

# GFA-6002 & GFA-6006

Custom Install Power Amplifiers



**ADCOM**

# WELCOME

Dear Fellow ADCOM Product Owner,

Welcome to the ADCOM family! For more than twenty years, ADCOM products have delivered excellent performance and value for customers around the world. Our products are designed by our experienced and demanding engineering team, built to the highest standards in our factory, and sold and serviced through dealers, custom installers, and other retailers whose primary goal is your complete satisfaction.

We know you are anxious to hear your new power amplifier in action, but please take a few minutes to read this owner's manual before connecting the power amplifier to your system. It is particularly important that you connect your power amplifier to your preamplifier while they are unplugged and your other equipment is turned off. This will protect your equipment from potential short circuits that may occur during installation. In addition, it is important that you allow for adequate ventilation around your power amplifier and other equipment, since excessive heat buildup can shorten the life of any electronic product, including the power amplifier. Once you have correctly connected your new power amplifier to your other components, you should be able to enjoy many trouble-free years of performance.

We conduct a thorough quality and performance test on each and every power amplifier we build in our factory prior to shipment. In the rare case of a defect that may occur after shipment, we stand behind our power amplifier with a five-year parts and labor warranty. To register for this warranty, please complete and mail the enclosed warranty card back to ADCOM. Also, please keep a copy of your sales receipt with the owner's manual so you may provide proof of eligibility for the warranty should the need arise.

We know you will be very happy with the audio performance of your new power amplifier. We hope you will also consider other ADCOM products, such as our line of multichannel amplifiers, preamplifiers and digital source components. In addition, we design and manufacture complementary products such as surge suppressors and speaker selectors. Please visit our web site at [www.adcom.com](http://www.adcom.com) to learn more about our complete line of stereo, home theater, and distributed audio/video products.

On behalf of all of us at ADCOM, I want to thank you for selecting our product for your home or business entertainment system.

Sincerely,



Douglas Klein  
President

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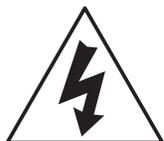
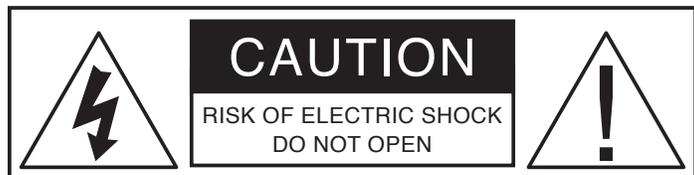
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## THE FOLLOWING PRECAUTIONS AND SAFETY INSTRUCTIONS ARE REQUIREMENTS OF UL AND CSA SAFETY REGULATIONS

Warning: To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.



The graphic symbol of a lightning flash with an arrow point within a triangle signifies that there is dangerous voltage within the unit and it poses a hazard to anyone removing the cover to gain access to the interior of the unit. Only qualified service personnel should make any such attempt.



The graphic symbol of an exclamation point within an equilateral triangle warns a user of the device that it is necessary to refer to the instruction manual and its warnings for proper operation of the unit.

Do not place this unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious injury to a child or adult, and serious damage to the unit. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer or sold with the unit. Any mounting of the device should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

Read all the safety and operating instructions before connecting or using this unit.

Retain this notice and the owner's manual for future reference.

All warnings on the unit and in its operating instructions should be adhered to.

All operating and use instructions should be followed.

Do not use this unit near water. For example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool.

The unit should be installed so that its location or position does not interfere with its proper ventilation. For example, it should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or placed in a built-in installation, such as bookcase or cabinet, that may impede the flow of air through its ventilation openings.

The unit should be situated away from heat sources such as radiators, heat registers, stoves, or other devices (including amplifiers) that produce heat.

The unit should be connected to a power supply outlet only of the voltage and frequency marked on its rear panel.

The power supply cord should be routed so that it is not likely to be walked on or pinched, especially near the plug, convenience receptacles, or where the cord exits from the unit.

Clean unit only as recommended in its instruction manual.

The power supply cord of the unit should be unplugged from the wall outlet when it is to be unused for a long period of time.

Care should be taken so that objects do not fall, and liquids are not spilled, into the enclosure through any openings.

This unit should be serviced by qualified service personnel when:

- A. The power cord or the plug has been damaged; or
- B. Objects have fallen, or liquid has been spilled, into the unit; or
- C. The unit has been exposed to rain, or liquids of any kind; or
- D. The unit does not appear to operate normally, or exhibits a marked change in performance; or
- E. The device has been dropped, or the enclosure damaged.

**DO NOT ATTEMPT SERVICING OF THIS UNIT YOURSELF.  
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

### ATTENTION

POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UNE PRISE CE COURANT OU UNE AUTRE SORTIE CE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

### 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.

### CAUTION POWER LINES

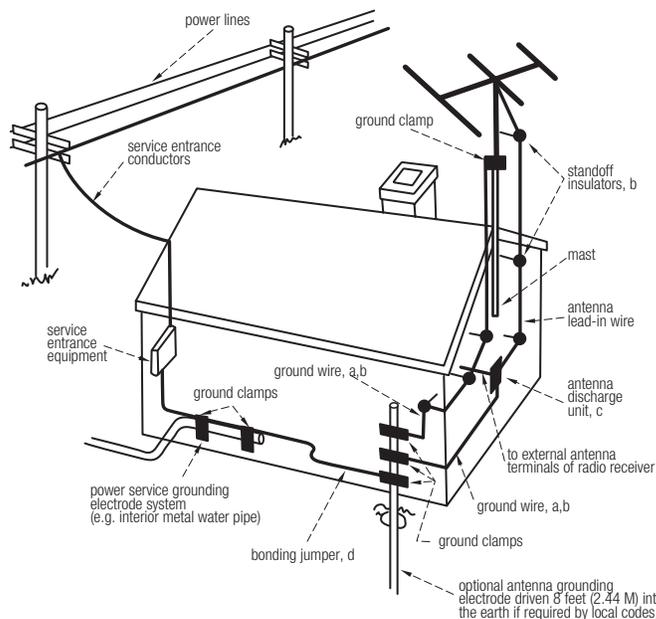
Any outdoor antenna must be located away from all power lines.

