

Industrial Telephone

Model HR70

Installation & Operation

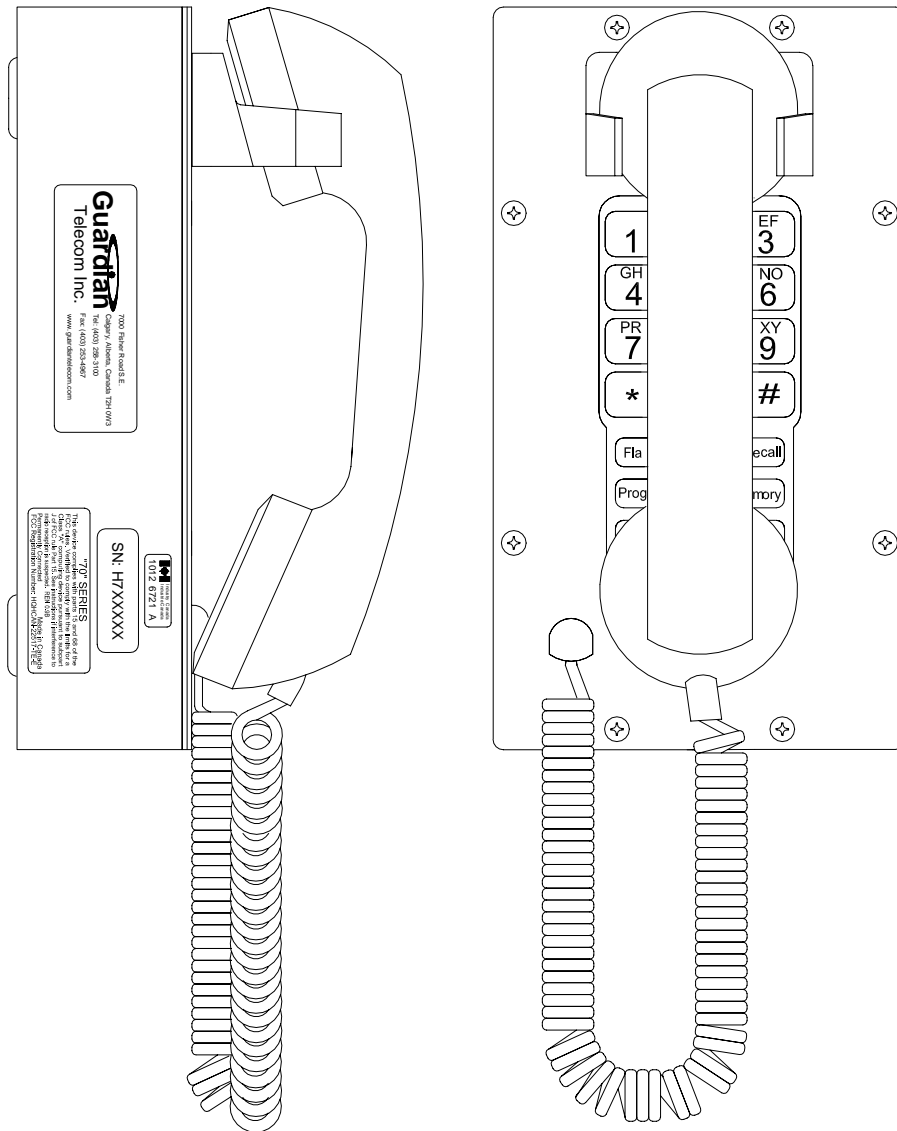


Table of Contents

Package Contents.....	2
Overview	3
Features.....	3
Installing the HR70.....	6
Field Repairs.....	7
Fuse Replacement.....	7
Programming the HR70	8
Operating the HR70.....	8
Engineering Specifications.....	9
HR70 Models and Options	10
Accessories.....	10
Government Certification	11
Warranty.....	12
Disclaimer	12
Warning.....	12
Service Telephone Number	12
Feedback	12
Guardian Product Return	13

Table of Figures

Figure 1 - Features.....	4
Figure 2 - Overall Dimensions.....	4
Figure 3 - Installation.....	5
Figure 4 - Wiring Connections.....	5

Package Contents

- (1) HR70 Telephone
- (1) Installation & Operation Manual

Overview

HR70 Industrial Telephone

The HR70 Telephone is designed to provide safe, reliable communication in areas prone to high humidity, chemical vapors, dust and physical abuse.

