

# *MDA-100*

*Mixing Distribution Amplifier*

*Parts and Drawing Manual*

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## Warranty Notice

See the enclosed warranty card for further details.

## Customer Support

Technical questions should be directed to:

Customer Service Department  
Bosch Security Systems, Inc.  
12000 Portland Avenue South  
Burnsville, MN 55337 USA  
info@rtsintercoms.com  
Telephone: 800-392-3497  
Fax: 800-323-0498

## Return Shipping Instructions





Customer Service Department  
Bosch Security Systems, Inc. (Lincoln, NE)  
Telephone: 402-467-5321  
Fax: 402-467-3279  
Factory Service: 800-553-5992

Please include a note in the box which supplies the company name, address, phone number, a person to contact regarding the repair, the type and quantity of equipment, a description of the problem and the serial number(s).

## Shipping to the Manufacturer

All shipments of product should be made via UPS Ground, prepaid (you may request from Factory Service a different shipment method). Any shipment upgrades will be paid by the customer. The equipment should be shipped in the original packing carton. If the original carton is not available, use any suitable container that is rigid and of adequate size. If a substitute container is used, the equipment should be wrapped in paper and surrounded with at least four (4) inches of excelsior or similar shock-absorbing material. All shipments must be sent to the following address and must include the Proof of Purchase for warranty repair. Upon completion of any repair the equipment will be returned via United Parcel Service or specified shipper, collect.

Factory Service Department  
Bosch Security Systems, Inc.  
8601 East Cornhusker Hwy.  
Lincoln, NE 68507 U.S.A.  
Attn: Service

 THE LIGHTNING FLASH AND ARROWHEAD WITHIN THE TRIANGLE IS A WARNING SIGN ALERTING YOU OF "DANGEROUS VOLTAGE" INSIDE THE PRODUCT.	 CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER-SERVICABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.	 THE EXCLAMATION POINT WITHIN THE TRIANGLE IS A WARNING SIGN ALERTING YOU OF IMPORTANT INSTRUCTIONS ACCOMPANYING THE PRODUCT
SEE MARKING ON BOTTOM/BACK OF PRODUCT		
<b>WARNING:</b> APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING AND NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.		
<b>WARNING:</b> THE MAIN POWER PLUG MUST REMAIN READILY OPERABLE.		
<b>CAUTION:</b> TO REDUCE THE RISK OF ELECTRIC SHOCK, GROUNDING OF THE CENTER PIN OF THIS PLUG MUST BE MAINTAINED.		
<b>WARNING:</b> TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPRATUS TO RAIN OR MOISTURE.		
<b>WARNING:</b> TO PREVENT INJURY, THIS APPARATUS MUST BE SECURELY ATTACHED TO THE FLOOR/WALL/RACK IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS.		
	This product is AC only.	

## *Important Safety Instructions*

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

## *Caution*

These servicing instructions are for use by qualified service personnel only. To reduce the risk of electrical shock do not perform any servicing, unless you are qualified to do so.

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# Maintenance and Parts List

## Fuse Replacement



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

The fuse holder, shown in Figure 1, is designed for one active fuse, with provision for holding a spare. It also has a safety interlock to prevent fuse removal while the power cord is plugged into the MDA-100.

To **remove the fuse**, do the following:

1. Unplug the **power cord** from the MDA-100.
2. Using a small screwdriver, pry out the **fuse holder**.
3. Replace the **fuse** only with the same type and rating.
4. Slide the **fuse holder back into place**.
5. Reinstall the **power cord**.

