CPA 650

Operation Manual

BIAMP®

SYSTEMS

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TABLE OF CONTENTS

INTRODUCTION

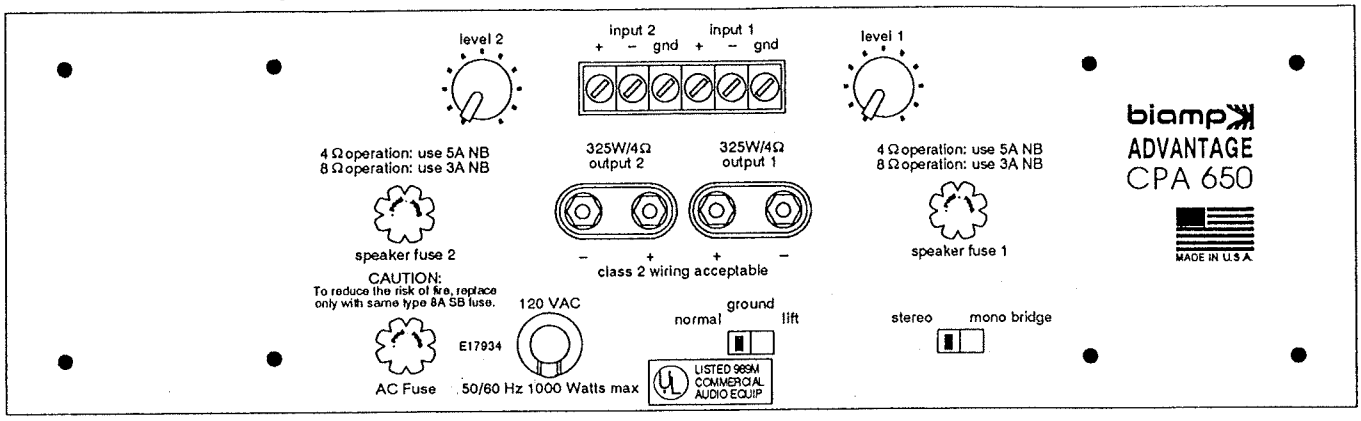
ADVANTAGE® **CPA650** dual channel power amplifiers are designed to supply reliable service in permanent installations. CPA650 amplifiers have complete overload, short-circuit, and thermal protection, with automatic reset. Barrier strip input and 5-way binding post output connectors provide trouble free, dependable connections. CPA650 amplifiers are passively cooled for quiet operation, without fan noise or filter maintenance. CPA650 amplifiers are UL listed and carry a five-year warranty.

CPA650 features include:

- balanced inputs on barrier strip terminals
- 325 watts/channel @ 4 ohms (stereo)
- 200 watts/channel @ 8 ohms (stereo)
- 650 watts @ 8 ohms (mono bridge)
- peak indicators on each channel
- detented level controls (front or rear mounting)
- output fuses for speaker protection
- turn-on muting to prevent "thumping"
- recessed ground lift switch to eliminate ground loops
- recessed mono bridge switch
- passively cooled (no fan noise or maintenance)
- optional distribution autoformer (rear panel mounting)
- Five-Year Gold Seal warranty
- CE marked and **UL** listed

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

REAR PANEL



Autoformer Mounting Holes: These holes are for mounting of optional autoformers to the rear panel of the CPA650. Autoformers allow the CPA650 to be used to drive 25V, 70V, or 100V distributed speaker systems (see 5-Way Speaker Binding Posts below).

AC Fuse & Power Cord: For 115VAC operation the AC Fuse is an 8 Amp Slow-Blow (8A SB). For 230VAC operation, the AC Fuse is a 4 Amp Slow-Blow (4A SB). Replace AC Fuse with same type and value only. 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*

Speaker Fuses: These fuses help protect the amplifiers and speakers from short-circuit or DC voltages. The Speaker Fuses are rated to allow full power into proper speaker loads. Replace Speaker Fuses with the same type and value fuses only. The CPA650 is shipped from the factory with 5 Amp Normal-Blow (5A NB) Speaker Fuses, which are appropriate with speaker loads of 4Ω per channel (8Ω mono-bridge). For best protection with speaker loads of 8Ω per channel (16Ω mono-bridge), use 3 Amp Normal-Blow (3A NB) fuses.

Channel Level Controls: These controls adjust the input signal level for each channel. After setting appropriate levels at the signal source, then adjust the Channel Level Controls for the desired output volume from the CPA650. In mono-bridge mode, Channel 1 becomes the active input and Channel 2 input is inactive. As an option, the Channel Level Controls may be mounted to the CPA650 front panel. ***CAUTION:*** *Disconnect the CPA650 from AC power before removing the top panel.* Remove the plugs from the front panel mounting holes (save them for the rear panel mounting holes). Remove the knobs and the nuts from the level controls (use an 11mm or 7/16" nut driver). Move the level controls to their respective front panel mounting holes. Re-install nuts and knobs (hold onto controls to avoid twisting wires). Install plugs in rear panel mounting holes. Check wire routing to avoid pinching or over-heating of wires.

