

MUZAK®

MA-100 POWER AMPLIFIER

OPERATING INSTRUCTIONS



OPERATION

The MUZAK MA-100 Power Amplifier delivers up to 100 watts of output power for all types of sound reinforcement systems. It remains stable with operating conditions of varying line voltages and with all types of loads, including long, unloaded speaker lines having considerable capacitance.

CONTROLS AND INDICATORS

A primary power ON-OFF switch and pilot indicator are located on the front panel. A VOLUME control with cover cap is located on the rear of the chassis.

HIGH-PASS FILTER

A two-section high-pass filter is provided with the MA-100 to protect driver loudspeakers from excessive low-frequency power demands. Filter use is indicated when high power output from the amplifier is applied to driver loudspeakers not equipped with protective crossover networks. The 3 dB frequency of the high-pass filter is 400 Hz.

A screwdriver-operated FILTER IN-OUT switch is located on the rear of the chassis (see Figure 1). The switch is placed in the OUT position when the MA-100 is shipped from the factory.

An active dissipation sensing circuit provides fail-safe protection for the output transistors. Circuit action is immediate and effective at all frequencies within the passband of the amplifier, limiting only that portion of program material that would damage or degrade the output transistors.

ACCESSORIES

A plug-in MUZAK UT-5 Line Transformer is available to provide line isolation. Input sensitivity for full-rated amplifier output is 0.8V rms with the UT-5 transformer.

INSTALLATION

The MA-100 may be installed in a standard 19-inch equipment rack. Vertical space required is 7 inches.

RACK INSTALLATION

1. Remove four screws securing front panel. Open and lower panel as shown in Figure 2.

2. Install MA-100 in equipment rack with appropriate four screws supplied.

3. Close front panel and secure with four screws previously removed.

VENTILATION

The MA-100 generates minimal heat during normal use. Although the amount of heat is relatively low, the amplifier must be ventilated to prevent an excessive temperature rise. Because transistors are heat sensitive, the MA-100 should not be placed adjacent to heat-generating equipment or in areas where ambient temperature exceeds 55°C (131°F).

If the MA-100 is installed in an equipment rack or cabinet with other heat-producing equipment installed above and/or below (two or more MA-100's or one MA-100 with real time analyzer, oscilloscope, etc.), space must be provided between the units or the MA-100 may become too warm. A 1 3/4" perforated panel is recommended for this purpose. When several amplifiers or other heat-producing units are installed in a single rack or cabinet, acceptable air temperature may be in doubt. To determine temperature conditions, operate the system until temperature stabilizes, then measure air temperature with a bulb-type thermometer held at

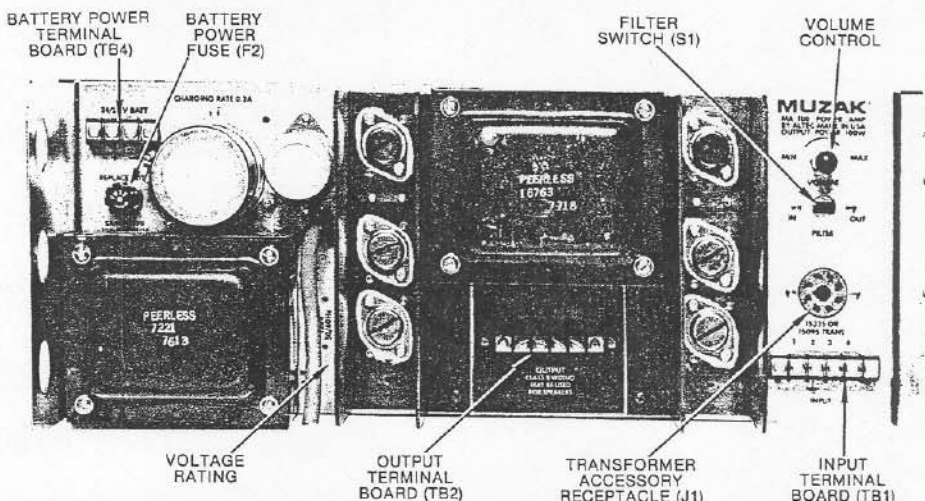


Figure 1. Rear View of MA-100 Power Amplifier

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Specifications and components subject to change without notice. Overall performance will be maintained or improved.

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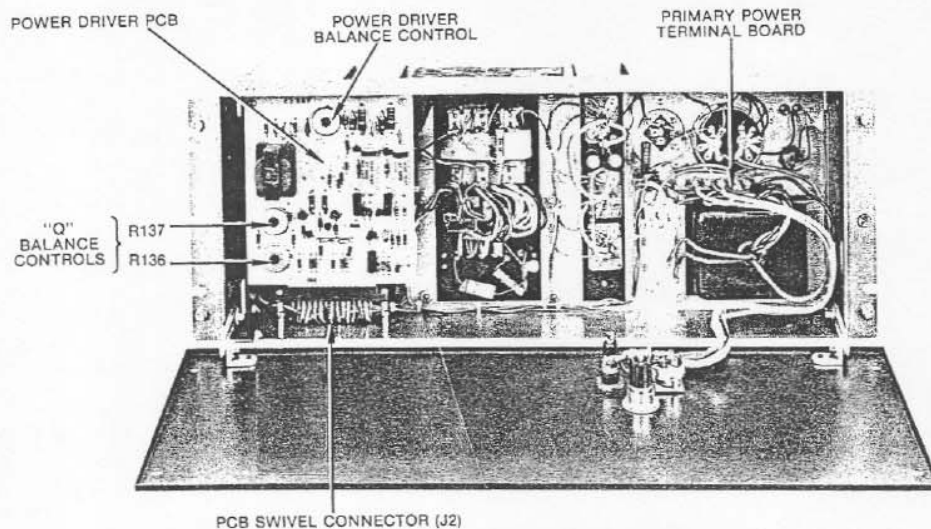


