



GAI-TRONICS® CORPORATION
A HUBBELL COMPANY

7245-004 Indoor Remote Subset Amplifier Enclosure

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 7245-004 Indoor Remote Subset Amplifier Enclosure is intended for use in GAI-Tronics Page/Party® and SmartSeries systems. This enclosure enables the amplifier, speaker, and field cabling of subset stations to be remotely mounted. It is constructed of fabricated steel and is equipped with a 24-position remote subset connector.

System Requirements and Limitations

For proper operation, the 7245-004 Amplifier Enclosure must be installed with a subset and amplifier from the following list:

Subsets:

- 726-101 Single Party Desktop Subset
- 7265-101 Multi-Party Desktop Subset
- 711-102 Single Party Desk-Edge Subset
- 7115-102 Multi-Party Desk-Edge Subset
- 716-102 Single Party Flush-Mount Subset
- 7165-102 Multi-Party Flush-Mount Subset

Amplifiers:

- 723-001 Remote Subset Amplifier
- 723-901 SmartSeries Remote Subset Amplifier

The amplifier enclosure must be mounted within 8 feet of the subset due to the subset cable limitations. In addition, the amplifier enclosure must be mounted at an indoor location - the amplifier enclosure is not designed for outdoor use.

In order to provide SmartSeries features, the amplifier enclosure must be connected to a 723-901 Remote SmartSeries Subset Amplifier. The SmartVolume™ feature is not supported for the 7265-101 or the 726-101 Subset and 723-801 SmartSeries Remote Subset Amplifier combinations. Also, the SmartVolume™ feature is not supported for multiple speaker applications.

The 723-901 Remote Subset Amplifier is designed only for use with the magnetic hookswitch subsets listed in the System Requirements section of this manual. Subsets containing an RF hookswitch are not supported.

In order to provide Page/Party® features, the amplifier enclosure must be connected to a 723-001 Remote Subset Amplifier or the 723-901 Remote Subset Amplifier.

