



GAI-TRONICS® CORPORATION
A HUBBELL COMPANY

Model 13382 WiFi and 13383 VoIP Addressable Amplified Speakers Installation and Operation Manual

TABLE OF CONTENTS

Foreword	1
Scope of Manual	1
Nomenclature	1
Ordering Replacement Parts	1
Service and Repair	1
Confidentiality Notice	2
Computer Software Copyrights	2
Warranty	2
Safety and General Information	3
Safe Handling of CMOS Integrated Circuit Devices	4
General Information	5
Product Overview	5
Features and Functions	6
System Requirements and Limitations	6
Available Models	7
Replacement Parts and Kits	8
Performance Specifications	8
Programming and Set Up	10
Opening the Addressable Amplified Speaker	10
First Time WiFi Interface Setup (Model 13382)	11
Changing the WiFi Interface Configuration	14
VoIP PCBA Configuration	15
Closing the Addressable Amplified Speaker	15
Installation	16
Mechanical Receipt Inspection	17
Cable Installation Safety Considerations	17
Required Tools	17

Mounting.....	17
Cable Installation.....	18
Closing the Addressable Amplified Speaker	22
<i>Field Installed Options.....</i>	<i>23</i>
Model 12506-001 Remote Volume Control Assembly	23
Model 190-003PS Weatherproof Power Supply Kit	24



GAI-TRONICS® CORPORATION
A HUBBELL COMPANY

Model 13382 WiFi and 13383 VoIP Addressable Amplified Speakers

Foreword

Scope of Manual

This manual offers descriptive data and service information for the VoIP and WiFi Addressable Amplified Speaker Assemblies.

Nomenclature

The model number, located on the nameplate on top of the speaker, specifically identifies GAI-Tronics equipment.

Ordering Replacement Parts

When ordering replacement parts or requesting equipment information, please include the complete identification number. This applies to all components, kits, and chassis. If the component part number is not known, the order should include the number of the chassis or kit of which it is a part and sufficient description of the desired component to identify it. Order parts from:

Customer Service

GAI-Tronics Corporation

400 E. Wyomissing Ave.

Mohnton, PA 19540

US: 800-492-1212

Outside US: 610-777-1374

Service and Repair

Inoperative or malfunctioning equipment should be returned to the factory for repair. Please call **1-800-492-1212** or **610-777-1374** to obtain a Return Authorization number, published repair prices, and shipping instructions.

NOTE: A purchase order or credit card number is required prior to processing non-warranty repairs.

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.

Computer Software Copyrights

This product contains copyrighted computer programs stored in semiconductor memory. These programs are copyrighted by GAI-Tronics Corporation and may not be reproduced in any form without expressed written permission from GAI-Tronics.

Warranty

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, and the warranty period on any repaired or replacement equipment shall be 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. The applicability of any such third-party warranty will be determined solely 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, for a period of one (1) year from the date of completion, re-perform such services at no cost to the Buyer. 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 services provided hereunder.

Limitations/Exclusions. The warranty on any equipment supplied hereunder is subject to Customer's use in compliance with applicable FCC regulations and manufacturer specifications. 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 accident, misuse, abuse, neglect, system design, product modification, failure to follow instructions contained in the product manual, repair, or attempted repair by anyone not authorized by GAI-Tronics, improper installation, installation of parts that do not conform to the quality or specifications of the original parts or accessories, damage or loss occurred during shipment, or any unit which is not new when sold or upon which the serial number has been defaced, modified or removed. The warranty does not extend to damage incurred by natural causes including Force Majeure. The warranty does not cover microprocessors if failure is due to static damage or application of improper voltage. 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.

Operational and Maintenance Procedures. Buyer acknowledges that any improper use, maintenance, or modification of the equipment provided hereunder, or use of unqualified maintenance or service technicians will severely impair the operational effectiveness of the entire communication system. Buyer hereby agrees to indemnify, defend and hold GAI-Tronics harmless from and against any and all third party claims arising, in any manner, out of: (a) Buyer's neglect of the equipment; (b) Buyer's use of technicians not authorized by GAI-Tronics to service the equipment; or (c) Buyer's improper use or modification of the equipment or failure to follow the operational and maintenance procedures provided with the equipment.

Limitation of Liability/Damages. In no event (even should circumstances cause the exclusive warranties and remedies set forth in the Warranty section to fail of their essential purpose) shall either party be liable for any indirect, incidental, special or consequential damages (including, but not limited to, loss of use, loss of anticipated profits, or damages arising from delay) whether such claims are alleged to have arisen out of breach of warranty, breach of contract, strict or absolute liability in tort, or other act, error or omission, or from any other cause whatsoever, or any combination of the foregoing.

Safety and General Information



Installation should only be performed by qualified service personnel in accordance with the National Electrical Code or applicable local codes.



Power Sources - Operate this unit only from the type of power source indicated on the label. If unsure of the type of power supply to use, contact qualified service personnel.

- For units intended to operate from battery power, refer to operating instructions.
- For units intended to operate with External Power Supplies, use only the recommended approved power supplies.
- For units intended to operate with a limited power source, this power source must comply with EN60950. Substitutions may damage the unit or cause fire or shock.

Outdoor Product:

Power Lines - An outdoor system should not be located in the vicinity of overhead power lines, electric lights, or power circuits, or where it may contact such power lines or circuits, as this contact might be fatal. Refer to the National Electrical Code Article 800 regarding installation.

User Instructions

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Exposure to Radio Frequency Energy

This equipment complies with FCC's RF radiation exposure limits set forth for an uncontrolled environment. The antenna(s) used for this transmitter must be installed and operated to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter. Installers must ensure that 20 cm separation distance will be maintained between the device and users.

Antenna Care

Unauthorized antennas, modifications, or attachments could damage the radio and may violate FCC regulations.

Do NOT hold the antenna when the radio is IN USE. Holding the antenna affects the effective range.

Approved Accessories

Only use GAI-Tronics Corporation approved accessories. Please visit www.gai-tronics.com.

Electromagnetic Interference/Compatibility

Electronic equipment may be susceptible to electromagnetic interference. If you experience interference, visit the FCC website at <http://www.fcc.gov> for possible solutions.

Safe Handling of CMOS Integrated Circuit Devices

Many of the integrated circuit devices used in communications equipment are of the Complementary Metal Oxide Semiconductor (CMOS) type. Because of their high open circuit impedance, CMOS integrated circuits are vulnerable to damage from static charges. Care must be taken handling, shipping, and servicing them and the assemblies in which they are used.

Even though protection devices are provided in CMOS integrated circuit inputs, the protection is effective only against overvoltage in the hundreds of volts range such as is encountered in an operating system. In a system, circuit elements distribute static charges and load the CMOS circuits, decreasing the chance of damage. However, CMOS circuits can be damaged by improper handling of the modules, even in a system.

