

CHANGE/ERRATA INFORMATION

ISSUE NO: 1 1/94

This change/errata contains information necessary to ensure the accuracy of the following manual. Enter the corrections in the manual if either one of the following conditions exist:

1. The revision letter stamped on the indicated PCA is equal to or higher than that given with each change.
2. No revision letter is indicated at the beginning of the change/errata.

MANUAL

Title: 8010A/8012A  
Part Number: 491944  
Print Date: August 1978  
Rev.- Date: 2, 1/85

C/E PAGE EFFECTIVITY

Page No.	Print Date
1	1/94
2	1/94
3	1/94
4	1/94
5	1/94
6	1/94
7	1/94
8	1/94

**ERRATA #1**

On page 4-6, Table 4-4, change STEP 1 under RANGE,

FROM: 20 mV            TO: 200 mV

**ERRATA #2**

On page 601-3, change the first sentence in step 5,

FROM:     With the DMM, verify the power supply voltages for each test point (TP) listed in Table 601-1.

TO:       With the DMM, verify the power supply voltages for each test point (TP) listed in Table 4-7.

**ERRATA #3**

On page 601-4, Table 601-2, change the MFG PART NO. for F3,

FROM: MDL1-32            TO: MDQ1-32

**CHANGE #2**

The following changes reflect the A1 Main PCB Assembly at revision level AG, and the Option -01 A1 Main PCB Assembly at revision level AJ.

Replace the parts lists, the reference designator drawings and the schematic with the following pages.

Table 5-2. A1 Main PCB Assembly

REFERENCE DESIGNATOR	FLUKE STOCK	MFRS SPLY	MANUFACTURERS PART NUMBER	TOT	N O T E
-A>-NUMERIC3-----> S-----DESCRIPTION-----	--NO--	--CODE--	--OR GENERIC TYPE-----	QTY-	-E-
AR 1					
C 1, 4	218206	89536	418780	1	
C 2, 7	148478	93790	ER-530-000	2	
C 3	148486	93790	CD15FD151J03	1	
C 5	148346	93790	CD15FD121J03	2	
C 6	162008	68919	CD19FD222J03	1	
C 8, 19, 33	193623	56289	MKS4473K250	1	
C 9	448183	37942	199D106X0015CA2	3	
C 10	436840	62643	160223K1000AH	1	
C 11, 13	446773	68919	SME63VB22RM6X11LL	1	
C 12	148429	89536	MKP4473K160B	2	
C 14	446781	68919	MKP4104K160B	1	
C 15	436113	68919	MKS4224K100	1	
C 16, 34	149153	60705	562CZ5UCK101AF103Z	2	
C 17	105692	60705	562CX5FCK102EE501K	1	
C 18	161927	56289	199D225X0020BA2	1	
C 30, 31	484071	89536	484071	2	
C 32	435990	62643	SME35VB221M10X12FT	1	
CR 1	347559	14936	P-300G-066	1	
CR 2, 3	348177	27014	FD7223	2	
CR 9- 11	698555	04713	1N4002	3	
DS 1	698381	89536	698381	1	
F 1	376582	71400	AGX-2	1	
F 2	475004	71400	BBS-3	1	
H 5, 15	103424	12014	CUP-07826-014-0.146	2	
H 16	479634	89536	479634	1	
H 17, 18	129890	74594	129890	2	
H 19, 20	276709	74594	276709	2	
H 21- 24	494641		COMMERCIAL	4	
H 25, 26	178533	2M530	0604IPP	2	
J 1	379438	00779	1-87022-0	1	
JA 1	471029	89536	471029	1	
MP 4	471730	89536	471730	1	
MP 7, 49, 50	425900	89536	425900	3	
MP 8, 28- 32	426759	89536	426759	6	
MP 9	422824	83553	C0240-026-0500S	1	
MP 18, 19	347526	55566	3053B440B14-MOD.=.625	2	
MP 20	515635	89536	515635	1	
MP 21	545079	89536	545079	1	
MP 22	471011	89536	471011	1	
MP 23	471037	89536	471037	1	
MP 24	471045	89536	471045	1	
MP 25	479642	89536	479642	1	
MP 26	445197	89536	445197	1	
MP 51	540724	89536	540724	1	
Q 1- 3, 9	218396	04713	2N3904	4	
Q 4, 5	195974	04713	2N3906	2	
R 1	109397	01121	GB1041	1	
R 2	474080	91637	CMF-65-69 1001F T-1,R64	1	3
R 3	474445	91637	CMF-55 1001B	1	
R 4	474973	80294	3352W-10-201	1	
R 5, 23	348987	59124	CF1/4 105J	2	
R 6	348771	59124	CF1/4 101J	1	
R 7	461988	89536	461988	1	
R 8	461970	89536	461970	1	
R 9	461962	89536	461962	1	
R 10	461780	89536	461780	1	
R 11, 32	108233	89536	108233	2	
R 12	572859	89536	572859	1	
R 13	357665	59124	CF1/4 1R0J	1	
R 14	285056	01121	HB1045	1	
R 15	348755	59124	CF1/4 150J	1	
R 16	109793	89536	109793	1	
R 17	348953	59124	CF1/4 224J	1	
R 18	343426	59124	CF1/4 102J	1	
R 19	478883	89536	478883	1	
R 20	342659	59124	CF1/4 225J	1	
R 21	485052	89536	485052	1	
R 22	342634	59124	CF1/4 474J	1	

