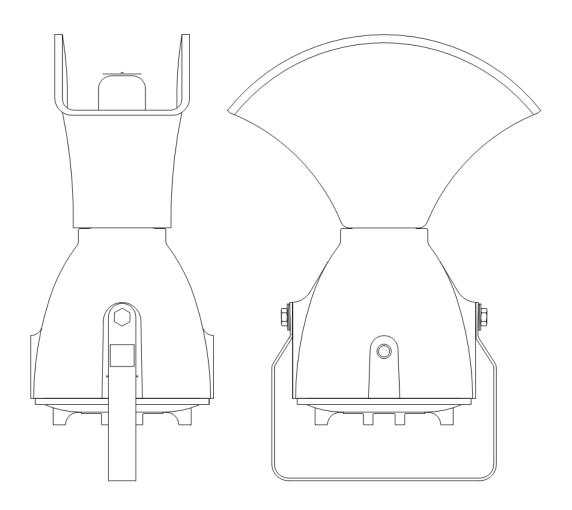


Explosion Proof Speaker, Ringer & Speaker/Ringer Models SR40 and SR60

Installation & Operation



P004562 Rev. H 180430 4/30/2018 12:24 PM





Table of Contents

Overview	3
Features	
Accessories	
SR40/60 Models and Options	4
Installing the SR40/60	
Wiring and Setting up the SR40/60	6
P7240 24V, P7243 230V, P7248 12V and P7250 120V Ringers	6
P7241 24V, P7244 230V, P7249 12V and 7251 120V Ringers with 70V Paging	7
P7245 SR40 and P7260 SR60 70V Paging Speakers	8
P7246 SR40 70V Paging Speaker with DC Filter Circuit	9
P7247 SR40 and P7262 SR60 16 Ohm Paging Speakers	.10
Maintenance	.10
SR40/60 Replacement Parts	.10
SR40 Specifications	.11
SR60 Specifications	.13
Storage	.14
Cleaning Tips for Guardian Telephones	.14
APPENDIX A - Hazardous Location Classification	.15
Warranty	.17
Disclaimer	.17
Warning	.17
Service Telephone Number	.17
Feedback	.17
Guardian Product Return	.18

Table of Figures

Figure 1 - Overall Dimensions	4
Figure 2 - Ringer Wiring	6
Figure 3 - Ringers with 70V Paging	
Figure 4 - Paging Speakers Wiring	8
Figure 5 - Paging Speaker with DC Filter Circuit	

Package Contents
One (1) SR40 or SR60 Ringer, Speaker or Speaker Ringer
One (1) Installation & Operation Manual

Overview

SR40/SR60 Explosion Proof Speaker/Ringer

Guardian Telecom's rugged, versatile SR40 and SR60 Hazardous Area Speaker/Ringers can be set up as loud speakers for paging applications, loud ringers to signal incoming phone calls, or both functions can be combined in one device. Approval for use in hazardous areas makes these speaker/ringers ideal for use in harsh, industrial environments. SR40's and SR60's generate up to 110dB and can be factory set in ringer configuration for 12, 24, 120 or 230 volts AC. The SR40 has a 40 watt driver and the SR60 has a 60 watt driver.

SR40/60 speakers are designed to provide security against ignition of the surrounding atmosphere. All parts of the apparatus, which might produce an electrical spark, are completely enclosed. All passages to the outside are made such that any spark or flame will be cooled to a temperature below the ignition threshold before reaching the outside atmosphere.

The SR40/60 Models P7240 and P7243 are loud Telephone Ringers while models P7241 and P7244 are ringers with additional 70V paging capability. In order for these products to operate as a telephone ringer, a ring detect relay is needed to control the AC voltage to the ringer circuit when the telephone ringing signal is detected. All ringers are capable of producing a sound pressure level of 110 dB, which is adjustable on the circuit board. The Paging function of the speaker is designed to operate on a 70 Volt audio system and comes factory set to 30 Watts, (15 Watts when combined with the ringer function). A jumper setting on the circuit board is used to select lower wattage levels.

