



MAINTENANCE MANUAL FOR SINGLE METER OPTION ME02 (MASTR® II STATIONS)

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DESCRIPTION

MASTR II Station Option ME02 consists of D.C. Meter Assembly 19B234871P101 and associated meter cable mounted on the station control panel. The metering option consists of a three-range meter, meter switch (EXT-TX-RX), and a jack for external metering. When the switch is in the

"EXT" position, the meter functions as a 10 volt full scale positive with respect to chassis ground. The meter option and control panel are located behind the station receiver-exciter door.

Instructions for servicing the station transmitter and receiver are contained in the Station Maintenance Manual.



GE Mobile Communications

General Electric Company
Lynchburg, Virginia 24502

METERING SWITCH POSITIONS		
RECEIVER TEST		
		N.P.276480
SWITCH POSITION	TEST SET SWITCH POSITION	FUNCTION
1	A	FM DET
2	B	IF AMPL
3	C	MULT 1
4	D	MULT 2
5	F	LB,HB-NOISE BLANKER UHF-MULT 3
6		OFF
TRANSMITTER TEST		
SWITCH POSITION	TEST SET SWITCH POSITION	FUNCTION
1 	A	EXCITER MOD 1
2	B	EXCITER MOD 2 (MULT1UHF)
3	C	EXCITER MULT 1 (MULT2UHF)
4	D	EXCITER MULT 2 (MULT3UHF)
5	F	EXCITER MULT 3 (MULT4UHF)
6	G	EXCITER AMPL NOT PRESENT ON MID-BAND
7	C	UHF- AMPL2 LB,HB-PA PWR CONT VOLT
8	D	PA AMPL 1 DRIVE
9	F	PA DRIVER CURRENT
10	G	PA CURRENT
11		PA A+
12		OFF

