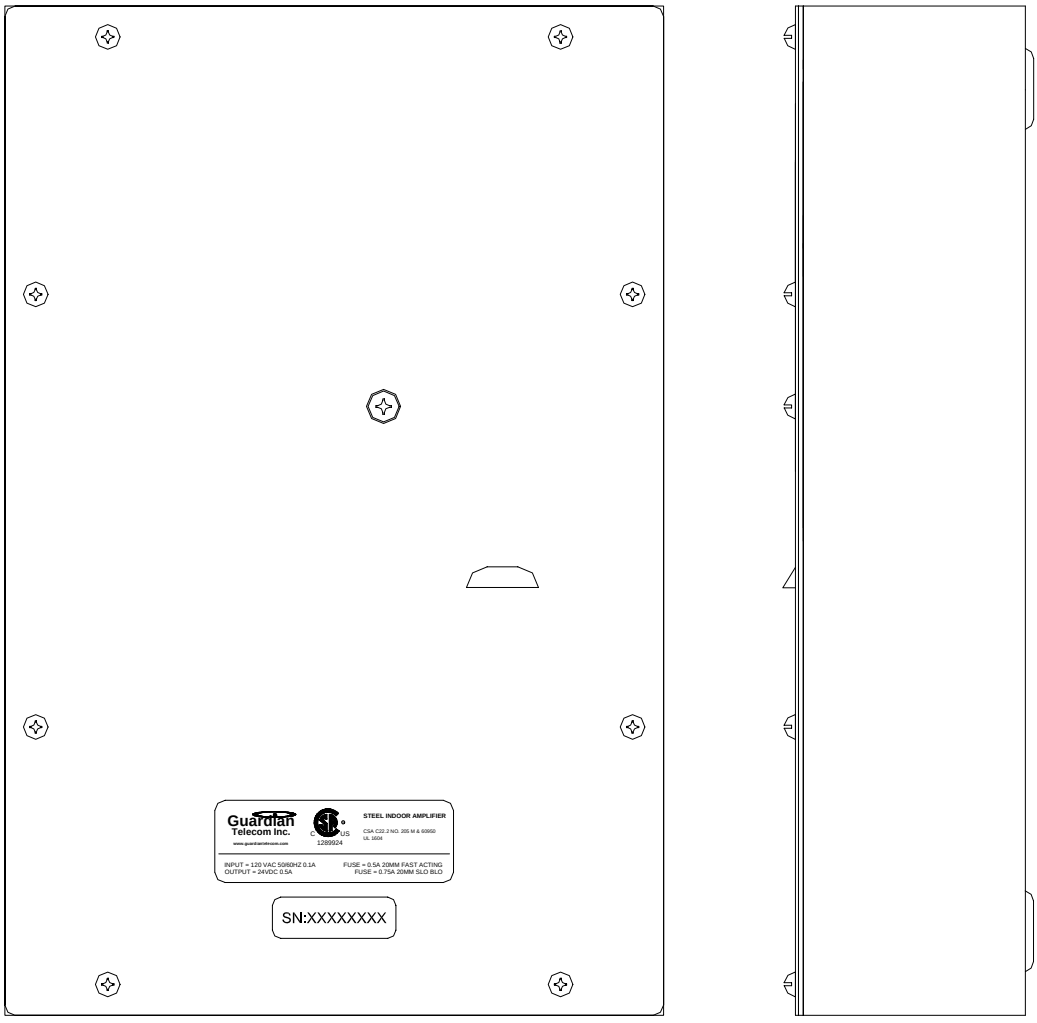
Guardian Telecom Inc. Industrial Communications Worldwide

Page/Talk Paging Amplifier

Model SIA

Installation & Operation



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ISO 9001 CERTIFIED

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One (1) SIA Page/Talk Paging Amplifier
Eight (8) Faceplate Screws
One (1) Installation & Operation Manual

Overview

SIA 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 SIA Paging Amplifier described in this manual is designed for use in harsh, industrial environments. It 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

- weatherproof and dust-resistant
- 16 gauge steel, zinc dichromate plated and powder coated

Ambient Noise Monitor

- monitors the ambient noise and adjusts speaker volume accordingly
- initial level adjusting on faceplate

