OSD BMA-6012P Multi-Zone Amplifier Owner's Manual

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OSD BMA-6012P Multi-Zone Amplifier

INTRODUCTION

The BMA6012P is a major step forward in installation amplifiers technology. Twelve mono Zone power amplifiers, featuring 85% class D design technology, can operate as 6 independent Zone amplifiers. Self-explanatory Input and Output connections are easy to follow since any of the 12 mono amplifiers can be connected to either 70-Volt,

8-Ohm or 4-ohm speaker circuits. Each of the 12 mono amplifiers has their own input and output connectors and level Controls. Up to 6 stereo Zones (4-ohm or 70-Volt at 50Watts / channel), 6 mono I bridged Zone amplifiers (100 Watt bridged 8-ohm or 140-Volt). Each zone can be configured independently allowing a combination of Stereo 4-ohm or 70 Volt and Mono /Bridged 8-ohm or 140 Volt Zones.Dual-function LEDs on the front panel provide both activity and Clip indication for each pair of amplifiers, which also have their own button-selectable Limiter; Stereo/Bridge modes and 4-ohm / 70V modes are also selectable. The Ch. Input Line / Bus switch selects between either the Bus Input (button depressed) or the individual Zone's Input signal. Additional features include: any amplifier with no signal at its input is automatically shut off and the BMA6012P is able to operate either on 11 0V-120V / 60Hz or 220V-240V / 50Hz AC mains. The BMA6012P comes configured to connect to 11 0V-120V / 60Hz mains. For use with 220V-240V/50Hz mains set the rear panel Voltage Select switch to 220V-240V (also, replace the T1 0.0AU250V fuse with a T5.0AL I 250V fuse).

SAFETY

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK) NO USER-SERVICEABLE PARTS INSIDE REFER SERVICE TO QUALIFIED SERVICE PERSONNEL

- The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.
- The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance
  (servicing) instructions in the literature accompanying the appliance.

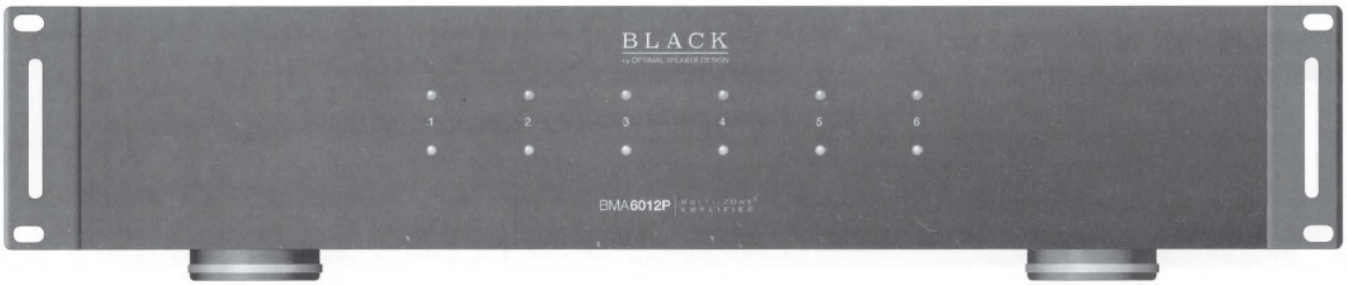
WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRICSHOCK,OO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. This product was designed and manufactured to meet strict quality and safety standards. There are, however.some installation and operation precautions, which you should be particularly aware of.

1. Read Instructions – All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions – The safety and operating instructions should be retained for future reference.
3. Heed Warnings – All warnings on appliance and in the operating instructions should be adhered to.
4. Follow instructions – All operating and use instructions should be followed.
5. Water and Moisture – The ppliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
6. Carts and Stands – The appliance should be only with a cart or stand that is recommended by the manufacturer. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

