P1	Receptacle, power: 3 wire grounding type, 15 amps at 125 v; sim to Circle F Mfg. 1517 or GE 5242-1.
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S1	19B209498P1	Push: DPST, 20 amps and 220 VRMS; sim to McGill 0811-0188.
		- - - - - - - - - TERMINAL BOARDS - - - - - - -
TB1	19C301087P2	Phen: 4 terminals; sim to GE CR151D.
		- - - - - - - - - - - SOCKETS - - - - - - - - -
XF1 thru XF3	4037402P2	Fuseholder: 15 amps at 250 v; sim to Littelfuse 342001.
A803		HEAT SINK 19C320836G1
		- - - - - - - DIODES AND RECTIFIERS - - - - - -
CR1 and CR2	19A116524P2	Silicon: sim to Type N2158R, includes N210P20C6 nut.
A804	19C328488G1	Control Board. (Refer to Parts List 19C328488G1).
		- - - - - - - - - - CAPACITORS - - - - - - - - -
C801	19A134574P2	Quick disconnect: 7 µf ±6%, 660 VDCW; sim to GE26F6624FB. (Used in G4 only).
C802	19A134033P1	Electrolytic: 49,000 µf +50% -10%, 20 VDCW; sim to GE 92F180AMA.
C803 and C804	5496520P19	Electrolytic: 48,000 µf +100% -10%, 40 VDCW; sim to GE Type 86F561M.
C805	19A134574P1	Quick disconnect: 5 µf ±6%, 660 VDCW; sim to GE26F6622FB. (Used in G5 only).
		- - - - - - - DIODES AND RECTIFIERS - - - - - -
CR801 and CR802	19A116524P2	Silicon: sim to Type 1N2158R, includes N210P20C6 nut.
CR803	19B226282G2	Rectifier, silicon.
		- - - - - - - - - - - FUSES - - - - - - - - - -
F801A*		(See Fuse Kit 19B216021). Added by REV A.
F801*		(See Fuse Kit 19B216021). Deleted by REV A.
F801B*	1R11P8	Quick blowing: 35 amps, 250 v; sim to Bussmann NON35. Added by REV A.
		- - - - - - - - JACKS AND RECEPTACLES - - - - - -
J801	19B209288P3	Receptacle: sim to Molex Products 1292R.
		- - - - - - - - - - RELAYS - - - - - - - - - -
K801	19B232626G1	Relay, open: 80 ohms ±10% coil res, 12.6 VDC nominal, 1 form A, 1 form C, 15 amps at 28 VDC; sim to Magnecraft 22RX134A.
L801	19B209497P1	- - - - - - - - - - INDUCTORS - - - - - - - - - - Reactor: 1 mh ind. min at 27 amps, 0.010 ohms DC res max. (Used in G4 only).
L802	19B226151G1	Reactor: 10 mh ind min, 2.50 amps, 0.100 ohms DC res max.
L803	19B209496P1	Reactor: 1 mh ind min at 15 amps, 0.010 ohms DC res max. (Used in G5 only).
		- - - - - - - - - - RESISTORS - - - - - - - - -
R801	2R17P21	Wirewound: 10 ohms ±5%, 50 w; sim to Ward Leonard K41389-1.
		- - - - - - - - - - TRANSFORMERS - - - - - - - -
T802	19C320835G2	Transformer, power: Pri input: 121/242 VRMS ±20%, 60 Hz, Sec A output: 3.0 amp, Sec B output: 12.3 VDC at 15.0 amp. (Includes P801). (Used in G5 only).
T803	19C320835G1	Transformer, power: Pri input: 121/242 VRMS ±20%, 60 Hz, Sec A output: 3.0 amp, Sec B output: 12.3 VDC at 27.0 amp. (Includes P801). (Used in G4 only).
		- - - - - - - - - - CABLES - - - - - - - - -
W801	5490059P6	Cable, RF: 3 conductor, approx 10 feet long. (Includes P802).
		- - - - - - - - - - SOCKETS - - - - - - - - -
XF801A*	19B216021G7	Fuse Holder. (Includes 19D413045P1 base, (2) 19B205950P1 chips, (2) N117P15006C13 tap screws. Added by REV A.
XF801*	19B216021G7	Fuse Holder. (Includes 19D413045P1 base, (2) 19B205950P1 chips, (2) N117P15006C13 tap screws. Deleted by REV A.
XF801B*	19A134675P1	Fuse Holder: 31-60 amps at 250 v; sim to Bussman No. 1B0013. Added by REV A.
		- - - - - - - - - - MISCELLANEOUS - - - - - - -
	19B226097G2	Cover. (A801).
	19B226005P1	Heat sink. (Used with A803).
	19A115275P2	Insulator, disc. (Used with CR1, CR2 on A803).
	19A115276P2	Insulator, disc. (Used with CR1, CR2 on A803).
		FUSE KIT 19B216021G8 15 AMP 19B216021G9 20 AMP 19B216021G10 30 AMP 19B216021G11 10 AMP
		- - - - - - - - - - - FUSES - - - - - - - - - -
F801A	1R11P4	Quick blowing: 15 amps, 250 v; sim to Bussmann NON15. (Used in G8).
	1R11P5	Quick blowing: 20 amps, 250 v; sim to Bussmann NON20. (Used in G9).
	1R11P7	Quick blowing: 30 amps, 250 v; sim to Bussmann NON30. (Used in G10).
	1R11P3	Quick blowing: 10 amps, 250 v; sim to Bussmann NON10. (Used in G11).
	19D413046P1	Cover.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PRODUCTION CHANGES

