



GAI-TRONICS® CORPORATION
A HUBBELL COMPANY

SP2 Fiber Hazardous Area Handset/Speaker Amplifier Station Quick Installation Guide

Important Safety Instructions

- Read, follow, and retain instructions—All safety and operating instructions should be read and followed before operating the unit. Retain instructions for future reference.
- 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.
- Attention—This device requires an active laser component provided by the end installer. Supply voltage 3.3 V dc, supply current 300 mA, power dissipation 1 W. Fiber optic module must comply with the provisions of Laser Class 1.

Specific Conditions of Use: Flameproof joints are not to be repaired in the field. If the flame path is damaged, the enclosure is to be removed from service and replaced with a new properly working enclosure. The screws used for the body to cover must have a yield stress equal to or greater than 1100 MPa.

⚠ 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. Class 2 circuit wiring must be performed in accordance with NEC 725.55.

These enclosures must be installed by trained, qualified and competent personnel. Installation must comply with state and national regulations; as well as safety practices for this type of equipment.

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

The mounting location must be flat and provide proper clearance, rigidity and strength to support the enclosure and all contained devices. The enclosures are equipped with factory-installed hinges. The enclosures should be mounted with hinges on the left.

⚠ WARNING ⚠ **Do not** mount the enclosure with hinges on the top or bottom side.

Securely fasten the enclosure to the mounting location, using 3/8-inch (10mm) diameter steel mounting bolts and washers, or washer head bolts.

⚠ WARNING ⚠ **Do not disconnect equipment while energized.**

Ensure proper grounding to protective earthing.

⚠ WARNING ⚠ **In 24 V dc systems: Under NO condition should this equipment be operated from a battery charger without the batteries connected.**

In 24 V dc systems, most chargers have an unloaded output of 35 to 45 volts that can quickly damage the equipment designed for nominal 24 volts. The maximum battery voltage should never exceed the maximum specified input voltage.

Inspect and clean the machined flange flame joint surfaces of both the cover and box. Surfaces must be smooth, free of nicks, scratches, dirt or any foreign particle build-up that would prevent a proper seal. Surfaces must seat fully against each other to provide a proper explosion-proof joint. Clean surfaces by wiping with a clean lint-free cloth.

Apply a light coat of Killark “LUBG” lubricant to flange surfaces and close the cover. Install and tighten all cover bolts to 30 lb-ft. Make certain no cover bolts are omitted. Use only those bolts supplied with the enclosure.

General Information

This guide covers the installation of the SP2 Fiber Hazardous Area Handset/Speaker Amplifier Station. Figure 1 shows the standard SP2 Fiber Hazardous station. Refer to Publication 42004-792L2 for detailed explanations of the available configuration options, settings and adjustments, system design, and warranty information. GAI-Tronics’ product documentation is located on the “Document Center” page of the GAI-Tronics website. The link to the document center is <https://www.gai-tronics.com/docs/default.htm>.