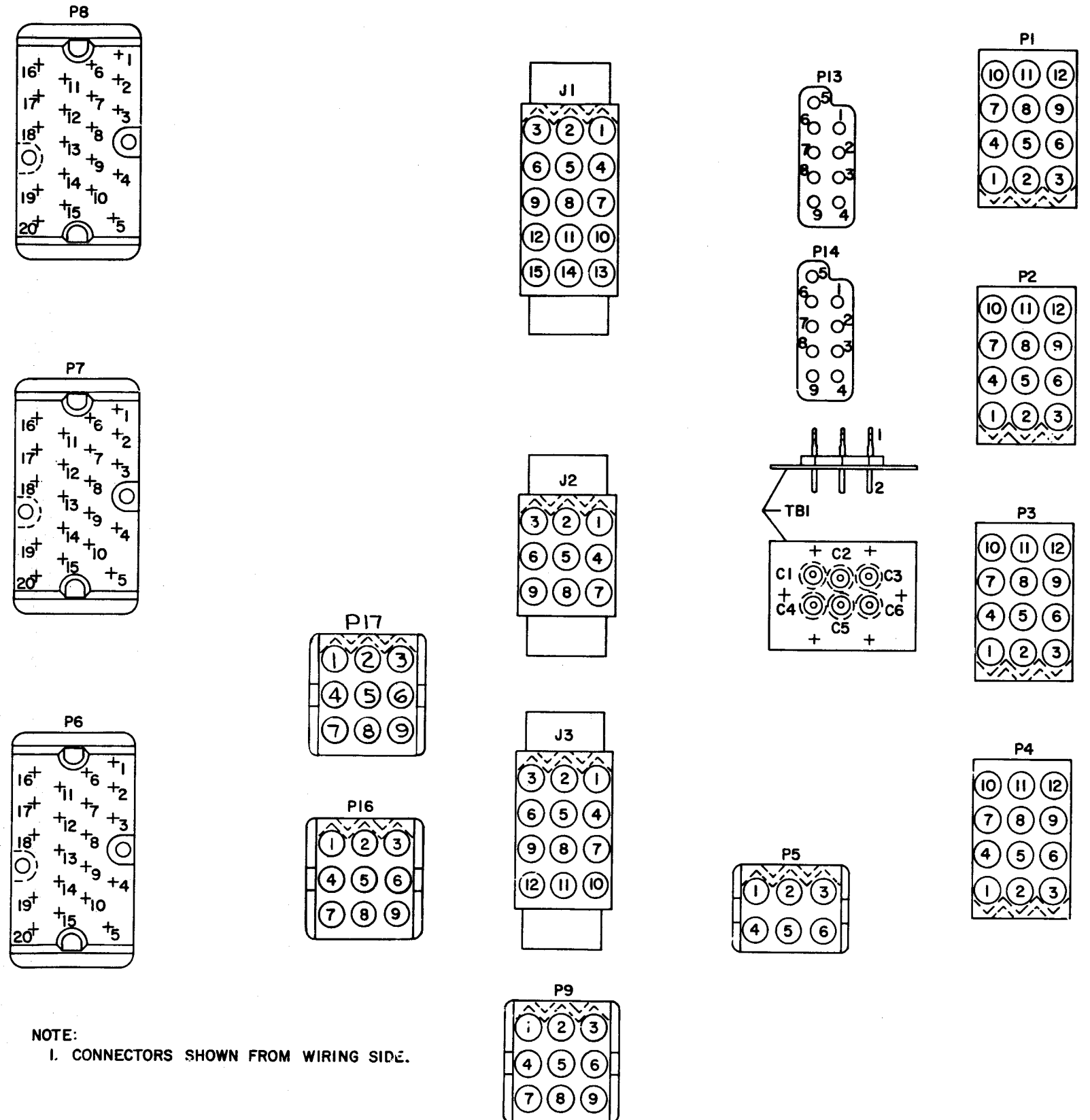
RECEIVER
SWITCH

TRANSMITTER
SWITCH

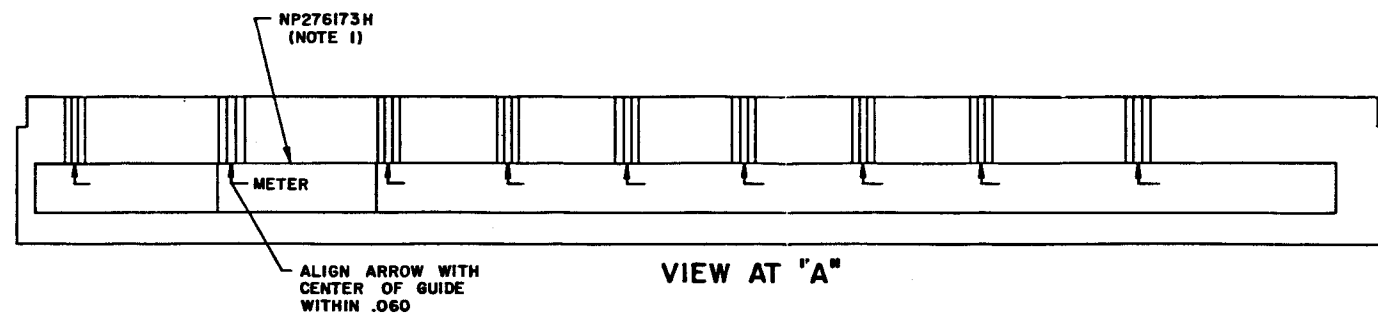
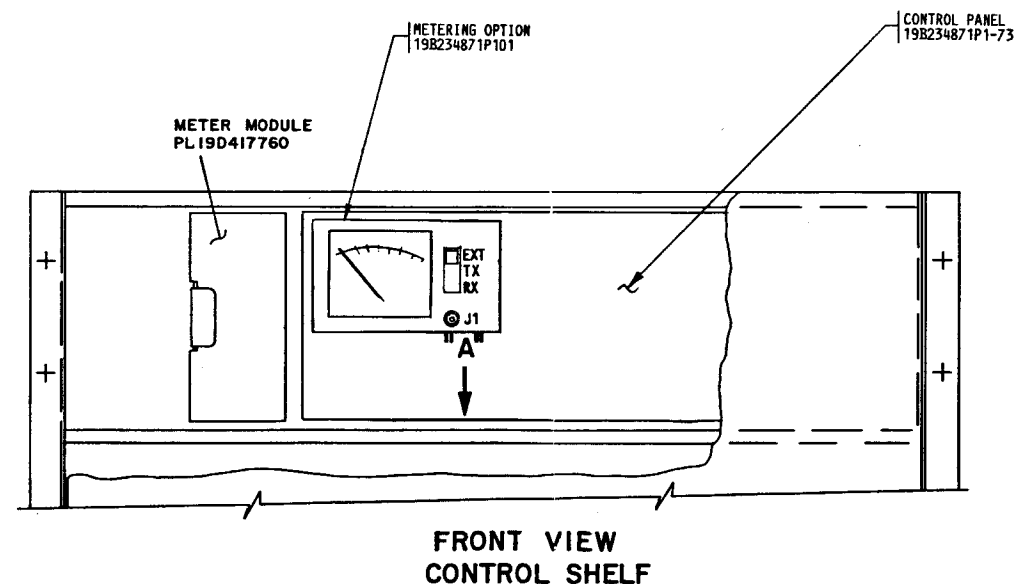
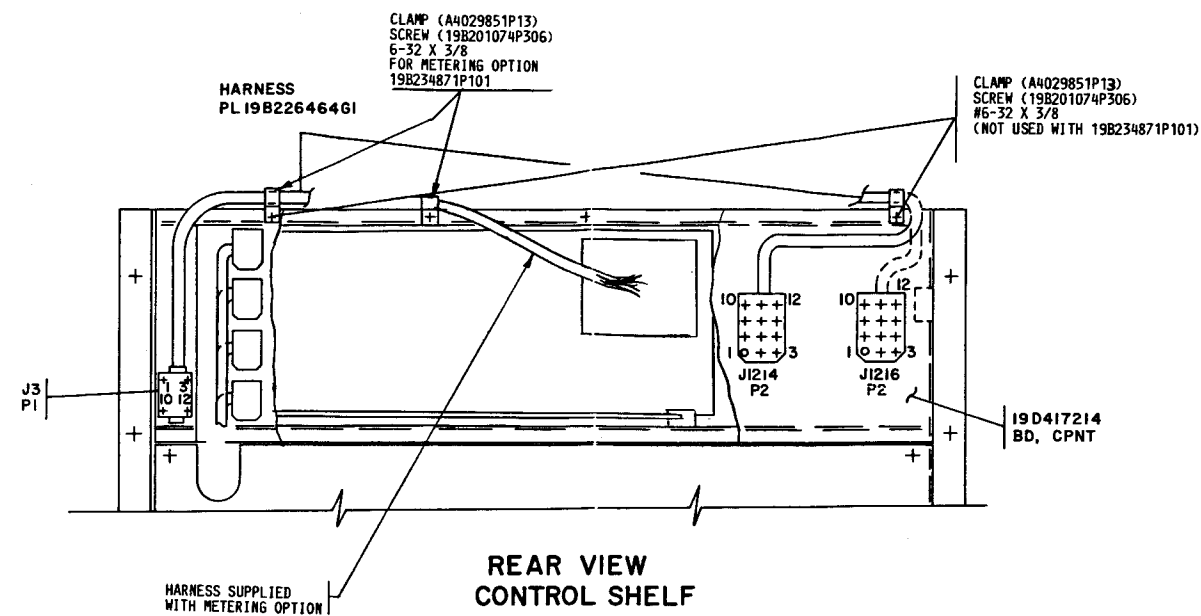
1V —
METER SCALE
3V —

