

POWERPAK PLUS+
Monitor Equalizer/Amplifier

operation manual



POWERPAK PLUS⁺

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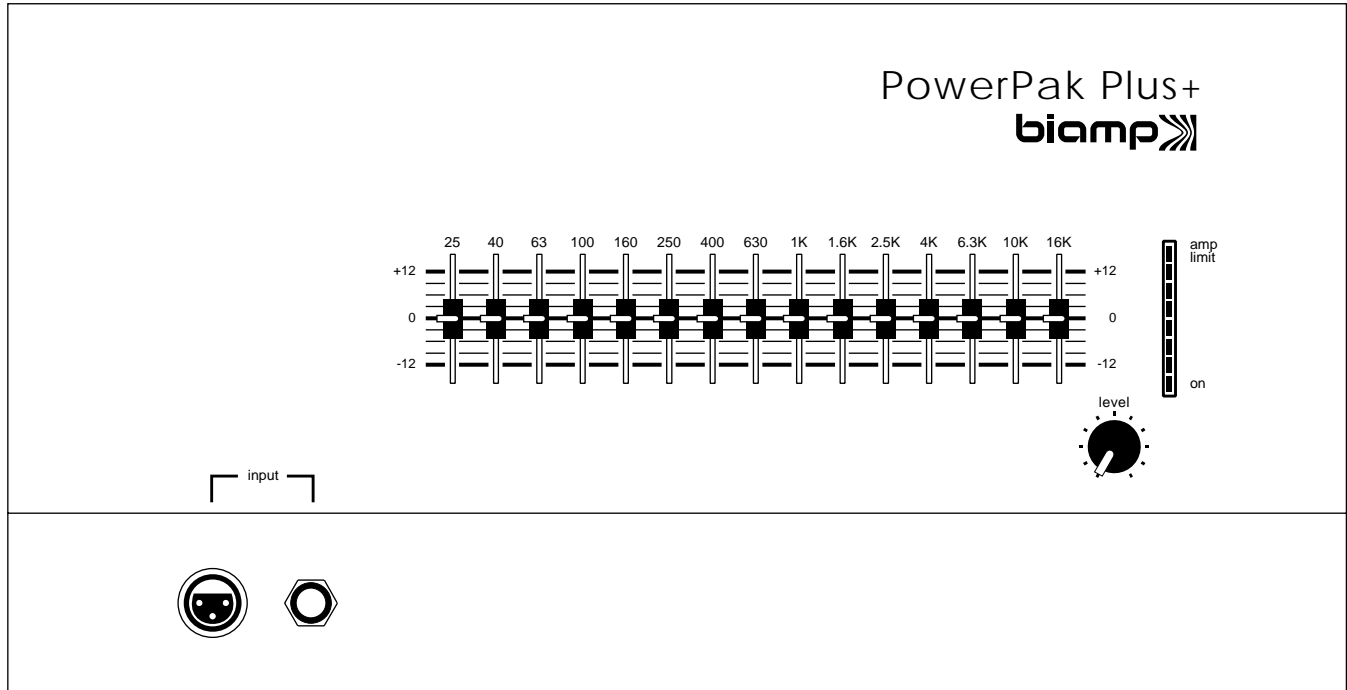
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INTRODUCTION

The Biamp **POWERPAK PLUS⁺** is a 300 Watt power amplifier, PLUS⁺ a 15-band graphic equalizer. The amplifier produces a true 300 Watts into 4 Ohm loads, and includes Biamp's exclusive Auto-Limit protection. Auto-Limit is a fast attack, quick release peak limiter, which prevents amplifier clipping and allows maximum power output without the harsh sounding distortion caused by clipping. The amplifier is passively cooled and has complete thermal protection, with automatic restart, to avoid damage to the amplifier from excessive heat. The 15-band graphic equalizer features "Constant-Q" technology for precise room tuning with less filter interaction, better filter combining, and constant filter bandwidth at any setting. The XLR and 1/4" Phone line inputs are electronically balanced. A rack-mounting kit, a nylon carrying bag, and an autoformer for distributed speaker systems are optional. The POWERPAK PLUS⁺ is covered by Biamp's 5-year Gold Seal warranty.

