

KENWOOD

REGULATED DC POWER SUPPLY

PA250-0.42A

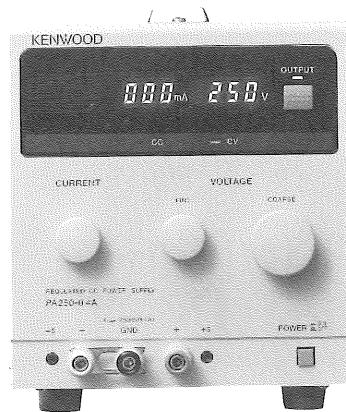
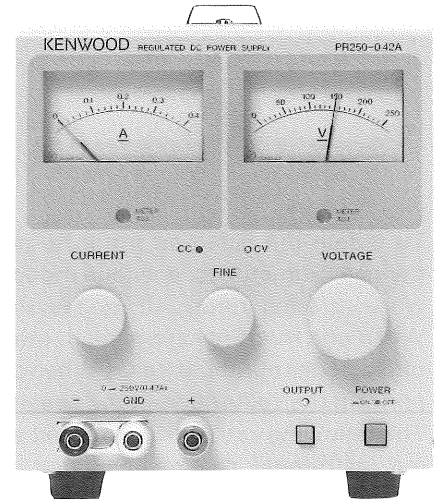
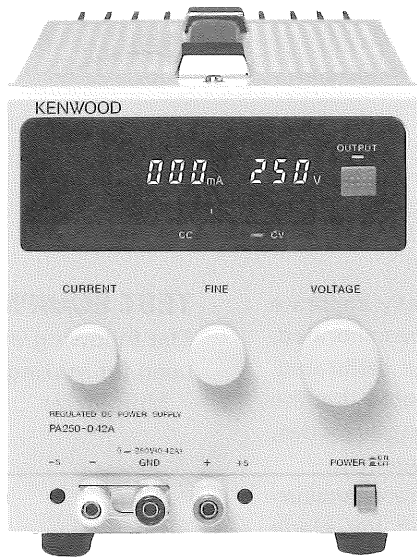
PA250-0.4A

PR250-0.42A

PR250-0.4A

SERVICE MANUAL

KENWOOD CORPORATION



WARNING

The following instructions are for use by qualified personnel only. To avoid electric shock, do not perform any servicing other than contained in the operating instructions unless you are qualified to do so.

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ADJUSTMENT

To obtain the best performance, periodically calibrate the unit. Sometimes, only one mode need be calibrated, while at other times, all modes should be calibrated. When one mode is calibrated, it must be noted that the other modes may be affected. When calibrating all modes, perform the calibration in the specified sequence.

The following calibration required an accurate measuring instrument and an insulated adjusting flat blade screwdriver. If they are not available, contact your dealer. For optimum adjustment, turn the power on and warm up the unit sufficiently (more than 30 minutes) before starting.

Before calibrating the unit, check the power supply voltage.

TEST EQUIPMENT REQUIRED

The following instrument or their equivalent should be used for making adjustment.

Multimeter 45 Fluke

ADJUSTMENT

PA250-0.42A/PA250-0.4A

Item	Adjustment VR	P.C. B.	Procedure
V.REF	VR1 VR2	PA250-0.42A W02-2262-08 PA250-0.4A W02-2158-08	<ul style="list-style-type: none"> ● Adjust VR1 to read 10.01 to 10.05 V. ● Adjust VR2 so that the output is between 0 and 30 mV.
V.OFF	VR4	PA250-0.42A W02-2260-08 PA250-0.4A W02-2157-08	<ul style="list-style-type: none"> ● Set the COARSE and FINE potentiometers on the front panel to the minimum positions, and adjust VR4 (V.OFF) so that the output voltage reads 0.000 V.
A.OFF	VR5		<ul style="list-style-type: none"> ● Set the CURRENT potentiometer to the minimum position, and adjust VR5 (A.OFF) so that the output current reads -0.000□A (□: 1 to 4).
Output Voltage (V.ADJ)	VR1		<ul style="list-style-type: none"> ● Set the COARSE and FINE potentiometers to the maximum positions, and adjust VR1 (V.ADJ) to read the rated output voltage.
Output Current (A.ADJ)	VR2		<ul style="list-style-type: none"> ● Set the CURRENT potentiometer to the maximum position, and adjust OCP with VR2 (A.ADJ).
CV	VR1 VR2	PA250-0.42A W02-2266-08 PA250-0.4A W02-2165-08	<p>This adjustment uses 2 potentiometers located on the right side of the DPM unit and a potentiometer on the V.REF unit.</p> <ul style="list-style-type: none"> ● Set up the digital multimeter to read 19.0 V and adjust VR1 (CV_L) of the DPM unit so that the voltage reads 19.0 V. ● Set up the digital multimeter to read 250 V and adjust VR2 (CV_H) of the DPM unit so that the voltage reads 250 V. ● Turn the output ON/OFF and adjust the indication; adjust the display when the output is OFF and the value when the output is ON with VR3 of the V.REF unit.
CC	VR3		<ul style="list-style-type: none"> ● Adjust VR3 (CC) so that the CC display becomes the maximum output current.

PR250-0.42A/PR250-0.4A

Item	Adjustment VR	P.C. B.	Procedure
V.REF	VR1 VR2	PR250-0.42A W02-2259-08 PR250-0.4A W02-2163-08	<ul style="list-style-type: none"> ● Adjust VR1 to read 10.01 to 10.05 V. ● Adjust VR2 so that the output is between 0 and 30 mV.
CV	VR1	PR250-0.42A W02-2258-08 PR250-0.4A W02-2156-08	<ul style="list-style-type: none"> ● Adjust VR1 (V.ADJ) to read the output voltage setting value.
CC	VR2		<ul style="list-style-type: none"> ● Connect a load and adjust VR2 (A.ADJ) to read the output current setting value.
A meter	VR3		<ul style="list-style-type: none"> ● Set the load to the rated current and adjust the swing of the ammeter on the unit precisely with VR3 (AM CAL).

Specifications Model	Output voltage setting	Output current setting
	[V]	[A]
PA250-0.42A	257	0.4452
PA250-0.4A		0.4240
PR250-0.42A		0.4452
PR250-0.4A		0.4240

PARTS LIST

PA250-0.42A Y86-1980-00

REF. NO	PARTS NO	NAME & DESCRIPTION
	A01-1238-08	COVER
	A63-0125-08	FRONT PANEL
	B11-0545-08	FILTER
	B40-2737-24	SERIAL NO. PLATE
	B42-3738-08	FUSE RATING LABEL
	B42-3885-08	EXTERNAL CONTROL LABEL
	B42-3999-08	RATING;AC100V 50/60HZ 155W
	B42-4000-08	RATING;AC120V 50/60HZ 155W
	B42-6001-08	RATING;AC220V 50/60HZ 155W
	B42-6002-08	RATING;AC240V 50/60HZ 155W
	B42-6003-08	RATING;AC120V 60HZ 155W
	B63-0175-00	INSTRUCTION MANUAL;JAPANESE
	B63-0176-00	INSTRUCTION MANUAL;ENGLISH
	E12-0401-15	SENSOR PLUG
	E18-0162-05	JACK
	E21-0670-03	TERMINAL,RED
	E21-0671-03	TERMINAL,BLACK
	E21-0672-03	TERMINAL,WHITE
	E29-0506-04	SHORTING BAR
	E29-0542-08	LUG;M3
	E30-0027-35	UL/CSA POWER CORD
	E30-0545-05	JIS POWER CORD
	E30-0571-15	SAA POWER CORD
	E30-1815-05	CEE POWER CORD
	E30-1867-05	BS POWER CORD
	F01-0886-08	HEAT SINK
	F05-3022-05	FUSE(6X32MM) 3A/250V
	F11-1244-08	SHIELD CASE
	F29-0517-08	INSULATOR;FOR Q6/Q11
	F50-0004-08	FUSE(5X20MM) 3A/250V
	F51-0026-08	FUSE(6X32MM) 4A/125V
	H10-2856-08	FOAMED STYRENE PAD (FRONT)
	H10-2857-08	FOAMED STYRENE PAD (REAR)
	H20-1734-08	VINYL COVER
	H53-0124-08	CARTON BOX
	J02-0529-08	FOOT
	J19-1671-08	CLAMPER;FOR 2-CORE AC CORD
	J19-1672-08	CLAMPER;FOR 3-CORE AC CORD
	J21-4720-08	BRACKET;FOR P.C.B
	J21-4758-08	BRACKET;FOR AC CORD BUSHING
	J29-0516-08	BRACKET;FOR EXT. CONTROL BOARD
	J30-0532-08	VOLUME SPACER
	J30-0635-08	VOLUME SPACER;FOR VR01
	J42-0083-05	BUSHING;FOR 2-CORE AC CORD
	J42-0085-05	BUSHING;FOR 3-CORE AC CORD
	J61-0408-05	WIRE WRAPPING BAND
	K01-0417-05	HANDLE
	K21-0907-04	KNOB;COARSE
	K21-0911-04	KNOB;FINE/CURRENT
	K27-0509-04	PUSH BUTTON,ORANGE;POWER
	K27-0557-04	BUTTON,RED;OUTPUT
	L07-1511-08	POWER TRANSFORMER
	N09-0718-05	SCREW,SEMS PAN HD M3X6
	N09-0720-05	SCREW,SEMS PAN HD M4X10
	N09-0757-05	SCREW,SEMS BINDING TAPTITE 3X6
	N09-0777-05	SCREW,SEMS PAN HD M4X6
	N09-0789-05	SCREW,SEMS PAN HD M3X10
	N09-0797-08	SCREW,SEMS TAPTITE 3X10
	N14-0404-04	FLANGE NUT M3
	N32-3006-41	SCREW,FLAT HD M3X6
	N89-3006-41	SCREW,BINDING TAPTITE 3X6
	N89-3012-41	SCREW, BINDING TAPTITE 3X12
	S40-2533-08	PUSH SWITCH;POWER
	W02-2260-08	AMP UNIT
	W02-2261-08	EXT. CONTROL UNIT
	W02-2262-08	V. REF UNIT
	W02-2266-08	D. P. M. UNIT
VR1	R29-3503-08	VOLUME 10K
VR2	R29-1508-08	VOLUME 1K
VR3	R29-3504-08	VOLUME 10K

PA250-0.42A AMP UNIT W02-2260-08

REF. NO	PARTS NO	NAME & DESCRIPTION
	E18-0162-08	SENSING TERMINAL
	E21-0674-08	EXTERNAL OUTPUT TERMINAL
	E40-7141-08	PIN CONNECTOR 2P(LINE VOLTAGE)
	E40-7142-08	PIN CONNECTOR 1P(LINE VOLTAGE)
	E40-7171-08	PIN CONNECTOR 2P
	J13-0518-08	FUSE CLIP;FOR 6X30MM
	J13-0519-08	FUSE CLIP;FOR 5X20MM
	J73-0260-08	PCB (UNMOUNTED)
	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
	R92-1061-05	JUMPING RES. ZERO OHM (5MM)
	C90-3019-08	CAP. ELECTRO 1000 105°C 35V
	C92M1H222K	CAP. NYLAR 2200P 10% 50V
	C90-2559-08	CAP. METAL FILM 0.1 10% 50V
	C92M1H472K	CAP. NYLAR 4700P 10% 50V
	C92M1H103K	CAP. NYLAR 0.01 10% 50V
	C6 NO USE	
	C7 C90-3020-08	CAP. ELECTRO 100 105°C 25V
	C8 CF93AN3A103K	CAP. POLYESTER 0.01 10% 1000V
	C11 CF93AN1J224K	CAP. POLYESTER 0.22 10% 63V
	C12 C90-3033-08	CAP. ELECTRO 220 105°C 25V
	C13 C90-3033-08	CAP. ELECTRO 220 105°C 25V
	C14 CF93AN1J104K	CAP. POLYESTER 0.1 10% 63V
	C15 CF93AN1J104K	CAP. POLYESTER 0.1 10% 63V
	C16 NO USE	
	C17 C90-3034-08	CAP. ELECTRO 100 105°C 16V
	C18 C90-3034-08	CAP. ELECTRO 100 105°C 16V
	C19 C90-3175-08	CAP. ELECTRO 10 105°C 100V
	C20 CF93AN1J104K	CAP. POLYESTER 0.1 10% 63V
	C21 NO USE	
	C22 C90-2559-08	CAP. METAL FILM 0.1 50V
	C25 C91-2560-08	CAP. CERAMIC 0.1 10% 400V
	C26 NO USE	
	C27 CR45BH471K	CAP. CERAMIC 470P 10% 50V
	C101 C91-2588-08	CAP. CERAMIC 0.1 10% 630V
	CN1 E40-7184-08	PIN CONNECTOR 5P
	CN2 E40-7327-08	PIN CONNECTOR 12P
	CN3 E40-7328-08	PIN CONNECTOR 15P
	CN4 E40-7126-08	PIN CONNECTOR 2P
	CN5 E40-7219-08	PIN CONNECTOR 3P
	CN6 E40-7219-08	PIN CONNECTOR 3P
	CN7 E40-7220-08	PIN CONNECTOR 4P
	CN8 E40-7220-08	PIN CONNECTOR 4P
	CN9 NO USE	
	CN10 E40-7332-08	PIN CONNECTOR 4P
	CN11 E40-7332-08	PIN CONNECTOR 4P
	CN12 E40-7333-08	PIN CONNECTOR 2P
	CN13 E40-7333-08	PIN CONNECTOR 2P
	CN14 E40-7333-08	PIN CONNECTOR 2P
	CN15 E40-7322-08	PIN CONNECTOR 6P
	CN20 E40-3240-08	PIN CONNECTOR 5P
	CNGP1 E40-7333-08	PIN CONNECTOR 2P
	C01 C91-1323-08	CAP. CERAMIC 0.1 20% 250V
	D1 1B4B42	DIODE, STACK
	D2 ERA15-01	DIODE
	D3 1SS270A	DIODE
	D4 1SS270A	DIODE
	D5 1SS270A	DIODE
	D6 1SS270A	DIODE
	D7 1SS270A	DIODE
	D8 NO USE	
	D9 D3SB60	DIODE, STACK
	D10 ERA15-01	DIODE
	D11 1B4B42	DIODE, STACK
	D12 NO USE	
	D13 1SS270A	DIODE
	D14 1SS270A	DIODE
	D15 1SS270A	DIODE
	D16 1SS270A	DIODE
	D24 1SS270A	DIODE
	D25 1SS270A	DIODE
	D26 1SS270A	DIODE
	D27 ERA15-01	DIODE
	D28 ERA15-01	DIODE
	D29 ERA15-01	DIODE
	D30 ERA15-01	DIODE
	D31 ERA15-01	DIODE
	D32 ERA15-01	DIODE
	D01 ERA15-04	DIODE
	IC1 UPC151C	IC, OP AMP
	IC2 UPC151C	IC, OP AMP

