

B & K Components, Ltd.

User Manual

AV1230

Multi-Zone Amplifier

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Warranty Information

COMPLETE USER MANUAL - AV1230

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Limited Warranty

B&K Components, Ltd., referred to herein as B&K, warrants your B&K equipment against all defects in material and workmanship for a period of five years from the date of purchase. This warranty applies only to the original purchaser and only to equipment in normal residential use and service. Defective equipment must be returned to B&K, prepaid, accompanied by proof of purchase and sufficient payment to cover the cost of return shipping and handling, and will be repaired or replaced at the discretion of B&K whose decision as to the method of reparation will be final.

This warranty shall not apply to any equipment which is found to have been improperly installed, incorrectly fused, misused, abused, or subjected to harmful elements, used in any way not in accordance with instructions supplied with the unit, or to have been modified, repaired or altered in any way without the expressed, written consent of B&K. This warranty does not apply to the cabinet or appearance items such as the faceplate or control buttons, nor does it cover any expenses incurred in shipping the unit to and from the manufacturer's service department.

This warranty on B&K Components, Ltd. products is NOT VALID if the products have been purchased from an unauthorized dealer or an E-tailer or if the original factory serial number has been removed, defaced or replaced in any way. B&K Components, Ltd. sells its products through authorized dealers in order to insure that consumers obtain proper dealer service and support. Buying from an authorized B&K Components, Ltd. dealer insures that you have a FACTORY WARRANTY on your B&K Components, Ltd. product. If you have any questions concerning your Factory Warranty call B&K Components, Ltd. At 716-656-0026.

Upgradability: B&K is one the first manufacturers in the audio/video industry to consistently offer software and hardware upgrades to its processing of audio signals. Through upgrades B&K delivers exceptional value to its customers. But what is "Upgradability"? Upgradability is not a guarantee; we define it as a philosophy of designing and manufacturing products so that as audio technology evolves, B&K can provide enhancements and improvements to its products that are economically viable.

THE EXPRESS FACTORY WARRANTY HEREIN CONTAINED IS IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY, UPGRADABILITY OR OF FITNESS FOR ANY PARTICULAR PURPOSE. B&K COMPONENTS, LTD. SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE FOR DAMAGES, INCLUDING SPECIAL, INCIDENTAL, EXEMPLARY, PUNITIVE OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH THE PURCHASE, USE OR PERFORMANCE OF ANY B&K PRODUCT.

This warranty gives you specific legal rights. You may also have other rights which vary from State to State. Some States do not allow the exclusion or limitation of incidental or consequential damages and the foregoing exclusions may not apply to you.

No agent, representative, dealer or employee of B&K has the authority to increase or alter the obligations or terms of this warranty.

Accessories Included

- 1 - Power Cord
- 1 - Owner's Manual
- 1 - Warranty Card

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Safety Precaution

Please Read Before Installing



WARNING: to prevent fire or shock hazard, do not expose this unit to rain or moisture. Care should be taken to prevent objects or liquid from entering the enclosure. Never handle the power cord with wet hands.

- ◆The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated “dangerous voltage” within the product’s enclosure that may constitute a risk of electric shock.
- ◆The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the unit.
- ◆Caution: To prevent the risk of electric shock, do not remove cover. No user-serviceable parts are inside. Refer servicing to qualified service personnel.
- ◆Unplug the amplifier from the AC outlet when plugging in or unplugging cables, when left unused for an extended period of time, moving the amplifier, or when you suspect lightning in your area.
- ◆Prevent damage to the power cord. Do not bend, pull, place objects on, alter, etc. Replace the power cord if it becomes damaged.
- ◆Always grasp the plug on the power cord when plugging in or unplugging the amplifier from the AC outlet.
- ◆The system may produce sound levels capable of causing permanent hearing loss. Do not operate for extended periods of time at high volume levels.
- ◆Make sure the amplifier is placed on a level surface.
- ◆The amplifier is equipped with raised feet to provide ventilation, reduce acoustic feedback, and provide protection against scratching the surface the unit is resting on. We advise against removing or altering feet.
- ◆Do not stack anything on top of the amplifier (processor, source, etc.) Leave a minimum of 2” clearance from the top of the amplifier to the next shelf (or component) to insure proper ventilation.
- ◆The amplifier should be located away from other sources that may be sensitive to heat.
- ◆Do not perform any internal modifications to the amplifier.
- ◆Always connect the amplifier’s power cord to an unswitched AC outlet for normal operation.
- ◆If young children are present, adult supervision should be provided until the children are capable of following all rules for safe operation.
- ◆Do not plug the amplifier’s power cord into an outlet with an unreasonable number of other devices. Be careful if using extension cords and ensure the total power used by all devices does not exceed the power rating (watts/amperes) of the extension cord.
- ◆Excessive loads may cause the insulation on the cord to heat and possibly melt.
- ◆Mistaking CONTROL OUTPUT or CONTROL INPUT connectors for audio/video inputs or outputs may damage the amplifier or other components.
- ◆Damage can occur to the speakers if the power rating of each individual driver is exceeded by the amplifier. Ensure that all the drivers in the system are capable of handling not only the average power being delivered by the amplifiers, but also the peak power that is likely to be generated during strong passages. If you are unsure of your speaker’s power rating, contact the speaker manufacturer or the dealer where you purchased them.
- ◆The amplifier should be serviced by qualified personnel when:
 - The amplifier is not functioning properly.
 - Objects have entered the chassis.
 - The amplifier was exposed to rain or other type of moisture.
 - The amplifier was dropped, or the chassis is damaged.



