-01 Option
Rechargeable Battery Option

601-1. INTRODUCTION

601-2. The Option 8050A-01 replaces the standard 8050A power supply with a power supply that will operate from either rechargeable batteries or line power. If the batteries are fully charged, your 8050A will operate for 10 hours (typical) before the batteries must be recharged.

601-3. SPECIFICATIONS

601-4. The specifications for the 8050A-01 are given in Table 601-1. All other specifications are equivalent to those given for the 8050A in Section 1 of this manual.

601-5. OPERATION

WARNING

DO NOT OPERATE YOUR 8050A-01 WITH THE BATTERIES REMOVED.

601-6. Operation of an 8050A-01 differs in two respects from operation of a standard 8050A -- battery charging and the BT annunciator on the display. When the BT annunciator appears, on the display during operation, measurement accuracy may deteriorate beyond the limits specified in Section 1. If the BT annunciator appears and you still need to make additional measurements before recharging, set the POWER switch to the OFF position for a couple of minutes, then set the POWER switch back to the ON position. If the BT annunciator does not appear immediately, you have at least two minutes of in-specification operation. If the BT annunciator appears immediately after the POWER switch is set back to the ON position, none of the measurements should be accepted as being within the specified limits. Normally, when the BT annunciator appears, recharge the batteries as soon as possible.

601-7. To recharge the batteries, connect the 8050A-01 to line power and set the POWER switch to the OFF position. If the POWER switch is set to the ON position, the batteries receive a reduced charge that is sufficient to maintain their charge level but insufficient to charge the batteries to a higher level.

Table 601-1. 8050A-01 Specifications

8050A—01 BATTERY OPTION:

BATTERIES: TYPE: NiCAD
OPERATING TIME: 10 hours, typical
RECHARGE TIME: (with POWER switch in OFF position): 14 hours for full charge

POWER CONSUMPTION: 6W max.

LINE VOLTAGE: 90-264V, 47-440 Hz, field changeable

STANDARDS: IEC 348: Protection Class 1 when operated from supply mains
Protection Class 2 when operated from internal batteries

601-8. THEORY OF OPERATION

601-9. The theory of operation of the 8050A-01 is illustrated by the main pcb schematic in Section 7. The battery power supply is shown below the standard power supply on Sheet 1 of the schematic. The 8050A-01 can be used with line voltage from 90V to 264V, 47 to 440 Hz. (To select the proper line voltage configuration, refer to the 8050A-01 AC Line Voltage procedure, given later in this subsection.) Fuse F3 provides protection for the power supply. Line power input is rectified, filtered, and regulated. The output of the power supply acts as a current source for the battery. The battery determines the voltage level into the power converter. Do not operate the 8050A-01 with the battery removed. The power converter uses the flyback transformer technique to develop several output voltages so that +13V, -10V, +6V, and -5V (with respect to power supply common) are available.

609-10. When the battery voltage drops below approximately 4V, the BT annunciator appears in the display.

601-11. MAINTENANCE

WARNING

THESE SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED PERSONNEL ONLY. TO AVOID ELECTRICAL SHOCK, DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.

601-12. Battery Replacement

601-13. Use the following procedure for removing and replacing batteries:

1. Complete the Calibration Access procedure given in Section 4 of this manual.
2. Turn the instrument upside down.
3. Unplug the red and black battery wires, for both battery packs, from the pcb pins.
4. Apply pressure to the front and rear sides of the battery cases to disconnect the cases from the Main PCB Assembly.
5. Remove the blotting papers.
6. Replace the batteries (and blotting papers) with new Fluke battery assemblies.
7. Reconnect the battery cases to the Main PCB Assembly.
8. Connect the battery wires to their appropriate pins on the main pcb, with red to + and black to –.
9. Reinstall the instrument in its case.

601-14. Fuse Replacement

601-15. Use the following procedure to replace the main power fuse, F3:

1. Complete the Calibration Access procedure given in Section 4 of this manual.
2. F3 is located immediately in front of the power receptacle.
   a. For 100V and 120V instruments, replace F3 with a 1/16A, 250V, type MDL fuse.
   b. For 240V instruments, replace F3 with a 1/32A, 250V, type MDL fuse.

601-16. 8050A-01 Line Voltage Selection

601-17. Use the following procedure to change the operating ac line voltage on the 8050A-01:

1. Complete the Calibration Access procedure given in Section 4 of this manual.
2. Locate the ac line selection holes on the Main PCB Assembly. (The white wire from the power receptacle will be soldered in one of the holes.)
3. Relocate the white wire (from the power receptacle) to the pcb hole labeled with the intended voltage.
4. Reinstall the case and relabel the ac line voltage designation on the decal at the bottom of the instrument.

601-18. LIST OF REPLACEABLE PARTS

601-19. Tables 601-2 and 601-3 list replaceable parts for the 8050A-01. Figures 601-1 and 601-2 are the component location diagrams for the 8050A-01.