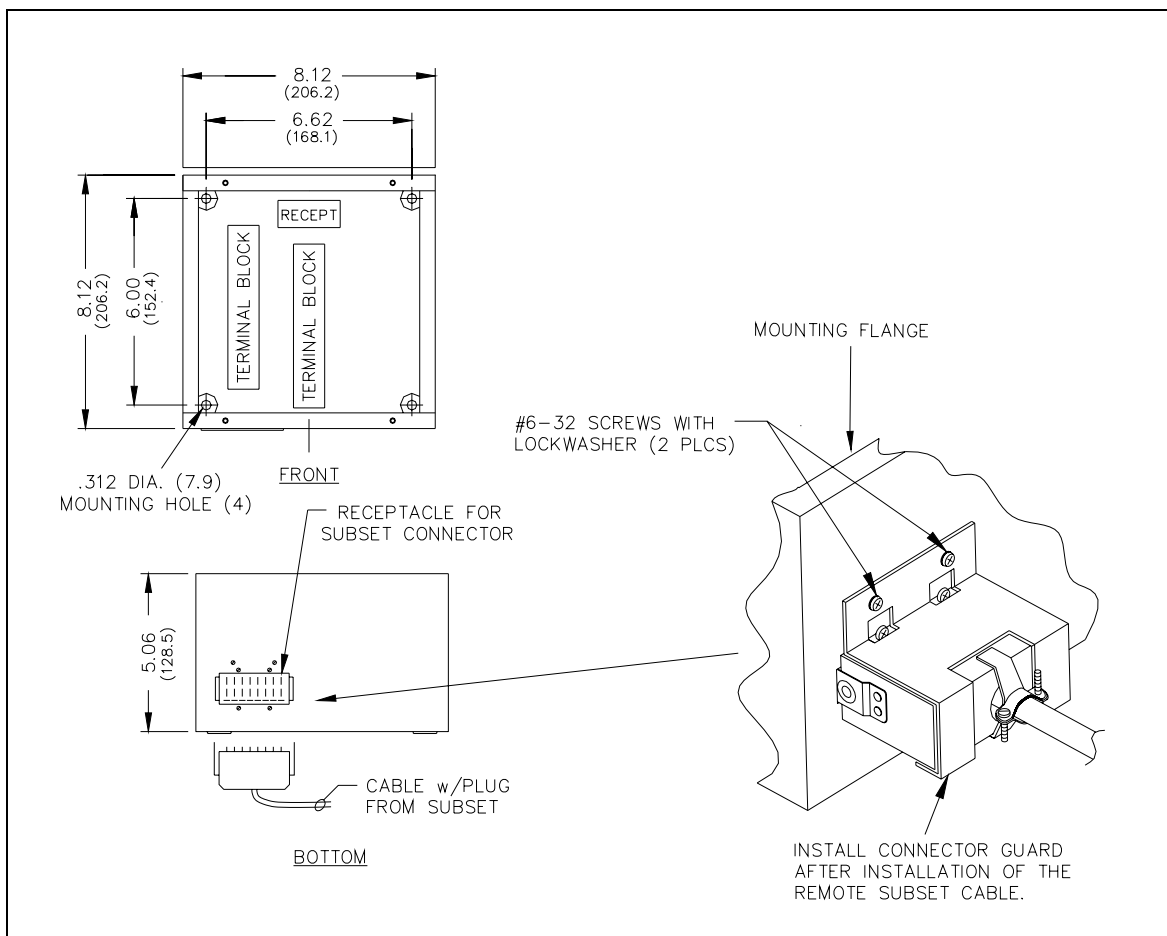


Figure 1. 7245-004 Indoor Remote Subset Amplifier Enclosure Mounting Details

Features and Functions

The 7245-004 Indoor Remote Subset Amplifier Enclosure provides terminations for the following:

- Connectorized subset cabling
- Plug-in remote amplifier
- External speaker(s)
- System cabling
- Auxiliary input signals (SmartSeries stations only)

Description of Major Components

For the following discussion, refer to Figure 2, which provides a block diagram of the enclosure. The 7245-004 Amplifier Enclosure can be divided into three primary sections. Each of these sections is described below.

Subset Connector - The 24-position subset connector J2 links the remote subset with the amplifier and enclosure. This interface enables the microphone, receiver, hookswitch, page switch, party line, speaker, and auxiliary input signals of the subset to be connected to the amplifier and system cabling.

Amplifier Connector - The 24-position amplifier connector J1 links the amplifier with the subset and system cabling. This interface enables the ac power, microphone, receiver, hookswitch, page switch, party line, page line, speaker, mute, and auxiliary input signals of the amplifier to be connected to the subset and system cabling.

Terminal blocks - TB1 and TB2 provide connection points for the system cable, an 8-ohm or 16-ohm speaker, and the auxiliary inputs signals. In addition, the terminal blocks provide connectivity to the subset receptacle and remote subset amplifier connector.