METER
SENSITIVITY

FIGURE 2 - METERING LABEL THAT APPEARS ON THE RADIO PANEL DOOR

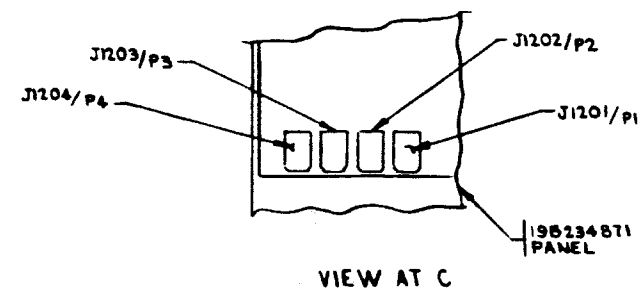


NOTE:
1. CONNECTORS SHOWN FROM WIRING SIDE.



- 1 THESE INSTRUCTIONS COVER THE MODIFICATION OF THE CONTROL SHELF FOR INSTALLATION OF THE METER MODULE PL190417760G1
- INSTRUCTIONS:
1. AFFIX NAMEPLATE NP276173H TO SHELF AS SHOWN IN FRONT OF SLOT IN WHICH MODULE IS TO BE INSTALLED.
 2. INSTALL MODULE IN FIRST POSITION FROM LEFT IN SHELF.
 3. INSTALL HARNESS AS FOLLOWS:
 - A. INSTALL CABLE CLAMPS (198226464G1) AS SHOWN. INSTALL P2 OF HARNESS ON J1214 ON COMPONENT BOARD (190417214) IF MODULE IS INSTALLED IN SECOND SLOT FROM LEFT IN CONTROL SHELF, OR ON J1216 IF MODULE IS INSTALLED IN FIRST SLOT ON LEFT IN CONTROL SHELF.
 - B. INSTALL P1 OF HARNESS ON J3 OF STATION HARNESS (19C320811)
 - C. INSTALL CABLE CLAMPS (4029851P13) AS SHOWN. REMOVE AND DISCARD THE TWO SCREWS PRESENT AT LOCATIONS WHERE CLAMPS ARE TO BE MOUNTED AND MOUNT CLAMPS USING THE TWO SCREWS (198201074P306) SUPPLIED.
 4. TEST PER 19A129945.