To avoid damage to circuits, observe the following handling, shipping, and servicing precautions:

1. Prior to and while servicing a circuit module, particularly after moving within the service area, momentarily touch both hands to a bare metal, earth-grounded surface. This will discharge any static charge that may have accumulated on the person doing the servicing.
NOTE: Wearing a conductive wrist strap will minimize static build-up during servicing.
2. Whenever possible, avoid touching any electrically conductive parts of the circuit module with your hands.
3. Power down the unit before installing or removing the circuit module.
4. When servicing a circuit module, avoid carpeted areas, dry environments, and certain types of clothing (silk, nylon, etc.) because they contribute to static build-up. Similarly, disconnect the test probe prior to removing the ground lead.
5. All electrically powered test equipment should be grounded. Apply the ground lead from the test equipment to the circuit module before connecting the test probe.
6. If a circuit module is removed from the system, it is desirable to lay it on a conductive surface (such as a sheet of aluminum foil) which is connected to ground through 100k of resistance.
7. When soldering, be sure the soldering iron is grounded and has a grounded tip.
8. Prior to connecting jumpers, replacing circuit components, or touching CMOS pins (if this becomes necessary in the replacement of an integrated circuit device), be sure to discharge any static build-up as described in procedure 1. Since voltage differences can exist across the human body, it is recommended that only one hand be used if it is necessary to touch pins on the CMOS device and associated board wiring.
9. When replacing a CMOS integrated circuit device, leave the device in its conductive rail container or conductive foam until it is to be inserted into the printed circuit module.
10. All low impedance test equipment (such as pulse generators, etc.) should be connected to CMOS device inputs after power is applied to the CMOS circuitry. Similarly, such low impedance equipment should be disconnected before power is turned off.
11. Replacement modules shipped separately from the factory will be packaged in a conductive material. Any modules being transported from one area to another should be wrapped in a similar material (aluminum foil may be used). **Never use non-conductive material** for packaging these modules.

General Information

Product Overview

The Model 13383 VoIP Addressable Amplified Speaker enables broadcasting to personnel throughout a facility via an existing Local Area Network (LAN). The Model 13382 WiFi Addressable Amplified Speaker provides the same capability as the Model 13383 but permits connection to an existing Wireless LAN (WLAN).

These speaker assemblies are completely self-contained and can easily be added to an existing LAN (10/100 Base-T Ethernet) or WLAN (IEEE 802.11 b/g/n) with minimal cost or effort.

Each speaker model includes an integral VoIP interface and speaker amplifier. The Model 13382 additionally includes a WiFi interface circuit and antenna.

Power can be provided via a PoE connection (Model 13383 only, 802.3af compliant) or the external power supply provided with each unit. Each speaker is capable of providing a maximum 115 dBm output at 1 meter when powered via PoE or the 15 V dc power supply provided with each unit; or 118 dBm output at 1 meter via an external 24 V dc power supply.

For additional design flexibility, each Addressable Amplified Speaker can provide a 600-ohm, 0 dBm audio output. This output can be connected to the audio input of a central amplifier or any equipment that requires a 600-ohm audio input, to further expand the broadcast system.

Each VoIP or WiFi Speaker is capable of providing two dry contact (N. O.) outputs. Each output is programmable for a variety of uses such as activation of a strobe in a high noise area or initiating a door latch remotely.

The GAI-Tronics VoIP and WiFi Speakers provide the flexibility to address a diverse range of applications. A wide variety of functions can be achieved by altering the configuration data stored in the non-volatile memory. Configuration options include:

- Web page configuration
- Configuration file
- Command Line Interface (CLI)

Features and Functions

The GAI-Tronics Models 13382 WiFi and 13383 VoIP Addressable Amplified Speakers are equipped with the following features:

- Wired or WiFi VoIP
- One-way broadcasting from VoIP network
- Weatherproof enclosure
- Power-over-Ethernet, 802.3af Compliant (Model 13383 only)
- Wireless 802.11b, IEEE 802.11g Compliant (Model 13382 only)
- A high-efficiency (>80%) Class D amplifier
- 600-ohm audio output
- Two dry contact closure outputs
- SIP compatible (RFC3261)
- Real-time status reporting via TMA software (purchased separately)
- Configurable via web page, serial link or download
- Multicast capability, up to eight addresses
- Universal ac input power supply provided, 15 V dc
- Optional local volume control
- Provides up to 8 watts into an 8-ohm load (115 dB spl), measured at 1 meter on axis, with PoE power input (or 15 V dc)
- Provides up to 30 watts into an 8-ohm load (118 dB spl), measured at 1 meter on axis, with 24 V dc power input

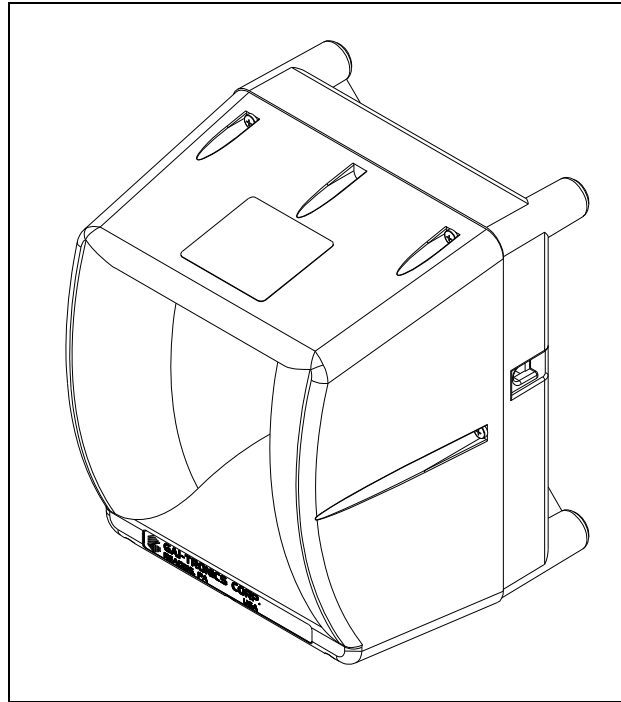


Figure 1. VoIP/WiFi Addressable Amplified Speaker Assembly

System Requirements and Limitations

A 100 Base-T Ethernet with SIP Server is required for systems containing three or more VoIP Addressable Amplified Speaker Assemblies. The operation of this equipment is limited by the customer's LAN media capabilities and the services available at each end point. The performance of the VoIP Speaker Assembly is dependent on the provision of sufficient bandwidth and prioritization on the network to give the quality of service required. In addition, the setup, installation, and software version of key components such as switches and routers can have a significant effect on the operation of this equipment. Improper connections or loose cables can also affect their operation.

The Addressable Amplified Assemblies require a local 15 V dc or 24 V dc power for operation. Each unit is provided with a universal (120/240 V ac) power supply that provides a 15 V dc output. GAI-Tronics Model 190-003PS Weatherproof Power Supply Kit is available (purchased separately) to provide a 24 V dc output.

The following network facilities should be provided (This may vary widely depending on how your network is deployed):

- SIP proxy server (to route calls)
- SIP registrar server (frequently combined with proxy servers)
- TFTP server (for downloading configuration files).
- TCP Syslog server (for reporting alarms and external inputs)
- SMTP server (for reporting via email)
- STNP server (to synchronize the internal clock)
- STUN server (for NAT firewall traversal)

Dedicated systems, such as Gatekeepers, VoIP-enabled PABXs or soft PABXs may also provide these functions.