Table 601-2. 8050A-01 Final Assembly

REF DES	DESCRIPTION	FLUKE STOCK NO.	MFG SPLY CODE	MFG PART NO.	TOT QTY	REC QTY	NOTE
	8050A FINAL ASSEMBLY WITH BATTERY OPTION FIGURE 601-1 (8050A-01)	8050A	WITH	BATTERY OPTION -01			
					1		
A1	MAIN PCB ASSEMBLY				2		
BT1,BT2	BATTERY, WIRED SET	487975	89536	487975	1	5	
F1	FUSE, FAST-ACT, 2A	376582	71400	AGX-2			
	FOR EUROPEAN USAGE USE P/N	460972	89536	460972	1	5	
F2	FUSE, FIBRE, 3A, 600V	475004	71400	BBS-3	1	5	
F3	FUSE, SLO-BLO, 1/16A	163030	71400	MDL1-16			
	FOR EUROPEAN USAGE USE 1/32A, 5X20MM 240V. REPLACE FUSE CLIPS WITH FUSE. RELOCATE WHITE WIRE IN 240V HOLE.						
H1	SCREW, PHP, 6-32 X 1/4	385401	73734	19042	5		
H2	SCREW, PHP, 6-32 X 1/2	320051	89536	320051	2		
H3	SCREW, RHP, 4-40 X 1/4	256156	89536	256156	5		
H4	SCREW, THD-FORMING, 5/20 X 5/16	494641	89536	494641	4		
H5	SCREW, SEMS, 6-32 X 1/4	178533	89536	178533	3		
H6	SCREW, PHP, 6/32 X 3/8	288266	89536	288266	2		
H7	WASHER, #6 FLAT	340505	89536	340505	2		
J1	CABLE, DISPLAY INTERCONNECT	507723	89536	507723	1		
LCD1	DISPLAY, LIQUID CRYSTAL	507673	89536	507673	1	1	
MP1	BEZEL, LCD	479642	89536	479642	1		
MP2	BRACKET, LCD	471730	89536	471730	1		
MP3	BUTTON, SWITCH (FUNCTION)	425900	89536	425900	4		
MP4	BUTTON, SWITCH (GREEN)	510271	89536	510271	1		
MP5	BUTTON, GRAY (OFFSET)	510164	89536	510164	1		
MP6	BUTTON, SWITCH (RANGE)	426759	89536	426759	6		
MP7	DECAL, CSA	525527	89536	525527	1		
MP8	CONNECTOR, ELASTOMERIC	453092	89536	453092	1		
MP9	FUSE HOLDER ASSEMBLY	516039	89536	516039	1		
	TO ORDER FUSE HOLDER CAP ONLY, FOR EUROPEAN USAGE USE P/N	SEE	MP12				
MP10	INSERT, SILICONE	537076	89536	537076	2		
MP11	INSULATOR	525139	89536	525139	1		
		495044	89536	495044		1	
MP12	CAP, FUSEHOLDER (FOR SEPARATE ORDER) TO ORDER COMPLETE ASSEMBLY, SEE MP9 P/N.	478248	89536	478248	2		
MP13	DECAL, DISC (ON HANDLE)	510156	89536	510156	1		
MP14	PANEL, FRONT	471029	89536	471029	1		
MP15	RECEPTACLE, AC	510198	89536	510198	2		
MP16	RETAINER, FLEX	516021	89536	516021	1		
MP17	SHIELD, INSULATOR	510172	89536	510172	1		
MP18	SHIELD, MAIN	510180	89536	510180	1		
MP19	SHIELD, TOP	525196	89536	525196	1		
MP20	INSULATOR	508465	89536	508465	1		
MP21	DECAL, FRONT PANEL	478008	89536	478008	1		
MP22	CASE, EXTERIOR PLASTIC	330092	89536	330092	1		
MP23	HANDLE, MOLDED	507665	89536	507665	1		
MP24	DECAL, SPECIFICATION	516666	89536	516666	1		
MP25	TEST LEAD W/PROBE (Y8132)	534487	89536	534487	1		
MP26	LABEL, "Caution"	483610	89536	483610	2	2	
MP27	PAD, BATTERY ABSORBANT	471052	89536	471052	2		
MP28	RETAINER, BATTERY	501593	89536	501593	1		
MP29	GROMMET (USED IN SHIPMENT)	524611	89536	524611	1		
MP30	DECAL, FACTORY MUTUAL	537514	89536	537514	1	1	
MP31	JUMPER ASSY. (FOR U5)	537522	89536	537522	1	1	
MP32	JUMPER ASSY. (FOR U33)	697821	89536	697821	1		
MP33	BOX, UNIT SHIPMENT	723155	89536	723155	1		
MP34	BOX LINER	343723	89536	343723	1		
W1	LINE CORD	530907	89536	530907	1		
TM1	INSTRUCTION MANUAL (8050A)	533919	89536	533919	AR		
	RECOMMENDED SPARE PARTS KIT (8050A)						

