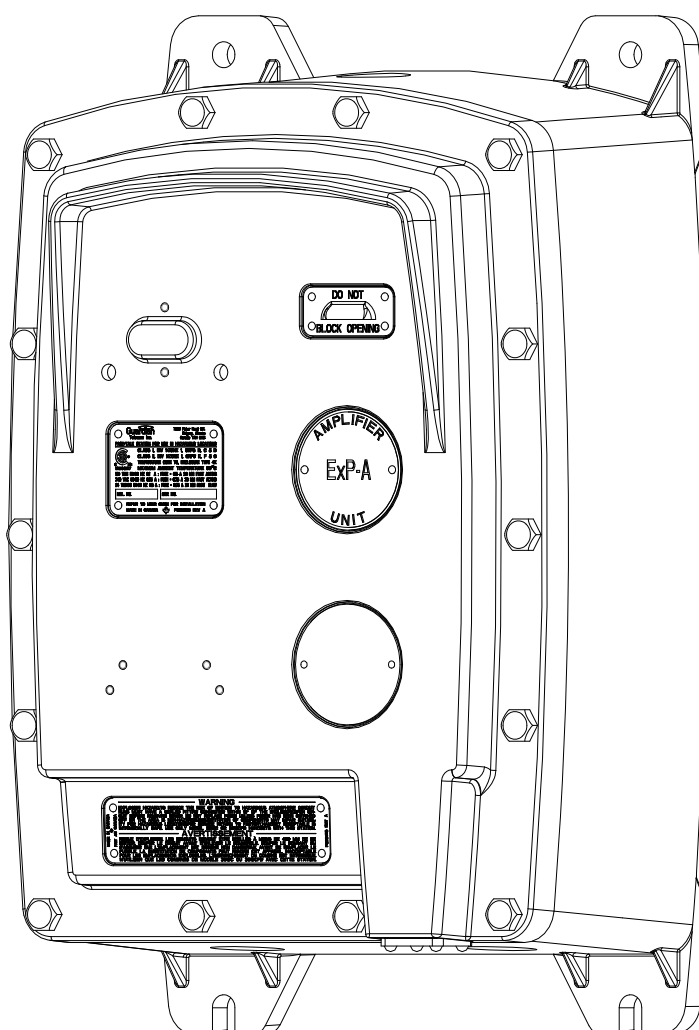


Explosion Proof Page/Talk Paging Amplifier

Model EXP-A

Installation & Operation



P005381 Rev. B 110520 6/6/2011 7:17 AM

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Package Contents

- One (1) EXP-A Page/Talk Paging Amplifier
- Twelve (12) Faceplate Bolts
- Two (2) Tubes of Lubricant
- One (1) Installation & Operation Manual

Overview

EXP-A Explosion Proof Page/Talk Paging Amplifier

Guardian's Page/Talk Systems provide reliable and easy to use paging and communication within industrial environments such as plants, mills and factories.

The Model EXP-A Paging Amplifier described in this manual is designed for use in Class I, Division 1 hazardous locations. Each Paging Amplifier provides up to twelve watts of paging power for an external loudspeaker. The EXP-A provides the capability of adding additional speakers without the need for a paging station.

Guardian's stations and related equipment are compatible with systems provided by most other manufacturers.

Features

Enclosure and Faceplate

- copper free cast aluminum - powder coated

Ambient Noise Monitor

- monitors the ambient noise and adjusts speaker volume accordingly

Connectors

- removable screw and plug Combicon connectors allow for ease of installation
- simply screw wires into plug and reinsert plug into PCB socket