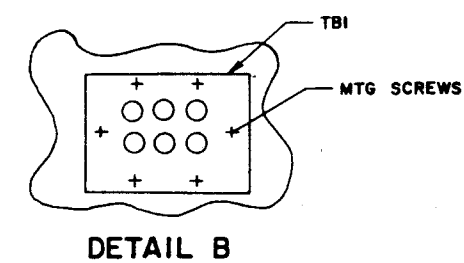
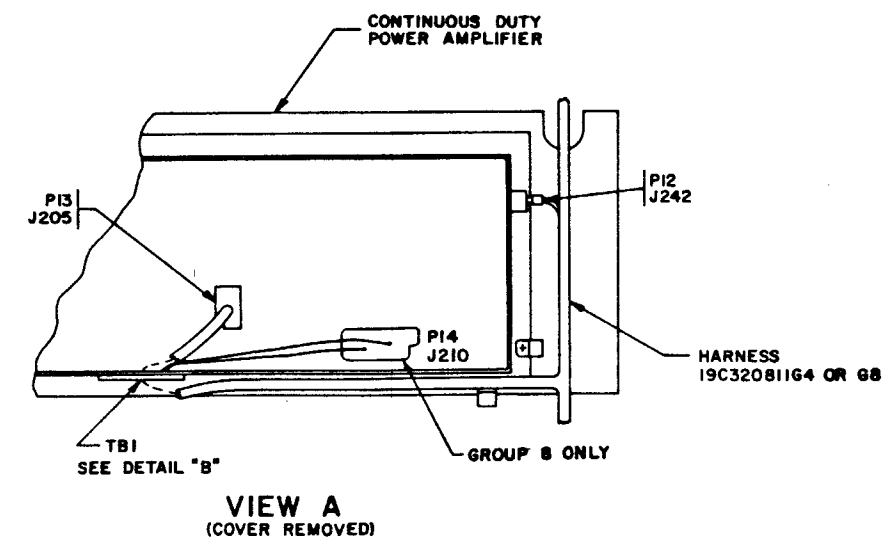
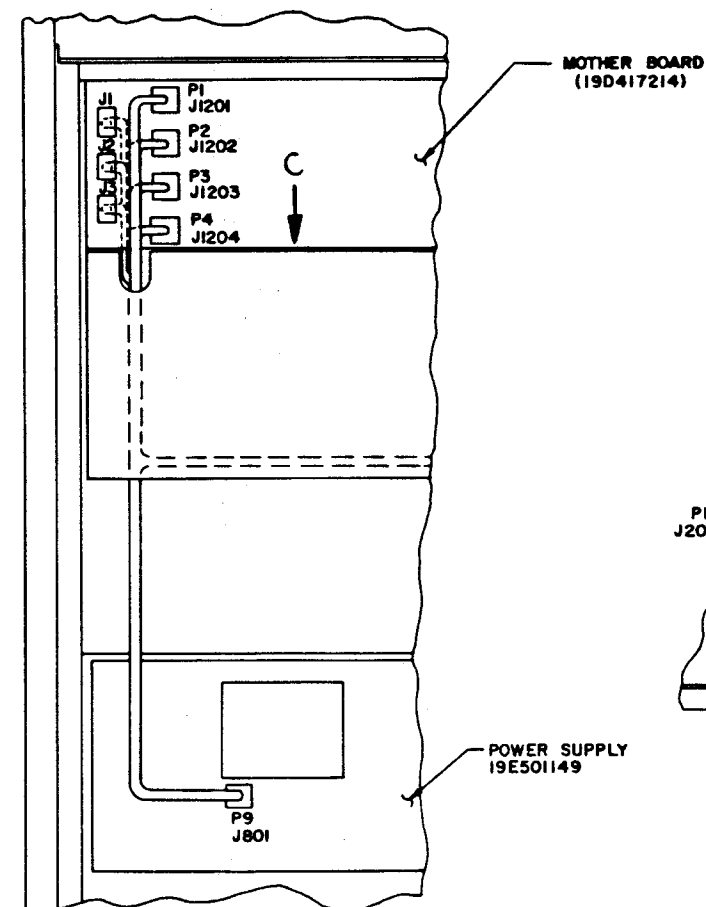
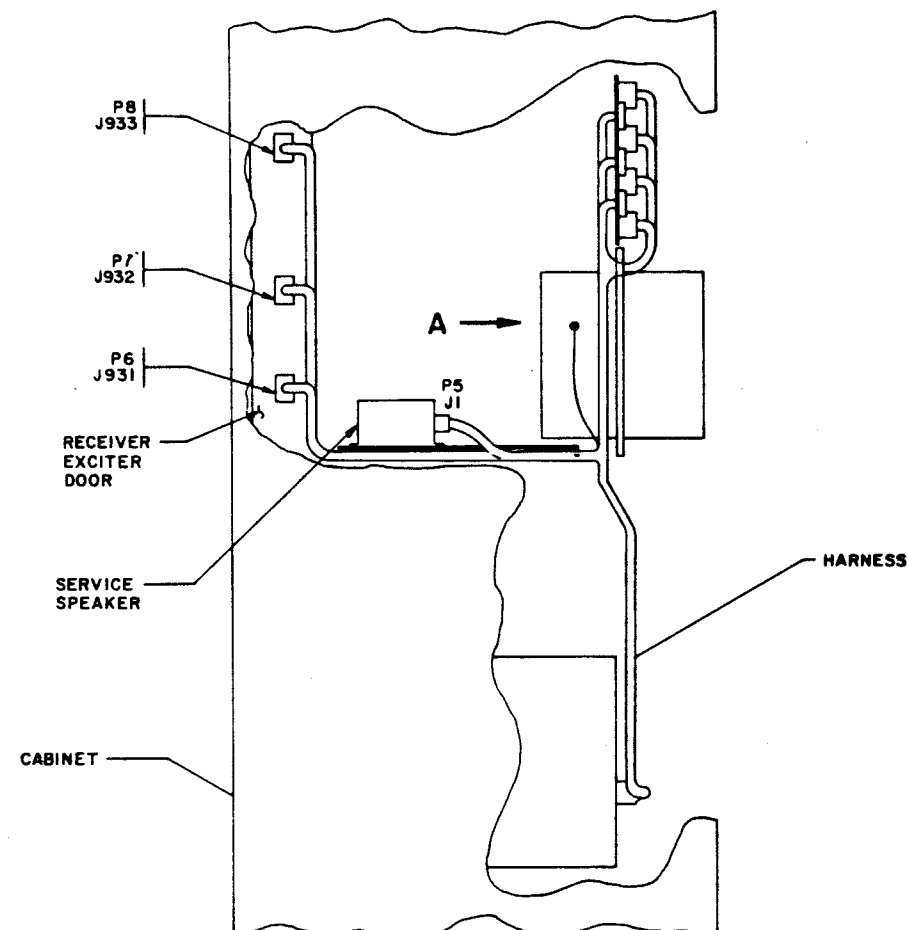
- ② THESE INSTRUCTIONS COVER THE INSTALLATION OF THE METERING OPTION (19B234871P101) ONTO THE CONTROL PANEL 19B234871P1 THRU 73.
1. REMOVE BLANK PANEL ON CONTROL PANEL & DISCARD.
 2. ASSEMBLE METERING OPTION. USING SAME HARDWARE USED TO MOUNT BLANK PANEL.
 3. ROUTE HARNESS FROM METERING OPTION UP AROUND TOP OF SHELF & PLUG ONTO J3.