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION
IC3	UPC1093J	IC, VARIABLE SHUNT REGULATOR
IC4	UPC78N05H	IC, 3-TERMINAL REGULATOR
IC5	UPC79N05H	IC, 3-TERMINAL REGULATOR
IC6	UPC1093J	IC, VARIABLE SHUNT REGULATOR
IC7	LH607CN	IC, OP AMP
IC8	UPC1093J	IC, VARIABLE SHUNT REGULATOR
IC9	HAI78L12A	IC, TERMINAL FIXED VOLTAGE REG.
Q1	2SC1815(GR)	TR. SI, NPN
Q2	2SC1815(GR)	TR. SI, NPN
Q3	2SC1815(GR)	TR. SI, NPN
Q4	2SC1815(GR)	TR. SI, NPN
Q5	2SC1815(GR)	TR. SI, NPN
Q6	2SK1011	FET, N-CHANNEL
Q7	NO USE	
Q8	2SC3421(Y)	TR. SI, NPN
Q9	2SC1815(GR)	TR. SI, NPN
Q10	2SC1815(GR)	TR. SI, NPN
Q11	2SK1011	FET, N-CHANNEL
Q12	NO USE	
Q13	2SC1815(GR)	TR. SI, NPN
Q14	2SC1815(GR)	TR. SI, NPN
Q11A	2SK1011	FET, N-CHANNEL
Q11B	2SK1011	FET, N-CHANNEL
R1	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R2	RD14BB2C123J	RES. CARBON 12K 5% 1/6W
R3	RD14BB2C302J	RES. CARBON 3K 5% 1/6W
R4	RD14BB2C510J	RES. CARBON 51 5% 1/6W
R5	RD14BB2C514J	RES. CARBON 510K 5% 1/6W
R6	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R7	RN14BK2C1202F	RES. METAL FILM 12K 1% 1/6W
R8	RN14BK2C2001F	RES. METAL FILM 2K 1% 1/6W
R9	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R10	RD14BB2C302J	RES. CARBON 3K 5% 1/6W
R11	RD14BB2C513J	RES. CARBON 51K 5% 1/6W
R14	RD14BB2C432J	RES. CARBON 4.3K 5% 1/6W
R15	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R16	RD14BB2C512J	RES. CARBON 5.1K 5% 1/6W
R17	NO USE	
R18	RD14BB2C513J	RES. CARBON 51K 5% 1/6W
R19	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R20	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R21	RN14BK2C3903F	RES. METAL FILM 390K 1% 1/6W
R22	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R23	RN14BK2C9101F	RES. METAL FILM 9.1K 1% 1/6W
R24	RN14BK2C3001F	RES. METAL FILM 3K 1% 1/6W
R27	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R28	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R29	RS14GB3D184J	RES. METAL FILM 180K 5% 2W
R30	RS14GB3A200J	RES. METAL FILM 20 5% 1W
R31	NO USE	
R32	RS14GB3A200J	RES. METAL FILM 20 5% 1W
R33	NO USE	
R34	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R35	RD14BB2C123J	RES. CARBON 12K 5% 1/6W
R36	RD14BB2C302J	RES. CARBON 3K 5% 1/6W
R37	RD14BB2C510J	RES. CARBON 51 5% 1/6W
R38	RD14BB2C105J	RES. CARBON 1K 5% 1/6W
R39	RD14BB2C913J	RES. CARBON 91K 5% 1/6W
R45	RS14GB3D104J	RES. METAL FILM 100K 5% 2W
R46	RD14BB2C512J	RES. CARBON 5.1K 5% 1/6W
R51	RN14BK2C2401F	RES. METAL FILM 2.4K 1% 1/6W
R52	RN14BK2C3001F	RES. METAL FILM 3K 1% 1/6W
R53	RD14BB2C911J	RES. CARBON 910 5% 1/6W
R54	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R55	RN14BK2C5102F	RES. METAL FILM 51K 1% 1/6W
R56	RN14BK2C5102F	RES. METAL FILM 51K 1% 1/6W
R57	NO USE	
R58	RN14BK2C5102F	RES. METAL FILM 51K 1% 1/6W
R59	RN14BK2C5102F	RES. METAL FILM 51K 1% 1/6W
R60	RD14BB2C511J	RES. CARBON 510 5% 1/6W
R61	RN14BK2C9101F	RES. METAL FILM 9.1K 1% 1/6W
R62	RN14BK2C3001F	RES. METAL FILM 3K 1% 1/6W
R63	NO USE	
R64	RN14BK2C2001F	RES. METAL FILM 2K 1% 1/6W
R65	NO USE	
R66	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R67	RS14GB3DR51J	RES. METAL FILM 0.51 5% 2W
R68	RD14BB2C333J	RES. CARBON 33K 5% 1/6W
R69	NO USE	
R70	RN14BK2C1603F	RES. METAL FILM 160K 1% 1/6W
R71	RN14BK2C1603F	RES. METAL FILM 160K 1% 1/6W
R72	RD14BB2C333J	RES. CARBON 33K 5% 1/6W
R73	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R74	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R80	RD14BB2C225J	RES. CARBON 2.2K 5% 1/6W
R81	RD14BB2C105J	RES. CARBON 1K 5% 1/6W

REF. NO	PARTS NO	NAME & DESCRIPTION
R84	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R85	NO USE	
R86	RS14GB3A102J	RES. METAL FILM 1K 5% 1W
R87	RS14GB3A102J	RES. METAL FILM 1K 5% 1W
R101	RD14BB2E300J	RES. CARBON 30 5% 1/4W
R201	RD14BB2E300J	RES. CARBON 30 5% 1/4W
R301	RD14BB2E300J	RES. CARBON 30 5% 1/4W
R32A	RS14GB3A200J	RES. METAL FILM 20 5% 1W
R32B	RS14GB3A200J	RES. METAL FILM 20 5% 1W
R401	RD14BB2E300J	RES. CARBON 30 5% 1/4W
RO1	RN14BK2C1003F	RES. METAL FILM 100K 1% 1/6W
RTH1	100D-5	THERMISTOR
RY1	S76-0604-08	RELAY
RY2	S76-0604-08	RELAY
SW2	S31-1512-08	MASTER/SLAVE SWITCH
VR1	R12-1564-08	RES. SEMI FIXED 1KB
VR2	R12-5547-08	RES. SEMI FIXED 100KB
VR3	NO USE	
VR4	R12-3567-08	RES. SEMI FIXED 10KB
VR5	R12-3567-08	RES. SEMI FIXED 10KB

PA250-0.42A EXT. CONTROL UNIT W02-2261-08

REF. NO	PARTS NO	NAME & DESCRIPTION
	E29-0544-08	EXTERNAL CONTROL TERMINAL
	J73-0261-08	PCB (UNMOUNTED)
C1	CK45F1H472K	CAP. CERAMIC 4700P 10% 50V
CN19	E40-7328-08	PIN CONNECTOR 15P
CN20	E40-7333-08	PIN CONNECTOR 2P
D13	1SS270A	DIODE
Q12	2SC1815(GR)	TR. SI, NPN
R41	RD14BB2E512J	RES. CARBON 5.1K 5% 1/4W
R47	RD14BB2E622J	RES. CARBON 6.2K 5% 1/4W
R77	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R78	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
S3	S62-0189-08	M/S SWITCH
S4	S62-0189-08	M/S SWITCH
S5	S62-0189-08	M/S SWITCH
S6	S62-0189-08	M/S SWITCH
S7	S62-0168-08	M/S SWITCH

PARTS LIST

PA250-0.42A V.REF UNIT W02-2262-08

REF. NO	PARTS NO	NAME & DESCRIPTION
C1	CQ92H1H473K	CAP. MYLAR 0.047 10% 50V
C2	C90-3022-08	CAP. ELECTRO 4.7 105°C 50V
C3	C90-3176-08	CAP. ELECTRO 22 20% 350V
C4	C90-3018-08	CAP. ELECTRO 1 105°C 50V
C5	CK45B1H101K	CAP. CERAMIC 100P 10% 50V
CN2	E40-7332-08	PIN CONNECTOR 4P
CN3	E40-7322-08	PIN CONNECTOR 6P
D1	1SS270A	DIODE
D2	1SS270A	DIODE
D3	ERA15-01	DIODE
IC1	OP072	IC, OPERATIONAL AMPLIFIER
IC2	TA78L132AP	IC, 3-TERMINAL REGULATOR
R1	RN14BK2E5101F	RES. METAL FILM 5.1K 1% 1/4W
R2	RN14BK2E1001F	RES. METAL FILM 1K 1% 1/4W
R3	RN14BK2E3303F	RES. METAL FILM 330K 1% 1/4W
R4	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R5	RN14BK2E2200F	RES. METAL FILM 220 1% 1/4W
R6	RN14BK2E2002F	RES. METAL FILM 20K 1% 1/4W
R7	RN14BK2E8201F	RES. METAL FILM 8.2K 1% 1/4W
R8	RN14BK2E3300F	RES. METAL FILM 330 1% 1/4W
R9	RN14BK2E6801F	RES. METAL FILM 6.8K 1% 1/4W
R10	RN14BK2E1603F	RES. METAL FILM 160K 1% 1/4W
R11	RN14BK2E1603F	RES. METAL FILM 160K 1% 1/4W
RY3	S76-0625-08	RELAY
VR1	R12-0894-08	RES. SEMI FIXED 2KB
VR2	R12-0895-08	RES. SEMI FIXED 50KB
VR3	R12-0894-08	RES. SEMI FIXED 2KB

PA250-0.42A D.P.M. UNIT W02-2266-08

REF. NO	PARTS NO	NAME & DESCRIPTION
	E38-0546-08	WIRE ASS'Y; 24P JUMPER
	J61-0532-08	PCB SUPPORT
	N09-4501-08	SCREW, PAN HD TAPPING 3.5X6
C1	CE04EW1A101M	CAP. ELECTRO 100 20% 10V
C2	CE04EW1E4R7M	CAP. ELECTRO 4.7 20% 25V
C3	CK45F1H104Z	CAP. CERAMIC 0.1 20% 50V
C4	CK45F1H104Z	CAP. CERAMIC 0.1 20% 50V
C5	CK45F1H104Z	CAP. CERAMIC 0.1 20% 50V
C6	CQ92H1H104K	CAP. MYLAR 0.1 10% 50V
C7	CQ92H1H104K	CAP. MYLAR 0.1 10% 50V
C8	CQ92H1H104K	CAP. MYLAR 0.1 10% 50V
C9	CQ92H1H104K	CAP. MYLAR 0.1 10% 50V
C10	CQ92H1H104K	CAP. MYLAR 0.1 10% 50V
C11	CQ92H1H104K	CAP. MYLAR 0.1 10% 50V
C12	CK45F1H104Z	CAP. CERAMIC 0.1 20% 50V
C13	CE04EW1E4R7M	CAP. ELECTRO 4.7 20% 25V
C14	CE04EW1E4R7M	CAP. ELECTRO 4.7 20% 25V
C15	CE04EW1E4R7M	CAP. ELECTRO 4.7 20% 25V
C16	CK45F1H104Z	CAP. CERAMIC 0.1 20% 50V
C17	CK45F1H104Z	CAP. CERAMIC 0.1 20% 50V
C18	CK45F1H104Z	CAP. CERAMIC 0.1 20% 50V
C19	CK45B1H471K	CAP. CERAMIC 470P 10% 50V
C120	CK45B1H471K	CAP. CERAMIC 470P 10% 50V
C121	CK45B1H471K	CAP. CERAMIC 470P 10% 50V
C122	CK45B1H471K	CAP. CERAMIC 470P 10% 50V
CN1	E40-7315-08	PIN CONNECTOR 12P
D1	1S1588	DIODE
IC1	NC14433P	IC, 3-1/2 DIGIT A/D CONVERTER
IC2	NC14433P	IC, 3-1/2 DIGIT A/D CONVERTER
IC3	TC4066BP	IC, QUAD BILATERAL SWITCH
IC4	TC74HC4511AP	IC, BCD 7 LATCH/DECODER/DRIVER
IC5	TC74HC4511AP	IC, BCD 7 LATCH/DECODER/DRIVER
IC6	NC1413P	IC, PERIPHERAL DRIVER ARRAY
IC7	TC74HC74AP	IC, DUAL D-FLIP FLOP
IC8	TC74HC10AP	IC, TRIPLE 3-INPUT NAND GATE
IC9	TC74HC14AP	IC, HEX SCHMITT INVERTER
L1	B30-0972-05	LED, RED
L2	B30-0972-05	LED, RED
L3	B30-0973-05	LED, GREEN
LE1	B30-0974-05	LED, 7-SEGMENTS
LE2	B30-0974-05	LED, 7-SEGMENTS
LE3	B30-0974-05	LED, 7-SEGMENTS
LE4	B30-0974-05	LED, 7-SEGMENTS
LE5	B30-0974-05	LED, 7-SEGMENTS

REF. NO	PARTS NO	NAME & DESCRIPTION
LE6	B30-0974-05	LED, 7-SEGMENTS
LE7	B30-0974-05	LED, 7-SEGMENTS
PC1	PC817	IC, PHOTO COUPLER
R1	RN14BK2E1302F	RES. METAL FILM 13K 1% 1/4W
R2	RN14BK2E6801F	RES. METAL FILM 6.8K 1% 1/4W
R3	RN14BK2E4702F	RES. METAL FILM 47K 1% 1/4W
R4	RN14BK2E4701F	RES. METAL FILM 4.7K 1% 1/4W
R5	RN14BK2E2001F	RES. METAL FILM 2K 1% 1/4W
R6	RN14BK2E1001F	RES. METAL FILM 1K 1% 1/4W
R7	RN14BK2E3001F	RES. METAL FILM 3K 1% 1/4W
R8	RN14BK2E2001F	RES. METAL FILM 2K 1% 1/4W
R9	RN14BK2E8201F	RES. METAL FILM 8.2K 1% 1/4W
R10	RN14BK2E2001F	RES. METAL FILM 2K 1% 1/4W
R11	RD14BB2E103J	RES. CARBON 10K 5% 1/4W
R12	RD14BB2E103J	RES. CARBON 10K 5% 1/4W
R13	RD14BB2E512J	RES. CARBON 5.1K 5% 1/4W
R14	RN14BK2E3003F	RES. METAL FILM 300K 1% 1/4W
R15	RN14BK2E5103F	RES. METAL FILM 510K 1% 1/4W
R16	RN14BK2E3003F	RES. METAL FILM 300K 1% 1/4W
R17	RN14BK2E5103F	RES. METAL FILM 510K 1% 1/4W
R20	R92-1061-05	JUMPING RES. ZERO OHM (5MM)
R21	RD14BB2C821J	RES. CARBON 820 5% 1/6W
R25	RD14BB2C224J	RES. CARBON 220K 5% 1/6W
R26	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R27	RD14BB2E364J	RES. CARBON 360K 5% 1/4W
R28	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R29	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R30	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R31	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R32	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R129	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R130	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R131	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R132	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R18A	RD14BB2E102J	RES. CARBON 1K 5% 1/4W
R18B	RD14BB2E122J	RES. CARBON 1.2K 5% 1/4W
R19A	RD14BB2E102J	RES. CARBON 1K 5% 1/4W
R19B	RD14BB2E122J	RES. CARBON 1.2K 5% 1/4W
RA1	R90-1129-08	RES. NETWORK 4X330
RA2	R90-1129-08	RES. NETWORK 4X330
RA3	R90-1129-08	RES. NETWORK 4X330
RA4	R90-1129-08	RES. NETWORK 4X330
SW1	S74-0601-08	TACT SWITCH
TR1	DTA114EPX	TR. DIGITAL
VR1	R12-1566-08	RES. SEMI FIXED 1K
VR2	R12-1566-08	RES. SEMI FIXED 1K
VR3	R12-1566-08	RES. SEMI FIXED 1K
ZD1	TL431CLPB	IC, 3-TERMINAL SHUNT REGULATOR

PA250-0.4A Y86-1570-00

REF. NO	PARTS NO	NAME & DESCRIPTION
	A01-1238-08	COVER
	A10-1473-08	CHASSIS
	A63-0097-08	FRONT PANEL
	B11-0545-08	FILTER
	B40-2737-24	SERIAL NO. PLATE
	B42-3738-08	FUSE RATING LABEL
	B42-3880-08	RATING: AC100V 50/60HZ 147W
	B42-3881-08	RATING: AC120V 50/60HZ 147W
	B42-3882-08	RATING: AC220V 50/60HZ 147W
	B42-3883-08	RATING: AC240V 50/60HZ 147W
	B42-3884-08	RATING: AC120V 60HZ 147W
	B42-3885-08	EXTERNAL CONTROL LABEL
	B63-0128-08	INSTRUCTION MANUAL: JAPANESE
	B63-0129-08	INSTRUCTION MANUAL: ENGLISH
	E12-0401-15	SENSOR PLUG
	E18-0162-05	JACK
	E21-0670-03	TERMINAL, RED
	E21-0671-03	TERMINAL, BLACK
	E21-0672-03	TERMINAL, WHITE
	E29-0506-04	SHORTING BAR
	E30-0027-35	UL/CSA POWER CORD
	E30-0545-05	JIS POWER CORD
	E30-0571-15	SAA POWER CORD
	E30-1815-05	CEE POWER CORD
	E30-1867-05	BS POWER CORD
	F01-0886-08	HEAT SINK

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION
F05-3022-08	FUSE(6X32MM)	2.5A/250V
F11-1244-08	SHIELD CASE	
F29-0517-08	INSULATOR;FOR Q6/Q11	
F29-0518-08	INSULATOR;FOR Q11A/Q11B/Q11C	
F29-0542-08	LUG	
F50-0004-08	FUSE(5X20MM)	3A/250V
F51-0026-08	FUSE(6X32MM)	4A/125V
H10-2856-08	FOAMED STYRENE PAD (FRONT)	
H10-2857-08	FOAMED STYRENE PAD (REAR)	
H20-1734-08	VINYL COVER	
H53-0087-08	CARTON BOX	
J02-0529-08	FOOT	
J19-1671-08	CLAMPER;FOR 2-CORE AC CORD	
J19-1672-08	CLAMPER;FOR 3-CORE AC CORD	
J21-4720-08	BRACKET;FOR P.C.B	
J21-4758-08	BRACKET;FOR AC CORD BUSHING	
J29-0516-08	BRACKET;FOR EXT. CONTROL BOARD	
J30-0634-08	SPACER;FOR AC CHANGING UNIT	
J30-0635-08	VOLUME SPACER;FOR VRO1	
J31-0617-08	VOLUME SPACER;FOR VRO2	
J39-0531-08	SPACER;FOR RELAY UNIT	
J42-0083-05	BUSHING;FOR 2-CORE AC CORD	
J42-0085-05	BUSHING;FOR 3-CORE AC CORD	
J61-0408-05	WIRE WRAPPING BAND	
K01-0417-05	HANDLE	
K21-0907-04	KNOB;COARSE	
K21-0911-04	KNOB;FINE/CURRENT	
K27-0509-04	PUSH BUTTON,ORANGE;POWER	
K27-0557-04	BUTTON,RED;OUTPUT	
L01-9998-08	POWER TRANSFORMER	
N09-0718-05	SCREW,SENS PAN HD M3X6	
N09-0757-05	SCREW,SENS BINDING TAPTITE 3X6	
N09-0776-05	SCREW,SENS PAN HD M5X10	
N09-0777-05	SCREW,SENS PAN HD M4X6	
N09-0789-05	SCREW,SENS PAN HD M3X10	
N09-0797-08	SCREW,SENS TAPTITE 3X10	
N14-0404-04	FLANGE NUT M3	
N32-3006-41	SCREW,FLAT HD M3X6	
N89-3006-41	SCREW,BINDING TAPTITE 3X6	
N89-3012-41	SCREW,BINDING TAPTITE 3X12	
S40-2533-08	PUSH SWITCH;POWER	
W02-2157-08	AMP UNIT	
W02-2158-08	V. REF UNIT	
W02-2164-08	EXT. CONTROL UNIT	
W02-2165-08	D.P.M UNIT	
C10	C90-3124-08	CAP. ELECTRO 470 1% 450V
VRO1	R29-3503-08	VOLUME 10K
VRO2	R29-1508-08	VOLUME 1K
VRO3	R29-3504-08	VOLUME 10K