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 - externally accessible

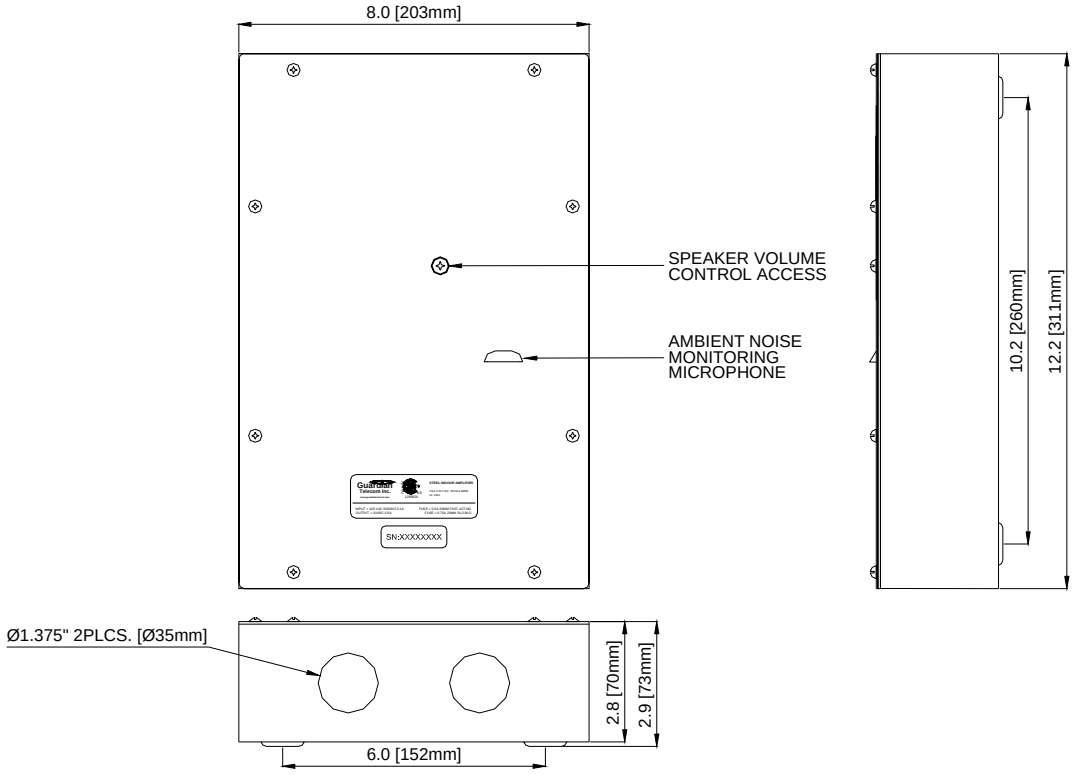


Figure 1 - SIA Features and Dimensions

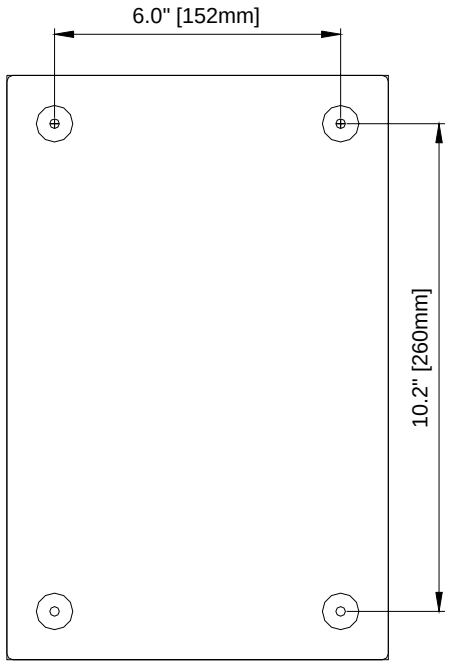


Figure 2 - Mounting

Installing the SIA

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

- Ensure that the amplifier 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 11 lbs./5 kg and any additional load.
- Ensure that none of the electrical connection circuits are live.
- Use the template provided to locate and drill holes for mounting screws.
- Remove the screws on the faceplate and remove the faceplate.
- Secure the unit to the wall.
- Bring cable(s) into the enclosure through the conduit entrance(s) and attach individual wires to the Combicon connector(s). Attach the first or only cable to the bottom connector. Make connections to terminals 1A and 1B for a single line system.
- 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.
- Plug the connectors into the receptacles on the interface PCB.
- Ensure all connections are secure.
- Replace the faceplate ensuring that the connector is properly seated.
- Apply power to the system.
- Wait at least 20 seconds then adjust the speaker volume to the desired level using the potentiometer accessible through the faceplate. Use the tamperproof screwdriver provided to remove the screw and a small flat tip screwdriver to make the adjustment.
- Test the installation by making a paging call.

