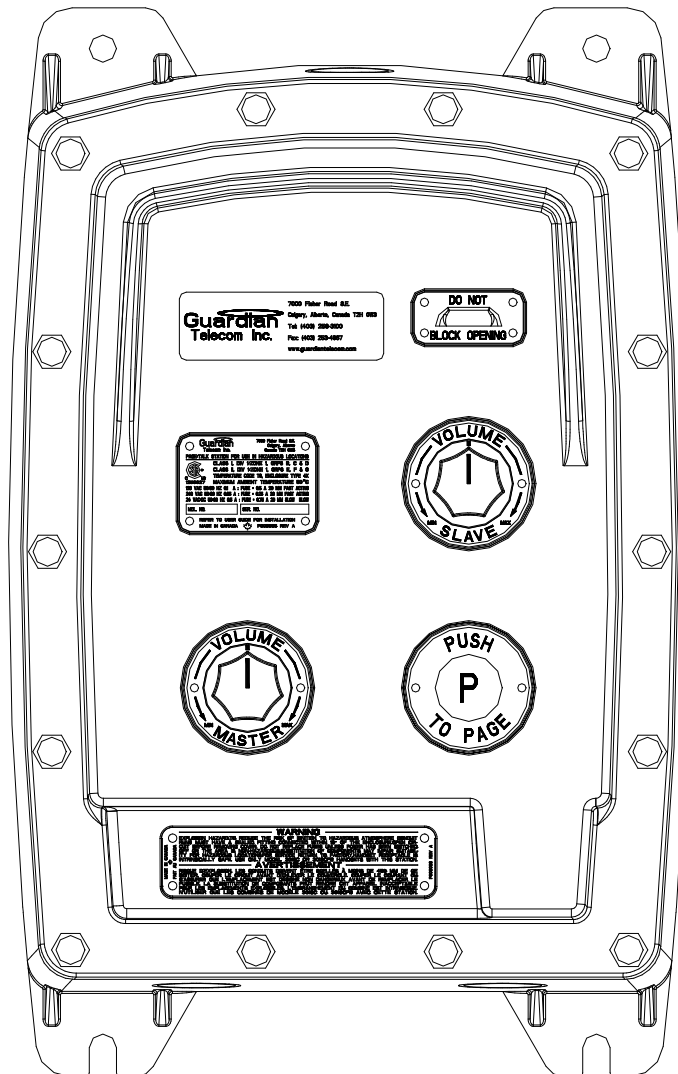


Explosion Proof Talk/Back Wall Station

Model ExP-TBA

Installation & Operation



P005615 Rev. E 080220 2/21/2008 1:43 PM

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Package Contents

- (1) EXP-TBA Master Station
- (12) Faceplate Bolts
- (2) Tubes of Lubricant
- (1) Installation & Operation Manual

Overview

Talk Back System EXP-TBA

The model EXP-TBA is an intercom system designed for use in situations where frequent communication between two stations is required. The system is particularly well suited to drilling rig operations. The system utilizes a remote Slave loudspeaker in dual roles, to broadcast messages from the Master Station and to act as a microphone to pick up and transmit messages back to the Master Station. The Master Station has a microphone on the faceplate which is activated when the Push-To-Page button on the faceplate is pressed. An option is for the connection of a remote foot switch or hand operated button switch, which when activated will cause the Master Station loudspeaker to act as a microphone.

The EXP-TBA system has two possible operating modes:

1. **Hands Free Talk-Back Mode:** In this mode the Slave speaker is always configured as a microphone sending any sound in the area back to the Master Station speaker, except when the Master Station is activated to transmit. If desired a push button can be installed near the Slave speaker, which when pressed will cause a ringing signal to be heard over the Master Station speaker. The ringing signal will be heard even if the Master Station speaker volume is turned down.
2. **Push-To-Talk Mode:** In this mode neither the Master Station speaker nor the Slave speaker is normally in transmit mode. A push button is required at the Slave speaker to put the speaker into transmit mode. The button must be held in for the duration of the call.