7. Wall or Ceiling Mounting – The appliance should be mounted to wall or ceiling only as recommended by the manufacturer.
8. Ventilation -The appliance should be situated so that its location or position does not interfere with its proper ventilation.For example, the appliance should not be situated on a bed, sofa, rug or similar surface that may block the ventilation openings; or, place in a built-in installation, such as a bookcase or cabinet that may impede the low of air through the ventilation openings.
9. Heat – Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
10. Power Sources – The appliance should be connected to a power supply only of the type described in the operation instructions or as marked on the appliance.
11. Grounding or Polarization – 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 grounding prong are provide for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
12. Power-Cord Protection – Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cord at plugs, convenience receptacles, and the point where they exit from the appliance.
13. Cleaning – Clean only with dry cloth.
14. Power Lines -An outdoor antenna should be located away from the power lines.
15. Nonuse Periods -The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
16. Accessories – Only use attachments/accessories specified by the manufacturer.
17. Object and Liquid Entry – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
18. Damage Requiring Service- The appliance should be serviced by qualified service Personnel when:
    - The Power-supply cord or the plug has been damaged; or
    - Objects have fallen, or liquid has spilled into the appliance; or
    - The appliance has been exposed to rain; or
    - The appliance does not appear to operate normally or exhibits a marked change in performance; or
    - The appliance has been dropped, or the enclosure damaged.
19. Servicing -The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

FRONT PANEL



1. Independently switchable on each Zone between its zone-specific stereo inputs and a mono global audio balanced input.
2. Each Zone is also independently Stereo/Bridge switch to select a single mono output for single speaker use or higher output power.
3. Each Zone independently controllable via RS232, IR and voltage trigger lines.
4. Each Zone has -20dB Limiter and independent MUTE trigger inputs (activated by +3 to t30V DC).
5. Each Zone individual Trigger Outputs (+ 12V DC) to indicate the status of each Zone.
6. The unit has front panel “ZC?ne on ” and “zone overload ” indicators.
7. Master Global Trigger In (+3 to +30V DC) and Trigger Out (+12V DC).
8. Detachable screw-terminal connectors for Global Balanced Audio Input/Output, IR, Sense and Speaker Outputs.

REAR PANEL

1. Power: This switch turns the AC mains On or OFF.
2. Voltage: Select either11 0V- 120V / 220V-240V for your local voltage level. Please check your local voltage for user reference.
3. Fuse: When using with 220V-240V I 50Hz for T5.0AL / 250V fuse, using with 11 0V-120V / 60Hz for T1 0.0AL I 250V fuse.
4. AC input: 3-Pin ground cable connect the unit to external AC Power Supply.
5. Remote Bypass Setting.
6. Selectable 70V and 100V constant voltage speaker output. 71 4 ohm/ 70V Button: Leave this switch in the up position if you are connecting 4-ohm or 8-ohm speaker circuit (Stereo mode). Depress the button to connect a 70V speaker circuit.

7. Stereo/Bridge Button: For stereo, or dual-zone mono operation, at 50 Watts per channel leave this in the up position.To combine (i.e. Bridge) the two into a 100-Watt mono amplifier, depress the button. In Bridge mode, the 4 ohm I 70V button must be in the 4 ohm / 70V button must be in the 4 ohm position (depressed) to allow for the 8-ohm speaker circuit, not4-ohms! In bridge mode, an amplifier encounters a load that is about one half of its actual value a 4-ohm load would therefore be
   2-ohms to a bridged amp and if the amplifier isn't designed to run Safely into such a low impedance (which the BMA6012P is not) damage may occur to the amplifier. We do not recommend connecting a 70V Speaker circuit while in Bridge mode as the output will be at 140V and the sound can be distorted.
8. 9. Limiter In/ Out Button: The Limiter In/ Out button activates a pre-set input limiter, which helps reduce the level of accidental loud noises and clipping distortion for each Zone (both channels of each Zone).
9. 10. Ch Line Input: These inputs allow connection of sources directly to the individual channels. This input allows Stereo, line-level source or two separate mono audio sources. If you Bridge the Zone's pair of amplifiers into an 8-ohm speaker circuit, use the Left input and connect a mono source.
10. 11. For Bus Input: a screw terminal strip are provided to connect your mixer, stereo I preamp, CD player or other audio media device. (Note: use only one type of source). For Bus outputs: simply in parallel with the Bus Inputs and enable you to interconnect the BMA6012P with another BMA6012P or amplifier. (Note: only the Input Bus signals will be patched to Output).
11. IR remote/ mute/ status port.
12. Speaker Connections: Insert bare wire ends here and tighten the retaining screws to secure properly.For a stereo Zone or dual mono Zones, connect the + and – system leads from each Zone to one +4 ohm and its adjacent-Neg terminal in the L& R terminal groupings. In Bridge mode, connect the + and – leads from an 8-ohm speaker circuit (not 4ohms-see Stereo/ Bridge Button section above) to each of the +4 ohm terminals.
13. Line/Bus Button: Ech Zone's input source can be selected using this switch. Depress the button to select the audio program coming from the Bus Input or leave it in the up position to use the Zone's Line Input.
14. Master control input.
15. Master control output.
16. RS232: The RS232 serial port allows two-way communication control by a home automation system.

