

HALF RACK PA-AMPLIFIERS

QAA MA2500H



IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions - All the safety and operating instructions should be read before this product is operated.
2. Keep these instructions - The safety and operating instructions should be retained for future reference.
3. Heed all warnings - All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow all instructions - All operating and use instructions should be followed.
5. Do not use this apparatus near water - The appliance should not be used near water or moisture - for example, in a wet basement or near a swimming pool, and the like.
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 plug. A polarized plug has two blades with one wider than the other. A grounding plug has two blades and a third grounding prong. The wide blade or the third prong is 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 at 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 the apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when



Protective earthing terminal. The apparatus should be connected to a mains socket outlet with a protective earthing connection.



This lightning flash is intended to alert the user to the presence of non-insulated "dangerous voltage" on the output terminals that may be of sufficient magnitude to constitute a risk of electric shock. The external wiring connected to the terminals requires installation by an instructed person or the use of ready-made leads or cords.



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: To reduce the risk of electric shock, do not remove any cover. No user-serviceable parts inside. Refer servicing to qualified service personnel only.



The lightning flash with arrowhead symbol within the equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



The exclamation point within the equilateral triangle is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying this appliance.

CAUTION: To prevent electric shock, do not use this polarized plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

Specifications

Model	QAA MA2500H
Rated Power at 8ohm	2x240W/4x240W
Bridged Power at 100V	480W/2x480W
Input sensitivity / Impedance	0dBu/10kohm Unbalanced / Balanced
Power Supply Voltage	AC115/230V , 50/60Hz
Power Consumption	588W/1120W
Speaker Output	100V / 8Ω
Frequency Response	80Hz~17KHz (+1dB /-3dB)
S/N Ratio	>80dB (with A-Weight)
T.H.D	<1% (at rated power, 1kHz)
Working Humidity	90%
Output Channel	1 or 2 channel
Tone Controls	Bass:100Hz(±10dB), Treble:10KHz(±10dB)
Working Temperature	0°C~+40°C
Product Dimension (WxHxD)	215*44*330 mm (Half-U)
Net Weight	3.3kg

Necessary modifications are carried out without notice

Optional to purchase rack mount bracket:

1PC Rack Mount:



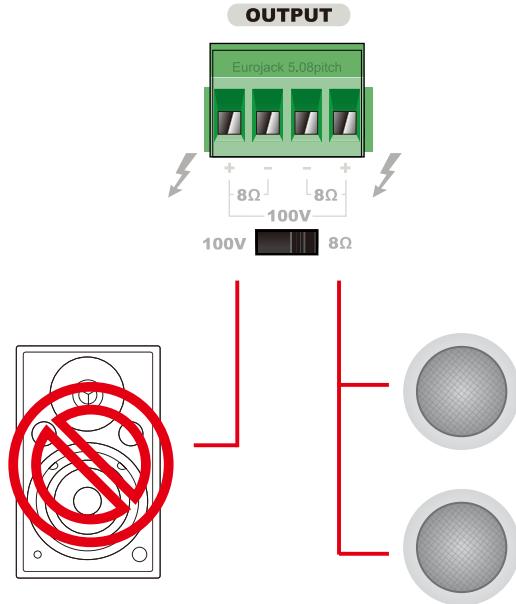
HA-BRC

2PCs Combined Rack Mount:



HA-BRC2

CAUTION : Never use both the Low-Z(8Ω)and Hi-Z(100V) terminals at the same time
You have to switch the impedance selector to the desired position at 100 volts or 8 ohms.
The 8 ohm speaker shall be connected to the output + and - and the 100 volt output shall be connected to the + at both ends.



[Figure 2.3 Wrong connection]

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Introductions

Welcome

Congratulation and thank you for the purchasing HA series, a multi-function integrated amplifier. These amplifiers are designed to provide a big impact in sound reproduction and to produce the best and highest quality audio at an affordable price. We wish you great enjoyment and satisfaction when using your amplifier, whether you are an installation or reinforcement engineers.

Unpacking and Installation

Although it is neither complicated to install nor difficult to operate your amplifier, a few minutes of your time is required to read this manual for properly wired installation and becoming familiar with its features and how to use them. Please take a great care may be needed when moving your set and are required if it ever becomes necessary to return your set for service. Never place the unit near radiator in front of heating vents, to direct sun light, in excessive humid or dusty location to avoid damages and to guarantee a long reliable use.

Connect your unit with the system components according to the description on the following pages.

Features

The HA series amplifiers are comprehensive, integrated amplifier solutions for commercial and industrial applications. These low-cost units provide all necessary features in a simple building.