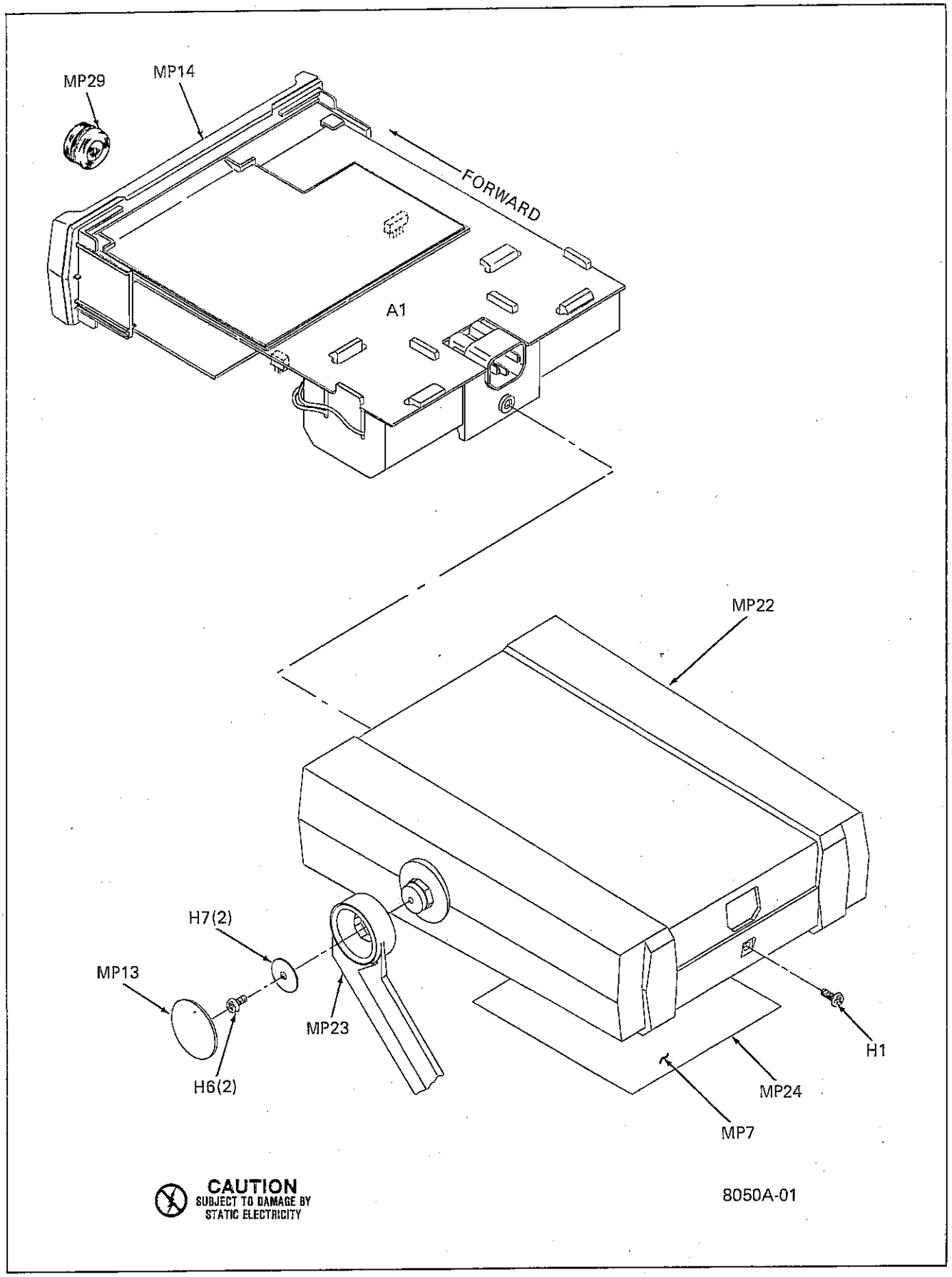
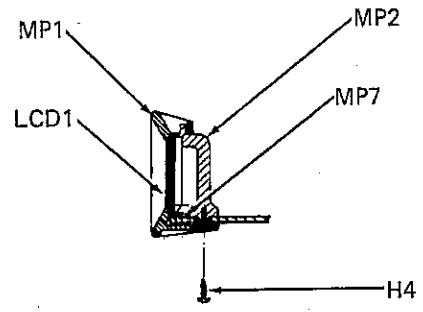
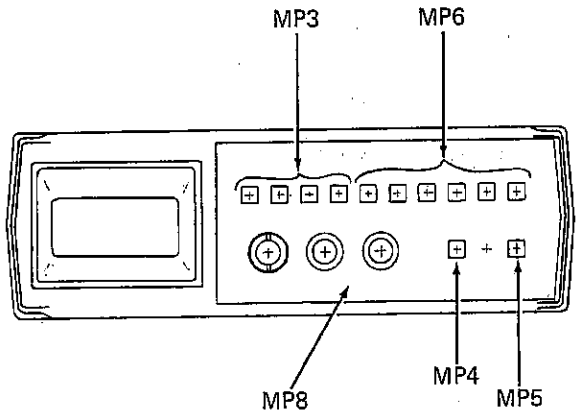


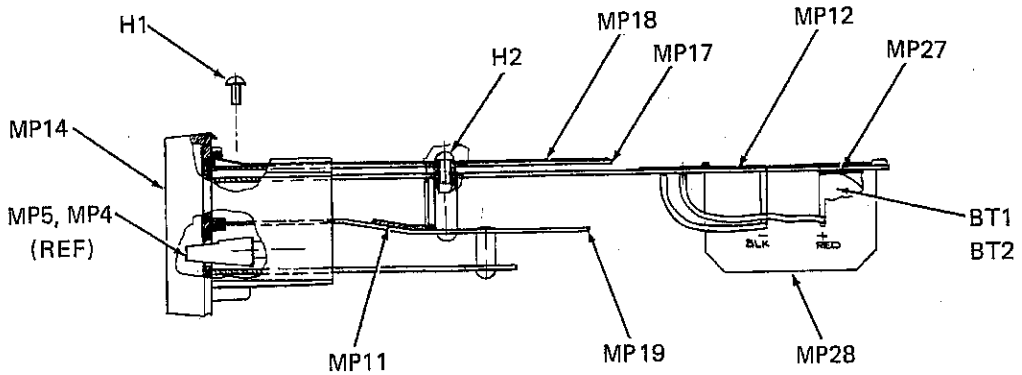
Figure 601-1. 8050A-01 Final Assembly



Bezel Section



FRONT VIEW



SIDE VIEW

8050A-4011

Figure 601-1. 8050A-01 Final Assembly (cont)