Specification

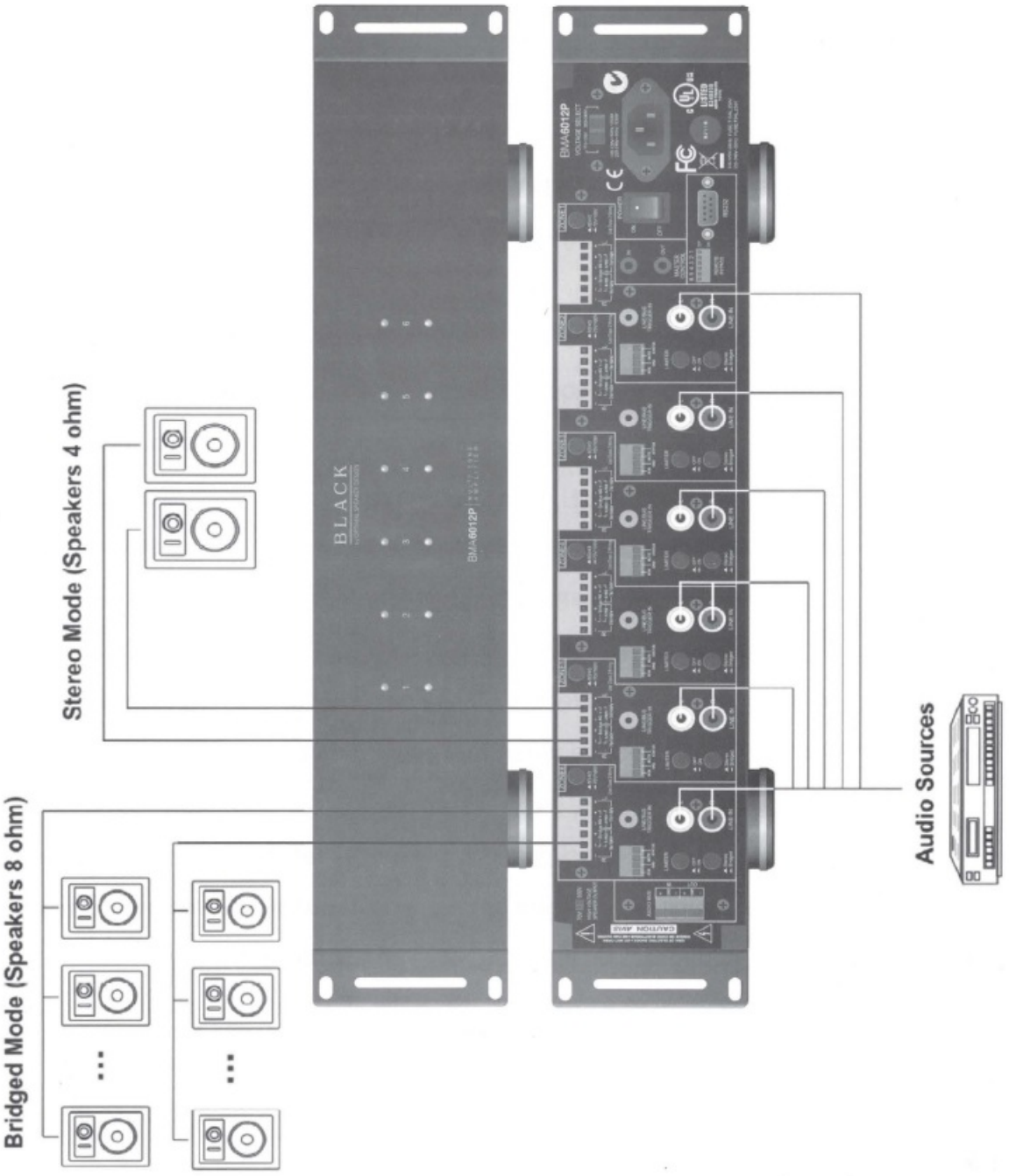
- Continuous Output Power:
  - 30W per channel 8ohms at 1 k Hz THO 0.1 %
  - 50W per channel 4ohms at 1 k Hz THO 0.1 %
  - 1 00W Bridged 8ohms at 1 k Hz THO 0.1 %
  - 30W per channel 70V/100V at 1 kHz THO 0.1%
- Total Harmonic Distortion:
  - 0.1%@ 10W
- Signal-to-Noise Ratio:
  - 90dB A-Weighted 1 K Hz
- Channel Separation:
  - 65dB 1K Hz
- Frequency Response:
  - 20Hz to 20kHz+/-1dB

