Industrial Communications Worldwide

Heavy Duty Industrial Telephone
Model HR70(M)

Installation & Operation
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Package Contents

(1) HR70(M) Telephone
(1) Installation & Operation Manual
Overview

HR70(M) Heavy Duty Industrial Telephone
The HR70(M) is a rugged telephone designed to provide safe and reliable communication in harsh environments and locations prone to vandalism.

Features

Enclosure and Faceplate
- 16 AWG steel, zinc dichromate plated and powder coated

Keypad
- vandal resistant metal, standard 3 x 4 matrix

Encapsulated Circuitry
- the circuit board is encapsulated by an epoxy resin making it resistant to corrosive agents (e.g. H₂S, SO₂ and NH₃) and environments with high humidity

Hook Switch
- magnetic reed hook switch, no moving parts

Surge Arrestor and Fuse
- protects the electronic circuits and user in the event of a high voltage spike on the telephone line

Noise Reducing Microphone (Noise Canceling Optional)
- aids in clarity of transmission in noisy areas

Volume Control Handset (Optional)
- Aids in clarity of reception in noisy areas

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

Armored Handset Cord
- withstands vandalism and severe use

Hearing-Aid Compatible
- compatible with inductively coupled hearing-aid devices
Guardian Telecom Inc.

Installation and Operation
Model HR70(M)

**Figure 1 - Features**

- SEALED MAGNETIC REED HOOK SWITCH
- HIGH IMPACT ABS HANDSET WITH HEARING AID COMPATIBLE EARPIECE
- METAL KEYPAD
- ARMoured CORD

**Figure 2 - Dimensions**

Dimensions: 5.2" [132 mm], 5.0" [127 mm], 2.2" [55 mm], 2.1" [52 mm], 9.0" [229 mm]
Figure 3 - Mounting

Figure 4 - Electrical Connections
Installing the HR70(M)

- 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 cable or conduit runs.
- Ensure mounting can support 4lbs (1.8kg) and any additional foreseeable 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 plug.
- 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 to locate and drill holes for #8 or M4 mounting screws.
- Secure the unit to the wall.
- Fit an appropriate cable gland, grommet or conduit connector to the 7/8” opening in the bottom of the enclosure.
- Bring cable into the enclosure through the opening and attach individual wires from the exchange (Tip/Ring/Ground) to the connector (Tip & Ring are not polarity sensitive). If a conduit hub is used, ensure it is grounded to the ground stud.
- Re-connect the harness to the front cover assembly.
- Ensure all connections are secure, then replace and secure the cover.
- Connect the telephone into the system.
- Test the unit by calling to and from another unit on the exchange.

Tip: The HR70(M) is factory preset for DTMF tone.
Tip: Use #8 or M4 screws to secure the unit to the wall.

Operation

- Once the Model HR70(M) Telephone has been properly installed and energized operation is identical to most other single line telephones.
- If the optional receiver volume control handset is installed receiver volume may be increased or decreased by pressing the appropriate button.

Field Repairs

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

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>Details</th>
</tr>
</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>Receiver Volume Adjustment</td>
<td>13.5 dB in 2.7 dB Steps, 3 Steps Up and 2 Steps Down</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;75 dB</td>
</tr>
<tr>
<td>FCC Ringer Equivalence</td>
<td>0.8A</td>
</tr>
<tr>
<td>Receiver Volume Adjustment</td>
<td>13.5 dB in 2.7 dB Steps, 3 Steps Up and 2 Steps Down</td>
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</tr>
<tr>
<td>Ringer Output</td>
<td>&gt;75 dB</td>
</tr>
<tr>
<td>FCC Ringer Equivalence</td>
<td>0.8A</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>Details</th>
</tr>
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<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 Arrestor / Terminal Block</td>
</tr>
<tr>
<td>Weatherproof</td>
<td>Enclosure 3R</td>
</tr>
<tr>
<td>Temperature</td>
<td>-40° to +60° C (-40° to +140° F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>0 to 95% RH</td>
</tr>
<tr>
<td>Dustproof</td>
<td>Full Enclosure Gasket</td>
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</tbody>
</table>

### Environmental

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</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>16 AWG Steel, Zinc Dichromate Plated and Powder Coated</td>
</tr>
<tr>
<td>Dimensions</td>
<td>9.0 x 5.0 x 4.9 inches (229 x 127 x 125 mm)</td>
</tr>
<tr>
<td>Net Weight</td>
<td>4 lbs (1.8 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>Optional Microphone</td>
<td>Noise Canceling Dynamic</td>
</tr>
<tr>
<td>Receiver</td>
<td>Hearing Aid Compatible</td>
</tr>
<tr>
<td>Standard Mounting</td>
<td>Vertical Wall on Standard Outlet Box</td>
</tr>
<tr>
<td>Wiring Access</td>
<td>7/8&quot; (22mm) Cable Entry Opening</td>
</tr>
<tr>
<td>Hardware Material</td>
<td>Stainless Steel</td>
</tr>
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</table>
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 it is connected to a telephone line.

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.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:

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<tbody>
<tr>
<td>Model No.</td>
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<td>Part No.</td>
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<tr>
<td>Serial No.</td>
<td></td>
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<tr>
<td>Date of Purchase</td>
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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

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