The GAI-Tronics VoIP/WiFi Addressable Amplified Speakers only support Session Initiation Protocol (SIP) to RFC3261 Call Control signaling.

In addition to direct access, peer-to-peer or via a SIP server, each amplified speaker is capable of receiving a Multicast broadcast. Multicast allows a single audio stream to be sent to multiple end points simultaneously, to achieve multi-point paging or Public Address functionality over IP. Multicast requires the use of a SIP server that specifically supports Multicast functionality and each speaker must be configured (enabled) to receive Multicast packets.

Available Models

Table 1. VoIP/WiFi Addressable Amplified Speakers Model Chart

Part No.	Description
13382	WiFi VoIP Addressable Amplified Speaker
13383	VoIP Addressable Amplified Speaker

Replacement Parts and Kits

Table 2. Replacement Parts and Kits

Part No.	Description	13382	13383
61512-038	Wiring Harness, VoIP Weatherproof Amplified Speaker	■	■
13327-021	Speaker	■	■
19101-037	WLAN Antenna, SMA Wireless	■	
61531-055	Cable, WiFi Power	■	
69625-001	PCBA, VoIP Broadcast Carrier	■	■
69868-101	PCBA, Ethernet Wireless Interface	■	
12506-001	Remote Volume Control L-Pad (optional)	■	■
40419-015	Power Supply, 120/240 V ac, 15 V dc output	■	■
190-003PS	Power Supply, Weatherproof, 24 V dc, 110/220 V ac input	■	■
61007-043	Patch Cable, Cat5e 350 MHz	■	■
100-02-7013-000	VoIP Interface PCBA	■	■

Performance Specifications

Power Options

AC Power Requirements (utilizing plug-in power supply provided with unit)

Input voltage 120/240 V ac, 50/60 Hz

Input current..... 0.35 A @ 120 V ac, 0.2 A @ 240 V ac

Power over Ethernet (PoE) Requirements (Model 13382 only)

Power 802.3af compliant (via RJ45)

Audio

Output

Speaker output power

With PoE or 15 V dc power supply 8 W into 8-ohm load

With 24 V dc power source 30 W into 8-ohm load

Sound pressure level

@ 8 W 115 dB SPL, at 1 meter

@ 30 W 118 dB SPL, at 1 meter

Line out (into 600 ohms)..... 1.0 Vrms

Frequency response..... 300–3000 Hz

Dispersion

Nominal coverage when surface-mounted to wall (ref. –6 dB)

Vertical..... Upward: 40°
Downward: 60°

Horizontal 90°

Network (Ethernet)

Signaling	SIP (RFC3261 compliant) Loose routing
Configuration	Embedded web server
	Embedded Telnet server
	Configuration file download
	Configuration file building tool (Vconf.exe)
	Direct serial connection
	(Nine-way D-type female connector
	Command line interface
	SNTP with time zone and daylight saving
	Automatic updating via TFTP
	Password protection
Compliance to Standards	FCC CRF 47 Part 15

Control Outputs

Output 1 (isolated solid state switch)	50 milliamps @ 30 V ac/dc (resistive load)
Output 2 (isolated SPST relay)	10 amps @ 30 V ac/dc (resistive load)

WiFi Module (Model 13382 only)

Antenna (internal)	2.4 GHz, 2.0 dBi, 50 Ω , omni-directional, ¼ wavelength dipole configuration, VSWR \leq 2.0
Standards	IEEE 802.11b/g/n
	Static IP provisioning or DHCP STUN client (NAT traversal)
Frequency	2.412 – 2.484 GHz

Mechanical

Physical dimensions	8.02 × 8.12 × 9.52 inches (203.7 × 206.2 × 241.8 mm)
Enclosure material	Glass-reinforced polyester, 0.20-inch thick
Hardware	Urethane gaskets, stainless steel hardware
Color	Black
Shipping weights	
Model 13382	7.3 lbs. (3.3 kg)
Model 13383	7.0 lbs. (3.2 kg)

Environmental

Temperature range	–4° F to +140° F (–20° C to +60° C)
Weatherproof rating	Rainproof
Humidity	95% non-condensing

Approval Standards

USA	FCC Modular Approval, FCC ID: XM5-SM2144N1 CFR Title 47 FCC Part 15, Subpart B and C
Canada	Industry Canada Module Approval IC: 8516A-SM2144N2 Industry Canada ICES-003, RSS-Gen, RSS-210
EU	EN 300 328 (R&TTE Directive 1999/5/EC) EN 301 489 (EMC Directive 2004/108/EC)

Programming and Set Up

NOTE: The Model 13382 WiFi and 13383 VoIP Addressable Amplified Speakers include the same embedded browser as do GAI-Tronics' VoIP and WiFi telephones. There are many programmable parameters utilized by our telephones that are not utilized by the VoIP Amplified Speakers. All speakers are factory programmed for maximum operating proficiency. **Please do not make any programming changes other than those directed in this manual.**

Opening the Addressable Amplified Speaker

The Addressable Amplified Speaker must be opened for programming and installation. **Bench programming and testing is recommended.** Remove the speaker from the carton and position on a flat surface with the front of the speaker facing up. Although the front section attaches to the rear section with six Phillips screws, only two screws have been secured during the production process. Back out the two screws on the left and right side of the speaker. All screws are captive and will remain in the front section. Lift the front section straight up and flip to the left-hand side of the rear section. Refer to Figure 2.

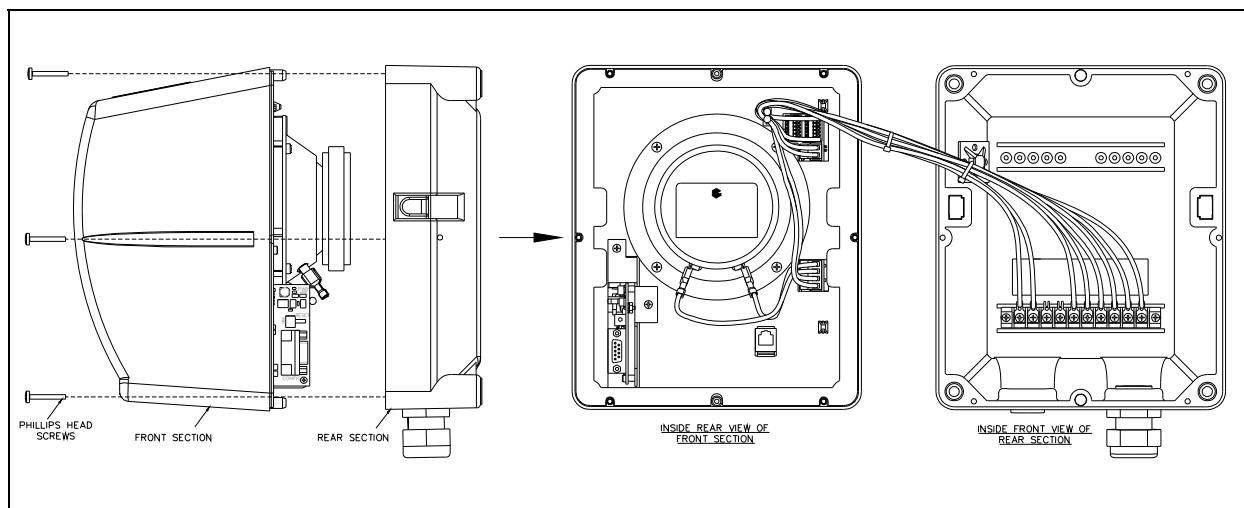


Figure 2: Addressable Amplified Speaker (Model 13382 shown)

First Time WiFi Interface Setup (Model 13382)

The installer should ensure that the network is configured to allow VoIP communications (using the SIP protocol) between the desired locations before attempting to configure the GAI-Tronics VoIP Addressable Amplified Speakers.