After reading this manual, if you have any questions or need technical assistance, please call Biamp Systems toll-free at **1-800-826-1457**.

FRONT PANEL FEATURES



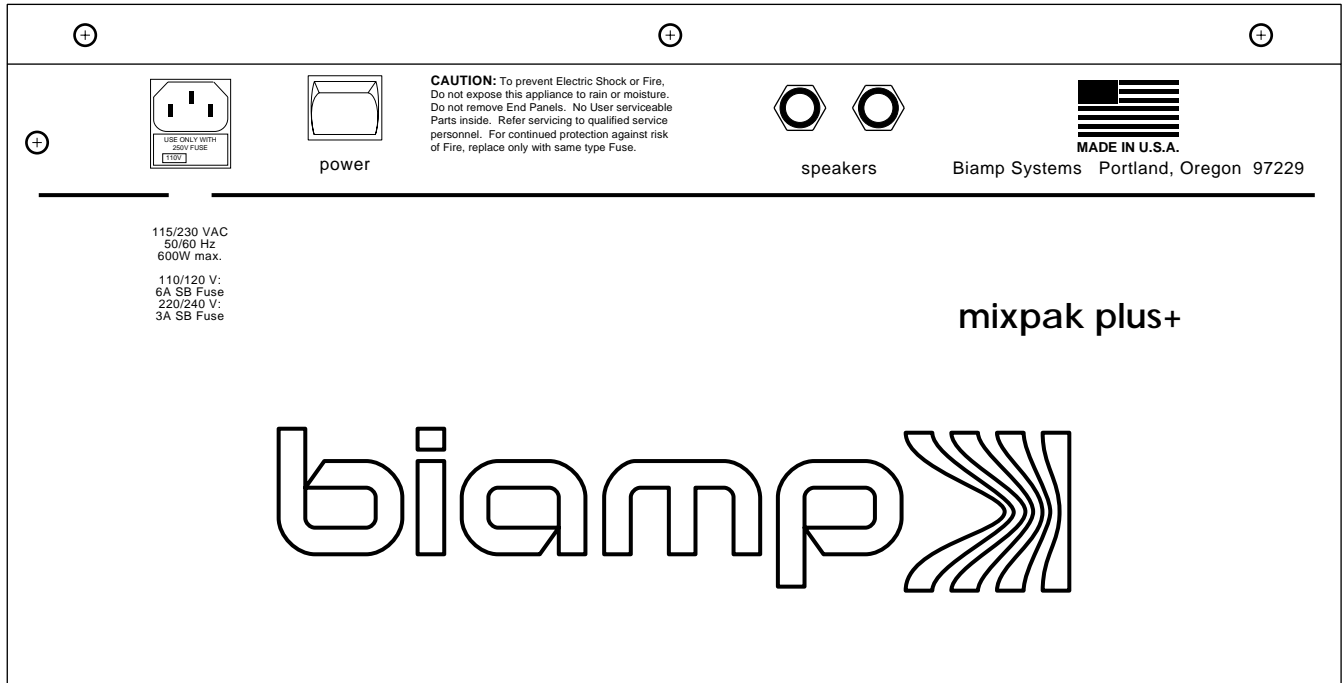
INPUTS: These 3-conductor XLR and 1/4" Phone connectors accept balanced or unbalanced line level signal. The XLR connector is wired to the DIN standard with Pin 2 high (+), Pin 3 low (-), and Pin 1 ground (common). For unbalanced use, wire to the XLR connector with Pin 2 high (+) and both Pins 3 & 1 ground (common). The 1/4" Phone connector is wired with Tip high (+), Ring low (-), and Sleeve ground (common). For unbalanced use, wire to the 1/4" Phone connector with Tip high (+) and both Ring and Sleeve ground (common)...OR...use a standard unbalanced 2-conductor 1/4" Phone plug. **CAUTION:** To avoid increased distortion, do not attempt to utilize both input connectors simultaneously. Only one input signal should be connected at any time.

