Page/Talk Industrial Desk Stations
Models MLD20 and MLD25

Installation & Operation
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Package Contents

One (1) Page/Talk Desk Station
One (1) Junction Box and Power Supply Enclosure
One (1) Installation & Operation Manual
Overview

MLD20/25 Page/Talk Desk Stations
Guardian’s Page/Talk Systems provide reliable and easy to use paging and communication within industrial environments such as plants, mills and factories. Individuals can be paged from any station and two or more persons can communicate on any available party line.

Models MLD20 (Single line) and MLD25 (Multi line) desk stations are described in this manual. The sets consist of two components; a desktop station and a junction box/power supply enclosure. The enclosure houses the wiring board and a power converter board. A single customized cable supplied with the set provides the connection between the enclosure and the desktop station.

Desktop stations are equipped with a 5 Watt speaker with volume control, and a noise reducing microphone handset. A press bar switch on the handset enables one-hand paging operations.

Guardian's stations and related equipment are compatible with systems provided by most other manufacturers.

Features

Desk Set Enclosure
- cover black PVC
- base 16 gauge steel, zinc chromate plated and powder coated

Junction Box and Power Supply Enclosure
- 16 gauge steel, zinc chromate plated and powder coated

Connectors
- removable screw and plug Combicon connectors allow for ease of installation
- simply screw wires into plug and reinsert plug into PCB socket

Handset
- page switch on handset
- noise reducing microphone
- electronic hook switch provides durability

Headset
- optional plug in headset

Controls
- speaker volume - externally accessible
- microphone gain
- receiver volume
- side tone adjustment
Figure 1 - MLD20/25 Features

Figure 2 - MLD20/25 Dimensions
Figure 3 - Junction Box & Power Supply Features

Figure 4 - Junction Box & Power Supply Dimensions
Figure 5 - Junction Box Wiring

Electrical Connection Details

<table>
<thead>
<tr>
<th>Source</th>
<th>Designation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>120/240VAC</td>
<td>J4A/J5A</td>
<td>HOT</td>
</tr>
<tr>
<td></td>
<td>J4A/J5A</td>
<td>COM</td>
</tr>
<tr>
<td></td>
<td>J4A/J5A</td>
<td>GND</td>
</tr>
<tr>
<td>*Ambient Noise</td>
<td>J6A</td>
<td>MIC +</td>
</tr>
<tr>
<td>Microphone</td>
<td>J6A</td>
<td>MIC -</td>
</tr>
<tr>
<td>*Speaker</td>
<td>J7A</td>
<td>SPK +</td>
</tr>
<tr>
<td></td>
<td>J7A</td>
<td>SPK -</td>
</tr>
<tr>
<td>Page Line</td>
<td>J2A/J3A</td>
<td>PA Page Line</td>
</tr>
<tr>
<td></td>
<td>J2A/J3A</td>
<td>PB</td>
</tr>
<tr>
<td>Channel</td>
<td>J2A/J3A</td>
<td>1A Channel 1</td>
</tr>
<tr>
<td></td>
<td>J2A/J3A</td>
<td>1B</td>
</tr>
<tr>
<td></td>
<td>J2A/J3A</td>
<td>2A Channel 2</td>
</tr>
<tr>
<td></td>
<td>J2A/J3A</td>
<td>2B</td>
</tr>
<tr>
<td></td>
<td>J2A/J3A</td>
<td>3A Channel 3</td>
</tr>
<tr>
<td></td>
<td>J2A/J3A</td>
<td>3B</td>
</tr>
<tr>
<td></td>
<td>J2A/J3A</td>
<td>4A Channel 4</td>
</tr>
<tr>
<td></td>
<td>J2A/J3A</td>
<td>4B</td>
</tr>
<tr>
<td></td>
<td>J2A/J3A</td>
<td>5A Channel 5</td>
</tr>
<tr>
<td></td>
<td>J2A/J3A</td>
<td>5B</td>
</tr>
</tbody>
</table>

Note: Channels 2 to 5 connections remain empty for MLD20 hookup.
* No connection with MLD20/25

Figure 6 - Electrical Connections
Installing the MLD20/25 Desk Station

**WARNING** - high voltages are present in this equipment when it is connected to the power source.

- Follow all appropriate electrical codes and use only approved electrical fittings for the installation.
- Remove the screws on the enclosure faceplate and remove the faceplate.
- Ensure that the power supply in the junction enclosure is set up for the correct input voltage.
- Mount the junction box/power supply enclosure within 5 meters of where the desk set will be stationed. The location should be free of obstructions and with space to make the necessary connections. Use the template provided to locate and drill holes for the enclosure mounting screws.
- Ensure that none of the electrical connection circuits are live.
- Bring cable(s) into the enclosure through the cable entrance(s) and attach individual wires to the Combicon connector(s). Attach the first or only cable to the bottom connector. Make connections to terminals 1A and 1B for the single line MLD20.
- Plug the connectors into the receptacle on the interface PCB.
- Ensure all connections are secure.
- Replace the cover
- Plug the desk set cable plug into the enclosure connector and ensure the connection is secure.
- Apply power to the system.
- Adjust speaker volume to the desired level using the control on the face of the desk set.
- Test the installation by making a call as described in the operating section.

