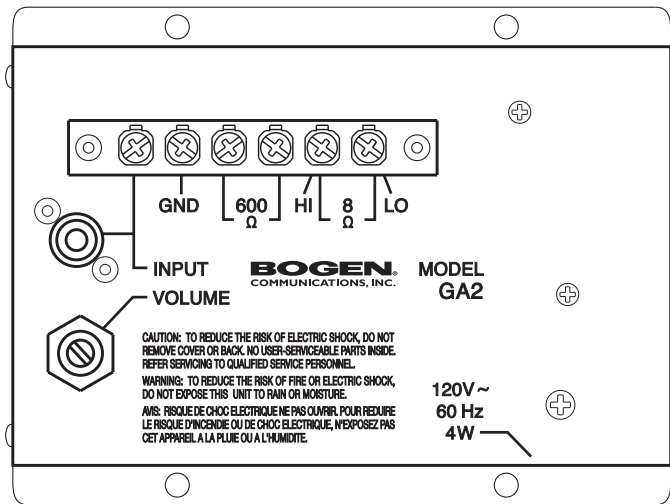


BOGEN®

1.5W Utility Amplifier GA2 Model

Installation and Use Manual

NOTICE: Every effort was made to ensure that the information in this guide was complete and accurate at the time of printing. However, information is subject to change.

WARNING: To reduce the risk of Fire or Electric Shock, Do Not Expose this apparatus to rain or moisture.

Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases shall be placed on the apparatus.

WARNING: Only connect unit to AC mains outlet providing protective earthing connection.

NOTE: Mains plug is used as disconnect device from the mains and shall remain readily accessible and operable.

CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

CAUTION: DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE, BUILT-IN CABINET, OR IN ANOTHER CONFINED SPACE. ENSURE THE UNIT IS WELL VENTILATED. TO PREVENT THE RISK OF SHOCK OR FIRE HAZARD DUE TO OVERHEATING, ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION VENTS.

Always follow these basic safety precautions when installing and using the unit:

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean unit with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. 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 prong, are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when not used for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**



CAUTION: TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE ANY FRONT/BACK COVERS OR PANELS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions.

GA2 1.5W Utility Amplifier

Bogen Model GA2 is a rugged and compact 1.5 watt amplifier designed to meet the requirements of continuous low-power audio applications. It is ideally suited for telephone line music-on-hold amplification. It can be used to drive monitor speakers, headphones, or as a line amplifier. With accessory transformer WMT1A connected to the input, the GA2 will provide amplification for a 600-ohm telephone line.

The amplifier provides a high-level input with screwdriver-adjustable volume control, and both an 8-ohm and 600-ohm output. The input is available at either a phone jack or screw terminals. Sensitivity for full output is 50 mV. Outputs are available via screw terminals. The GA2 is listed to UL Standard 60065 for the U.S. and Canada.

Typical Applications

The GA2 can be used to interface the music-on-hold function of various telephone systems to the output of an audio source.

The GA2 can be used for telephone systems with provisions for music-on-hold that require either 600-ohm or 8-ohm/1.5W input to their MOH inputs.

When used as a line amplifier, the 600-ohm balanced, or 8-ohm output of the GA2 can be used to drive the input of power amplifier(s) remotely located from the music source. Figure 2 illustrates use of Model GA2 as a multiple headphone driver. With this arrangement, the amplifier can drive up to 20 pairs of headphones.

CAUTION:

To prevent overdriving an amplified speaker system, use the following setup procedure.

- 1) Set all of the zone amplified speaker volume controls to the maximum "ON" position.
- 2) Adjust the GA2 output to a level slightly louder than is normally required at the speaker.
- 3) Adjust the individual amplified speaker volume level control to the desired volume level.

Technical Specifications

Power Output: 1.5 watts RMS

Frequency Response: 200 Hz to 15 kHz +0 dB, -2.5 dB

Total Harmonic Distortion: 2% @ 1.5W, 0.25% @ 1W

Output Level: +6 dBm (1.5V) across balanced 600 ohms

Sensitivity: 50 mV

Input Impedance: 100 kilohms

Hum and Noise: -72 dB below rated output

Output Impedance: 8 ohms; 600 ohms balanced

Control: Volume, screwdriver-adjustable

Terminations:

Output — terminal strip

Input — RCA-type phono jack or terminal strip

Power Consumption: 4W, 120V ~, 60 Hz

Dimensions: 5-1/2" W x 4-1/8" H x 2-1/4" D

Product Weight: 2 lb.