#### OUTDOOR ANTENNA GROUNDING

If an outside antenna is connected to your tuner or tuner/preamplifier, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 701984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

- a. Use No.10 AWG (5.3 mm<sup>2</sup>) copper, No.8 AWG (8.4 mm<sup>2</sup>) aluminum, No.17 AWG (1.0 mm<sup>2</sup>) copper clad steel or bronze wire, or larger, as a ground wire.
- b. Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 46 feet (1.221.83 m) apart.
- c. Mount antenna discharge unit as close as possible to where lead-in enters house.
- d. Use jumper wire not smaller than No.6 AWG (13.3 mm<sup>2</sup>) copper, or the equivalent, when a separate antenna grounding electrode is used. See NEC Section 810-21 (j).

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE INSTRUCTIONS CONTAINED IN ARTICLE 810. RADIO AND TELEVISION EQUIPMENT.



#### NOTE TO CATV SYSTEM INSTALLER

This reminder is provided to call the CATV system installer's attention to Article 82022 of the National Electrical Code that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

# Unpacking the Amplifier

Before your new ADCOM amplifier left our factory, it was carefully inspected for physical imperfections and tested for all electrical parameters as a routine part of ADCOM's systematic quality control. This, along with full operational and mechanical testing, should ensure a product flawless in both appearance and performance. After you have unpacked the GFA-6002/06, inspect it for physical damage. Save the shipping carton and all packing material as they are intended to reduce the possibility of transportation damage should the amplifier ever need to be shipped again. In the unlikely event damage has occurred, notify your dealer immediately and request the name of the carrier so a written claim to cover shipping damages can be initiated. The right to a claim against a public carrier can be forfeited if the carrier is not notified promptly in writing and if the shipping carton and packing materials are not available for inspection by the carrier. Save all packing materials until the claim has been settled.

## Safety Instructions

### APPLICABLE FOR USA, CANADA OR WHERE APPROVED FOR THE USAGE

**CAUTION:** TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT. INSERT FULLY.

**ATTENTION:** POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

### CLASS 1 LASER PRODUCT Complies with DHHS 21 CFR 1040.10 and 1040.11

**DANGER:** INVISIBLE LASER RADIATION WHEN YOU OPEN THE TOP COVER. AVOID DIRECT EXPOSURE TO LASER BEAM.

**CAUTION:** USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED IN THIS MANUAL MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

**DANGER:** Visible and invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.

**WARNING:** There are no user serviceable parts inside. Refer all servicing to qualified service personnel.

**WARNING:** To reduce the risk of fire or electric shock, do not expose the

unit to moisture or water. Do not allow foreign objects to get into the enclosure. If the unit is exposed to moisture, or a foreign object gets into the enclosure, immediately disconnect the power cord from the wall. Take the unit to a qualified service person for inspection and necessary repairs. Read all the instructions before connecting or operating the component. Keep this manual so you can refer to these safety instructions. Heed all warnings and safety information in these instructions and on the product itself. Follow all operating instructions. Clean the enclosure only with a dry cloth or a vacuum cleaner. You must allow 10 cm or 4 inches of unobstructed clearance around the unit. Do not place the unit on a bed, sofa, rug, or similar surface that could block the ventilation openings. If the unit is placed in a bookcase or cabinet, there must be ventilation of the cabinet to allow proper cooling. Keep the component away from radiators, heat registers, stoves, or any other appliance that produces heat.

The unit must be connected to a power supply only of the type and voltage specified on the rear panel. Connect the component to the power outlet only with the supplied power supply cable or an exact equivalent. Do not modify the supplied cable. Do not defeat grounding and/or polarization provisions. The cable should be connected to a 3-pin polarized wall outlet, matching the wide blade of the plug to the wide slot of the receptacle. Do not use extension cords. Do not route the power cord where it will be crushed, pinched, bent, exposed to heat, or damaged in any way. Pay particular attention to the power cord at the plug and where it exits the back of the unit. The power cord should be unplugged from the wall outlet if the unit is to be left unused for a long period of time. Immediately stop using the component and have it inspected and/or serviced by a qualified service agency if:

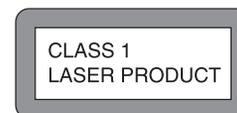
- the power supply cord or plug has been damaged;
- objects have fallen or liquid has been spilled into the unit;
- the unit has been exposed to rain;

- the unit shows signs of improper operation; or
- the unit has been dropped or damaged in any way.

**FCC Information:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.(TV, radio, etc.)
- Increase the separation between the equipment and receiver
- Connect the equipment to an outlet on circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for additional help.

**Caution:** This device complies with part 15 of the FCC Rules operation is subject to the following to conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



## Description of Unit

Congratulations on your decision to purchase the GFA-6002 or GFA-6006 custom installation power amplifier. The GFA-6002 and GFA-6006 have been designed to be musically accurate in a configuration specifically designed to integrate with any home audio pre-amplifier. You have made a wise choice that will reward you for years to come with exceptionally accurate and musical sound reproduction. To realize the full potential of your new amplifier, and before making any connections to it, please read these operating and installation instructions thoroughly.