Configuration of the WiFi interface is required to set up security of the WLAN unit's connection.

For first time configuration of the WiFi interface, power the unit by connecting 24–48 V dc to P5.

While the VoIP Addressable Speaker's WiFi interface is still using the factory default configuration, it will be an Access Point to a network called **HF-A11_AP**. Using a PC/laptop with wireless capability, connect to the HF-A11_AP network. When the PC shows that it is connected to the HF-A11_AP network the yellow LED on the WiFi interface should be ON.

When you are connected to the HF-A11_AP network, open a web browser on the PC and type **10.10.100.254** into the address field and press **Enter**. The HF-A11_AP WiFi Log In Window will open. Enter **admin** for both the user and password, then log in. The Working Mode Configuration Web page will open. Select STA Mode then click the **Apply** button.

If you are having a problem connecting to the HF-A11_AP network verify that the PC's wireless network adapter is set to DHCP (Obtain an IP address automatically).



Figure 3. WiFi Interface Working Mode Configuration Web Page

After the configuration has updated, the Web page will show **Set Successfully, Restart to use new setting**. Then click on the **STA Interface Setting** selection. The STA Interface Setting Web Page will open.

STA Interface Parameters	
AP's SSID	BIGMAN2 <input type="button" value="Search..."/>
MAC Address (Optional)	<input type="text"/>
Security Mode	WPA2PSK ▼
Encryption Type	AES ▼
Pass Phrase	<input type="text"/>

Figure 4. WiFi Interface STA Interface Setting Web Page

Find the WiFi network for the VoIP Addressable Amplified Speaker by clicking the **Search** button in the AP's SSID section. The Site Survey Web page will open showing all available networks. Select the desired network and click the **Apply** button.

Site Survey							
	SSID	BSSID	RSSI	Channel	Encryption	Authentication	Network Type
<input type="radio"/>	TP-LINK_LAB	a0:f3:c1:a8:db:fc	60%	1	NONE	OPEN	Infrastructure
<input type="radio"/>	BIGMAN2	40:16:7e:5b:6e:78	100%	6	AES	WPA2PSK	Infrastructure
<input type="radio"/>	HP-Print-18-LaserJet 400 color	bc:85:56:ed:fd:18	39%	6	NONE	OPEN	Infrastructure
<input type="radio"/>	BIGMAN3	c8:d7:19:f4:99:99	5%	6	TKIP	WPAPSK	Infrastructure
<input type="radio"/>	Test	00:0f:66:75:88:96	5%	7	NONE	OPEN	Infrastructure
<input type="radio"/>	BigmanAP	00:0d:3a:28:c5:1b	29%	9	WEP	OPEN	Infrastructure
<input type="radio"/>	Hubbell-Guest	6c:f3:7f:dc:c8:81	0%	11	NONE	OPEN	Infrastructure

Figure 5. WiFi Interface Site Survey Web page

A reminder window for entering the WEP Key will pop up. Click the **OK** button.

When the STA Interface Setting Web page opens again, the AP's SSID, Security Mode and Encryption Type fields will automatically be filled in. Now enter the WEP Key or Pass Phrase for the selected network and click the **Apply** button.

If the VoIP Addressable Amplified Speaker being configured is not within the range of its wireless network, manually fill in the AP's SSID, Security Mode, Encryption Type and WEP Key or Pass Phrase fields before you click the Apply button.

After the configuration has updated, the Web page will show **Set Successfully, Restart to use new setting**. Then click on the Device Management selection. The Device Management Web Page will open. Click the **Restart** button in the Restart Module section.

Figure 6. WiFi Interface Device Management Web page

When the WiFi module is restarting the web page will show **Rebooting....** Both LEDs on the RJ-45 Jack J2 will turn OFF for several seconds while the WiFi interface is restarting. The green LED will turn ON first when the WiFi interface is done restarting. The yellow LED will turn ON if the WiFi interface can connect to the newly configured network.



If the VoIP Addressable Amplified Speaker does not connect to the wireless network due to an incorrect WEP Key or Pass Phrase, follow the instructions in the “Changing the WiFi Interface Configuration” section of this manual.

NOTE: The WiFi module is no longer an Access Point to its own network (HF-A11_AP). The WiFi module should now be connected to or trying to connect to the newly configured wireless network. The browser Web page will not change from showing Rebooting because the PC is no longer connected to the HF-A11_AP network.

Changing the WiFi Interface Configuration

To change the configuration of the WiFi interface first press the RLOAD button (PB1) for 10 seconds to return the WiFi interface to its default settings. The RLOAD button is located on the VoIP PCBA near the WiFi module and J2. Both LEDs on the RJ-45 Jack (J2) will turn OFF for several seconds while the WiFi interface is resetting. Wait for the green LED to turn ON before trying to connect to the HF-A11_AP network.

With the default settings loaded and the green LED on the RJ-45 Jack (J2) ON follow the instructions in the “First Time WiFi Interface Setup” section in this manual to connect the HF-A11_AP network and change the configuration settings.

 **WARNING**  If the VoIP Addressable Amplified Speaker has been configured for DHCP, after changing the WiFi Interface configuration, the power must be cycled before it will connect to the wireless network. After power is reapplied and the green and yellow LEDs on the RJ-45 Jack (J2) are ON and the HEART BEAT LED on the VoIP PCBA is flashing you can go to the next section, “VoIP PCBA Configuration” and start setting up the VoIP Addressable Amplified Speaker configuration.

VoIP PCBA Configuration

For the first time configuration of the VoIP PCBA, power the unit by connecting dc power to TB101 and connect Ethernet port of the VoIP PCBA to a 10/100 Base-T Ethernet network. Refer to Figure 9.

Verify the PC is connected to the same network as the VoIP Addressable Amplified Speaker.

The easiest way to get started is to make a network connection to the unit and log on via a web browser. The unit is initially set with a static IP address:

IP address **192.168.1.2**

A user name and password will be requested. The initial factory settings are:

User Name **user**

Password **password**

Changing the user name and password is recommended. This security measure helps to prevent unauthorized changes to the VoIP PCBA Interface's configuration.

NOTE: The audio output level is set by configuring the Hands-free Output on the Audio Settings webpage during the configuration of the speaker.

VoIP PCBA Initial Network Configuration

Each VoIP PCBA must be set up for the network prior to installation. Assign a local ID, domain, proxy, and registrar.

Assign a host name The host name provides identification of the different VoIP PCBAs on the network.

Test Verify that calls can be made successfully.

Maintain Monitor alarms. Set up auto-updates.

Refer to Pub. 42004-482 for detailed programming instructions of this VoIP device.