An \* in 'S' column indicates a static-sensitive part.

Table 5-2. A1 Main PCB Assembly (cont)

REFERENCE DESIGNATOR		DESCRIPTION	FLUKE STOCK	MFRS SPLY	MANUFACTURERS PART NUMBER	TOT QTY	N O T
-A>-NUMERIC	S		--NO--	-CODE-	-OR GENERIC TYPE-		-E-
R	30	RES,CF,4.7K,+/-5%,0.25W	348821	59124	CF1/4 472J	1	
R	31	RES,CF,100K,+/-5%,0.25W	348920	59124	CF1/4 104J	1	
R	33	RES,CC,3.3M,+/-5%,0.25W	208389	89536	208389	1	
R	34	RES,CC,47M,+/-10%,0.5W	146415	89536	146415	1	
RT	1	THERMISTOR,RECT.,POS.,1K,+/-40%,25C	446849	54583	911P84E102YU13	1	
RV	1- 3	VARISTOR,430V,+/-10%,1.0MA	447672	34371	V430MT7B	3	
S	1	SINGLE STATION,ALTERNATE ACTION SWITC	473736	89536	473736	1	
S	4	SWITCH ASSEMBLY,PUSHBUTTON	473322	89536	473322	1	
T	1	TRANSF,PWR,1.65W,90-132V	461509	89536	461509	1	
U	1	RNET,MF,POLY,SIP,8010 HI V DIVIDER	508762	89536	508762	1	
U	2	RES,WW,NET,TOL MATCHED	461491	91637	461491	1	
U	3	* IC,CMOS,3.5 DIGIT ADC,CUSTOM	429100	34371	429100	1	
U	4	DIODE,SI,RECT,BRIDGE,BV=50V,IO=1A	418582	14936	DF01M	1	
U	5	RES,CERM,NET,CUSTOM	474999	89536	474999	1	
U	6	* IC,CMOS,QUAD XOR GATE	355222	34371	CD4030BE	1	
U	7	* IC,2.5 V,40 PPM T.C.,BANDGAP REF	472845	04713	MC1403U	1	
U	8	* HYBRID RMS CONVERTER	480897	89536	480897	1	
VR	2	* ZENER,UNCOMP,4.3V,5%,20.0MA,0.4W	180455	04713	1N749A	1	
W	1	WIRE ASSY, FUSE	489096	89536	489096	1	
W	2	WIRE ASSEMBLY	487579	89536	487579	1	
W	3	WIRE ASSEMBLY	487629	89536	487629	1	
W	4	WIRE ASSY, INPUT	487637	89536	487637	1	
W	5	WIRE ASSY, AC	489120	89536	489120	1	
W	6	WIRE ASSY, AC	489112	89536	489112	1	
W	8	WIRE ASSEMBLY	489773	89536	489773	1	
W	11	CONN,ELASTOMERIC,LCD TO PWB,2.000 L	453092	89536	453092	1	
XF	1	FUSE HOLDER ASSY	487967	89536	487967	1	
XF2		HLD, FUSE, 13/32, PWB MT	516880	71400	1A1360-03	2	
XU	1	SOCKET, IC, 40 PIN, DUAL WIPE, RETENTION	756668	00779	2-641616(-1or-3)	1	
Y	1	CRYSTAL,3.84MHZ,+/-0.05%,60 HZ	650390	89536	650390	1	1
Y	1	CRYSTAL,3.2MHZ,+/-0.05%,50 HZ	513937	89536	513937	0	2