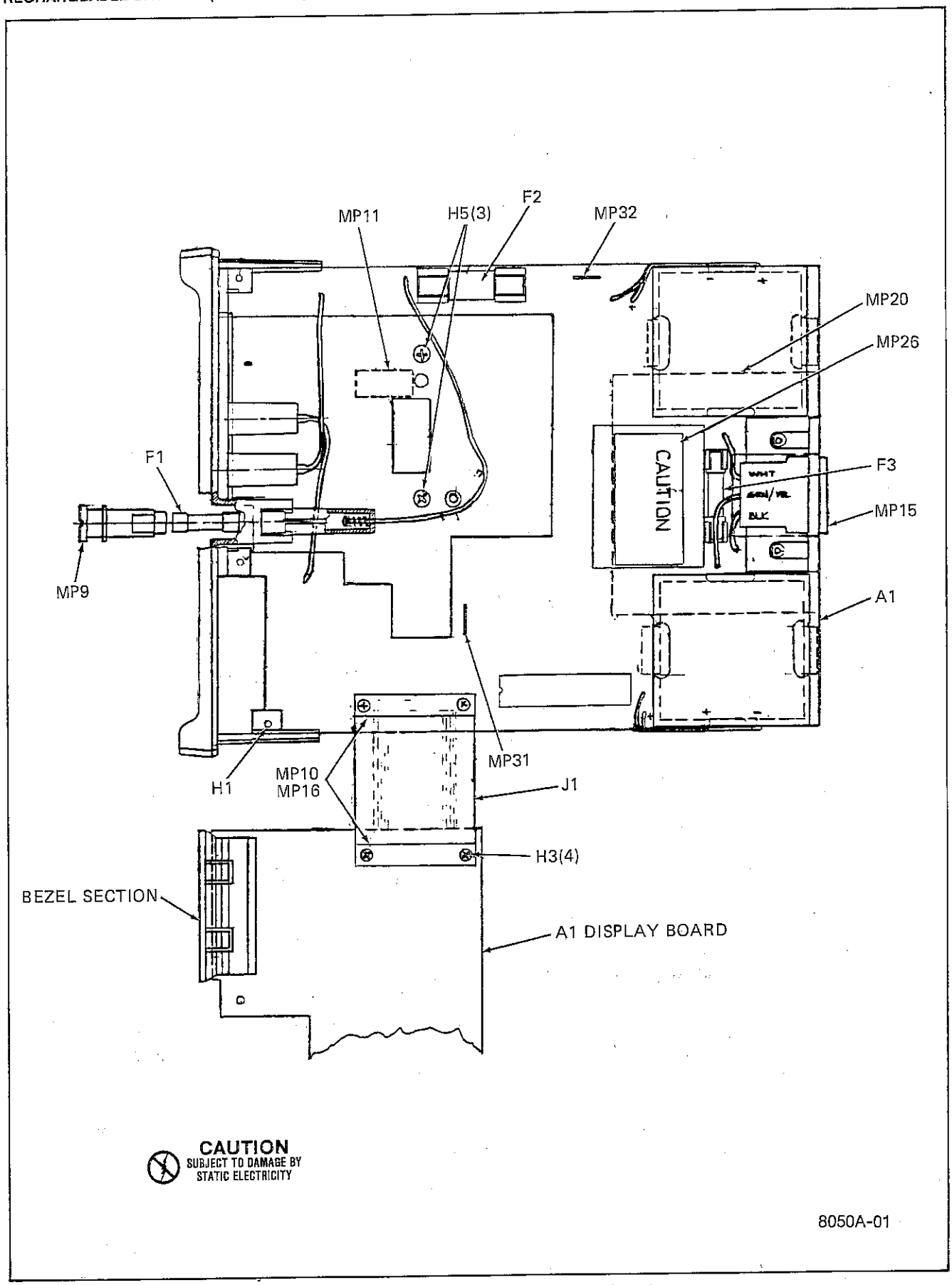


Figure 601-1. 8050A-01 Final Assembly (cont)