Changes in the equipment to improve performance or to simplify circuits are identified by a "Revision Letter," which is stamped after the model number of the unit. The revision stamped on the unit includes all previous revisions. Refer to the Parts List for descriptions of parts affected by these revisions.

19E501149G4

REV. A - To stop fuse from blowing. Changed fuse F801 and fuse holder XF801.

19E501149G5

REV. A - To discharge filter capacitors. Rewired R801.

19E501149G4 & G5

REV. B - To stop in line connector (19A116849P1-3) failure. Deleted 19A116849P1-3 in line connectors. Added E3-E5, and rewired power supply.

SAME AS PART 1 AND CHANGE MARKING
FROM: 19E501149G1 TO: 19E501149G4 WITH CORRECT REV LETTER

SAME AS PART 1 AND CHANGE MARKING
FROM: 19E501149G2 TO: 19E501149G5 WITH CORRECT REV LETTER

SAME AS PART 1 AND CHANGE MARKING
FROM: 19E501149G3 TO: 19E501149G6 WITH CORRECT REV LETTER

THESE INSTRUCTIONS COVER THE INSTALLATION OF THE HUM SUPPRESSION MODIFICATION IN THE 19E501149 POWER SUPPLY. THE FOLLOWING ITEMS ARE USED:

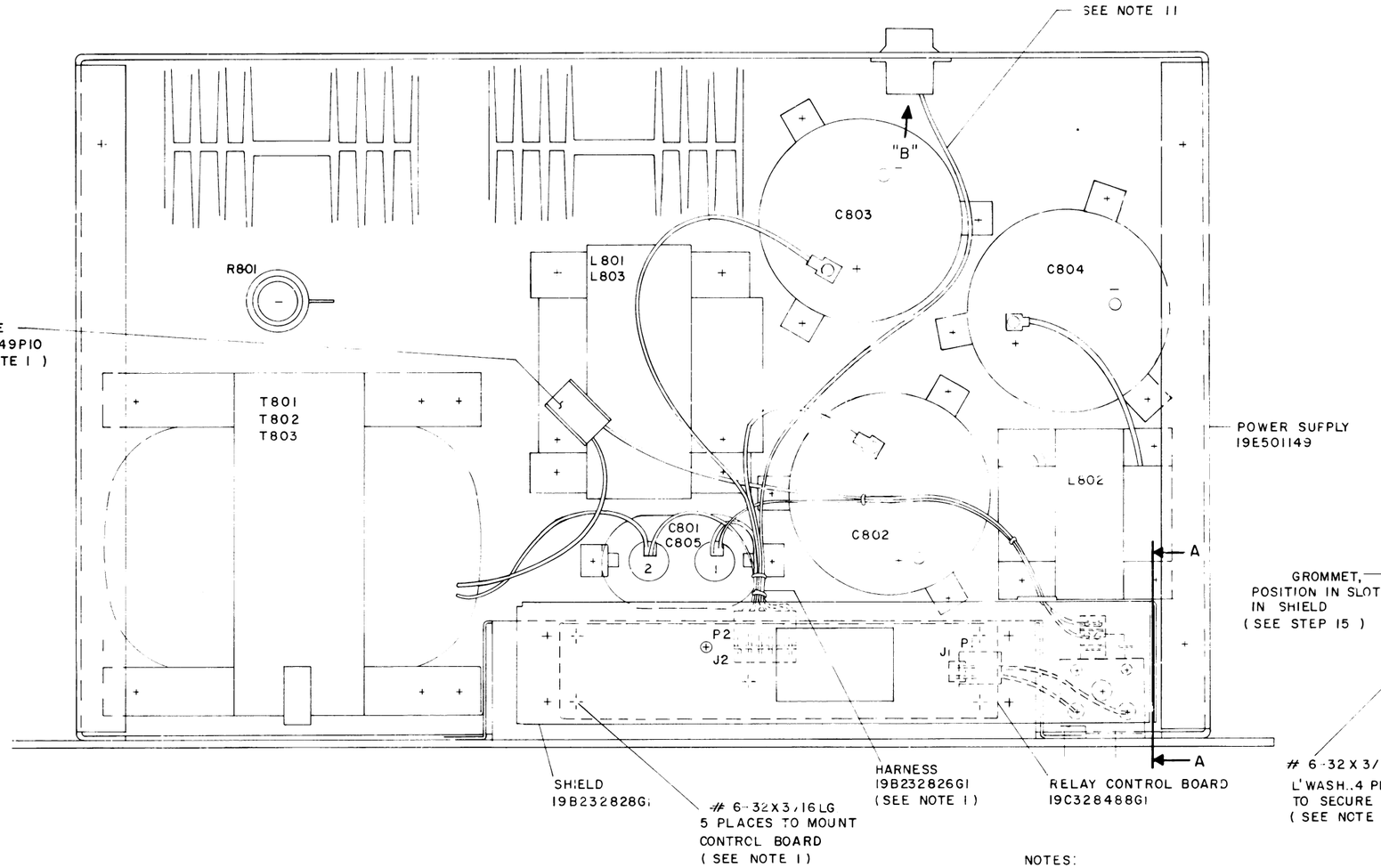
19C328488G1 RELAY CONTROL BD
19B232828G1 SHIELD
19B232626G1 RELAY
19A137541G1 INSTALLATION KIT

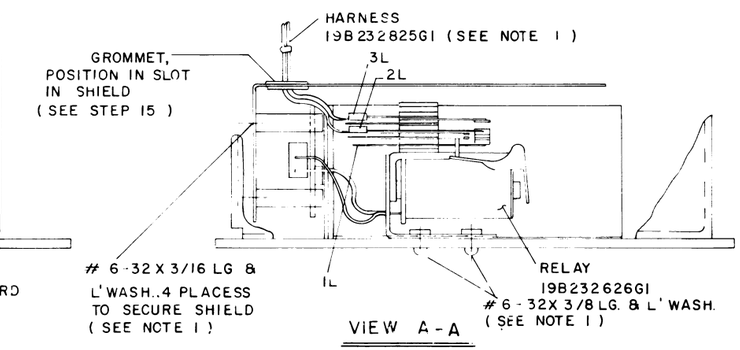
INSTRUCTIONS:

1. DISCONNECT POWER & DISCHARGE C801/C805 BY REMOVING INSULATING CAPS & SHORTING TERMINALS TOGETHER.
2. CONNECT ONE RED WIRE OF HARNESS 19B232825G1 TO TERMINAL 3L OF RELAY 19B232626G1. CONNECT THE OTHER RED WIRE TO TERMINAL 2L OF THE RELAY (SEE VIEW A-A).
3. MOUNT RELAY TO POWER SUPPLY FRONT PANEL USING 2 6-32 X 3/8 SCREWS & L'WASHERS AS SHOWN.
4. MOUNT RELAY CONTROL BOARD IN POWER SUPPLY USING 5 6-32 X 3/16 SCREWS AS SHOWN.
5. CONNECT P1 FROM RELAY TO J1 ON RELAY CONTROL BOARD.
6. DISCONNECT LEAD FROM T801/T802/T803 AT C801/C805 TERMINAL 1. CUT TERMINAL OFF TRANSFORMER LEAD LEAVING MAXIMUM LEAD LENGTH. REMOVE INSULATING CAP FROM LEAD AND SPLICE THIS LEAD TO UNTERMINATED LEAD OF 19B232825G1 HARNESS USING 19A116849P10 SPLICE.
7. FEED REMAINING LEAD OF 19B232825G1 HARNESS THRU INSULATING CAP REMOVED IN STEP 6 & CONNECT TO C801/C805 TERMINAL 1.
8. CONNECT P2 OF 19B232826G1 HARNESS TO J2 ON RELAY CONTROL BOARD.
9. FEED ONE TERMINATED RED LEAD OF 19B232826G1 HARNESS THRU INSULATING CAP & CONNECT TO C801/C805 TERMINAL 1. REPLACE INSULATING CAP.
10. FEED THE OTHER TERMINATED RED LEAD OF 19B232826G1 HARNESS THRU THE OTHER INSULATING CAP & CONNECT TO C801/C805 TERMINAL 2. REPLACE INSULATING CAP.
11. CONNECT THE TERMINATED BLUE LEAD OF HARNESS 19B232826G1 INTO J801-8.

15. INSTALL THE 19B232828G1 SHIELD USING 4 6-32 X 3/16 SCREWS & L'WASHER. DRESS 19B232825G1 HARNESS SO THAT GROMMET ON HARNESS IS POSITIONED IN SLOT OF SHIELD.

VIEW "B"