The AV1230 is an integration of a stereo audio distribution Bus with twelve compact and efficient 30 W power amplifiers. Each pair of amplifiers have Dip Switches that allow system configuration of mono/stereo and muting control via Bus or Local control input. The AV1230 is designed to allow flexibility and functionality in the design of Multi-Zone power system applications.

Below are some of the applications for the AV1230 audio distribution amplifier:

- ◆The most obvious example allows for six stereo audio input pairs to power six pairs of amplified speaker outputs. This is the default factory configuration.
- ◆Using the audio distribution Bus Dip Switches allow independent configuration for up to 12 mono channels or 6 stereo pairs, with independent automatic audio sense muting per amplifier output pair.
- ◆The availability of both Local and Bus audio outputs, allows for a number of units to be cascaded for easy and efficient system expansion.

FEATURES

Multiple AV1230s can be easily linked together to add more rooms or expand a large listening area.

Dip Switches allow for configuration of the audio signal for each pair of amplifier channels including Local or Bus, mono or stereo and muting control.

Toroidal Transformer - Efficient high current power delivery for improved dynamics.

Computer Grade Capacitors - Large capacity computer grade electrolytic capacitors for high transient power delivery and extended low frequency control.

Limited Protection - Increased Safe Operating Area and thermal overload protection allows for continuous duty unattended use.

Gold Plated Connectors - Improved connections for better sound and minimized signal loss and degradation.

1% Metal Film Resistors - Low noise precision resistors offer a cleaner more repeatable sound quality.

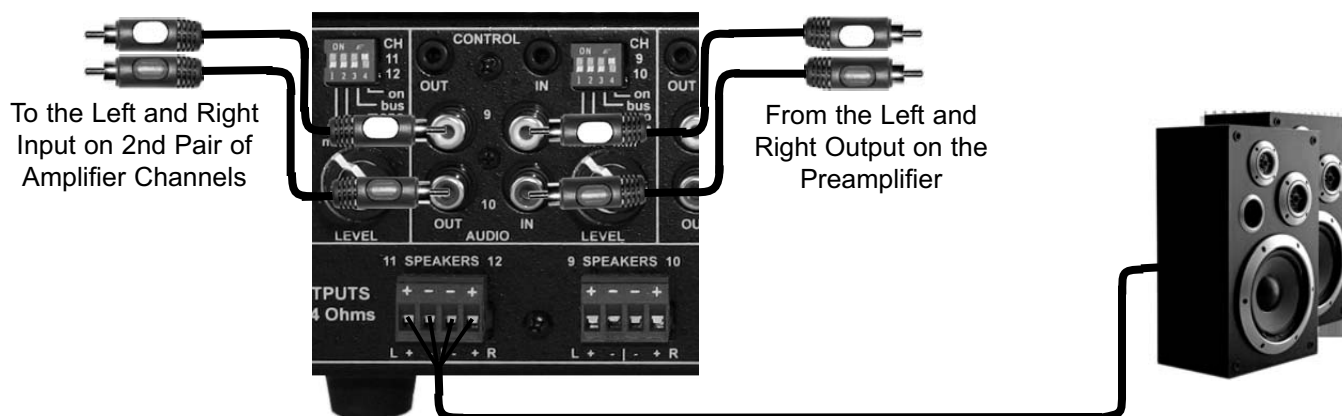
High Current Circuitry - More accurate three dimensional reproduction of source material with sonic fidelity usually found only in larger power amplifiers.



