



GAI-TRONICS®
A HUBBELL COMPANY

Model 670-001

Explosion-proof Speaker Station

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 670-001 Explosion-proof Speaker Station provides safe and clear communications in hazardous areas, even in high-noise situations. This model is NRTL certified for use in the US and Canada for the following areas: Class I, Div. 1, Groups C and D; Class II, Div. 1, Groups E, F, and G; and Class III, Div. 1.

The Model 670-001 station enclosure is fabricated from cast aluminum and is suitable for indoor use. If the station is to be mounted outdoors, it should be housed in a GAI-Tronics Model 10444-003 Weatherproof Non-metallic Enclosure. This enclosure is rated NEMA 4X, and can be purchased separately.

This installation manual provides instructions on both the placement and mounting of the stations. Refer to Pub. 42004-185 and 42004-237 (Canada), which show the conduit installation and station wiring details necessary to maintain the explosion-proof integrity of the station.

⚠️ WARNING ⚠️ Explosion Hazard – Do not connect or disconnect equipment unless power has been switched off or the area is known to be non-hazardous.

Installation

Whether installing an entire system or only an add-on station, consult the system layout diagrams at the end of this manual. These figures, used in conjunction with the station installation information and the cable layout guide, should provide all the information necessary to install the Page/Party® stations. These figures do not show an explosion-proof station; however, the basic points of the system layout and design still apply.

⚠️ NOTE ⚠️ A separate power feed is recommended for Page/Party® stations in Div. 1 areas. With a separate power feed, the Page/Party® stations can be shut off for service or maintenance without disrupting the power supply to the other equipment in the Div. 1 area.

Enclosure Placement

All GAI-Tronics Page/Party[®] units are wired in parallel. Good system layout design minimizes the cable required for each installation. GAI-Tronics multi-conductor cable, designed especially for this application, is recommended. The number, size, and color-coding of conductors are listed in the accompanying system connection diagrams.



System layout and power cable length are important considerations when installing Page/Party[®] equipment. The rules vary for different systems, but generally, the total power cable length should not exceed one mile (5280 feet) for 115 V ac systems. The length of cable between the stations is not a factor; the total cable length is the most important consideration.

Mounting

Refer to Pub. 42004-185 and 42004-237 (Canada), shipped with this unit. The suggested mounting height for all station enclosures is 54 inches (137 cm) up to the centerline of the enclosure.

To maintain the explosion-proof integrity of these stations, all mounting hardware is located outside the enclosure. The unit should be mounted using the two mounting straps that extend past the four corners of the enclosure. See Figure 1.

Use the standard $\frac{3}{8}$ -inch bolts to secure the enclosure to the mounting surface. Secure the bottom two bolts first, then the top bolts. The mounting strap design allows the station to be removed from its mounting surface by removing only two of the bolts.

 **NOTE**  If this unit is to be used outdoors, it should be mounted inside a GAI-Tronics Model 10444-003 Weatherproof Non-metallic Enclosure, which is equipped with a front door. This enclosure has four mounting feet in the four corners and is suitable for mounting to many surfaces. It can be purchased separately.