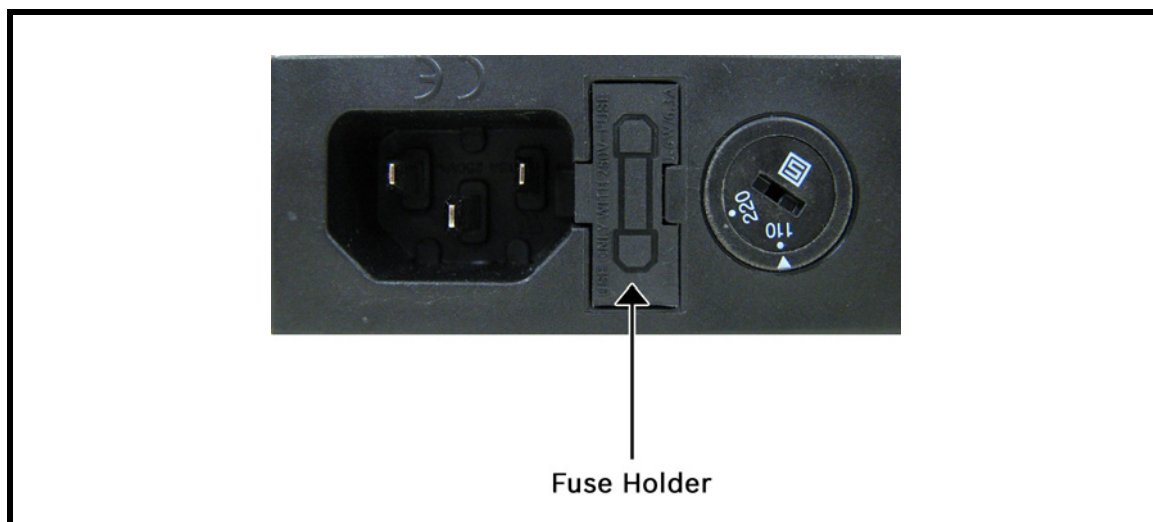


FIGURE 1. Fuse Holder

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## How to Obtain Parts

Parts may be obtained directly from Bosch Security Systems, Inc:

### **Bosch Security Systems, Inc.**

12000 Portland Avenue South

Burnsville, MN 55337 U.S.A.

Telephone: 1.800.392.3497

Fax: 1.800.323.0498

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## Final Assembly, MDA-100

**TABLE 1.** MDA-100 Final Assembly Parts List

Qty	RTS Part No.	Description
1	590133001	BOX SM KP95-0
4	590122000	FOAM CORNER PROTECTOR (SMALL)
1	38109675	EMC AND LVD STATEMENT CONFORM CE
4	567155	NO. 6 INTERNAL TOOTH LOCK WASHER
1	499938105	18 GA. WIRE GREEN
15	51845038	SCREW, #4-40 X 1/4, PAN HEAD SCREW
2	8800102098	CONN 6PIN HOUSING FEMALE
4	8800108706	6-32 X 3/8 PHMS PHIL ZCI
1	8800129649	PANEL BOTTOM ADA700/5-5, NORANCO
2	8800129630	SIDE PANEL ADA-700/5-4, NORANCO
1	88001296211	PANEL REAR, MDA-100 ADA-700/5-2
1	8800129603	COVER, TOP ADA-700/5-3
1	8800121406	TRANSFORMER PWR TOP=1A014
1	8800119552	NUT 10/32 KEP, ZCI
1	8800118232	CONN. 156 SP 4 POS 22GA.
1	8800117313	A/C ENTRY MODULE WITH FUSE 110/220
1	8800109867	TERMINAL FEM 14-16 NON INS
4	8800242945	6-32 X 3/8 OHMS PHIL ZCI SCR-395
1	88001296121	PANEL, FRONT, MDA-100
1	9030721500	PCB ASSY MDA-100
1	8800300800	10-32 X 1-1/2 PHMS PHIL ZCI
14	8800163129	4-40X3/16 FHMS PHIL ZCI
70	8800147763	CONN PIN FEM 18-24 GA
1	8800141037	TERMINAL RING #6 14-16NON INS
1	8800129658	FUSE 1 AMP 5MMX 20MM FAST
1	8800102668	A/C CORD/CONN 18GA SVT (7FT)
4	8800101883	CONN 12PIN HOUSING FEMALE
15	50086004	LOCKWASHER, #4 SPLIT, CLEAR ZINC

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## Circuit Board Assembly, MDA-100