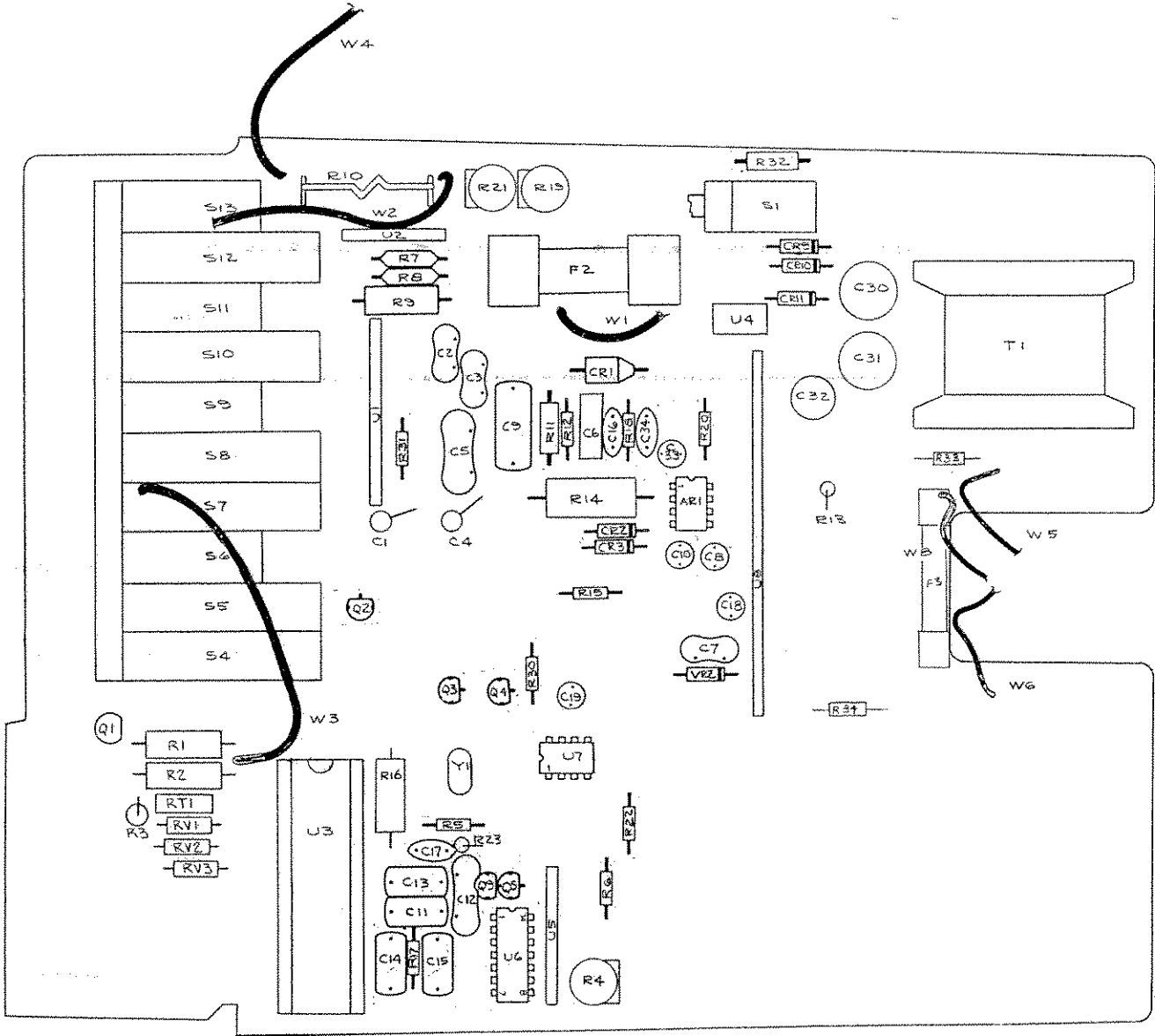
An \* in 'S' column indicates a static-sensitive part.