Models P7247 and P7262 are 16 ohm speakers only, models P7245 and P7260 are 70V speakers only and model P7246 is a 70V speaker with DC filter circuit to monitor line integrity.

Features	
Body and Cap Construction	
Cast, copper free aluminum	
Powder coated	
Compliance	
Hazardous areas	
Weatherproof	
Sound Pressure Level (SPL)	
110 dB at one meter	

Accessories

- P7226 Hazardous area ring detect relay
- P7231 Hazardous area off-hook detect relay

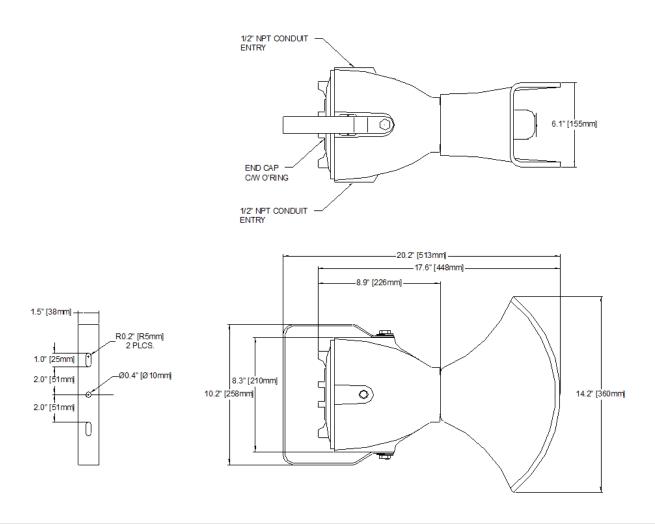


Figure 1 - Overall Dimensions

SR40/60 Models and Options

- P7240 SR40, 24V Ringer
- P7241 SR40, 24V 15 Watt Paging Loudspeaker/Ringer
- P7243 SR40, 230V Ringer
- P7244 SR40, 230 V, 15 Watt Paging Loudspeaker/Ringer
- P7245 SR40, 30 Watt 70V Paging Loudspeaker
- P7246 SR40, 30 Watt, 70V Paging Loudspeaker with DC Filter Circuit for Monitoring Line Integrity
- P7247 SR40, 30 Watt, 16 Ohm Paging Loudspeaker
- P7248 SR40, 12V Ringer
- P7249 SR40, 12V, 15 Watt Paging Loudspeaker/Ringer
- P7250 SR40, 120V Ringer
- P7251 SR40, 120V, 15 Watt Paging Loudspeaker/Ringer
- P7260 SR60, 60 Watt, 70V Paging Loudspeaker
- P7262 SR60, 60 Watt, 16 Ohm Paging Loudspeaker

Installing the SR40/60

• Ensure that the device is suitable for the intended service e.g. telephone ringer, ringer/paging, paging only. Also check to ensure that the device will handle the voltages and signals that will be supplied. Switching from 120 to 230 VAC and from 12 to 24 VAC can be accomplished in the field by changing jumpers on the circuit board. It is not possible to switch between high and low voltage ranges in the field, the proper voltage range must be ordered from the factory. Application of incorrect voltage may damage the device or result in non-performance.

See: SR40/60 Models and Options

- Declassify the hazardous location or disconnect wiring in a safe area before proceeding with any installation or electrical wiring.
- Ensure that none of the electrical connection circuits are live.
- Install the SR40/60 according to appropriate electrical codes using approved electrical fittings.

Note: This device must be wired using Division 2 wiring methods as specified in 501-4(b) of the National Electrical Code NEPA 70, for installation in the United States.

- Choose a wall location that is free of obstructions and permits space for ½"
 NPT conduit runs or other approved wiring methods.
- Consider the need to later access the interior of the speaker when selecting the mounting method.
- Ensure mounting can support 20lbs. (9kg).
- Use a small diameter rod to remove the end cap.
- Make any required checks and adjustments before mounting the speaker.
- Mount with two 3/8" bolts or equivalent
- Run wiring into the body of the device.
- Make wiring connections as instructed on the following pages.
- Ensure that threads and sealing surfaces are clean and undamaged.
- Replace the end cap and tighten firmly ensuring that the faces of the end cap and the body are in contact.
- Apply power to the system.
- Test the unit by making a call to the telephone to which the ringer is connected and/or making a paging call.