Block Diagram

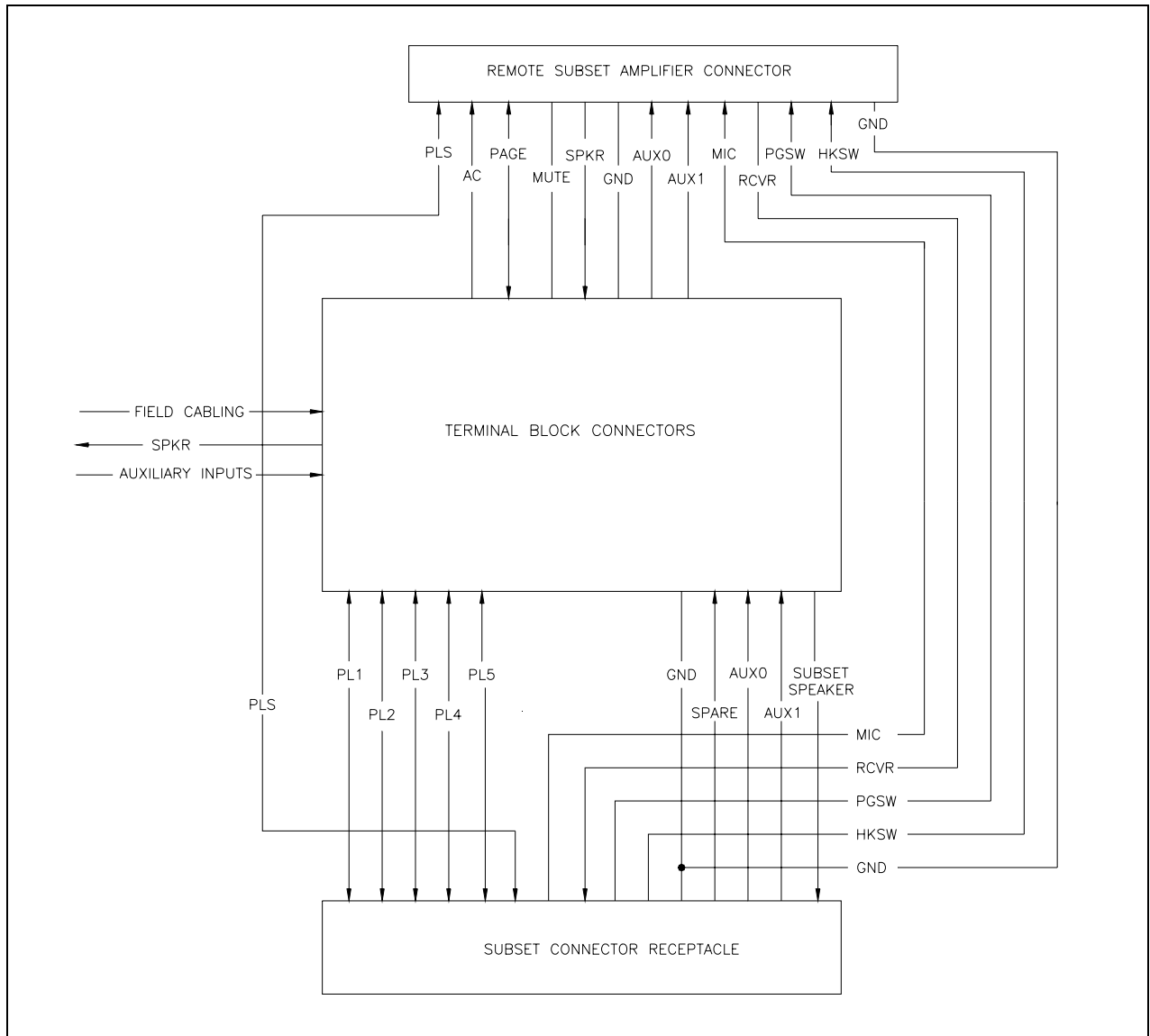


Figure 2. Block Diagram

Installation

⚠ WARNING ⚠ Do not install this equipment in hazardous areas. Installations in non-approved hazardous areas may cause a safety hazard and consequent injury or property damage.

General Information

Refer to the system layout diagrams for typical single party and multi-party system diagrams. These diagrams and the instructions that follow will assist you in installing the 7245-004 Enclosure. For additional system installation, operation, and maintenance information consult Pub. 42004-139, Installation of GTC 700 Series Page/Party® Systems Manual, or Pub. 42004-280, SmartSeries System General Installation Guide.

When installing an add-on station, consult the system layout diagrams at the end of this manual. These figures, when used in conjunction with the station installation information and cable layout guide, should provide all the information necessary to install additional stations.

System layout and power cable length are very important when installing SmartSeries and Page/Party® equipment. Although it varies for different systems, the general guideline is that the most distant station should not exceed 1 mile [5280 feet (1600 m)] from the line balance assembly in Page/Party® systems, or the Page/Party® Interface in SmartSeries systems.

SmartSeries stations require 120 V ac power. The typical ac input current for Page/Party® and SmartSeries stations is less than 0.5 A_{RMS} at full power output. GAI-Tronics system cable contains a No. 14 AWG wire triplet for distributing ac power to the stations. This wire can carry a maximum of 15 amps. Therefore, up to 30 SmartSeries stations can be connected to a single power circuit. Additional stations must be powered by additional power circuits. Refer to the table below for power calculations.

Voltage drop must also be taken into consideration for long cable runs. The minimum operating voltage for a GAI-Tronics station is 90 V ac and the resistance of No. 14 AWG cable is 26.8 ohms per loop mile. Contact your nearest GAI-Tronics representative if you require assistance with system layout.

Page/Party® Zone Power Calculation Table	
The maximum power in any leg of a zone is limited to 120 V ac at 15 amps due to the wire size (No. 14 AWG) in the system cable. Therefore, the following calculations must be made when determining the maximum number and type of units in a leg of the zone.	
Number of handset stations, speaker amplifiers, or SmartSeries Remote Terminal Units:	_____ × 0.50 amp = _____
Total current (<15 amps):	_____

Mounting

Refer to Figure 3 for a typical installation of desk-edge or desktop subset stations in the knee-well of the desk. Refer to Figure 4 for a typical installation of flush-mount subset stations. Place the enclosure in a location that provides easy installation and removal of the connectorized subset cabling, the plug-in amplifier, the speaker cabling, and the system cabling.

NOTE: The GAI-Tronics subsets designed for use with this enclosure contain 8-foot (244 cm) connectorized cables. This enclosure must be mounted within reach of these cables.