Closing the Addressable Amplified Speaker



Assemble the speaker sections and tighten the front panel screws to 16 to 20 in-lbs. of torque.

Installation

Install equipment without modification and according to all applicable local and national electrical codes. Consult the National Electrical Code (NFPA 70), Canadian Standards Association (CSA 22.1), and local codes for specific requirements regarding your installation. Class 2 circuit wiring must be performed in accordance with NEC 725.55.

Read, follow, and retain instructions – All safety and operating instructions should be read and followed before operating the unit. Retain instructions for future reference.

 **WARNING**  **This product can contain hazardous voltages. Always remove power to this station and any associated equipment before beginning any installation.**

 **CAUTION**  **Do not install this equipment in areas other than those indicated on the approval listing in the “Specifications” section of this manual. Such installation may cause a safety hazard and consequent injury or property damage.**

Heed warnings – Adhere to all warnings on the unit and in the operating instructions.

Attachments – Attachments not recommended by the product manufacturer should not be used, as they may cause hazards.

Servicing – Do not attempt to service this unit by yourself. Opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

This permanently connected apparatus must have an ALL-POLE MAINS switch with a contact separation of at least 3 mm in each pole incorporated in the electrical installation of the building.

Outdoor Installation Product

Power lines - An outdoor system should not be located in the vicinity of overhead power lines, electric lights, or power circuits, where it may contact such power lines or circuits, as this contact might be fatal. Refer to the National Electrical Code Article 800 regarding installation.

Antenna Care

Unauthorized antennas, modifications, or attachments could damage the radio and may violate FCC regulations.

Electromagnetic Interference/Compatibility

Electronic equipment may be susceptible to electromagnetic interference. If you experience interference, visit the FCC website at <http://www.fcc.gov> for possible solutions.

Mechanical Receipt Inspection

The Addressable Amplified Speaker is shipped in a cardboard container, protected from movement and distress by a self-forming packaging material. Thoroughly inspect it as soon as possible after delivery. In-transit damage should be immediately reported to the transportation company.

Cable Installation Safety Considerations

Interconnecting, communications, and Class 2 dc power cables should be separated from electrical light or other Class 1 circuits by at least 2 inches. The exception is where Class 1 wiring or power circuits are run in a raceway, or are metal-sheathed or metal-clad, or are permanently separated from the conductors of the other circuitry by a continuous and firmly fixed nonconductor such as porcelain tubes or flexible tubing in addition to the insulation on the wire. Communications cables and in-building wiring should be listed and marked for the purpose according to NEC Article 800.

Required Tools

- #1 Phillips screwdriver
- 1/16-inch flat blade screwdriver (for TB101, TB1 and TB3 connections only)

Mounting

Refer to “Opening the Addressable Amplified Speaker” section on page 10 and to Figure 2.

After opening the Addressable Amplified Speaker, untwist the nylon tie used for wire management. Unplug the quick-connect fastons from the speaker and unplug the dual 7-point connectors (TB1), 2-point connector (TB2), and 4-point connector (TB3) from the PCBA. The front section can now be completely separated from the rear section. See Figure 7.

Mount the rear section to any flat surface using 1/4-inch diameter customer-provided screws in each of the four 0.280-inch mounting holes in the corners of the rear section. Refer to Figure 7 for mounting hole pattern dimensions. A Model 231-001 Pole Mounting Kit can also be used for pole or surface mounting. Two customer-provided mounting screws are required to surface mount this kit. The kit includes four mounting screws needed to secure the speaker to the kit’s bracket.

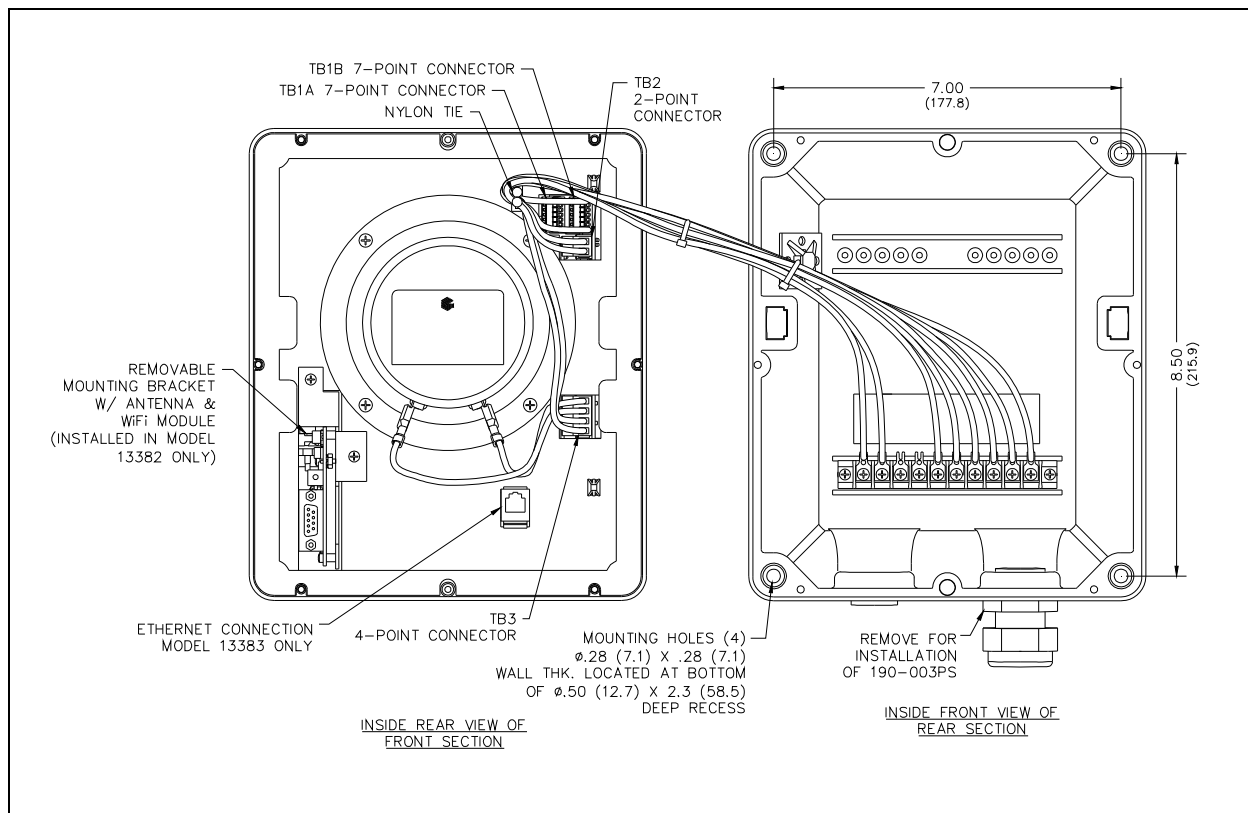


Figure 7. Mounting Detail

Cable Installation

Each of the speaker assemblies is designed for bottom cable entry, where two $\frac{3}{4}$ -inch conduit entries are located. Field wiring can enter the speaker housing using the installed $\frac{3}{4}$ -inch NPT cable bushing (bottom right), or with rigid or flexible conduit by removing the installed bushing. The $\frac{3}{4}$ -inch male conduit plug (bottom left) can be removed for additional conduit connections. Refer to Figure 8. When conduit entries are closed and sealed, the speaker is completely rain-tight.