PA250-0.4A AMP UNIT W02-2157-08

REF. NO	PARTS NO	NAME & DESCRIPTION
E18-0162-08	SENSING TERMINAL	
E21-0674-08	EXTERNAL OUTPUT TERMINAL	
E40-7141-08	PIN CONNECTOR 2P(LINE VOLTAGE)	
E40-7142-08	PIN CONNECTOR 1P(LINE VOLTAGE)	
E40-7171-08	PIN CONNECTOR 2P	
J13-0518-08	FUSE CLIP;FOR 6X30MM	
J13-0519-08	FUSE CLIP;FOR 5X20MM	
J73-0188-08	PCB (UNMOUNTED)	
R92-0150-05	JUMPING RES. ZERO OHN(10MM)	
C1	C90-3019-08	CAP. ELECTRO 1000 105°C 35V
C2	C90-3019-08	CAP. MYLAR 1000P 10% 50V
C3	C91-2559-08	CAP. CERAMIC 0.1 0.25P 50V
C4	C92-2164-08	CAP. MYLAR 4700P 10% 50V
C5	C92-2164-08	CAP. MYLAR 0.01 10% 50V
C6	NO USE	
C7	C90-3020-08	CAP. ELECTRO 100 105°C 25V
C8	C91-2561-08	CAP. CERAMIC 0.01 10% 1000V
C11	C90-3022-08	CAP. ELECTRO 4.7 105°C 50V
C12	C90-3033-08	CAP. ELECTRO 220 105°C 25V
C13	C90-3033-08	CAP. ELECTRO 220 105°C 25V
C14	C91-2562-08	CAP. CERAMIC 0.1 63V
C15	C91-2562-08	CAP. CERAMIC 0.1 63V
C16	NO USE	
C17	C90-3034-08	CAP. ELECTRO 100 105°C 16V
C18	C90-3034-08	CAP. ELECTRO 100 105°C 16V
C19	C90-3022-08	CAP. ELECTRO 4.7 105°C 50V
C20	C91-2562-08	CAP. CERAMIC 0.1 63V
C21	NO USE	
C22	C91-2559-08	CAP. CERAMIC 0.1 0.25P 50V
C25	C91-2560-08	CAP. CERAMIC 0.1 10% 400V
CN1	E40-7326-08	PIN CONNECTOR 5P

REF. NO	PARTS NO	NAME & DESCRIPTION
CN2	E40-7327-08	PIN CONNECTOR 12P
CN3	E40-7328-08	PIN CONNECTOR 15P
CN4	E40-7126-08	PIN CONNECTOR 2P
CN5	E40-7219-08	PIN CONNECTOR 3P
CN6	E40-7219-08	PIN CONNECTOR 3P
CN7	E40-7220-08	PIN CONNECTOR 4P
CN8	E40-7220-08	PIN CONNECTOR 4P
CN9	NO USE	
CN10	E40-7332-08	PIN CONNECTOR 4P
CN11	E40-7332-08	PIN CONNECTOR 4P
CN12	E40-7333-08	PIN CONNECTOR 2P
CN13	E40-7333-08	PIN CONNECTOR 2P
CN14	E40-7333-08	PIN CONNECTOR 2P
CN15	E40-3240-05	PIN CONNECTOR 5P
G01	C91-1323-08	CAP. CERAMIC 0.1 20% 250V
G02	NO USE	
G03	C90-3122-08	CAP. ELECTRO 10 1% 350V
D1	1B4B42	DIODE,STACK
D2	ERA15-01	DIODE
D3	1SS270A	DIODE
D4	1SS270A	DIODE
D5	1SS270A	DIODE
D6	1SS270A	DIODE
D7	1SS270A	DIODE
D8	NO USE	
D9	D3SB60	DIODE,STACK
D10	ERA15-01	DIODE
D11	1B4B42	DIODE,STACK
D12	NO USE	
D13	1SS270A	DIODE
D14	1SS270A	DIODE
D15	1SS270A	DIODE
D16	1SS270A	DIODE
D24	1SS270A	DIODE
D25	1SS270A	DIODE
D26	1SS270A	DIODE
D01	ERA15-04	DIODE
GP1B1	E40-7333-08	PIN CONNECTOR 2P
IC1	UPC151C	IC,OP AMP
IC2	UPC151C	IC,OP AMP
IC3	UPC1093J	IC,VARIABLE SHUNT REGULATOR
IC4	UPC78N05H	IC,3-TERMINAL REGULATOR
IC5	UPC78N05H	IC,3-TERMINAL REGULATOR
IC6	UPC1093J	IC,VARIABLE SHUNT REGULATOR
IC7	LM607GN	IC,OP AMP
IC8	UPC1093J	IC,VARIABLE SHUNT REGULATOR
IC9	HA178L12A	IC,TERMINAL FIXED VOLTAGE REG.
Q1	2SC1815(GR)	TR. SI, NPN
Q2	2SC1815(GR)	TR. SI, NPN
Q3	2SC1815(GR)	TR. SI, NPN
Q4	2SC1815(GR)	TR. SI, NPN
Q5	2SC1815(GR)	TR. SI, NPN
Q6	2SK1011	FET, N-CHANNEL
Q7	NO USE	
Q8	2SC3421(Y)	TR. SI, NPN
Q9	2SC1815(GR)	TR. SI, NPN
Q10	2SC1815(GR)	TR. SI, NPN
Q11	2SK1011	FET, N-CHANNEL
Q12	NO USE	
Q13	2SC1815(GR)	TR. SI, NPN
Q14	2SC1815(GR)	TR. SI, NPN
Q11A	2SK1011	FET, N-CHANNEL
Q11B	2SK1011	FET, N-CHANNEL
R1	RD14BB2E122J	RES. CARBON 1.2K 5% 1/4W
R2	RD14BB2E123J	RES. CARBON 12K 5% 1/4W
R3	RD14BB2E302J	RES. CARBON 3K 5% 1/4W
R4	RD14BB2E510J	RES. CARBON 51 5% 1/4W
R5	RD14BB2E514J	RES. CARBON 510K 5% 1/4W
R6	RD14BB2E104J	RES. CARBON 100K 5% 1/4W
R7	RN14BK2E1202F	RES. METAL FILM 12K 1% 1/4W
R8	RN14BK2E2001F	RES. METAL FILM 2K 1% 1/4W
R9	RD14BB2E102J	RES. CARBON 1K 5% 1/4W
R10	RD14BB2E302J	RES. CARBON 3K 5% 1/4W
R11	RD14BB2E513J	RES. CARBON 51K 5% 1/4W
R14	RD14BB2E432J	RES. CARBON 4.3K 5% 1/4W
R15	RD14BB2E102J	RES. CARBON 1K 5% 1/4W
R16	RD14BB2E512J	RES. CARBON 5.1K 5% 1/4W
R17	NO USE	
R18	RD14BB2E513J	RES. CARBON 51K 5% 1/4W
R19	RD14BB2E103J	RES. CARBON 10K 5% 1/4W
R20	RD14BB2E102J	RES. CARBON 1K 5% 1/4W
R21	RN14BK2E3903F	RES. METAL FILM 390K 1% 1/4W
R22	RD14BB2E102J	RES. CARBON 1K 5% 1/4W
R23	RN14BK2E9101F	RES. METAL FILM 9.1K 1% 1/4W
R24	RN14BK2E3001F	RES. METAL FILM 3K 1% 1/4W

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION			
R27	RD14BB2E102J	RES. CARBON 1K	5%	1/4W	
R28	RD14BB2E103J	RES. CARBON 10K	5%	1/4W	
R29	RS14GB3D184J	RES. METAL FILM 180K	5%	2W	
R30	RS14GB3A200J	RES. METAL FILM 20	5%	1W	
R31	NO USE				
R32	RS14GB3A200J	RES. METAL FILM 20	5%	1W	
R33	NO USE				
R34	RD14BB2E122J	RES. CARBON 1.2K	5%	1/4W	
R35	RD14BB2E123J	RES. CARBON 12K	5%	1/4W	
R36	RD14BB2E302J	RES. CARBON 3K	5%	1/4W	
R37	RD14BB2E510J	RES. CARBON 51	5%	1/4W	
R38	RD14BB2E105J	RES. CARBON 1M	5%	1/4W	
R39	RD14BB2E913J	RES. CARBON 91K	5%	1/4W	
R45	RS14GB3D104J	RES. METAL FILM 100K	5%	2W	
R46	RD14BB2E103J	RES. CARBON 10K	5%	1/4W	
R51	RN14BK2E2201F	RES. METAL FILM 2.2K	1%	1/4W	
R52	RN14BK2E3001F	RES. METAL FILM 3K	1%	1/4W	
R53	RD14BB2E911J	RES. CARBON 910	5%	1/4W	
R54	RD14BB2E101J	RES. CARBON 100	5%	1/4W	
R55	RD14BB2E103J	RES. CARBON 10K	5%	1/4W	
R56	RD14BB2E103J	RES. CARBON 10K	5%	1/4W	
R57	NO USE				
R58	RD14BB2E103J	RES. CARBON 10K	5%	1/4W	
R59	RD14BB2E103J	RES. CARBON 10K	5%	1/4W	
R60	RD14BB2E511J	RES. CARBON 510	5%	1/4W	
R61	RN14BK2E9101F	RES. METAL FILM 9.1K	1%	1/4W	
R62	RN14BK2E3001F	RES. METAL FILM 3K	1%	1/4W	
R63	NO USE				
R64	RN14BK2E2001F	RES. METAL FILM 2K	1%	1/4W	
R65	RD14BB2E225J	RES. CARBON 2.2M	5%	1/4W	
R66	RD14BB2E103J	RES. CARBON 10K	5%	1/4W	
R67	RS14GB3DR51J	RES. METAL FILM 0.51	5%	2W	
R68	RD14BB2E333J	RES. CARBON 33K	5%	1/4W	
R69	NO USE				
R70	RN14BK2E1603F	RES. METAL FILM 160K	1%	1/4W	
R71	RN14BK2E1603F	RES. METAL FILM 160K	1%	1/4W	
R72	RD14BB2E333J	RES. CARBON 33K	5%	1/4W	
R73	RD14BB2E103J	RES. CARBON 10K	5%	1/4W	
R74	RD14BB2E203J	RES. CARBON 20K	5%	1/4W	
R101	RD14BB2E300J	RES. CARBON 30	5%	1/4W	
R201	RD14BB2E300J	RES. CARBON 30	5%	1/4W	
R301	RD14BB2E300J	RES. CARBON 30	5%	1/4W	
R32A	RS14GB3A200J	RES. METAL FILM 20	5%	1W	
R32B	RS14GB3A200J	RES. METAL FILM 20	5%	1W	
R401	RD14BB2E300J	RES. CARBON 30	5%	1/4W	
RTH1	100D-5	THERMISTOR			
RY1	S76-0604-08	RELAY			
RY2	S76-0604-08	RELAY			
SW2	S31-1512-08	MASTER/SLAVE SWITCH			
VR1	R12-1567-08	RES. SEMI FIXED 1K			
VR2	R12-5547-08	RES. SEMI FIXED 100KB			
VR3	NO USE				
VR4	R12-3567-08	RES. SEMI FIXED 10KB			
VR5	R12-3567-08	RES. SEMI FIXED 10KB			

PA250-0.4A EXT. CONTROL UNIT

W02-2164-08

REF. NO	PARTS NO	NAME & DESCRIPTION			
	E29-0544-08	EXTERNAL CONTROL TERMINAL			
	J73-0261-08	PCB (UNMOUNTED)			
CN19	E40-7328-08	PIN CONNECTOR 15P			
CN20	E40-7333-08	PIN CONNECTOR 2P			
D13	1SS270A	DIODE			
Q12	2SC1815(GR)	TR. S1, NPN			
R41	RD14BB2E512J	RES. CARBON 5.1K	5%	1/4W	
R47	RD14BB2E622J	RES. CARBON 6.2K	5%	1/4W	
R77	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W	
R78	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W	
S3	S62-0169-08	M/S SWITCH			
S4	S62-0169-08	M/S SWITCH			
S5	S62-0169-08	M/S SWITCH			
S6	S62-0169-08	M/S SWITCH			
S7	S62-0168-08	M/S SWITCH			

PA250-0.4A V.REF UNIT

W02-2158-08

REF. NO	PARTS NO	NAME & DESCRIPTION			
	J73-0262-08	PCB (UNMOUNTED)			
C1	C092M1H473K	CAP. NYLAR	0.047	10%	50V
C2	C90-3022-08	CAP. ELECTRO	4.7	105°C	50V
C3	C90-3122-08	CAP. ELECTRO	10	1%	350V
C4	C90-3018-08	CAP. ELECTRO	1	105°C	50V
C5	CK45FB1H101K	CAP. CERAMIC	100P	10%	50V
CN1	E40-7184-08	PIN CONNECTOR			5P
CN2	E40-7335-08	PIN CONNECTOR			4P
CN3	E40-7184-08	PIN CONNECTOR			5P
D1	1SS270A	DIODE			
D2	1SS270A	DIODE			
D3	ERA15-01	DIODE			
D4	ERA15-01	DIODE			
D5	ERA15-01	DIODE			
D6	ERA15-01	DIODE			
D7	ERA15-01	DIODE			
D8	ERA15-01	DIODE			
D9	ERA15-01	DIODE			
IC1	OP072	IC, OPERATIONAL AMPLIFIER			
IC2	TA78L015AP	IC, 3-TERMINAL OP AMP			
R1	RN14BK2E5101F	RES. METAL FILM 5.1K	1%	1/4W	
R2	RN14BK2E1001F	RES. METAL FILM 1K	1%	1/4W	
R3	RN14BK2E3300F	RES. METAL FILM 330	1%	1/4W	
R4	RN14BK2E1003F	RES. METAL FILM 100K	1%	1/4W	
R5	RN14BK2E2200F	RES. METAL FILM 220	1%	1/4W	
R6	RN14BK2E2002F	RES. METAL FILM 20K	1%	1/4W	
R7	RN14BK2E8201F	RES. METAL FILM 8.2K	1%	1/4W	
R8	RN14BK2E3300F	RES. METAL FILM 330	1%	1/4W	
R9	RN14BK2E6801F	RES. METAL FILM 6.8K	1%	1/4W	
R10	RN14BK2E1603F	RES. METAL FILM 160K	1%	1/4W	
R11	RN14BK2E1603F	RES. METAL FILM 160K	1%	1/4W	
R12	NO USE				
R13	RS14GB3A102J	RES. METAL FILM 1K	5%	1W	
R14	RS14GB3A102J	RES. METAL FILM 1K	5%	1W	
RY	S76-0625-08	RELAY			
VR1	R29-1515-08	V. R.			2K
VR2	R29-4503-08	V. R.			50K
VR3	R29-1515-08	V. R.			2K