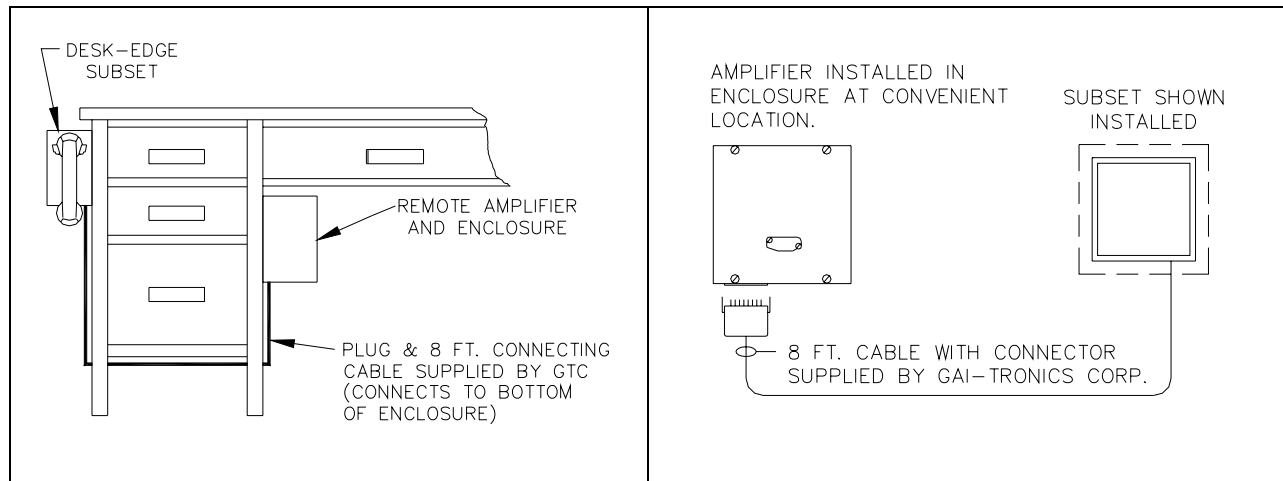


Figure 3. Typical Desk-edge Installation

Figure 4. Typical Flush-mount Installation

The 7245-004 Indoor Enclosure is not supplied with openings for conduit or cable. Drill or punch these openings using the supplied template before mounting the enclosure. The best location for the conduit holes is along the top or bottom of the enclosure and near the rear surface. Avoid the top center as it may interfere with the plug-in amplifier receptacle.

In extreme environments, extra precautions should be taken to improve system reliability. Whenever possible, do not install conduit from the top. Side or bottom entry helps to prevent moisture from dripping onto the terminals or printed circuit boards.

There are four 0.312-inch diameter mounting holes in the corners of the amplifier enclosure. See Figure 1 for hole pattern dimensions. When mounting the enclosure, use caution to avoid damaging the terminal blocks inside. Install the connector guard over the remote cable plug using the screws provided as shown in Figure 1 to comply with NRTL requirements.

Wiring

Feed the system wiring into the enclosure. Strip the insulation on each conductor of the system cable. Install a ring lug on the ground conductor (GRN/YW wire). The wires must be spade-lugged and connected carefully and completely to the terminal blocks in accordance with the colors indicated on the system layout diagrams at the end of this manual. An improper termination may result in diminished station performance.

Feed the speaker wiring into the enclosure. Strip the insulation on each conductor of the speaker cable. Install spade lugs on each conductor. Connect the speaker wires of an 8-ohm speaker between the TB1-4 (speaker common) and TB1-5 (8-ohm) or connect the speaker wires of a 16-ohm speaker between the TB1-4 (speaker common) and TB1-6 (16-ohm).

1. Set the speaker muting control to the desired location. Refer to the Local Muting and Mutual Muting sections for details.
2. Plug the subset connector into the J2 receptacle located at the bottom of the enclosure. Secure the connector with the connector guard and screws provided. See Figure 1.
3. Insert the plug-in amplifier into the J1 receptacle of the enclosure and secure the amplifier with four screws.

Local Muting

Figure 5 illustrates local speaker muting when stations are completely assembled and paging operation occurs. Normally, when the station button is pressed, the paging speaker connected to that station is silenced (muted) to prevent acoustic feedback to the handset microphone. However, while the handset is in use for party line conversations, the paging speaker is “live” to enable paging calls from other stations.

To disable the mute feature, follow these instructions:

1. Locate the lugged violet wire attached to terminal point 7 (mute) on the terminal block within the enclosure.
2. Transfer the lugged violet wire to terminal point 8 (Page L1).

After any muting changes are made, unpack the station amplifier and install.

Mutual Muting

In the event that feedback occurs within an area and repositioning of the system speakers does not help, mutual muting may be used to correct this problem.

Perform the following steps to mutually mute the adjacent amplifiers/handsets within a zone.

1. Ensure that the purple lugged wire is connected to terminal 7 of TB1.
2. Connect terminal TB1-7 of the handset station to TB1-7 of the station within the zone that is causing feedback. This is done by using the spare system wire (orange conductor) from within the system cable that runs between the stations.