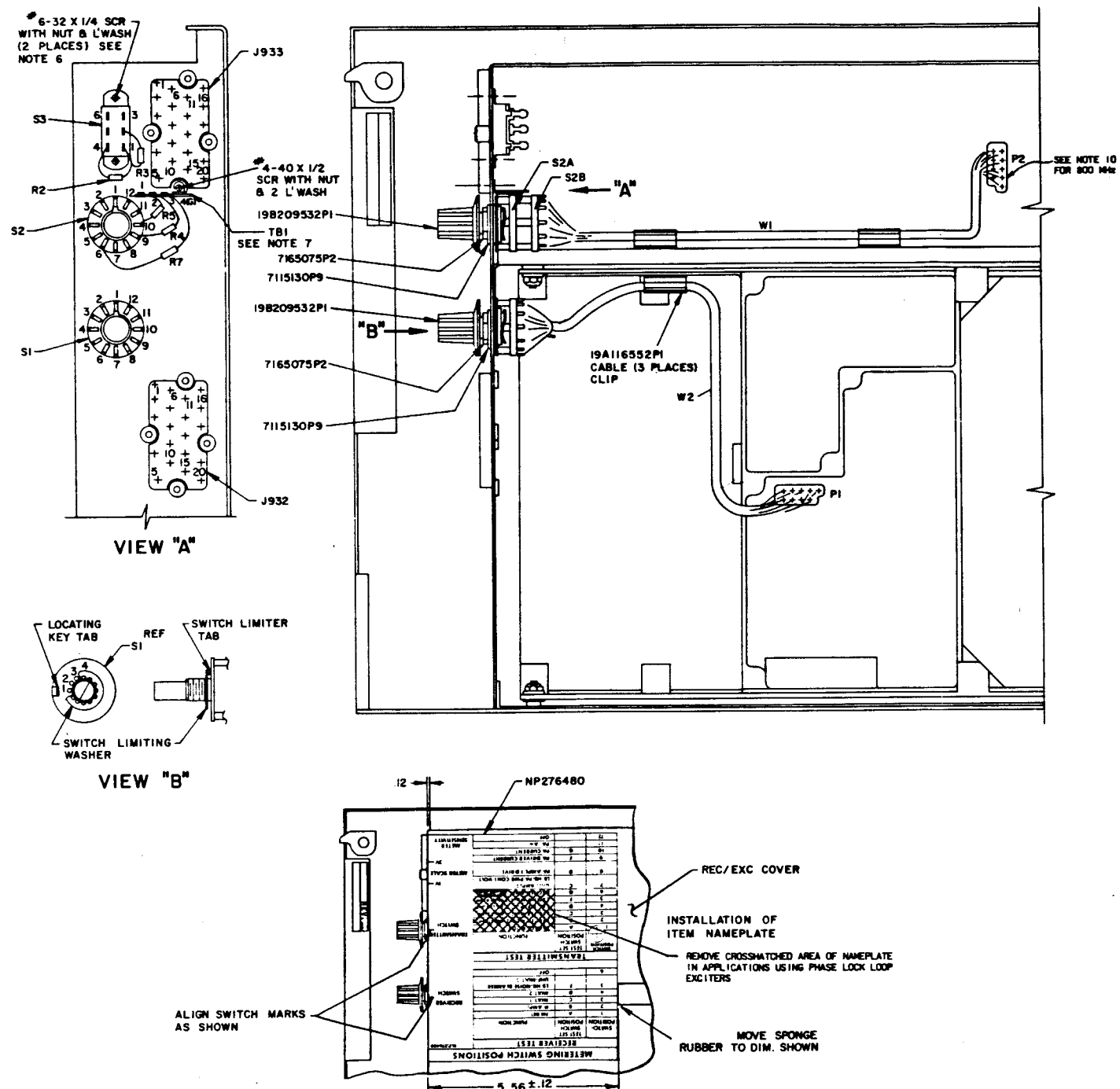


① THESE INSTRUCTIONS COVER THE INSTALLATION OF HARNESS 19C320811G4 OR G8 IN MASTR II STATIONS.

INSTRUCTIONS FOR INSTALLING HARNESS 19C32001164 OR 68

1. REMOVE EXISTING HARNESS.
2. INSTALL HARNESS (PL19C320B1164 OR G8) AS SHOWN.
3. REMOVE COVER FROM POWER AMPL. TO EXPOSE J205 & J210.
4. REMOVE MTG SCREWS AND COVER PLATE FROM POWER AMPL. (SEE VIEW A). INSTALL TBI USING SAME SCREWS.