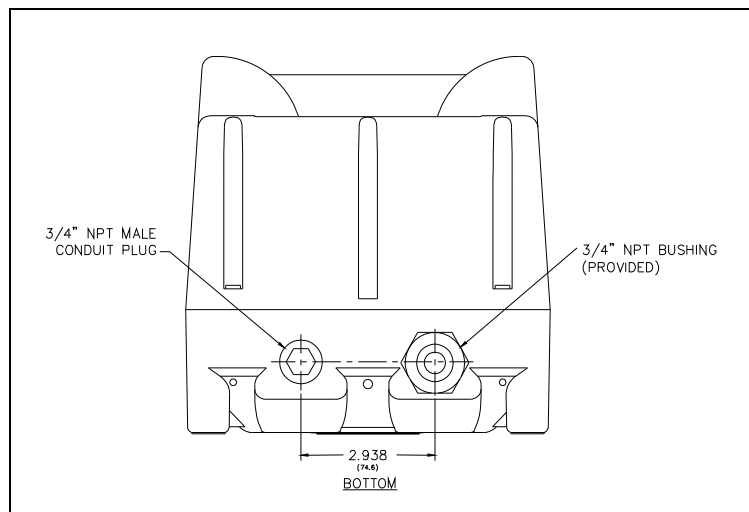


Figure 8. Bottom view of speaker assembly

Install the necessary cable for wiring the speaker.

Field Wire Connections to Terminal Block

The Addressable Amplified Speaker provides terminal blocks inside the rear portion of the housing for most field wiring. Each terminal block is labeled to indicate the functionality. Refer to Figure 9. When connecting to TB101 it is recommended that spade or ring lug connectors are used.

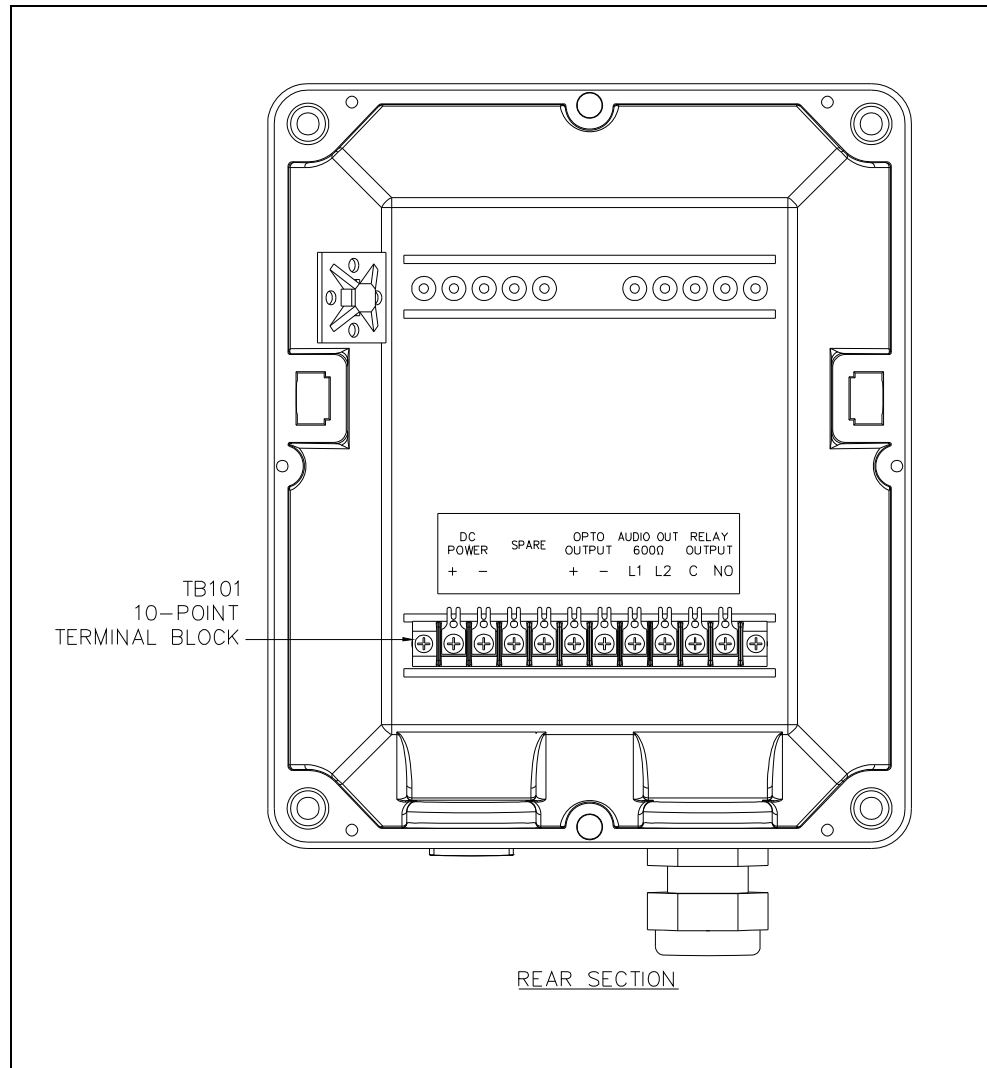


Figure 9. TB101 Wiring Location

VoIP PCBA Connection in the Model 13383

Power the unit by either local power or PoE.

For local power, connect dc power to the terminal blocks on the back box (observing polarity) and connect Ethernet port of VoIP PCBA to a 10/100 Base-T Ethernet Network. PoE would be applied via the RJ45 connection.

VoIP PCBA Connections in the Model 13382

For the Model 13382 the WiFi PCBA must be configured prior to configuring the assembly. (See page 11.)

Power the unit by local power by connecting dc power to the terminal blocks on the back box.

The wiring terminal strip, TB101, is located on the rear section of the speaker assembly. The screw terminal designations for all models are as shown below. Refer also to Figure 9.

Table 3. TB101 Wiring Description

Terminal Strip Label	Connection	Gauge Wire	Function
DC POWER +	TB2-1	No. 20 AWG	Ground reference (local supply)
DC POWER –	TB2-2	No. 20 AWG	Ground reference (local supply)
SPARE			
SPARE			
OPTO OUTPUT NO (2)	TB1-7	No. 22 AWG	Solid state relay positive output
OPTO OUTPUT C (2)	TB1-14	No. 22 AWG	Solid state relay negative output
AUDIO OUT 600 Ω L1	TB1-8	No. 22 AWG	Positive audio output
AUDIO OUT 600 Ω L2	TB1-1	No. 22 AWG	Negative audio output
RELAY C (1)	TB3-4	No. 18 AWG	Common relay connection
RELAY NO (1)	TB3-3	No. 18 AWG	Normally open relay

Connectors

TB1 Wiring Connector

The pin-out for the dual, seven-point wiring connector (14 points total) on the front section of the speaker assembly is described below. The numbering orientation is shown in Figure 10.