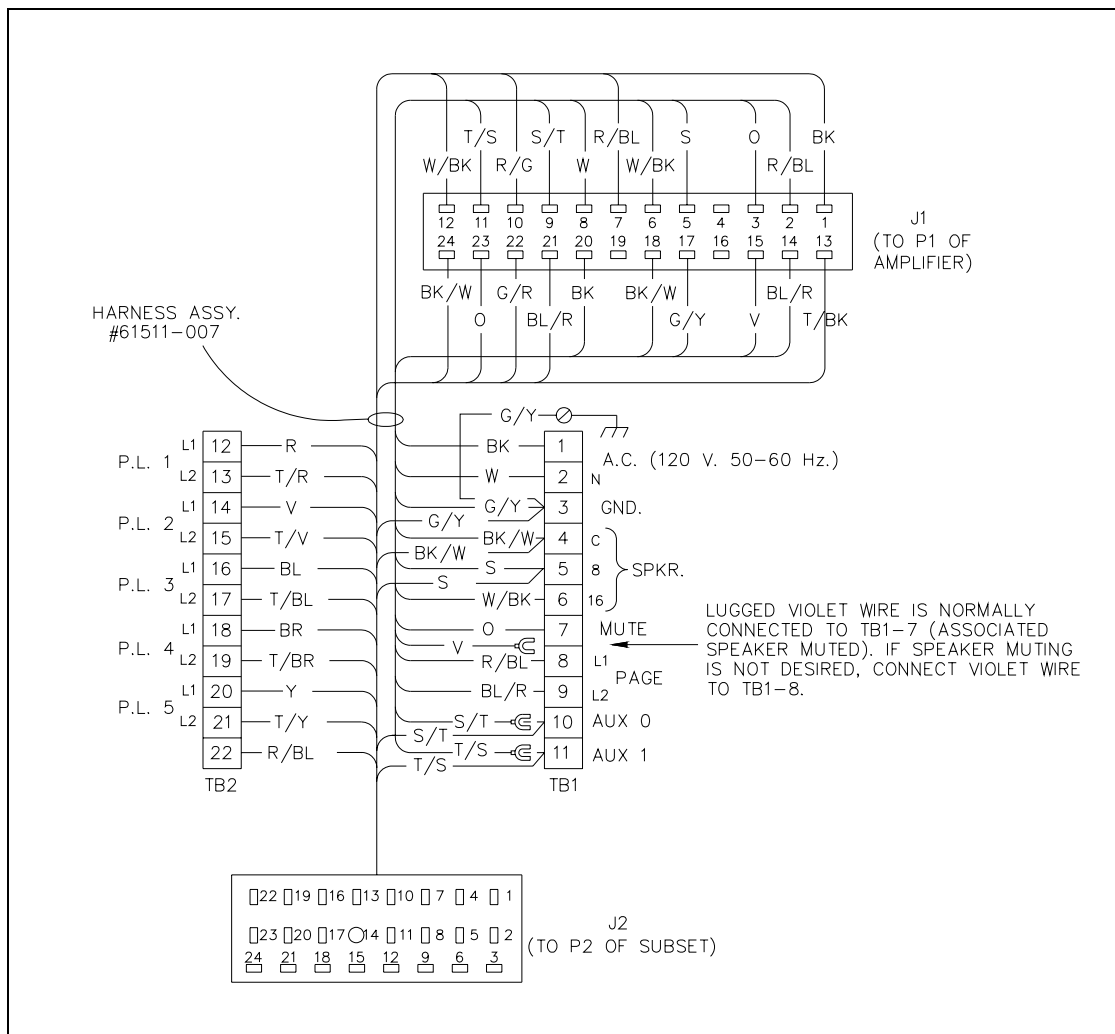


Figure 5. Enclosure Wiring Details

Maintenance

Regular inspection and a good preventive maintenance program will increase the reliability of your GAI-Tronics station. The GAI-Tronics Field Service Department can formulate a service contract suited to your facility's specific need for preventive maintenance.

In addition, the following procedure can be used to keep your system operating effectively.

 **WARNING**  **Before performing any of the following preventive maintenance steps, remove all power from the station.**

1. Remove the amplifier from the enclosure.
2. Visually check the interior of the enclosure for signs of contamination such as dust, condensation or process liquid.
3. Using the No. 10440-003 Maintenance Cable, plug the amplifier into the connector in the enclosure. Check, and if necessary, adjust the amplifier to maximize performance.
4. Reinstall the amplifier in the enclosure. Ensure that all gaskets and hardware are in place. Failure to install the gaskets, which also act as spacers, can result in damage to the connectors on the amplifiers and inside the enclosures and can cause system faults.

It may become necessary to re-terminate some or all of the enclosures in a system. If so, strip the wires back to clean copper and connect only one wire to each connector to allow for easier future troubleshooting.

Troubleshooting

The following table lists some hints to aid technicians in troubleshooting.

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, or reposition the speaker. In some cases, the speaker of a nearby station may have to be repositioned.
Crosstalk occurs.	One or more system cable pairs may be improperly terminated or a fault exists somewhere else in the system. Visually inspect the system cable connections for accidental crossing of the cable pairs or grounds.
Remote subset is inoperable.	<ul style="list-style-type: none"> • Verify that the connector of the remote subset is securely connected to the subset receptacle of the enclosure. • Remove the amplifier from the enclosure. Re-install the amplifier ensuring the enclosure connector and the amplifier connector are aligned properly.
Auxiliary inputs do not operate.	<ul style="list-style-type: none"> • Remove the amplifier and verify the lugged auxiliary input wires are properly terminated on terminal points TB1-10 and TB1-11 respectively. • Verify the auxiliary inputs have been enabled in the system software.