Table 601-3. A1 Main PCB Assembly

REF DES	DESCRIPTION	FLUKE STOCK NO.	MFG SPLY CODE	MFG PART NO.	TOT QTY	REC QTY	NOTE
			WITH	BATTERY OPTION -01			1 2
A1	MAIN PCB ASSEMBLY FIGURE 601-2 (8050A-4011AAI)						
C1	CAP, VAR, 1-5-0.25 PF, 2000V	218206	72982	530-000	2		
C2	CAP, VAR, 1-5-0.25 PF, 2000V	218206	72982	530-000	REF		
C3	CAP, MICA, 120 PF +/-5%, 500V	148486	72136	DM15F121J	2		
C4	CAP, MICA, 120 PF +/-5%, 500V	148486	72136	DM15F121J	REF		
C5	CAP, MICA, 1800 PF +/-5%, 500V	148353	89536	148353	1		
C6	CAP, POLYPROP, 10 UF +/-10%, 100V	446781	89536	446781	1		
C7	CAP, POLYEST, 1.0 UF +/-10%, 100V	447847	37445	C280MAH/AIM	1		
C8	CAP, TA, 10 UF +/-20%, 15V	193623	56289	196D106X0015A1	4		
C9	CAP, POLYPROP, .22 UF +/-10%, 100V	446799	89536	446799	1		
C10	CAP, POLYESTER, .022 UF +/-10%, 1000V	448183	52763	MKT. 1822 322/10	1		
C11	CAP, MYLAR, .047 UF +/-10%, 250V	162008	73445	C280MAE/A47K	2		
C12	CAP, ELECT, 470 UF -10/+75%, 16V	501510	89536	501510	2		
C13	CAP, ELECT, 470 UF -10/+75%, 16V	501510	89536	501510	REF		
C14	CAP, TA, 10 UF +/-20%, 15V	193623	56289	196D106X0015A1	REF		
C15	CAP, TA, 22 UF +/-20%, 15V	423012	56289	196D226X0015KA1	1		
C20	CAP, ELECT, 2.2 UF +/-20%, 50V	614875	89536	614875	1		
C21	CAP, ELECT, 220 UF -10/+75%, 16V	435990	89536	435990	2		
C22	CAP, ELECT, 470 UF -10/75%, 16V	501510	89536	501510	1		
C23	CAP, ELECT, 2200 UF -10/+75%, 16V	474981	89536	474981	1		
C25	CAP, CER, 1000 PF +/-20%, 100V	149153	56289	C0238101F103M	3		
C26	CAP, CER, 1000 PF +/-20%, 100V	149153	56289	C0238101F103M	REF		
C27	CAP, TA, 2.2 UF +/-20%, 20V	161927	56289	196D226X0020HA1	1		
C28	CAP, POLYPROP, .047 UF +/-10%, 100V	446773	89536	446773	1		
C29	CAP, MICA, 180 PF +/-5%, 500V	148460	72136	DM15F181J	1		
C30	CAP, MICA, 68 PF +/-5%, 500V	146510	72136	DM15F680J	1		
C31	CAP, MYLAR, .047 UF +/-10%, 250V	162008	73445	C280MAE/A47K	REF		
C32	CAP, CERAMIC, 1000 PF +/-10%, 500V	357806	56289	C016B102G-102K	3		
C33	CAP, TA, 10 UF +/-20%, 15V	193623	56289	196D106X0015A1	REF		
C34	CAP, ELECT, 47 UF -10/+75%, 16V	436006	89536	436006	1		
C35	CAP, CERAMIC, 1000 PF +/-10%, 500V	357806	56289	C016B102G-102K	REF		
C36	CAP, CERAMIC, 1000 PF +/-10%, 500V	357806	56289	C016B102G-102K	REF		
C37	CAP, CER, .025 UF +/-20%, 100V	168435	56289	C0238101H253M	1		
C38	CAP, ELECT, 47 UF +/-20%, 10V	613984	89536	613984	2		
C39	CAP, ELECT, 47 UF +/-20%, 10V	613984	89536	613984	REF		
C40	CAP, MICA, 330 PF +/-5%, 500V	148445	72136	DM15F331J	1		
C41	CAP, ELECT, 10 UF +/-20%, 16V	614859	89536	614859	2		
C42	CAP, TA, 10 UF +/-20%, 15V	193623	56289	196D106X0015A1	REF		
C43	CAP, CER, 1000 PF +/-20%, 100V	149153	56289	C0238101F103M	REF		
C44	CAP, ELECT, 10 UF +/-20%, 16V	614859	89536	614859	REF		
CL1	DIODE, FED, CURRENT REGULATOR	393454	07910	TCR5290	1	1	
CR1	DIODE, SI, RECTIFIER, 2 AMP, 50 VOLT	347559	14099	1N5400	1	1	
CR2	DIODE, SI, LO-CAP/LO-LEAK	348177	07263	FD7223	3	1	
CR3	DIODE, SI, LO-CAP/LO-LEAK	348177	07263	FD7223	REF		
CR4	DIODE, RECTIFIER	343491	01295	1N4002	1	1	
CR5,CR6	DIODE, SI, HI-SPEED SWITCHING	203323	07910	1N4448	2	1	
CR12	DIODE, SI, LO-CAP/LO-LEAK	348177	07263	FD7223	REF		
DS1	DIODE, LIGHT-EMITTING (LED) RED	429555	12040	MLS5053	1	1	
MP1	SPRING, COMPRESSION COIL	422824	83553	C0240-026-0500-S	1		
MP2	SUPPORT, HYBRID (TO U32)	515635	89536	515635	2		
MP3	CLIP, FUSE	485219	91833	3529	2		
MP4	HOUSING, LED (W/DS1)	522243	89536	522243	1		
MP5	HEATSINK, (W/U26)	473785	89536	473785	1		
MP6	SUPPORT, RESISTOR	545079	89536	345079	1		
MP7	CLIP, COMPONENT	516880	89536	516880	2		
MP8	SPACER, SWAGED	525154	89536	525154	4		
MP9	SPACER, STANDOFF	295089	89536	285089	2		
MP31	JUMPER ASSY (FOR U5)	417899	52072	CA-05S-TSD	1		
MP32	JUMPER ASSY (FOR U33)	417311	30035	SS-109-1-04	1		
Q1	XSTR, SI, NPN	218396	89536	218396	3	1	
Q2	XSTR, SI, NPN	218396	89536	218396	REF		
Q3	XSTR, SI, NPN (METAL)	329698	89536	329698	1	1	
Q4	XSTR, SI, PNP	225599	07263	2N4250	2	1	

Table 601-3. A1 Main PCB Assembly (cont)