Parts List abbreviations:

CD - Ceramic Disk

CF - Carbon Film



CM - Ceramic Monolithic

EL - Electrolytic

MF - Metal Film

Rad - Radial Leads

Tant - Tantalum

TABLE 2. 9030721500 MDA-100 Circuit Board

Qty	RTS Part No.	Ref Desc	Description
2	50086004	XREG1, XREG2	LOCKWASHER, #4 SPLIT, CLEAR ZINC
2	51845039	XREG1, XREG2	SCREW, #4-40 X 3/8, PAN HEAD, MACHINE SCREW, STEEL, BRIGHT NICKEL
2	52188006	XREG1, XREG2	NUT, #4-40, HEX, MACHINE NUT, STEEL, BRIGHT ZINC, 0.093
17	8800100508	C1 - C17	CAP CER 22PF 100V 2% NPO
56	52676113	C35 - C96	CAP .1 UF/50V Z5U 20% B SIZE BULK
18	52676517	C113 - C128, C200 AND C201	CAPACITOR, 1UF, 50VOLT
2	8800139594	C79, C80	CAP TANT 22UF
4	8800101892	J2, J3, J5, J6	CONNECTOR 12 PIN RT ANGLE MALE
3	8800102105	J1, J4, J7	CONN
4	56073001	CR6, CR7, CR8, CR9	DIODE T AND R
2	5500103907	XREG1, XREG2	HEATSINK
1	8800104737	REG1, -18V	IC, 3-TERMINAL NEGATIVE VOLTAGE REGULATOR, T0-220F
1	880104791	REG2, +18V	IC REG
1	8800105362	LED1	LED RED SUPER BRIGHT
3	8800106637	GND1, GND2, GND3	TERMINAL PIN
20	8800107137	R121 - R140	RES 1/2W 5% 300HM
20	54046100	R93 - R112	RESISTOR, 100K 1%
10	54045100	R43 - R52	RESISTOR, 10K 1% 1/4W
16	54044100	R18 - R33	RESISTOR, 1K 1%
32	54045200	R53 - R84	RESISTOR, 20K OHM, 1/4W 1%
9	54044499	R34 - R42	RESISTOR, 4.99K 1%
2	54044619	R119, R120	RES. 6.19K 1%
8	54044976	R85 - R92	RES 9.76K 1%
1	52154271	R1	RES2.7K OHM
16	8800221272	R200 - R215	TRIMPOT 100K
8	8800134456	R216 - R223	TRIMPOT 500
4	8800114771	CR2 - CR5	DIODE
2	52734020	C300, C301	CAP P6683-ND
1	8800118982	CHASSIS GND	PC QUICK QUICK-FIT MALE TERMINA, .250 TAB
17	8800127516	C18 - C34	CAP CER 100PF 100V 2% NPO
10	880012982S	IC1, IC2, IC21 - IC28	IC OP AMP
2	8800129523	J9, J10	HEADER 0.1SP
3	8800129729	R224, R225, R226	3/8" SQUARE TRIMMING POTENTIOMETER, 100K
18	8800129747	R2 - R19	RES, METAL FILM 1/4W 1% 300 OHM
4	54045301	R113 - R116	RES 1/4W 1% 30.1K
1	57762504	J8	HEADER 4POS
18	SEM41-NE5534	IC3 - IC20	IC
2	54044590	R117, R118	RES, 5.9K 1%
4	55257540	C75 - C78	CAPACITOR TANT
1	8800129710	CR1	DIODE 1N5256B
1	8800283507	PCB	PC BOARD, PC1026 MDA-100
14	51845057	XJ1 - XJ7	SCREW, #4-40 X 3/8, PANHEAD, MACHINE SCREW, STEEL, BLACK ZINC
A/R	51741000	XREG1, XREG2	THERMAL COMPOUND



Drawings included:

- Audio Schematic Diagram, MDA-100
- Power Supply Schematic Diagram, MDA-100
- Circuit Board Assembly Layout, MDA-100