## NOTES:

NOTE 1 = USED ON 115V CONFIGURATION

2 = USED ON 230V CONFIGURATION

3 = R2 IS A FUSIBLE RESISTOR, USE EXACT REPLACEMENT TO ENSURE SAFETY!



8010A-1601

Table 601-2. A1 Main PCB Assembly (-01 Option)

REFERENCE DESIGNATOR	FLUKE STOCK	MFRS SPLY	MANUFACTURERS PART NUMBER	TOT QTY	N O T
-A>-NUMERIC->	S	NO	OR GENERIC TYPE	----	-E-
-----	-----	-----	-----	-----	-----
DESCRIPTION					
A 1	*	469981	89536 469981	1	
AR 1	*	418780	27014 LP351	1	
BT 1		487975	89536 487975	1	
C 1, 4		218206	52769 ER-530-000	2	
C 2, 7		148478	93790 CD15FD151J03	2	
C 3		148486	93790 CD15FD121J03	1	
C 5		148346	93790 CD19FD222J03	1	
C 6		162008	68919 MKS4473K250	1	
C 8, 19, 29,		193623	56289 199D106X0015CA2	4	
C 33		193623			
C 9		448183	37942 160223K1000AH	1	
C 10, 21, 28		436840	62643 SME63VB22RM6X11LL	3	
C 11, 13		446773	68919 MKP4473K160B	2	
C 12		148429	89536 148429	1	
C 14		446781	68919 MKP4104K160B	1	
C 15		436113	68919 MKS4224K100	1	
C 16, 34		149153	60705 562CZ5UCK101AF103Z	2	
C 17		105692	60705 562CX5FCK102EE501K	1	
C 18, 24		161927	56289 199D225X0020BA2	2	
C 20		474981	89536 474981	1	
C 22, 26, 27		435990	62643 SME35VB221M10X12FT	3	
C 23		363713	56289 199D685X0035DA2	1	
C 25		357806	60705 562CX5FBA102EF102K	1	
C 36		402966	04222 SR201C102MAA	1	
CR 1		347559	14936 P-300G-066	1	
CR 2, 3	*	348177	27014 FD7223	2	
CR 5, 8	*	203323	65940 1N4448	2	
CR 6, 7		698555	04713 1N4002	2	
DS 1		698381	89536 698381	1	
F 1		376582	71400 AGX-2	1	
F 2		475004	71400 BBS-3	1	
F 3		163022	89536 163022	1	
H 5, 15		103424	12014 CUP-07826-014-0.146	2	
H 16		479634	89536 479634	1	
H 17, 18		129890	74594 129890	2	
H 19, 20		276709	74594 276709	2	
H 21- 24		494641	89536 494641	4	
H 25, 26		178533	2M530 0604IPP	2	
J 1		379438	00779 1-87022-0	1	
J 2, 3		233411	00779 60599-3	2	
JA 1		471029	89536 471029	1	
MP 4		471730	89536 471730	1	
MP 7, 49, 50		425900	89536 425900	3	
MP 8, 28- 32		426759	89536 426759	6	
MP 9		422824	83553 C0240-026-0500S	1	
MP 10		471052	89536 471052	1	
MP 11		483610	89536 483610	1	
MP 13		473785	89536 473785	1	
MP 18, 19		347526	55566 3053B440B14-MOD.=.625	2	
MP 20		515635	89536 515635	1	
MP 21		545079	89536 545079	1	
MP 22		471011	89536 471011	1	
MP 23		471037	89536 471037	1	
MP 24		471045	89536 471045	1	
MP 25		479642	89536 479642	1	
MP 26		445197	89536 445197	1	
MP 27		483602	89536 483602	1	
MP 51		540724	89536 540724	1	
Q 1- 3, 7,	*	218396	04713 2N3904	5	
Q 9	*	218396			
Q 4, 5, 8	*	195974	04713 2N3906	3	
Q 6	*	418707	27014 MPS6562	1	
R 1		109397	01121 GB1041	1	
R 2		474080	91637 CMF-65-69 1001F	1	1
R 3		474445	91637 CMF-55 1001B	1	
R 4		474973	80294 3352W-10-201	1	
R 5, 23		348987	59124 CF1/4 105J	2	
R 6, 28		348771	59124 CF1/4 101J	2	

