Hazardous Area, Vandal Resistant Telephone
Model VR700

Installation and Operation
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Package Contents

(1) VR700 Telephone
(2) Door Latch Keys
(1) Mounting Plate
(1) Installation & Operation Manual

Models and Options

• P5710 Model VR700 Hazardous Area Telephone

Accessories

• P7226 Hazardous Area Ring Detect Relay
• P7231 Hazardous Area Off-hook Detect Relay (24V)
• P7021 CE20 Hazardous Area External Ringer
Overview

Hazardous Area Telephone

The VR700 is a vandal resistant telephone designed to provide safe, reliable communication in Class I, Division 2, hazardous locations. The unit is housed in a rugged, weather and corrosion resistant enclosure that ensures the unit will function dependably in the most severe conditions.

Features

Enclosure
- polyurethane body construction
- weatherproof and corrosion resistant
- spring loaded hinged door
- stainless steel faceplate

Keypad
- standard 3x4 matrix

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 and Field Replaceable Fuse
- prevents damage to the electronic circuitry in the event of a high voltage spike on the telephone line

Wall Mount
- easily mounted on any sturdy vertical structure

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

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

Armored Handset Cord
- withstands severe use

Hearing-Aid Compatible
- compatible with inductively coupled hearing-aid devices
**Figure 1 - Overall Dimensions**

- **Dimensions:**
  - Width: 6.3" [160mm]
  - Height: 16.4" [417mm]
  - Depth: 12.0" [305mm]
- **Notes:**
  - Ø0.265" [Ø7mm] for #10 or M5

**Figure 2 - Installation**

- **Connections:**
  - Orange, Green, Blue wires for 2-wire connection.
  - Fuse connection.
  - Surge arrestor connection.
  - Ground from exchange.
  - Connect to circuit board harness.
  - Ring and tip connections.

**BACK VIEW**
Installing the VR700

- Declassify the hazardous location before proceeding with any installation or electrical wiring.
- Follow all appropriate electrical codes and use only approved electrical fittings for the installation.
- For waterproofing purposes apply Teflon tape to all glands and conduits.
- Choose a wall location that is free of obstructions and permits space for ½” NPT conduit runs.
- Ensure mounting can support 16 lbs (7.3 kg) and any additional foreseeable load.
- Ensure that none of the electrical connection circuits are live.
- Separate the faceplate from the housing by removing the two temporary, factory installed screws and unplugging the wiring harness from the faceplate.
- 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.
- Use the template provided or the mounting bracket to locate and drill holes for mounting screws.
- Secure the unit to the wall.
- Bring cable into the enclosure through the conduit entrance and attach individual wires from the exchange (Tip/Ring/Ground) to the surge arrester (Tip & Ring are not polarity sensitive.). If a conduit hub is used, ensure it is grounded to the ground stud.
- Plug the wiring harness back into the faceplate and secure the faceplate.
- Connect the telephone lines at the local exchange or demarcation block.
- Test the unit by calling to and from another station.

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.

Tip: The VR700 is factory preset for DTMF tone.
See: Figure 3 - Setting Dialing Mode.

Tip: Use ¼” or M8 screws to secure the unit to the wall.
See: Figure 2 - Installation.
Figure 3 - Setting Dialing Mode
Maintenance

- Declassify the hazardous location before proceeding with any maintenance or repairs.
- To maintain hazardous area compliance the only field repair permitted is setting the dialing mode 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 3 - Setting Dialing Mode and Figure 2 - Installation.

Operation

- Once your Model VR700 Telephone has been properly installed and energized, operation is identical to most other single line telephones.

Fuse Replacement

- Declassify the hazardous location before proceeding with any installation, electrical wiring or repairs.
- 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 the spare fuse attached to the fuse holder.
- Carefully replace the front plate and install all 14 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.

WARNING!

- Replace only with a 0.25 amp 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.
## Engineering Specifications

**Electrical Performance**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Rating</th>
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</thead>
<tbody>
<tr>
<td>Audible Range Frequency Response</td>
<td>300 - 3400 Hz</td>
</tr>
<tr>
<td>Dialing Method</td>
<td>DTMF or 40/60 Pulse at 10 PPS</td>
</tr>
<tr>
<td>Transmit Objective Loudness Rating (TOLR)</td>
<td>-38 +/- 3 dB</td>
</tr>
<tr>
<td>Receive Objective Loudness Rating (ROLR)</td>
<td>Typical 50 +/- 3 dB</td>
</tr>
<tr>
<td>Side Tone Objective Loudness Rating (SOLR)</td>
<td>Typical 11 +/- 4 dB</td>
</tr>
<tr>
<td>Ringer Output</td>
<td>&gt;65 dB</td>
</tr>
<tr>
<td>FCC Ringer Equivalence Number (REN)</td>
<td>0.8 B</td>
</tr>
<tr>
<td>Set Impedance</td>
<td>600 ohms Nominal</td>
</tr>
<tr>
<td>Maximum Loop</td>
<td>15,000 ft (4,600 m) of 22 awg Copper</td>
</tr>
</tbody>
</table>