Specifications

Mechanical

Construction/finish.....	16-gauge cold-rolled steel/textured gray polyurethane
Mounting.....	Wall or column, four 0.312-inch (7.92 mm) diameter mounting holes
Connections	Internal screw-type barrier terminal blocks; 24-pin subset connector
Dimensions	8.1 H × 8.1 W × 5.1 D inches (206 × 206 × 129 mm)
Shipping weight	6.0 lbs. (2.7 kg)
Net weight.....	5.1 lbs. (2.3 kg)

Environmental

Temperature range	-22° F to +158° F (-30° C to +70° C)
Relative humidity	Non-condensing 85% maximum
Indoor environmental rating	Meets the requirements of IP20

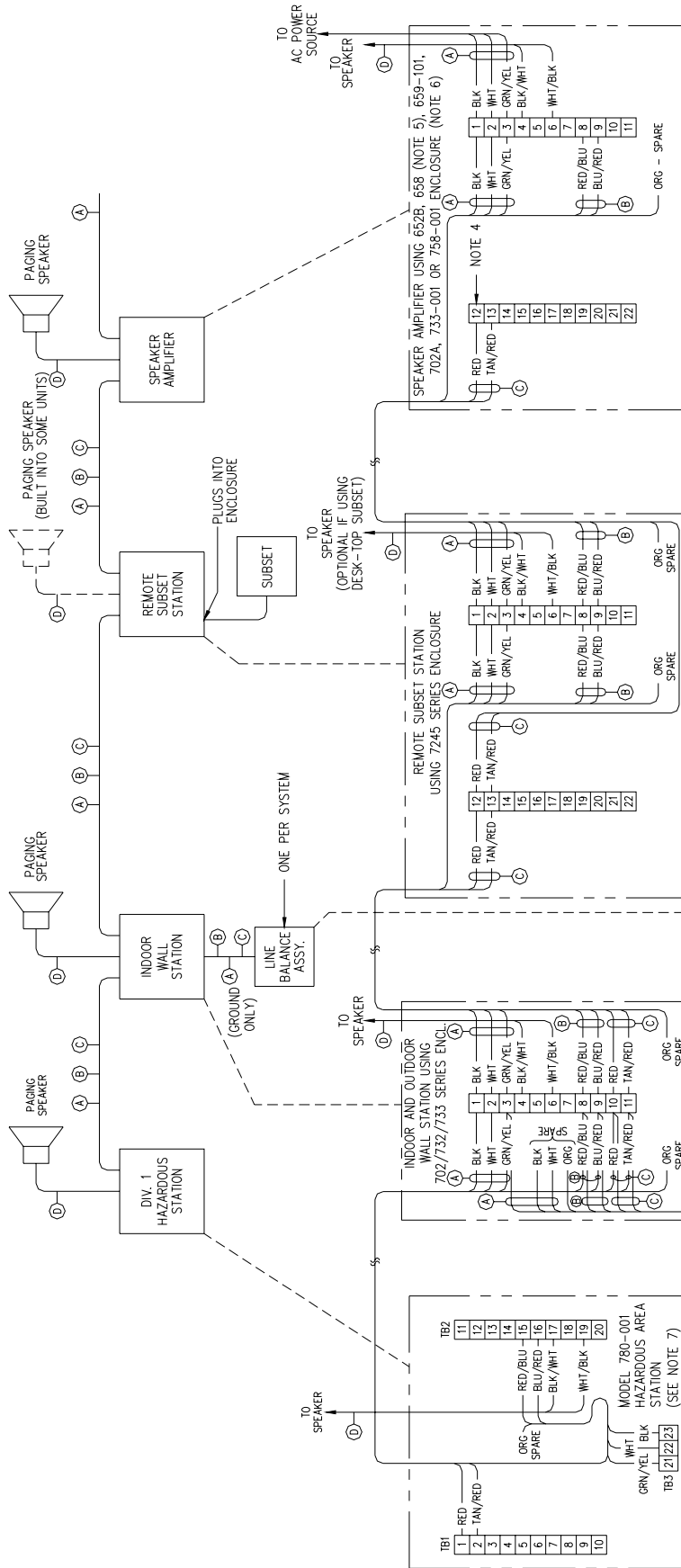
Approvals

Approval	NRTL certified for use in US and Canada..... Class I, Div. 2, Groups A, B, C, D
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Replacement Parts

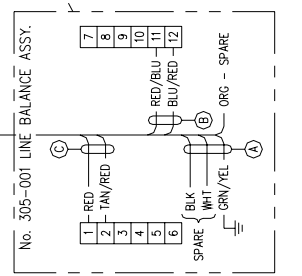
Part Number	Description
12535-001	Hardware for Harness Assembly
61511-007	Harness Assembly
12508-002	Screw Kit (32 pack)
10440-003	Maintenance Extension Cable (24-pin)

