

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 RISK OF ELECTRIC SHOCK DO NOT OPEN 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 | | |
| WARNING: APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING AND NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS. | | |
| WARNING: THE MAIN POWER PLUG MUST REMAIN READILY OPERABLE. | | |
| CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, GROUNDING OF THE CENTER PIN OF THIS PLUG MUST BE MAINTAINED. | | |
| WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPRATUS TO RAIN OR MOISTURE. | | |
| WARNING: 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.

Table of Contents

| | |
|--|----------|
| <i>Fuse Replacement</i> | <i>3</i> |
| <i>How to Obtain Parts</i> | <i>4</i> |
| <i>Final Assembly, MDA-100</i> | <i>4</i> |
| <i>Circuit Board Assembly, MDA-100</i> | <i>4</i> |

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**.

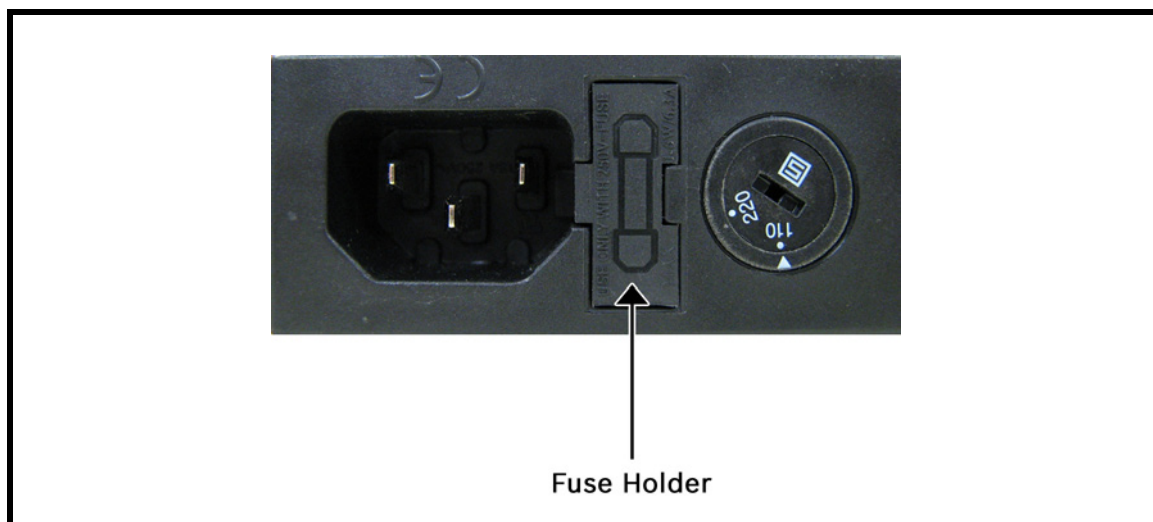


FIGURE 1. Fuse Holder

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

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 |

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% 30OHM |
| 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

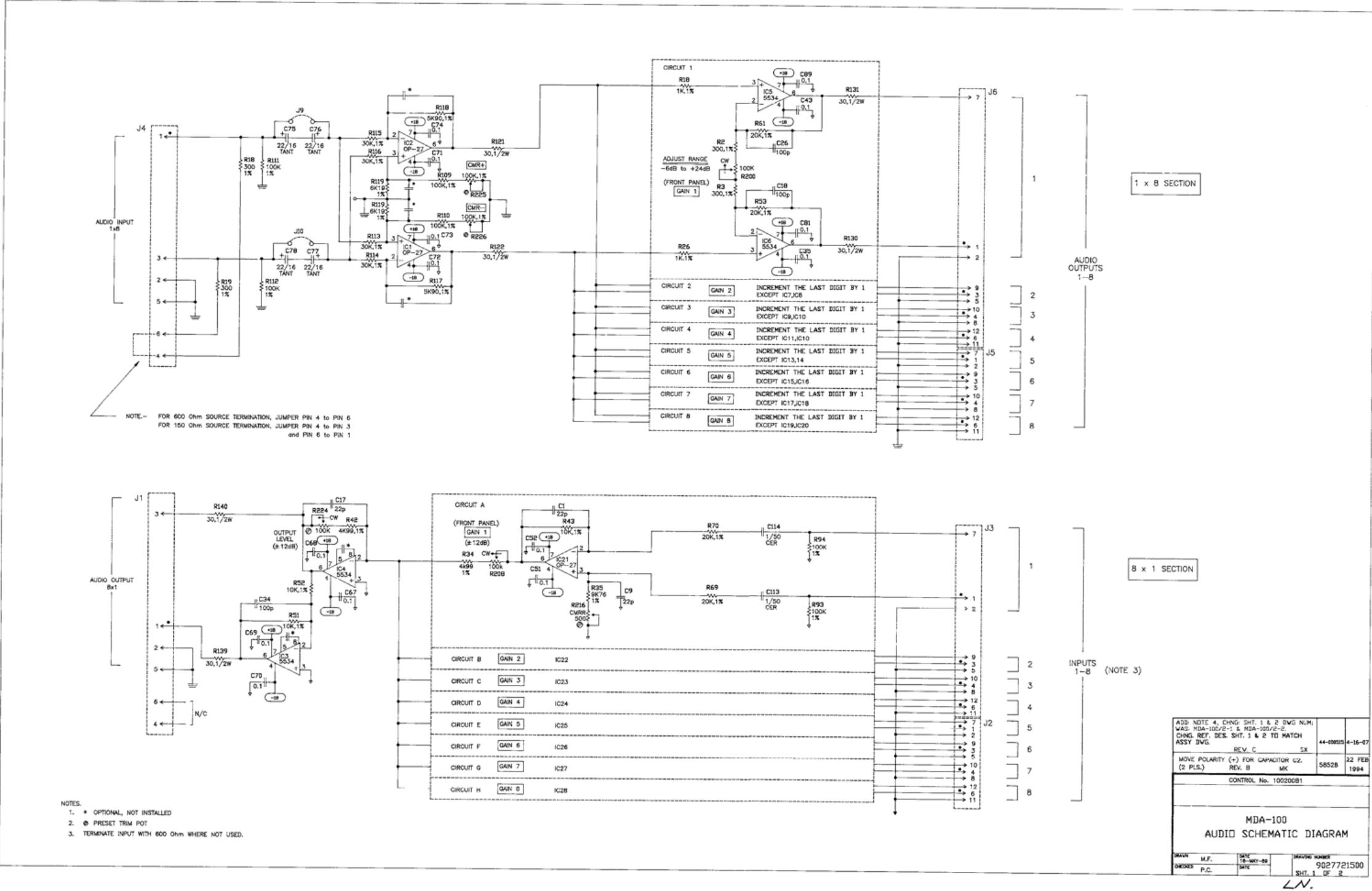
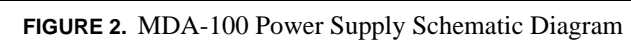