Controls

- speaker volume
- ambient noise level

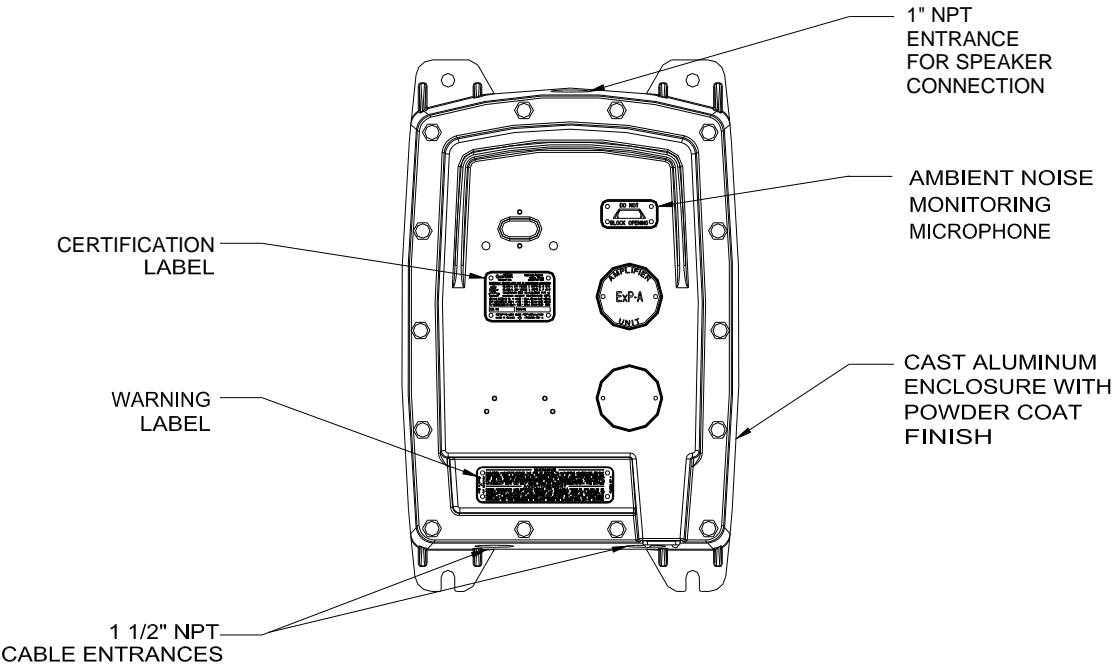


Figure 1 - EXP-A Features

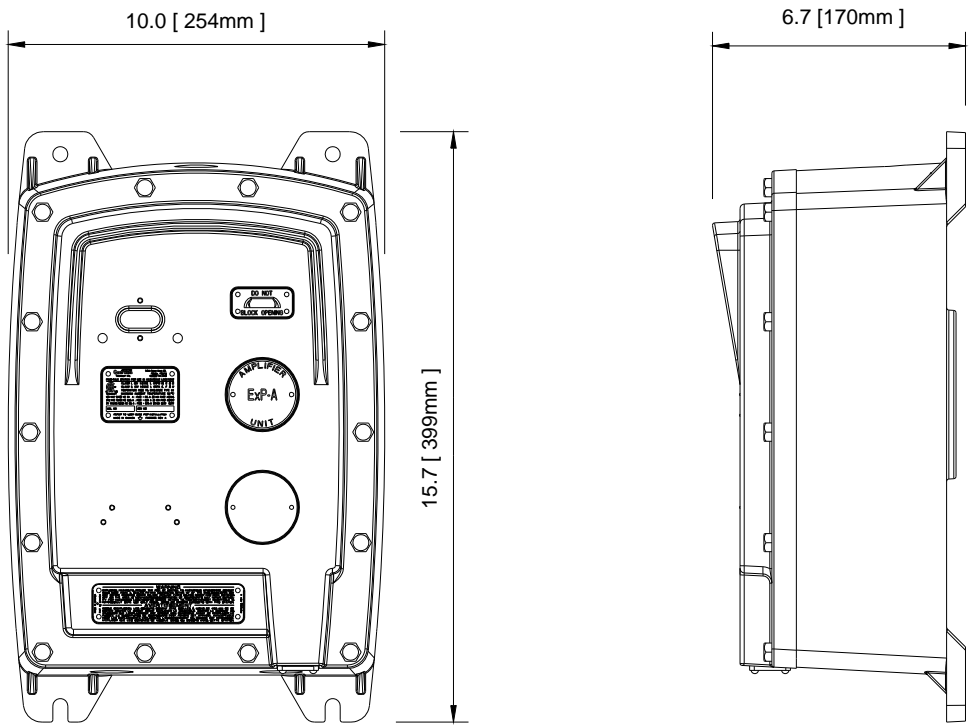


Figure 2 - EXP-A Dimensions

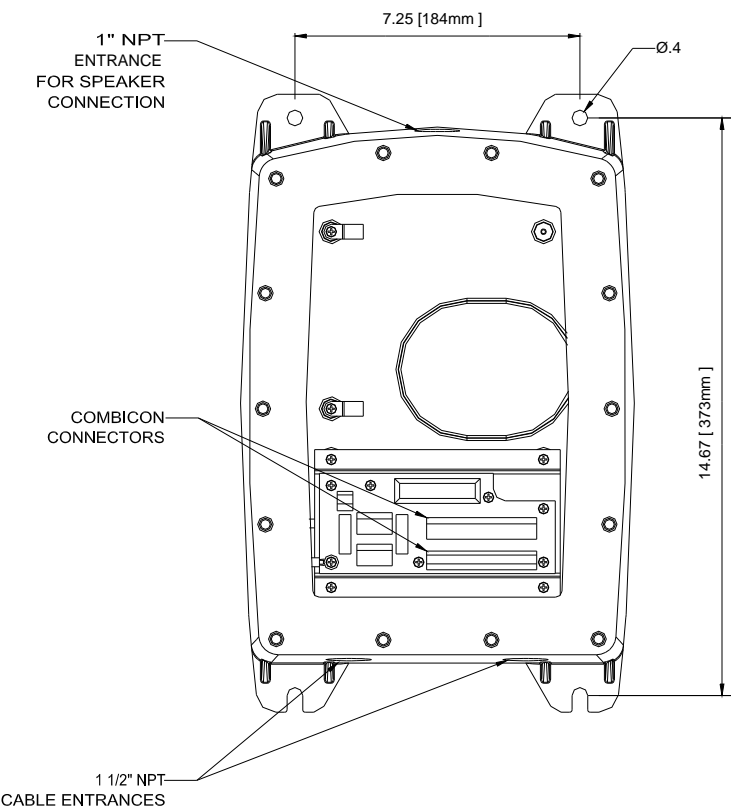


