



GAI-TRONICS®  
A HUBBELL COMPANY

# Model 701-312 Page/Party® 600-Ohm Handset/Speaker Amplifier

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## Confidentiality Notice

This manual is provided solely as an operational, installation, and maintenance guide and contains sensitive business and technical information that is confidential and proprietary to GAI-Tronics. GAI-Tronics retains all intellectual property and other rights in or to the information contained herein, and such information may only be used in connection with the operation of your GAI-Tronics product or system. This manual may not be disclosed in any form, in whole or in part, directly or indirectly, to any third party.

## General Information

The Model 701-312 Page/Party® 600-Ohm Handset/Speaker Amplifier is an important component of a GAI-Tronics Page/Party® system. This handset/speaker amplifier is ideal for applications that require long cable runs. Use the Model 701-312 Handset/Speaker Amplifier in Page/Party® systems that require cable runs exceeding one mile (1.6 km) from the system line balance assembly.

## Installation



### NOTE



**Do not install the Model 701-312 in a 33-ohm system or audio levels will be low.**



### CAUTION



**Do not install this equipment in hazardous areas. Installing in hazardous areas may cause a safety hazard and consequent injury or property damage.**

The Model 701-312 Handset/Speaker Amplifier is a plug-in amplifier that mates directly with the Model 702, 703, 732 and 733 Series Amplifier Enclosures. To install the handset/speaker amplifier, simply plug it into the enclosure.

Figure 1 shows installation and adjustment details. Please refer to the drawing when you are installing and adjusting the amplifier.

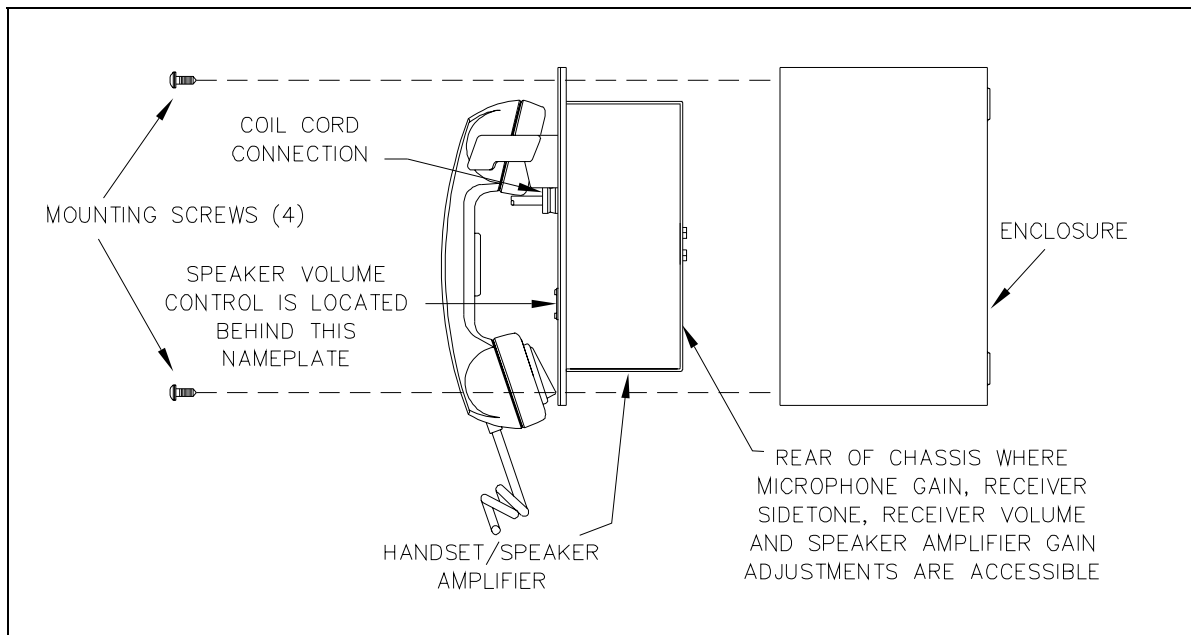


Figure 1. Installation and Adjustment Details

## Operation

GAI-Tronics offers two types of Page/Party® systems: single party (one party line) and multi-party (five party lines).