EXP-TBA Features

Enclosure and Faceplate

- copper free cast aluminum - powder coated

Master/Slave Operation

- only one master station required

Post Announcement Tone

- optional – jumper on circuit board

Slave Operator Ring Tone To Master Station

- optional – requires a push button switch at the slave speaker location
- ring tone volume adjustable (internal)

Page Switch

- page switch on faceplate of enclosure
- option for external hand or foot switch

Master Microphone

- on faceplate of master station
- option for use of master speaker as microphone

Controls

- separate master and slave speaker volume controls on faceplate

Power Requirement

- 24 VDC or 24/120/230 VAC

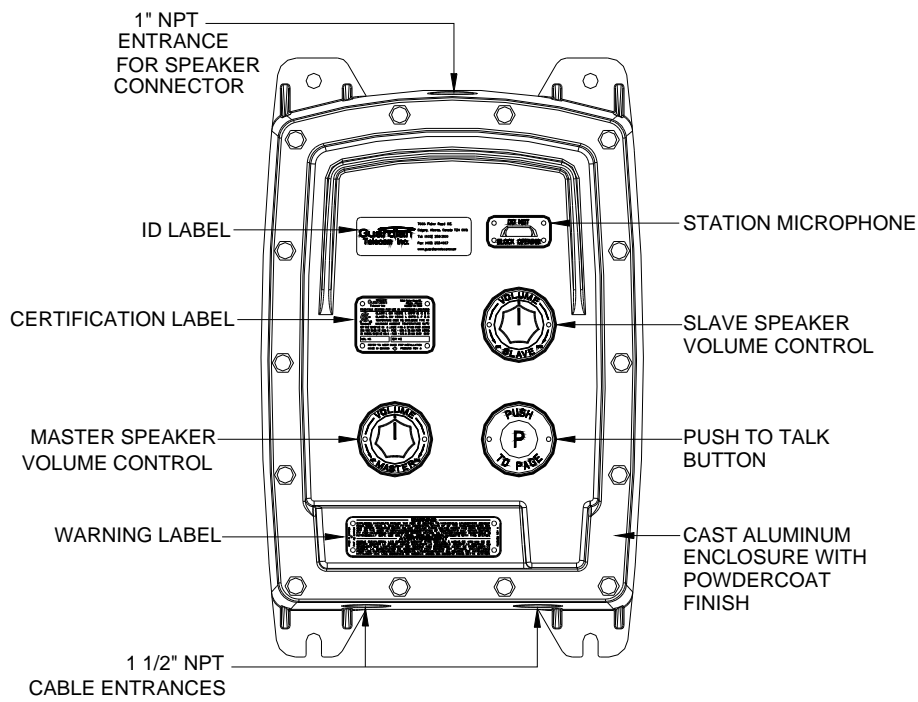


Figure 1 - Features

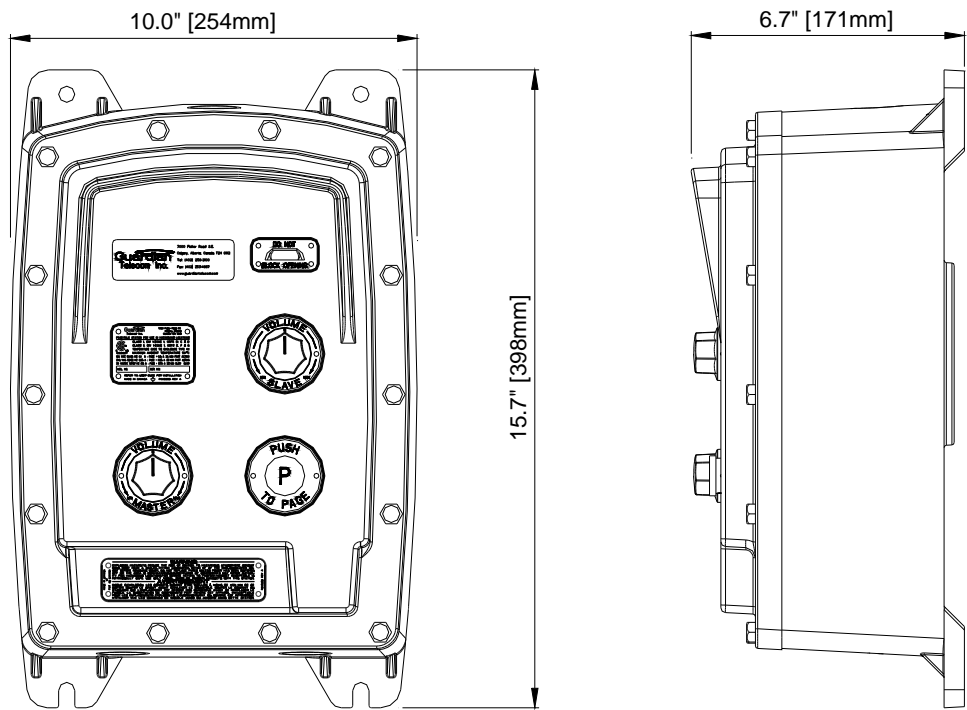


Figure 2 - Dimensions

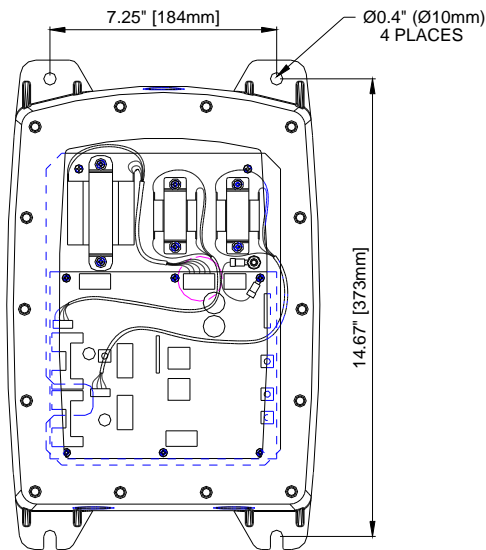


Figure 3 - Mounting

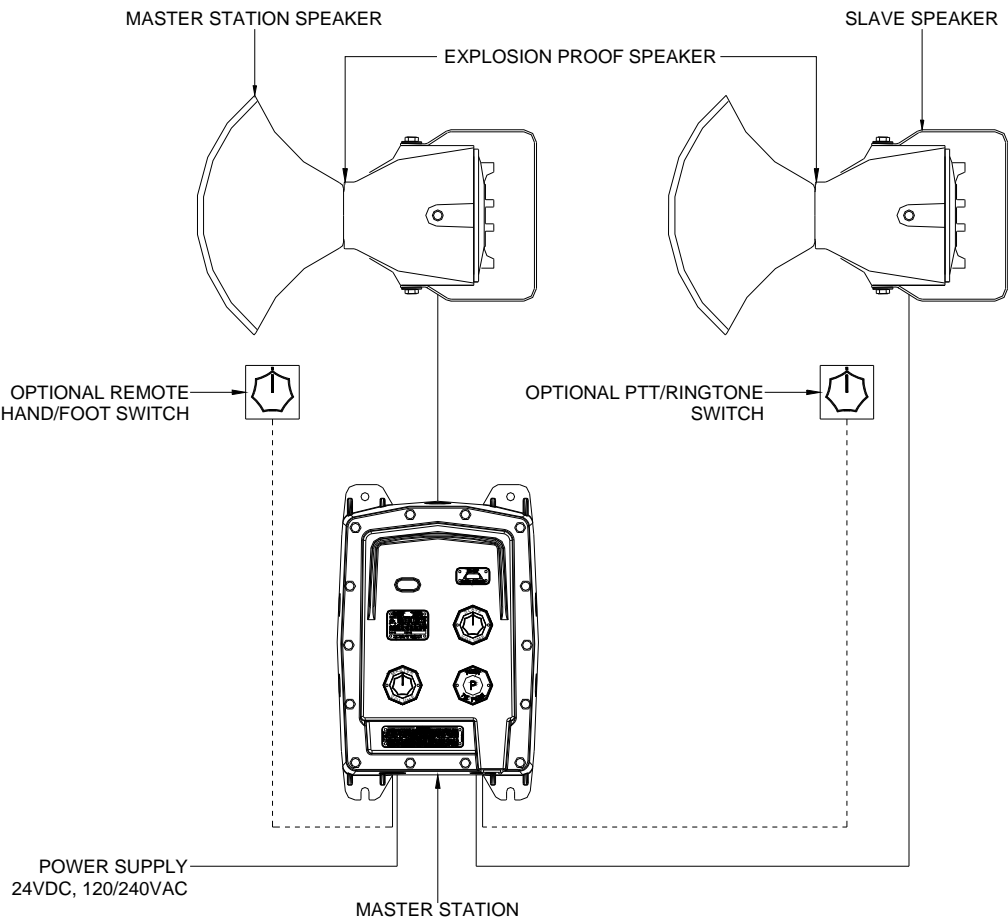


Figure 4 - Typical Installation

Installing the EXP-TBA

The master station is approved for use in hazardous areas. The speakers used with the system may or may not be approved, check the labels on the speakers for ratings.