Figure 3 - Mounting

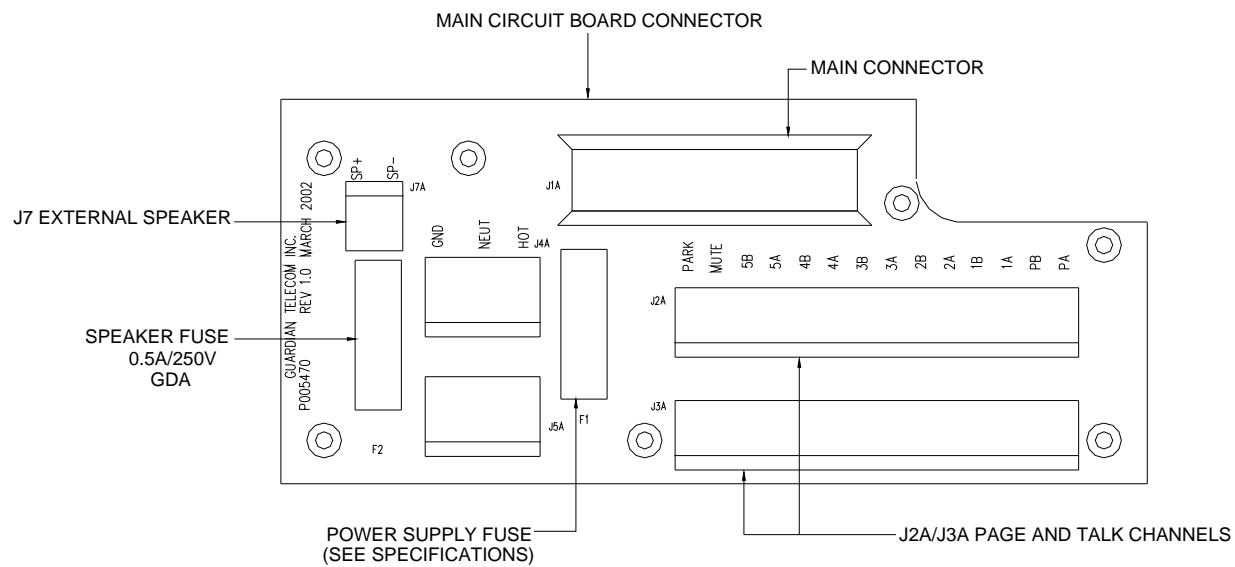


Figure 4 - Wiring

Installing the EXP-A

WARNING - high voltages are present in this equipment when it is connected to the power source.