## GFA-6002 Features

- Precision-matched devices used throughout the signal path
- 27,000  $\mu\text{F}$  of power supply-filter capacitance to optimize transient response
- Bridgeable operation
- Audio IN and OUT for each channel for flexible system configuration
- Independent input level controls for each channel
- Independent power supplies for each channel
- Fewer gain stages improve signal reproduction accuracy
- Custom toroidal power transformer provides better regulation and greater peak current capability
- Independent thermal-overload and distortion LEDs for all channels
- High quality, gold-plated 5-way binding posts
- High quality, gold-plated RCA jacks
- Large independent internal heatsinks for greater cooling capability of output devices
- Two convenient modes of power ON/OFF triggering; 3-30V AC/DC triggering & audio signal sensing
- Heavy gauge, anodized aluminum front panel
- Powder-coated, baked chassis and top cover for greater durability
- Cooling vents for greater efficiency and cooler operation while driving low impedance loads
- Ground lift to eliminate ground loops
- Detachable AC cord for easier installation

## GFA-6006 Features

- Precision-matched devices used throughout the signal path
- 60,000  $\mu\text{F}$  of power supply-filter capacitance to optimize transient response
- Bridgeable operation; 6/5/4/3 channels
- Audio IN and OUT for each channel for flexible system configuration
- Independent input level controls for each channel
- Independent power supplies for each channel
- Fewer gain stages improve signal reproduction accuracy
- Custom toroidal power transformer provides better regulation and greater peak current capability
- Independent thermal-overload and distortion LEDs for all channels
- High quality, gold-plated 5-way binding posts
- High quality, gold-plated RCA jacks
- Large independent internal heatsinks for greater cooling capability of output devices
- Two convenient modes of power ON/OFF triggering; 3-30V AC/DC triggering & audio signal sensing
- Heavy gauge, anodized aluminum front panel
- Powder-coated, baked chassis and top cover for greater durability
- Cooling vents for greater efficiency and cooler operation while driving low impedance loads
- Ground lift to eliminate ground loops
- Detachable AC cord for easier installation



## Installing the GFA-6002 and GFA-6006

During normal home operation the internal heatsinks of the GFA-6002/6006 may become warm. However, there are instances during high-level playback into low impedances when the heatsinks will become much warmer than usual. To ensure the amplifier's long-term, trouble-free operation it is necessary to provide adequate ventilation for the heatsinks. Therefore, the GFA-6002/6006 should be kept away from external sources of heat such as radiators and hot-air ducts. The GFA-6002/6006 should never be placed with other heat-producing components in a cabinet or enclosure lacking free air flow. The top and bottom panel of the amplifier's chassis have been provided with vents to allow the necessary cooling of the internal components. It is imperative that these vents are not obstructed in any way.

We recommend that you do not stack other components on top of the GFA-6002/6006. This is particularly important if your system includes low-impedance loudspeakers which are difficult to drive, or if you will consistently demand high volume levels from the amplifier and speaker system. Not only will heat generated by the amplifier affect the performance of equipment stacked on top of the GFA-6002/6006, but the free flow of air through the ventilating slots in the amplifier may be partially obstructed.

If you observe these recommendations, the GFA-6002/6006 will perform reliably in any reasonable environment. You should also pay attention to such normal considerations as protection from excessive dust and moisture. Occasional vacuuming of accumulated dust on the chassis, panels and around the ventilating slots should be all that is required.

The optimal performance of your new

GFA-6002/6006 will ultimately depend on the care with which you make the connections between the amplifier, pre-amplifier, surround sound decoder and the loudspeakers. All input and output signal connections should be made only with high quality, low-loss, low capacitance cables following the recommendations in the Inputs and Outputs section of CONNECTING THE GFA-6002/6006.

## Connecting the GFA-6002 and GFA-6006

When connecting the amplifier to the loudspeaker, it is vital to maintain proper polarity (positive to positive, negative to negative). On the GFA-6002/6006, the positive terminal is color coded RED and labeled "+," and the negative is color coded BLACK and labeled "-". The positive terminal on the speaker will be color coded RED, or will be labeled "+," "pos," "positive," "8 ohms" or "4 ohms." The negative terminal on the speaker will be color coded BLACK, or will be labeled "-", "neg," "negative," "C," "Common," "G," or "ground."

We recommend that your speaker cables be terminated with "U" type spade connectors. These will give the most contact area insuring long-term reliability. The spade connector should have a maximum width of 0.57 inches and an opening width of no less than 0.25".

To properly connect the speaker cable to the binding posts, turn the insulated head of the binding post clockwise until the wire or connector is firmly secured. Finger pressure is sufficient and you should not use pliers or other tools which could damage or over-tighten the binding-post assembly. The binding posts have been designed in such a way that finger pressure is all that is required to cause a "pinching" action among the different metal surfaces to ensure proper connection.

It is very important to use the correct size of wire in order to avoid unnecessary loss of amplifier power in the cable, reduction of amplifier damping factor and other undesirable conditions. Sound audio engineering practice suggests the use of at least AWG16, stranded, copper cable. Recommended capacitance of the speaker wire should not exceed 50pF per foot. This insures high frequencies will not be rolled off.

All loudspeakers having a nominal impedance down to 4 ohms can be connected to and driven by the GFA-6002/6006. The amplifier can drive these low-impedance speakers at more than adequate power levels with no difficulty. It should be noted that many loudspeaker systems which are nominally rated at 4 ohms drop in impedance, in some parts of their frequency range, to as low as 2 ohms (and sometimes less). You will not experience difficulties even with these very low impedance loads unless you demand excessively high volume levels from your system.

We do not recommend that you run multiple sets of speakers to each speaker output on the GFA-6002/6006. Instead, we recommend that you use a multiple speaker selector such as the ADCOM GFS-300 or GFS-600. A speaker selector enables you to maintain good sonic integrity while giving you the flexibility to add speakers throughout your house and maintain proper impedance levels to help prevent over heating of the amplifier.

Finally, we suggest that you follow this chart for speaker wire lengths and gauges. If longer runs are needed, it is best to consult with your ADCOM Dealer to maximize the performance of your system with your exact conditions.

**up to 24 feet – AWG16**  
**up to 36 feet – AWG14**  
**up to 58 feet – AWG12**

## Description of Unit: Front Panel

### [1] On/Standby/Vacation

This LED monitors the status of operation of the amplifier. The LED will glow amber whenever the rear panel Power/Vacation switch is in the OFF (powered down with only minimal circuitry energized) or AUTO position (amplifier is in the standby mode). When powered up (from AUTO) using the 3-30V AC/DC triggering or signal sensing feature, the LED will change to red, changing back to amber when there is no longer signal present or the 3-30V AC/DC triggering is not energized. The LED will glow red whenever the rear panel power switch is in the ON and the GFA-6006/6002 is energized.