REF DES	DESCRIPTION	FLUKE STOCK NO.	MFG SPLY CODE	MFG PART NO.	TOT QTY	REC QTY	NOTE
Q5	XSTR, SI, PNP	340026	04713	MPS6563	1	1	
Q6	XSTR, SI, NPN, POWER	477331	04713	MDS01A	1	1	
Q7	XSTR, FET	370072	89536	370072	2	1	
Q8	XSTR, FET	370072	89536	370072	REF		
Q10	XSTR, SI, PNP	195974	04713	2N3906	2	1	
Q11	XSTR, SI, PNP	195974	04713	2N3906	REF		
Q12	XSTR, SI, NPN	168716	07263	S19254	1	1	
Q14	XSTR, SI, PNP	380394	89536	380394	3	1	
Q15	XSTR, SI, PNP	380394	89536	380394	REF		
Q16	XSTR, SI, PNP	225599	07263	2N4250	REF		
Q17	XSTR, SI, PNP	380394	89536	380394	REF		
Q18	XSTR, SI, NPN	218396	89536	218396	REF		
Q19	XSTR, FET, DUAL N-CHANNEL	419283	89536	419283	1	1	
R1	RES, COMP, 100K +/-10%, 1W	109397	01121	GB1041	1		
R2	RES, WW, 1000 +/-10%, 2W	474080	89536	474080	1		
R3	RES, MTL. FILM, 1000 +/-5%, 1/10W	514265	89536	514265	1		
R5	RES, CER, 100K +/-10%, 1/2W	529099	89536	529099	1		
R6	RES, VAR, 100 +/-10%, 1/2W	529115	89536	529115	1	1	
R7	RES, VAR, CER, 1K +/-10%, 1/2W	513259	89536	513259	1	1	
R8	RES, COMP, 220K +/-10%, 2W	110197	01121	HB1011	1		
R11	RES, VAR, CER, 500 +/-10%, 1/2W	447730	89536	447730	1	1	
R12	RES, CERMET, 200 +/-10%, 1/2W	474973	89536	474973	1		
R13	RES, MTL. FILM, 80.6K +/-1%, 1/8W	281121	91637	CMF558062F	1		
R14	RES, DEP. CAR, 1M +/-5%, 1/4W	348987	80031	CR251-4-5P1M	4		
R15	RES, DEP. CAR, 20 +/-5%, 1/4W	442202	80031	CR251-4-5P20E	2		
R16	RES, MTL. FILM, 900 +/-0.1%, 1/8W	461988	91637	CMF55901	1		
R17	RES, MTL. FILM 90 +/-0.1%, 1/8W	461970	91637	CMF55902	1		
R18	RES, WW, 9 +/-.15%, 1W	461962	89536	461962	1		
R19	RES, COMP, 100K +/-5%, 2W	285056	89536	285056	1		
R20	RES, COMP, 2.2M +/-10%, 1/2W	108225	89536	285056	1		
R21	RES, COMP, 22M +/-5%, 1/4W	221986	01121	CB2265	1		
R23	RES, DEP. CAR, 100 +/-5%, 1/4W	348771	80031	CR251-4-5P100E	2		
R24	RES, COMP, 4.7M +/-5%, 1/4W	220046	01121	CB4755	4		
R25	RES, DEP. CAR, 12 +/-5%, 1/4W	442178	80031	CR251-4-5P12E	1		
R26	RES, DEP. CAR, 9.1 +/-5%, 1/4W	441303	80031	CR251-4-5P9E1	1		
R27	RES, COMP, 10 +/-10%, 1/2W	108092	01121	EB1001	1		
R28	RES, DEP. CAR, 1K +/-5%, 1/4W	343426	80031	CR251-4-5P1K	1		
R29	RES, VAR, 1M +/-10%, 1/2W	485052	89536	485052	1	1	
R30	RES, DEP. CAR, 470K +/-5%, 1/4W	342634	80031	CR251-4-5P470K	1		
R31	RES, COMP, 470 +/-10%, 1/2W	108415	01121	EB4711	1		
R32	RES, DEP.CAR, 1M +/-5%, 1/4W	348987	80031	CR251-4-5P1M	REF		
R33	RES, DEP. CAR, 1M +/-5%, 1/4W	348987	80031	CR251-4-5P1M	REF		
R35	RES, MTL. FILM, 59K +/-1%, 1/8W	261677	91637	CMF555902F	1		
R36	RES, DEP. CAR, 15K +/-5%, 1/4W	348854	80031	CR251-4-5P15K	2		
R37	RES, COMP, 4.7M +/-5%, 1/4W	220046	01121	CB4755	REF		
R38	RES, DEP. CAR, 15K +/-5%, 1/4W	348854	80031	CR251-4-5P15K	REF		
R39	RES, MTL. FILM, 232K +/-1%, 1/8W	276618	91637	CMF552323	1		
R40	RES, DEP. CAR, 680 +/-5%, 1/4W	368779	80031	CR251-4-5P680E	1		
R42	RES, DEP. CAR, 27K +/-5%,1/4W	441501	80031	CR251-4-5P27K	1		
R43	RES, DEP. CAR, 750K +/-5%, 1/8W	442525	80031	CR251-4-5P750K	1		
R44	RES, DEP. CAR, 100 +/-5%, 1/4W	348771	80031	CR251-4-5P100E	REF		
R45	RES, COMP, 4.7M +/-5%, 1/4W	220046	01121	CB4755	REF		
R46	RES, FXD, 27K +/-5%, 1/4W	441501	80031	CR251-4-5P27K	1		
R47	RES, DEP. CAR, 8.2K +/-5%, 1/4W	441675	80031	CR251-4--5P8K2	1		
R48	RES, DEP. CAR, 15K +/-5%, 1/4W	348854	80031	CR251-4-5P15K	REF		
R49	RES, DEP. CAR, 27K +/-5%, 1/4W	441501	80031	CR251-4-5P27K	1		
R51	RES, DEP. CAR, 20 +/-5%, 1/4W	442202	80031	CR251-4-5P20E	REF		
R52	RES, COMP, 47M +/-10%, 1/2W	146415	89536	146415	1		
R53	RES, COMP, 4.7M +/-5%, 1/4W	220046	01121	CB4755	REF		
R54	RES, DEP. CAR, 1M +/-5%, 1/4W	348987	80031	CR251-4-5P1M	REF		
R55	RES, DEP. CAR, 470K +/-5%, 1/4W	342634	80031	CR251-4-5P470K	1		
R56	RES, CAR. DEP, 1 +/-5%, 1/4W	357665	80031	CR251-4-5P1E	1		
RT1	THERMISTOR	446849	50157	180Q10200	1	1	
RV1	VARISTOR	447672	09214	V430MA7	3	3	
RV2	VARISTOR	447672	09214	V430MA7	REF		

Table 601-3. A1 Main PCB Assembly (cont)