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

See: *Figure 1 - SIA Features and Dimensions*

See: *Insert - Template*

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

See: *Figure 3 - Electrical Connections and Figure 4 - Wiring*

See: *Group Muting*

Troubleshooting

Associated Speaker Is Not Working

- 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.
- Remove power from the wall station.
- Remove all faceplate cover screws.
- Lift off the faceplate cover.
- Replace the fuse.
- Replace the faceplate ensuring that the connector is properly seated.
- Apply power to the wall station.
- Test the installation by making a paging call.

See: *Engineering Specifications for correct fuse rating*

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

Electrical Connection Details

Assignment	*Designation*	*Description*	*Jacket Color*	*Stripe Color*
System Power	J4A/J5A J4A/J5A J4A/J5A	HOT COM GND	Black White Green	 Yellow
Ambient Noise Microphone	J6A J6A	MIC + MIC -	n/a n/a	n/a n/a
Speaker	J7A J7A	SPK + SPK -	n/a n/a	n/a n/a
Page Line	J2A/J3A J2A/J3A	PA Page Line PB "	Brown White	 Brown
Channel	J2A/J3A J2A/J3A	1A Channel 1 1B "	Red White	 Red
	J2A/J3A J2A/J3A	2A Channel 2 2B "	Purple White	 Purple
	J2A/J3A J2A/J3A	3A Channel 3 3B "	Red Blue	Blue Red
	J2A/J3A J2A/J3A	4A Channel 4 4B "	Yellow White	 Yellow
	J2A/J3A J2A/J3A	5A Channel 5 5B "	Blue White	 Blue
Group Muting of Loudspeakers	J2A/J3A J2A/J3A	Mute Park	Orange	

Note: Channels 2 to 5 connections remain empty for a single line hookup.

Figure 3 - Electrical Connections

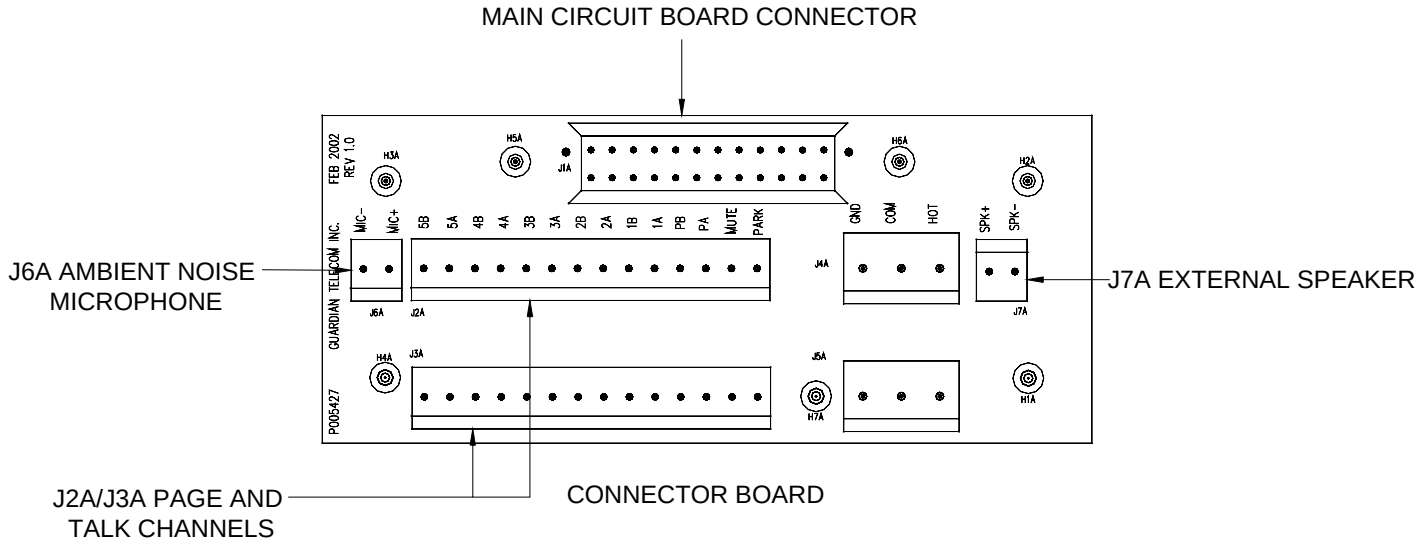


Figure 4 - Wiring

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 faceplate or from the back of the module – 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 5 - Circuit Board Layout*