Features

Enclosure

- 16 AWG steel, zinc dichromate plated and powder coated

Membrane Keypad

- weather tight
- 10 number memory
- Redial - last number (31 digits)
- Recall - obtains dial tone without hanging up handset
- Flash - 600ms timed loop break
- Pause - 3 second pause in programming
- Mute - disables handset microphone
- Softer/Louder – receiver volume controls

Encapsulated Circuitry

- circuit boards are resistant to corrosive agents (e.g. H₂S, SO₂ and NH₃) and environments with high humidity

Magnetic Reed Hook Switch

- no moving parts

Surge Arrestor

- protects the user in the event of a high voltage spike on the telephone line

Fuse

- prevents damage to the electronic circuits in the event of a high voltage spike on the telephone line

Noise Reducing Microphone

- allows a high level of intelligibility in locations with high background noise

Tone (DTMF) Operation

- factory set to tone (DTMF) dialing
- pulse dialing can be ordered or configured in the field

Heavy Duty Handset Cord

- withstands severe use

Hearing-Aid Compatible

- compatible with inductively coupled hearing-aid devices

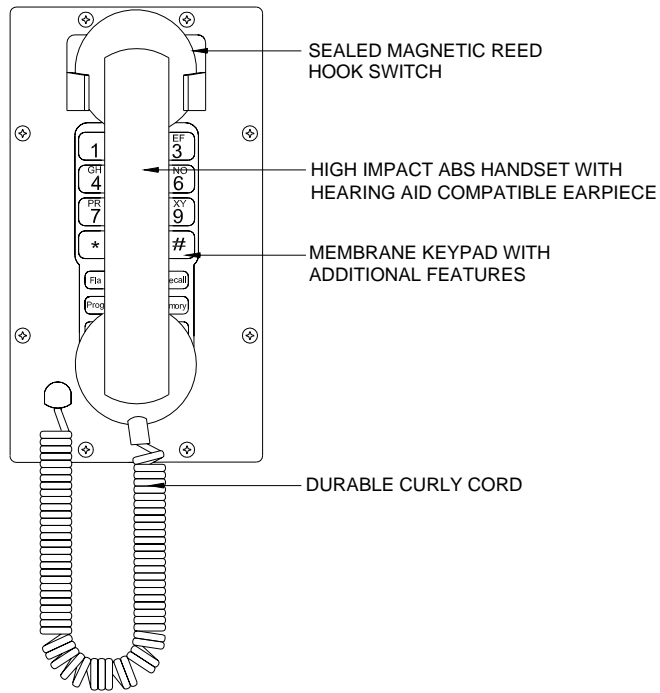


Figure 1 - Features

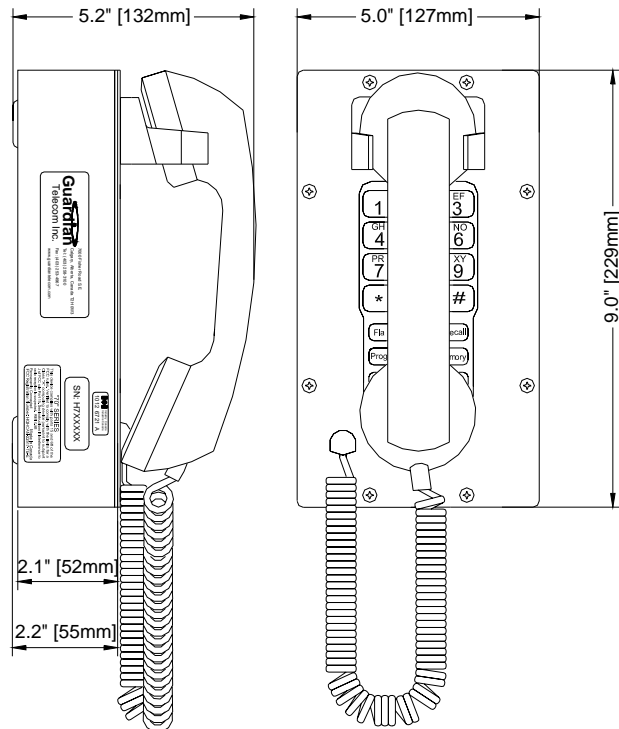


Figure 2 - Overall Dimensions

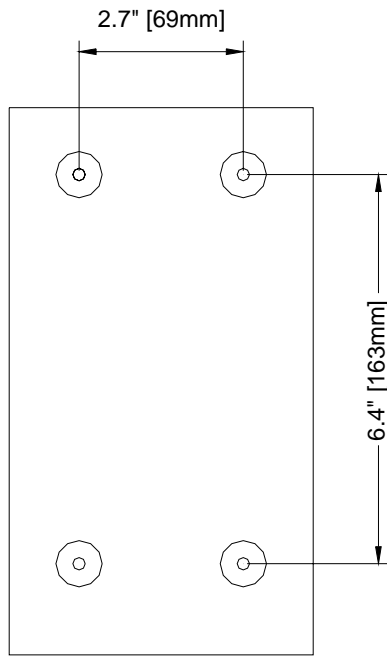


Figure 3 - Installation

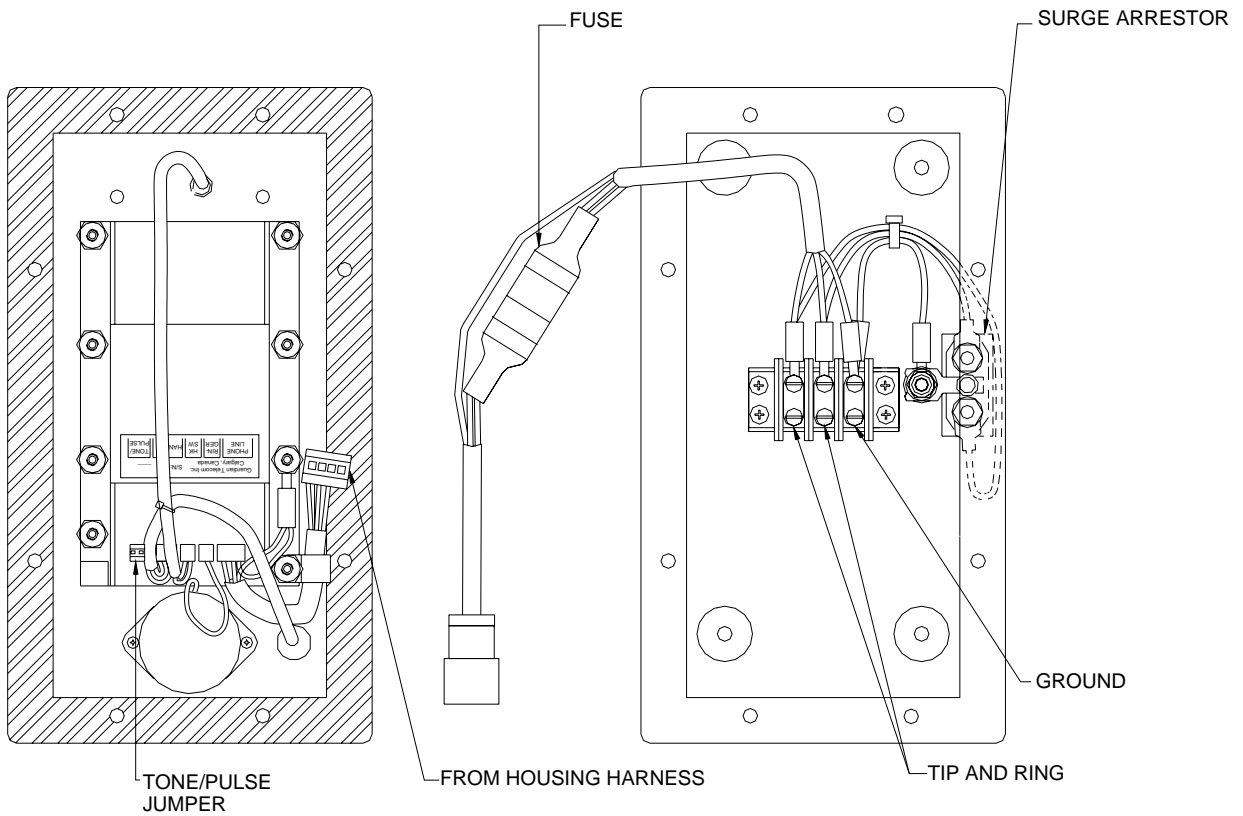


Figure 4 - Wiring Connections

Installing the HR70