FIGURE 1. MDA-100 Audio Schematic Diagram



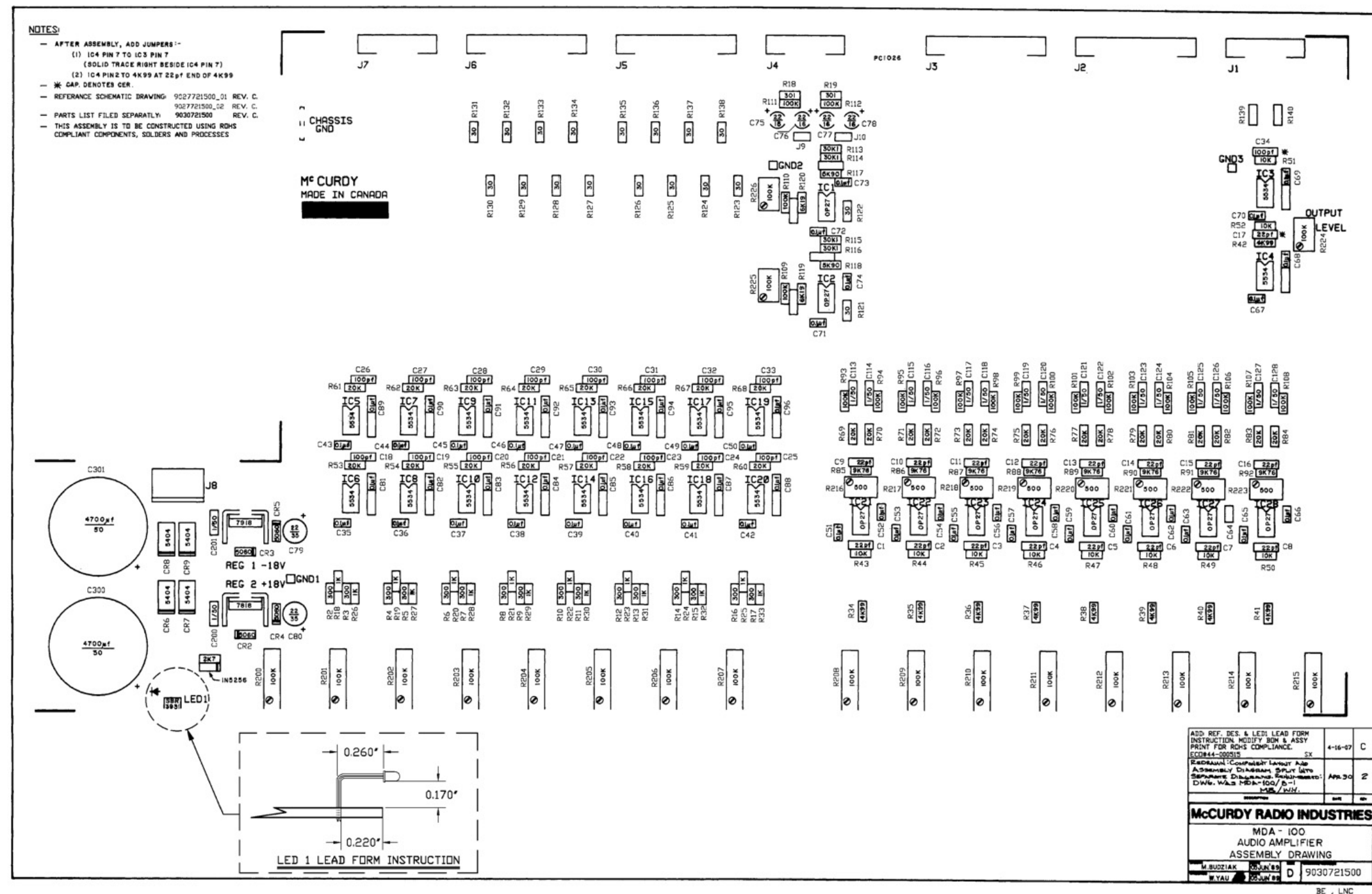


FIGURE 3. MDA-100 Audio Amplifier Assembly Drawing