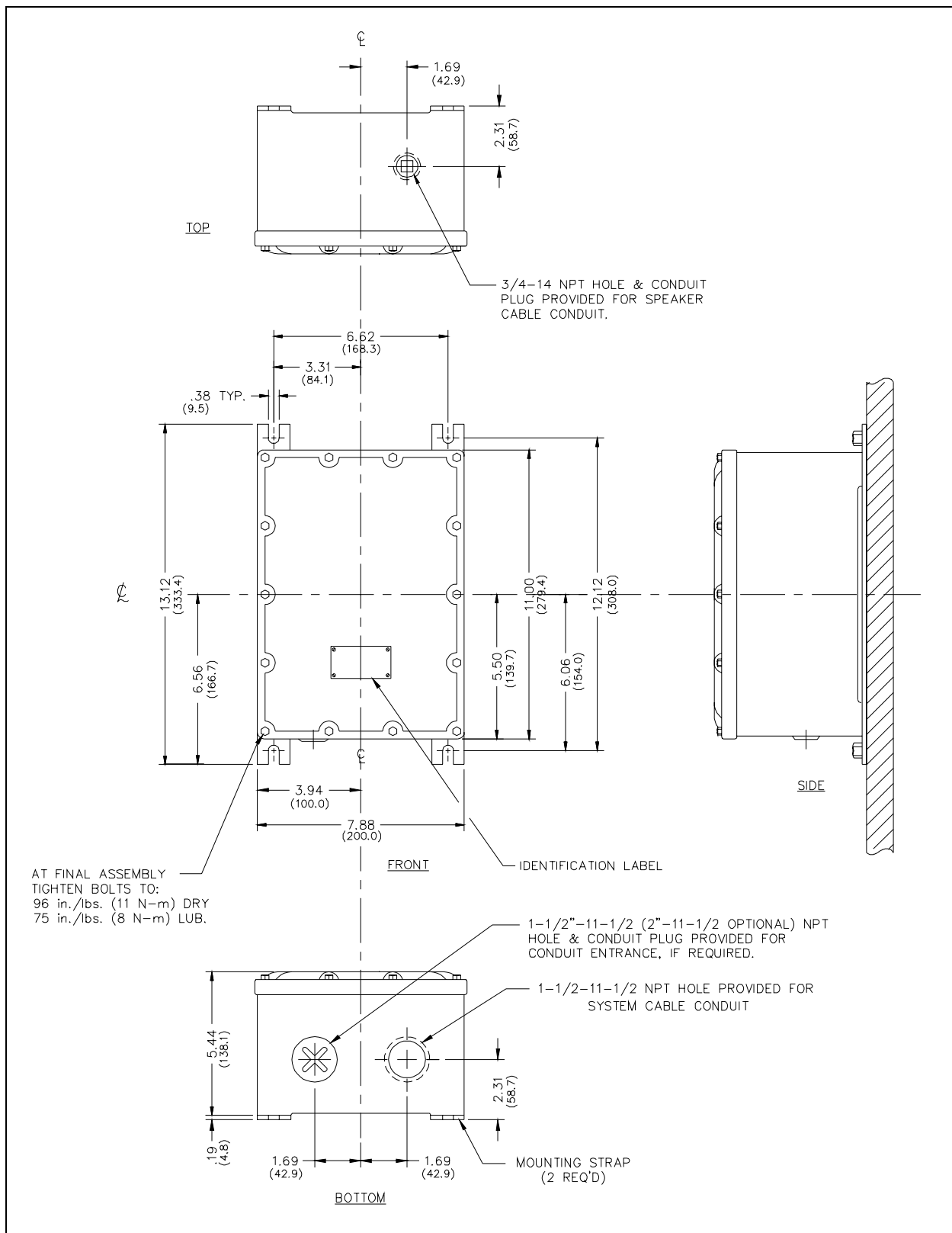




Figure 1. Model 670-001 Mounting Details

Conduit Installation

Refer to Pub. 42004-185 or 42004-237 (Canada), which is shipped with this unit. These publications detail how to maintain the explosion-proof integrity of the station.



 **NOTE**  **External conduits in areas with Class I, Group C and D areas must have gas seals not more than 18 inches (457 mm) from the station enclosure. External conduits in Class II and Class III areas must have seals if the conduit system is not dust-tight.**

Wiring

After the station has been mounted, use a 7/16-inch wrench to open the front panel of the station to access the Termination PCBA. Refer to Pub. 42004-185 or 42004-237 (Canada) for wiring details.

Feed the wiring through the conduit and into the enclosure. Follow the wire colors carefully—these colors correspond to GAI-Tronics 60029 or 60038 Series cable. The wires must be spade-lugged and connected carefully and completely to the terminal block. An improper termination may result in diminished station performance.

Before closing the station, plug the power interconnect cable from the front of the enclosure into the connector on the power supply card in the rear enclosure.