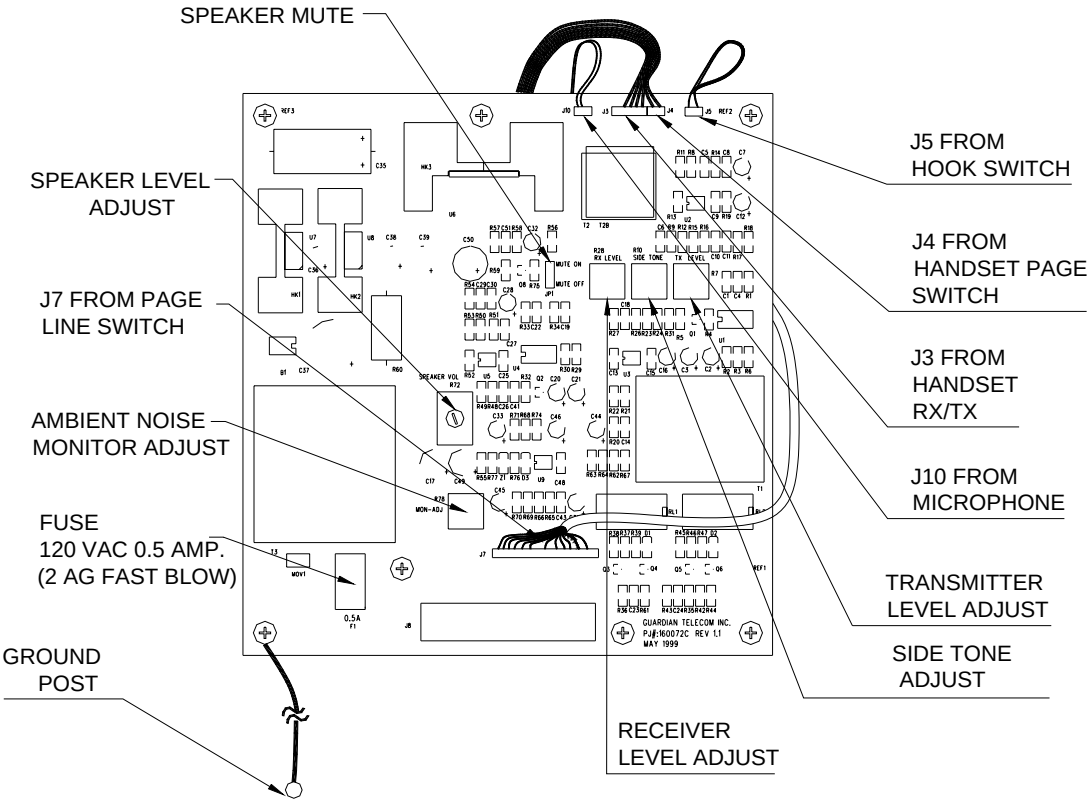


Figure 5 - Circuit Board Layout

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.

See: Figure 3 - Electrical Connections and Figure 5 - Circuit Board Layout.

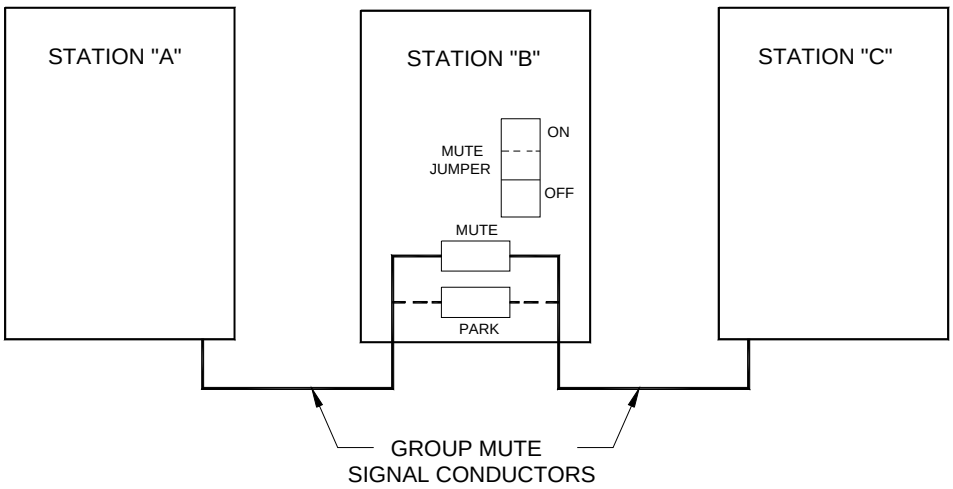
Note: Putting the mute jumper of a station in the on position will mute the associated speaker when the page button is pressed. If the jumper is in the off position the speaker will not be muted when the page button is pressed.