- 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 ½” NPT conduit runs.
- Ensure mounting can support 4lbs (1.8kg) and any foreseeable additional load.
- Ensure that none of the electrical connection circuits are live.
- Remove the eight (8) cover screws from the front of the unit and carefully remove the front cover assembly. NOTE that the handset and all electronics are attached to the front plate. The front cover may be separated from the back box by disconnecting the harness plugs.
- Use the template provided or the enclosure itself to locate and drill holes for #8 or M4 mounting screws.
- Secure the enclosure to the wall.
- Bring cable into the enclosure through the conduit entrance and attach individual wires from the exchange (Tip/Ring/Ground) to the terminal block (Tip & Ring are not polarity sensitive). If a conduit hub is used, ensure it is grounded to the ground stud.
- To change the Tone/Pulse setting to pulse, if required:
 - Move the jumper from pins 1 & 2 of the Tone/Pulse connector to pins 2 & 3.
 - To change the setting back to tone move the jumper back to pins 1 & 2.
- Reconnect the faceplate harness.
- Ensure all connections are tight, then replace and secure the cover.
- Connect the telephone into the system.
- Test the unit by making calls to and from another unit on the exchange.

See: Figure 2 - Overall Dimensions

See: Figure 3 - Installation.

See: Figure 4 - Wiring Connections

See: Figure 4 - Wiring Connections

Tip: The SP70A is factory preset for DTMF tone.