- Ensure that the location is non-hazardous before proceeding with any installation or electrical wiring.
- Ensure that the station is set up for the correct voltage.
- Follow all appropriate electrical codes and use only approved electrical fittings for the installation.
- Choose a wall location that is free of obstructions and permits space for conduit or wire.
- Ensure mounting can support 30 lbs/14 kg and any additional foreseeable load.
- Use the template provided to locate and drill holes for mounting screws.
- Remove the bolts on the faceplate and remove the faceplate.
- Secure the unit to the wall.
- Ensure that none of the electrical connection circuits are live.
- Bring cable(s) into the enclosure through the conduit entrance(s) and attach individual wires to the Combicon connector(s). Attach the wires from the first or only cable to the bottom connector. Make Talk channel connections to terminals 1A and 1B for a single line system. Plug any unused cable entrances.
- If the station is part of a Group Muting series connect the wires assigned to this function to either the Mute or Park terminal on the connector.
- Set the speaker mute jumper on the circuit board to the desired position.
- Plug the connector(s) into the receptacle(s) on the interface board.
- Ensure all connections are secure.
- Apply a bead of lubricant to the machined surface of the housing.
- Replace the faceplate ensuring that the connector is properly seated.
- Torque the faceplate bolts to 13.5 ft. lbs. (18 Newton-Meters).
- Apply power to the system.
- Wait at least 20 seconds then check the speaker volume by making a paging call. If alteration to the speaker volume is necessary, remove the faceplate and adjust the speaker level potentiometer on the circuit board – clockwise rotation increases the volume.
- Test the installation by making a call as described in the operating section.

Caution: Installation or electrical wiring in a hazardous location could result in serious injury to personnel or damage to property.

Tip: check the label on the main circuit board cover.

See: Figure 2 - EXP-A Dimensions.

See: Insert - Template.

Note: Be careful when removing the faceplate. The circuit board is on the faceplate.

See: Figure 3 - Mounting and Figure 5 - Electrical Connections.

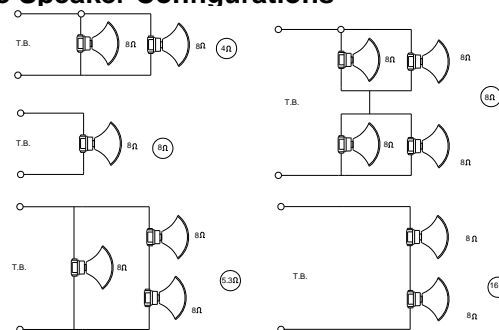
See: Group Muting.

Tip: The lubricant acts as a seal to prevent water and dust from entering the enclosure.

Note: Adjust speaker volume while ambient noise at the station is at a minimum.

Alternative Speaker Configurations

Note: Total impedance on the amplifier circuit should not be less than eight ohms for continuous operation such as background music and not less than four ohms for intermittent operation such as paging. Suitable resistors can be wired in series or in parallel with speakers to maintain an acceptable impedance.



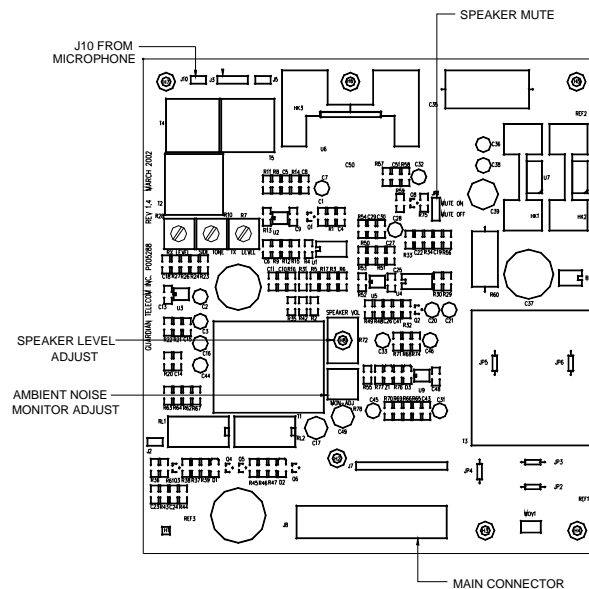
* T.B. - TERMINAL BLOCKS (SPEAKER +, -)