TYPICAL SINGLE-PARTY SYSTEM CONNECTION DIAGRAM

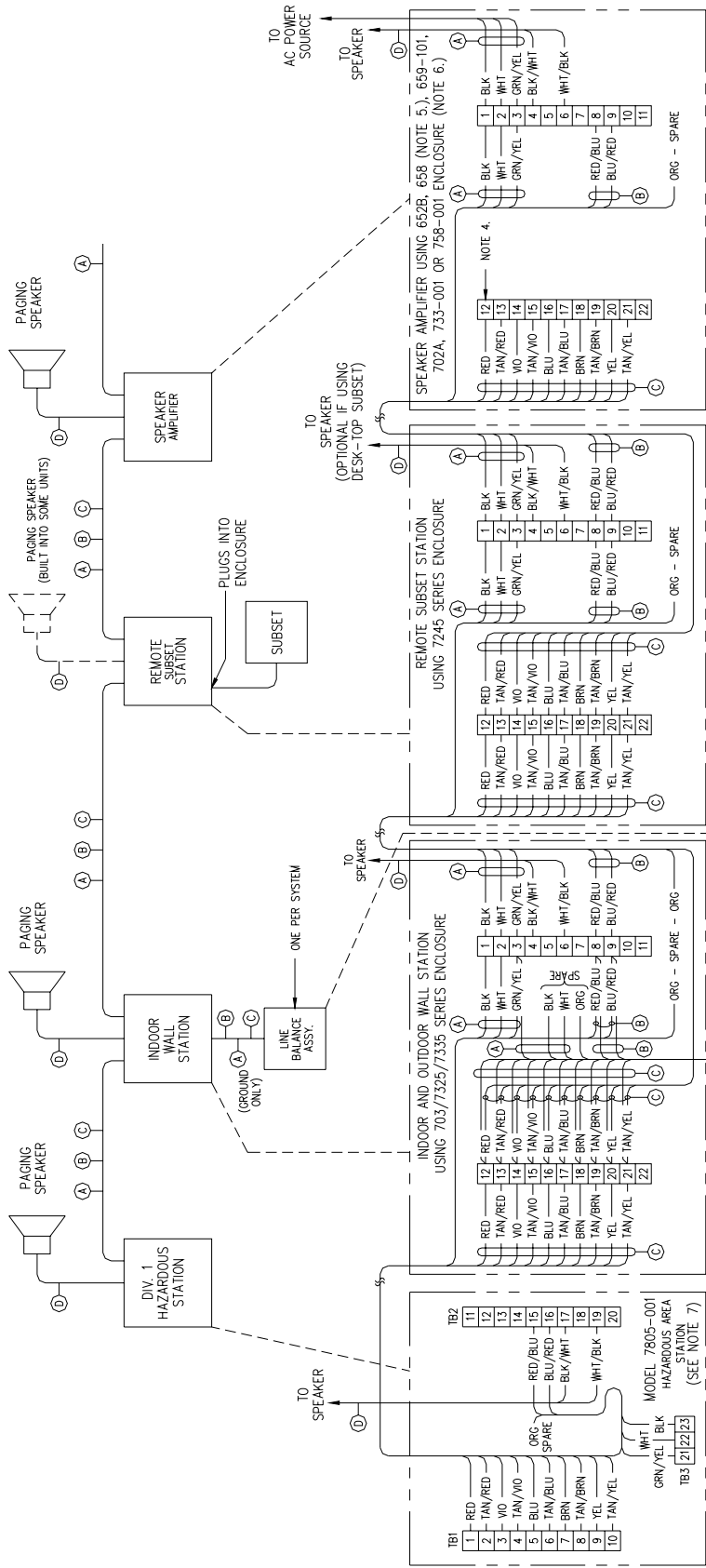


- CONNECTION NOTES:
1. THE CONNECTION TO THE 120 VOLT, 60 HZ SOURCE OF POWER SHOULD BE FROM THE STATION OR SPEAKER AMPLIFIER CLOSEST TO THAT SOURCE - NOT NECESSARILY A SPEAKER AMPLIFIER SHOWN ABOVE.
 2. THE CONNECTIONS SHOWN ABOVE ARE BASED ON 16 OHMS. FOR 8 OHM SPEAKERS, MOVE THE WHT/BLK WIRE FROM TERMINAL 6 TO TERMINAL 5.
 3. THE NOTATION COLOR#1/COLOR#2 DENOTES BASIC WIRE COLOR#1 WITH COLOR#2 STRIPE.
 4. NO PARTY LINE CONNECTIONS REQUIRED, BUT FOR CONVENIENCE OF INSTALLATION, PARTY LINE CONDUCTORS MAY BE TERMINATED, OR TIED THROUGH, ON THIS TERMINAL BLOCK.
 5. CONNECTIONS SHOWN ARE FOR 652B AND 658 ENCLOSURES MANUFACTURED AND DATE-CODED 0985 (SEPTEMBER 1985) OR LATER.
 6. THE LATEST VERSIONS OF THE 702A, 733-001, AND 758-001 ENCLOSURES INCLUDE A SPARE TERMINAL BLOCK (TB2). THIS BLOCK IS USED TO TERMINATE THE PARTY LINE CONNECTIONS WHEN USED WITH A 751-001 SPEAKER AMPLIFIER.
 7. INSTALLATION OF THE MODEL 780-001 DIV. 1 HAZARDOUS AREA STATION SHALL BE IN ACCORDANCE WITH GTC DWG. #C70628.