REF DES	DESCRIPTION	FLUKE STOCK NO.	MFG SPLY CODE	MFG PART NO.	TOT QTY	REC QTY	NOTE
RV3	VARISTOR	447672	09214	V430MA7	REF		
S1-S10	SWITCH ASSEMBLY	507707	89536	507707	1		
S11	SWITCH	473736	89536	473736	2		
S12	SWITCH	473736	89536	473736	REF		
T2	TRANSFORMER, (BATTERY MODEL)	574489	89536	514489	1		
T3	XFMR, DC-DC (BATTERY MODEL)	614123	89536	614123	1		
TP1-5	TERMINAL PINS	379438	89536	379438	12		
TP7-13							
U1	RESISTOR NETWORK	501080	89536	501080	1	1	3
U2	RESISTOR NETWORK	512905	89536	512905	1	1	4
U3	RESISTOR NETWORK	513556	89536	513556	1	1	
U4	RESISTOR NETWORK	513580	89536	513580	1	1	
U5	RESISTOR NETWORK	519736	89536	519736	1	1	
U6	IC, RES, 2-RESISTOR SHUNT	461491	89536	461491	1	1	
U7	IC, OP-AMP, DUAL, COMPENSATED, 8-PIN DIP	418566	18324	LM359N/CR3999	2	1	
U8	IC, OP-AMP, DUAL, COMPENSATED, 8-PIN DIP	418566	18324	LM359N/CR3999	REF		
U9	IC, LOW POWER, DUAL VOLTAGE COMPARATOR	478354	01295	LM393N	2	1	
U10Ø	IC, C-MOS, LIQUID-CRYSTAL 4-SEGMENT	453225	02735	CD4054BE	3	1	
U11Ø	IC, C-MOS, LIQUID-CRYSTAL 4-SEGMENT	453225	02735	CD4054BE	REF		
U12Ø	IC, C-MOS, LIQUID-CRYSTAL DSPLY DRIVERS	507376	02735	CD4056BE	4	1	
U13Ø	IC, C-MOS, LIQUID-CRYSTAL DSPLY DRIVERS	507376	02735	CD4056BE	REF		
U14Ø	IC, C-MOS, LIQUID-CRYSTAL DSPLY DRIVERS	507376	02735	CD4056BE	REF		
U15Ø	IC, C-MOS, LIQUID-CRYSTAL DSPLY DRIVERS	507376	02735	CD4056BE	REF		
U16Ø	IC, C-MOS, LIQUID-CRYSTAL 4-SEGMENT	453225	02735	CD4054BE	REF		
U21	IC, OPERATIONAL AMP. (8050A-4504)	609883	89536	609883	2	1	
U22Ø	IC, C-MOS, QUAD BILATERAL SWITCH, 14-PIN	363838	12040	MM5616AN	1	1	
U23	IC, OPERATIONAL AMP. (8050A-4504)	609883	89536	609883	REF		
U26	VOLTAGE REGULATOR	473793	89536	473793	1	1	
U27	RESISTOR NETWORK	513598	89536	513598	1	1	
U28	RECTIFIER BRIDGE	418582	83003	VM08	2	1	
U30	RECTIFIER BRIDGE	418582	83003	VM08	REF		
U31	IC, LOW POWER, DUAL VOLTAGE COMPARATOR	478354	01295	LM393N	REF		
U32	HYBRID RMS TO DC CONVERTER	510685	89536	510685	1		
U33	RESISTOR NETWORK	513564	89536	513564	1	1	
U34	RESISTOR NETWORK	519728	89536	519728	1	1	
VR1	DIODE, ZENER	387217	89536	387217	1	1	
VR2,VR3	DIODE, ZENER, 3MA, 5.6V +/-5%(SELECT)	535559	89536	535559	2	1	
W1	WIRE ASSEMBLY (RED)	537159	89536	537159	1		
W2	WIRE ASSEMBLY (BLK)	537167	89536	537167	1		
W3	WIRE ASSEMBLY (WHT)	489096	89536	489096	1		
W4	WIRE ASSEMBLY (BLK)	489104	89536	489104	1		
W5	WIRE ASSEMBLY (WHT)	489120	89536	489120	1		
W6	WIRE ASSEMBLY (GRN,YEL)	489112	89536	489112	1		
XU17	SOCKET, IC	429282	09922	DILB40P-108	1		
XU18-20	SOCKET, 14-PIN	276527	09922	DILB8P-108	3		
Y1	CRYSTAL, 4 MHZ	474072	89536	474072	1		

1 Please be aware of voltage changes.
2 Certain components may not be used therefore may not be installed.
3 U1 P/N 510941 may be used in place of P/N 501080.
4 U2 P/N 510834 may be used in place of P/N 512905.