- ▶ Two line inputs with Euro block and RCA jack.
- ▶ Acceptable wide range input level.
- ▶ 60Watts ~ 480Watts output(1 or 2 channel output).
- ▶ Advanced protection system includes current limiting, over current and thermal protections.
- ▶ Two bands tone controls.
- ▶ Parallel selector, 100V/8ohm selector, HPF Switch.
- ▶ Indicators : Power, Signal, Signal, Clip and Protect.
- ▶ Protection : Current Limiting, Thermal & DC Offset Protection.
- ▶ Cooling : FAN Cooling.
- ▶ Low distortion and low noise level
- ▶ Desktop type with rack mount bracket.
- ▶ Compact size and light weight(1U, half rack).
- ▶ Ideal commercial and industrial use

Connections

Choose input wire and connectors

INPUT : Connect unbalanced or balanced line-level sources to amplifier inputs.

Set Gain volume accordingly. Connect unbalanced line-level signals to RCA input connectors.

OUTPUT : Maintain proper polarity on output connectors.

For each output channel, connect the output terminals to the speaker loads.

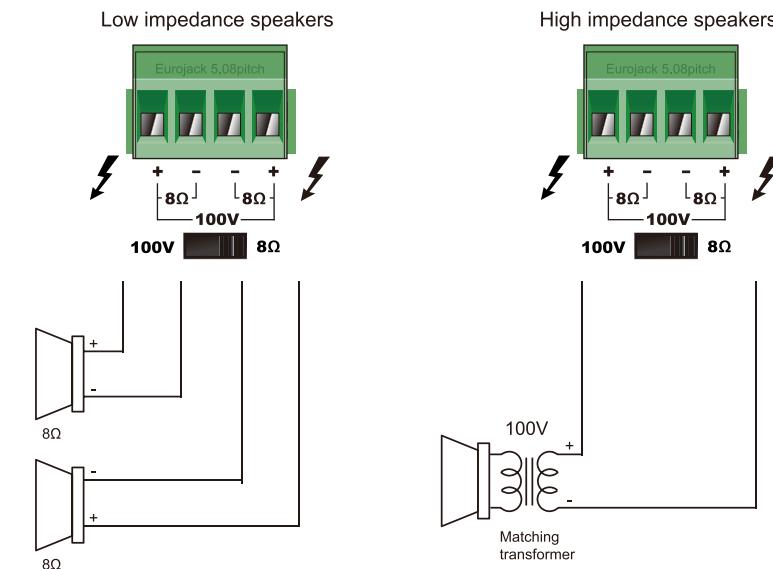
Use terminals marked 8Ω (+,-) for loud speaker load, use terminals marked $100V(+,+)$ for constant-voltage speaker loads.

The impedance and output voltage are same as following Table 2.1

	QAA MA2500H
8Ω	44V
$100V$	21Ω

[Table 2.1 Output voltage and impedance]

NOTE : Impedances indicated in the table 2.1 represent the total speaker system impedances. Speaker connection is shown in Figure 2.2



⚠ CAUTION

Select to 8Ω position for setting low impedance speakers

Select to $100V$ position for setting high impedance speakers

[Figure 2.2 How to connect speakers]

Choose output wire and connectors

For the amplifier output connectors, We recommends using pre-built or professionally wired, high-quality, and heavy gauge speaker wires. You may use EURO blocks for your output connectors. To prevent the possibility of short-circuits, wrap or otherwise insulate exposed loudspeaker cable connectors.

Using the guidelines below, select the appropriate size wire based on the distance from amplifier to speaker. The wire sizes apply to the 8-ohm tap.

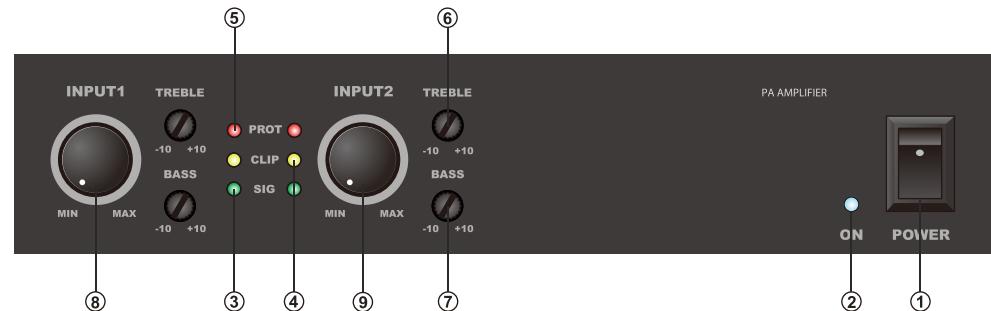
Distance	Wire Size
Up to 25 ft.	16 AWG
26~40 ft.	14 AWG
41~60 ft.	12AWG
61~100 ft.	10AWG
101ft~150 ft.	8AWG
151~200 ft.	6AWG

NOTE : Custom wiring should only be performed by qualified personnel. Class 2 wiring is required.