Follow all local codes and requirements when installing the EXP-TBA Intercom System.

Mount the Master Station and speakers.

Wire the system in accordance with local codes. The speaker cable used in the system requires either two or four 18 AWG, shielded conductors – depending on the system configuration. Power cable requires either two 14AWG conductors (DC), or three 14AWG conductors (AC).

If necessary adjustments to potentiometers can be made during commissioning to suit existing conditions. In order to facilitate making adjustments on the circuit board remove the faceplate, offset it to one side or the other of the enclosure and then secure it temporarily to the enclosure with two bolts.

Post announcement tone jumper: The post announcement tone is very useful in a half duplex intercom system. A beep-tone will be heard when the push to talk switch is released, the tone will signify that the transmission from the master station is over. If in PTT mode, the tone will also be heard when transmission from the slave speaker is over. Jumper JP1 on the circuit board is used to enable or disable the post announcement tone. To enable the post announcement tone set the jumper to the TONE position, to disable the tone set the jumper to the OFF position.

Microphone input level Potentiometer: This potentiometer is referenced R24, and labeled as MIC INPUT ADJ. It is used to control the audio signal from the Microphone input and the Master speaker as microphone input.

Slave Station Talk-Back input level Potentiometer: This potentiometer is referenced R43, and labeled as TALKBACK INPUT ADJ. It is used to control the input audio signal from the Slave Speaker.

Ringer Volume Adjusting Potentiometer: This potentiometer is referenced R54, and labeled as RING VOL. It is used adjust the volume of the ring tone and the beep tone by controlling the input audio signal.

Master Station speaker Attenuation Potentiometer: This potentiometer is referenced R21, and labeled as ATTEN LEVEL. It is used to control the amount of attenuation to the Master Station speaker (if the master station microphone is used), when the Push-To-Page switch is activated. It should be adjusted when the Push-To-Page switch is engaged, to a level that will not cause acoustic feedback (howling), with the volume control on the front of the faceplate turned to maximum.

Important: Speakers should be mounted as close as possible to users, since they serve as microphones as well. This will reduce the amount of ambient noise entering the speech transmission.

Apply a bead of lubricant to the machined surface of the housing.

Replace the faceplate ensuring that the connector is properly seated.

Torque faceplate bolts to 13.5 ft. lbs. (18 Newton-Meters).

See: Figure 4 -
Typical Installation

See: Figure 5 - Circuit
Board Layout

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

Switching between Operating Modes:

When powered up the Talk Back System will operate in the **Slave Hands Free mode**. In order to avoid opening up the EXP-TBA to switch operating modes the following procedure is used to toggle to the **Slave PTT mode** and vice versa.

- 1) Press the Page-To-Page switch and hold it for longer than 5 seconds (by counting from 1 to ten), then release the switch for a break time from 1/2 a second to 3 seconds.
- 2) Press the Push-To-Page switch ten times. Each time hold the switch from 1/2 a second to 2.5 seconds then release it for a break time from 1/2 a second to 3 seconds..
- 3) Push the Push-To-Page switch and hold it for longer than 5 seconds (by counting from 1 to ten). Then release the switch.
- 4) If the sequence is correct the system will switch its present operating mode to the other operating mode. Three beep tones will be heard over the Master Station speaker if the mode switching occurs.

Note: If power is lost after the system has been switched to Slave PTT mode it will revert back to Slave Hands Free mode when power is restored.

Operation**1. Hands Free Talk Back Mode:**

In Hands Free Talk Back mode the Master Station speaker is normally on and the Slave speaker is functioning as a microphone.

Faceplate Push-To-Page switch: Without any switches activated any sound in the Slave speaker area will be heard on the Master Station speaker. When the Push-To-Page switch (located on the EXP-TBA faceplate) is activated the Master Station speaker will be turned on – with attenuation to reduce the possibility of acoustic feedback, the Slave speaker will also be turned on. This condition will occur even if the remote Master Station or Slave switches are activated, since the Push-To-Page switch has priority.