<i>Assignment</i>	<i>Designation</i>	<i>Description</i>	<i>Jacket Color</i>	<i>Stripe Color</i>	<i>Wire Gauge</i>
System Power	J4A/J5A J4A/J5A J4A/J5A	HOT COM GND	Black White Green		14 AWG 14 AWG 14 AWG
Ambient Noise Microphone	J6A J6A	MIC + MIC -	n/a n/a	n/a n/a	n/a n/a
Speaker	J7A J7A	SPK + SPK -	n/a n/a	n/a n/a	n/a n/a
Page Line	J2A/J3A J2A/J3A	PA Page Line PB "	Blue Red	Red Blue	18 AWG "
Channel	J2A/J3A J2A/J3A	1A Channel 1 1B "	Red L. Brown	Red	18 AWG "
	J2A/J3A J2A/J3A	2A Channel 2 2B "	Violet L. Brown	Violet	18 AWG "
	J2A/J3A J2A/J3A	3A Channel 3 3B "	Blue L. Brown	Blue	18 AWG "
	J2A/J3A J2A/J3A	4A Channel 4 4B "	Brown L. Brown	Brown	18 AWG "
	J2A/J3A J2A/J3A	5A Channel 5 5B "	Yellow L. Brown	Yellow	18 AWG "
Group Muting of Loudspeakers	J2A/J3A J2A/J3A	Mute Park	Orange		18 AWG
Spare Conductor (Special Order)	n/a	Extra	Red		12 AWG

Note:

Channels 2 to 5 connections remain empty for single line system.

If this station is in a Group Muting series, but is not to be muted when paging calls are made from other stations in the group, connect the wires assigned to this function to the Park terminals.

Figure 5 - Electrical Connections**Figure 6 - Circuit Board Layout**

Ambient Noise Level Adjustment

The Ambient Noise Sensor on Guardian's Page/Talk stations automatically adjusts the volume of the associated loudspeaker up to 10dB, so that pages can be heard over the background noise.

There are two controls on the circuit board to adjust the Ambient Noise Sensor mechanism. The Paging Speaker Volume Control – which is accessible either from the front or the back of the circuit board – sets the volume of the speaker to a comfortable level when the ambient noise is at a minimum. The Ambient Noise Monitor Adjustment Control determines how the speaker volume tracks the ambient noise. That is if the speaker is not loud enough with a high ambient noise the control can be adjusted to increase the volume. Alternatively if the speaker is too loud with a high ambient noise the control can be adjusted to decrease the volume. It is usually not necessary to change the setting of the Ambient Noise Monitor Adjustment Control since it is set at the factory for average conditions. Adjustment could be necessary if for some reason the Ambient Noise Sensor Microphone is shielded from the source of ambient noise or some similar situation exists.

See: Figure 6 - Circuit Board Layout

Troubleshooting

Associated Speaker Is Not Working

- **Ensure that the location is non-hazardous before proceeding with any maintenance or repairs.**
- Remove the faceplate
- Ensure power is being supplied to the amplifier.
- Check the fuse located on the circuit board and replace if necessary. Correct the problem that caused the fuse to fail.
- Apply power to the wall station.
- Test the installation by making a paging call.

See: Accessing the Interior of the EXP-A

See: Product Specifications for correct fuse rating

Accessing the Interior of the EXP-A

Follow these instructions should it be necessary to access the interior of the EXP-1/-5 for adjustments or repairs.

- **Declassify the hazardous area or remove power before proceeding.**
- Remove power from the wall station.
- Remove faceplate cover bolts.
- Lift off the faceplate cover.
- Perform the necessary adjustments or repairs.
- Replace the faceplate ensuring that the connector is properly seated.
- Torque faceplate bolts to 13.5 ft. lbs. (18 Newton-Meters)
- Apply power to the wall station.

See: Figure 1 - EXP-A Features.