Accessing the Interior of the MLD20/25 Desk Station

Follow these instructions should it be necessary to access the interior of the MLD20/25 for adjustments or repairs.

- Unplug the desk station cable at the junction box.
- Remove all faceplate cover screws.
- Lift off the faceplate cover.
- Perform the necessary adjustments or repairs.
- Replace the faceplate.
- Reconnect the desk station to the power supply enclosure.

Note: Be careful when removing the faceplate. The circuit board is on the faceplate.

Tip: The desk unit is equipped with a 5-meter cable terminated with a connector that plugs into the bottom of the enclosure.

See: Figure 5 - Junction Box Wiring and Figure 6 - Electrical Connections

Note: Be careful when removing the faceplate. The circuit board is on the faceplate.
Operating the MLD20 Single Line Station

Initiating a Call
- Remove the handset.
- Ensure that the line is free

Broadcasting a Page
- Press and hold the Page button on the handset.
- Broadcast the page. (e.g. "Joe, I need to talk to you, pick up a handset.")

Connecting with a Second Party
- When the second party picks up their handset, both parties are connected and can carry on a conversation.

Freeing the Line
- Place the handset back on the cradle.

Note: There is one talk line on the MLW80.

Note: Continue holding down the Page button while broadcasting the page.

Note: The second party can be located at any other station.

Operating the MLD25 Multi Line Station

Initiating a Call
- Remove the handset.
- Select a free line using the Line selector.

Broadcasting a Page
- Press and hold the Page button on the handset.
- Broadcast the page that includes the number of the line you are using. (e.g. "Joe, talk to me on line one.")

Connecting with a Second Party
- When the second party picks up their handset, both parties are connected and can carry on a conversation.

Freeing the Line
- Place the handset back on the cradle.

Note: There are five talk lines on the MLW85.

Note: Continue holding down the Page button while broadcasting the page.

Note: The second party can be located at any other station.
Troubleshooting

Note: If access to the interior of the MLD20/25 is required refer to the appropriate section.

Station Is Dead But Speaker Is Working
- No Repair Possible, Return Desk Set For Repair.

Station Is Dead And Speaker Is Not Working
- Ensure power is being supplied to the station.
- Check the fuses located on the circuit boards in the desk set and in the power supply enclosure and replace if necessary. Correct the problem that caused the fuse to fail.

Handset Microphone Volume Too Low
- Adjust TX level control on circuit board.

Handset Receiver Volume Too Low
- Adjust RX level control on circuit board.

Feedback Or Distortion
- Adjust sidetone level control on circuit board.
- Inspect the line and connections for shorts and grounds.

Sidetone
- Adjust sidetone level control on circuit board.

Station Stays On or Off Hook
1. Ensure power is being supplied to the station.
2. Test the proximity switch in the handset receiver cradle by moving a small, permanent magnet over the area while listening on the handset for the line to open and close.
3. If the movement of the magnet switches the on/off hook condition, the magnet in the receiver cartridge of the handset may be weak – try another handset. It is not necessary to wire in the new handset to perform this test – if the new handset switches the on/off hook condition, replace the existing handset with the new unit.
4. If the movement of the magnet does not appear to switch the on/off hook condition the handset itself may be defective – try another handset.
5. If these remedies do not correct the problem return the station for repair.

Excessive Noise on Line
- Verify no other station's handset is off the hook.

Crosstalk
- Inspect wire terminations for crossed wire pairs.
### Engineering Specifications

#### Electrical Requirements Power Supply

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input voltage</td>
<td>120/240VAC</td>
</tr>
<tr>
<td>Input frequency</td>
<td>50/60Hz</td>
</tr>
<tr>
<td>Input current</td>
<td>120VAC 0.1Amp, 240VAC 0.05 Amp</td>
</tr>
<tr>
<td>Fuse</td>
<td>120VAC 0.5Amp, 240VAC 0.25 Amp - 2AG Fast Blow</td>
</tr>
</tbody>
</table>

#### Electrical Requirements Desk Set

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input voltage</td>
<td>24VDC</td>
</tr>
</tbody>
</table>

#### Handset Amplifier

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output level</td>
<td>1.5VRMS nominal into 33 Ohm load</td>
</tr>
<tr>
<td>Output limiter</td>
<td>1.5VRMS nominal</td>
</tr>
<tr>
<td>Transmit gain</td>
<td>50dB</td>
</tr>
<tr>
<td>Frequency response</td>
<td>250 – 4000HZ</td>
</tr>
<tr>
<td>Distortion</td>
<td>1.5% Maximum THD @ 1000HZ</td>
</tr>
</tbody>
</table>

#### Speaker Amplifier

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output level</td>
<td>5 Watts to 45 Ohm Speaker</td>
</tr>
<tr>
<td>Sound Pressure Level (SPL)</td>
<td>0.5 VAC at 80dB @ 1 meter</td>
</tr>
<tr>
<td>Frequency response</td>
<td>250 – 4000HZ</td>
</tr>
<tr>
<td>Distortion</td>
<td>1.5% Maximum THD @ 1000HZ 3 Watts</td>
</tr>
<tr>
<td>Input impedance</td>
<td>200K Ohms, nominal</td>
</tr>
</tbody>
</table>