- Input Sensitivity:
  - 600mV@ 30W
- Tone Control:
  - Bass 1 00Hz +/-12dB
  - Treble 1 Ok Hz+/-12dB
  - Global Audio Balanced Input Impedance: 600 Ohms
- Line Input Impedance:
  - 47 k-Ohm
- Rack mounting requirements:
  - 19 inch rack width, 2U rack height
- Power Requirements:
  - 115VAC 60Hz 1 0A/ 230VAC 50Hz 5A
- Dimensions:
  - W430 x H88 x 0416 mm
- Weight:
  - 22 Kg (48.4lbs)

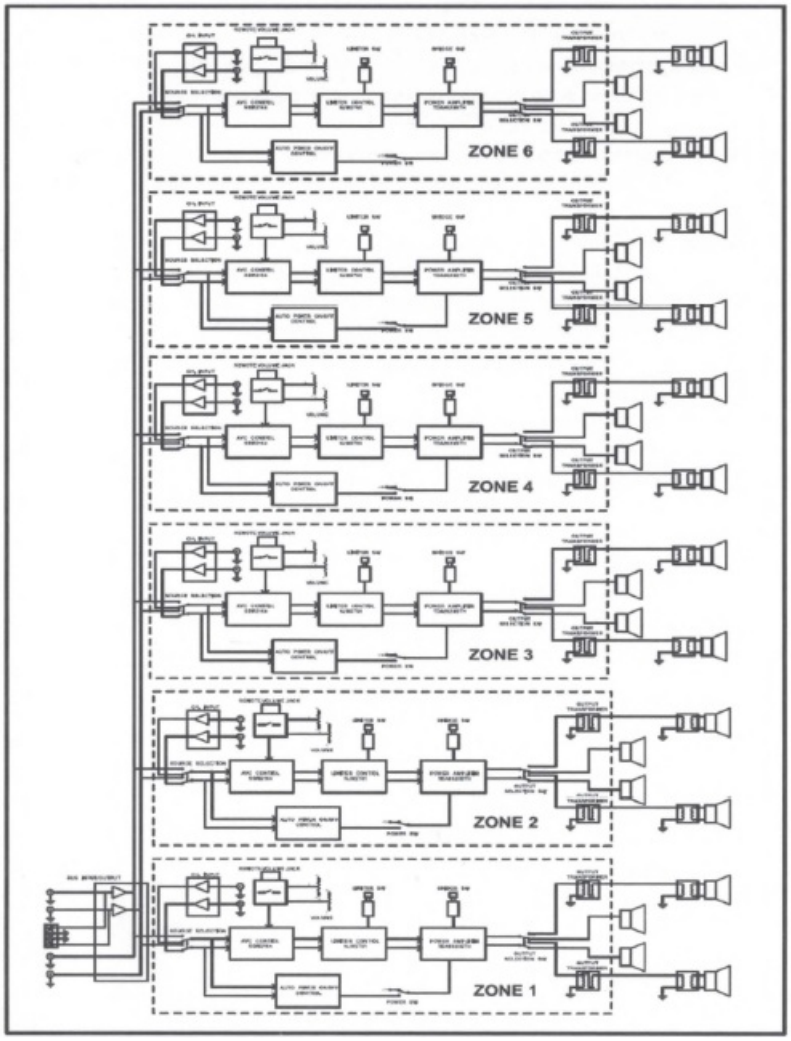
PHYSICAL LOCATION AND MOUNTING

1. The BMA6012P is convection cooled. That is, it depends on the natural free flow of air up through the slot perforations in the bottom plate, over the internal heat dissipating fins, then out the top cover, for adequate cooling.
2. The BMA6012P is designed for mounting into standard 19″ (483mm) racks or on flat horizontal surfaces.
3. If mounted in an equipment cabinet or other confining location, allow at least 2 inches of space above the top cover (see Fig. above). Be sure there are large openings in the shelf below the unit and in the cabinet to allow the entry of cool air and the· escape of warm air.
4. If the cabinet contains other heat generating components or you are using several BMA6012P’s, you will have to pay even closer attention to adequate ventilation.
5. Do not hesitate to use fans (quiet, boxer type), if necessary, to ensure a constant flow of air through the BMA6012P’s and the other heat generating components.
6. When installing the BMA6012P in a rack, please use racks that feature rear support provision. Adding a single RU (Rack Unit) above and below the BMA6012P will improve convection in heavy use applications. [One Rack Unit size= 1-3/4″ (44.5mm) in height].
7. In some installations, you may have large bundles of wire and cable to accommodate audio and speaker connections. Be sure to allow enough room for the leads and dress them in such a manner so as not to block airflow.

SPEAKER MODE



BLOCK DIAGRAM



WARRANTY & REPAIR

Optimal Speaker Design electronics have (2) year Limited Warranty against defects in materials and workmanship. Proof of purchase must accompany all claims. During the warranty period Optimal Speaker Design will replace any defective part and correct any defect in workmanship without charge tor either parts or labor. Optimal Speaker Design may replace returned