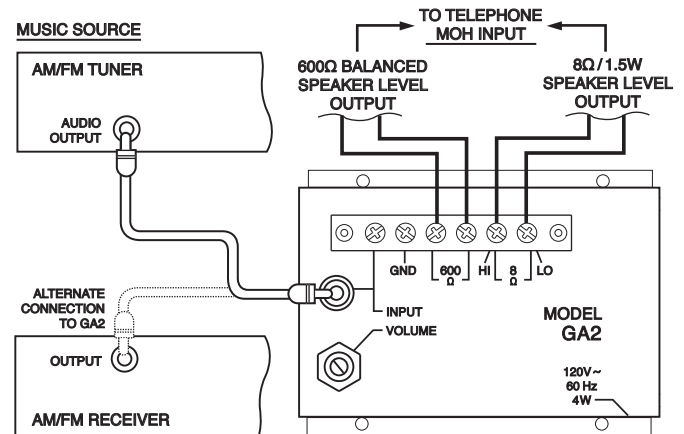
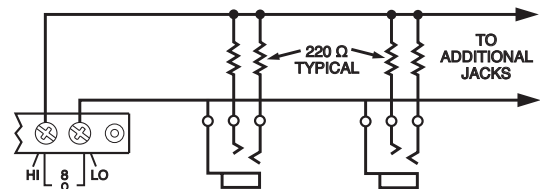


Figure 1: Connection Diagram for Tuner or Receiver to Music-On-Hold



TYPICAL - 200 / 600-OHM HEADPHONES

Figure 2: Typical 200/600-Ohm Headphones

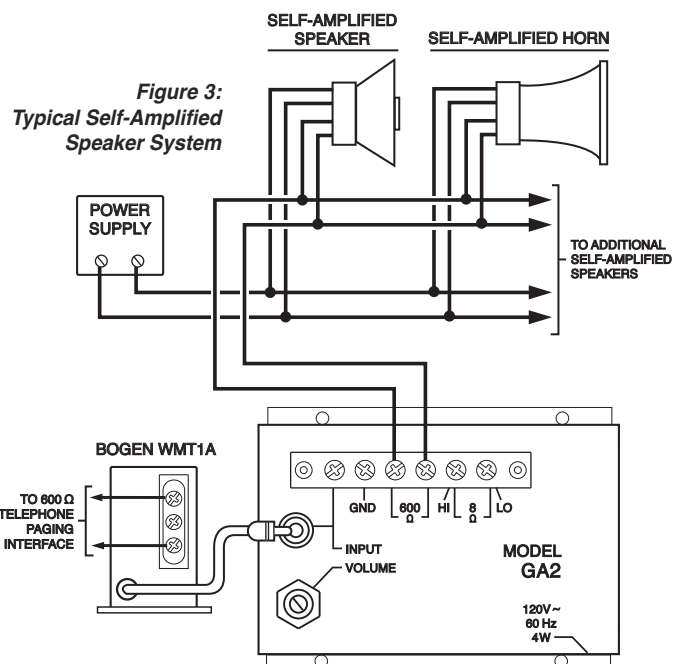


Figure 3:
Typical Self-Amplified
Speaker System

Limited Warranty; Exclusion of Certain Damages

The **Bogen GA2 Utility Amplifier** is warranted to be free from defects in material and workmanship for two (2) years from the date of sale to the original purchaser. Any part of the product covered by this warranty that, with normal installation and use, becomes defective (as confirmed by Bogen upon inspection) during the applicable warranty period, will be repaired or replaced by Bogen, at Bogen's option, provided the product is shipped insured and prepaid to: Bogen Factory Service Department, 4570 Shelby Air Drive, Suite 11, Memphis, TN 38118, USA. Repaired or replacement product will be returned to you freight prepaid. This warranty does not extend to any of our products that have been subjected to abuse, misuse, improper storage, neglect, accident, improper installation or have been modified or repaired or altered in any manner whatsoever, or where the serial number or date code has been removed or defaced.

THE FOREGOING LIMITED WARRANTY IS BOGEN'S SOLE AND EXCLUSIVE WARRANTY AND THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY. BOGEN MAKES NO OTHER WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED AND EXCLUDED TO THE MAXIMUM EXTENT ALLOWABLE BY LAW. Bogen's liability arising out of the manufacture, sale or supplying of products or their use or disposition, whether based upon warranty, contract, tort or otherwise, shall be limited to the price of the product. **IN NO EVENT SHALL BOGEN BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, LOSS OF DATA OR LOSS OF USE DAMAGES) ARISING OUT OF THE MANUFACTURE, SALE OR SUPPLYING OF PRODUCTS, EVEN IF BOGEN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR LOSSES.** Some States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from State to State.

Products that are out of warranty will also be repaired by the Bogen Factory Service Department – same address as above or call 201-934-8500. The parts and labor involved in these repairs are warranted for 90 days when repaired by the Bogen Factory Service Department. All shipping charges in addition to parts and labor charges will be at the owner's expense. All returns require a Return Authorization number. For most efficient warranty or repair service, please include a description of the failure.

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