Table 4. TB1 Wiring Description

Pin No.	Pin Name	Connection	Function
1	LINE OUT –	TB101-8	600-ohm audio output
2	INPUT 2	Not used	Monitored Input 2
3	INPUT 4	Not used	Monitored Input 4
4	INPUT 3	Not used	Monitored Input 3
5	INPUT 1	Not used	Monitored Input 1
6	SPARE		
7	OUTPUT CLOSURE +	TB101-5	Solid state relay output
8	LINE OUT +	TB101-7	600-ohm audio output
9	INPUT 2 GND	Not used	Monitored Input 2 ground reference
10	INPUT 4 GND	Not used	Monitored Input 4 ground reference
11	INPUT 3 GND	Not used	Monitored Input 3 ground reference
12	INPUT 1 GND	Not used	Monitored Input 1 ground reference
13	SPARE		
14	OUTPUT CLOSURE –	TB101-6	Solid state relay output

TB2 Wiring Connector

The numbering orientation is shown in Figure 10.

Table 5. TB2 Wiring Description

Pin No.	Pin Name	Connection	Function
1	LOCAL POWER +	TB101-1	24 V dc positive power supply input
2	LOCAL POWER –	TB101-2	24 V dc negative power supply input

TB3 Wiring Connector

The numbering orientation is shown in Figure 10.

Table 6. TB3 Wiring Description

Pin No.	Pin Name	Connection	Function
1	SPEAKER OUT +	Internal Speaker	Class D audio speaker audio
2	SPEAKER OUT –	Internal Speaker	Class D audio speaker audio
3	RELAY OUT NO	TB101-10	Normally open relay connection
4	RELAY OUT COM	TB101-9	Common relay connection

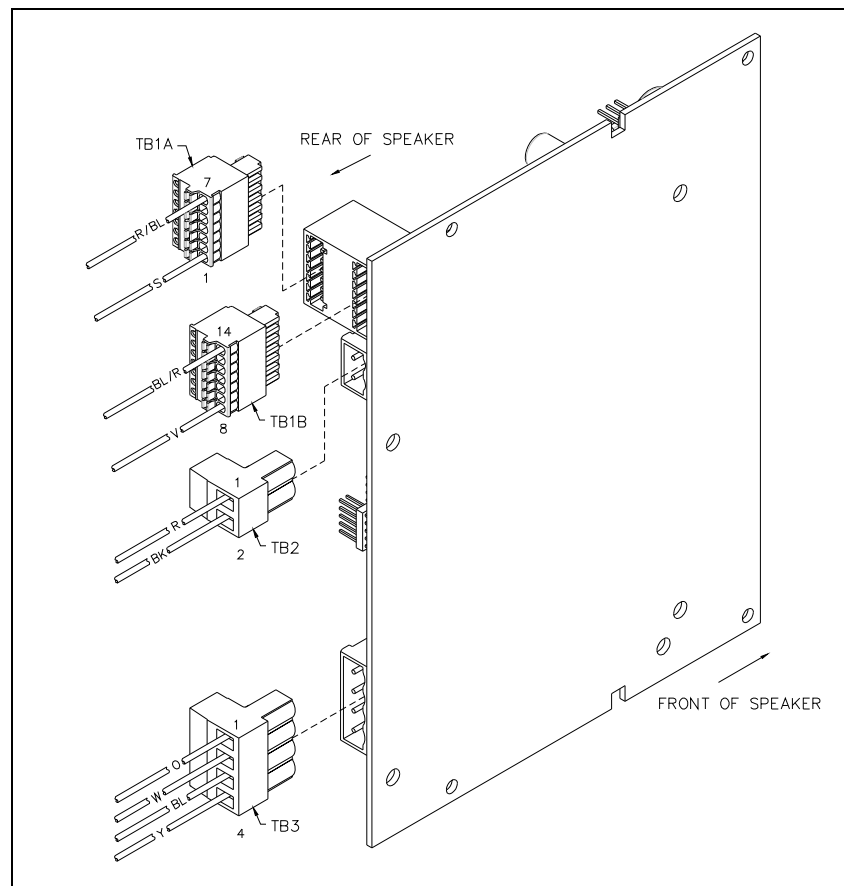


Figure 10. TB1 (A & B), TB2, and TB3 Connector Orientation Diagram

Closing the Addressable Amplified Speaker

When wire terminations have been completed, reconnect the dual 7-point connectors (TB1A and TB1B), the 2-point connector (TB2), and 4-point connector (TB3) to the PCBA. Route the wires through the nylon tie. Refer to Figure 10 for connector orientation and location. Re-twist the nylon tie to secure the wires. Refer to Figure 7 for wire routing. Assemble the speaker sections and tighten the front panel screws to 16 to 20 in-lbs. of torque.

Field Installed Options

Model 12506-001 Remote Volume Control Assembly

The Model 12506-001 Remote Volume Control Assembly allows local, mechanical control of the speaker's output volume. The Local Volume Adjustment can only adjust the output level lower than the maximum programmed level. The 12506-001 Remote Volume Control assembly is designed for indoor installation but can easily be installed in a single gang outlet box, mounted inside a weatherproof enclosure for outdoor applications. Figure 11 shows the wiring configuration needed for the use of the L-Pad connection for local volume adjustment.

1. Separate the front section from the rear section, and mount the rear of the speaker.
2. With the rear section securely mounted and field wiring in place, remove the white wire from TB3-1 and connect it to the orange wire from L-pad.
3. Connect the yellow wire from L-Pad to TB3-1.
4. Connect the black wire from L-Pad to TB3-2.

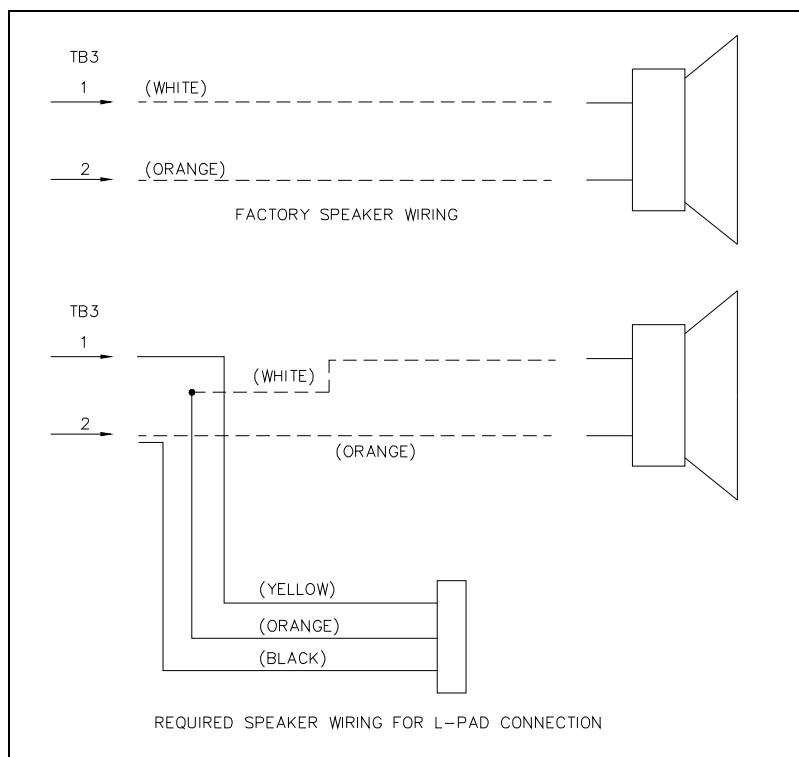


Figure 11. L-Pad Connection Wiring

When wire terminations have been completed, reconnect the connectors to the PCBA and route the wires through both nylon ties. Refer to Figure 10 for connector orientation. Re-twist the nylon ties to secure the wires. Refer to Figure 7 for wire routing. Assemble the speaker sections and tighten front panel screws to 16 to 20 in-lbs. of torque.

