

**ROTEL** *hifi*

# **RMB-100 Mosfet Mono Power Amplifier**

## **Owners Manual**

Please write the serial number and the purchase date in the spaces provided, for your records.

Amp Serial # \_\_\_\_\_

Purchase date \_\_\_\_\_

## INSTALLATION

Please place the amplifier in a level, DRY place away from direct sunlight. We recommend that the amp not be placed on a thick pile carpet, if you locate them near your speakers, as this will block the cooling vents in the amp bottom. There are accessory amplifier stands available to ensure good cooling. It is possible to install this amplifier out of sight as it is equipped with an Auto On Sensing Circuit and will turn on when a signal from the preamp is sensed.

Do not install the amplifier where it will become wet as this will damage the circuitry. Please do not sit anything on top of the RMB 100 as this will block the cooling vents and could cause it to overheat. If the RMB 100 is mounted inside a cabinet, please be sure that the cabinet has a large opening for cool air to circulate and cool the amplifier.

*There are **NO** user serviceable parts inside the RMB 100. Please do not open the cabinet as this will expose you to potentially high voltage and a risk of shock.* This could also damage the circuits and possibly void your warranty.

*Please retain the packing box and packing material for RMB 100. This will make it easy to transport if it should ever need service.*

### Connecting RMB 100 to your stereo.

We have provided **Unbalanced** RCA input connectors on the back panel of the amplifier. These are the most common connector for connecting an amplifier and preamplifier. We have also included an **XLR** connector to allow for preamplifiers with **Balanced** outputs. This connector is especially useful if the amplifier is situated a long distance from the preamplifier (10-

20 Meters) and Balanced cable is inherently less likely to pick up external noise from outside interference sources. Please set the input Selector Switch, located next to the input connectors, to the input you choose.

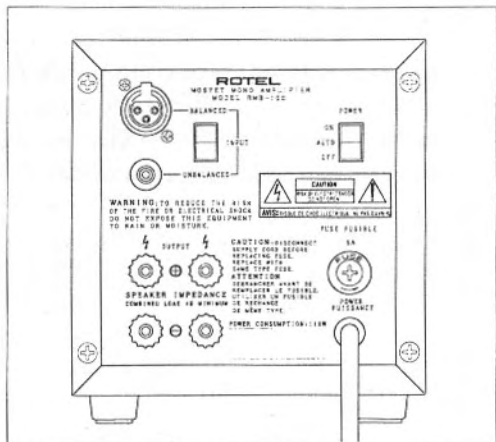
There are **Dual Speaker Output Terminals** on the RMB 100. These will make it easier to **Bi-Wire** speakers with the appropriate connections. These terminals may also be connected to an RSS 900 Speaker Selector for use in a mono or stereo installation. Consult your **Rotel hi fi Authorized Dealer** for advice about this. If Bi-Wiring is chosen, we suggest the use of matched sets of high performance speaker wire to enhance the sound of your system. (Speaker wire should be chosen by a careful audition at home.)

Connect the **RED (+)** terminal(s) on the RMB 100 to the **Positive** or RED terminal(s) on the speaker. Connect the **BLACK (-)** terminal(s) on the RMB 100 to the **Negative** or BLACK terminal(s) on your speaker.

**NOTE: Minimum Combined Load** (when Bi-wiring) **should not be lower than 4 ohms.** Ask your **Rotel hi fi Authorized Dealer** for advice if you are in doubt about this. The RMB 100 will work well with speakers from 4 to 16 ohm impedance. **Bi-wiring will result in a impedance load that is half of the rated speaker impedance since the tweeter and woofer sections will be in parallel.**

(Example: An 8 ohm speaker will be equivalent to a 4 ohm load if Bi-wired.)

See the drawing below to be certain of the correct connections to the RMB 100. As this is a MONO amplifier the connections will be the same for both RMB 100 amplifiers in a Stereo installation.



**Back Panel drawing of the RMB 100 amplifier showing Input for Balanced (XLR) and Unbalanced (RCA) connections, Input Selector Switch, Fuse Holder, Power Switch, and the Dual Speaker Output Terminals.**

The RMB 100 has an external fuse holder on the back panel. **If the amplifier will not play and the Power Indicator Light on the Front panel will not illuminate when the switch is set to ON or AUTO, then the Power Cord should be unplugged from the wall socket.** The fuse holder should be unscrewed by turning it counterclockwise with a Phillips #2 screwdriver. **If the fuse is bad then it should be replaced with one of the same value.**

The fuse rating for **120 volts AC** is **6 amps fast blow** type fuse.