EQUALIZER FILTER CONTROLS: These 15 slide controls adjust the gain in each of the filter bands (25Hz-16kHz). Each control has a range of ± 12 dB cut or boost, with a detent for easy centering. Proper equalization should require only moderate and equal amounts of cutting and boosting.

LEVEL: This rotary control adjusts the amplifier output level.

METER: This 8-segment LED display serves three functions. The bottom LED is a Power On indicator. The next 6 segments show the relative output from the amplifier. Each LED indicates an approximate 4dB increase in output power. The top LED indicates when maximum power has been reached and the Auto-Limit circuit is working to prevent amplifier overload.

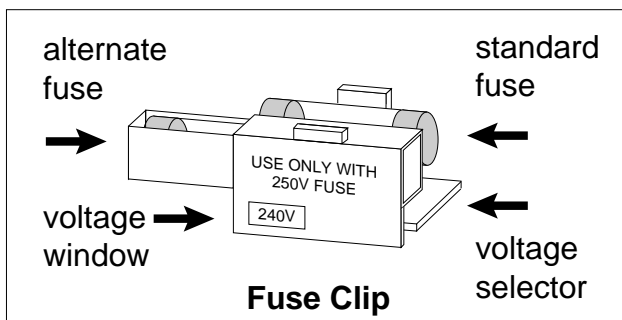
REAR PANEL FEATURES



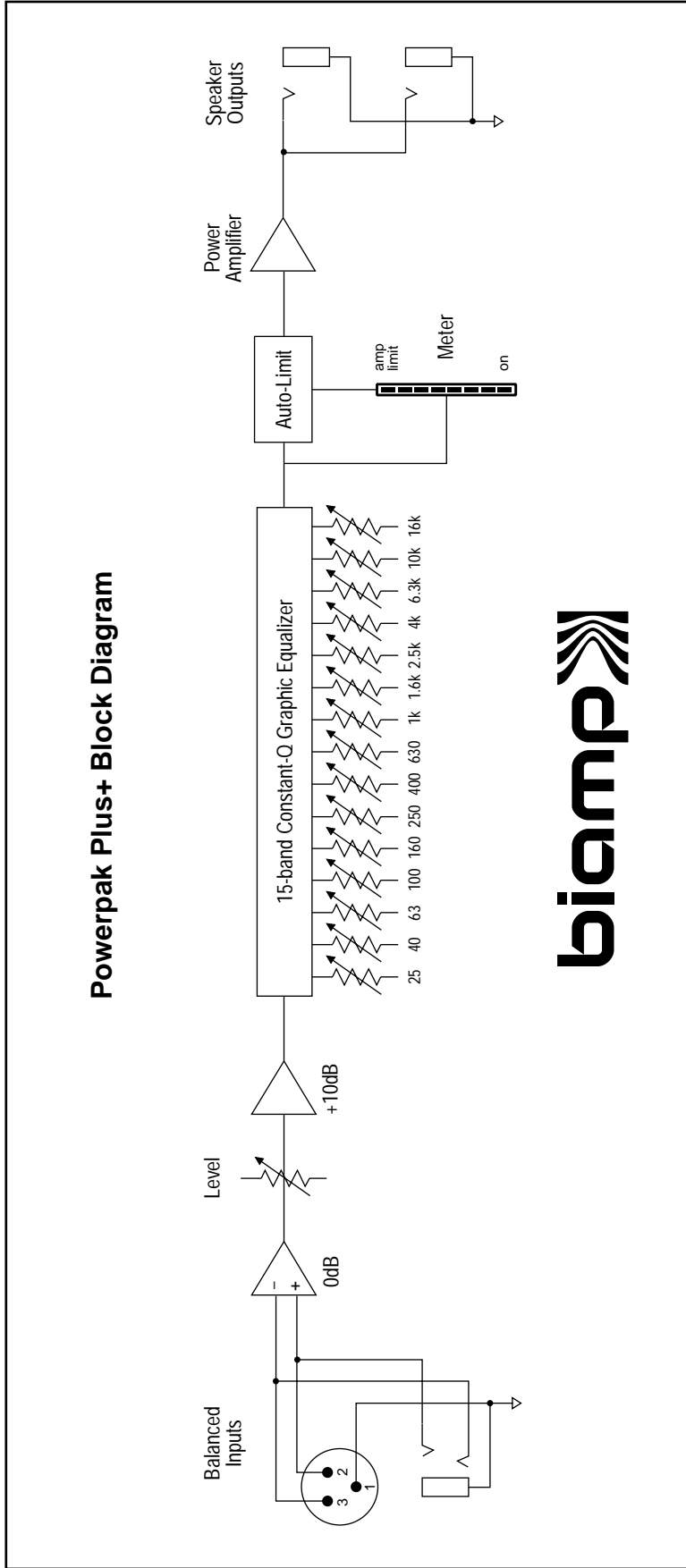
POWER ENTRANCE: This receptacle accepts the detachable AC Power Cord. The AC Power Cord is for connection to three-prong grounded AC outlets. *CAUTION: Do not remove or defeat the ground prong on the AC Power Cord, as this constitutes a shock hazard.* The Fuse Clip may be removed by first detaching the AC Power Cord, then prying the Fuse Clip out from above, using a flat-blade screwdriver in the notch provided. The Fuse Clip contains both the standard fuse and an alternate fuse (see diagram below). The standard fuse is held in the clip, and becomes the actual AC fuse when the Fuse Clip is installed. Replace the standard fuse only with the same value and type (6A SB for 110 VAC operation or 3A SB for 240 VAC operation). The alternate fuse, held in a drawer inside the Fuse Clip, is provided only for use at the alternate operational voltage setting. If it is necessary to change the operational voltage, first slide the voltage selector out of the left side of the Fuse Clip. Turn the voltage selector over, and slide it back into the Fuse Clip, making sure the desired voltage selection is visible through the voltage window. Then change the standard fuse value (6A SB for "110V" or 3A SB for "240V"), before re-installing the Fuse Clip.

POWER SWITCH: When the Power Switch is turned on, the front panel "on" LED indicates that power is applied to the unit.

SPEAKER OUTPUTS: These 2-conductor 1/4" Phone jacks are for connection to speaker loads of 4 Ohms or higher. The two jacks are wired in parallel (connecting an 8 Ohm speaker to each of these jacks results in a combined load of 4 Ohms). *CAUTION: Operation of the amplifier into loads of less than 4 Ohms may cause the thermal protection circuit to activate. If this happens, AC power to the unit will be temporarily removed and will automatically return after the amplifier has cooled. The amplifier is passively cooled and requires ventilation for proper operation. Never obstruct air flow to the cooling vents located on the top and bottom of the unit.*