Note: Be careful when removing the faceplate. The circuit board is on the faceplate.

Group Muting

In order to avoid acoustical feedback it may be desirable in certain circumstances to mute speakers associated with adjoining stations when making a paging call. This can be accomplished by interconnecting the "Group Mute" terminals of each station in the group, and setting the speaker mute jumpers on the circuit boards to the appropriate position.

Note: Putting the mute jumper of a station in the on position will mute the associated speaker when the page button is pressed. If the jumper is in the off position the speaker will not be muted when the page button is pressed.

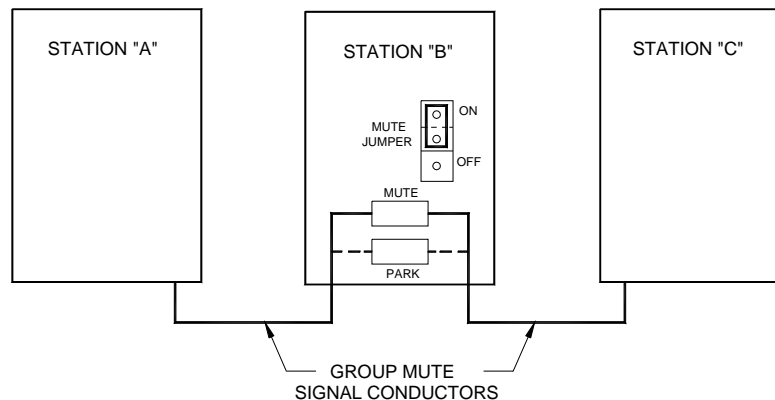
If group muting is used the associated speaker of any station in the group with its mute jumper in the on position will be muted when a paging call is made from any station in the group, including the associated station. Any speaker associated with a station with its mute jumper in the off position will not be muted when a paging call is made from any station in the group, including the associated station.

If it is desired to bypass a station in a group, connect the group paging wires to the PARK terminals of that station.

See: Figure 5 - Electrical Connections.

Note: Paging calls originating from stations outside the group will be heard regardless of the position of the Mute jumper.

EXAMPLE OF GROUP MUTING



If the Group Mute Signal Conductors are attached to the Park terminals of station "B" that station will be bypassed and paging from stations "A" or "C" will have no effect on the output of the loudspeaker associated with Station "B".

If the Group Mute Signal Conductors are attached to the Mute terminals of station "B" the condition of the loudspeaker associated with that station will depend on the setting of the Mute On/Off jumper. If the jumper is in the ON position the loudspeaker will be muted if a paging call is made from stations "A" or "C". If the jumper is in the OFF position the paging call will not be muted if a paging call is made from either of these stations.

Paging calls from outside the Group will always be heard, regardless of the position of the mute jumper.

Product Specifications	
<i>ELECTRICAL REQUIREMENTS</i>	
INPUT VOLTAGE	24 - 30VDC, 20 - 26 / 90-140 / 200-260 VAC
INPUT FREQUENCY	50/60Hz
INPUT VOLTAGE, CURRENT, FUSE	24VDC/0.5AMP/1A SLOW BLOW 24VAC/0.5AMP/1A SLOW BLOW 120VAC/0.1AMP/0.5A 250V 230VAC/0.05AMP/0.25A 250V
<i>SPEAKER AMPLIFIER</i>	
OUTPUT VOLTAGE/CURRENT/FUSE	24VRMS/0.5AMP/0.5A 20MM CERAMIC FAST BLOW
OUTPUT LEVEL	12 WATTS MAXIMUM
AMPLIFIER GAIN	1.5VRMS AT RATED OUTPUT
FREQUENCY RESPONSE	250 – 4000HZ
DISTORTION	1% MAXIMUM THD @ 1000HZ 10WATTS
INPUT IMPEDANCE	200K OHMS, NOMINAL
<i>ENVIRONMENTAL</i>	
WEATHER & DUST TIGHT	CSA ENCLOSURE 4X
<i>MECHANICAL</i>	
BODY CONSTRUCTION	COPPER FREE CAST ALUMINUM - POWDER COATED
OPERATING TEMPERATURE	-40° TO +50° C (-40° TO +122° F)
DIMENSIONS	10 x 15.7 x 6 INCHES (254 x 399 x 221MM)
NET WEIGHT	30 LBS/14 KG
STANDARD MOUNTING	VERTICAL WALL
CONNECTION OPENINGS	LOWER 2 x 1" NPT – UPPER 1 x 1" NPT
<i>COMPLIANCE</i>	
CANADIAN STANDARDS ASSOCIATION (CANADA AND USA)	SIGNAL APPLIANCES – AUDIBLE – FOR HAZARDOUS LOCATIONS CLASS I DIVISION 1/ZONE 1 GROUPS B, C & D CLASS II DIVISION 1/ZONE 1 GROUPS E, F & G AEX d IIB + H ₂ T6