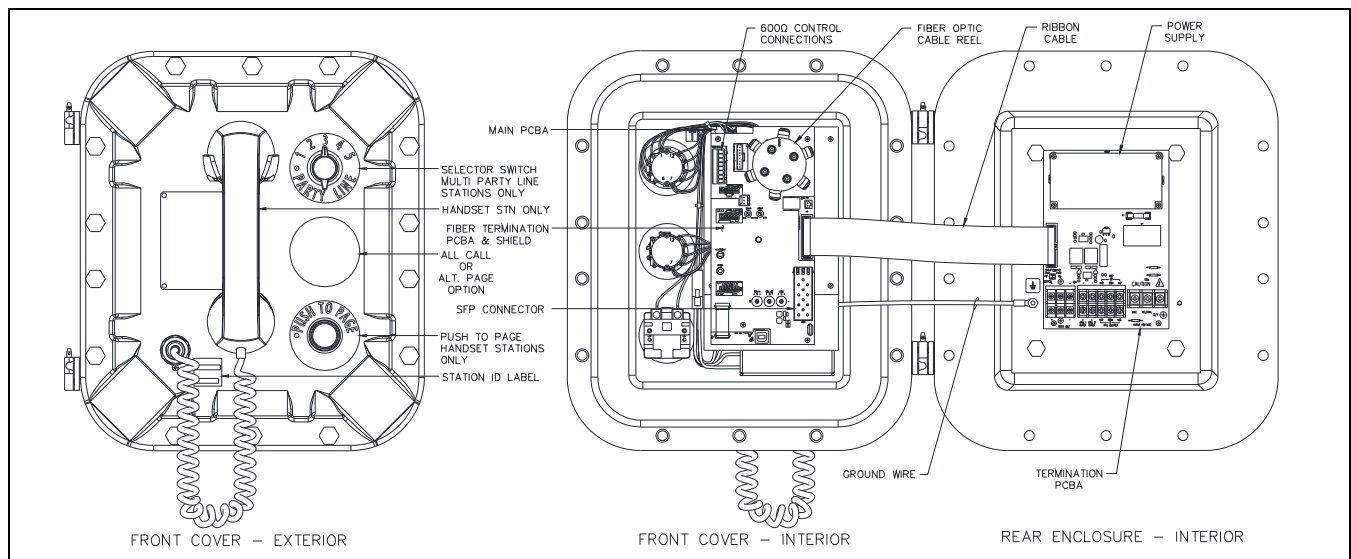


Figure 1. SP2 Fiber Hazardous Station

Installation

Mounting the Enclosure

NOTE: The mounting surface must be able to support the weight of the aluminum enclosure.

The enclosure must be securely fastened with 3/8-inch (10mm) diameter steel mounting bolts located on all four mounting feet. Stainless steel hardware is recommended in outdoor applications.

NOTE: Refer to the Killark installation, operation, and maintenance data sheet enclosed with the unit for additional information.

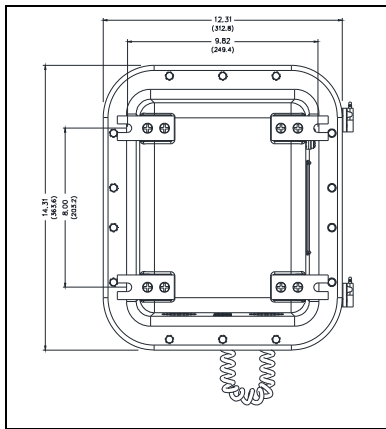


Figure 2. Enclosure Mounting Details

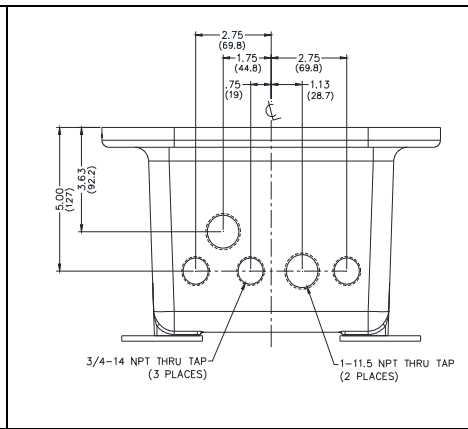


Figure 3. Standard NPT Conduit Entries

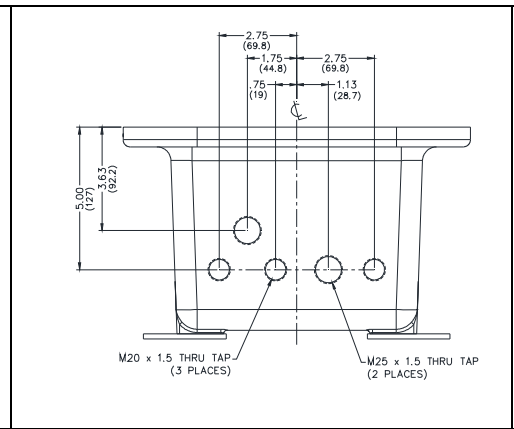


Figure 4. Standard Metric Cable Gland Entries

Cable Entries

Refer to Figure 3 for the standard NPT conduit entries, and Figure 4 for the standard metric cable gland entries. Ensure any unused openings are sealed with proper fittings per local standards. All metric cable entry devices and blanking elements shall be certified in type of explosion protection flameproof enclosure “d” with an IP66 rating, suitable for conditions of use and correctly installed. Use field wiring suitable for the ambient temperature. Any conduit NPT plugs (blanking elements) will need to be explosion-proof with a Type 4X rating.

Field Wiring

The SP2 station provides terminal blocks on the termination PCBA located in the rear enclosure for field wiring the power, speaker wiring, and RTU connections. Connect spade lugs to the wires before attaching them to the termination board terminal blocks to obtain the most secure connection. Torque the terminal block screws to 8–10 lb-in (0.90–1.13 Nm) when attaching the spade lugs.

