Explosion Proof Talk/Back Wall Station
Model MLX331

Installation & Operation
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Package Contents

(1) MLX331 Master Station
(1) Master Loudspeaker (optional)
(1) Slave Loudspeaker (optional)
(1) Installation & Operation Manual
Overview

MLX331 Talk Back Intercom System

The model MLX331 is an intercom system designed for use in situations where frequent communications between two stations are 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 from the slave speaker to the master station.

In drilling rig applications, the system consists of the master station on the drill floor with an associated loudspeaker and one remote slave speaker at the monkey board, which has the dual function of speaker and talk/back microphone. When the PTT switch on the master station is pushed, the system attenuates the local speaker to prevent acoustical feedback and the slave speaker is placed in the speaker mode to receive from the master station. When the PTT switch on the master station is released, the talk path reverses and the slave speaker acts as a microphone transmitting back to the speaker associated with the master station. The option is available for the master station to use either the internal microphone or the master station speaker as a microphone while using a remote PTT (foot) switch.

Jumper JP1 on the PCB board enables the injection of a post announcement tone on the slave speaker when the PTT switch is released at the master station. When the post announcement tone is heard it confirms to the user at the slave speaker location that the system is in the receive mode.

Features

<table>
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<tr>
<th>Enclosure and Faceplate</th>
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<tbody>
<tr>
<td>copper free cast aluminum - powder coated</td>
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<table>
<thead>
<tr>
<th>Master/Slave Operation</th>
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<tbody>
<tr>
<td>only one master station required</td>
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<table>
<thead>
<tr>
<th>Post Announcement Tone</th>
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<tr>
<td>optional – jumper on circuit board</td>
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<table>
<thead>
<tr>
<th>Slave Operator Ring Tone To Master Station</th>
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<tr>
<td>optional – requires a push button switch at the slave speaker location</td>
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<tr>
<td>ring tone volume adjustable (internal)</td>
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<tr>
<th>Page Switch</th>
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<tbody>
<tr>
<td>page switch on faceplate of enclosure</td>
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<tr>
<td>option for external hand/foot switch</td>
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<table>
<thead>
<tr>
<th>Master Microphone</th>
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<tbody>
<tr>
<td>on faceplate of master station</td>
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<tr>
<td>option for use of master speaker as mic. – jumper on circuit board</td>
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<thead>
<tr>
<th>Controls</th>
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<tbody>
<tr>
<td>separate master and slave speaker volume controls on faceplate</td>
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<tr>
<th>Power Requirement</th>
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<tr>
<td>24V AC/DC or 120/240 VAC</td>
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Figure 1 - Features

Figure 2 - Dimensions
Figure 3 - Mounting

- MASTER STATION SPEAKER
- EXPLOSION PROOF SPEAKER
- SLAVE SPEAKER
- OPTIONAL REMOTE HAND/FOOT SWITCH
- OPTIONAL RINGTONTE SWITCH
- POWER SUPPLY 24VDC, 120/240VAC
- MASTER STATION

Figure 4 - Typical Installation
Installing the MLX331

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 MLX331 Intercom System.
- Use shielded cable for the slave speaker.
- To select options and pre-adjust system levels, remove the bolts from the faceplate and remove the faceplate. Offset the faceplate to either side of the enclosure and secure with two bolts to provide access to the circuit board while making adjustments.
- If a post announcement tone is required enable the function by setting jumper JP1 on the PCB board to the on position.
- If the master station speaker is to be used as a microphone as well (instead of internal microphone), connect remote PTT (foot) to connector J5. The circuitry will recognize the remote PTT switch and automatically use the master station speaker as the microphone instead of the internal microphone. The internal microphone is automatically activated when the master station front panel PTT switch is used.
- Set the reference level of the master and slave output controls on the faceplate to the middle point.
- Adjust the PCB mounted control potentiometers to the desired levels:
  - Master station microphone level (onboard microphone or speaker as microphone).
  - Slave speaker talk/back input volume.
  - Master station speaker attenuation (when paging)
  - (Optional) ring tone volume
- Replace the faceplate.
- Using the controls on the front of the Master Station adjust:
  - Master Station speaker volume.
  - Slave Speaker volume.
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.

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**Figure 5 - Circuit Board Layout / Control Pots & Wiring**
## Engineering Specifications

### Electrical
- **Power Requirement**: 24V AC/DC; 120V/240VAC, 50/60 Hz
- **Power Supply Fuse**: 24V AC/DC - 1 AMP, 120VAC - 0.50A, 240VAC - 0.25 AMP SLOW BLOW, 2AG
- **Audio Output Fuses**: 250V, 0.75A, SLOW BLOW, 2AG

### Audio and Control Inputs
- **Master Internal Microphone**: 600 OHMS, 750mV RMS Maximum
- **External PTT Switch (Optional)**: DRY CONTACT SPST Switch
- **Master Speaker When Used As A Talk Back Microphone**: 600 OHMS, 1 VRMS Maximum

### Audio Outputs
- **Master Speaker Channel**: 70V Line, 10 Watts RMS
- **Slave Speaker Channel**: 70V Line, 10 Watts RMS

### Environmental
- **Temperature**: -40° to +60° C (-40° to +140° F)
- **Humidity**: 0 – 95% RH NON CONDENSING

### Mechanical
- **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
- **Connection Fittings**: Conduit Or Cable Gland

### Compliance
- **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+H2 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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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 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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<th>Details</th>
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<tr>
<td>Model No.</td>
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<td>Serial No.</td>
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<td>Date of Purchase</td>
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Industrial Communications Worldwide

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