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mPower Electronics MP84X Series Toxic Gas Transmitters

mPower Electronics MP84X Series Toxic Gas Transmitters User Guide

Contents

mPower Electronics

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VOXI EC MP84X Series

Specifications

- Manufacturer: mPower Electronics Inc.
- Model: VOXI EC MP84X Series
- User Interface: LCD graphic display, LED indications
- Control: IR remote programmer
- Mounting: Wall or pole mount
- Conduit Port for Wiring
- Power: 10-30V

Product Usage Instructions:

Mounting
Mount the VOXI EC to a wall or pole using the bracket and pole loops provided. Ensure proper grounding as per instructions.

User Interface:
The user interface includes an LCD graphic display and LED indications. Operations are controlled using an IR remote programmer.

Wiring Diagram
Refer to the provided wiring diagram for connecting various components like alarm LEDs, power LEDs, and grounding points.

Chemical Sensor Type
Ensure the correct chemical sensor type is installed for accurate readings.

Alarm Indications
Understand the meanings of low alarm, high alarm, and fault alarm contacts. Ensure proper wiring for reliable alarm notifications.

Maintenance
Regularly check and maintain the VOXI EC according to the manufacturer's instructions to ensure optimal performance.

Frequently Asked Questions (FAQ)

- **Q: How do I reset the VOXI EC?**

  A: To reset the VOXI EC, press and hold the reset button for 10 seconds.
- **Q: What is the recommended ground wire gauge?**

  A: We recommend using AWG11 as the ground wire for reliable grounding.
- **Q: How can I troubleshoot fault LED indicati** ons?

  A: Refer to the user manual for specific fault LED indications and troubleshooting steps.

VOX I EC
MP84X Series
Quick Start Guide

mPower Electronics Inc.

PN: M024-4002-000 v1.21

Read Before Operating
The VOXI EC User's Guide must be carefully read by all individuals who have or will have the responsibility of using, maintaining or servicing this product. The product will perform as designed only if it is used, maintained and serviced in accordance with the manufacturer's instructions.

Warnings

- Never operate the monitor when the cover is removed.
- Remove the monitor cover only in an area known to be non-hazardous.
- Use only mPower's sensor and accessories. Substitution of components will impair intrinsic safety and void warranty.
- For optimal results, it is recommended to allow the unit to warm up for 2 minutes after entering the test interface.
- For maximum safety, the accuracy of the instrument should be checked by exposing it to a known concentration calibration gas at regular intervals.
- Ensure that the gas inlet is not blocked.
- Ensure that all filters are clean and replaced on a regular basis.
- Remove the sensor only if necessary for repair. Zero and span calibration are required once the sensor is moved.
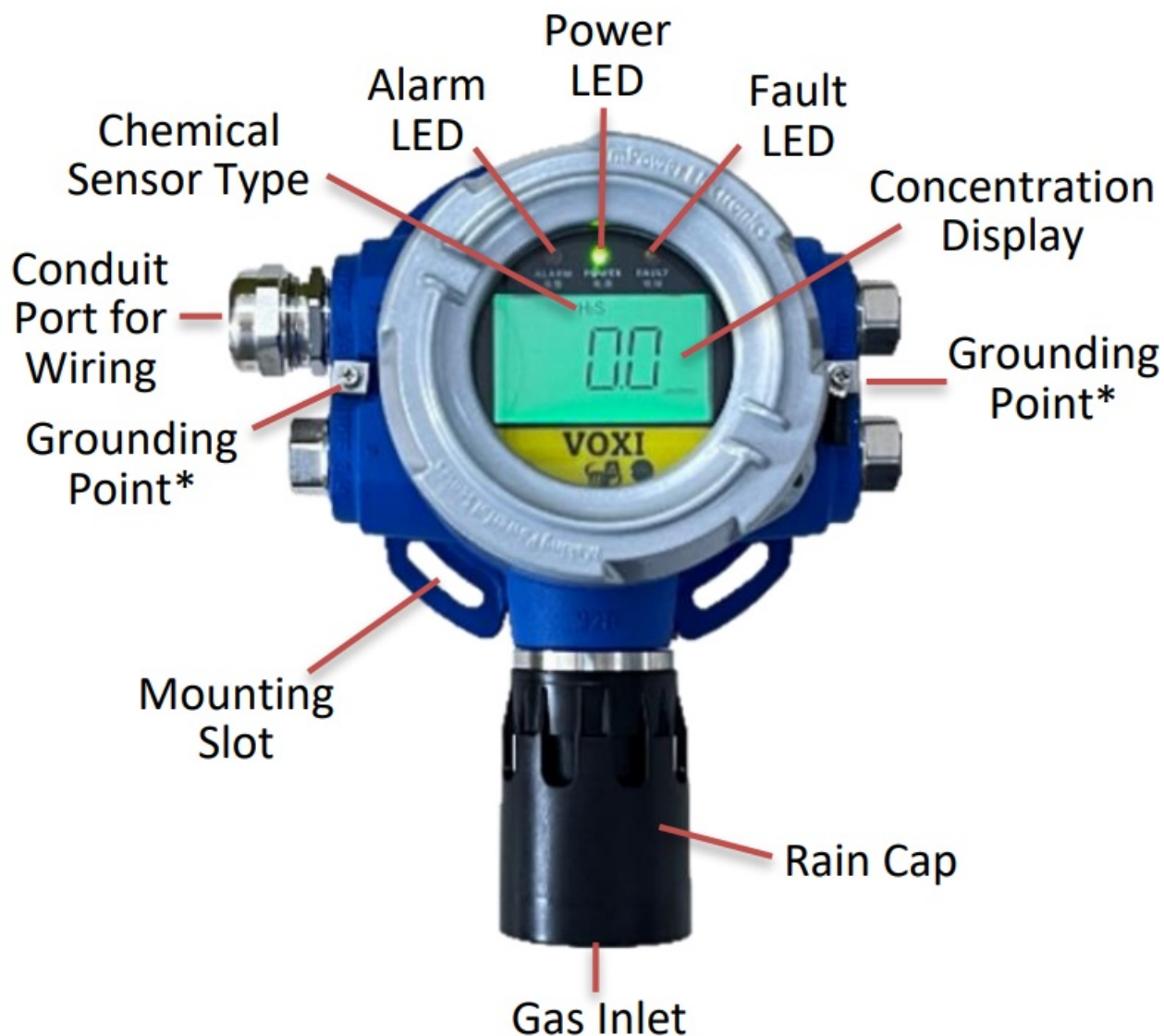
Mounting
Mount the VOXI EC to a wall or pole using the bracket and pole loops provided.