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.

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

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

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 any of the three stations. If the jumper is in the OFF position the paging call will not be muted if a paging call is made from any of the three stations.

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

Engineering Specifications	
Electrical Requirements	
Input Voltage	24/120/240VAC, 24VDC
Input Frequency	50/60Hz
Input Voltage/Current/Fuse	120VAC/0.1Amp/0.5A 20mm Ceramic Fast Blow
	240VAC/0.05Amp/0.25A 20mm Ceramic Fast Blow
	24VAC/VDC/0.5Amp/0.75A 20mm Ceramic Fast Blow
Speaker Amplifier	
Output Level	10 Watts With Nominal Voltage
Amplifier Gain	1.5VRMS At Rated Output
Frequency Response	250 – 4000Hz
Distortion	1% Maximum THD @ 1000Hz 10Watts
Input Impedance	200K Ohms, Nominal
Load Impedance	4 To 16 Ohms (Not Less Than 8 Ohms For Continuous Service)
Environmental	
Weather Tight	Enclosure Gasket
Dust Tight	Enclosure Gasket
Mechanical	
Body Construction	16 Gauge Steel, Zinc Dichromate Plated And Powder Coated
Faceplate	Stainless Steel
Dimensions (H x W x D)	12.3 x 8.0 x 2.9 Inches (313 x 203 x 74mm)
Net Weight	11 Lbs/5 Kg
Standard Mounting	Vertical Wall
Connection Fittings	Conduit Or Cable Gland
Compliance	
Canadian Standards Association	CSA C22.2 No. 205M (Signal Equipment) CSA C22.2 No. 60950/UL60950 (Safety Of Information Technology Equipment)

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 repairs.

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.
Step I - On-Site Correction
• 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.
Step II - Return Materials Authorization (RMA)
• 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.")
Step III - Factory Authorized Service
• 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.

Page/Talk Product Series Description

Guardian's Page/Talk Systems provide reliable and easy to use paging and communication within industrial environments and hazardous locations, such as plants, mills and factories. Wall and desk stations are available in both single line and multi line models. Individuals can be paged from any station and two or more persons can communicate on any available line. With the addition of a Merge/Isolate Cabinet up to 12 zones are supported.

These systems provide quality paging and communication functions, and with the telephone interface unit, communication outside the system. Speaker amplifier units provide the capability of adding extra speakers without the need for a Page/Talk station. The alarm tone generator provides synthesized audio alarm signals for plant safety systems and can be programmed to activate strobe lights for additional warning in noisy environments.