The fuse rating for **220/230/240 volts AC** is **T 3.15 amp time lag** type fuse.

**Installing a fuse with a higher rating than the label states on the amp will potentially damage the amplifier and void your warranty.**

## Features of the RMB 100 Mono Mosfet Power Amp

This amplifier consists of a Unity Gain Input Buffer Stage, an Auto On Sensing Circuit, Current and DC Offset Protection Circuits and matched pair Power Mosfet Output Transistors.

The input buffer stage is a low noise unity gain differential amplifier. This board also contains the signal detecting circuit that turns the amplifier ON when it receives a signal from the preamplifier. *Power for this stage is provided by a separate regulated power supply that is ON whenever the Power Cord is plugged into a mains outlet.*

The main power stage contains a dual complementary differential input stage. This leads to the high linearity cascade drivers that provide voltage gain. The final stage contains two matched pairs of complementary Power Mosfet Output Transistors acting as current buffers. We have incorporated a separate regulated power supply connection for the driver and the main stages of the amplifier to ensure ample, clean power is always available for each stage of the amp.

The Auto On Sensing Circuit allows you to leave the main power switch set to the ON position without consuming wasteful amounts of power. The circuit senses the music coming to the amplifier and turns the amplifier ON. During idle periods when the amp is not being used the circuit will turn the amp OFF. *To operate the RMB 100 in this manner, set the Power Switch to the AUTO position.* This feature will be particularly useful for remote mounted amplifiers or systems used in Custom installations.

The Power Indicator Lamp in the lower right corner of the heat sink (Front panel) will illuminate when the amp is ON or in Standby. **The amp will turn OFF after several minutes without a signal.**

If the amplifier turns OFF due to DC offset faults (internal or external) it may be **RESET** by pushing the Power Switch to OFF and waiting for a few seconds. **Then** set the Power Switch to AUTO or ON and it should function again. If the amplifier overheats due to poor ventilation or overdriving, it will turn OFF. This amplifier will operate at a temperature that will seem warm, due to its design. Install RMB 100 with the fins vertical and clear of any obstruction to ensure optimum cooling. A space of 75 mm (3") Above and in Front of the amplifier is the minimum recommended for adequate cooling.

We have designed this amplifier to have high performance and ample power reserves. This is reflected by the power rating that increases when the speaker impedance is lowered to 4 ohms, from 125 Watts rms @ 8 ohms to 200 Watts rms @ 4 ohms as specified by FTC (USA only) testing methods. The separate power supply for the driver and input stages also ensures the highest possible performance.

### **A final word about this amplifier**

We have designed this amp to measure well in tests with test equipment and in tests with the human ear. We believe both methods to be useful in the design of audio electronics. This is time consuming but we feel that the music benefits from this care and attention to detail.

If your speakers will permit Bi-Wiring, we strongly recommend it. This will allow them to give their best possible performance and this

will halve the resistance in the speaker leads by doubling the amount of wire, one set to the mid-high driver(s) and one set to the bass driver(s), from the amp to the speaker. This will also improve the amplifiers' control over the speaker system.

We realize that there are many choices available in the market today and we thank you again for choosing our RMB 100 Mosfet Mono Amplifier to amplify your music. **Enjoy the music!**

## SPECIFICATIONS

### RMB 100 Mono Mosfet Power Amp

Rated power, rms. 20–20,000 Hz @ 0.03% THD	125 watts/8 ohms 200 watts/4 ohms
Frequency response (+0, -0.4 dB)	10 Hz–20 kHz
Total Harmonic Distortion (THD)	0.03%
Intermodulation Distortion (IMD)	0.03%
Signal to noise ratio (SN)	100 dB (A weighted)
Voltage gain	29.2 dB
Input impedance	24K ohms
Damping factor	> 500
Dimensions	170 mm H x 165 mm W x 200 mm D 6 3/4" H x 6 1/2" W x 7 7/8" D
Weight	7.5 kg (16.5 LB)
Power requirements	120 volts/60 Hz 220/230/240 volts/50 Hz
Power consumption	
AUTO Standby	1.2 VA (240 volts)
Idling	40 VA
Full Power — 4 ohm load	500 VA

All specifications are correct at the time of printing.  
Rotel reserves the right to improve performance  
without notice.

**This RMB 100 amplifier is certified for use as a THX amplifier when using the RCA unbalanced input only. Please use the RCA input when using this amplifier in a THX Surround Sound system.**