The Power LED indicates that there is AC voltage being fed to the amplifier, but it does not signify that the entire amplifier's circuits are in operation.

this would indicate that the thermostat within the transformer has opened.

Once the temperature within the transformer decreases to a normal level, the thermostat will reset itself automatically and normal operation will resume. If you are to avoid continually tripping the thermostat in the transformer, you must reduce the sound level demands, correct the load impedance of the loudspeakers, or both.

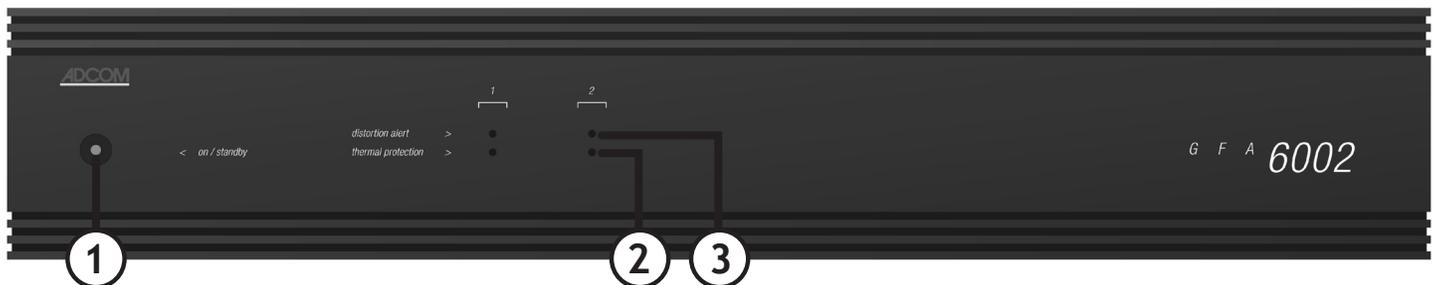
### [2] Thermal Protection

The GFA-6002/6006 are provided with a thermal protection circuit which will shut down the individual amplifiers if its heatsink temperature reaches 85°C. The Thermal Protection LEDs will light whenever the thermal protection circuit in its respective channel has been triggered and the amplifier is inoperative. The thermal protection circuitry will typically be triggered by very high power demands into impedances much lower than the amplifier is capable of driving

been over-driven or that the load the loudspeakers are presenting to the amplifier is unreasonably low. If you wish to prevent recurrent activation of the thermal protection circuitry, you must reduce the volume-level demands or correct the load impedance condition which may be causing activation of this circuitry.

### [3] Distortion Alert

The Distortion Alert circuit is a unique ADCOM distortion detection system which reads all forms of non-linear distortion such as THD, IM, slew-induced, "clipping," etc. The Distortion Alert LEDs will light when distortion reaches approximately 1% regardless of impedance, voltage/current phase angle or the reactance of the loudspeakers which the amplifier is driving. Sometimes, when the amplifier is in use, the LEDs may occasionally flicker during high volume listening, particularly if you are driving