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

Page/Talk System Models and Options

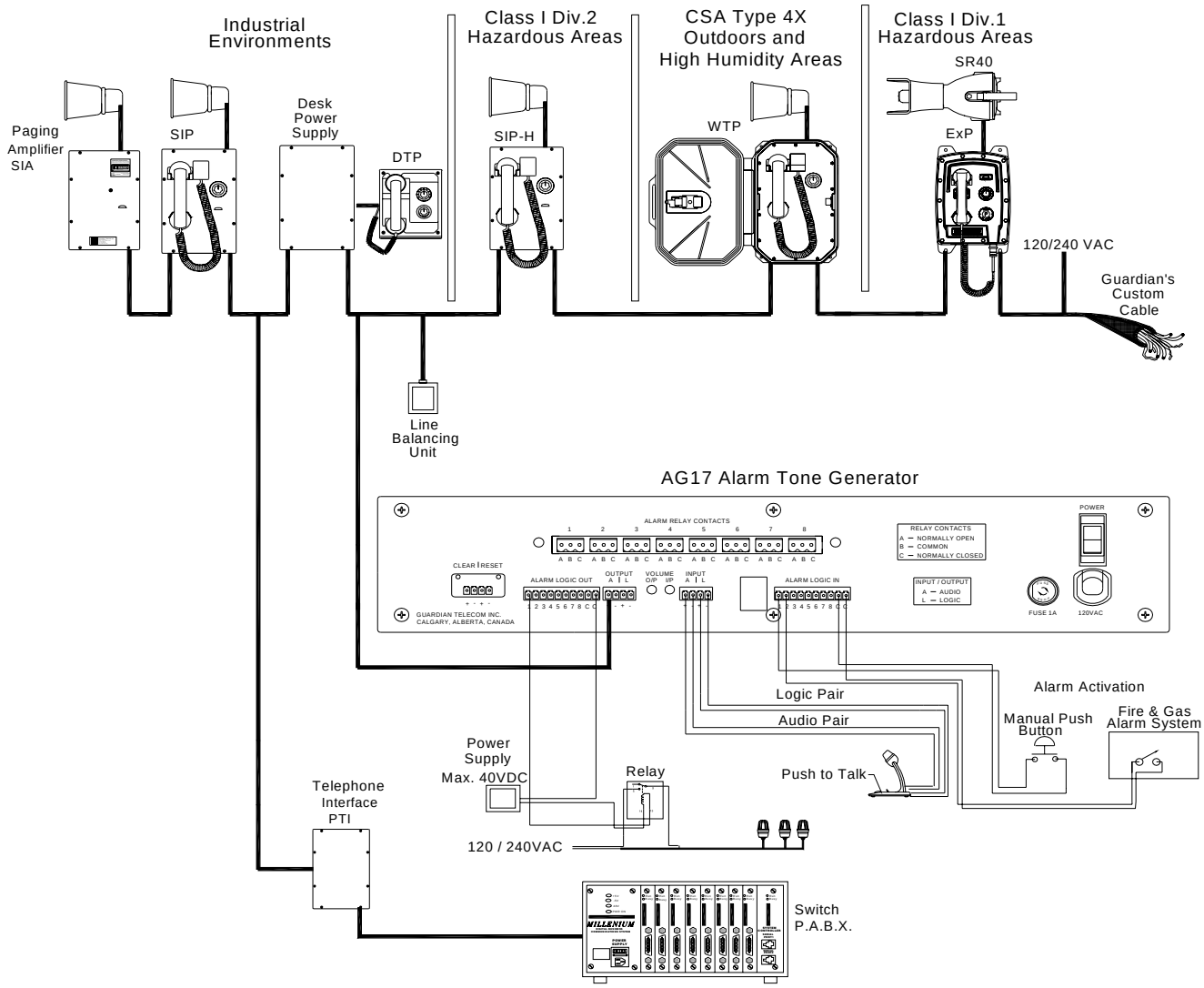
Standard Stations
P5901 SIP-1 Single Line Wall Station
P5906 SIP-5 Multi Line Wall Station
P5950 SIA Amplifier Unit
P5911 DTP-1 Single Line Desk Set
P5916 DTP-5 Multi Line Desk Set
P5921 WTP-1 Single Line Weather Proof Wall Station, NEMA 4X
P5926 WTP-5 Multi Line Weather Proof Wall Station, NEMA 4X
P5922 WTA Weather Proof Amplifier Unit, NEMA 4X

Hazardous Location and Explosion Proof Stations
P5900 SIP-H-1 Single Line Wall Station, Class I, Div.2
P5905 SIP-H-5 Multi Line Wall Station, Class I, Div.2
P5951 SIA-H Amplifier Unit, Class I, Div. 2
P5910 DTP-H-1 Single Line Desk Set, Class I, Div.2
P5915 DTP-H-5 Multi Line Desk Set , Class I, Div.2
P5920 WTP-H-1 Single Line Weather Proof Wall Station, NEMA 4X, Class I, Div.2
P5925 WTP-H-5 Multi Line Weather Proof Wall Station, NEMA 4X, Class I, Div.2
P5957 WTA-H Weather Proof Amplifier Unit, NEMA 4X, Class I, Div. 2
P5930 EXP-1 Explosion Proof Single Line Wall Station, Class I, Div.1
P5935 EXP-5 Explosion Proof Multi Line Wall Station, Class I, Div.1
P5956 EXA Explosion Proof Amplifier Unit, Class I, Div. 1

Options
P5940 PTI Telephone Interface Unit
P5980 PTL Line Balance Assembly
P5970 AG17 Alarm Tone Generator
P5960 AG17 Alarm Tone Generator, (with optional relay board.)

Cable
P005219 Standard 16 Conductor
P005366 Heavy Duty (Armoured) 16 Conductor
P00XXXX Standard 8 Conductor
P005863 Heavy Duty (Armoured) 8 Conductor

Appendix - Typical Layout



Notes:

Model No.
Part No.
Serial No.
Date of Purchase

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