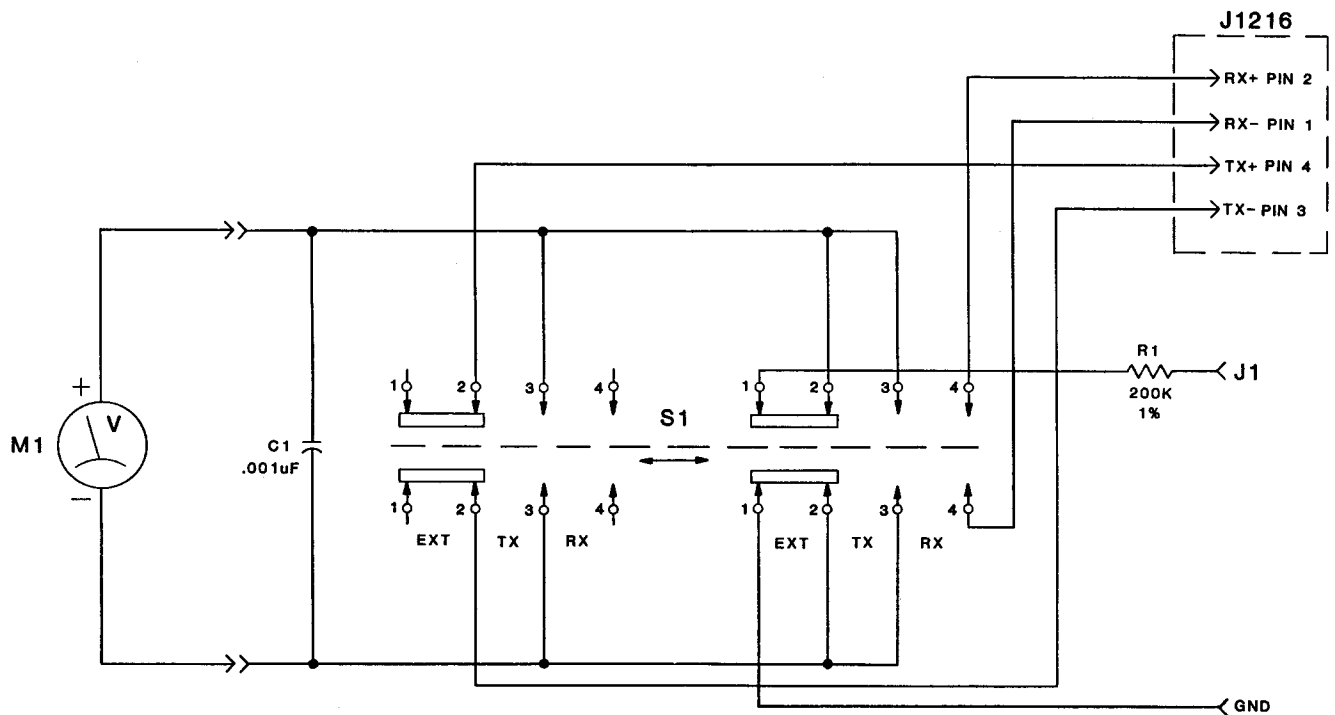




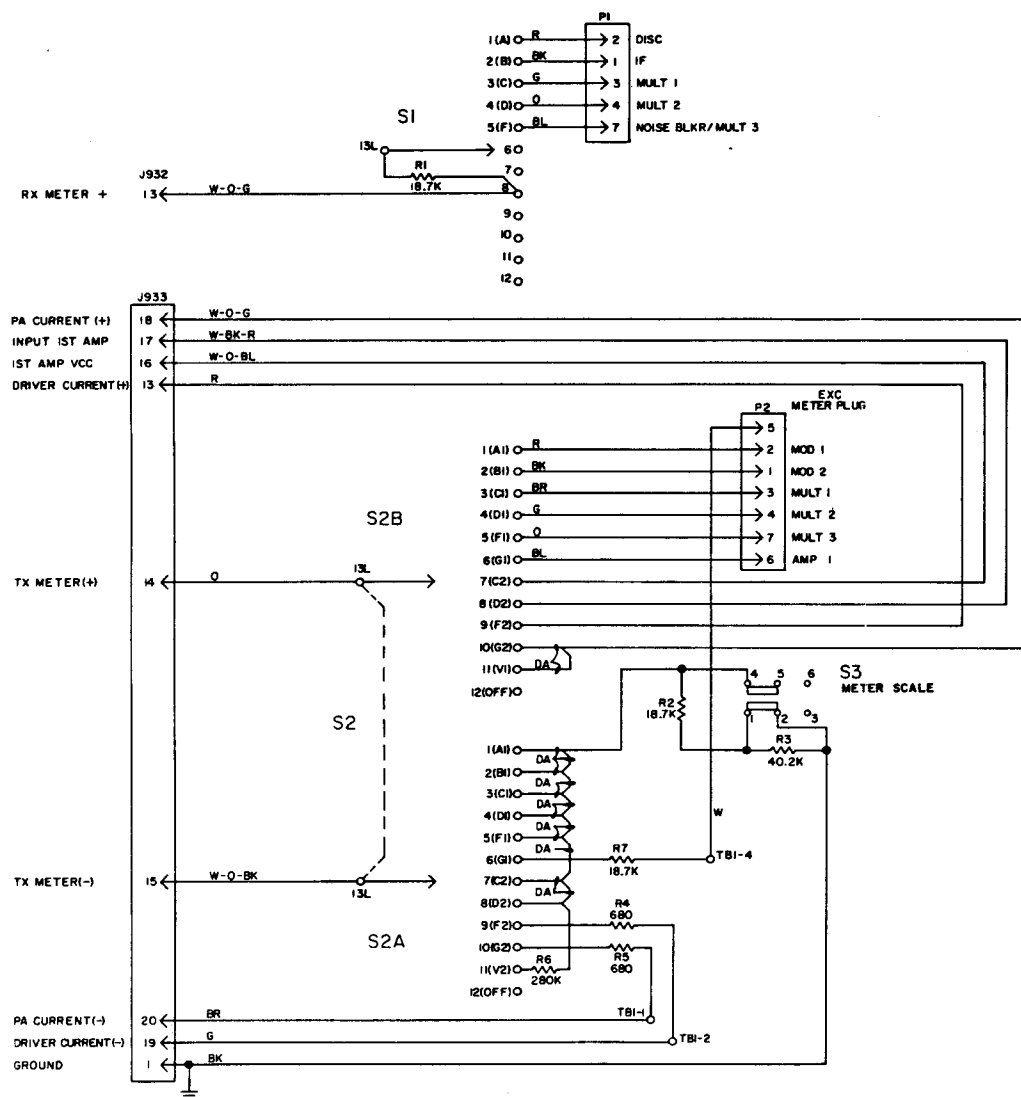
① THESE INSTALLATION INSTRUCTIONS COVER THE APPLICATION OF THE METER SWITCHING KIT (PL19B226293G1) TO THE REC/EXC COVER (PL19D417262)