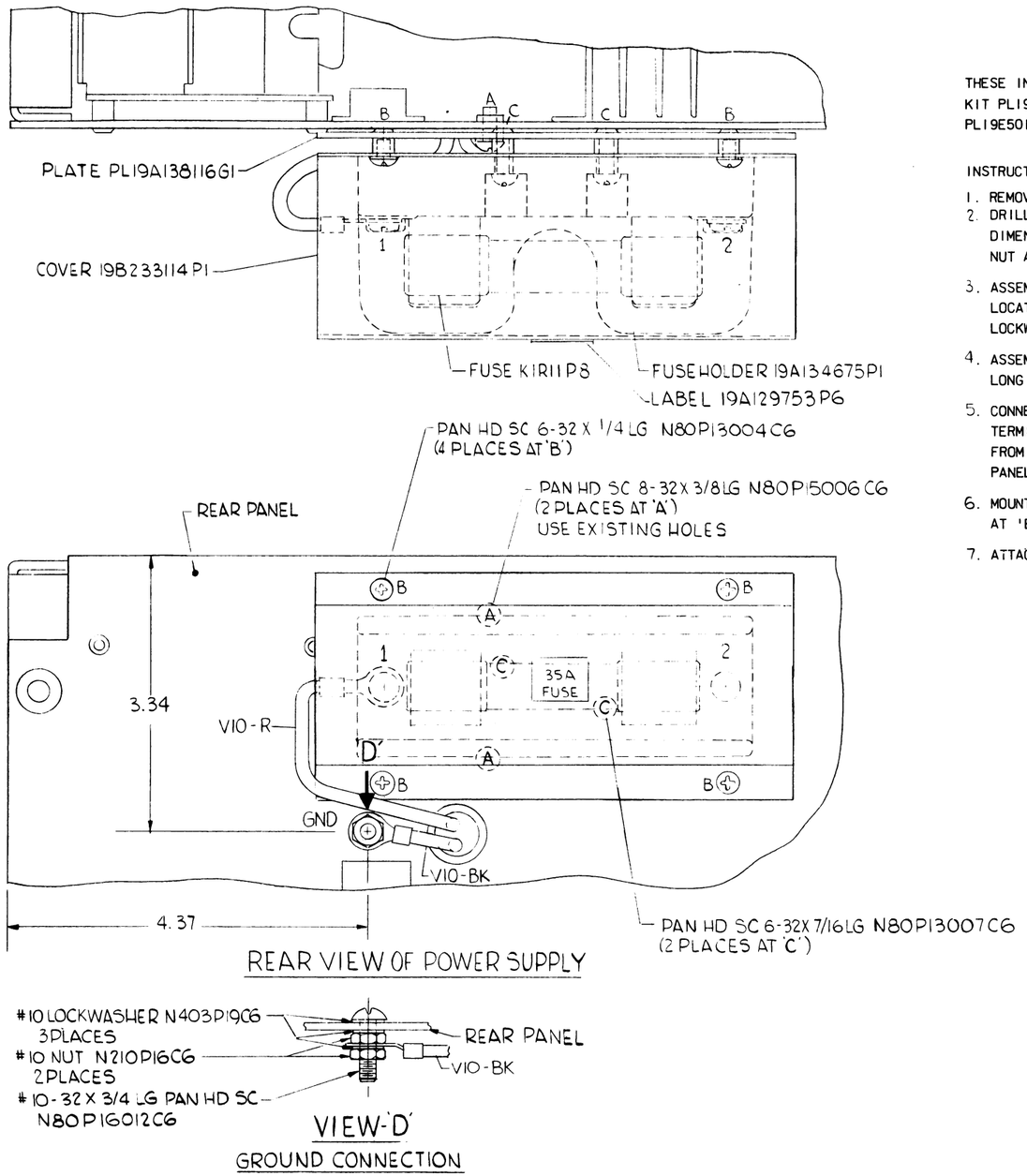


VIEW A-A

NOTES:
1. PART OF INSTALLATION KIT 19A137541G1

INSTALLATION INSTRUCTIONS

FOR HUM SUPPRESSION OF 19E501149 POWER SUPPLIES



REAR VIEW OF POWER SUPPLY

VIEW-'D'

GROUND CONNECTION

FIELD MODIFICATION

(19C328871, Rev. 1)

FUSE & FUSEHOLDER 19A138144G1

THESE INSTRUCTIONS COVER THE INSTALLATION OF MODIFICATION KIT PL19A138144G1 FOR THE MODIFICATION OF THE POWER SUPPLY PL19E501149G1 & G4 TO REPLACE POWER FUSE AND FUSEHOLDER.

INSTRUCTIONS:

1. REMOVE EXISTING FUSE AND FUSEHOLDER AND DISCARD.
2. DRILL A .204 DIA.HOLE IN REAR PANEL TO APPROXIMATE DIMENSIONS AS SHOWN. ASSEMBLE SCREW, LOCKWASHERS & NUT AS SHOWN IN VIEW-D.
3. ASSEMBLE PLATE TO EXISTING MOUNTING HOLES AT 'A' LOCATIONS USING (2) 8-32 X 3/8 LONG SCREWS AND LOCKWASHERS.
4. ASSEMBLE FUSEHOLDER TO PLATE USING (2) 6-32 X 7/16 LONG SCREWS AT 'C' LOCATIONS.
5. CONNECT THE RED LEAD FROM THE TRANSMITTER P.A. TO TERMINAL 2 ON THE FUSE BLOCK. CONNECT THE BLACK LEAD FROM THE TRANSMITTER P.A. TO THE GND STUD ON THE BACK PANEL AS SHOWN IN VIEW-D.