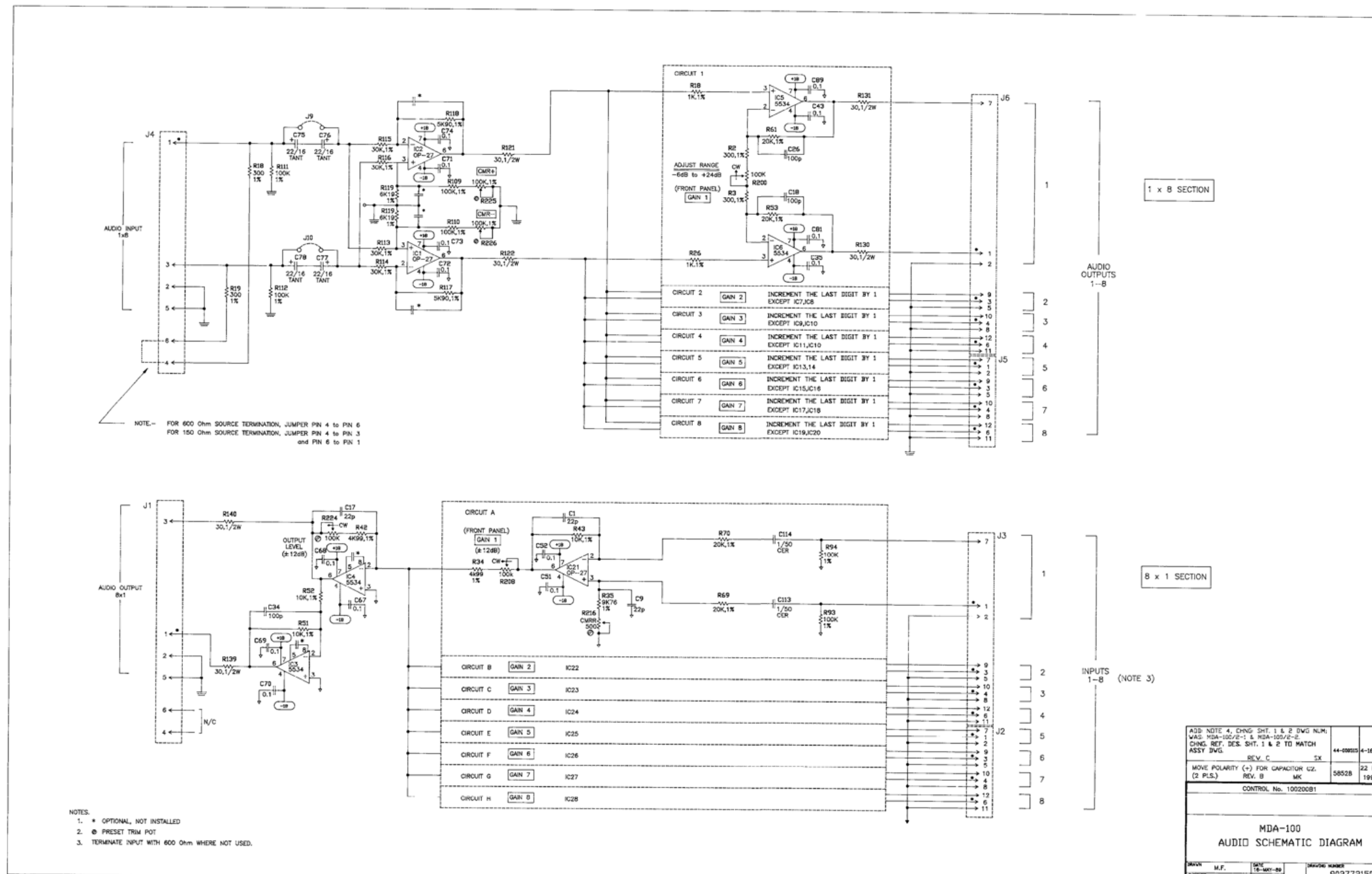


FIGURE 1. MDA-100 Audio Schematic Diagram