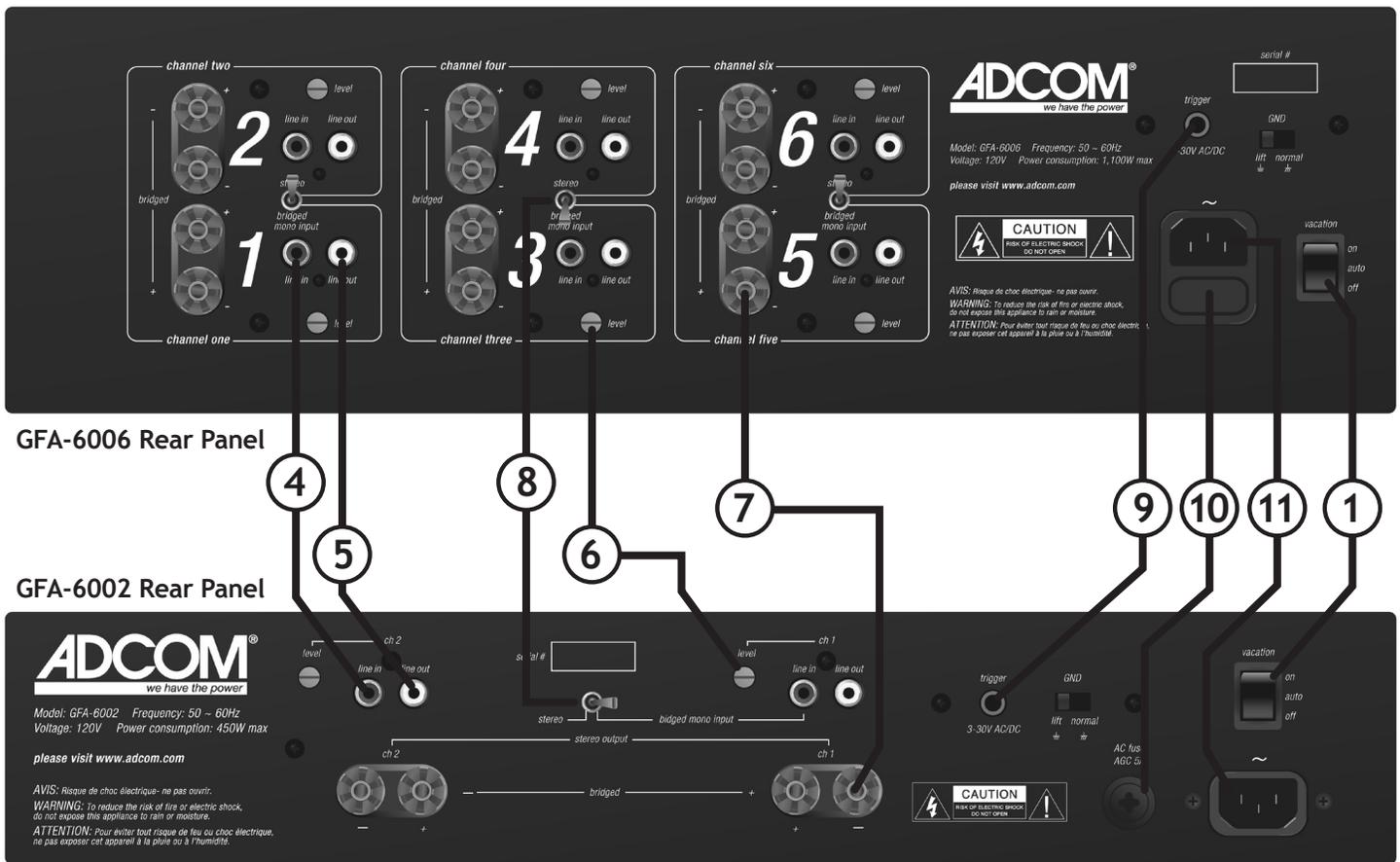


If, for example, one of the Thermal Protection LEDs glows, that amplifier channel will not produce sound even though the Power LED may still glow. Additionally, the internal power transformer is provided with a thermostat which will interrupt power into the transformer if its temperature exceeds 125°C. This high temperature will seldom, if ever, be encountered unless the amplifier is subjected to abnormal conditions, such as operation into loads of less than 3 ohms at very high listening levels. If the AC Fuse has not failed, the Power LED is out, and the Thermal Protection LED does not glow,

at those levels. If any amplifier channel's output through the loudspeaker(s) ceases abruptly and its Thermal Protection LED glows, you will know that its heatsink temperature has become unacceptably high and the circuitry is protecting the amplification devices. Please note that the Power LED will remain on and the amplifier will still be energized. Once the temperature of the heatsink(s) drops to a safe operating level, that amplifier will automatically resume operation.

Activation of the Thermal Protection circuitry in any of the channels of amplification in the GFA-6002/6006 is an indication that the amplifier has

low impedances. This flickering is no cause for concern. The LEDs are simply warning you that the amplifier is approaching its maximum power output into the particular loudspeakers you are using. If, however, the Distortion Alert LEDs glow brightly or are illuminated most of the time during playback, you are over driving the amplifier and should turn down your volume control to reduce the listening level. Otherwise, it may cause the Thermal Protection to be activated or, in extreme cases, damage your loudspeakers.



GFA-6006 Rear Panel

GFA-6002 Rear Panel

## Description of Unit: Rear Panel

### [4] Inputs & [5] Outputs

The audio inputs and outputs for the GFA-6002 and GFA-6006 are through high-quality, gold-plated RCA jacks to minimize high-frequency losses, noise, etc. They will accept standard RCA-type plugs, one for each of the channels. To insure that the performance designed into the amplifier is preserved, you should use the highest quality audio cables possible.

The GFA-6002 and 6006 feature inputs and outputs for each channel to allow “daisy-chaining” of channels or additional amplifiers in an installation. To direct signal from one channel to another, connect an appropriate cable (RCA to RCA, male to male) from the output of one channel to the input of the desired channel.

In bridged operation (see Bridged Operation) only the Bridged Mono Input is to be used. On the GFA-6006, bridged mono inputs are channels 1, 3, and 5. On the GFA-6002, bridged mono input is channel 1. For “daisy-chaining” the corresponding outputs for these channels are active.

### [6] Input Level Adjustment

Each channel has an input level adjustment. The purpose of this adjustment is to balance levels in installations where physical circumstances may create a large difference in volume. Turn the level control to the fully clockwise position for maximum sensitivity; turning the control counter clockwise reduces sensitivity. Use a small blade screwdriver to adjust. In balanced operation only the input adjustments for channels 1, 3, and 5 (GFA-6006) or channel 1 (GFA-6002)

are effective (see BRIDGED OPERATION for more details).

### [7] Amplifier Outputs

The GFA-6006/6002’s connections to the loudspeakers are made through high-grade, 5-way, binding post terminals. There are two terminals for each speaker, which are colored RED for the positive (+) output and BLACK for the negative (-) output. The binding posts will accept a variety of connector types; the most secure and prevalent of these is the “U”-type spade connectors (at least 0.25” wide and maximum width of 0.57”). The terminal will also accept bare wire (up to AWG10) and “banana” type plugs (single or dual).

In connecting the amplifier to the loudspeaker, it is vital to maintain proper polarity (positive to positive, negative to negative) in stereo operation. On the GFA-6006/6002, the positive terminal is color coded RED

and labeled "+," and the negative is color coded BLACK and labeled "-". The positive terminal on the speaker will be color coded RED, or will be labeled "+," "pos," "positive," "8 ohms," or "4 ohms." The negative terminal on the speaker will be color coded BLACK, or will be labeled "-", "neg," negative," "C," "Common," "G," or "ground."

Note: Bridged operation requires different loudspeaker connections. For details see the section Bridged Operation.

## [8] Bridged Operation

In bridged operation the output of two stereo amplifier channels are "combined" to drive one monophonic speaker. In the bridged mode the GFA-6002 and 6006 wattage capability increases to 175 Watts at 8 ohms per bridged channel. The GFA-6006 allows for any of three adjoining "pairs" of amplifiers to be bridged. For input directions see the section Audio Signal Inputs and Outputs. To engage bridged operation for a pair of amplifier channels, switch the corresponding toggle switch to the bridged position. In bridged operation the proper loudspeaker connection is to the POSITIVE (+) terminals of each of the pair of bridged channels. Do Not connect the Negative (-) speaker terminals under any circumstances in the bridged mode.