Input Barrier Strip: These barrier strip screw terminals are for connection of line-level input signals to the channels. For balanced inputs, connect High to (+), Low to (-), and Ground to (gnd). For unbalanced inputs, connect High to (+) and Ground to both (-) & (gnd). In mono-bridge mode, Channel 1 becomes the active input and the Channel 2 input is inactive.

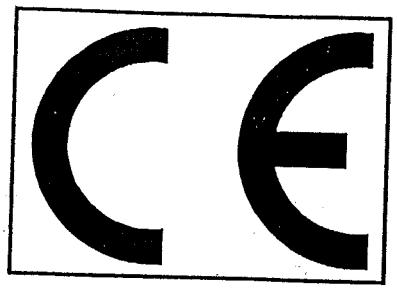
5-Way Speaker Binding Posts: These 5-way binding posts are for connection of speaker loads to the CPA650. In stereo mode, the red (+) terminal of each channel is for connection to speaker positive, and the black (-) terminal for each channel is for connection to speaker negative. The CPA650 will deliver up to 325 Watts per channel into 4 ohm minimum loads. In mono-bridge mode, the red (+) terminal of Channel 1 is for connection to speaker positive, and the red (+) terminal of Channel 2 is for connection to speaker negative. The CPA650 will deliver up to 650 Watts mono-bridged into an 8 ohm minimum load. Autoformers are available from Biamp Systems, which allow the individual channels of the CPA650 to be used to drive 25V, 70V, or 100V distributed speaker systems. When using the CPA650 in stereo mode, the appropriate autoformer for each channel is a DT-1A (#909-0026-00). When using the CPA650 in mono-bridge mode, an autoformer is not necessary to drive 25V or 70V distributed speaker systems. However, the load must be floating (neither side grounded) and 'back-to-back' series capacitors (1000uF/100V polar) should be used for isolation. In stereo mode, the CPA650 can drive 25V systems directly, using the same floating speaker load and capacitive isolation.

Mono-Bridge Switch: This switch selects stereo or mono-bridge operation. In mono-bridge mode, Channel 1 is the active input and the Channel 2 input is inactive. The red (+) speaker terminal of Channel 1 is for connection to speaker positive, and the red (+) speaker terminal of Channel 2 is for connection to speaker negative. The CPA650 delivers 650 Watts mono-bridged into an 8 ohm minimum load.

Ground Lift Switch: This recessed switch allows the circuit (signal) ground to be lifted (disconnected) from the chassis (AC) ground. This can help prevent hum inducing ground loops within the sound system, while maintaining safe AC grounding of the chassis.

SPECIFICATIONS

Maximum Power Output @ 2kHz (120 VAC)	
both channels driven into 4 ohms	325 watts/channel
both channels driven into 8 ohms	200 watts/channel
mono bridge into 8 ohms	650 watts
Signal-to-Noise Ratio (0-30kHz)	
rated power into 8 ohms	98dB
Total Harmonic Distortion	
20Hz-20kHz @ rated power	<1.0%
2kHz @ rated power (typical)	<.08%
Intermodulation Distortion (SMPTE)	<0.3%
Frequency Response (20Hz-20kHz)	+/-0.5dB
Input Impédance	
balanced	20k ohms
unbalanced	10k ohms
Sensitivity	1 Vrms (2.2dBu)
Power Requirements	120/220 VAC, 50/60Hz
Power Consumption	1000 watts max.
Dimensions	
height (3 rack spaces)	5.25 inches (133mm)
width	19 inches (483mm)
depth	11 inches (279mm)
Weight	33 lbs. (14.97kg)



Declaration of Conformity

BIAMP SYSTEMS
14130 NW Science Park Drive
Portland, OR USA 97229

as the manufacturer, hereby declares that the following described product, in our delivered version, complies with the provisions of the DIRECTIVES as noted herein. In case of alteration of the product, not agreed upon or directed by us, this declaration is no longer valid.

Product: Model: ADVANTAGE CPA650
Description: Audio Commercial Power Amplifier

Applicable EC Directives: EMC Directive (89/336/EEC)

Applicable Harmonized Standards: EN55013 emissions EN55020 immunity

Applicable National Standards: not applicable

Special Considerations for Product Environment or Compliance: none

The Technical Report/File is maintained at:

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