### Single-Party

To initiate a call, lift the station handset and press and hold the handset pressbar. Speak directly into the handset to make the page announcement. The paged individual lifts the handset of a Page/Party® station for two-way communication over the party line.

### Page/Multi-Party

Complete the following steps to make a page announcement:

1. Lift the handset from the cradle.
2. If party line conversation is desired, rotate the selector switch to an unoccupied party line.
3. Press and hold the handset pressbar.
4. Speak directly into the microphone to broadcast your announcement over the loudspeakers.
5. Release the handset pressbar, and if requested, wait for a response.

The paged individual(s) responds by picking up a station handset and turning the selector switch to the requested party line. Party line communication, which is full duplex, is not broadcast over the system speakers. Other individual(s) can also pick up and join the conversation at any time. Always return the handset to the cradle following a page or a party line conversation.

# Maintenance

## Adjustments

Four adjustments are accessible through the rear chassis of the amplifier using a small standard screwdriver. Each adjustment is clearly labeled. The adjustments have been factory-set for optimal performance. Do not adjust these levels unless you have followed all the steps in the *Troubleshooting* section and are still not satisfied with the station performance.

- *Microphone Gain*: adjusts the gain level from the microphone signal to the page or party lines
- *Receiver Sidetone*: the amount of signal transmitted from the microphone to the receiver of a handset
- *Receiver Volume*: adjusts the gain level from a party line to the receiver
- *Speaker Amplifier Gain*: adjusts the speaker volume (also accessible from the front panel)

## Troubleshooting

The following table lists some difficulties encountered in Page/Party® systems. Included are some troubleshooting hints to aid in remedying these problems.

Problem	Solution
Any problem with station performance occurs.	<p>Review the steps of the installation, ensuring that you have correctly followed ALL steps. Check all the terminations in the amplifier enclosure and in the line balance assembly before proceeding to any other adjustments.</p> <p>Verify the system's line balance assembly is a Model 305-002 or that the existing line balance is set for 600-ohm operation.</p>
Speaker level requires adjustment.	<ol style="list-style-type: none"> <li>1. Adjust the volume control behind the nameplate on the front panel.</li> <li>2. Replace the speaker or driver.</li> </ol>
Outgoing conversation level requires adjustment.	<ol style="list-style-type: none"> <li>1. Adjust the microphone gain by removing the amplifier from the amplifier enclosure and attaching a Model 10440 Series extension cable between the connectors. Use a small standard screwdriver (<math>\frac{1}{8}</math>-inch blade) to slowly turn potentiometer (R17) on the rear chassis of amplifier until reaching the proper microphone gain.</li> <li>2. Replace the handset microphone.</li> </ol>
Incoming conversation level requires adjustment.	<ol style="list-style-type: none"> <li>1. Use a small standard screwdriver to adjust the receiver volume control on the rear of the amplifier using the Model 10440 Series extension cable as described above.</li> <li>2. Replace the receiver element in the handset.</li> </ol>
Feedback/distortion (a hum or buzz on the line) occurs during all Page/Party® station operation.	<ol style="list-style-type: none"> <li>1. Adjust the receiver sidetone on the rear of the amplifier using the ribbon cable assembly as described above.</li> <li>2. The line may be improperly terminated. Inspect the system cable for loose connections, shorts, and grounds. Line balance assembly connections are critical.</li> </ol>

Problem	Solution
Feedback occurs only during page.	Use the muting feature in the amplifier enclosure at the terminal blocks. Connect the violet wire at terminal 8 to terminal 7.
Sidetone (how the operator hears his own voice) requires adjustment.	<ol style="list-style-type: none"> <li>1. Adjust the receiver sidetone at the amplifier, using the extension ribbon cable as described above.</li> <li>2. Check that the line balance assembly resistors are connected properly.</li> </ol>
Crosstalk occurs.	One or more system cable pairs may be improperly terminated. Visually inspect the system cable connections for accidental crossing of the cable pairs or grounds.