## [9] 3-30V AC/DC Triggering

The GFA-6002 and GFA-6006 are very high power amplifiers and as such must be directly connected to the wall outlet or an appropriate surge protector or AC line conditioner. It must never be connected to the "switched" outlets on the rear panel of a pre-amplifier. Usually, this would mean that when you turn on/off your pre-amplifier you would have to turn on/off your power amplifier separately. We have, however, provided the ability to control the OFF/ON function (actually "powering up" from standby) of the amplifier by a 12-Volt DC output jack on the rear of certain ADCOM pre-amplifiers and tuner pre-amplifiers. When using this feature the rear panel Power Switch must be left in the in "auto" position. To connect, you will need a mono-mini phone plug to a mono-mini phone plug cable of appropriate length (not included) to reach from the rear panel jack of the amplifier to the rear panel of the pre-amplifier. Contact your dealer for information on using this feature with ADCOM and other brand pre-amplifiers. Although 12V DC is optimal, the circuit will operate from approximately 3 to 30V AC or DC, not to exceed 250mA. The center conductor (tip) is positive. When using the 3-30V AC/DC triggering method the unit will return to standby approximately two

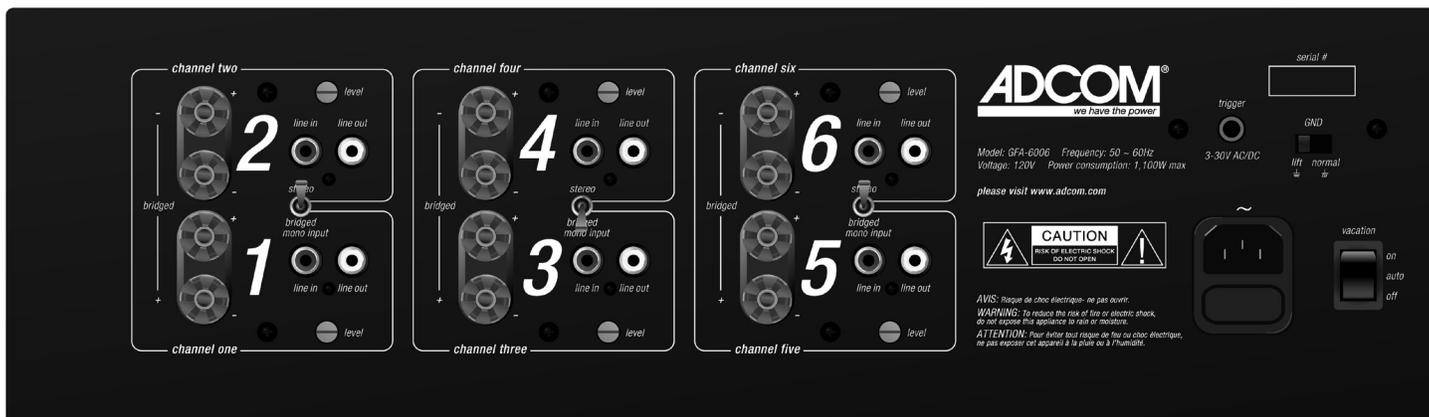
and one half minutes after the signal is no longer present.

## Audio Signal Sensing

Alternately, the sensing of audio signal can turn on the 6002/6006 amplifier. Any time the amplifier detects the presence of an incoming audio signal it will "power up" from standby. Please note that the speed of "turn on" by AC/DC triggering and audio sensing is different. AC/DC triggering is slightly faster. When using the signal sensing method, the unit will return to standby approximately two and one half minutes after the signal is no longer present. An incoming signal level of 5-7 mV is required to trigger this sensing method.

## [10] AC Fuse

The AC Fuse protects the electronic circuits of the GFA-6002/6006. This fuse, normally, will fail only if there is an overload within the GFA-6002/6006. It may, however, fail if the amplifier attempts to deliver very high power into very low-impedance loudspeakers. In either case, BE SURE TO REPLACE THE AC FUSE ONLY WITH AN EXACT REPLACEMENT FUSE.



The proper fuse values are:

**GFA-6002 for 120 volt operation**

Fuse Rating: 5 Amp 250 Volt

Buss®: AGC-5/250V

Littlefuse®:(3AG) 312005/250V

**GFA-6002 for 230 volt operation**

Fuse Rating: 3 Amp 250 Volt

Buss®: AGC-3/250V

Littlefuse®:(3AG) 312003/250V

**GFA-6006 for 120 volt operation**

Fuse Rating: 12 Amp 250 Volt

Buss®: AGC-12/250V

Littlefuse®:(3AG) 3120012/250V

**GFA-6006 for 230 volt operation**

Fuse Rating: 6 Amp 250 Volt

Buss®: AGC-6/250V

Littlefuse®:(3AG) 312006/250V

Before attempting to replace a failed fuse, be certain to unplug the AC Power Cord from the AC wall outlet to prevent possible electrical shock. Replace the AC fuse only with one identical in type and rating as printed on the rear panel. **DO NOT USE ANY SUBSTITUTE FUSES WITH DIFFERENT RATINGS OR VALUES.** Failure to observe this precaution may cause serious damage to the amplifier circuits, may create a hazard fire, and may void the warranty.

If the Power LED does not glow, it may be an indication that the AC fuse has blown. If you are using the 12V DC Triggering feature it may be

possible that there is a problem with that connection. To determine if the problem is caused by a malfunction in the 12V DC system, remove the small plug inserted into the 12V DC Triggering jack. Press the front panel power switch to turn off the amp, and immediately re-press the power switch. If the problem is caused by the 12V DC triggering circuit the amp will turn on and the LED will glow. **DO NOT** attempt repair of the 12V DC system. If you are not sure or the amplifier displays other symptoms, please consult the **RESOLVING PROBLEMS** section.

## Fuse Replacement

Since the fuse has a ceramic body and you cannot visually examine the fuse element, it is suggested that you replace it with an identical substitute or bring the fuse to your ADCOM dealer so they may check its integrity.