 **NOTE**  **All the bolts must be installed to maintain the integrity of the explosion-proof construction.**

Speaker Muting Information

This station is equipped with a muting feature that is used if the station is located near other handset/speaker stations. This feature prevents acoustic feedback between stations during paging by muting the station's associated speaker. This station is shipped from the factory with the mute feature enabled.

To disable the muting feature, remove jumper W6 located on the 10489-001 Termination PCBA. The chart below describes how the muting function operates when specific combinations of wire jumpers W3, W4, W5, and W6 are installed on the Termination PCBA.

W3	W4	W5	W6	Description of Operation
O	X	X	X	AUX/PAGE inputs to the amplifier are muted during station page (as shipped from GAI-Tronics—see the note).
O	X	X	O	AUX/PAGE inputs to the amplifier are not muted during a station page.
O	X	O	X	PAGE input is muted only during a station page.
X	X	O	X	PAGE input is muted during a station page or by contact closure between the Mute A and B inputs.
X	O	X	X	PAGE/AUX inputs are muted during a station page or by contact closure between the Mute A and B inputs.
X	O	O	O	PAGE/AUX inputs are not muted. Isolated normally open relay contact output between the Mute A and B terminals is closed during station pages.

X = Installed

O = Not Installed.

Mutual Muting

NOTE: Jumpers W4, W5, and W6 must be installed.

Stations that are located closely together may require *mutual muting* of the page amplifiers. To accomplish mutual muting between stations, connect the orange (spare) wire in the GAI-Tronics station cable to TB2-A on each of the Div. 1 stations that require muting. All the mutually muted stations are muted when any connected station is paging.

Mutual muting can be accomplished between the Div. 1 stations and Div. 2 enclosures using most GAI-Tronics 600 or 700 Series enclosures by connecting the orange (spare) wire between TB2-11(A) on the Div. 1 station and TB1-7 on the Div. 2 enclosure:

Div. 1 Stations (TB2-A)	Div. 2 Enclosures (TB1-7)		
670-001	702A	733-001	703A
780-001	732-101	7335-001	
7805-001	7325-101	758-001	

Consult GAI-Tronics for any enclosures not listed.

NOTE: The auxiliary speaker amplifier input is a balanced 10 kilohm audio input.

Specifications

Power input90–140 V ac; 120 V ac nominal, 50–60 Hz; 0.5A maximum
 Dimensions 13.1 H x 7.9 W x 5.6 D inches (332 x 200 x 143 mm)
 Temperature range..... -22 °F to +158 °F (-30 °C to +70 °C)
 Shipping weight 27 lbs. (12.2 kg)

Speaker Amplifier

Output..... @ 120 V ac: 12 watt minimum into 8- or 16-ohm load
 Voltage gain20 dB minimum, adjustable
 Frequency response 250–4,000 Hz., +0/-3 dB ref @ 1 kHz
 Distortion1% maximum THD @ 1 kHz/12 watt
 Input impedance 50,000 ohm, minimum @ 1 kHz
 Controls Speaker volume

Enclosure

Material/finish..... No. 359.2 aluminum alloy
 Mounting Wall or column, four 3/8-inch slotted mounting feet
 Connections Internal screw-type barrier terminal blocks
 Conduit entries Standard top: 3/4-inch NPT
 Standard bottom: 1.5-inches NPT
 Optional bottom: 2-inch NPT