Field Repairs

Note: The only field repair permitted is to change the Tone/Pulse setting and the replacement of fuses. All other repairs or alterations must be carried out by Guardian Telecom or an Authorized Service Depot. See **Warranty and Disclaimer for details.**

See: Figure 4 - Wiring Connections

Fuse Replacement

- Disconnect the telephone from Tip and Ring power supplied by the PABX or central office before attempting to replace the fuse.
- Carefully remove the front cover assembly and separate from the housing by disconnecting the harness plugs. NOTE that the handset and all electronics are attached to the front plate.
- Replace fuse in fuse holder with a 0.25 amp 250V 3AG fast blow fuse.
- Carefully replace the front plate and install all eight screws. Do not over tighten the cover screws, there is a flexible gasket between the cover and the body. Excessive tightening of the screws deforms the gasket and reduces the weather resistance of the set.

See: Figure 4 - Wiring Connections

WARNING!

- Replace only with a 0.25 amp 250V 3AG fast blow fuse. Failure to do so will void the warranty.
- If, on reconnecting power, the fuse fails, check the telephone system wiring. The fuse protects the Tip and Ring line from the telephone system. It is usually powered at 48 volts DC and must not be connected to 120 volts AC.

Programming the HR70

A direct memory access register can be assigned to each of the 10 number keys.