Warranty

Guardian Telecom warrants your product to be free of defects in material and workmanship for a period of one year. Guardian Telecom will repair or replace any defective unit that is under warranty free of charge.

This warranty is null and void if any non-authorized modifications have been made to this product, or if it has been subjected to misuse, neglect, or accident. This warranty covers bench repairs only; such repairs must be made at Guardian Telecom or an authorized service depot. Guardian Telecom is not responsible for costs incurred for on-site service calls, freight, or brokerage.

A return authorization must be obtained prior to warranty claims or repairs.

Disclaimer

The products covered by this manual are designed for use in Industrial Environments and/or Hazardous Locations. Due to the range of possible applications for these instruments the manufacturer will not be responsible for damages or losses of any kind suffered as a result of the use of this product, including consequential damages.

Warning

High voltages may be present in this product. Ensure that power is removed before installing, performing maintenance or making repairs.

Declassify the area or remove all current carrying connections in a safe area before opening the enclosure.

Service Telephone Number

1-800-363-8010

Guardian Telecom provides a customer service telephone number which is toll-free within North America. If you need assistance when installing or operating this product, please call the toll-free telephone number between regular business hours (8:00AM-5:00PM), Mountain Standard Time. If you are calling outside of regular business hours, please leave a detailed message, and a member of Guardian Telecom's Service Department will return your call as soon as possible. If your product requires service, Guardian personnel will supply you with an RMA (return materials authorization) number over the telephone or through our web site product return page. This number must be included with your return address and the name of the person to contact.

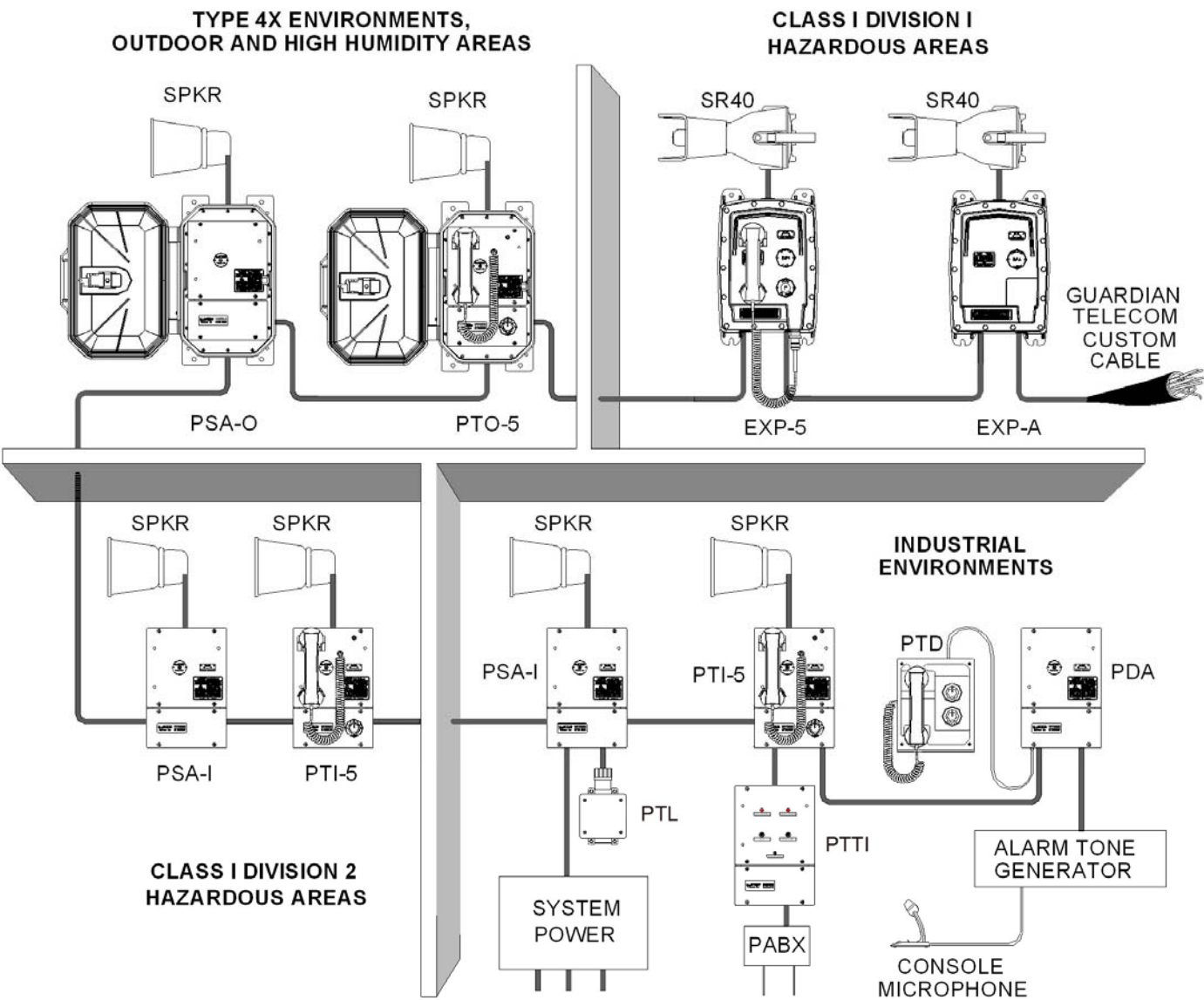
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Feedback