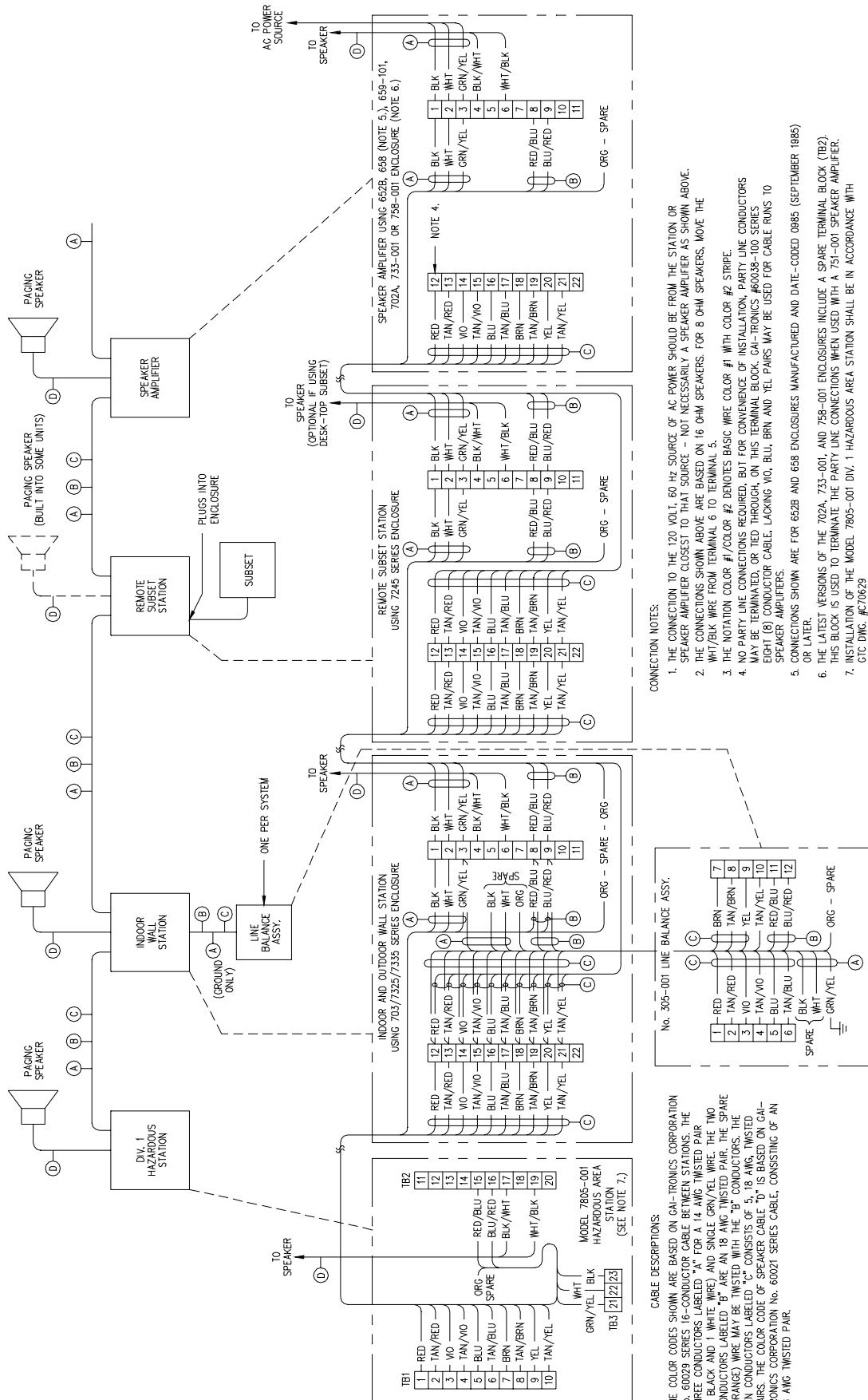
Approvals

NRTL certified for use in US and Canada for the following locations: Class I, Div. 1, Groups C, D
 Class II, Div. 1, Groups E, F, G
 Class III, Div. 1