PA250-0.4A D.P.M. UNIT

W02-2165-08

REF. NO	PARTS NO	NAME & DESCRIPTION			
	J61-0532-08	PCB SUPPORT			
	J73-0265-08	PCB (UNMOUNTED)			
	N09-4501-08	SCREW, PAN HD TAPPING 3.5X6			
C1	CE04EW1A101M	CAP. ELECTRO	100	20%	10V
C2	CE04EW1E4R7M	CAP. ELECTRO	4.7	20%	25V
C3	CK45FH104Z	CAP. CERAMIC	0.1	20%	50V
C4	CK45FH104Z	CAP. CERAMIC	0.1	20%	50V
C5	CK45FH104Z	CAP. CERAMIC	0.1	20%	50V
C6	C092M1H104K	CAP. NYLAR	0.1	10%	50V
C7	C092M1H104K	CAP. NYLAR	0.1	10%	50V
C8	C092M1H104K	CAP. NYLAR	0.1	10%	50V
C9	C092M1H104K	CAP. NYLAR	0.1	10%	50V
C10	C092M1H104K	CAP. NYLAR	0.1	10%	50V
C11	C092M1H104K	CAP. NYLAR	0.1	10%	50V
C12	CK45FH104Z	CAP. CERAMIC	0.1	20%	50V
C13	CE04EW1E4R7M	CAP. ELECTRO	4.7	20%	25V
C14	CE04EW1E4R7M	CAP. ELECTRO	4.7	20%	25V
C15	CE04EW1E4R7M	CAP. ELECTRO	4.7	20%	25V
C16	CK45FH104Z	CAP. CERAMIC	0.1	20%	50V
C17	CK45FH104Z	CAP. CERAMIC	0.1	20%	50V
C18	CK45FH104Z	CAP. CERAMIC	0.1	20%	50V
C19	CK45B1H471K	CAP. CERAMIC	470P	10%	50V
CN1	E40-7315-08	PIN CONNECTOR			12P
IC1	NC14433P	IC, 3-1/2 DIGIT A/D CONVERTER			
IC2	NC14433P	IC, 3-1/2 DIGIT A/D CONVERTER			
IC3	TC4066BP	IC, QUAD. BILATERAL SWITCH			
IC4	TC74HC4511AP	IC, BCD 7 LATCH/DECODER/DRIVER			
IC5	TC74HC4511AP	IC, BCD 7 LATCH/DECODER/DRIVER			
IC6	NC1413P	IC, PERIPHERAL DRIVER ARRAY			
IC7	TC74HC74AP	IC, DUAL D-FLIP FLOP			
IC8	TC74HC10AP	IC, TRIPLE 3-INPUT NAND GATE			
IC9	TC74HC14AP	IC, HEX SCHMITT INVERTER			
JP2	R92-1061-05	JUMPING RES.			ZERO OHM (5MM)
L1	B30-0972-05	LED, RED			
L2	B30-0972-05	LED, RED			
L3	B30-0973-05	LED, GREEN			

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION
LED1	B30-0974-05	LED, 7-SEGMENTS
LED2	B30-0974-05	LED, 7-SEGMENTS
LED3	B30-0974-05	LED, 7-SEGMENTS
LED4	B30-0974-05	LED, 7-SEGMENTS
LED5	B30-0974-05	LED, 7-SEGMENTS
LED6	B30-0974-05	LED, 7-SEGMENTS
LED7	B30-0974-05	LED, 7-SEGMENTS
PC1	PC817	IC, PHOTO COUPLER
R1	RN14BK2E1302F	RES. METAL FILM 13K 1% 1/4W
R2	RN14BK2E7501F	RES. METAL FILM 7.5K 1% 1/4W
R3	RN14BK2E4702F	RES. METAL FILM 47K 1% 1/4W
R4	RN14BK2E4701F	RES. METAL FILM 4.7K 1% 1/4W
R5	RN14BK2C2001F	RES. METAL FILM 2K 1% 1/6W
R6	RN14BK2E1001F	RES. METAL FILM 1K 1% 1/4W
R7	RN14BK2C3001F	RES. METAL FILM 3K 1% 1/6W
R8	RN14BK2C2001F	RES. METAL FILM 2K 1% 1/6W
R9	RN14BK2E8201F	RES. METAL FILM 8.2K 1% 1/4W
R10	RN14BK2C2001F	RES. METAL FILM 2K 1% 1/6W
R11	RD14BB2E103J	RES. CARBON 10K 5% 1/4W
R12	RD14BB2E103J	RES. CARBON 10K 5% 1/4W
R13	RD14BB2E512J	RES. CARBON 5.1K 5% 1/4W
R14	RN14BK2E3003F	RES. METAL FILM 300K 1% 1/4W
R15	RN14BK2E5103F	RES. METAL FILM 510K 1% 1/4W
R16	RN14BK2E3003F	RES. METAL FILM 300K 1% 1/4W
R17	RN14BK2E5103F	RES. METAL FILM 510K 1% 1/4W
R18	RD14BB2E222J	RES. CARBON 2.2K 5% 1/4W
R19	RD14BB2E222J	RES. CARBON 2.2K 5% 1/4W
R20	NO USE	
R21	RD14BB2E821J	RES. CARBON 820 5% 1/4W
R25	RD14BB2E103J	RES. CARBON 10K 5% 1/4W
R26	RD14BB2E103J	RES. CARBON 10K 5% 1/4W
R27	RD14BB2E244J	RES. CARBON 240K 5% 1/4W
R28	RD14BB2E103J	RES. CARBON 10K 5% 1/4W
R29	RD14BB2E102J	RES. CARBON 1K 5% 1/4W
R30	RD14BB2E103J	RES. CARBON 10K 5% 1/4W
R31	RD14BB2E103J	RES. CARBON 10K 5% 1/4W
R32	RD14BB2E102J	RES. CARBON 1K 5% 1/4W
RA1	R90-1129-08	RES. NETWORK 4X330
RA2	R90-1129-08	RES. NETWORK 4X330
RA3	R90-1129-08	RES. NETWORK 4X330
RA4	R90-1129-08	RES. NETWORK 4X330
SW1	S74-0601-08	TACT SWITCH
TR1	DTA114EFX	TR. DIGITAL
VR1	R12-1566-08	RES. SEMI FIXED 1K
VR2	R12-1566-08	RES. SEMI FIXED 1K
VR3	R12-1566-08	RES. SEMI FIXED 1K
ZD1	TL431CLPB	IC, 3-TERMINAL SHUNT REGULATOR

PR250-0.42A Y86-1910-00

REF. NO	PARTS NO	NAME & DESCRIPTION
	A01-1238-08	COVER
	A63-0118-08	FRONT PANEL
	B31-0766-08	METER: VOLT
	B31-0772-08	METER: CURRENT
	B40-2737-24	SERIAL NO. PLATE
	B42-3731-08	MASTER/SLAVE LABEL
	B42-3738-08	FUSE RATING LABEL
	B42-3999-08	RATING: AC100V 50/60HZ 155W
	B42-4000-08	RATING: AC120V 50/60HZ 155W
	B42-6001-08	RATING: AC220V 50/60HZ 155W
	B42-6002-08	RATING: AC240V 50/60HZ 155W
	B42-6003-08	RATING: AC120V 60HZ 155W
	B63-0173-00	INSTRUCTION MANUAL: JAPANESE
	B63-0174-00	INSTRUCTION MANUAL: ENGLISH
	C90-3177-08	CAP. ELECTRO WITH BRACKET
	E21-0670-03	TERMINAL, RED
	E21-0671-03	TERMINAL, BLACK
	E21-0672-03	TERMINAL, WHITE
	E29-0506-04	SHORTING BAR
	E29-0542-08	LUG: M3
	E30-0027-35	HL/CSA POWER CORD
	E30-0545-05	JIS POWER CORD
	E30-0571-15	SAA POWER CORD
	E30-1815-05	CEE POWER CORD
	E30-1867-05	BS POWER CORD
	F01-0886-08	HEAT SINK
	F05-3022-08	FUSE (6X32MM) 2.5A/250V
	F29-0517-08	INSULATOR: FOR Q6/Q11
	F50-0004-08	FUSE (5X20MM) 3A/250V
	F51-0026-08	FUSE (6X32MM) 4A/125V
	H10-2856-08	FOAMED STYRENE PAD (FRONT)

REF. NO	PARTS NO	NAME & DESCRIPTION
	H10-2857-08	FOAMED STYRENE PAD (REAR)
	H20-1734-08	VINYL COVER
	H53-0117-08	GARTON BOX
	J02-0529-08	FOOT
	J19-1671-08	CLAMPER: FOR 2-CORE AC CORD
	J19-1672-08	CLAMPER: FOR 3-CORE AC CORD
	J21-4720-08	BRACKET: FOR P.C.B
	J21-4758-08	BRACKET: FOR AC CORD BUSHING
	J30-0635-08	VOLUME SPACER: FOR VR01
	J42-0083-05	BUSHING: FOR 2-CORE AC CORD
	J42-0085-05	BUSHING: FOR 3-CORE AC CORD
	J61-0408-05	WIRE WRAPPING BAND
	K01-0417-05	HANDLE
	K21-0907-04	KNOB: COARSE
	K21-0911-04	KNOB: FINE/CURRENT
	K24-3006-04	KNOB, OUTPUT
	K27-0509-04	PUSH BUTTON, ORANGE: POWER
	L07-1514-08	POWER TRANSFORMER
	N09-0718-05	SCREW, SEMS PAN HD H3X6
	N09-0757-05	SCREW, SEMS BINDING TAPTITE 3X6
	N09-0776-05	SCREW, SEMS PAN HD H5X10
	N09-0777-05	SCREW, SEMS PAN HD H4X6
	N09-0789-05	SCREW, SEMS PAN HD H3X10
	N09-0797-08	SCREW, SEMS TAPTITE 3X10
	N14-0404-04	FLANGE NUT M3
	N89-3006-41	SCREW, BINDING TAPTITE 3X6
	N89-3012-41	SCREW, BINDING TAPTITE 3X12
	S40-2533-08	PUSH SWITCH: POWER
	W02-2258-08	AMP UNIT
	W02-2259-08	V. REF UNIT
VR1	R29-3503-08	VOLUME 10K
VR2	R29-1508-08	VOLUME 1K
VR3	R29-3504-08	VOLUME 10K

PR250-0.42A AMP UNIT W02-2258-08

REF. NO	PARTS NO	NAME & DESCRIPTION
	E21-0674-08	EXTERNAL OUTPUT TERMINAL
	E40-7141-08	PIN CONNECTOR 2P(LINE VOLTAGE)
	E40-7142-08	PIN CONNECTOR 1P(LINE VOLTAGE)
	J13-0518-08	FUSE CLIP: FOR 6X30MM
	J73-0326-08	PCB (UNMOUNTED)
	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
	R92-1061-05	JUMPING RES. ZERO OHM(5MM)
C1	C90-3019-08	CAP. ELECTRO 1000 105°C 35V
C2	C092M1H102K	CAP. NYLAR 1000P 10% 50V
C3	C90-2559-08	CAP. METAL FILM 0.1 50V
C4	C092M1H472K	CAP. NYLAR 4700P 10% 50V
C5	C092M1H103K	CAP. NYLAR 0.01 10% 50V
C6	NO USE	
C7	C90-3020-08	CAP. ELECTRO 100 105°C 25V
C8	CF93AN3A103K	CAP. POLYESTER 0.01 10% 1000V
C11	CF93AN1J224K	CAP. POLYESTER 0.22 10% 63V
C19	C90-3174-08	CAP. ELECTRO 10 1% 50V
C20	CF93AN1J104K	CAP. POLYESTER 0.1 10% 63V
C21	NO USE	
C22	C90-2559-08	CAP. METAL FILM 0.1 50V
C25	C91-2560-08	CAP. CERAMIC 0.1 10% 400V
C26	NO USE	
C27	CK45B1H471K	CAP. CERAMIC 470P 10% 50V
C101	C91-2588-08	CAP. CERAMIC 0.1 10% 630V
CN1	E40-7218-08	PIN CONNECTOR 2P
CN2	E40-7344-08	PIN CONNECTOR 3P
CN3	NO USE	
CN4	E40-7126-08	PIN CONNECTOR 2P
CN5	E40-7219-08	PIN CONNECTOR 3P
CN6	E40-7219-08	PIN CONNECTOR 3P
CN7	E40-7229-08	PIN CONNECTOR 4P
CN8	E40-7229-08	PIN CONNECTOR 4P
CN11	E40-7332-08	PIN CONNECTOR 4P
CN12	E40-7333-08	PIN CONNECTOR 2P
CN13	E40-7333-08	PIN CONNECTOR 2P
CN18	E40-7440-08	PIN CONNECTOR
CN21	E40-7332-08	PIN CONNECTOR 4P
CN22	E40-3240-08	PIN CONNECTOR 5P
CN25	E40-7322-08	PIN CONNECTOR 6P
C01	C91-1323-08	CAP. CERAMIC 0.1 20% 250V
D1	1B4B42	DIODE, STACK
D2	ERA15-01	DIODE
D3	1SS270A	DIODE
D4	1SS270A	DIODE

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION
D5	1SS270A	DIODE
D6	1SS270A	DIODE
D7	1SS270A	DIODE
D8	NO USE	
D9	D3SB60	DIODE, STACK
D10	ERA15-01	DIODE
D13	1SS270A	DIODE
D14	1SS270A	DIODE
D15	1SS270A	DIODE
D16	1SS270A	DIODE
D24	1SS270A	DIODE
D25	1SS270A	DIODE
D26	1SS270A	DIODE
D27	NO USE	
D28	1SS270A	DIODE
D01	ERA15-04	DIODE
IC1	UPC151C	IC, OP AMP
IC2	UPC151C	IC, OP AMP
IC3	UPC1093J	IC, VARIABLE SHUNT REGULATOR
IC6	UPC1093J	IC, VARIABLE SHUNT REGULATOR
IC9	HA178L12A	IC, TERMINAL FIXED VOLTAGE REG.
LED1	LN322GP	LED: GREEN
LED2	LN222RP	LED: RED
LED01	LN222RP	LED: RED
Q1	2SC1815(GR)	TR. SI, NPN
Q2	2SC1815(GR)	TR. SI, NPN
Q3	2SC1815(GR)	TR. SI, NPN
Q4	2SC1815(GR)	TR. SI, NPN
Q5	2SC1815(GR)	TR. SI, NPN
Q6	2SK1011	FET, N-CHANNEL
Q7	NO USE	
Q8	2SC3421(Y)	TR. SI, NPN
Q9	2SC1815(GR)	TR. SI, NPN
Q10	2SC1815(GR)	TR. SI, NPN
Q11	2SK1011	FET, N-CHANNEL
Q12	NO USE	
Q13	2SC1815(GR)	TR. SI, NPN
Q14	2SC1815(GR)	TR. SI, NPN
Q15	2SC1815(GR)	TR. SI, NPN
Q11A	2SK1011	FET, N-CHANNEL
Q11B	2SK1011	FET, N-CHANNEL
R1	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R2	RD14BB2C123J	RES. CARBON 12K 5% 1/6W
R3	RD14BB2C302J	RES. CARBON 3K 5% 1/6W
R4	RD14BB2C510J	RES. CARBON 51 5% 1/6W
R5	RD14BB2C514J	RES. CARBON 510K 5% 1/6W
R6	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R7	RN14BK2C1202F	RES. METAL FILM 12K 1% 1/6W
R8	RN14BK2C2001F	RES. METAL FILM 2K 1% 1/6W
R9	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R10	RD14BB2C302J	RES. CARBON 3K 5% 1/6W
R11	RD14BB2C513J	RES. CARBON 51K 5% 1/6W
R14	RD14BB2C202J	RES. CARBON 2K 5% 1/6W
R15	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R16	RD14BB2C512J	RES. CARBON 5.1K 5% 1/6W
R17	NO USE	
R18	RD14BB2C513J	RES. CARBON 51K 5% 1/6W
R19	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R20	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R21	RN14BK2C3903F	RES. METAL FILM 390K 1% 1/6W
R22	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R23	RN14BK2C9101F	RES. METAL FILM 9.1K 1% 1/6W
R24	RN14BK2C3001F	RES. METAL FILM 3K 1% 1/6W
R27	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R28	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R29	RS14GB3D184J	RES. METAL FILM 180K 5% 2W
R30	RS14GB3A200J	RES. METAL FILM 20 5% 1W
R31	NO USE	
R32	RS14GB3A200J	RES. METAL FILM 20 5% 1W
R33	NO USE	
R34	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R35	RD14BB2C123J	RES. CARBON 12K 5% 1/6W
R36	RD14BB2C302J	RES. CARBON 3K 5% 1/6W
R37	RD14BB2C510J	RES. CARBON 51 5% 1/6W
R38	RD14BB2C105J	RES. CARBON 1M 5% 1/6W
R39	RD14BB2C913J	RES. CARBON 91K 5% 1/6W
R40	RN14BK2C51R0F	RES. METAL FILM 51.0 1% 1/6W
R45	RS14GB3D104J	RES. METAL FILM 100K 5% 2W
R46	RD14BB2C512J	RES. CARBON 5.1K 5% 1/6W