BLOCK DIAGRAM



SPECIFICATIONS

OUTPUT POWER (@ 1kHz)	
4 Ohms	300 Watts
8 Ohms	200 Watts
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SIGNAL-TO-NOISE RATIO (30kHz BW)	105dB
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TOTAL HARMONIC DISTORTION (20Hz-20kHz/300 Watts @ 4 Ohms)	<0.10%
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INTERMODULATION DISTORTION (SMPTE)	
150 Watts @ 4 Ohms	<0.10%
300 Watts @ 4 Ohms	<0.15%
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SLEW RATE (@ 4 Ohms)	17 V/ μ Sec
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FREQUENCY RESPONSE (20Hz-20kHz/300 Watts @ 4 Ohms)	+0/-0.5dB
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EQUALIZATION (\pm 12dB/Constant-Q)	25Hz, 40Hz, 63Hz, 100Hz, 160Hz, 250Hz, 400Hz, 630Hz, 1kHz, 1.6kHz, 2.5kHz, 4kHz, 6.3kHz, 10kHz, 16kHz
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INPUT IMPEDANCE	
Balanced	20k Ohms
Unbalanced	10k Ohms
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POWER CONSUMPTION	600 Watts
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POWER REQUIREMENTS	115/230VAC 50/60Hz
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CONNECTORS	
Input	XLR & 1/4" Phone
Output	1/4" Phone
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DIMENSIONS (chassis without end-caps)	
Height	8.75 inches (5 rack spaces)
Width	19 inches
Depth	7.25 inches
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WEIGHT	<24 lbs.
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WARRANTY

BIAMP IS PLEASED TO EXTEND THE FOLLOWING 5-YEAR LIMITED WARRANTY TO THE ORIGINAL PURCHASER OF THE PROFESSIONAL SOUND EQUIPMENT DESCRIBED IN THIS OWNER'S MANUAL.

BIAMP Systems expressly warrants this product to be free from defects in material and workmanship for a period of 5 YEARS from the date of purchase as a new product from an authorized BIAMP dealer under the following conditions.

1. The Purchaser is responsible for completing and mailing to BIAMP, within 10 days of purchase, the attached warranty application.

2. In the event the warranted BIAMP product requires service during the warranty period, BIAMP will repair or replace, at its option, defective materials, provided you have identified yourself as the original purchaser of the product to any authorized BIAMP Service Center. Transportation and insurance charges to and from an authorized Service Center or the BIAMP factory for warranted products or components thereof to obtain repairs shall be the responsibility of the Purchaser.

3. This warranty will be VOIDED if the serial number has been removed or defaced; or if the product has been subjected to accidental damage, abuse, rental usage, alterations, or attempted repair by any person not authorized by BIAMP to make repairs; or if the product has been installed contrary to BIAMP's instructions.

4. The normal wear and tear of appearance items such as paint, knobs, handles, and covers is not covered under this warranty.

5. BIAMP SHALL NOT IN ANY EVENT BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS, LOSS OF USE, PROPERTY DAMAGE, INJURY TO GOODWILL, OR OTHER ECONOMIC LOSS OF ANY SORT. EXCEPT AS EXPRESSLY PROVIDED HEREIN, BIAMP DISCLAIMS ALL OTHER LIABILITY TO PURCHASER OR ANY OTHER PERSONS ARISING OUT OF USE OR PERFORMANCE OF THE PRODUCT, INCLUDING LIABILITY FOR NEGLIGENCE OR STRICT LIABILITY IN TORT.

6. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED. BIAMP EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE REMEDIES SET FORTH HEREIN SHALL BE THE PURCHASER'S SOLE AND EXCLUSIVE REMEDIES WITH RESPECT TO ANY DEFECTIVE PRODUCT. THE AGENTS, EMPLOYEES, DISTRIBUTORS, AND DEALERS OF BIAMP ARE NOT AUTHORIZED TO MODIFY THIS WARRANTY OR TO MAKE ADDITIONAL WARRANTIES BINDING ON BIAMP. ACCORDINGLY, ADDITIONAL STATEMENTS SUCH AS DEALER ADVERTISEMENTS OR REPRESENTATIONS DO NOT CONSTITUTE WARRANTIES BY BIAMP.

7. No action for breach of this warranty may be commenced more than one year after the expiration of this warranty.

Thank you for purchasing BIAMP...
QUALITY YOU CAN HEAR.

Biamp Systems
14130 N.W. Science Park
Portland, Oregon 97229
(503) 641-7287