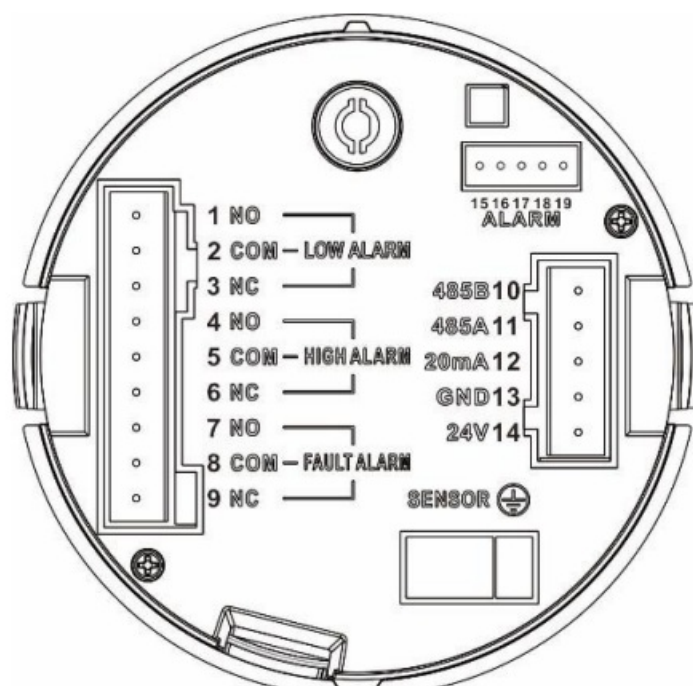Wall Mount   Vertical Pole Mount   Horizontal Pole Mount
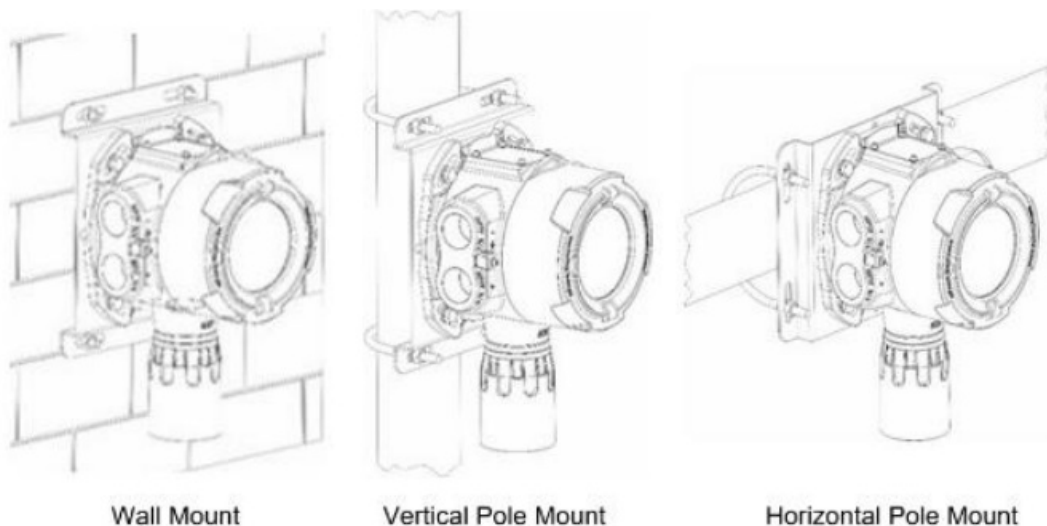
User Interface

The user interface of the VOXI EC has an LCD graphic display and LED indications. The operations are controlled using an IR romote programmer.