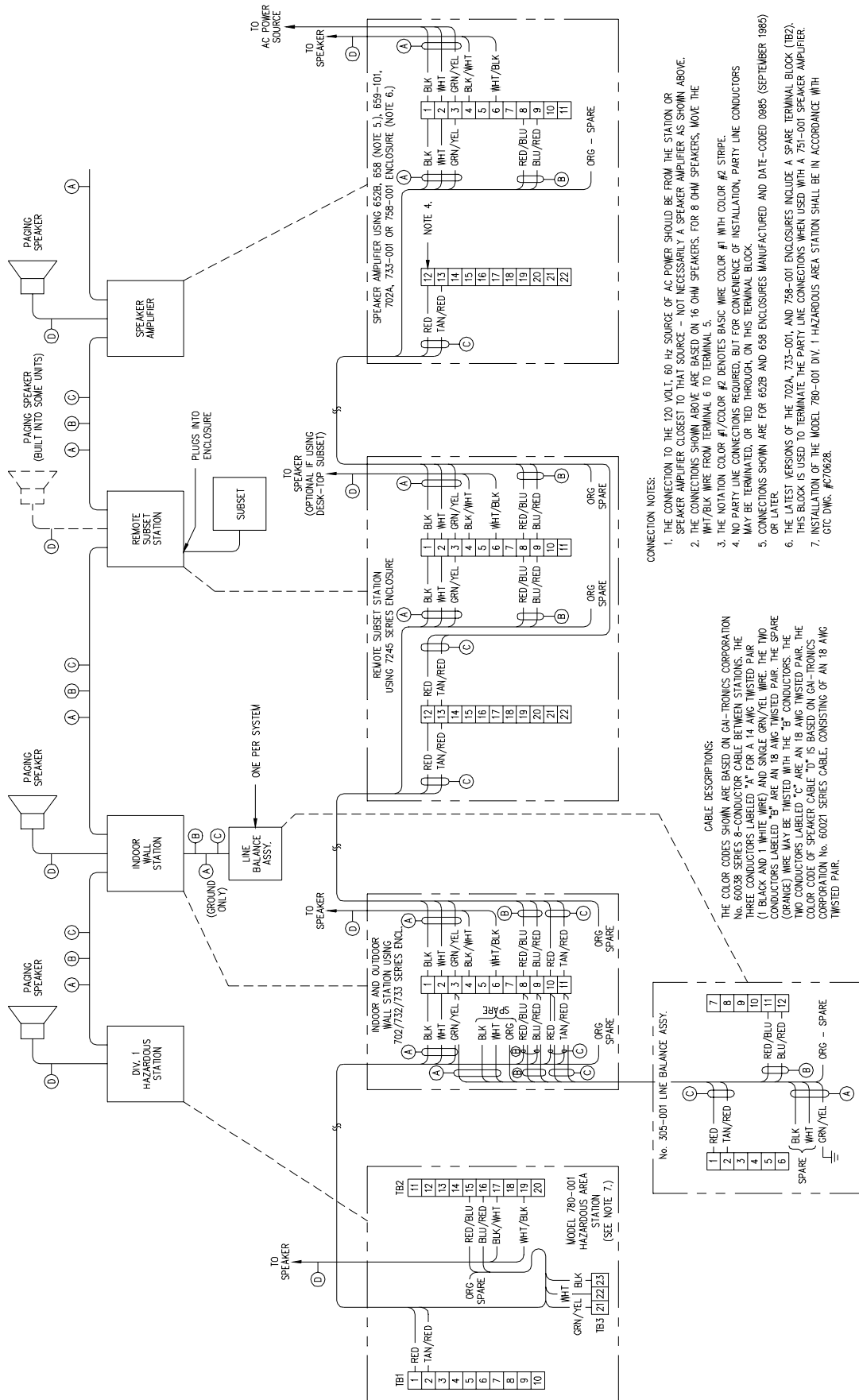
Replacement Parts

Part No.	Description
12604-001	Fuse, Slow, 0.7 amp (10 pack)
61514-004	Harness Assembly
12542-001	Replacement Front Cover Bolts (14 pack)
69488-105	PCBA, Speaker Amplifier
69489-001	PCBA, Termination
12571-001	Maintenance Cover Kit

TYPICAL MULTI-PARTY SYSTEM CONNECTION DIAGRAM



TYPICAL SINGLE-PARTY SYSTEM CONNECTION DIAGRAM



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.