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

See: Figure 1 - Overall Dimensions.

See: Wiring and Setting up the SR40/60

Wiring and Setting up the SR40/60

P7240 24V, P7243 230V, P7248 12V and P7250 120V Ringers

- Note: The SR40 ringer requires an externally switched power supply such as Guardian's P7226 Ring Detect Relay.
- Confirm that the AC voltage supply matches the voltage requirements for the SR40 ringer board (12/24 VAC or 120/230 VAC).
- Confirm that the jumpers on the circuit board are set to the correct voltage as per the part number.
- Ensure that none of the electrical connection circuits are live.
- Attach the AC wires to the designated points on the circuit board terminals.
- Reduce the ringer volume if desired by adjusting the control on the circuit board.

See: SR40/60 Models and Options

See: Figure 2 - Ringer Wiring

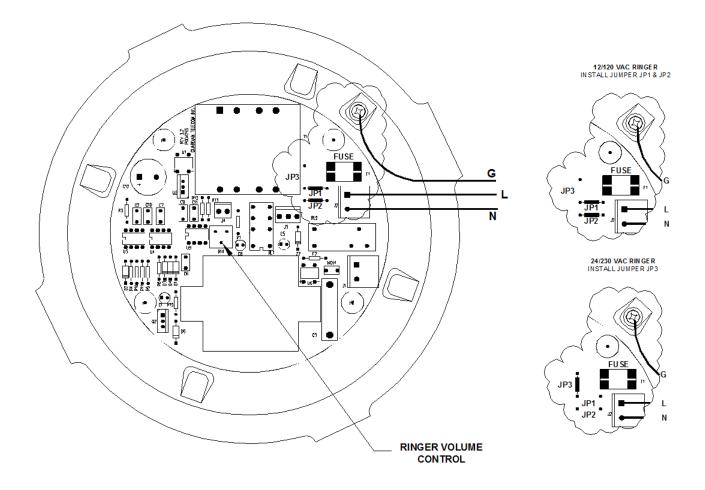
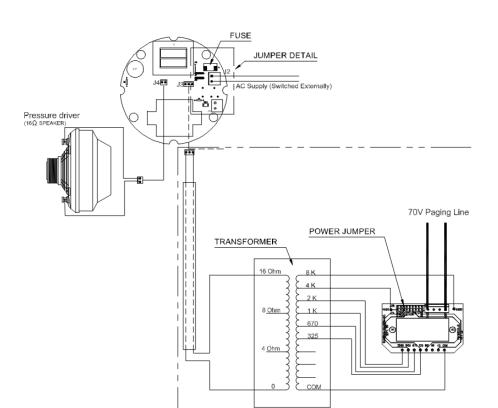


Figure 2 - Ringer Wiring

P7241 24V, P7244 230V, P7249 12V and 7251 120V Ringers with 70V Paging

- Note: The SR40 ringer requires an externally switched power supply.
 If the paging speaker is to be installed in proximity to a telephone that is to be used for paging, an off hook detect relay or other methods may be required to prevent acoustic feedback.
- Connect the ringer section of the device as explained above.
- Attach the 70-Volt paging lines to the designated terminals on the circuit board.
- If paging speaker power is to be less than factory set 15 Watts, set the jumper to the desired power level.

See: Figure 3 - Ringers with 70V Paging.



The speaker is supplied factory set at 15W (jumper on 325). To reduce speaker power, move jumper to the desired impedance.