An \* in 'S' column indicates a static-sensitive part.

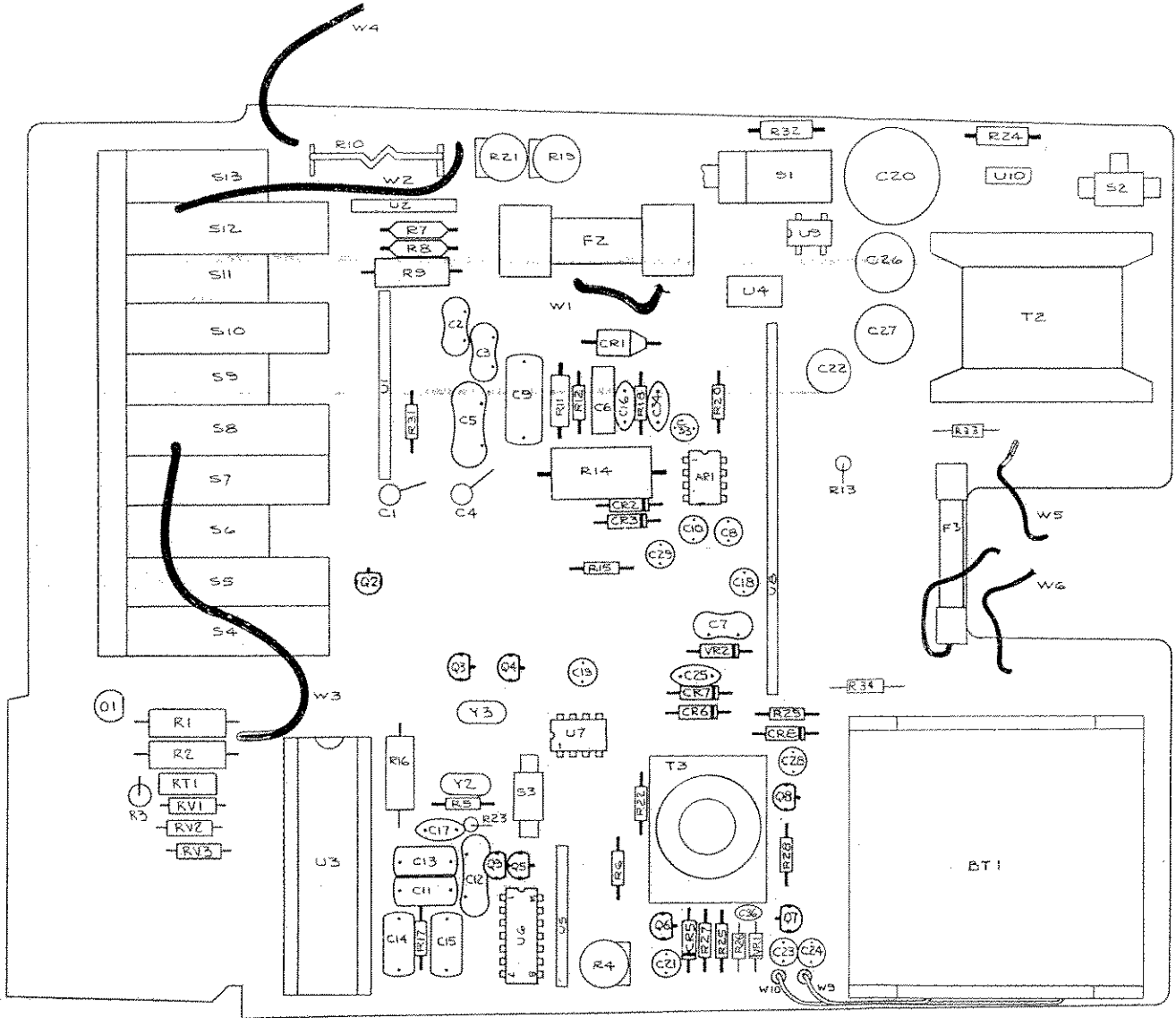
Table 601-2. A1 Main PCB Assembly (-01 Option) (cont)