The main PCBA, mounted to the back of the front panel, contains the 600-ohm audio connection. Use ferrule terminals for this connection. The fiber termination board is mounted on top of the main PCBA, which provides fiber optic termination to the Ethernet SFP transceiver.

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

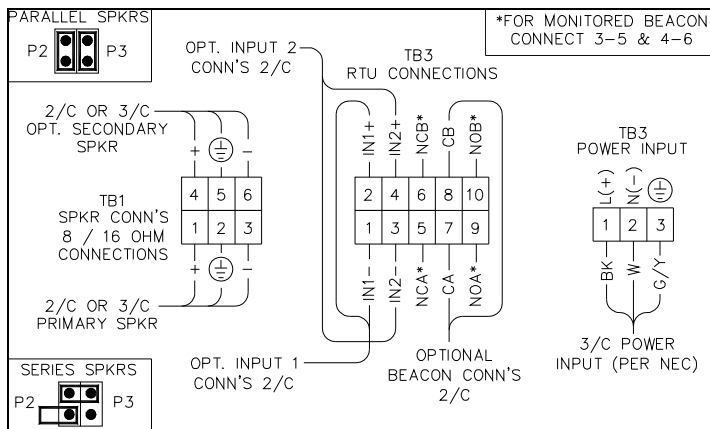


Figure 5. SP2 Termination Board Connections

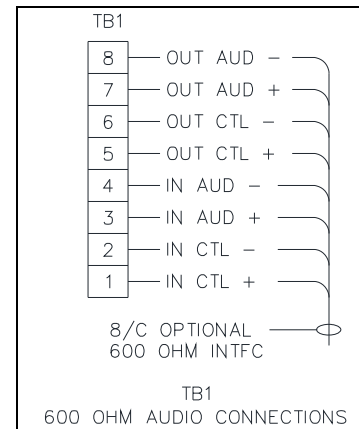


Figure 6. SP2 Mainboard Connections

Available Settings and Adjustments

Most optional equipment is preconfigured to default settings at the factory. The following is a partial list of the available adjustments and settings that may be needed:

- Reset switch
- Receiver volume
- Speaker volume
- Station ID and zone selector.
- Series/parallel speaker connection

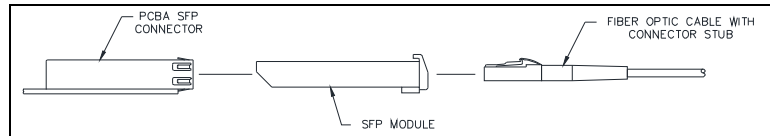


Figure 7. SP2 Fiber Optic Ethernet Connection

Attaching the Front Cover

After all adjustments have been completed, inspect and clean the machined flange joint surfaces of both the cover and box. Surfaces must be smooth, free of nicks, scratches, dirt or any foreign particle build-up that would prevent a proper seal. Surfaces must seat fully against each other to provide a proper explosion-proof joint. Clean surfaces by wiping with a clean lint-free cloth.

Apply a light coat of Killark “LUBG” lubricant to flange surfaces and close the cover. Install and tighten all cover bolts to 30 lb-in. Make certain no cover bolts are omitted. Use only those bolts supplied with the enclosure.

NOTE: Refer to the Killark Installation, Operation, and Maintenance Data Sheet enclosed with the unit for additional information.

Approvals

NRTL listed..... Hazardous locations Class I, Div. 1, Groups B, C & D;
 (USA and Canada)..... Class II, Div. 1, Groups F & G;
 Class III, Div. 1
 T6, Type 4X

International Certification

DEMKO 09 ATEX 0909372X (ATEX)..... II 2 G Ex db [ib] IIB + H₂ T6 Gb
 CENELEC EN 60079-0:2012 + All:2013, CENELEC EN 60079-1:2014, and CENLEC EN 60079-11:2012.
 IECEX UL 09.0009X (IECEX)..... Ex db [ib] IIB + H₂ T6 Gb IEC 60079-0:2011, 6th Edition,
 IEC 60079-1:2014, 7th Edition, IEC 60079-11:2011, 6th Edition.

Tabulation of Additional Previous Editions Applied

The following additional previous editions of Standards noted under the “Standards” section of this Certificate where applied to integral Components as itemized below. There are no significant safety related changes between these previous editions and the editions noted under the “Standards” section.	
EXB-8106 N34 empty enclosures, manufactured by Killark	IEC 60079-0:2004 IEC 60079-1:2003
Model Nos. GO1-13-N34 and GO1-KX1C-N34, manufactured by Killark	IEC 60079-0:2004 IEC 60079-1:2003

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.