Guardian Telecom continually strives to make reliable, durable, and easy to use products. If you, as an installer or user of our equipment, have any suggestions for improvements to this or any of our products or documents, including this manual, we would appreciate hearing from you.

Guardian Product Return
Guardian products have been quality tested and are in full working order when shipped from the factory, given the rugged nature of these products shipping is not expected to damage a unit. In the unlikely event of a malfunction Guardian follows the three step procedure below.
<i>Step I - On-Site Correction</i>
<ul style="list-style-type: none">• The most common source of difficulties with a new product is improper installation in one of two ways: incorrect wiring connections or connection to an incorrect power source.• Product wiring needs to be properly connected to the on-site wiring. Correct wiring instructions are shown in the user manual included with the product.• Connecting a telephone to a standard power source, rather than tip & ring, will blow the telephone's internal, user-replaceable fuse. In the event of fuse burn-out, disconnect the telephone from the power source, replace the fuse, and reconnect following the wiring diagrams provided with the product.
<i>Step II - Return Materials Authorization (RMA)</i>
<ul style="list-style-type: none">• When a product has been installed following user manual instructions, and the unit fails to operate, the user must contact Guardian Telecom to obtain authorization to return the product. This can be done by completing a RMA form online at www.guardiantelecom.com, or by calling the service telephone number given in this manual.• After providing information on the product, the owner and the nature of the problem, Guardian will issue a RMA number, to be shown on documentation returned with the product.• In addition to the RMA number, shipping documents should include name, address and telephone number of the owner along with contact information for the person responsible for the repair and/or the user who identified the malfunction.• (Where a product is being returned for repair from outside of Canada, customs documentation must show the product's serial number, date of export [date of purchase], and a notation that the equipment is: "Canadian goods returning.")
<i>Step III - Factory Authorized Service</i>
<ul style="list-style-type: none">• Once received, each product is carefully inspected and tested. If the product is under warranty, repairs are completed and the product returned to the owner, generally within five working days of receipt by the factory.• A product that has been subjected to misuse, neglect or accident or is beyond the warranty period will be evaluated. The service department will provide the owner's representative with a repair cost estimate. Once approved, repairs are completed and the product returned, generally within five working days.

Typical Installation



Model No.

Part No.

Serial No.

Date of Purchase

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