Each direct memory access register can contain up to 20 characters.

- Lift the telephone handset off the hook.
- Press **Program** to put the phone into programming mode.
- Press **Memory**.
- Press a number key **0-9**.
- Enter the telephone number you want to store (e.g. 1-800-363-8010).
- If your phone requires you to dial 9 (or other digit) to access an outside line, press the **9** key, then the **Pause** key, then enter the telephone number you want to store (e.g. 9 PAUSE 1-800-363-8010).
- Press **Program** to leave programming mode and return to normal telephone operation.

*Tip: Valid characters are 0-9, *, # and Pause.*

Tip: The number selected is assigned to the access register.

Operating the HR70

Manual Operation:

- Lift the handset and dial manually.

Automatic Memory Dialing:

- Lift the handset.
- Press **Memory**.
- Press a number key **0-9**.
- The number stored in the register will automatically dial.

*Tip: Valid keys for manual dialing are 0-9, * and #.*

Tip: Program the HR70 to use this quick dialing method.

Engineering Specifications	
<i>Electrical Performance</i>	
AUDIBLE RANGE FREQUENCY RESPONSE	300 – 3400 Hz
DIALING METHOD	DTMF OR 40/60 PULSE AT 10 PPS
TRANSMIT OBJECTIVE LOUDNESS RATING (TOLR)	-41 +/- 3 dB
RECEIVER VOLUME ADJUSTMENT	+8.1 / -5.4 dB IN 5 STEPS OF 2.7 dB
RECEIVE OBJECTIVE LOUDNESS RATING (ROLR)	
-AT NOMINAL VOLUME LEVEL	50 +/- 3 dB
-AT MAXIMUM VOLUME LEVEL	42 +/- 3 dB
-AT MINIMUM VOLUME LEVEL	55.5 +/- 3 dB
SIDE TONE OBJECTIVE LOUDNESS RATING (SOLR)	
-AT NOMINAL VOLUME LEVEL	11 +/- 4 dB
-AT MAXIMUM VOLUME LEVEL	7 +/- 4 dB
-AT MINIMUM VOLUME LEVEL	14 +/- 4 dB
MEMORY DIAL	10 REGISTERS OF 20 DIGITS EACH
FLASH	600 MSEC TIMED DISCONNECT
MUTE	PRESS KEY TO MUTE TRANSMITTER
REDIAL	31 DIGITS MAXIMUM
RINGER OUTPUT	MAX 75 dB
FCC RINGER EQUIVALENCE	0.9B
SET IMPEDANCE	600 OHMS NOMINAL
MAXIMUM LOOP	15,000 FT (4,600 M) OF 22 AWG COPPER
<i>Electrical</i>	
RINGER SENSITIVITY	40 – 100 V, 16 – 25 Hz
LINE VOLTAGE	24 – 56 VDC
LOOP CURRENT	20 - 120 MA
CONNECTION METHOD	TERMINAL BLOCK
FUSE	¼ AMP 250V 3AG FAST BLOW
<i>Environmental</i>	
WEATHERPROOF	ENCLOSURE NEMA 3R
TEMPERATURE	-40° TO +60° C (-40° TO +140° F)
HUMIDITY	0 TO 95% RH
DUSTPROOF	FULLY GASKETTED ENCLOSURE AND MEMBRANE KEYPAD

<i>Mechanical</i>	
HOOK SWITCH (CRADLE SWITCH) LIFE	>1 000 000 OPERATIONS
BODY CONSTRUCTION	16AWG STEEL, ZINC DICHROMATE PLATED & POWDER COATED
OVERALL DIMENSIONS H X W X D	9.0 X 5.0 X 5.2 INCHES (229 X 127 X 132 MM)
NET WEIGHT	4 LBS (1.8 KG)
HANDSET MATERIAL	HIGH IMPACT ABS
MICROPHONE	NOISE REDUCING ELECTRET
OPTIONAL MICROPHONE	NOISE CANCELING DYNAMIC
RECEIVER	HEARING AID COMPATIBLE
STANDARD MOUNTING	VERTICAL WALL
WIRING ACCESS	7/8" DIAM. OPENING FOR OWNER SUPPLIED FITTING
HARDWARE MATERIAL	STAINLESS STEEL
<i>Compliance</i>	
INDUSTRY CANADA	1012 6721 A
FCC	HQHCAN-22517-TE-E