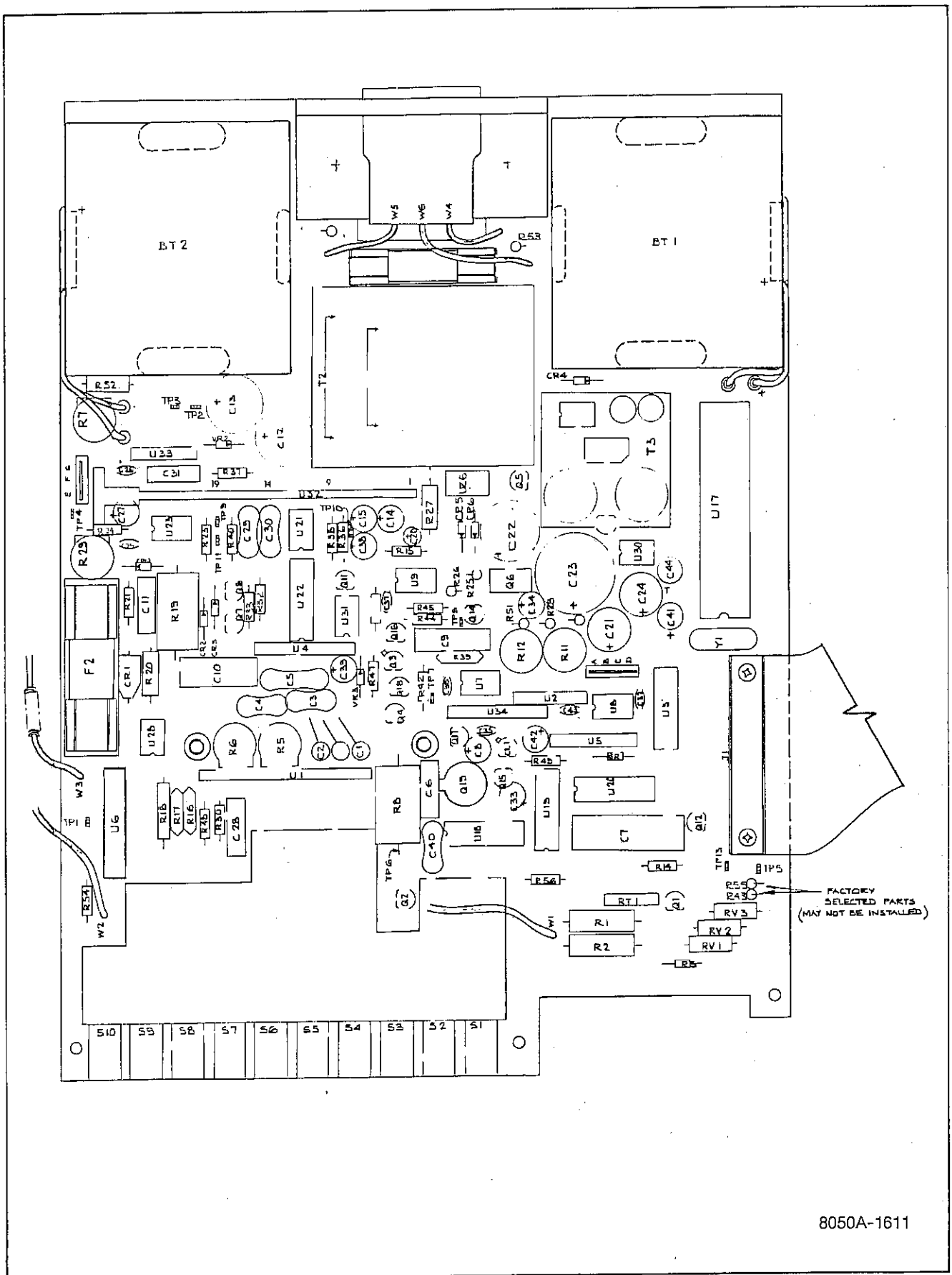
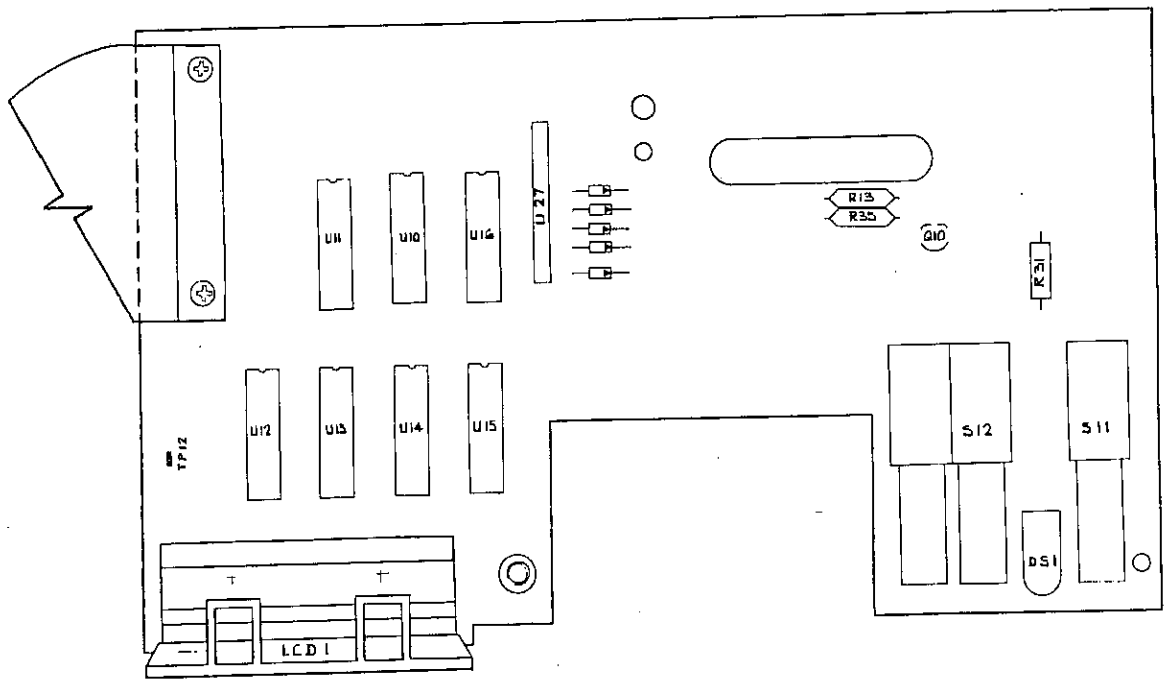


Figure 601-2. A1 Main PCB Assembly, 8050A-01



8050A-1611

Figure 601-2. A1 Main PCB Assembly, 8050A-01 (cont)