1. REMOVE AND DISCARD PLUG BUTTONS AND PLATE NECESSARY FOR INSTALLATION OF S1, S2, S3. RETAIN 6-32 X 1/4 SCREWS FOR INSTALLING S3.
2. BEFORE INSERTING S1 INTO CHASSIS, WITH SWITCH IN ITS FULL COUNTERCLOCKWISE POSITION, INSERT TAB OF SWITCH LIMITING WASHER INTO THE FOURTH HOLE CLOCKWISE FROM THE LOCATING KEY TAB OF THE SWITCH, AS SHOWN IN DETAIL B.
3. INSTALL S1 WITH HARDWARE SUPPLIED. ORIENT AS SHOWN. ROUTE CABLE R2 AS INDICATED. PLUG P1 INTO I.F.A.S. BOARD IN AREA DESIGNATED IF BOARD IS PRESENT.
4. ASSEMBLE DIALFACE TO KNOB, SEATING 4 GUIDES ON DIALFACE INTO OPENING AT LARGE END OF KNOB. PLACE KNOB ON SHAFT OF S1 WITH SWITCH IN ITS FULL COUNTERCLOCKWISE POSITION. ALIGN POSITION NUMBER 1 ON KNOB DIALFACE WITH LOCATING KEY TAB. TIGHTEN KNOB SECURELY USING NUT IN OUTER END OF KNOB. INSERT KNOB BUTTON INTO END OF KNOB. UNTIL FLUSH R/END OF KNOB. SEE VIEW B.
5. INSTALL S3 WITH HARDWARE SUPPLIED. ORIENT AS SHOWN.
6. REMOVE AND DISCARD GUIDE PIN AT THIS LOCATION. THEN INSTALL TB1 WITH 4-40 X 1/2 HARDWARE SUPPLIED. ORIENT AS SHOWN.
7. INSTALL AND SOLDER R2 BETWEEN S3-4 AND S3-1 AS SHOWN. INSTALL AND SOLDER R3 BETWEEN S3-1 AND S3-2 AS SHOWN.
8. INSTALL AND SOLDER R5 TO S2A-10 AS SHOWN. INSTALL AND SOLDER R4 TO S2A-9 AS SHOWN. INSTALL AND SOLDER R7 TO S2A-6 AS SHOWN.
9. CLIP TAB OFF OF LIMITING WASHER THEN, INSTALL S2 WITH HARDWARE SUPPLIED. ORIENT AS SHOWN. ROUTE CABLE W1 AS INDICATED. PLUG P2 INTO EXCITER BOARD IF PRESENT. THEN, WITH SWITCH IN ITS FULL COUNTER CLOCKWISE POSITION, PLACE KNOB ON SHAFT. ALIGN POSITION NUMBER 1 ON KNOB DIALFACE WITH SWITCH LOCATING KEY TAB. TIGHTEN KNOB SECURELY. INSERT KNOB BUTTON. IN APPLICATIONS USE PHASE LOCK LOOP EXCITERS, GUY BE OFF AT TERMINALS 12, 13 AND DISCARD.
10. CONNECT R6 TO TB1-1 AND SOLDER. CONNECT R4 TO TB1-2 AND SOLDER. CONNECT R7 TO TB1-3 AND SOLDER. MAKE THE FOLLOWING CONNECTIONS FROM S1. CONNECT WOG WIRE TO J932-13. MAKE THE FOLLOWING CONNECTIONS FROM S2. CONNECT BK WIRE FROM J933-1 TO S3-2. CONNECT G WIRE FROM J933-19 TO TB1-2. CONNECT BR WIRE FROM J933-29 TO TB1-1. CONNECT WOG WIRE TO J933-15. CONNECT O WIRE TO J933-14. CONNECT WOL WIRE TO J933-16. CONNECT WBR WIRE TO J933-17. CONNECT WOG WIRE TO HOEE-18. CONNECT W WIRE TO TB1-3. CONNECT DA WIRE FROM S2A-1 TO S3-4. CONNECT R WIRE TO J933-13.
11. WHEN MOUNTING THE 800 MHz EXCITER, THE CAN OR COVER DOES NOT HAVE A HOLE FOR P2; USE CLAMP 19A116552P1 TO SECURE P2 & W1 ON TOP OF THE COVER.

(19D417603, Rev. 13)



(4170-S-01, Rev. A)



NOTES:

1-ALL WIRES ARE SF24 UNLESS OTHERWISE NOTED.

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 MICROFARADS (EQUAL TO MICROFARADS) UNLESS FOLLOWED BY UF= MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH= MILLIHENRYS OR H=HENRYS.

(19D417597, Rev. 4)