Figure 2. Front View with Hinged Panel Open

the bottom of the uppermost amplifier. Do not let the thermometer bulb touch metal because the metal probably will be hotter than the ambient air. If air temperature exceeds 55°C, the equipment should be spaced farther apart or a blower should be installed to ventilate the cabinet.

ELECTRICAL

120 Volt, 50/60 Hz Power Connections

Equipment supplied for domestic use is provided with the power transformer primary strapped for 120 volts (terminals 1 to 2 and 3 to 4 on TB3). The power input rating is adjacent to the power cord on the chassis (see Figure 1). Verify that line voltage is in accordance with the voltage rating before connecting the MA-100 to line power.

240 Volt, 50/60 Hz Power Connections

Export equipment is provided with the power transformer primary strapped for

240 volts (terminals 2 to 3 on TB3). The power input rating is adjacent to the power cord on the chassis.

For a MA-100 previously wired for 120V ac primary power, use the following procedure to change wiring for 240V ac, 50/60 Hz operation:

1. Remove four screws securing front panel, open and lower panel.
2. Locate terminal board TB3 above power transformer T1 (see Figure 2).
3. Remove strap "A" connecting terminals 1 and 2 and remove strap "B" connecting terminals 3 and 4; solder strap "C" to terminals 2 and 3 (see Figure 3).
4. Use a rating label to show 240V rating. Affix label over previous 120V rating (see Figure 2).
5. Close front panel and secure with four screws previously removed.

Battery Connections

If desired, the MA-100 may be connected to an external 24/28 volt battery with minus (–) as ground. Terminals for the dc power connections are on TB4 (see Figures 1 and 7). If ac power fails, transfer to dc power is instantaneous, automatic and silent. A built-in charging circuit supplies a 100 mA trickle current to maintain battery charge during ac operation. The battery power supply is not operated by the primary power ON-OFF switch on the front panel. If switching of battery power is desired, an external relay or switch should be provided by the user.

Input Connections

Input connections may be either direct-coupled or transformer-isolated at the INPUT terminal board (see Figure 1). Direct coupling is accomplished by connecting the input leads (shielded conductor recommended) to terminals 1 and 2. Terminal 2 is ground. Table I lists the terminals and applications of the INPUT terminal board.

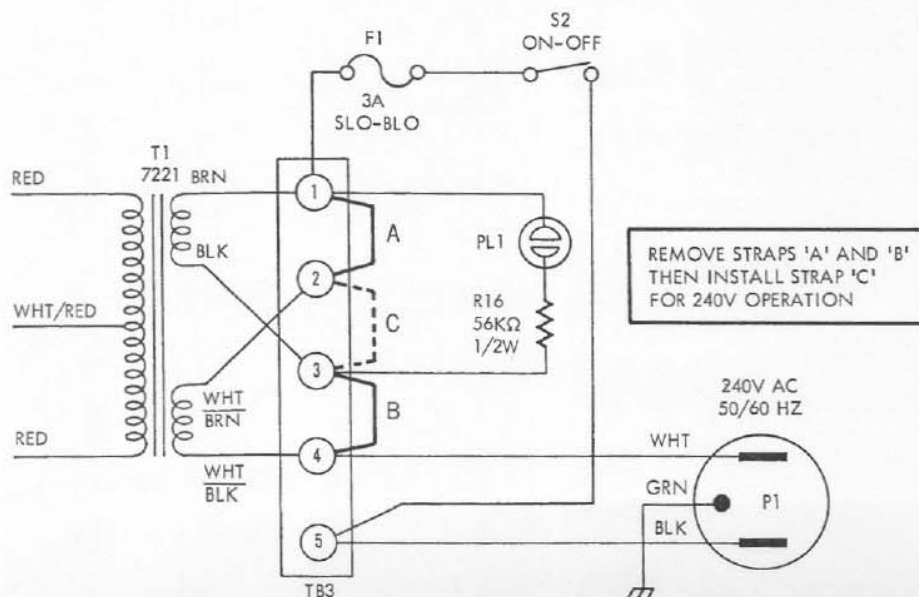


Figure 3. Converting to 240V ac, 50/60 Hz Operation

Table I. Terminals and Applications of INPUT Terminal Board

Terminals	Function/Application	
1,2 (GND)	Direct-Coupled	For unbalanced high-impedance sources
		For bridging unbalanced low-impedance lines having signal voltages of 0.8V rms or higher
3,4	Transformer-Isolated	For low-impedance line-bridging input or 15K ohm line-matching input (with MUZAK UT-5 Line Transformer)