



## **LMA / LMA-NC LINE MONITOR ALERT USER'S MANUAL**



**LMA**



**LMA-NC**

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## Table of Contents

<u>Section</u>	<u>Page</u>
Overview .....	3
Installation .....	3
Operation & Test .....	4
Troubleshooting .....	5
Specifications .....	5
LMA Connection Diagram .....	6

## **Overview**

The Line Monitor Alert Board (LMA) provides visual and audible alerts when detecting a contact closure at the alert input. The alert input of the LMA board can be connected to the phone line monitoring output (AUX2) of any Janus Elevator Product that includes it. This will allow monitoring the status of the phone line on a Janus Elevator phone or any other ADA phone equipped with such output.

If more than one phone needs to have the phone line monitored, then the LMA should be used in conjunction with the Line Monitor Expansion Board (LMX) which will support up to 10 phones. If more than 10 phones are used then you could use multiple Expansion Boards and connect the alert output of one Expansion Board to any of the inputs of another Expansion Board.



If the phone(s) are connected to an EMS5 Call Director, you should also use the Line Monitor Expansion Board (LMX) and connect the AUX1 of the EMS5 to any of the inputs of the LMX board and the ADA to the rest of the inputs.

## **Installation**

1. The LMA requires 1 pair of wires from the Phone Line Monitoring output (AUX2) of the elevator phone to the LMA alert input (see Figure 1). If you have an LMA-NC you will need to mount it to your panel using the supplied spacers and 6/32 nuts. Next you need to connect/mount the LED or external 6/12V light and reset key switch for silencing the buzzer.
2. The LMX requires 1 pair of wires from the Phone Line Monitoring output (AUX2) of each ADA elevator phone to each input of the LMX and 1 pair of wires from the LMA alert input to the LMX alert output (see Figure 1).
3. The LMA / LMX system requires 12-24VDC/0.5A to operate. The power terminal is not polarity sensitive.

**Note 1:** Cabling can be 18-24 gauge pair cable.

**Note 2:** If the Phone Line Monitoring output of the elevator phone is normally closed (NC) instead of the standard normally open (NO) output, you can install a jumper at the NC location next to the alert input connector(s) of the LMA or LMX units.

**Optional:** If an LMX unit is provided, install it on the wall or flat surface with (4) 8-32 screws using the (4) holes on the sides of the unit (see Figure 3).

## **Operation & Test**

1. The LMA and LMX boards are both equipped with Power / Board status LED. When the board is first powered up the LED will flash rapidly to indicate resetting and then flash slower to indicate normal operation. If you need to reset the boards without removing power you can press and hold the "Test/Reset" button for at least 5 seconds.
2. If the phone line from a Janus Elevator Product equipped with a phone line monitoring relay is disconnected or shorted, the AUX2 output of the phone will close within 2 minutes.
3. The LMA board will detect an alert input closure and it will trigger the audible and visual alarms.
4. The LED(s) will flash and the piezo buzzer will emit a beep every 5 seconds. The volume of the piezo buzzer is set at optimal level at the factory but can be adjusted using the "VOL" potentiometer on the LMA board.
5. The piezo buzzer can be silenced only by authorized personnel if the "Key Switch Reset" input is closed. The LED(s) will continue to flash until the phone line is reconnected or fixed on the phone.
6. If an LMX board is used the user can also identify which phone has a phone line issue by checking the LED next to each input. If the LED is "ON" on any of the inputs it will indicate a phone line failure of a phone connected to this input (the LEDs are located inside the LMX enclosure).

### **Quick Test:**

To test the LMA or the LMX boards you can press and release the "Test/Reset" button. On the LMA board you will see the LED(s) flashing and you will also hear the piezo buzzer beep at least twice (once every 5 seconds) to indicate an active alert input. On the LMX board you will see the LED of each input from 1 to 10 light up for 1 second to indicate an active input and the alert output will then close accordingly. If the LMX is connected to the LMA while performing this test you can test both systems at once.

**Note:** This test will only test the functionality of the LMA and LMX boards. Please refer to the "Complete System Test" below to test the entire phone line monitoring system.

### **Complete System Test:**

- In order to test the entire system you must first make sure everything is connected and powered up according to the installation instructions of this manual.
- Remove the phone line from the phone and within 2 minutes the alert input of the LMA board will close and this should cause the LED(s) to flash and the piezo buzzer to sound (if the LMX is also used it will close the alert input of the LMA board if any of its 10 inputs are closed).
- Activate the Key Switch Input on the LMA board to make sure you can silence the piezo buzzer but make sure that the LED(s) continue to flash.
- To turn "OFF" the LED(s) and the piezo buzzer on the LMA board, reconnect the phone line to the phone.

## **Troubleshooting**

1. If the LMA / LMX do not turn 'ON' make sure that the wall transformer is plugged into 110VAC outlet, and measure the voltage on the "POWER" connector inside the LMA / LMX unit. The voltage should read about 12-24VDC. The "POWER" connection is not polarity sensitive.
2. If the phone line is removed from the phone and it does not trigger an alarm, first check the connections according to diagram on Figure 1. If all connections are good make sure you test the AUX2 line monitoring output of the phone by removing the phone line and wait about 2 minutes until the output closes. If this output does not close make sure you have 12-24VDC/AC supplied on the "PWR" connector of the phone. If all is correct, replace phone and repeat test.
3. If the LMA is activated but the phone line on the phone is good, disconnect the alert input wires from the LMA board to see if that stops the alarm. If the alarm does not stop cycle, power on the LMA board or press and hold the Test/Reset button onboard for at least 5 seconds to reset the LMA board. If the alarm does not stop when the alert input wires are disconnected, then you must check for a short on the wiring or a fault on the AUX2 line monitor output of the Janus Elevator Product.

## **Specifications**

### **LMA**

**Size:** 10-1/2" H x 5" W x 3.1" D

**Weight:** 4 lbs.

**Operating Voltage:** 12-24 VDC

**Operating Current:** 400mA

**Operating Temperature Range:** 0 to 70 degrees C

**Storage Temperature Range:** -20 to 70 degrees C

• Supplied with standard 12VDC/0.5A transformer

### **LMX**

**Size:** 7-1/4" H x 4-5/8" W x 1-3/8" D

**Weight:** 0.5 lbs.

**Operating Voltage:** 12-24 VDC

**Operating Current:** 150mA

**Operating Temperature Range:** 0 to 70 degrees C

**Storage Temperature Range:** -20 to 70 degrees C

**Relative Humidity:** Up to 95% (non-condensing)

• Supplied with standard 12VDC/0.5A transformer

**Figure 1: LMA Connection Diagram**