NOTE: Be careful not to pinch wiring between the front and rear speaker sections when securing them together.

Model 190-003PS Weatherproof Power Supply Kit

The Model 190-003PS Weatherproof Power Supply Kit is designed for mounting to the bottom of a VoIP Addressable Speaker. The kit includes a 3-gang weatherproof electrical box, 24 V dc power supply, mounting bracket, 2-point terminal block, cable assemblies, 3-inch pipe nipple, 3/4-inch NPT conduit hub, tamper-resistant hardware, and a security bit (T15 Torx). Refer to Figure 12 and Figure 13 and Pub. 42003-266 for installation details.

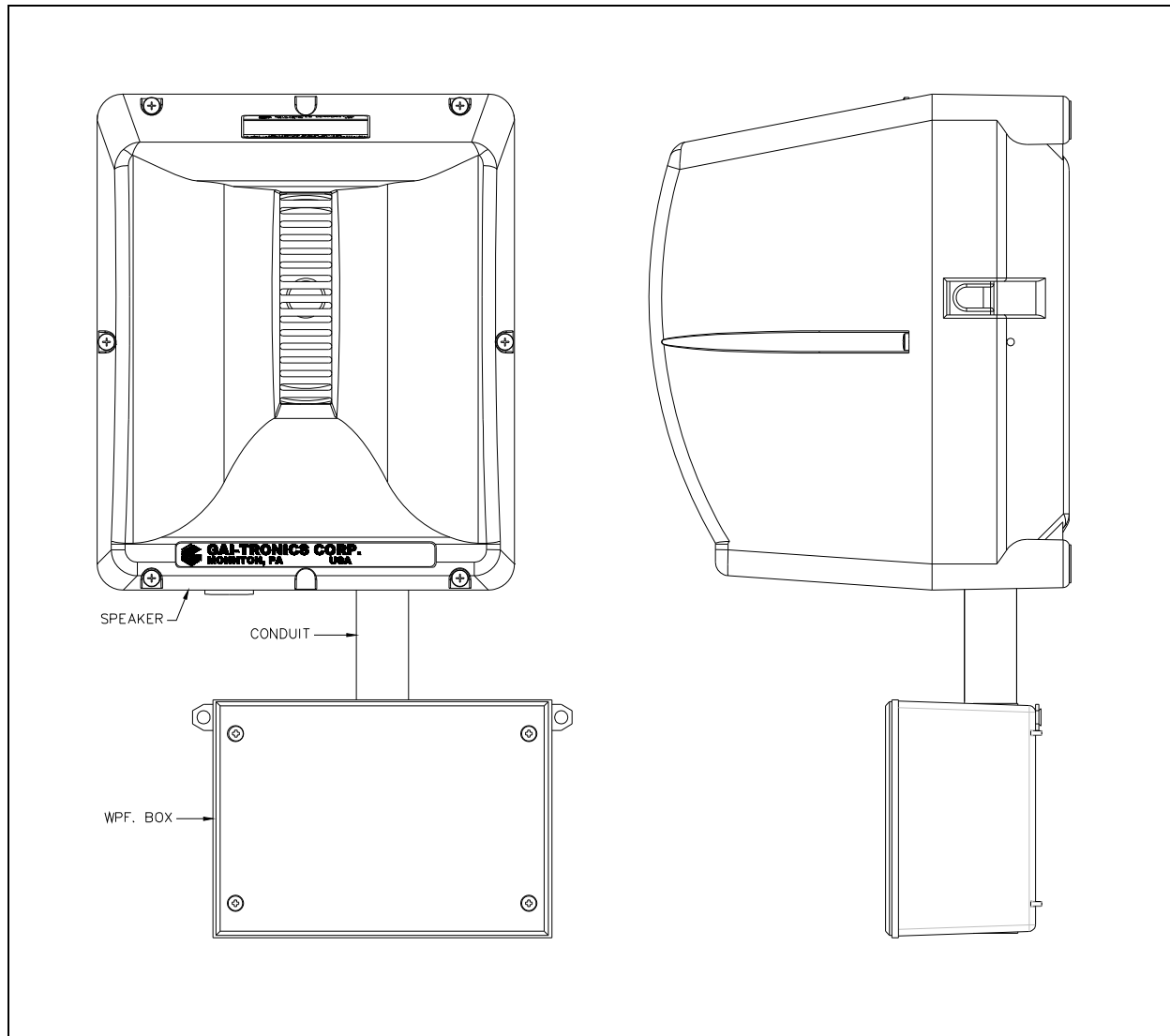


Figure 12. Model 190-003PS Mounting Details

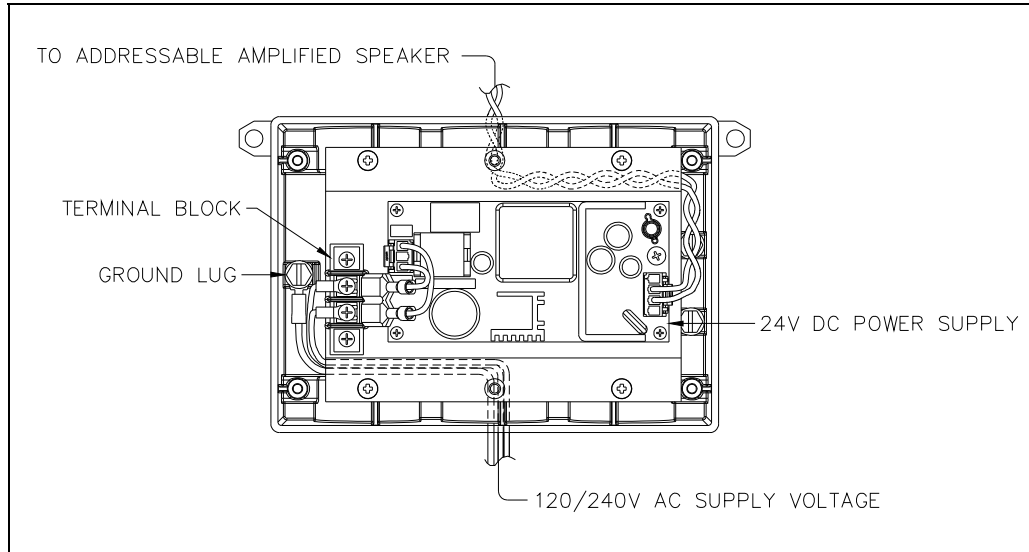


Figure 13. Model 190-003PS Wiring Details

Warranty

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

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.