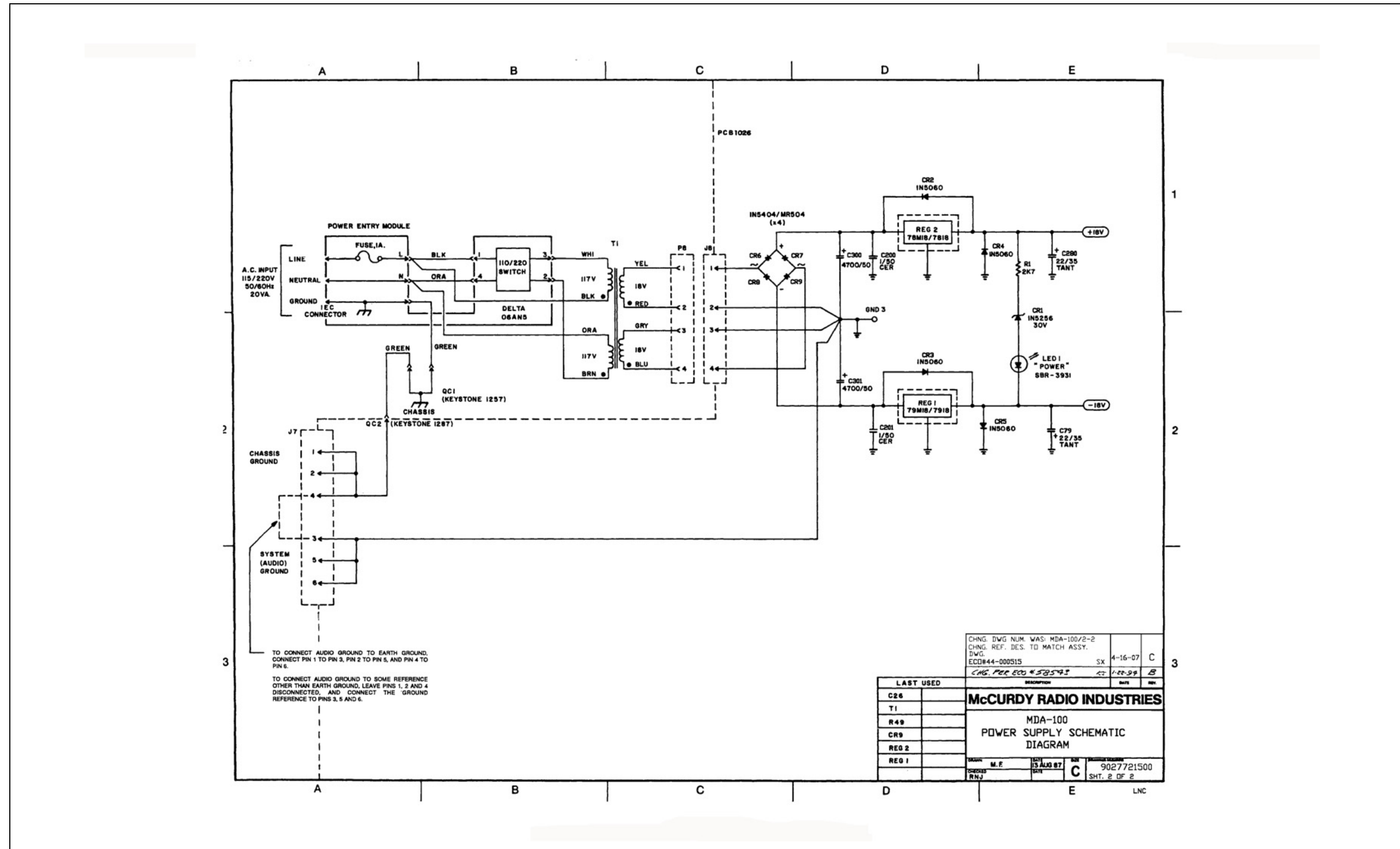


FIGURE 2. MDA-100 Power Supply Schematic Diagram