REF. NO	PARTS NO	NAME & DESCRIPTION
R51	RN14BK2C2401F	RES. METAL FILM 2.4K 1% 1/6W
R52	RN14BK2C3001F	RES. METAL FILM 3K 1% 1/6W
R66	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R67	RS14GB3DR51J	RES. METAL FILM 0.51 5% 2W
R70	RN14BK2C1603F	RES. METAL FILM 160K 1% 1/6W
R71	RN14BK2C1603F	RES. METAL FILM 160K 1% 1/6W
R72	RD14BB2C333J	RES. CARBON 33K 5% 1/6W
R73	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R74	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R75	NO USE	
R76	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R77	NO USE	
R78	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R79	RD14BB2H102J	RES. CARBON 1K 5% 1/2W
R90	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R91	NO USE	
R92	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R93	RD14BB2C205J	RES. CARBON 2M 5% 1/6W
R101	RD14BB2E300J	RES. CARBON 30 5% 1/4W
R201	RD14BB2E300J	RES. CARBON 30 5% 1/4W
R202	RD14BB2H302J	RES. CARBON 3K 5% 1/2W
R301	RD14BB2E300J	RES. CARBON 30 5% 1/4W
R32A	RS14GB3A200J	RES. METAL FILM 20 5% 1W
R32B	RS14GB3A200J	RES. METAL FILM 20 5% 1W
R401	RD14BB2E300J	RES. CARBON 30 5% 1/4W
R01	RN14BK2C1003F	RES. METAL FILM 100K 1% 1/6W
RY1	S76-0604-08	RELAY
RY2	S76-0604-08	RELAY
SW1	S68-0631-05	OUTPUT SW
SW2	S31-1512-08	MASTER/SLAVE SWITCH
VR1	R12-1565-08	RES. SEMI FIXED 2KB
VR2	R12-5547-08	RES. SEMI FIXED 100KB
VR3	R12-0597-08	RES. SEMI FIXED 100
VR4	R12-1565-08	RES. SEMI FIXED 2KB

PR250-0.42A V.REF UNIT

W02-2259-08

REF. NO	PARTS NO	NAME & DESCRIPTION
C1	CQ92H1H473K	CAP. NYLAR 0.047 10% 50V
C2	C90-3022-08	CAP. ELECTRO 4.7 105°C 50V
C3	C90-3176-08	CAP. ELECTRO 22 20% 350V
C4	C90-3018-08	CAP. ELECTRO 1 105°C 50V
C5	CK45B1H101K	CAP. CERAMIC 100P 10% 50V
CN1	E40-7184-08	PIN CONNECTOR 5P
CN2	E40-7332-08	PIN CONNECTOR 4P
CN3	E40-7322-08	PIN CONNECTOR 6P
D1	1SS270A	DIODE
D2	1SS270A	DIODE
D3	ERA15-01	DIODE
IC1	OP072	IC, OPERATIONAL AMPLIFIER
IC2	TA78L132AP	IC, 3-TERMINAL REGULATOR
R1	RN14BK2E5101F	RES. METAL FILM 5.1K 1% 1/4W
R2	RN14BK2E1001F	RES. METAL FILM 1K 1% 1/4W
R3	RN14BK2E3303F	RES. METAL FILM 330K 1% 1/4W
R4	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R5	RN14BK2E2200F	RES. METAL FILM 220 1% 1/4W
R6	RN14BK2E2202F	RES. METAL FILM 22K 1% 1/4W
R7	RN14BK2E8201F	RES. METAL FILM 8.2K 1% 1/4W
R8	RN14BK2E3300F	RES. METAL FILM 330 1% 1/4W
R9	RN14BK2E6801F	RES. METAL FILM 6.8K 1% 1/4W
R10	RN14BK2E5101F	RES. METAL FILM 5.1K 1% 1/4W
R11	RN14BK2E1603F	RES. METAL FILM 160K 1% 1/4W
RY3	S76-0625-08	RELAY
VR1	R12-0894-08	RES. SEMI FIXED 2KB
VR2	R12-0895-08	RES. SEMI FIXED 50KB
VR3	R12-0893-08	RES. SEMI FIXED 5KB

PARTS LIST

PR250-0.4A Y86-1580-00

REF. NO	PARTS NO	NAME & DESCRIPTION
A01	1238-08	COVER
A10	1468-08	CHASSIS
A63	0098-08	FRONT PANEL
B31	0766-08	METER;VOLT
B31	0767-08	METER;CURRENT
B40	2737-24	SERIAL NO. PLATE
B42	3731-08	MASTER/SLAVE LABEL
B42	3738-08	FUSE RATING LABEL
B42	3886-08	RATING;AC100V 50/60HZ 147W
B42	3887-08	RATING;AC120V 50/60HZ 147W
B42	3888-08	RATING;AC220V 50/60HZ 147W
B42	3889-08	RATING;AC240V 50/60HZ 147W
B63	0130-08	INSTRUCTION MANUAL;JAPANESE
B63	0131-08	INSTRUCTION MANUAL;ENGLISH
E21	0670-03	TERMINAL, RED
E21	0671-03	TERMINAL, BLACK
E21	0672-03	TERMINAL, WHITE
E29	0506-04	SHORTING BAR
E30	0027-35	UL/CSA POWER CORD
E30	0545-05	JIS POWER CORD
E30	0571-15	SAA POWER CORD
E30	1815-05	CEE POWER CORD
E30	1867-05	BS POWER CORD
F01	0886-08	HEAT SINK
F05	3022-08	FUSE(6X32MM) 2.5A/250V
F29	0517-08	INSULATOR;FOR: Q6/Q11
F29	0542-08	LUG
F50	0004-08	FUSE(5X20MM) 3A/250V
F51	0026-08	FUSE(6X32MM) 4A/125V
H10	2856-08	FOAMED STYRENE PAD (FRONT)
H10	2857-08	FOAMED STYRENE PAD (REAR)
H20	1734-08	VINYL COVER
H53	0088-08	CARTON BOX
J02	0529-08	FOOT
J19	1671-08	CLAMPER;FOR 2-CORE AC CORD
J19	1672-08	CLAMPER;FOR 3-CORE AC CORD
J21	4720-08	BRACKET;FOR P.C.B
J21	4724-08	BRACKET;FOR METER
J21	4758-08	BRACKET;FOR AC CORD BUSHING
J30	0634-08	SPACER;FOR AC CHANGING UNIT
J30	0635-08	VOLUME SPACER;FOR VR01
J39	0531-08	SPACER;FOR RELAY UNIT
J42	0083-05	BUSHING;FOR 2-CORE AC CORD
J42	0085-05	BUSHING;FOR 3-CORE AC CORD
K01	0417-05	HANDLE
K21	0907-04	KNOB;COARSE
K21	0911-04	KNOB;FINE/CURRENT
K27	0509-04	PUSH BUTTON,ORANGE;POWER
L01	9999-08	POWER TRANSFORMER
N09	0718-05	SCREW,SEMS PAN HD M3X6
N09	0757-05	SCREW,SEMS BINDING TAPTITE 3X6
N09	0776-05	SCREW,SEMS PAN HD M5X10
N09	0777-05	SCREW,SEMS PAN HD M4X6
N09	0789-08	SCREW,SEMS PAN HD M3X10
N09	0797-08	SCREW,SEMS TAPTITE 3X10
N14	0404-04	FLANGE NUT M3
N89	3006-41	SCREW,BINDING TAPTITE 3X6
N89	3012-41	SCREW,BINDING TAPTITE 3X12
S40	2533-08	PUSH SWITCH;POWER
W02	2156-08	AMP UNIT
W02	2163-08	V. REF UNIT
C10	C90-3124-08	CAP. ELECTRO 470 1% 450V
VR01	R29-3503-08	VOLUME 10K
VR02	R29-1503-08	VOLUME 1K
VR03	R29-3504-08	VOLUME 10K

PR250-0.4A AMP UNIT W02-2156-08

REF. NO	PARTS NO	NAME & DESCRIPTION
E21	0674-08	EXTERNAL OUTPUT TERMINAL
E40	7141-08	PIN CONNECTOR 2P(LINE VOLTAGE)
E40	7142-08	PIN CONNECTOR 1P(LINE VOLTAGE)
J13	0518-08	FUSE CLIP;FOR 6X30MM
J13	0519-08	FUSE CLIP;FOR 5X20MM
J73	0188-08	PCB (UNMOUNTED)
R92	0150-05	JUMPING RES. ZERO OHM(10MM)
C1	C90-3019-08	CAP. ELECTRO 1000 105°C 35V
C2	C092M1H102K	CAP. MYLAR 1000P 10% 50V
C3	C91-2559-08	CAP. CERAMIC 0.1 0.25P 50V
C4	C092M1H472K	CAP. MYLAR 4700P 10% 50V
C5	C092M1H103K	CAP. MYLAR 0.01 10% 50V

REF. NO	PARTS NO	NAME & DESCRIPTION
C6	NO USE	
C7	C90-3020-08	CAP. ELECTRO 100 105°C 25V
C8	C91-2561-08	CAP. CERAMIC 0.01 10% 1000V
C11	C90-3022-08	CAP. ELECTRO 4.7 105°C 50V
C19	C90-3022-08	CAP. ELECTRO 4.7 105°C 50V
C22	C91-2559-08	CAP. CERAMIC 0.1 0.25P 50V
C25	C91-2560-08	CAP. CERAMIC 0.1 10% 400V
C101	C91-2588-08	CAP. CERAMIC 0.1 10% 630V
CN1	E40-7218-08	PIN CONNECTOR 2P
CN2	E40-7332-08	PIN CONNECTOR 4P
CN3	NO USE	
CN4	E40-7126-08	PIN CONNECTOR 2P
CN5	E40-7219-08	PIN CONNECTOR 3P
CN6	E40-7219-08	PIN CONNECTOR 3P
CN7	E40-7220-08	PIN CONNECTOR 4P
CN8	E40-7220-08	PIN CONNECTOR 4P
CN9	NO USE	
CN10	E40-7332-08	PIN CONNECTOR 4P
CN11	E40-7332-08	PIN CONNECTOR 4P
CN12	E40-7333-08	PIN CONNECTOR 2P
CN13	E40-7333-08	PIN CONNECTOR 2P
CN14	NO USE	
CN15	E40-7344-08	PIN CONNECTOR 3P
C01	C91-1323-08	CAP. CERAMIC 0.1 20% 250V
C02	NO USE	
C03	C91-3127-08	CAP. CERAMIC 10 0.25P 350V
D1	1B4B42	DIODE,STACK
D2	ERA15-01	DIODE
D3	1SS270A	DIODE
D4	1SS270A	DIODE
D5	1SS270A	DIODE
D6	1SS270A	DIODE
D7	1SS270A	DIODE
D8	NO USE	
D9	D3SB60	DIODE,STACK
D10	ERA15-01	DIODE
D14	1SS270A	DIODE
D15	1SS270A	DIODE
D16	1SS270A	DIODE
D01	ERA15-04	DIODE
IC1	UPC151C	IC,OP AMP
IC2	UPC151C	IC,OP AMP
IC3	UPC1093J	IC,VARIABLE SHUNT REGULATOR
IC6	UPC1093J	IC,VARIABLE SHUNT REGULATOR
IC9	HA178L12A	IC,TERMINAL FIXED VOLTAGE REG.
LED01	B30-0984-08	LED
Q1	2SC1815(GR)	TR. SI, NPN
Q2	2SC1815(GR)	TR. SI, NPN
Q3	2SC1815(GR)	TR. SI, NPN
Q6	2SK1011	FET, N-CHANNEL
Q7	NO USE	
Q8	2SC3421(Y)	TR. SI, NPN
Q9	2SC1815(GR)	TR. SI, NPN
Q10	2SC1815(GR)	TR. SI, NPN
Q11	2SK1011	FET, N-CHANNEL
Q11A	2SK1011	FET, N-CHANNEL
Q11B	2SK1011	FET, N-CHANNEL
R1	RD14BB2E122J	RES. CARBON 1.2K 5% 1/4W
R2	RD14BB2E123J	RES. CARBON 12K 5% 1/4W
R3	RD14BB2E302J	RES. CARBON 3K 5% 1/4W
R4	RD14BB2E510J	RES. CARBON 51 5% 1/4W
R5	RD14BB2E514J	RES. CARBON 510K 5% 1/4W
R6	RD14BB2E104J	RES. CARBON 100K 5% 1/4W
R7	RN14BK2E1202F	RES. METAL FILM 12K 1% 1/4W
R8	RN14BK2E2001F	RES. METAL FILM 2K 1% 1/4W
R9	RD14BB2E102J	RES. CARBON 1K 5% 1/4W
R10	RD14BB2E302J	RES. CARBON 3K 5% 1/4W
R15	RD14BB2E102J	RES. CARBON 1K 5% 1/4W
R16	RD14BB2E512J	RES. CARBON 5.1K 5% 1/4W
R19	RD14BB2E103J	RES. CARBON 10K 5% 1/4W
R20	RD14BB2E102J	RES. CARBON 1K 5% 1/4W
R21	RN14BK2E3903F	RES. METAL FILM 390K 1% 1/4W
R22	RD14BB2E102J	RES. CARBON 1K 5% 1/4W
R23	RN14BK2E9101F	RES. METAL FILM 9.1K 1% 1/4W

PARTS LIST

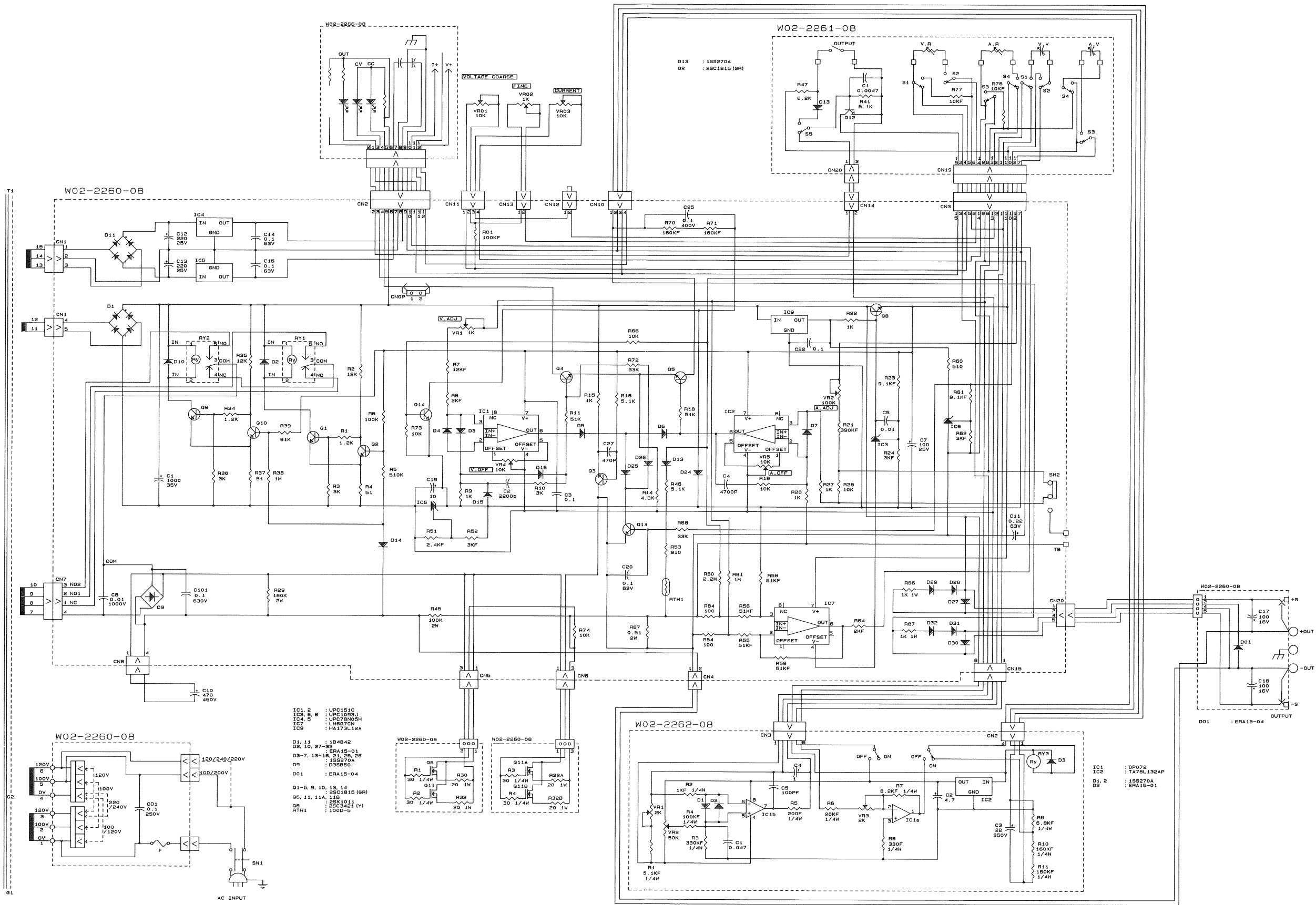
REF. NO	PARTS NO	NAME & DESCRIPTION			
R24	RN14BK2E3001F	RES. METAL FILM 3K	1%	1/4W	
R25	RD14BB2E122J	RES. CARBON 1.2K	5%	1/2W	
R26	RD14BB2E122J	RES. CARBON 1.2K	5%	1/2W	
R27	RD14BB2E102J	RES. CARBON 1K	5%	1/4W	
R28	RD14BB2E103J	RES. CARBON 10K	5%	1/4W	
R29	RS14GB3D184J	RES. METAL FILM 180K	5%	2W	
R30	RS14GB3A200J	RES. METAL FILM 20	5%	1W	
R31	NO USE				
R32	RS14GB3A200J	RES. METAL FILM 20	5%	1W	
R33	NO USE				
R34	RD14BB2E122J	RES. CARBON 1.2K	5%	1/4W	
R35	RD14BB2E123J	RES. CARBON 12K	5%	1/4W	
R36	RD14BB2E302J	RES. CARBON 3K	5%	1/4W	
R37	RD14BB2E510J	RES. CARBON 51	5%	1/4W	
R38	RD14BB2E105J	RES. CARBON 1M	5%	1/4W	
R39	RD14BB2E913J	RES. CARBON 91K	5%	1/4W	
R40	RN14BK2E51R0F	RES. METAL FILM 51.0	1%	1/4W	
R45	RS14GB3D104J	RES. METAL FILM 100K	5%	2W	
R51	RN14BK2E2401F	RES. METAL FILM 2.4K	1%	1/4W	
R52	RN14BK2E3001F	RES. METAL FILM 3K	1%	1/4W	
R67	RS14GB3DR51J	RES. METAL FILM 0.51	5%	2W	
R70	RN14BK2E1603F	RES. METAL FILM 160K	1%	1/4W	
R71	RN14BK2E1603F	RES. METAL FILM 160K	1%	1/4W	
R74	RD14BB2E103J	RES. CARBON 10K	5%	1/4W	
R101	RD14BB2E300J	RES. CARBON 30	5%	1/4W	
R201	RD14BB2E300J	RES. CARBON 30	5%	1/4W	
R301	RD14BB2E300J	RES. CARBON 30	5%	1/4W	
R32A	RS14GB3A200J	RES. METAL FILM 20	5%	1W	
R32B	RS14GB3A200J	RES. METAL FILM 20	5%	1W	
R401	RD14BB2E300J	RES. CARBON 30	5%	1/4W	
RY1	S76-0604-08	RELAY			
RY2	S76-0604-08	RELAY			
SW2	S31-1512-08	MASTER/SLAVE SWITCH			
VR1	R12-1564-08	RES. SEMI FIXED 1KB			
VR2	R12-5547-08	RES. SEMI FIXED 100KB			
VR3	R12-0597-08	RES. SEMI FIXED 100			

