GAI-TRONICS®
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SP2 PoE Remote Subset/Speaker Amplifier Station Quick Installation Guide

General Information

This guide covers the installation of SP2 PoE remote subset/speaker amplifier stations (see Figure 1). Refer to Pub. 42004-794 for detailed explanations of the available configuration options and adjustments, system design specifications, and warranty information. GAI-Tronics' product documentation is located on the GAI-Tronics website at https://www.gai-tronics.com.

Options The factory installs and preconfigures optional equipment to default settings.

- speaker amplifier only (no remote subset)
- conformal coating for PCBA
- 70-volt/100-volt speaker connections
- gray powder-coat finish

Settings and Adjustments Complete following settings and adjustments after installation:

- speaker volume
- series/parallel speaker connection
- receiver volume
- station ID and zone selector
- speaker/line output

Subsets Install the SP2 PoE remote subset/speaker amplifier station with a remote subset configuration from the following list:

- single or multi-party desktop subset
- single or multi-party desk-edge subset
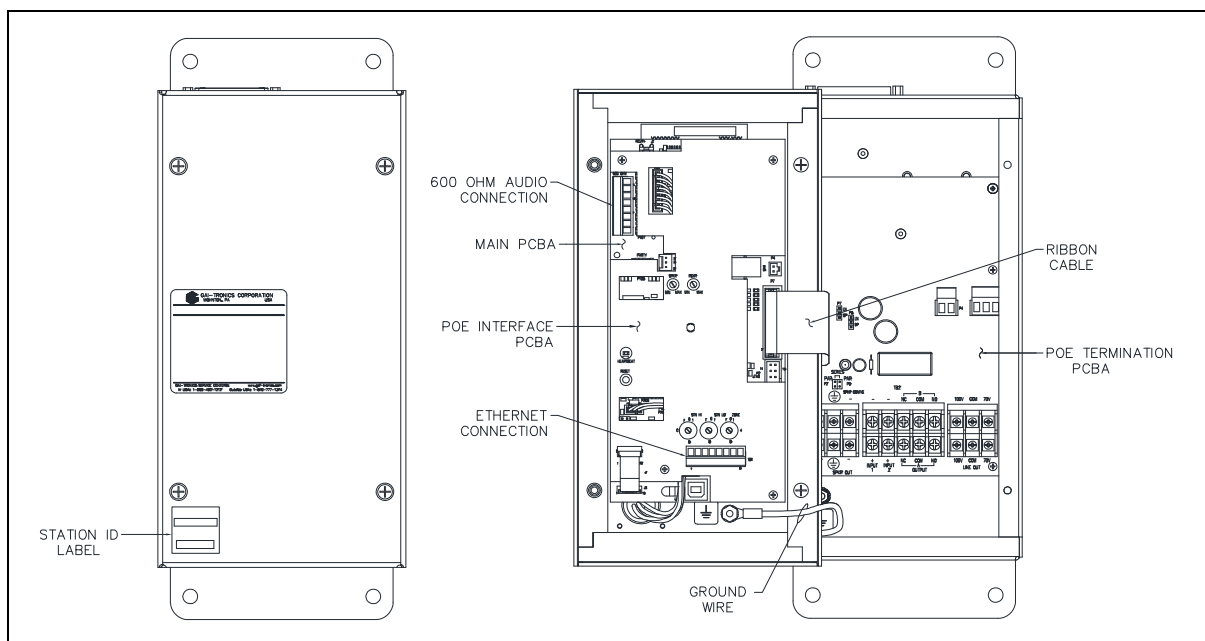- single or multi-party flush-mount subset

Figure 1. SP2 PoE Remote Subset/Amplifier Station

Important Safety Instructions

- **Read, follow, and retain instructions**—Read and follow all safety and operating instructions before installing or operating the unit. Retain instructions for future reference.

- **Heed warnings**—Adhere to all warnings on the unit and in the operating instructions.

- **Attachments**—Do not use attachments not recommended by the product manufacturer, as they may cause hazards.

- **Servicing**—Do not attempt to service this unit. Opening or removing covers may expose dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

⚠ **ATTENTION** ⚠ —Install equipment without modification and according to all applicable local, national, and international electrical codes. North America—Consult the National Electrical Code (NFPA 70), Canadian Standards Association (CSA 22.1), and local codes for specific requirements regarding your installation. Install Class 2 circuit wiring in accordance with the NEC.