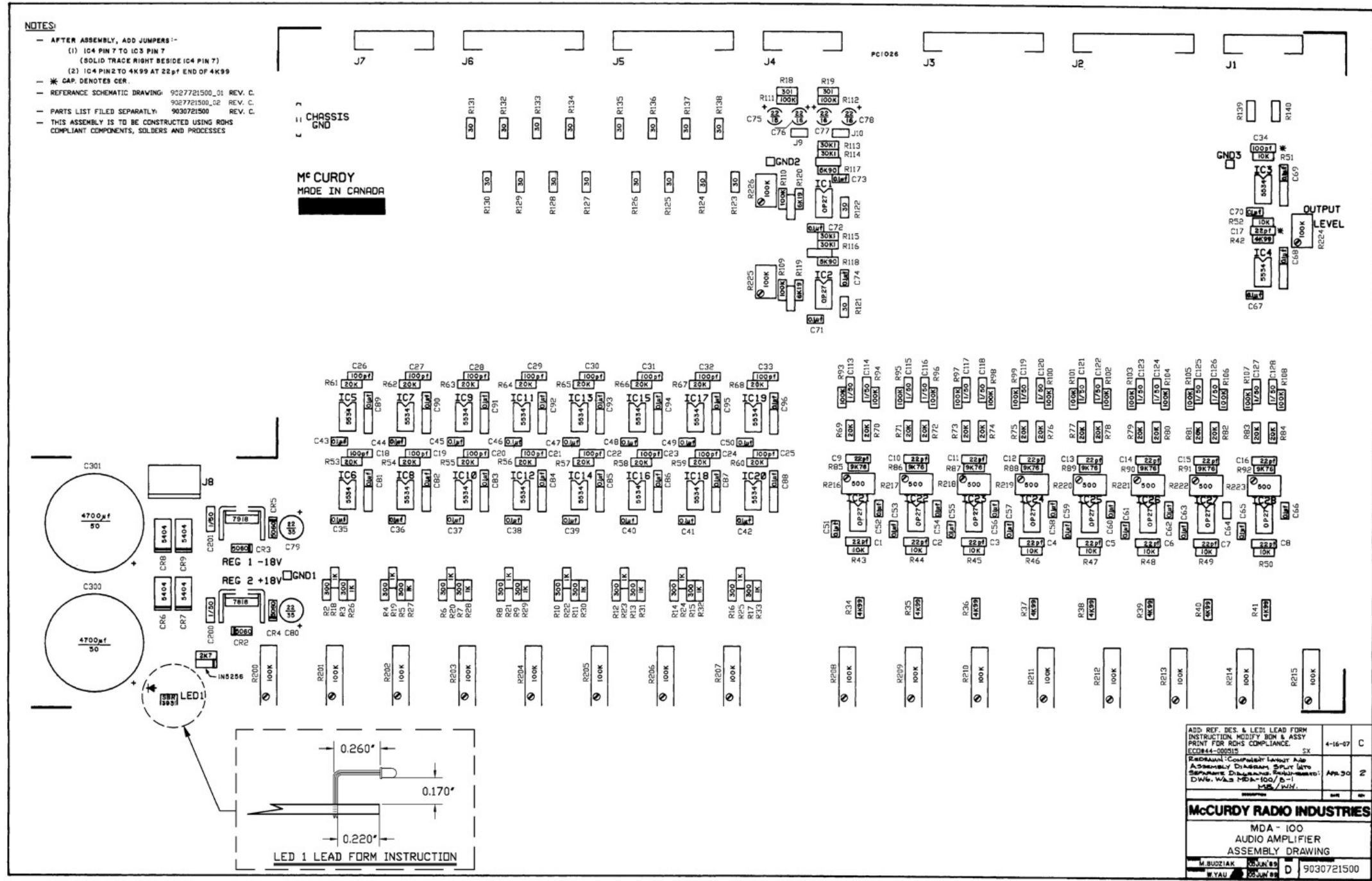


FIGURE 3. MDA-100 Audio Amplifier Assembly Drawing