PARTS LIST

LBI-31983

PARTS LIST

LBI4799A
MASTR II CONTINUOUS DUTY
STATION HARNESS WITH METERING
19C320811G4

SYMBOL	GE PART NO.	DESCRIPTION
		----- JACKS AND RECEPTACLES -----
J1	19B209288P5	Connector. Includes:
	19B209288P29	Shell.
		Contact, electrical: wire size No. 22-30 AWG; sim to Molex 02-09-1141. (Quantity 13).
J2	19B209288P3	Connector. Includes:
	19B209288P29	Shell.
		Contact, electrical: wire size No. 22-30 AWG; sim to Molex 02-09-1141. (Quantity 9).
J3	19B209288P5	Connector. Includes:
	19B209288P29	Shell.
		Contact, electrical: wire size No. 22-30 AWG; sim to Molex 02-09-1141. (Quantity 9).
		----- PLUGS -----
P1	19B209288P20	Connector. Includes:
	19B209288P29	Shell.
		Contact, electrical: wire size No. 22-30 AWG; sim to Molex 02-09-1141. (Quantity 11).
P2	19B209288P20	Connector. Includes:
	19B209288P29	Shell.
	19B209288P29	Contact, electrical: wire size No. 22-30 AWG; sim to Molex 02-09-1141. (Quantity 6).
	19B209288P30	Contact, electrical: male; sim to Molex 02-09-2141. (Quantity 1).
P3	19B209288P20	Connector. Includes:
	19B209288P29	Shell.
		Contact, electrical: wire size No. 22-30 AWG; sim to Molex 02-09-1141. (Quantity 9).
P4	19B209288P20	Connector. Includes:
	19B209288P29	Shell.
	19B209288P29	Contact, electrical: wire size No. 22-30 AWG; sim to Molex 02-09-1141. (Quantity 7).
	19B209288P30	Contact, electrical: male; sim to Molex 02-09-2141. (Quantity 1).
P5	19B209288P23	Connector. Includes:
	19B209288P29	Shell.
	19B209288P29	Contact, electrical: wire size No. 22-30 AWG; sim to Molex 02-09-1141. (Quantity 4).
P6 thru P8	19A143191G1	Connector includes 19C330656P1 - SHELL and 19A115793P1 - CONTACTS
P9	19B209288P4	Connector. Includes:
	19B209288P30	Shell.
	19B209288P30	Contact, electrical: male; sim to Molex 02-09-2141. (Quantity 1).
	19B209288P2	Contact, electrical: sim to Molex 02-09-2101. (Quantity 1).
P12	19A115793P1	Contact, electrical: sim to Malco 2700.
P13	19B219534P1	Connector, plug: 9 male contacts.
		----- TERMINAL BOARDS -----
TB1	19A130051G1	Plate.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PARTS LIST

LBI-4846A
METERING KIT
19B226293G1

SYMBOL	GE PART NO.	DESCRIPTION
		----- PLUGS -----
P1 and P2	19B219534P1	Connector, plug: 9 male contacts.
		----- RESISTORS -----
R1 and R2	19C314256P31872	Metal film: 18.7K ohms $\pm 1\%$, 1/2 w.
R3	19C314256P34022	Metal film: 40.2K ohms $\pm 1\%$, 1/2 w.
R4 and R5	19A700106P59	Composition: 680 ohms $\pm 5\%$, 1/4 w.
R6	19A701250P444	Metal film: 280K ohms $\pm 1\%$, 1/4 w.
R7	19C314256P31872	Metal film: 18.7K ohms $\pm 1\%$, 1/2 w.
		----- SWITCHES -----
S1	5495454P39	Rotary: 1 section, 1 pole, 2-12 pos with adjustable stop positions, non-shorting contacts, 2 amps at 25 VDC or 1 amp at 110 VAC; sim to Oak Type "A" or Centralab Series 100.
S2	5495454P38	Rotary: 2 sections, 2 poles, 2-12 pos with adjustable stop positions, non-shorting contacts, 2 amps at 25 VDC or 1 amp at 110 VAC; sim to Oak Type "A" or Centralab Series 100.
S3	19B209261P8	Slide: DPDT, 2 poles, 2 positions, .5 amp VDC or 3 amps VAC at 125 v; sim. to Switchcraft 46206L.
		----- TERMINAL BOARDS -----
TB1	7487424P18	Miniature: 3 contacts.
		----- CABLES -----
W1		HARNES ASSEMBLY 19B226293G2 (Includes P1, R1, S1)
W2		HARNES ASSEMBLY 19B226293G3 (Includes P2, R6, S2)
		----- MISCELLANEOUS -----
	7165075P2	Hex nut, brass: thd. size No. 3/8-32. (Used with S1 and S2).
	7115130P9	Lockwasher, internal tooth: No. 3/8. (Used with S1 and S2).
	19B209532P1	Knob, screw on. (Used with S1 and S2).
	19A116552P1	Cable clip.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PARTS LIST
METERING OPTION
19B234871P101
ISSUE 1

REFERENCE NUMBER	NUMBER	DESCRIPTION
C1	J19/362-0000	.001uF 50V MONO CAP.
J1	J19/233-0042	EFJ RED TIP JACK CONN.
J1216	J19/233-0005	12 POS MOLEX RECPT.
M1	J19/902-0004	50uA ANALOG METER
R1	J19/311-2003	200K 1/4W RES.
SW1	J19/611-0015	4PTT 3 POS SLIDE SWITCH
J1216 PIN 1-4	J19/233-0041	MALE MOLEX PIN
J1216 PIN 1,3	J19/222-0016	24" 22AWG GRN STRD WIRE
J1216 PIN 2,4	J19/222-0014	24" 22AWG RED STRD WIRE
M1	J19/200-0014	#6 SPADE LUG
M1 CHASSIS	J19/222-0021	3" 22AWG BLK STRD WIRE
M1 MINUS SLIDE	J19/222-0016	3" 22AWG GRN STRD WIRE
M1 PLUS SIDE	J19/222-0014	2" 22AWG RED STRD WIRE
SW1	J19/200-0087	#311x.187" RIVET
	J19/200-0081	5" CABLE TIE
	J19/900-5102A	ANODIZED METER COVER
	J19/199-3070	#6-32x1/4" PHLP. SCRW