Remote Master Station Switch – (optional): This can be a foot operated or a hand operated button switch. It will activate the Master Station when it is pushed and when the Push-To-Page switch is open. In this condition the Master Station speaker is converted into a microphone. The Slave speaker is turned on to broadcast the message sent from the Master Station.

Slave Station Switch – (optional): If an optional push button switch is installed next to the Slave speaker a ring tone will be heard on both the Master Station speaker and the Slave speaker when the button is pressed. This will occur even if the Master Station speaker volume control is turned down and will alert persons in the vicinity of the Master Station.

2. Press-To-Talk Mode:

In Press-To-Talk Mode the Master Station speaker and the Slave speaker are normally off. A push button is required at the Slave speaker to put the speaker into transmit mode. The button must be held in for the duration of the call.

Microphone Push-To-Page Switch: When the Push-To-Page switch (located on the EXP-TBA faceplate) is activated the Master Station speaker will be turned on – with attenuation to reduce the possibility of acoustic feedback, the Slave speaker will also be turned on. This condition will occur even if the remote Master Station or Slave switches are activated, since the Push-To-Page switch has priority.

Remote Master Station Switch – (optional): This can be a foot operated or a hand operated switch. It will activate the Master Station when it is pushed and when the Push-To-Page switch is open. In this condition the Master Station speaker is converted into a microphone. The Slave speaker is turned on to broadcast the message sent from the Master Station.

The Slave Station Switch: When the Slave station switch is pressed, the Slave speaker is converted into a microphone. The Master Station speaker will be turned on to receive the message from the Slave station. This condition is valid as long as neither the Push-To-Page nor Master Station remote switches are activated.

Button priorities are:

1. Faceplate Push-To-Page switch.
2. Master Station remote switch (either a hand operated button or a foot switch).
3. Slave speaker switch.

Speaker Volume Controls:

The Master Station speaker Volume Control and The Slave Speaker Volume Control knobs are located on the faceplate and can be adjusted to provide a comfortable sound level.

The Master Station speaker Volume Control: The Master Station speaker Volume Control knob is used to adjust the volume on the Master Station speaker. This should be done with input from the Slave speaker, since activating the Push-To-Page switch will attenuate the Master Station speaker volume.

The Slave Speaker Volume Control: The Slave Speaker Volume Control knob is used to adjust the volume on the Slave Speaker.