#### Mechanical

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>Desktop Station: Cover PVC. Base 16 gauge steel, zinc chromate plated and powder coated</td>
</tr>
<tr>
<td></td>
<td>- Power Supply Enclosure: 16 gauge steel, zinc chromate plated and powder coated</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Desktop Station: 7.9x9.6x5.4 inches (199x244x138mm)</td>
</tr>
<tr>
<td></td>
<td>- Power Supply Enclosure: 8.0x12.3x2.9 inches (203x313x74mm)</td>
</tr>
<tr>
<td>Net Weight</td>
<td>Desktop Station: 6.0 Lbs/2.7 Kg</td>
</tr>
<tr>
<td></td>
<td>- Power Supply Enclosure: 7.0 Lbs/3.2 Kg</td>
</tr>
<tr>
<td>Mounting</td>
<td>Desk Set: Horizontal Desk or Vertical Wall</td>
</tr>
<tr>
<td></td>
<td>- Power Supply Enclosure: Vertical Wall</td>
</tr>
<tr>
<td>Connection Method</td>
<td>Desk Set: 5 Meter Cable supplied with desk set</td>
</tr>
<tr>
<td></td>
<td>- Power Supply Enclosure: Two 1 3/8” cable entry openings</td>
</tr>
</tbody>
</table>
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
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
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.
7000 Fisher Rd. SE
Calgary, Alberta, Canada T2H 0W3
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.

<table>
<thead>
<tr>
<th>Step I - On-Site Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 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.</td>
</tr>
<tr>
<td>• 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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step II - Return Materials Authorization (RMA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 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 <a href="http://www.guardian">www.guardian</a> telecom.com, or by calling the service telephone number given in this manual.</td>
</tr>
<tr>
<td>• 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.</td>
</tr>
<tr>
<td>• 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.</td>
</tr>
<tr>
<td>• (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.”)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step III - Factory Authorized Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 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.</td>
</tr>
<tr>
<td>• 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.</td>
</tr>
</tbody>
</table>
Page/Talk Product Series Description

Guardian's Page/Talk Systems provide reliable and easy to use paging and communication within industrial environments and hazardous locations, such as plants, mills and factories. Wall and desk stations are available in both single line and multi line models. Individuals can be paged from any station and two or more persons can communicate on any available line. With the addition of a Merge/Isolate Cabinet up to 12 zones are supported.

These systems provide quality paging and communication functions, and with the telephone interface unit, communication outside the system. Speaker amplifier units provide the capability of adding extra speakers without the need for a Page/Talk station. The alarm tone generator provides synthesized audio alarm signals for plant safety systems and can be programmed to activate strobe lights for additional warning in noisy environments.

Guardian's Stations and related equipment are compatible with systems provided by most other manufacturers.

Page/Talk System Models and Options

Standard Stations
- P5901 MLW10 Single Line Wall Station
- P5906 MLW15 Multi Line Wall Station
- P5950 MLA13 Amplifier Unit
- P5911 MLD20 Single Line Desk Set
- P5916 MLD25 Multi Line Desk Set
- P5921 MLW80 Single Line Weather Proof Wall Station, NEMA 4X
- P5926 MLW85 Multi Line Weather Proof Wall Station, NEMA 4X
- P5958 MLA83 Weather Proof Amplifier Unit, NEMA 4X

Hazardous Location and Explosion Proof Stations
- P5900 MLW100 Single Line Wall Station, Class I, Div.2
- P5905 MLW150 Multi Line Wall Station, Class I, Div.2
- P5951 MLA130 Amplifier Unit, Class I, Div. 2
- P5910 MLD200 Single Line Desk Set, Class I, Div.2
- P5915 MLD250 Multi Line Desk Set, Class I, Div.2
- P5920 MLW800 Single Line Weather Proof Wall Station, NEMA 4X, Class I, Div.2
- P5925 MLW850 Multi Line Weather Proof Wall Station, NEMA 4X, Class I, Div.2
- P5957 MLA830 Weather Proof Amplifier Unit, NEMA 4X, Class I, Div. 2
- P5930 MLX300 Explosion Proof Single Line Wall Station, Class I, Div.1
- P5935 MLX350 Explosion Proof Multi Line Wall Station, Class I, Div.1
- P5956 MLA330 Explosion Proof Amplifier Unit, Class I, Div. 1

Options
- P5940 MLI15 Telephone Interface Unit
- P5970 AG17 Alarm Tone Generator
- P5960 AG17 Alarm Tone Generator, (with optional relay board.)

Cable
- P005219 Standard 16 Conductor
- P005366 Heavy Duty 16 Conductor
Appendix B – Typical Installation

Guardian's Custom Cable

Class I Div. 1 Hazardous Area

CSA Type 4X High Humidity Area

Class I Div. 2 Hazardous Area

AG17 Alarm Tone Generator

Desk Power Supply

Industrial Environment

Line Balancing Unit