1. AC Power Inlet and AC Fuse. The fuse is an 8 Amp / 250 Volt Slow Blow fuse. Replace with same type and value fuse only.
2. Channel control input/output. Each pair of amplifier channels has its own 1/8" (3.5mm) minijack control input/output (pass through) control jack to provide remote switching of the amplifier audio mute on/off feature. The control input circuit is designed to work as Tip Pos. (+) and Ring Neg. (-). A minimum of 5VDC @ 1 mA is recommended, and is compatible with up to 24V AC or DC. (The control outputs DO NOT source any voltage directly, they only PASS through the input voltage at their receptive inputs).
3. Channel inputs and outputs. Each pair of amplifier channels has its own set of audio input / output (pass through) RCA connections. Typically used for connecting signal interconnects from the preamplifier to the amplifier.
4. Dip Switches. Each pair of amplifier channels has its own Dip Switches that are used to configure the audio signal (Local or Bus, mono or stereo, muting sense and control trigger).
5. Channel level control. Each pair of amplifier channels has its own DUAL input level control. The level of the right channel is adjusted by the outer level control and the level of the left channel is adjusted by the inner level control. This is also shown on the back panel of the unit.
6. Removable four position phoenix speaker connections. Speaker connections are 4 ohm stable. Connectors can accommodate up to 12 gauge speaker wire.
7. Bus control input/output. The amplifier allows for single switching of the amplifier audio mute on/off feature on any pair of amplifier channels (1-2, 3-4, 5-6, 7-8, 9-10, 11-12) with it's Dip Switch setting configured for Amp off and Sense off. The Bus control output is a pass through of the Bus control input. The control input circuit is designed to work as Tip Pos. (+) and Ring Neg. (-). A control source capable of sourcing a minimum of 5 VDC @ 1 mA is recommended, and is compatible with up to 24V AC or DC. (The control outputs DO NOT source any voltage directly, they only PASS through the input voltage at their receptive inputs).
8. Bus inputs and outputs. In a similar fashion to the Bus control inputs, the AV1230 has provisions for an independent stereo audio signal and control trigger distribution bus. It is an independent stereo audio input and minijack control input and output to source audio and trigger to amplifier channels 1-2, 3-4, 5-6, 7-8, 9-10, or 11-12 when the Dip Switch for Bus is set to On.

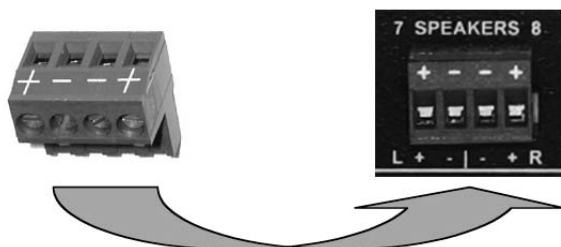
Local RCA Input and Output

Each pair of amplifier channels have their own input and output RCA connectors. The inputs are designed to accept line level audio from a preamplifier's RCA unbalanced output connectors. Output expansion is accommodated with the RCA output connectors. These outputs are effectively a direct pass through from the inputs.



Amplified Output

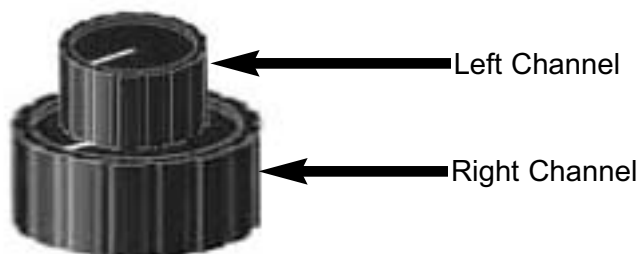
The AV1230 connects to speakers via six plug-in Phoenix connectors. Simply unplug the connector from the rear of the AV1230, strip the speaker wire approximately 1/4" and insert the bare end into the gate on the connector. Use a small flat blade screwdriver to tighten the connection to each conductor. Phoenix adapters can accommodate up to 12 gauge speaker wire. Make sure the connector is held upside down to connect Left and Right as shown:



Level Control

Each pair of amplifier channels have their own Local level control. It may be used to equally attenuate the level for both amplifiers pairs.