## [11] AC Power Cord

The AC cord provides power to operate all the GFA-6002/6006's circuits. Its plug can be connected to a standard wall outlet provided the outlet supplies a voltage compatible with the power requirements printed on the rear panel of the GFA-6002/6006.



SYMPTOM	POSSIBLE REASON	POSSIBLE SOLUTION
Power LED does not glow. No sound	AC Power Cord(s) not plugged in. AC Fuse(s) failed. Transformer thermal protection engaged. 12V DC triggering malfunctioning.	Plug in AC Power Cord(s). Replace AC Fuse(s). Wait until unit cools down. It will reset. Reset power switch manually. Check connection of 12V DC trigger at source.
Power LED glows, but no sound	Preamp or source unit is not on. Connections in rear of amp are loose.	Make sure whole system is on. Verify all connections on rear of amp.
One channel not producing sound	INPUT(s) or OUTPUT(s) connector disconnected or loose. Speaker disconnected. Internal protection engaged.	Verify both connections on that channel.  Verify connection at speaker. Bring to Dealer or Service Center.
Hum from all speakers at any volume	Ground loop (difference in ground voltages between components).	If Cable TV is present (see Note 1). If Cable TV is not present (see Note 2).
Hum from all speakers (hum goes up or down with volume)	Problem with source unit (CD, tape, etc.), or RCA cable connecting that source unit to the preamp.	Try different source (tuner, tape, etc.) and/or different RCA cable.
Hum from the amplifier itself	Some major appliance, dimmer, halogen or fluorescent light is creating interference.	Make sure all appliances, dimmers and suspect lights are off.

## Troubleshooting

Use the troubleshooting notes above to solve common situations that don't require professional attention. If the steps stated in possible solution do not resolve your problem, then please contact your ADCOM dealer or call the ADCOM customer service department. Any problems not covered here should be brought to the attention of your ADCOM dealer or ADCOM customer service department.

**A special note on "hum:"** When there is a low-volume "hum" audible throughout your speakers, even with the main volume turned all the way down, you have a common phenomenon known as a "ground loop." A ground loop is basically a difference in ground voltages between two or more components which are connected electrically and which creates multiple current paths where there must only be one. This difference in potentials creates a 60Hz low-level sound (approximately a low A), that seems to "hum."

It can be caused by adding new components to your system, but that does not imply there is anything electrically wrong with any new component. With the advent of audio/video and home theater systems, the problem has become commonplace. Generally, the cause is the Cable-TV incoming signal line. This new incoming line may add an additional ground at a different potential to the AC line ground of your other equipment (refer to note 1 and 2, to troubleshoot a hum problem).

**Note 1:** Cable TV systems can sometimes contribute to ground loop problems which cause "hum." To determine if your cable system is the contributing factor, disconnect

the Cable-TV incoming signal line (round, 75Ω) at the wall, or the first component the cable is connected to (i.e. the cable box, or VCR). If the hum is no longer present, you must insert a "75Ω ground loop isolator" before reconnecting the line. You should check with your ADCOM dealer to obtain one. If the "75Ω ground loop isolator" works only partially or not at all, then please read note 2 to complete the troubleshooting procedure.

**Note 2:** Make sure that the power amplifier is at least 6" from processor or other equipment using microprocessors. Usually putting another component between them is sufficient to minimize the hum. If this does not reduce the hum, turn the system off and disconnect all Inputs from the amplifier. If the hum still persists, then your dealer or service center must examine the unit/system. If the hum disappears, try another set of RCA cables. Connect one RCA cable at a time to see if one specific cable is responsible. If any or all cables cause the hum to appear, then the unit should be evaluated for proper operation by your dealer or authorized service center. Please see our website or call us for a list of authorized service centers in your area.

## Servicing

ADCOM has a technical service department to answer questions pertinent to the installation and operation of your unit. In the event of difficulty, please contact us for prompt advice. If your problem cannot be resolved through our combined efforts, we may refer you to an authorized repair agency, or authorize return of the unit to our factory. To aid us in directing you to a convenient service center, it would

be helpful if you indicate which major city is accessible to your home.

**Please address mail inquires to:**  
**ADCOM Service**  
**8541 East Anderson Drive**  
**Scottsdale, Arizona 85255 USA**

**Phone, Fax or Email inquires to:**  
**Voice: (480) 607-2277 or Fax: (480) 348-9876**  
**Monday through Friday, 8:00 AM to 4:00 PM MST**  
**Email: [service@adcom.com](mailto:service@adcom.com)**

For fax inquires, please include a return fax number for the reply. When calling or writing about your ADCOM product, be sure to note and refer to its serial number as well as the date of purchase and the dealer from whom it was purchased. In any communications to us, please include a daytime phone number where we may reach you. In the event the unit must be returned to our factory for service, you will be instructed on the proper procedure when you call or write for a return authorization. **Under no circumstances should your unit be shipped to our factory without prior authorization, or packed in other than its original carton and fillers.**

If the original shipping carton and its fillers have been lost, discarded, or damaged, a duplicate carton may be obtained from our service department for a nominal charge.

Always ship prepaid via United Parcel Service (UPS) or other approved carrier. Do not ship via parcel post, since the packing was not designed to withstand rough parcel post handling. Improper shipment of the product will void your warranty coverage.

## Warranty

ADCOM, a division of Klein Technology Group, LLC, makes the following limited warranties. These limited warranties extend to the original purchaser or any person receiving this product as a gift from the original purchaser and to no other purchaser or transferee. **There is no warranty provided by ADCOM for products purchased from unauthorized outlets or dealers or from previous owners.**

### Limited Five Year Warranty (Home, Non-Commercial Use Only)

ADCOM warrants this product against defects in materials or workmanship for a period of five (5) years after the date of original retail purchase from an ADCOM authorized dealer. During this period, ADCOM will repair or replace a defective product or part, at our option, with a new or refurbished product or part without charge to you, as long as you follow the procedures listed below.