## Specifications

### Amplifier

#### Power requirements

Voltage..... 90–140 V ac range, 50/60 Hz, 115 V ac nominal

Power consumed: Zero/max. signal (12 watts)..... 10 VA, 4.5 W/50 VA, 27 W

Construction/finish..... 16-gauge cold-rolled steel/gray baked enamel

### Handset

Microphone ..... Dynamic, noise-canceling

Receiver ..... Dynamic, hearing aid compatible per FCC Part 68

Cable..... Retractable, 6-foot extended PVC

Material..... Gray ABS

External controls..... Push-to-page switch or push-to-page handset pressbar, handset hook-switch

### Handset Amplifier

Output level..... 1.5 Vrms nominal into 600 ohm load

Output limiter ..... 1.5 Vrms nominal

Gain ..... 55 dB nominal (below limiter level); adjustable from 40 to 63 dB

Frequency response..... 250–4,000 Hz, +/-1.5 dB

Distortion ..... 1.5% maximum THD @ 1 kHz

Controls..... Microphone gain, receiver volume and sidetone



# Warranty

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Equipment. GAI-Tronics warrants for a period of one (1) year from the date of shipment, that any GAI-Tronics equipment supplied hereunder shall be free of defects in material and workmanship, shall comply with the then-current product specifications and product literature, and if applicable, shall be fit for the purpose specified in the agreed-upon quotation or proposal document. If (a) Seller's goods prove to be defective in workmanship and/or material under normal and proper usage, or unfit for the purpose specified and agreed upon, and (b) Buyer's claim is made within the warranty period set forth above, Buyer may return such goods to GAI-Tronics' nearest depot repair facility, freight prepaid, at which time they will be repaired or replaced, at Seller's option, without charge to Buyer. Repair or replacement shall be Buyer's sole and exclusive remedy. The warranty period on any repaired or replacement equipment shall be the greater of the ninety (90) day repair warranty or one (1) year from the date the original equipment was shipped. In no event shall GAI-Tronics warranty obligations with respect to equipment exceed 100% of the total cost of the equipment supplied hereunder. Buyer may also be entitled to the manufacturer's warranty on any third-party goods supplied by GAI-Tronics hereunder. The applicability of any such third-party warranty will be determined by GAI-Tronics.

Services. Any services GAI-Tronics provides hereunder, whether directly or through subcontractors, shall be performed in accordance with the standard of care with which such services are normally provided in the industry. If the services fail to meet the applicable industry standard, GAI-Tronics will re-perform such services at no cost to buyer to correct said deficiency to Company's satisfaction provided any and all issues are identified prior to the demobilization of the Contractor's personnel from the work site. Re-performance of services shall be Buyer's sole and exclusive remedy, and in no event shall GAI-Tronics warranty obligations with respect to services exceed 100% of the total cost of the services provided hereunder.

Warranty Periods. Every claim by Buyer alleging a defect in the goods and/or services provided hereunder shall be deemed waived unless such claim is made in writing within the applicable warranty periods as set forth above. Provided, however, that if the defect complained of is latent and not discoverable within the above warranty periods, every claim arising on account of such latent defect shall be deemed waived unless it is made in writing within a reasonable time after such latent defect is or should have been discovered by Buyer.

Limitations / Exclusions. The warranties herein shall not apply to, and GAI-Tronics shall not be responsible for, any damage to the goods or failure of the services supplied hereunder, to the extent caused by Buyer's neglect, failure to follow operational and maintenance procedures provided with the equipment, or the use of technicians not specifically authorized by GAI-Tronics to maintain or service the equipment. **THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE IN LIEU OF AND EXCLUDE ALL OTHER WARRANTIES AND REMEDIES, WHETHER EXPRESS OR IMPLIED BY OPERATION OF LAW OR OTHERWISE, INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

## Return Policy

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If the equipment requires service, contact your Regional Service Center for a return authorization number (RA#). Equipment should be shipped prepaid to GAI-Tronics with a return authorization number and a purchase order number. If the equipment is under warranty, repairs or a replacement will be made in accordance with the warranty policy set forth above. Please include a written explanation of all defects to assist our technicians in their troubleshooting efforts.

Call 800-492-1212 (inside the USA) or 610-777-1374 (outside the USA) for help identifying the Regional Service Center closest to you.