HR70 Models and Options

- P6720 Model HR70 Industrial Telephone
- P6973 Model HR70(M) Heavy Duty Industrial Telephone With Armored Handset Cord and Metal Keypad
- P6271 Model HR71 Industrial Ringdown Telephone
- P6972 Model HR71 Industrial Ringdown Telephone With Autodialer
- P6971 Model HR71 Heavy Duty Industrial Ringdown Telephone With Armored Handset Cord

Accessories

- P7225 Weatherproof ring detect relay
- P7229 Weatherproof off-hook detect relay (24V)
- Loud Ringers
- Strobe Lights

Government Certification

Attached to the telephone are labels for *Industry Canada* and the *United States Federal Communications Commission*. These identify equipment certifications indicating the 60 and 70 series telephones meet certain telecommunications network protective, operational and safety requirements. These agencies do not guarantee the equipment will operate to the user's satisfaction.

Before installing this telephone equipment, users should ensure it is permissible to connect the equipment to facilities of the local telecommunications company.

Equipment must be installed using acceptable connection methods. In some cases, the telephone users inside wiring, associated with a single line service, may be extended by a certified connector assembly (telephone extension cord). The customer should be aware that in some situations compliance with the above conditions may not prevent degradation of service.

Repairs to certified equipment should be made by a supplier designated authorized maintenance facility.

For their own protection users should ensure the electrical ground connections of the power utility, telephone lines and internal metallic water pipe systems, if present, are connected. This precaution may be particularly important in rural areas.

CAUTION: Users should not attempt to make ground connections, but should contact the appropriate electrical inspection authority or electrician.

Load Number (LN)

The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop used by the device. Termination on a loop may consist of any combination of devices subject only to the requirement that the total of the Load Numbers of all the devices does not exceed 100.

Notification to Telephone Company

Upon request, the customer must notify the telephone company of the particular line to which the connection will be made and provide the Industry Canada or FCC registration number. The local telephone company may request disconnection of the telephone where alterations or malfunctions affect the telephone's performance.

United States Federal Communications Commission

This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for Class A computing device pursuant to Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

Interference

There is no guarantee that interference will not occur in a particular installation. If interference to radio or television reception from this equipment is suspected, proceed as follows:

1. Unplug the set, check for the interference.
2. Re-orient the receiving antenna.
3. Relocate the set with respect to the receiver.
4. Move the set away from the receiver.

If necessary, consult the supplier or an experienced radio/television technician for additional suggestions.

FCC Rules and Ringer Equivalence Number

This equipment complies with Part 68 of the FCC Rules. On the side of this equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five. To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

Service changes and Limitations

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

This equipment can not be used on public coin telephone service as provided by your telephone company. Connection to party line service is subject to state tariffs (contact the state public utility commission, public service commission or corporate commission for information.)

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

For the purposes of installing the product and replacing fuses only this device may be opened and reassembled by qualified personnel, following the instructions in the product manual.

High voltages may be present in this device when connected to telephone wiring

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.

**Guardian Telecom Inc.
7552 - 10th Street N.E.
Calgary, Alberta, Canada T2E 8W1
Toll-free 1-800-363-8010
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.
<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.



**Guardian Telecom Inc.
7552 - 10th Street N.E.
Calgary, Alberta, Canada T2E 8W1
Toll-free 1-800-363-8010
Ph. (403) 258-3100
Fax. (403) 253-4967
www.guardiantelecom.com
E-mail: sales@guardiantelecom.com**

Industrial Communications Worldwide