### Limited Ninety (90) Day Warranty (Commercial Use Only)

ADCOM warrants this product against defects in materials or workmanship for a period of ninety (90) days after the date of original purchase from an ADCOM authorized dealer. During this period, ADCOM will repair or replace a defective product or part, at our option, with a new or refurbished product or part without charge to you, as long as you follow the procedures listed below.

All implied warranties, including implied warranties of merchantability and fitness for a particular purpose are limited in duration to the duration of the warranty period.

This warranty excludes all incidental and consequential damages, unless contravened by state law. This warranty gives you specific rights and you may have other rights which vary from state to state.

No person, agent, distributor, dealer, or company is authorized to change, modify or extend the terms of these warranties in any manner whatsoever.

## Your Responsibilities

The above warranties are subject to the following conditions:

- (1) You must retain and present your dated invoice or bill of sale to provide proof of original purchase from an ADCOM Authorized Dealer and coverage under the warranty period.
- (2) You must notify us within ten (10) days after you discover a defective product or part.
- (3) All warranty servicing of this product must be done by ADCOM or an authorized ADCOM Service Center.
- (4) This warranty is only valid if this product has been purchased and used in the United States. Warranty coverage for products purchased and used outside of the United States is provided by local ADCOM authorized distributors.
- (5) Charges by third parties for set-up, installation, adjustments, shipment, insurance, and other charges are not covered by this warranty.
- (6) This warranty extends only to defects in material or workmanship as limited above and does not extend to any product or part which has been lost or discarded by you or to damage to products or parts caused by misuse, accident, Acts of God such as lightning or fluctuations in electrical power, improper installation, improper maintenance or use in violation of instructions provided in this Owner's Manual, or to products which have been altered or modified. This warranty does not extend to products which have had the serial number removed, altered, defaced, or rendered illegible.
- (7) Physically damaged products are not covered by this warranty and will be returned as received without repair.

# GFA-6002 Specifications

## Power Rating (To IEC/CEA-490A Requirements)

70 Watts continuous average power into 8 ohms at any frequency between 20Hz and 20kHz with all channels driven at less than 1.0% THD.

100 Watts continuous average power into 4 ohms at any frequency between 20Hz and 20kHz with all channels driven at less than 1.0% THD.

Bridged Power: 175 Watts continuous average power (one channel) into 8 ohms at any frequency between 20Hz and 20kHz with at less than 1.0% THD.

## IM Distortion (SMPTE)

1 watt to 70 watts into 8 ohms. . . . . ≤ 0.05%

## IM Distortion (CCIF, Any Combination from 4kHz to 20kHz)

70 watts into 8 ohms. . . . . ≤ 0.01%

## Frequency Response @ 1 Watt into 8 Ohms

10Hz to 20kHz. . . . . +0, -0.25dB

Power Bandwidth (-3d B). . . . . 5Hz to 130kHz

Dynamic Headroom Into 4 Ohms. . . . . 1.8 dB

## Signal to Noise Ratio, "A" Weighted

70 watts into 8 ohms. . . . . ≥ 100dB

Gain. . . . . 29dB

Input Sensitivity. . . . . variable

Input impedance. . . . . 17k ohms

## Damping Factor

20Hz to 20kHz. . . . . ≥ 400

## Rise Time

5kHz, 90V, peak-to-peak square wave, 20% to 80%. . . . . 2.7μS

## Power Consumption (Continuous, All Channels Driven)

Quiescent. . . . . 30VA

Maximum. . . . . 600VA

# General

Power (available in 230VAC by special order). . . . . 115VAC–50/60Hz

Chassis Dimension. . . . . 3" (76.2mm) x 17" (432mm) x 11.5" (292.1mm)

Maximum Dimensions. . . . . 3.5" (88.9mm) x 17" (432mm) x 12.5" (317.5mm)

Weight. . . . . 18 lbs. (8.2kg)

Weight, Packed. . . . . 21 lbs. (9.5kg)

# GFA-6006 Specifications

## Power Rating (To IEC/CEA-490A Requirements)

70 Watts continuous average power into 8 ohms at any frequency between 20Hz and 20kHz with all channels driven at less than 1.0% THD.

100 Watts continuous average power into 4 ohms at any frequency between 20Hz and 20kHz with all channels driven at less than 1.0% THD.

Bridged Power: 175 Watts continuous average power (one channel) into 8 ohms at any frequency between 20Hz and 20kHz with at less than 1.0% THD.

## IM Distortion (SMPTE)

1 watt to 70 watts into 8 ohms. . . . . ≤ 0.05%

## IM Distortion (CCIF, Any Combination from 4kHz to 20kHz)

70 watts into 8 ohms. . . . . ≤ 0.01%

## Frequency Response @ 1 Watt into 8 Ohms

10Hz to 20kHz. . . . . +0, -0.25dB

Power Bandwidth (-3d B). . . . . 5Hz to 130kHz

Dynamic Headroom Into 4 Ohms. . . . . 1.8 dB

## Signal to Noise Ratio, "A" Weighted

70 watts into 8 ohms. . . . . ≥ 100dB

Gain. . . . . 29dB

Input Sensitivity. . . . . variable

Input impedance. . . . . 17k ohms

## Damping Factor

20Hz to 20kHz. . . . . ≥ 400

## Rise Time

5kHz, 90V, peak-to-peak square wave, 20% to 80%. . . . . 2.7μS

## Power Consumption (Continuous, All Channels Driven)

Quiescent. . . . . 45VA

Maximum. . . . . 1440VA

# General

Power (available in 230VAC by special order). . . . . 115VAC–50/60Hz

Chassis Dimension. . . . . 4.75" (120.7mm) x 17" (432mm) x 14.5" (368.3mm)

Maximum Dimensions. . . . . 5.25" (133.4mm) x 17" (432mm) x 15.5" (393.7mm)

Weight. . . . . 33 lbs. (15kg)

Weight, Packed. . . . . 38 lbs. (17.2kg)

**ADCOM**

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