6. MOUNT COVER TO PLATE WITH (4) 6-32 X 1/4 LONG SCREWS AT 'B' LOCATIONS.
7. ATTACH LABEL TO COVER AS SHOWN.

PARTS LIST

FIELD FUSE MODIFICATION KIT
19A138144G1
ISSUE 1

SYMBOL	GE PART NO.	DESCRIPTION
	19A134675P1	Fuseholder: sim to Bussman 1B0013.
	1R11P8	Fuse, quick blowing: sim to Bussman NON35.
	19A129753P6	Label. (35A FUSE).
	19B233114P1	Fuse cover.
	19A138116G1	Plate. (Mounts fuseholder assembly).
	N80P13004C6	Pan head screw: No. 6-32 x 1/4. (Secures fuse cover to plate).
	N80P15006C6	Pan head screw: No. 8-32 x 3/8. (Secures plate to mounting surface).
	N403P16C6	Lockwasher, external tooth: No. 8. (Secures plate to mounting surface).
	N80P13007C6	Pan head screw: No. 6-32 x 7/16. (Secures fuseholder to plate).
	N404P13C6	Lockwasher, internal tooth: No. 6. (Secures fuseholder to plate).
	N80P16012C6	Pan head screw: No. 10-32 x 3/4. (Part of ground connection).
	N210P16C6	Hex nut: No. 10-32. (Part of ground connection-Quantity 2).
	N403P19C6	Lockwasher: No. 10. (Part of ground connection-Quantity 3).