Only trained, qualified, and competent personnel must install these enclosures. Installation must comply with state and national regulations, as well as safety practices for this type of equipment.

⚠ **WARNING** ⚠ —**Do not disconnect equipment while energized. Insure proper grounding to protective earthing.**

Installation

Enclosure Mounting and Cable Entries

Mount the enclosure to a flat surface that provides proper clearance, rigidity, and strength to support the enclosure and all contained devices. The subset cable length requires mounting the amplifier within 10-feet of the subset. Mount the amplifier enclosure at an indoor location.

1. Mount the enclosure using the four 0.312-inch (8 mm) diameter holes located on the mounting flanges with ¼-inch (M6) hardware (see Figure 2).

    - The suggested mounting height for all station enclosures is 48 inches (1219 mm) to the center of the bottom mounting holes of the enclosure.
    - SP2 stations are not supplied with conduit or cable openings.

2. Remove the front panel.

3. Drill or punch entry openings in the rear section of the enclosure (see Figure 2).

    - The station is suitable for bottom and/or top entry.
    - using 70-volt/100-volt line audio requires bottom entry.
    - *Recommended*: Bottom entry prevents condensation that may form in the conduit from dripping onto the termination PCBA.
    - The minimum material (spacing) between entry holes is ½ inch (13 mm).

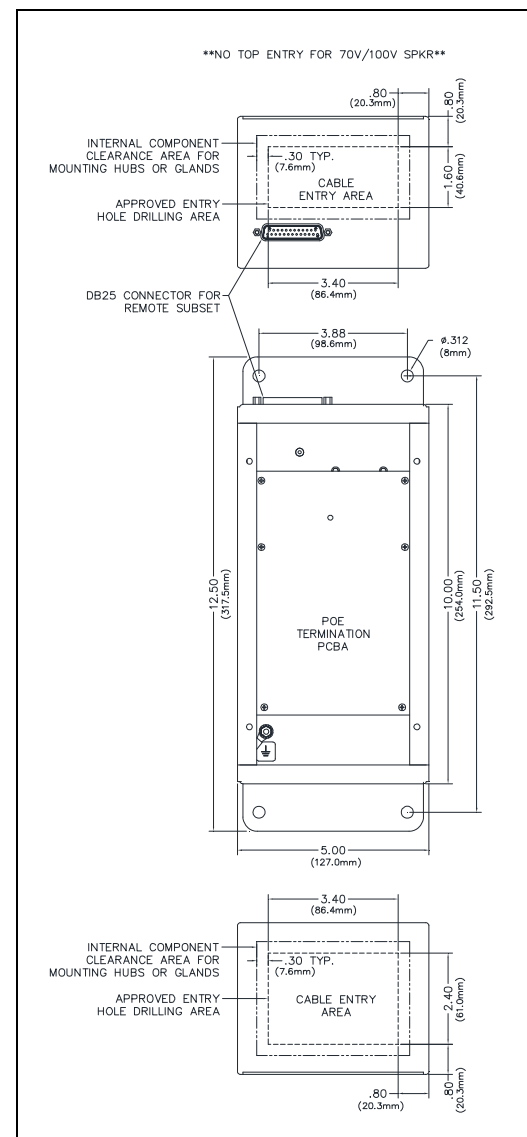**NOTE:** Do not use top entries with 70-volt/10-volt speaker connections.

Figure 2. Suggested Wire Entry Locations

Field Wiring

SP2 stations provide terminal blocks, on the termination PCBA, located in the rear enclosure, for field wiring the speaker and RTU connections. The main PCBA, mounted to the back of the front panel, provides a pluggable terminal block for the 600-ohm audio connection. The PoE interface PCBA, mounted on top of the main PCBA, provides a pluggable terminal block for the PoE connection (see Figure 2).

NOTE: Use shielded Ethernet cable or metallic conduit for installation.