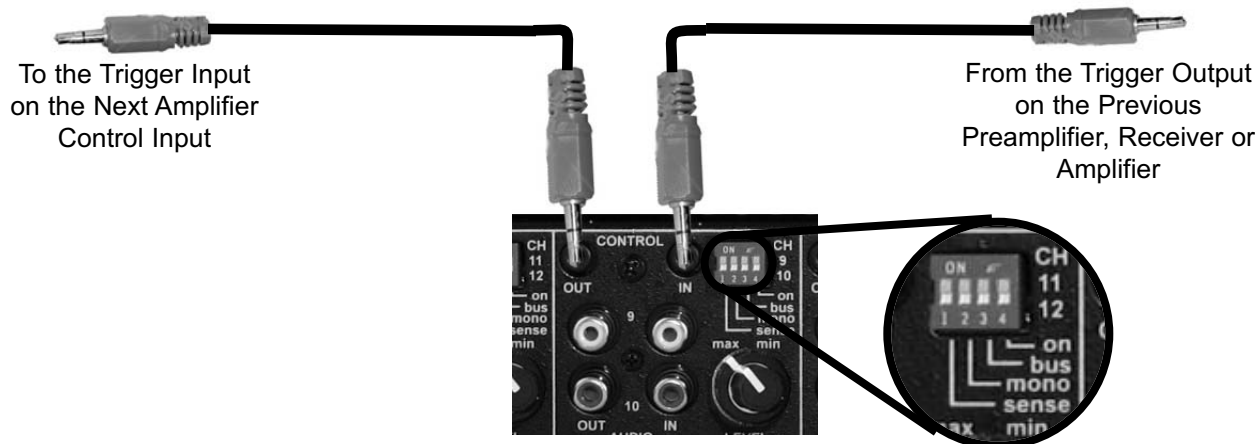
Default from the factory, the level controls are set to full clockwise (no attenuation). Note, on the AV1230 there is a set of level controls for each pair of amplifiers (1-2, 3-4, 5-6, 7-8, 9-10, and 11-12) allowing for separate control of the left and right signals. The outer level control adjusts the volume of the right channel. The inner level control adjusts the volume of the left channel.



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Control Trigger and Muting

Each pair of amplifier channels has its own 1/8" (3.5mm) mono minijack control input / output (pass through) to provide remote switching of the amplifier audio mute on/off feature. The control input circuit is designed to work as a Tip Pos. (+) and Ring Neg. (-) mono minijack connection. A minimum of 5VDC @ 1 mA is recommended, and is compatible with up to 24V AC or DC. A preamplifier's control output, such as is provided with the B&K series preamplifier, can be utilized to provide a control signal to the AV1230. When Local channel control muting is desired, the proper Dip Switch configuration must be set with all Dip Switches in the off position, as shown below.

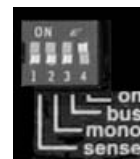


DIP Switches

Each pair of amplifiers have their own set of four Dip Switches. The function of each Switch is described below:

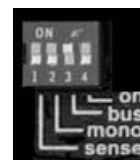
ON: (ON is the factory default setting for all amplifier pairs)

Amplifier pairs with Dip Switch On set to 'On', have the remote Bus and Channel switching of the amplifier audio mute on/off feature disabled. When remote amplifier audio muting is desired by either the Bus or Local Channel control input, the Amp switch must be set to the 'Off' position.



BUS: (OFF is the factory default setting for all amplifier pairs)

Amplifier pairs (channels 1-2, 3-4 and 5-6), with Dip Switch Bus set to 'On', have their inputs sourced from the audio signal present at the Bus input. When the Bus feature is not desired and the amplifier pair is to be sourced at the Local audio inputs, the Bus switch must be set to the 'Off' position.



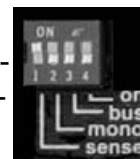
MONO: (OFF is the factory default setting for all amplifier pairs)

Amplifier pairs with Dip Switch Mono set to 'On', have the sum of the selected audio inputs, i.e.. Local or Bus, processed into a composite mono signal source for both amplifier channels. When mono is not desired, or independent channel amplification of the amplifier pairs is necessary, the Mono switch must be set to the 'Off' position.



SENSE: (OFF is the factory default setting for all amplifier pairs)

Amplifier pairs with Dip Switch Sense set to 'On' have the remote Master and Channel switching of the amplifier audio mute on/off feature disabled. Amplifier pairs set to use Sense will mute automatically after a delay of three minutes once no audio signal has been detected. The sense circuit monitors the selected audio input, i.e. Local or Bus, mono or stereo. When remote amplifier audio muting is desired by either the Master or Local channel control input, the Sense switch must be set to the 'Off' position. When the Amp On feature is desired, the automatic muting of the amplifier pairs is not desired, or if the audio signal is erratic the Sense switch must be set to the "Off" position.