T-10 POWER RA	TING: 15W MAX Watts @
(ohms)	70.7V
8000	0.6
4000	1.25
2000	2.5
1000	5.0
670	7.5
325	15

For Ringer detail refer to Figure 2

Figure 3 - Ringers with 70V Paging

OPTIONAL 70V PAGING

P7245 SR40 and P7260 SR60 70V Paging Speakers

- Note: If the paging speaker is to be installed in proximity to a telephone that is to be used for paging, an off hook detect relay or other methods may be required to prevent acoustic feedback.
- Attach the 70-Volt paging lines to the designated terminals on the circuit board
- If paging speaker power is to be less than factory set 30 Watts, (SR40) or 60 Watts, (SR60), set the speaker line input to the desired power level.

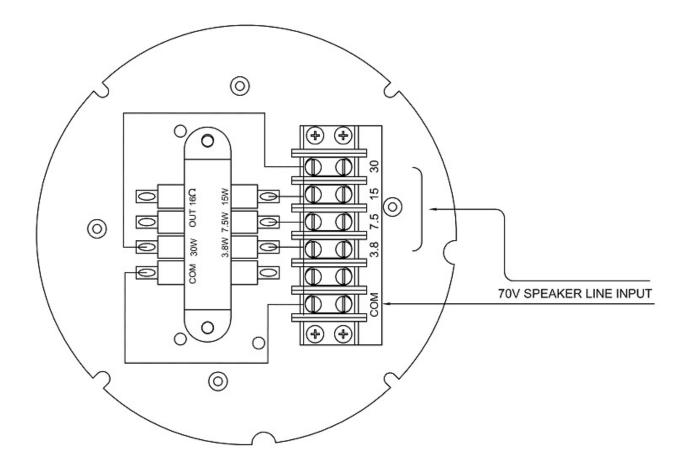


Figure 4 - Paging Speakers Wiring

P7246 SR40 70V Paging Speaker with DC Filter Circuit

- Note: If the paging speaker is to be installed in proximity to a telephone that is to be used for paging, an off hook detect relay or other methods may be required to prevent acoustic feedback.
- The P7246 Paging Speaker is configured to be part of a system that monitors the integrity of connecting wiring. It contains circuitry that can be set with a jumper on the circuit board to either conduct or inhibit DC current. To be effective circuitry is required at the paging amplifier to impress and detect a 24 VDC bias voltage on the paging line. The monitoring system requires that all speakers on the line, except the last one must inhibit DC current flow; therefore they must all be model P7246.
- Place jumper J2 in the "ON" position (ON-Center terminal) for the End of Line Unit. All other units on a common line set Jumper J2 in the "OFF" position (OFF-Center terminal).
- Attach the 70-Volt paging lines to the designated terminals on the circuit board.
- If paging speaker power is to be less than factory set 30 Watts, set the jumper to the desired power level.

See: Figure 5 - Paging Speaker with DC Filter Circuit

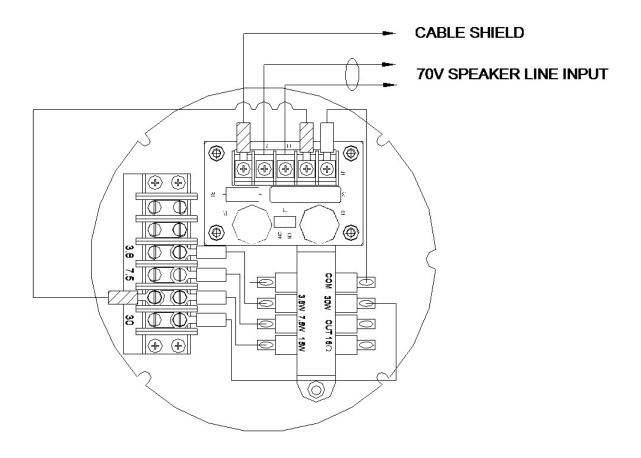


Figure 5 - Paging Speaker with DC Filter Circuit

P7247 SR40 and P7262 SR60 16 Ohm Paging Speakers

- Note: If the paging speaker is to be installed in proximity to a telephone that is to be used for paging, an off hook detect relay or other methods may be required to prevent acoustic feedback.
- Attach the amplifier 16 ohm paging lines to the black and white wires from the driver.