CAUTION : Never use shielded cable for output power wiring.

Controls

FRONT PANEL



1. POWER SWITCH

Turn on and off the power of device.

2. POWER indicator

Turned on when the device is powered on.

3. SIGNAL indicator

Turned on when output signal exceeds a certain level.

4. CLIP indicator

Turned on when output signal exceeds rated level. If this indicator is activated then turn the volume to counter clockwise.

5. PROTECTION indicator

Turned on when the amplifier goes into protection mode by over current or over temperature.

6. HIGH tone control(TREBLE)

Adjusts the high frequency : 10kHz +/- 10dB.

7. LOW tone control(BASS)

Adjusts the low frequency : 100Hz +/-10dB.

8. INPUT1 volume

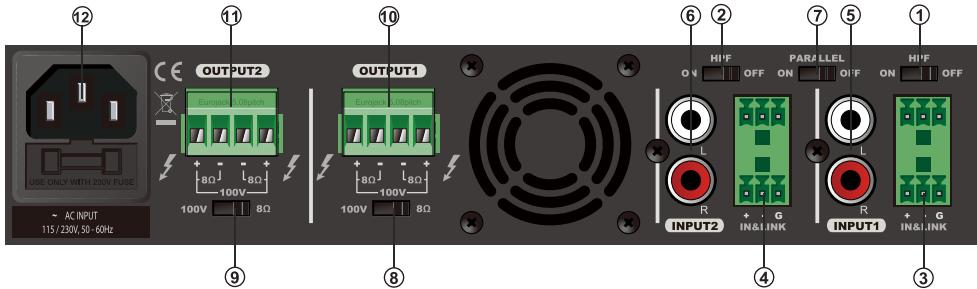
Adjusts the input 1 level between -∞dB and 0dB.

9. INPUT2 volume

Adjusts the input 2 level between -∞dB and 0dB.

Controls

REAR PANEL



1,2. HIGH PASS FILTER

High pass filter 180Hz -3dB.

3,4. BALANCED INPUT & LINK OUT

Terminal block can be connected balanced LINE input and balanced LINK output.

5,6. UNBALANCED INPUT

RCA connector can be accepted unbalanced LINE input.

7. PARALLEL

Input parallel selector.

8,9. OUTPUT SELECTION

Sets the output impedance of amplifier : high-impedance connection 100V or low-impedance connection 8Ω.

10,11. SPEAKER CONNECTIONS

⚠ CAUTION

Before connecting speakers, make sure that the power of the device is turned off.

If the power is on, there is a risk of electrical shock.

12. AC INPUT CONNECTION

⚠ CAUTION

When connecting the power cord, connect the power cord to the connector and then plug it into an appropriate AC power outlet.

Before connecting or disconnecting the power cord, make sure that the power to the device is turned off.

Setups

Installation

CAUTION : Before you begin, make sure your mixer-amplifier is disconnected from the power source, with the power switch in the "OFF" position and all level controls turned completely down (counterclockwise). You may stack mixer-amplifiers without using a cabinet or you may place a single mixer-amplifier on a surface with 12-inches (about 30cm) of air space around the unit for convection cooling.

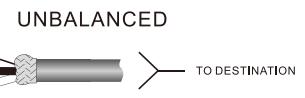
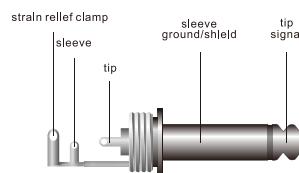
Wiring guide

Choose input wire and connectors

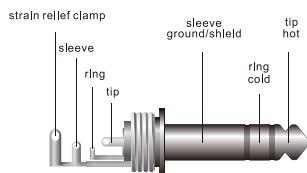
We recommends using pre-built or professionally wired balanced line. 22 to 24 gauge cables. Figure 2.1 shows connector pin assignments for wiring. The RCA input connections can also be used for unbalanced inputs.



Unbalance 1/4" Connector

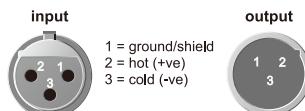


Balance TRS 1/4" Connector



For connection of balanced and unbalanced plugs, ring and sleeve have to be bridged at the stereo plug

XLR Balanced Wiring Guide



For unbalanced use pin 1 and pin 3 have to be bridged

[Figure 2.1 Input wire and connectors]