- CABLE DESCRIPTION:
- THE COLOR CODES SHOWN ARE BASED ON GAL-TRONICS CORP. NO. 60038 SERIES 8-CONDUCTOR CABLE BETWEEN STATIONS.
- THE 3 CONDUCTORS LABELED 'A' ARE A 14 AWG TWISTED PAIR (1 BLACK AND 1 WHITE WIRE) AND A SINGLE GRN/YEL WIRE.
- THE TWO CONDUCTORS LABELED 'B' ARE AN 18 AWG TWISTED PAIR. THE SPARE (ORANGE) WIRE MAY BE TWISTED WITH THE 'B' CONDUCTORS.
- THE CONDUCTORS LABELED 'C' ARE AN 18 AWG TWISTED PAIR.
- THE COLOR CODE OF SPEAKER CABLE 'D' IS BASED ON GAL-TRONICS CORP. NO. 60021 SERIES CABLE, CONSISTING OF AN 18 AWG TWISTED PAIR.



TYPICAL MULTI-PARTY SYSTEM CONNECTION DIAGRAM



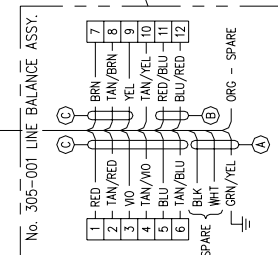
CABLE DESCRIPTIONS:
THE COLOR CODES SHOWN ARE BASED ON GAI-TRONICS CORP. NO. 60029 SERIES 16-CONDUCTOR CABLE BETWEEN STATIONS.

THE 3 CONDUCTORS LABELED 'A' ARE A 14 AWG TWISTED PAIR (1 BLACK AND 1 WHITE WIRE) AND SINGLE GRN/YEL WIRE.

THE TWO CONDUCTORS LABELED 'B' ARE AN 18 AWG TWISTED PAIR.

THE 10 CONDUCTORS LABELED 'C' CONSISTS OF FIVE 18 AWG TWISTED PAIRS.

THE COLOR CODE OF SPEAKER CABLE 'D' IS BASED ON GAI-TRONICS CORP. NO. 60021 SERIES CABLE, CONSISTING OF AN 18 AWG TWISTED PAIR.



- CONNECTION NOTES**
1. THE CONNECTION TO THE 120 VOLT, 60 HZ SOURCE OF AC POWER SHOULD BE FROM THE STATION OF SPEAKER AMPLIFIER CLOSEST TO THAT SOURCE - NOT NECESSARILY A SPEAKER AMPLIFIER AS SHOWN ABOVE.
 2. THE CONNECTIONS SHOWN ABOVE ARE BASED ON 16 OHM SPEAKERS. FOR 8 OHM SPEAKERS, MOVE THE WHT/BLK WIRE FROM TERMINAL 6 TO TERMINAL 5.
 3. THE NOTATION COLOR #1/COLOR #2 DENOTES BASIC WIRE COLOR #1 WITH COLOR #2 STRIPE CONDUCTORS MAY BE TERMINATED, OR TIED THROUGH, ON THIS TERMINAL BLOCK. GAI-TRONICS #60038-100 SERIES 8 CONDUCTOR CABLE, LACKING YIO, BLU, BRN, AND YEL PAIRS MAY BE USED FOR CABLE RUNS TO SPEAKER AMPLIFIERS.
 4. CONNECTIONS SHOWN ARE FOR 652B AND 658 ENCLOSURES MANUFACTURED AND DATE CODED 0985 (SEPTEMBER 1985) OR LATER.
 5. THE LATEST VERSIONS OF THE 702A, 733-001, AND 758-001 ENCLOSURES INCLUDE A SPARE TERMINAL BLOCK (TB2). THIS BLOCK IS USED TO TERMINATE THE PARTY LINE CONNECTIONS WHEN USED WITH A 751-001 SPEAKER AMPLIFIER.
 6. INSTALLATION OF THE MODEL 7805-001 DIV. 1 HAZARDOUS AREA STATION SHALL BE IN ACCORDANCE WITH GCT DWG. #C70629.

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.