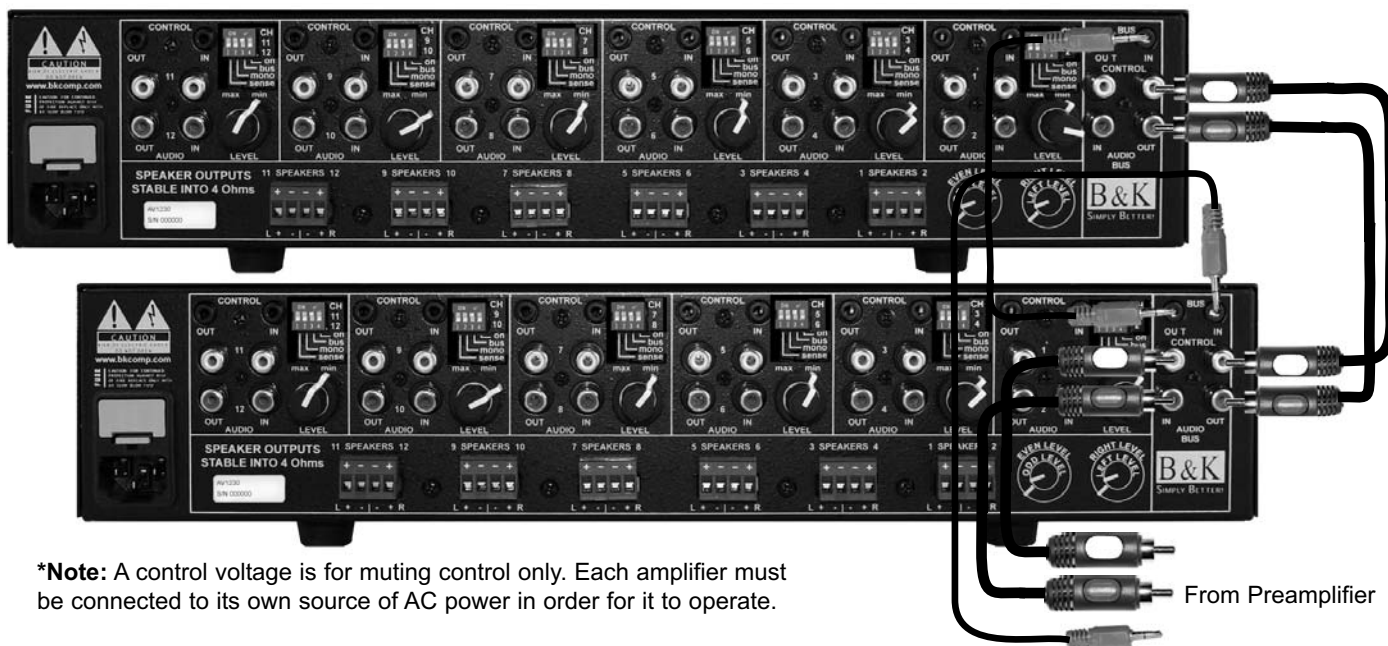
Bus Control and Muting

The AV1230 is designed to provide Bus control for all amplifier channels. The Bus control allows for single switching of the amplifier auto sense mute on/off feature on any pair of amplifier channels (1-2, 3-4, 5-6, 7-8, 9-10 or 11-12) with its Dip Switch setting configured for Amp off and Sense off and the Bus Switch on. The Bus control output is a pass through of the Bus control input for both signal and control. The control input circuit is designed to work as a Tip Pos. (+) and Ring Neg. (-) mono minijack connection. A control source capable of sourcing a minimum of 5 VDC @ 1 mA is recommended, and is compatible with up to 24V AC or DC. (The Master control outputs DO NOT source any voltage directly, they only PASS through the input voltage at their receptive inputs).

If more than one AV1230 or other units are to be controlled, the control signal can be expanded to include each successive unit by simply running a 1/8" mini cable from the CTRL OUT connector of the first amplifier to the CTRL IN connector of the next unit (commonly referred to as 'daisy chaining') with both a Local and Bus control signal.

Note: When an 1/8" (3.5mm) mini plug is inserted into the Local amplifier pairs control input jack, the Bus Control signal is automatically disabled for that amplifier pair.