**Electrical Requirements**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Rating</th>
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</thead>
<tbody>
<tr>
<td>Ringer Sensitivity</td>
<td>40 - 100 V, 16 - 25 Hz</td>
</tr>
<tr>
<td>Line Voltage</td>
<td>24 - 56 VDC</td>
</tr>
<tr>
<td>Loop Current</td>
<td>20 - 120 mA</td>
</tr>
<tr>
<td>Connection Method</td>
<td>Surge Arrester</td>
</tr>
<tr>
<td>Fuse</td>
<td>¼ AMP 3AG Fast Blow</td>
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**Environmental**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Rating</th>
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<tbody>
<tr>
<td>Weather and Corrosion Resistant</td>
<td>Enclosure 4X</td>
</tr>
<tr>
<td>Temperature</td>
<td>-50° to +50° C</td>
</tr>
<tr>
<td>Humidity</td>
<td>0 to 100% RH</td>
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<tr>
<td>Dust Resistant</td>
<td>Full Enclosure Gasket</td>
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</table>

**Mechanical**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hook Switch (Cradle Switch) Life</td>
<td>&gt;1 000 000 Operations</td>
</tr>
<tr>
<td>Body Construction</td>
<td>Polyurethane</td>
</tr>
<tr>
<td>Faceplate</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>Dimensions</td>
<td>16.4 x 12.0 x 6.3 inches (417 x 305 x 160)</td>
</tr>
<tr>
<td>Net Weight</td>
<td>16 lbs (7.3 kg)</td>
</tr>
<tr>
<td>Handset Material</td>
<td>High Impact ABS</td>
</tr>
<tr>
<td>Microphone</td>
<td>Noise Reducing Electret</td>
</tr>
<tr>
<td>Receiver</td>
<td>Hearing Aid Compatible</td>
</tr>
<tr>
<td>Standard Mounting</td>
<td>Vertical Wall</td>
</tr>
<tr>
<td>Connections</td>
<td>1/2&quot; NPT Threaded Openings</td>
</tr>
<tr>
<td>Hardware Material</td>
<td>Stainless Steel</td>
</tr>
</tbody>
</table>
### Compliance

<table>
<thead>
<tr>
<th>MILITARY STANDARDS</th>
<th>MIL-STD 810E</th>
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<tbody>
<tr>
<td>CANADIAN STANDARDS ASSOCIATION (CSA)</td>
<td>REFERENCE NUMBER: LR65547</td>
</tr>
<tr>
<td>Class I, Division 2, Groups A, B, C and D</td>
<td>Class I, Zone 2, Group IIC Hazardous Locations</td>
</tr>
<tr>
<td>Class I, Zone 2, Group IIC Hazardous Locations</td>
<td>Temperature Code T5</td>
</tr>
<tr>
<td>Temperature Code T5</td>
<td>Enclosure Type 4X</td>
</tr>
</tbody>
</table>

**GUARDIAN TELECOM**  
Tel.: (403) 258-3100  
Fax: (403) 253-4967  

**VR700**  
VANDAL RESISTANT TELEPHONE  
Class I, DIV. 2, Groups A, B, C, and D  
Class I, Zone 2, Group IIC Hazardous Locations  
Temperature Code T5  
Enclosure Type 4X  

L.N. 21  
R.E.N. 0.8B  
LINE VOLTAGE: 24 - 56V DC  
LOOP CURRENT: 20 - 120mA  
RINGER SENSITIVITY: 40 - 100V, 16 - 25Hz  
SEE USER'S GUIDE FOR INSTALLATION  
SER. NO.: VR7XXXX  

**WARNING:** DO NOT DISCONNECT POWER WHILE CIRCUITS ARE LIVE  
UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS. DO NOT  
REPLACE FUSE WHILE CIRCUIT IS LIVE OR WHILE AREA IS KNOWN  
TO BE HAZARDOUS. FIELD REPAIR IS NOT POSSIBLE.  
SEE INSTRUCTION MANUAL FOR PROPER OPERATION AND  
INSTALLATION INSTRUCTIONS.  

MADE IN CANADA  

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**Figure 4 - I.D. and Compliance**
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.

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 this device may be opened and reassembled by qualified personnel, following the instructions in the product manual. In the cases of explosion proof and hazardous area devices it is imperative that mating surfaces be clean and undamaged prior to reassembly and that fasteners be made up to the specified torque.

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.

**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.guardian telecom.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.
Industrial Communications Worldwide

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