PR250-0.4A V.REF UNIT

W02-2163-08

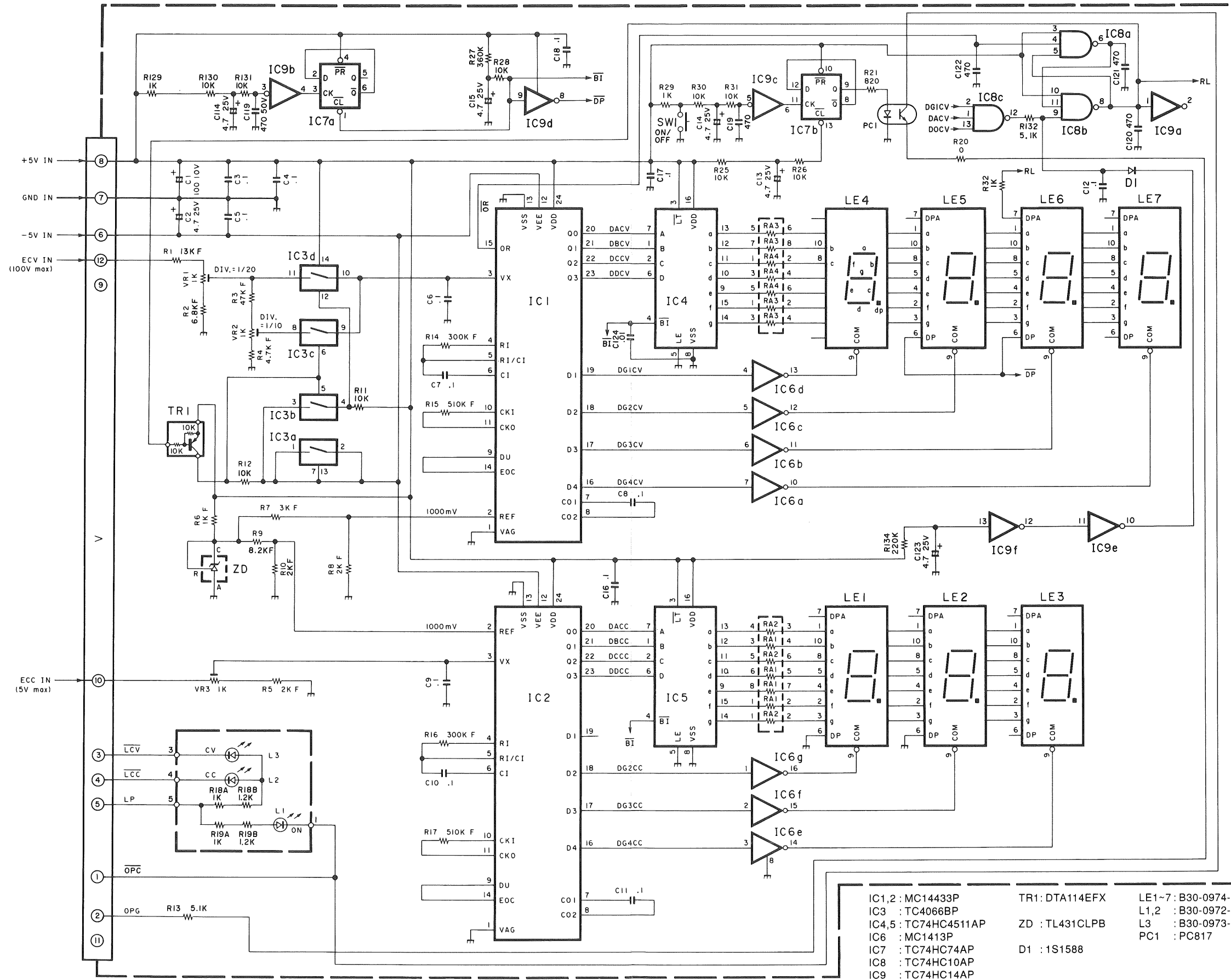
REF. NO	PARTS NO	NAME & DESCRIPTION			
	J73-0262-08	PCB (UNMOUNTED)			
C1	CQ92M1H473K	CAP. MYLAR 0.047	10%	50V	
C2	C90-3022-08	CAP. ELECTRO 4.7	105°C	50V	
C3	C90-3123-08	CAP. ELECTRO 10	1%	350V	
C4	C90-3018-08	CAP. ELECTRO 1	105°C	50V	
C5	GK45B1H101K	CAP. CERAMIC 100P	10%	50V	
CN1	E40-7184-08	PIN CONNECTOR 5P			
CN2	E40-7218-08	PIN CONNECTOR 2P			
CN3	E40-7335-08	PIN CONNECTOR 4P			
D1	1SS270A	DIODE			
D2	1SS270A	DIODE			
IC1	OP072	IC, OPERATIONAL AMPLIFIER			
IC2	HA178L12A	IC, TERMINAL FIXED VOLTAGE REG.			
R1	RN14BK2E5101F	RES. METAL FILM 5.1K	1%	1/4W	
R2	RN14BK2E1001F	RES. METAL FILM 1K	1%	1/4W	
R3	RN14BK2E3303F	RES. METAL FILM 330K	1%	1/4W	
R4	RN14BK2E1003F	RES. METAL FILM 100K	1%	1/4W	
R5	RN14BK2E2200F	RES. METAL FILM 220	1%	1/4W	
VR1	R12-0894-08	RES. SEMI FIXED 2KB			
VR2	R12-0895-08	RES. SEMI FIXED 50KB			

SCHEMATIC DIAGRAM PA250-0.42A



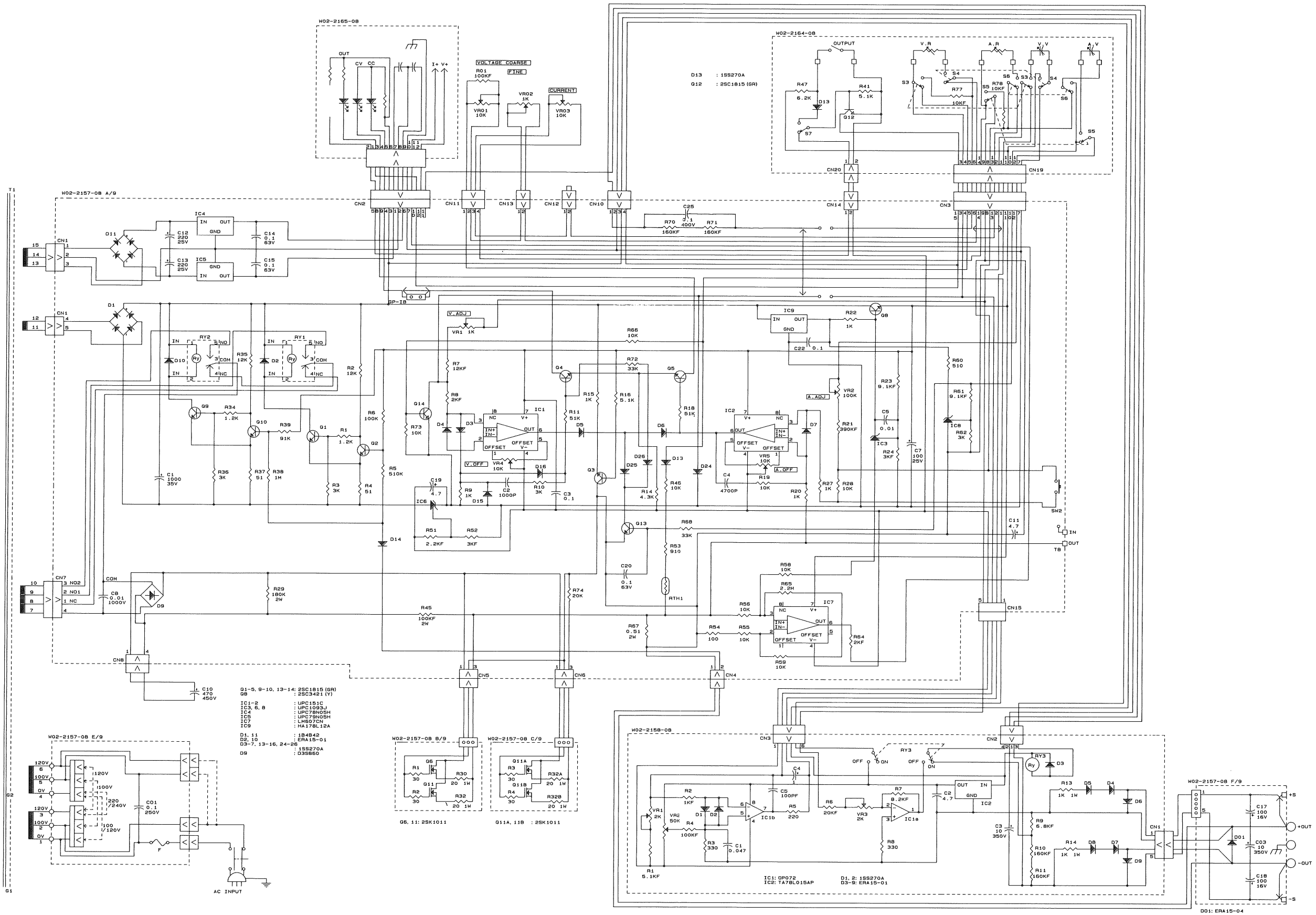
SCHEMATIC DIAGRAM PA250-0.42A

D.P.M. UNIT (W02-2266-08)



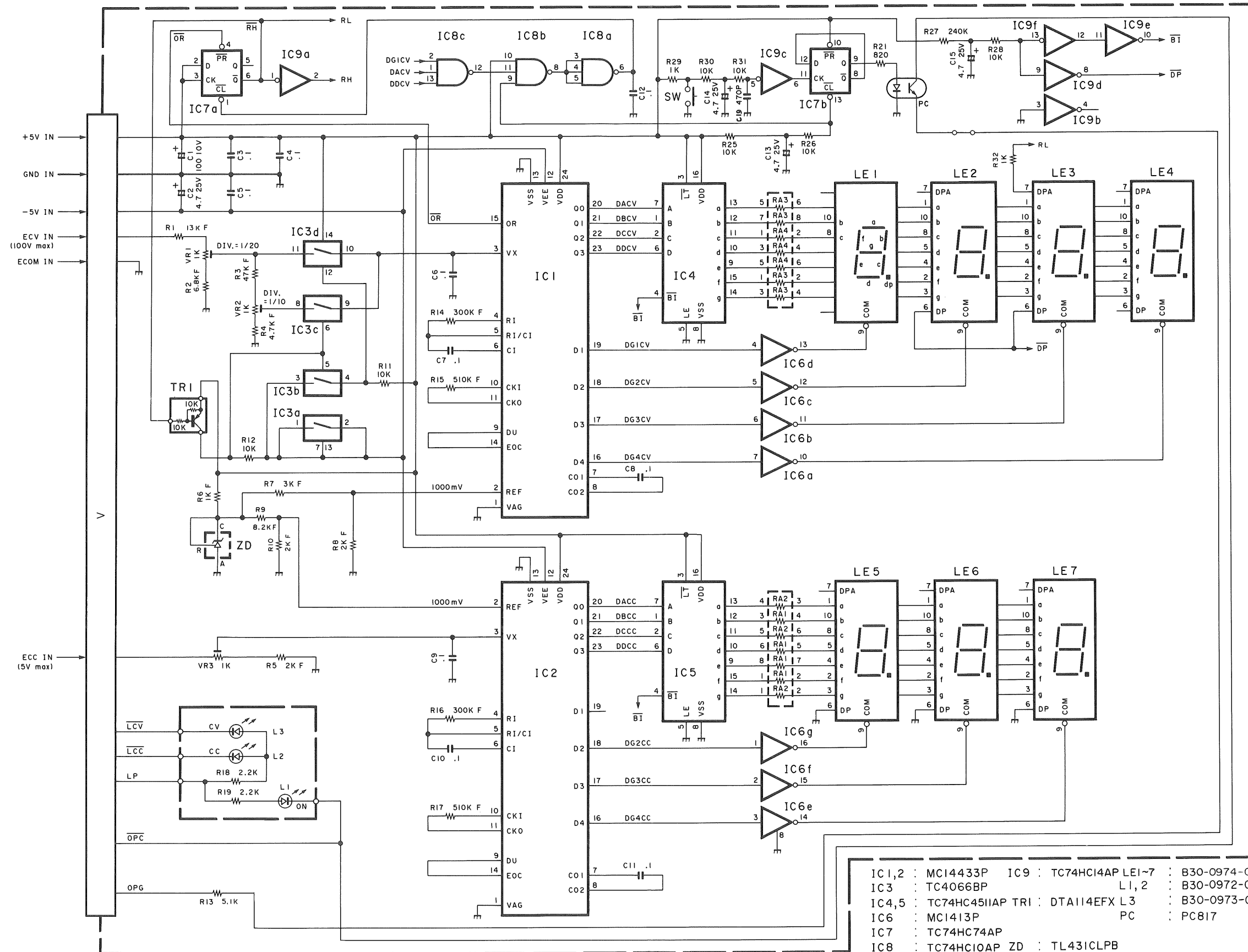
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|----------------------|-----------------|---------------------|
| IC1,2 : MC14433P | TR1 : DTA114EFX | LE1~7 : B30-0974-05 |
| IC3 : TC4066BP | ZD : TL431CLPB | L1,2 : B30-0972-05 |
| IC4,5 : TC74HC4511AP | D1 : 1S1588 | L3 : B30-0973-05 |
| IC6 : MC1413P | | PC1 : PC817 |
| IC7 : TC74HC74AP | | |
| IC8 : TC74HC10AP | | |
| IC9 : TC74HC14AP | | |