Shown below is a two AV1230 system, including the Bus signal and control cabling.



Mono Usage

The AV1230 has the ability to have up to twelve output channels that may be mono. When the Mono Dip Switch is enabled, the single signal from either the left or the right channel would be sent to both outputs. The AV1230 has the ability to have up to 12 mono channels when using the bus section on the amplifier.

System Installation

There will most likely be a number of cables involved in the installation of the home entertainment system. Pre-planning is essential in order to maximize system efficiency. We recommend the following as a means of reaching that goal.

- ◆ Make a diagram of the proposed system by laying out the relative location of each component in the system. Then lay out the proposed cable runs between them. Number each cable and record its length on the diagram for future use.
- ◆ Cable runs are critical in that they must be kept away from the sources of power radiation (amplifiers, power cords, heaters, appliances, etc.). For safety reasons, they should also be kept out of traffic areas.
- ◆ The process of optimizing the system will include the type of cable, the length of the run, and the obstructions it must deal with along its run. When possible, use a separate dedicated AC power line for the audio video system that is not shared by any other household component. **THIS IS VERY IMPORTANT!**

Making the Connections

- ◆ Before doing anything, insure that the power switch on the amplifier's front panel is in the 'off' position.
- ◆ Again, it is recommended that you locate a separate dedicated AC power outlet for the audio video system that is **not** shared by any other household component.
- ◆ Locate the AC power cord provided with the amplifier and plug it into the power input receptacle in the rear panel. **Do not connect it to the AC power source yet!**
- ◆ Connect the audio cable from your preamplifier's output to the corresponding input connector on the amplifier.
- ◆ Connect the wire from your speakers to the appropriate outputs on the amplifier. It is absolutely essential that you observe correct polarity in all connections.
- ◆ Double check all connections
- ◆ Connect a playback unit (CD, DVD, Tuner, etc.) to the preamplifier.
- ◆ **Before turning anything on, insure the preamplifier is set to a low volume level.** Turn on the preamplifier, turn the volume on preamplifier to a minimum level and then turn on the amplifier (**in that order**). Set the source on the preamplifier to the playback unit you've just connected. Turn the volume up slowly and listen for music from the appropriate channels. If this is not the case, double check the installation.

Note: When turning equipment 'off' the amplifier should always be turned off **first** then the preamplifier.

Care and Cleaning

Under normal use, the amplifier will not require any special care. Clean the exterior of the unit by wiping it with a damp cloth to remove any dirt or dust that accumulates. Do not let any liquid enter the amplifier through its' vents or top cover. It is recommended that the connectors on the rear panel be cleaned annually using isopropyl alcohol.

Returning Equipment

No equipment may be returned to B&K Components, Ltd. without a RETURN AUTHORIZATION NUMBER (RA) issued by B&K. An RA number may be requested by calling B&K at the numbers below. Please have the following information available when an RA is requested.

1. Name, address and phone number
2. The model and serial number of the equipment being returned.
3. A description of the problem being experienced.
4. The sales receipt from an authorized B&K dealer.

Your call will be referred to a Technical Service Representative who will work with you to resolve the problem. If it is determined that the unit must be returned for repair, an RA number will be issued.

B&K Components, Ltd.

2100 Old Union Rd. Buffalo, NY 14227-2725

Phone: 1-800-543-5252 or (716) 656-0023 Fax: (716) 656-1291

E-mail: info@bkcomp.com Web: <http://www.bkcomp.com>

Power Rating: 8 ohms 4 ohms	30 Watts 55 Watts
Number of Channels	12
Current (peak to peak)	16 Amps
Dynamic Headroom	1.0dB
Total Harmonic Distortion (THD)	0.09% at 1kHz
Frequency Response	5 Hz - 45 kHz
S/N (A-Weighted)	95 dB
Input sensitivity	0.55 Volts
Input Impedance	33.2 k ohms
Dampening Factor	80
Slew Rate	14 V / μ sec
Voltage Gain	28
Line Voltage	120/220/240 VAC switchable
Level Controls	Dual
Control Input/Output	Yes
Minimum Control Input Voltage	5 VDC @ 1 mA
Output Connector Max Wire Gauge	12 gauge
Dimensions (Cut Out Dimensions) Height Width Length	4" (4.125") 17" (17.125") 15.25" (15.38")
Weight (in lbs.)	22
Power Consumption	360 Watts
Replacement Fuse (Main AC)	8A / 250 Volt Slow Blow

*Specifications and design are subject to change at any time without notice.