REFERENCE DESIGNATOR	FLUKE STOCK	MFRS SPLY	MANUFACTURERS PART NUMBER	TOT QTY	N O T E
-A>-NUMERICS-----> S-----DESCRIPTION-----	--NO--	-CODE-	-OR GENERIC TYPE-----	QTY-	-E-
R 7	RES,MF,900,+-.0.1%,0.125W,50PPM	461988	89536 461988	1	
R 8	RES,MF,90,+-.0.1%,0.125W,50PPM	461970	89536 461970	1	
R 9	RES,WW,9.000,+-.15%,3W	461962	89536 461962	1	
R 10	RES,WW,.01,+-.25%,1W	461780	89536 461780	1	
R 11, 32	RES,CC,22M,+-.10%,0.5W	108233	89536 108233	2	
R 12	RES,CC,22M,+-.5%,0.25W	572859	89536 572859	1	
R 13, 27	RES,CF,1,+-.5%,0.25W	357665	59124 CF1/4 1R0J	2	
R 14	RES,CC,100K,+-.5%,2W	285056	01121 HB1045	1	
R 15	RES,CF,15,+-.5%,0.25W	348755	59124 CF1/4 150J	1	
R 16	RES,CC,1M,+-.10%,1W	109793	89536 109793	1	
R 17	RES,CF,220K,+-.5%,0.25W	348953	59124 CF1/4 224J	1	
R 18	RES,CF,1K,+-.5%,0.25W	343426	59124 CF1/4 102J	1	
R 19	RES,VAR,CERM,5K,+-.10%,0.5W	478883	89536 478883	1	
R 20	RES,CF,2.2M,+-.5%,0.25W	342659	59124 CF1/4 225J	1	
R 21	RES,VAR,CERM,1M,+-.10%,0.5W	485052	89536 485052	1	
R 22	RES,CF,470K,+-.5%,0.25W	342634	59124 CF1/4 474J	1	
R 24	RES,CC,8.2,+-.5%,0.5W	159590	89536 159590	1	
R 25	RES,CF,4.3K,+-.5%,0.25W	441576	59124 CF1/4 433J	1	
R 26	RES,CF,47,+-.5%,0.25W	441592	59124 CF1/4 470J	1	
R 29	RES,CF,4.7K,+-.5%,0.25W	348821	59124 CF1/4 472J	1	
R 31	RES,CF,100K,+-.5%,0.25W	348920	59124 CF1/4 104J	1	
R 33	RES,CC,3.3M,+-.5%,0.25W	208389	89536 208389	1	
R 34	RES,CC,47M,+-.10%,0.5W	146415	89536 146415	1	
RT 1	THERMISTOR,RECT.,POS.,1K,+-.40%,25C	446849	54583 911PB4E102YU13	1	
RV 1- 3	VARISTOR,430V,+-.10%,1.0MA	447672	34371 V430MT7B	3	
S 1	SINGLE STATION,ALTERNATE ACTION SWITC	473736	89536 473736	1	
S 2, 3	SWITCH,SLIDE,SPDT	453365	79727 G1-116-0005,G-20-32	2	
S 4	SWITCH ASSEMBLY,PUSHBUTTON	473322	89536 473322	1	
T 2	TRANSFORMER,BATTERY CHARGER 90-264V	490110	89536 490110	1	
T 3	TRANSF,INV,0.52MH,TOROID	478453	89536 478453	1	
U 1	RNET,MF,POLY,SIP,8010 HI V DIVIDER	508762	89536 508762	1	
U 1	RES,CERM,NET,TOL/TC MATCHED	461483	89536 461483	1	