Maintenance

- Note: Follow these instructions to access the interior of the Speaker/Ringer to make adjustments.
- Disconnect the voltages supplied to the speaker/ringer before removing the end cap.
- Use a small diameter rod to remove the end cap.
- Make any necessary repairs or adjustments.
- Replace the end cap and tighten firmly ensuring that the faces of the end cap and the body are in contact.
- Apply power to the system.
- Test the unit by making a call to the telephone or system to which the ringer is connected and/or making a paging call.
- Ensure that equipment and wiring in a hazardous location complies with regulations and standards applicable to that location.
 - Note: These devices must be wired using Division 2 wiring methods as specified in 501-4(b) of the National Electrical Code NEPA 70, for installation in the United States.
- Inspect periodically for broken or worn parts and correct any abnormal condition immediately.

SR40/60 Replacement Parts

Part No.	Description
P002868	Deflector
P002869	Cone
P004539	SR40 Driver
P004540	SR60 Driver
Circuit boards -	specify product part number and serial number

SR40 Specifications	
Driver	
SOUND PRESSURE LEVEL (SPL) DELIVERED (PROJECTION HORN INSTALLED)	110dB AT ONE METER MAX
16 Ohm Paging Speaker	
FREQUENCY RESPONSE	250-7500Hz
Power rating	30 WATTS CONTINUOUS
IMPEDANCE	16 OHMS
70 Volt Paging Speaker	
LINE MATCHING TRANSFORMER	70 VOLT; 30 WATT (TAPS FROM 3.8 TO 30 WATTS)
70 Volt Paging Speaker with Ringer	
LINE MATCHING TRANSFORMER	70 VOLT; 15 WATT (TAPS FROM 0.6 TO 15 WATTS)
Telephone Ringer	
INPUT VOLTAGE/CURRENT	12 VAC: 1A 24 VAC: 0.75A 120VAC: 0.5A 230VAC: 0.25A
INPUT VOLTAGE/FUSE	12 VAC: 2.0A 250 VOLT 2AG SLOW BLOW 24 VAC: 1.50A 250 VOLT 2AG SLOW BLOW 120VAC: 0.50A 250 VOLT 2AG FAST BLOW 230VAC: 0.25A 250 VOLT 2AG FAST BLOW
DUTY CYCLE	50%
RINGER OUTPUT (SPL)	>110dB AT 1 METER, VOLUME CONTROL ON CIRCUIT BOARD
Mechanical	
BODY & CAP CONSTRUCTION	COPPER FREE CAST ALUMINUM WITH EPOXY POWDER COAT
FLAME ARRESTOR	HASTALOY (OR BRASS FOR U.S.A.)
PROJECTION HORN	ABS
DIMENSIONS (FULLY ASSEMBLED)	20.2x14.2x8.3 INCHES (513x360x210 MM)
WEIGHT	9 KG (20 LBS.)
SHIPPING DIMENSIONS	16x12x12 INCHES (407x305x305 MM)
SHIPPING WEIGHT	10 KG (22 LBS.)
TEMPERATURE	-40° TO +60° C (-40° TO +140° F)
HUMIDITY	0 - 100 % RH
Dustproof	GASKETED & THREADED JOINTS

Compliances	
HAZARDOUS LOCATION PERMISSIONS	CSA
	CLASS I, DIVISION 1, GROUPS B, C & D
	CLASS I, ZONE 1, GROUP IIB + H2; TYPE 3R
	CLASS II, DIVISION 1, GROUPS E, F & G
	CLASS III
	TEMP CODE: T5 FOR SR40 MODELS
	TEMP CODE: T3C FOR SR60 MODELS
	UL
	CLASS I, DIVISION 1, GROUPS B, C & D
	CLASS I, ZONE 1, GROUP IIB + H2; TYPE 4X
	T6 (EXCEPTION T4 ON 120 VAC & 230 VAC MODELS)
	TAMB: -40° TO + 104° (-40° TO + 40°C)
WEATHERPROOF & WATERTIGHT	ENCLOSURE 3R (CSA), 4X (UL)