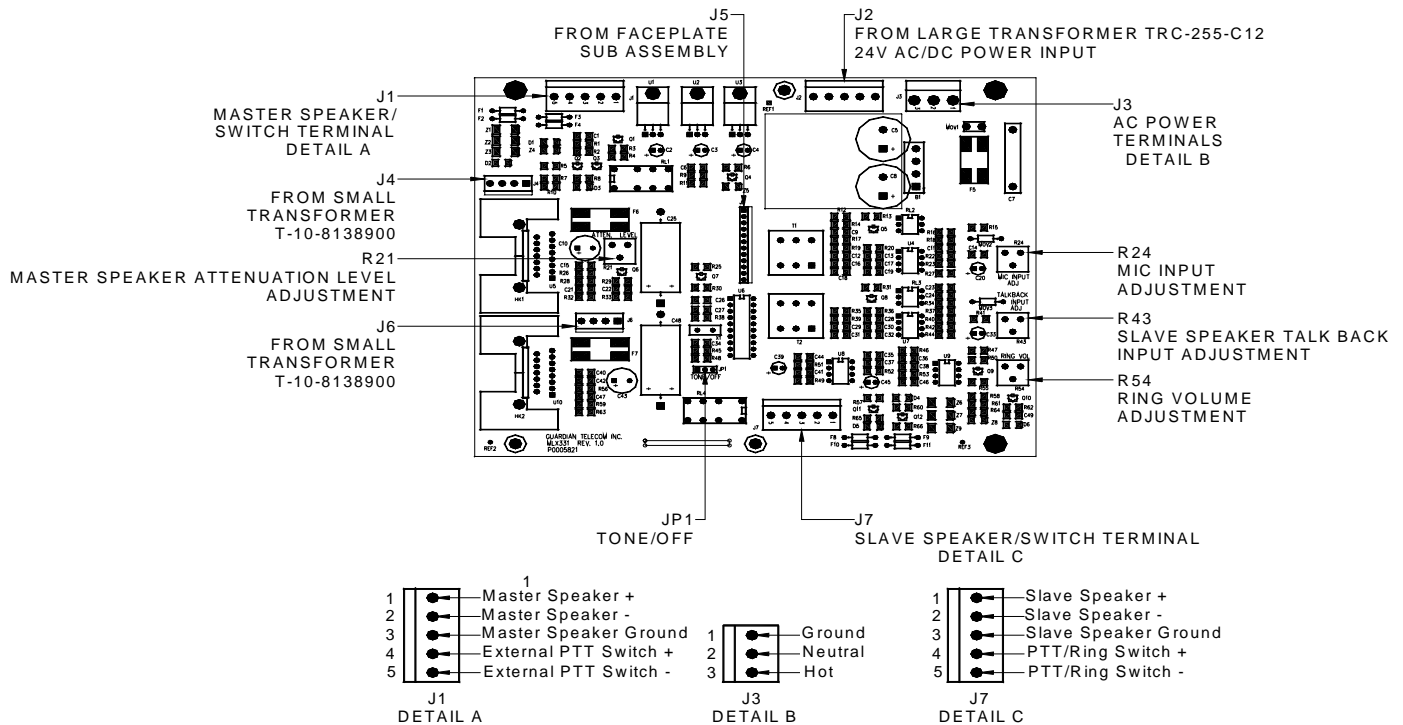


Figure 5 - Circuit Board Layout

Controls

Adjusting Pots:

PCB Mounted:

- R21: Master Station speaker attenuation control.
- R24: Microphone input volume control (internal mic. or speaker as mic.)
- R43: Slave Speaker talk/back input volume control.
- R54: Ring tone volume control.

Faceplate Mounted:

- 1) Master Station speaker volume control.
- 2) Slave Speaker volume control.

Post announcement tone jumper:

JP1; ON position: Post announcement enabled.

JP1; OFF position: Post announcement disabled.

Figure 6 - Control Pots and Wiring

Engineering Specifications	
<i>ELECTRICAL</i>	
POWER REQUIREMENT	24VDC; 120V/230VAC, 50/60 Hz
POWER SUPPLY FUSE	24VDC - 1 AMP, 120VAC - 0.50A, 230VAC - 0.25 AMP SLOW BLOW, 2AG
AUDIO OUTPUT FUSES	250V, 0.75A, SLOW BLOW, 2AG
<i>AUDIO AND CONTROL INPUTS</i>	
MASTER INTERNAL MICROPHONE	600 OHMS, 750mV RMS MAXIMUM
EXTERNAL PTT SWITCH (OPTIONAL)	DRY CONTACT SPST SWITCH
<i>AUDIO OUTPUTS</i>	
MASTER SPEAKER CHANNEL	70V LINE, 10 WRMS
SLAVE SPEAKER CHANNEL	70V LINE, 10 WRMS
<i>ENVIRONMENTAL</i>	
TEMPERATURE	-40° TO +60° C (-40° TO +140° F)
HUMIDITY	0 – 95% RH NON CONDENSING
<i>MECHANICAL</i>	
BODY CONSTRUCTION	COPPER FREE CAST ALUMINUM
NET WEIGHT	27 LBS./12.3 KG
DIMENSIONS (W X H X D)	10 X 15.7 X 6" (254 X 398 X 152 MM)
STANDARD MOUNTING	VERTICAL WALL
CABLE ENTRANCES	TWO 1 ½" NPT OPENINGS ON BOTTOM SURFACE ONE 1" NPT OPENING ON TOP SURFACE
<i>COMPLIANCE</i>	
CSA (US AND CANADA)	CLASS I, DIVISION 1, GROUPS B,C & D CLASS II, DIVISION 1, GROUPS E,F & G CLASS I, ZONE 1, GROUP IIB+H ₂ T6 ENCLOSURE TYPE 4X / IP56

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.

Guardian products have been quality tested and are in full working order when shipped from the factory. Shipping damage should be claimed on the carrier.

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 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 (North America)

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.
<ul style="list-style-type: none">• 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.
<ul style="list-style-type: none">• 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.
<ul style="list-style-type: none">• 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.
<ul style="list-style-type: none">• 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.
<ul style="list-style-type: none">• (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.
<ul style="list-style-type: none">• 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.

Model No.

Serial No.

Date of Purchase



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