U 2	RES,WW,NET,TOL MATCHED	461491	91637 461491	1	
U 3	* IC,CMOS,3.5 DIGIT ADC,CUSTOM	535369	89536 535369	1	
U 3	* IC,CMOS,3.5 DIGIT ADC,CUSTOM	429100	34371 429100	1	
U 4, 9	DIODE,SI,RECT,BRIDGE,BV=50V,IO=1A	418582	14936 DF01M	2	
U 5	RES,CERM,NET,CUSTOM	474999	89536 474999	1	
U 6	* IC,CMOS,QUAD XOR GATE	355222	34371 CD4030BE	1	
U 7	* IC,2.5 V,40 PPM T.C.,BANDGAP REF	472845	04713 MC1403U	1	
U 8	* HYBRID RMS CONVERTER	480897	89536 480897	1	
U 10	* IC,VOLT REG,ADJ,1.2 TO 37 V,1.5 AMPS	473793	27014 LM317MP	1	
VR 1	* ZENER,UNCOMP,10.0V,5%,20.0MA,0.5W	473744	04713 1N5240B	1	
VR 2	* ZENER,UNCOMP,4.3V,5%,20.0MA,0.4W	180455	04713 1N749A	1	
W 1	WIRE ASSY, FUSE	489096	89536 489096	1	
W 2	WIRE ASSEMBLY	487579	89536 487579	1	
W 3	WIRE ASSEMBLY	487629	89536 487629	1	
W 4	WIRE ASSY, INPUT	487637	89536 487637	1	
W 5	WIRE ASSY, AC	489120	89536 489120	1	
W 6	WIRE ASSY, AC	489112	89536 489112	1	
W 8	WIRE ASSY, AC	489104	89536 489104	1	
W 10	CONN,ELASTOMERIC,LCD TO PWB,2.000 L	453092	89536 453092	1	
XF 1	FUSE HOLDER ASSY	487967	89536 487967	1	
XF2	HLD, FUSE, 13/32, PWB MT	516880	71400 1A1360-03	2	
XF 3, 4	HLD, FUSE, 1/4, PWB MT	485219	91833 3529	2	
XU 1	SOCKET, IC, 40 PIN, DUAL WIPE, RETENTION	756668	00779 2-641616(-1or-3)	1	
Y 2	CRYSTAL, 3.2MHZ, +-.0.05%, HC-18/U	513937	61429 HC-49/U-3.2MHZ	1	
Y 3	CRYSTAL, 3.84MHZ, +-.0.05%, HC-18/U	650390	61429 HC-18/U-384MHZ	1	

An \* in 'S' column indicates a static-sensitive part.

## NOTES:

NOTE 1 = R2 IS A FUSIBLE RESISTOR, USE EXACT REPLACEMENT TO ENSURE SAFETY!



8010A-1611



- NOTES - UNLESS OTHERWISE SPECIFIED:
1. ALL RESISTOR VALUES ARE IN OHMS. ALL CAPACITOR VALUES ARE IN UF.
  2. FOR ASSY DIAG SEE 802A-4001.
  3. FOR RES DESIGNATION ENFS SEE 802A-101.
  4. 214: 4K 200V 871: 4K 250V 541: 2 250V/400V 541: 2 250V/400V 54: 40/DC 510: 10 51: VOLTS 511: 200 512: 100 513: 250V/30A
  5. IF CHANGES ARE MADE TO THIS SCHEMATIC PLEASE REFERENCE THE PARTS LIST AND REVISE THE SCHEMATIC ACCORDINGLY.
  6. RES DESIGNATION NOT USED: C24