SR60 Sp	ecifications
Driver (16 Ohm Paging Speaker)	
FREQUENCY RESPONSE	250-7500Hz
POWER RATING	60 WATTS CONTINUOUS
SOUND PRESSURE LEVEL (SPL) DELIVERED (PROJECTION HORN INSTALLED)	113dB AT ONE METER MAX
IMPEDANCE	16 OHMS
70 Volt Paging Speaker	
LINE MATCHING TRANSFORMER	70 Volt; 60 Watt (Taps from 5 to 60 Watts)
Mechanical	
BODY & CAP CONSTRUCTION	COPPER FREE CAST ALUMINUM WITH EPOXY POWDER COAT
FLAME ARRESTOR	HASTALOY
PROJECTION HORN	ABS
DIMENSIONS (FULLY ASSEMBLED)	20.2x14.2x8.3 INCHES (513x360x210 MM)
WEIGHT	9 KG (20 LBS.)
SHIPPING DIMENSIONS	16x12x12 INCHES (407x305x305 MM)
SHIPPING WEIGHT	10 KG (22 LBS.)
TEMPERATURE	-40° TO +60° C (-40° TO +140° F)
Ниміріту	0 - 95 % RH Non-Condensing
DUSTPROOF	GASKETTED & THREADED JOINTS
Compliances	
HAZARDOUS LOCATION PERMISSIONS	CSA
	CLASS I, DIVISION 1, GROUPS B, C & D
	CLASS I, ZONE 1, GROUP IIB + H2
	CLASS II, DIVISION 1, GROUPS E, F & G
	CLASS III; TEMP CODE T3C
WEATHERPROOF & WATERTIGHT	ENCLOSURE 3R

Storage

General Storage (All situations):

- Note any stacking limits or warnings on packaging (if any).
- Do not store in temperatures over +80C.
- Store in original packaging if possible until needed.

Long Term Storage (> 6 Months):

- If area is air conditioned and not subject to high changes in humidity, continue to store in original packaging.
- If wide humidity shifts are expected, then use these steps:
 - o Remove product from packaging (including plastic bags) and store on shelf in open air.
 - If area is subject to a high degree of dust, to help maintain cosmetic appearance you can cover with cloth (Do not cover with plastic or materials that will trap moisture) or clean periodically.
 - Do not store out of packaging long term where they are exposed to sunlight. Long term exposure to UV may cause fading on plastic parts.

Cleaning Tips for Guardian Telephones

Guardian Telephones may occasionally need to be cleaned to maintain appearance. Generally, wiping the surface with a clean, water dampened cloth will remove most films or residues. If the soiling is too stubborn for plain water, a mild detergent solution may be used. Be sure to wipe away any detergent residue with a plain water dampened cloth. The Telephone may be cleaned with any general-purpose household glass and surface type cleaner. Do not spray the telephone directly! Spray the cleaner on a soft cloth then wipe the surface. Pre-treated cloths, like those used for eyeglasses or cameras, may be used to clean the Telephone. Premoistened towelettes may also be used, however, avoid those containing lanolin or aloe as they will leave a slippery residue. The handset and surface of the telephone may be cleaned with disinfectants used for general cleaning in a medical environment. Isopropyl alcohol may be used applied with a cloth. Avoid using alcohol on silicon based keypads, since doing so may significantly degrade legibility.

- Do not use furniture polishes, waxes or plasticizer-based cleaner (Armor All etc.)
- Do not use lanolin, aloe, glycerin or other skin care type products.
- Do not apply any solvent such as acetone, mineral spirits etc.
- Do not directly spray or immerse the handset.