SCHEMATIC DIAGRAM PA250-0.4A



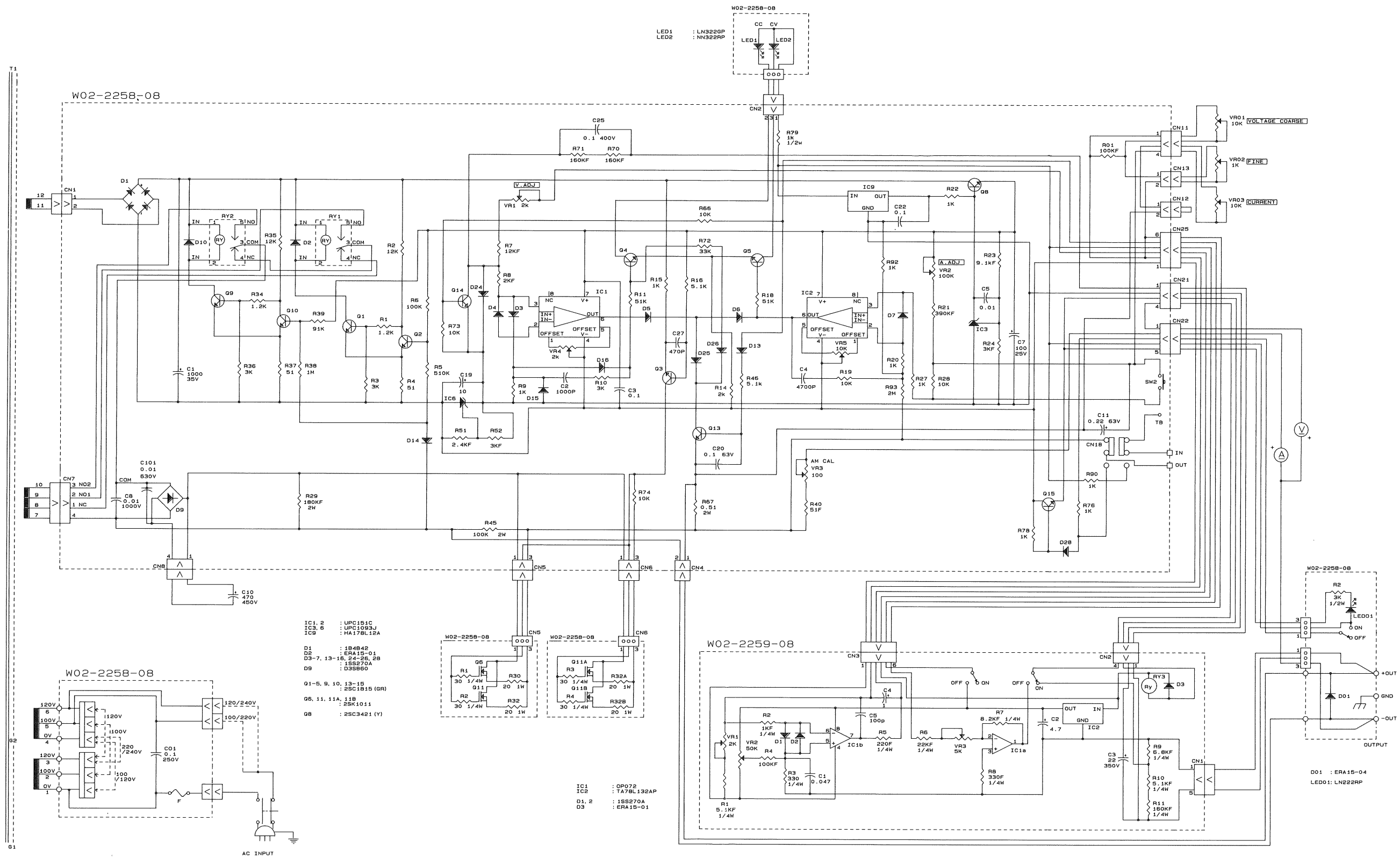
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D.P.M. UNIT (W02-2165-08)

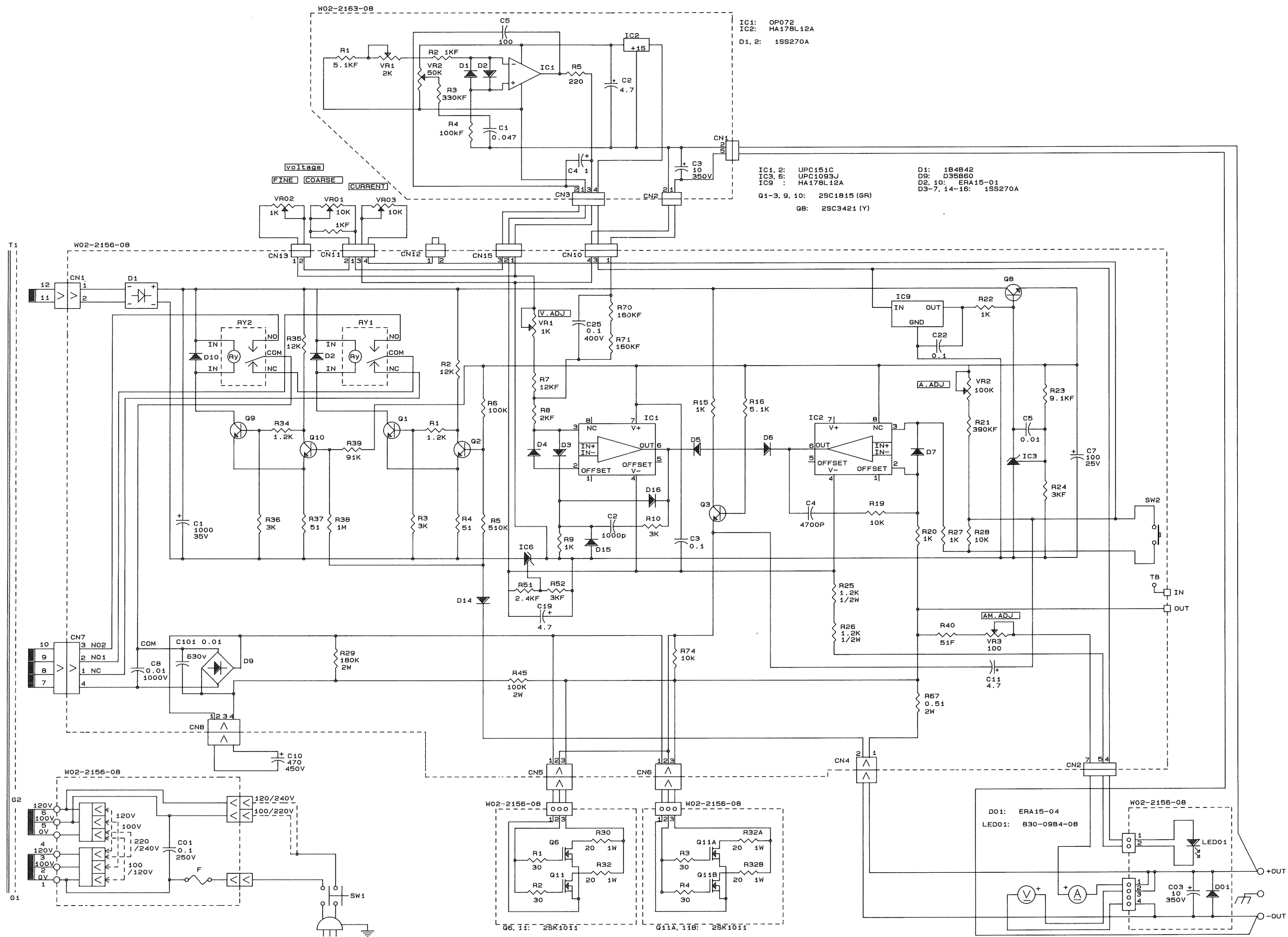


- IC1,2 : MC14433P IC9 : TC74HC14AP LE1~7 : B30-0974-05
- IC3 : TC4066BP LI, 2 : B30-0972-05
- IC4,5 : TC74HC4511AP TRI : DTA114EFX L3 : B30-0973-05
- IC6 : MC1413P PC : PC817
- IC7 : TC74HC74AP
- IC8 : TC74HC10AP ZD : TL431CLPB

SCHEMATIC DIAGRAM PR250-0.42A



SCHEMATIC DIAGRAM PR250-0.4A



P.C. BOARD PA250-0.42A

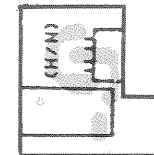
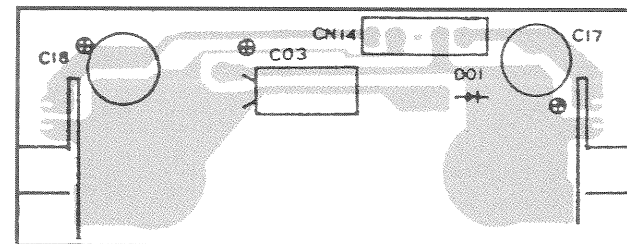
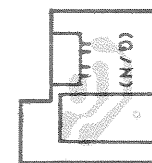
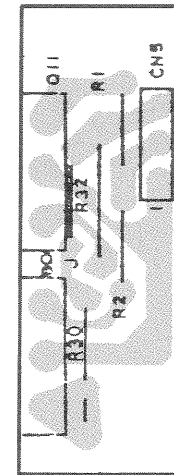
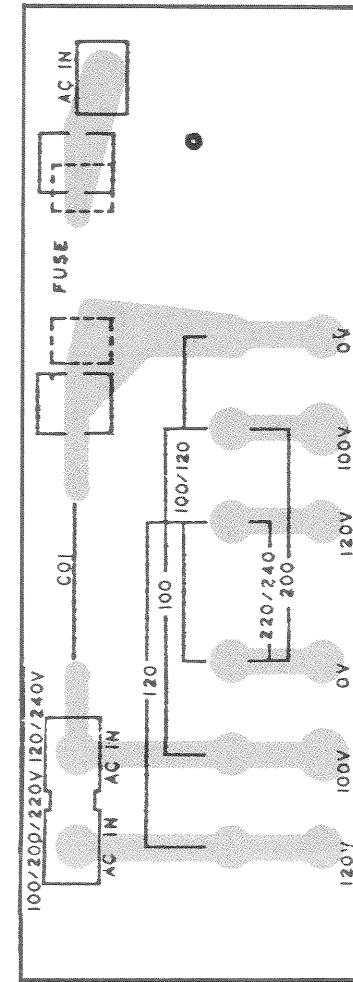
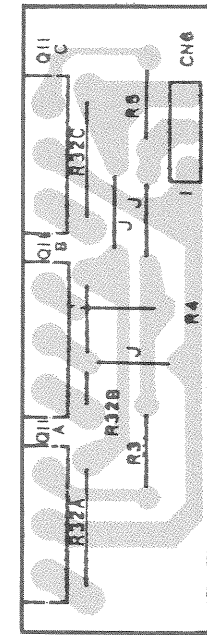
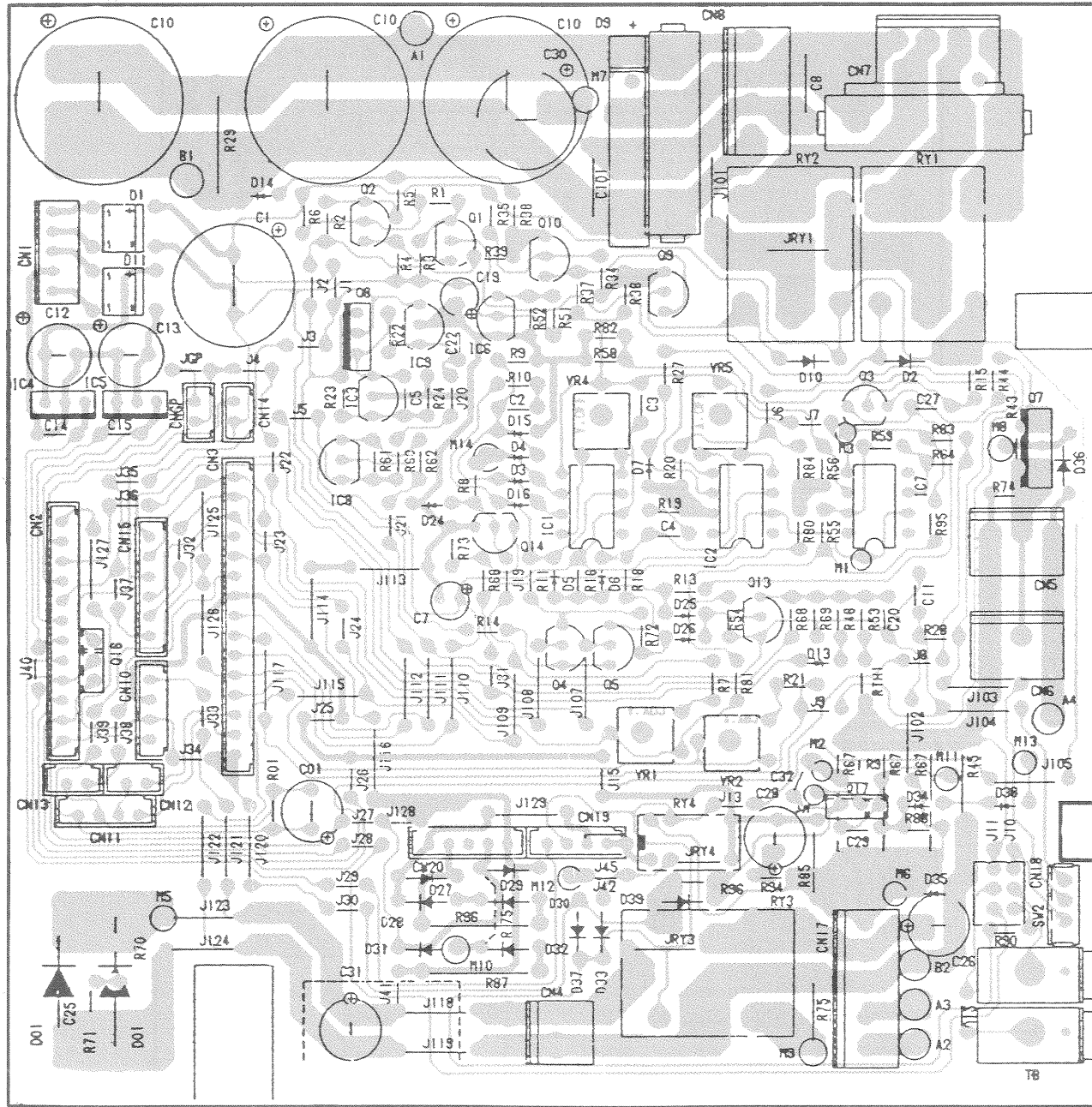
AMP UNIT (W02-2260-08)

Pattern side view

Pattern side view

Pattern side view

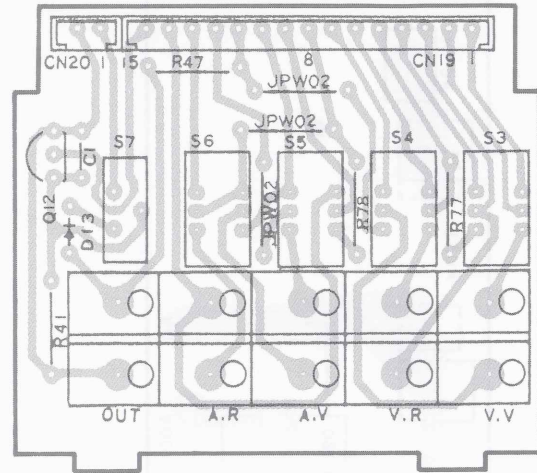
Pattern side view



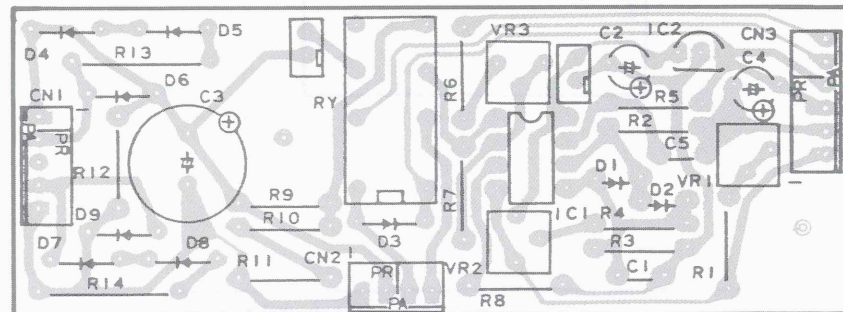
P.C. BOARD PA250-0.42A

EXT. CONTROL UNIT (W02-2261-08)