1. Install spade lugs or ferrules on the wires before connection to the terminal blocks.
2. Torque the terminal block screws to 8–10 in·lb (0.90–1.13 N·m) when connecting spade lugged wires.
3. Connect the station enclosure to earth ground
   1. Install a #6 ring lug on the ground conductor
   2. Secure it to the ground terminal located in the lower left corner at the back of the rear enclosure (see Figure 2).
4. *8-/16-ohm speakers* (see Figure 3):
   1. Terminate the direct speaker connection to terminal block **TB1** on the termination PCBA.
   2. Configure the speaker jumpers, **P2** and **P3**, for the impedance of the connected speakers.
   3. Install jumpers **P6** and **P7** in the **SP** position for 8-ohm/16-ohm operation.
   70-/100-volt speakers:
   NOTE: Connection of 70-volt/100-volt speakers requires factory installation of the 70-volt/100-volt toroid on the termination PCBA (see Pub. 42004-794).
   1. Terminate the 70-volt or 100-volt speaker connections to terminal block **TB3** on the termination PCBA.
   2. Install jumpers **P6** and **P7** in the **LN** position for 70-volt/100-volt speaker line operation.
5. Terminate the RTU inputs and output to terminal block **TB2** on the termination PCBA (see Figure 3).
6. Terminate the RTU power source to terminal block **TB2** on the termination PCBA (see Figure 3).
7. Terminate the 600-ohm audio connections to terminal block **TB1** on the main PCBA (see Figure 3).
8. Terminate the PoE connection to terminal block **TB1** on the PoE interface PCBA (see Figure 3).
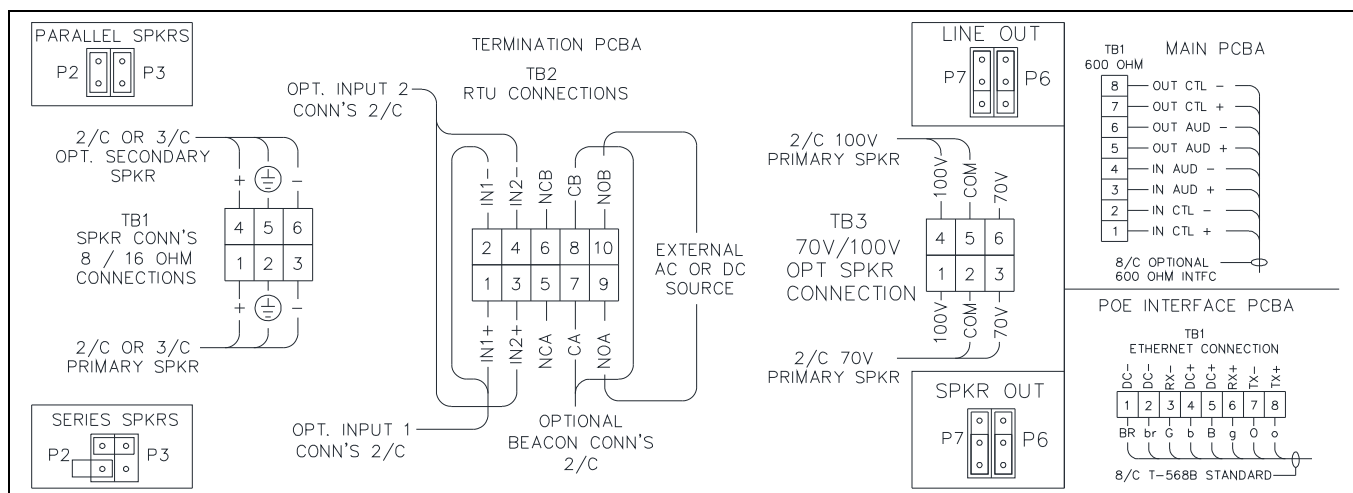   Maximum Ethernet cable length is 100 m. Minimum cable specification is category 5e.

Figure 3. SP2 PoE Connection Diagrams

Front Cover Installation

After all adjustments are complete:

1. Place the front cover onto the rear enclosure.
   Do not to pinch any cables.
2. Secure the front cover using the four screws and washers provided.
3. Torque the screws to 50 in·lb (5.65 N·m).

Programming

SP2 stations are factory configured to provide basic page/party functions upon power-up. Configure stations for custom operation and/or larger system designs using the CLI or SP2 Console application. Refer to Publication 42004-784, SP2 Configuration Guide (see the Reference Documentation section).

Reference Documentation

SP2 PoE Remote Subset/Speaker Amplifier Station 42004-794

SP2 Configuration Guide..42004-784

Approvals

NRTL Listed for USA and Canada... 60950-1—Information Technology Equipment—Safety

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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.