APPENDIX A - Hazardous Location Classification

CLASS I, DIVISIONS 1 & 2, GROUP B

acrolein formaldehyde(gas) propyl nitrate butadiene hydrogen ethylene oxide manufactured gases containing more than 30% hydrogen(by volume) proplene oxide

CLASS I, DIVISIONS 1 & 2, GROUP C

acetaldehyde epichlorohydrin methyl formal methyl mercaptan butyl mercaptan ethylenimine methyl mydrazine

n-butyraldehyde ethyl mercaptan morpholine carbon monoxide n-ethyl morpholine nitroethane crotonaldehyde hydrogen cyanide nitromethane hydrogen selenide dicyclopentadiene 2-nitropropane diethyl ether hydrogen sulfide propionaldehyde diethylamine isobutyraldehyde n-propyl ether di-isopropylamine Isopropyl glycidyl ether tetrahydrofuran dimethylamine methylacetylene triethylamine

1,4-dioxane methylacetylene-propadiene unsymetrical dimethyl hydrazine

valeraldehyde

di-n-propylamine methyl ether

CLASS I, DIVISIONS 1 & 2, GROUP D

acetic acidethyl benzenemethyl isocyanateacetoneethyl chloridemethyl methacrylateacetonitrileethylenediamine2-methyl-1-propanolacrylonitrileethylene dichloride2-methyl-2-propanol

allyl chloride ethyl glycol monomethyl ether naptha ammonia (3) ethyl formate nonane n-amyl acetate gasoline nonene sec-amyl acetate heptane octane benzene heptene octene butane hexane pentane 1-butanol (butyl alcohol) 2-hexanone 1-pentanol 2-butanol (secondary butyl alcohol) hexenes 2-pentanone n-butyl acetate isoamyl acetate 1-pentene

sec-butyl acetate isoamyl alcohol petroleum naptha butylamine isobutyl acrylate propane butylene isoprene 1-propanol chlorobenzene isopropyl acetate 2-propanol isopropylamine n-propyl acetate chloroprene cyclohexane isopropyl ether propylene

cyclohexene liquefied petroleum gas propylene dichloride cyclopropane mesityl oxide propylene oxide

1,1-dichloroethane methane pyridine 1,2-dichloroethylene methanol styrene methyl acetate 1,3-dichloropropene toluene methyl acrylate tripropylamine di-isobutylene ethane methylamine turpentine methylcyclohexane ethanol vinvl acetate methyl ethyl ketone ethyl acetate vinyl chloride methyl formate vinylidene chloride ethyl acrylate

ethylamine methyl isobutyl ketone xylenes

APPENDIX A (cont.)

CLASS II, DIVISIONS 1 & 2, GROUP E

Atmospheres containing combustible metal dusts regardless of resistivity, or other combustible dusts of similarly hazardous characteristics having resistivity of less than 10⁵ ohm-centimeter

CLASS II, DIVISIONS 1 & 2, GROUP F

Atmospheres containing carbon black, charcoal, coal or coke dusts which have more than eight percent total volatile material (carbon black per ASTM D1620; charcoal, coal and coke dusts per ASTM D271) or atmospheres containing these dusts sensitized by other materials so that they present an explosion hazard, and having resistivity greater than 100 ohm-centimeter but equal to or less than 10⁸ ohm centimeter.

CLASS II, DIVISIONS 1 & 2, GROUP G

Atmospheres containing combustible dusts having resistivity of 100000 ohm-centimeter or greater.

NOTE: This appendix is a summary of information contained in the National Electrical Code. Please refer to local applicable Electrical Codes for details and latest update.

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

Under no circumstances shall the End Cap be opened or removed without first disconnecting the voltages supplied to the speaker.

It is the responsibility of the installer to ensure that equipment and wiring in a hazardous location complies with regulations and standards applicable to that location.

All apparatus shall be completely assembled and properly sealed before connecting power.

Note: For Group B applications ensure that suitable fittings are installed.

Service Telephone Number

1-800-363-8010 in 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.

Guardian Telecom, a division of Circa Enterprises Inc.
Toll-free 1-800-363-8010 in North America
Ph. (403) 258-3100
Fax. (403) 253-4967
www.guardiantelecom.com

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 circuitry that is intended to receive a telephone signal to a standard power source may destroy the component.

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.

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



Guardian Telecom, a division of Circa Enterprises Inc.
Toll-free 1-800-363-8010
Phone (403) 258-3100
Fax. (403) 253-4967

www.guardiantelecom.com

E-mail: sales@guardiantelecom.com (Click to open message box)

Tough. Trusted. True.

© Guardian Telecom 2018