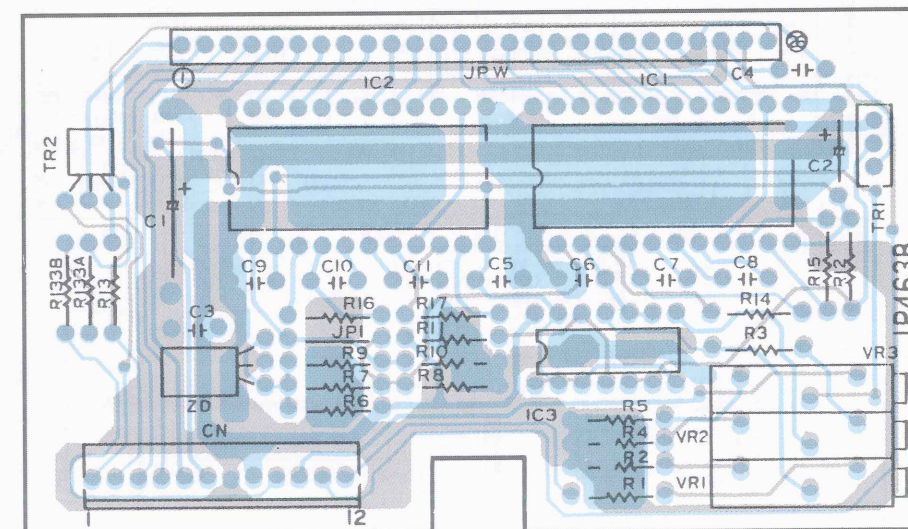
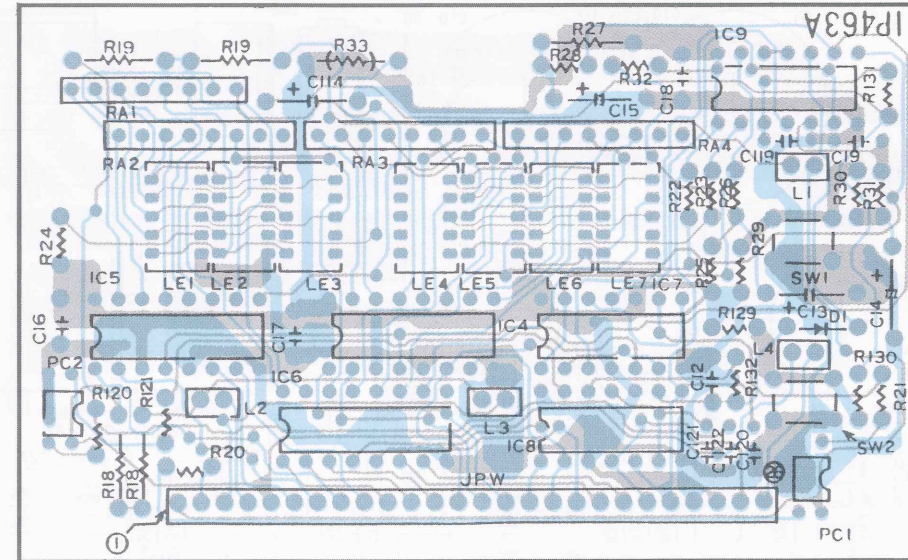
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V. REF UNIT (W02-2262-08)



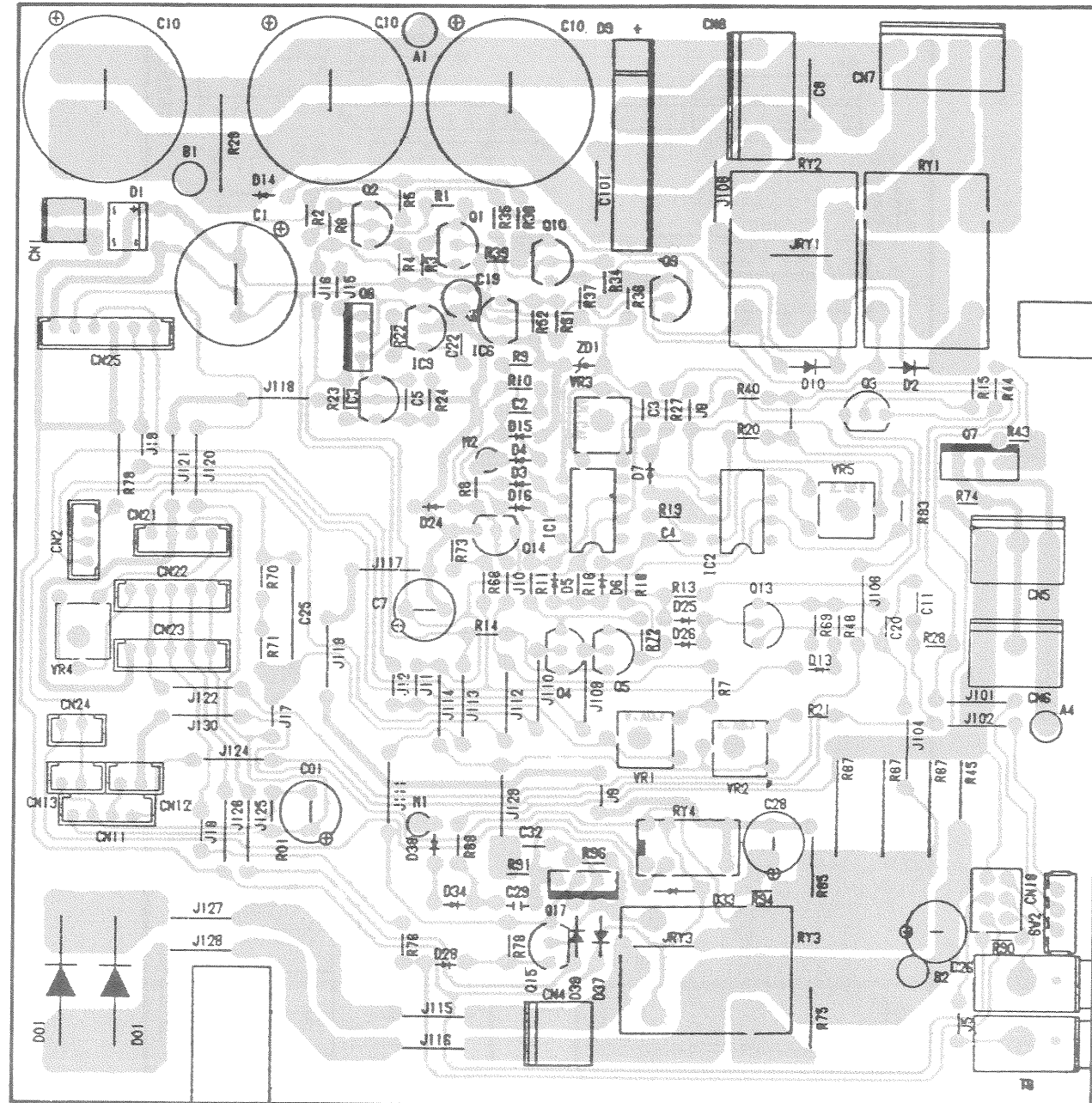
D.P.M. UNIT (W02-2266-08)



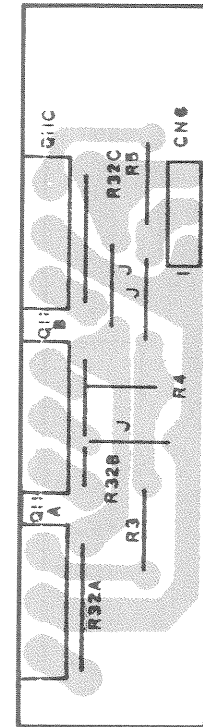
P.C. BOARD PR250-0.42A

AMP UNIT (W02-2258-08)

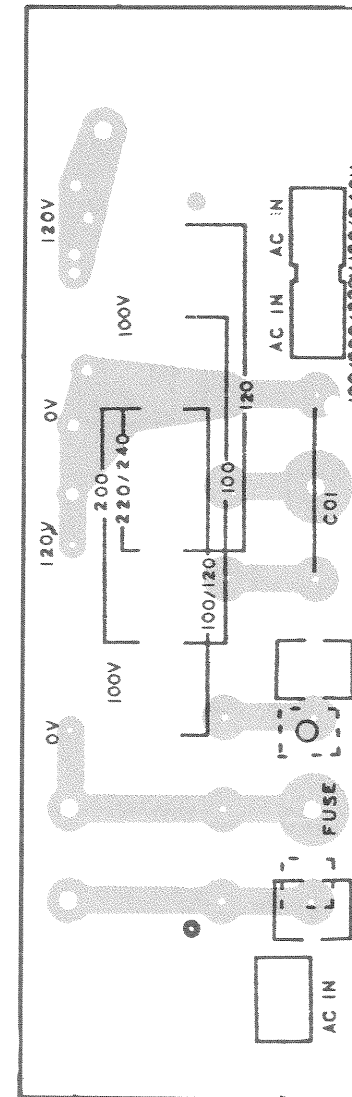
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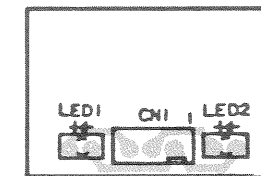
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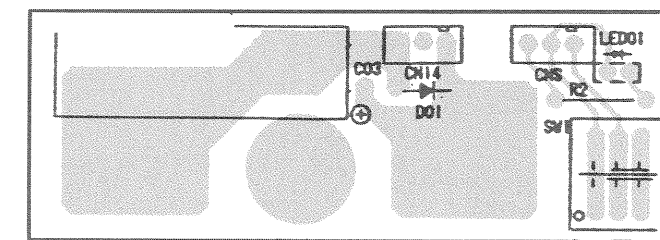
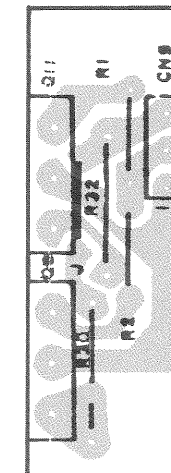
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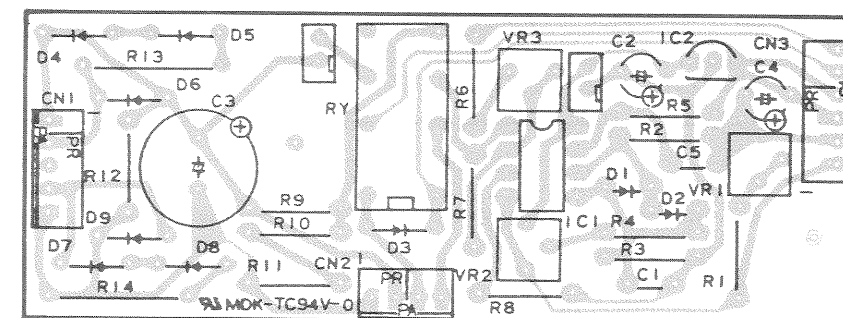
Pattern side view



Pattern side view



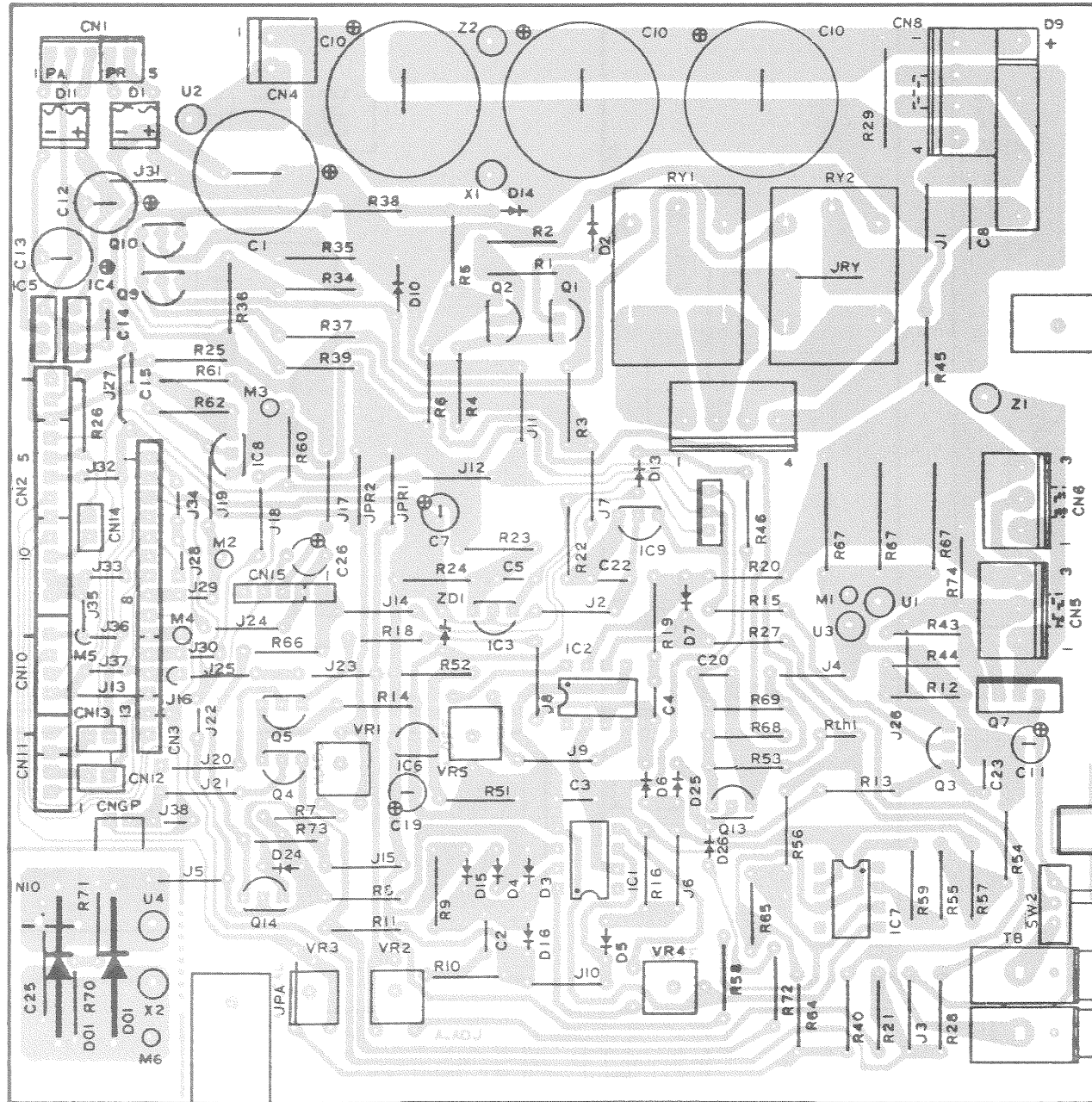
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P.C. BOARD PA250-0.4A/PR250-0.4A

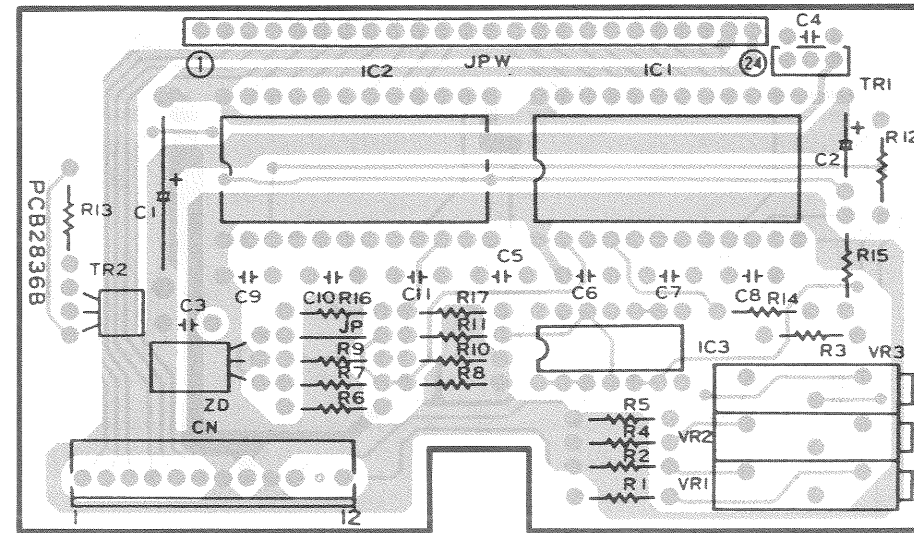
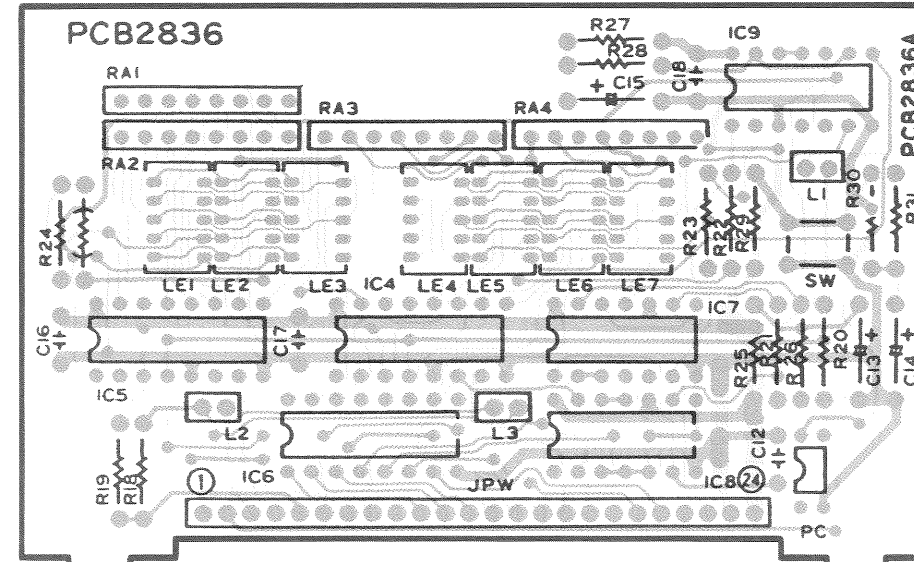
AMP UNIT

Pattern side view



P.C. BOARD PA250-0.4A

D.P.M. UNIT (W02-2165-08)





A product of
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