electronics with a product of equal value and performance. In such cases, some modifications to the mounting may be necessary and are not Optimal Speaker Design ‘s responsibility. For this warranty to apply, the unit must be installed and used according to its written instructions. If necessary, repairs must be performed by Optimal Speaker Design . The unit must be returned to Optimal Speaker Design at the owner’s expense and with prior written permission. Accidental damage and shipping damage are not considered defects, nor is damaged resulting from abuse or from servicing performed by an agency or person not specifically authorized in writing by Optimal Speaker Design. Optimal Speaker Design sells products only through authorized dealers and distributors to ensure that customers obtain proper support and service. Any Optimal Speaker Design product purchased from an unauthorized dealer or other source, including retailers, mail order dealers and online sellers will not be honored or serviced under existing Optimal Speaker Design warranty policy. Any sale of product by an unauthorized source or other manner not authorized by Optimal Speaker Design shall void the warranty on the applicable product. Damage to or destruction of components due to application of excessive power voids the warranty on those parts. In these cases, repairs will be made on the basis of the retail value of the parts and labor. To return tor repairs, you must email customer service at **RMA@OSDAUDIO.com** tor a Returned.
Merchandise Authorization (RMA) number then the unit must be shipped to Optimal Speaker Design at the owner’s expense, along with a note explaining the nature of service required. Be sure to pack the product(s) in a corrugated container with at least 3 inches of resilient material to protect the unit from damage in transit. This Warranty Does Not Cover: Damage caused by abuse, accident, misuse, negligence, or improper operation (installation)

- Any products that have been altered or modified

- Any product whose identifying number of decal, serial#, etc. has been altered, defaced or removed
- Normal wear and maintenance.

Documents / Resources

	OSD BMA-6012P Multi-Zone Amplifier [pdf] Owner's Manual BMA-6012P, Multi-Zone Amplifier, BMA-6012P Multi-Zone Amplifier