Power
LED

Alarm
LED

Fault
LED

Chemical
Sensor Type

Conduit
Port for
Wiring

Concentration
Display

Grounding
Point*

Grounding
Point*

Mounting
Slot

Rain Cap

Gas Inlet

*The ground wire must be connected to the VOXI housing reliably. We recommend using AWG11 as ground wire.

Wiring Diagram

1 NO
2 COM – LOW ALARM
3 NC
4 NO
5 COM – HIGH ALARM
6 NC
7 NO
8 COM – FAULT ALARM
9 NC

15 16 17 18 19
ALARM

485B 10
485A 11
20mA 12
GND 13
24V 14

SENSOR

1	2	3	4	5	6	7	8	9
Low Alarm Contacts			High Alarm Contacts			Fault Alarm Contacts		
Norm. Open	Com	Norm. Closed	Norm. Open	Com	Norm. Closed	Norm. Open	Com	Norm. Closed

10	11	12	13	14
RS485B	RS485A	4-20 mA	-V	+V (10-30V, <1W)

| 15	16	17	18	19
+V	-V	Strobe/Horn Fault Alarm (reserved)	Strobe/Horn Low Alarm (reserved)	Strobe/Horn High Alarm (reserved)

Start Up

After supplying 10-30V power, the VOXI EC enters a self-test process. Biased sensors, like NO and lead-free O2, require a few hours stabilization time.

When the startup is complete, the sensor type and concentration readings are displayed. Sampling is by diffusion.

If any alarm level is exceeded, the Alarm LED flashes and the display backlight changes color.
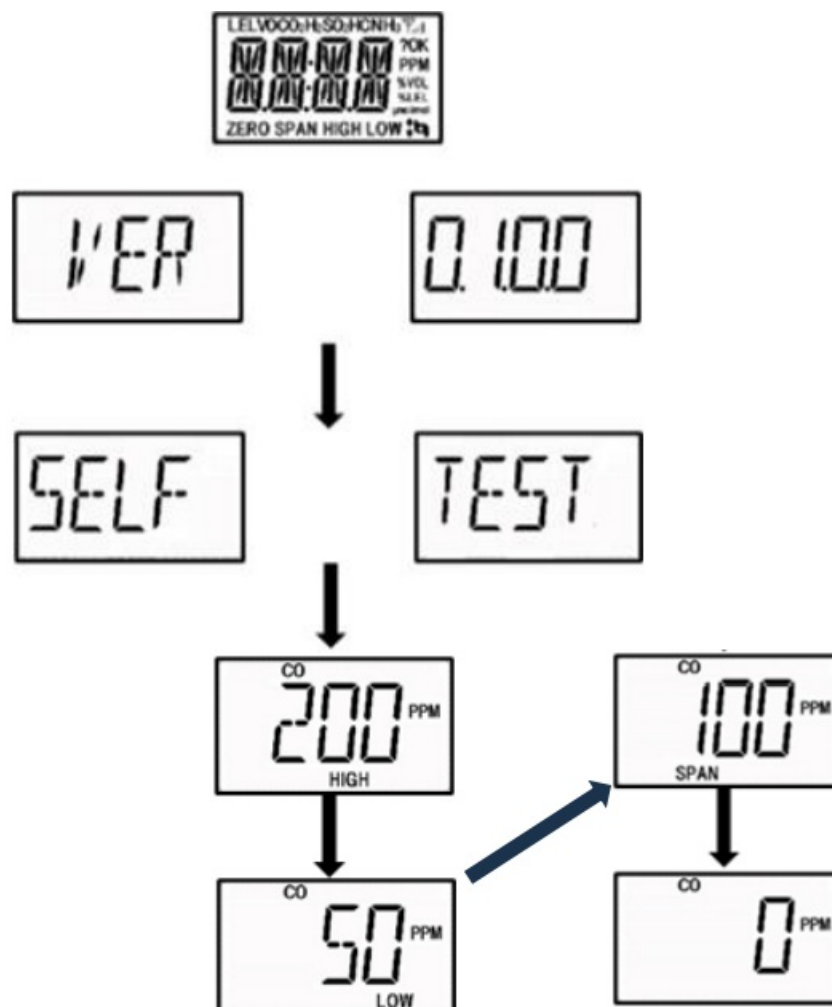
Infrared Remote Programmer

The Remote Programmer uses a CR2025 3V battery and communicates with the transmitter from up to 3 m (10 ft). when directed straight at the transmitter display (instead of from an angle).
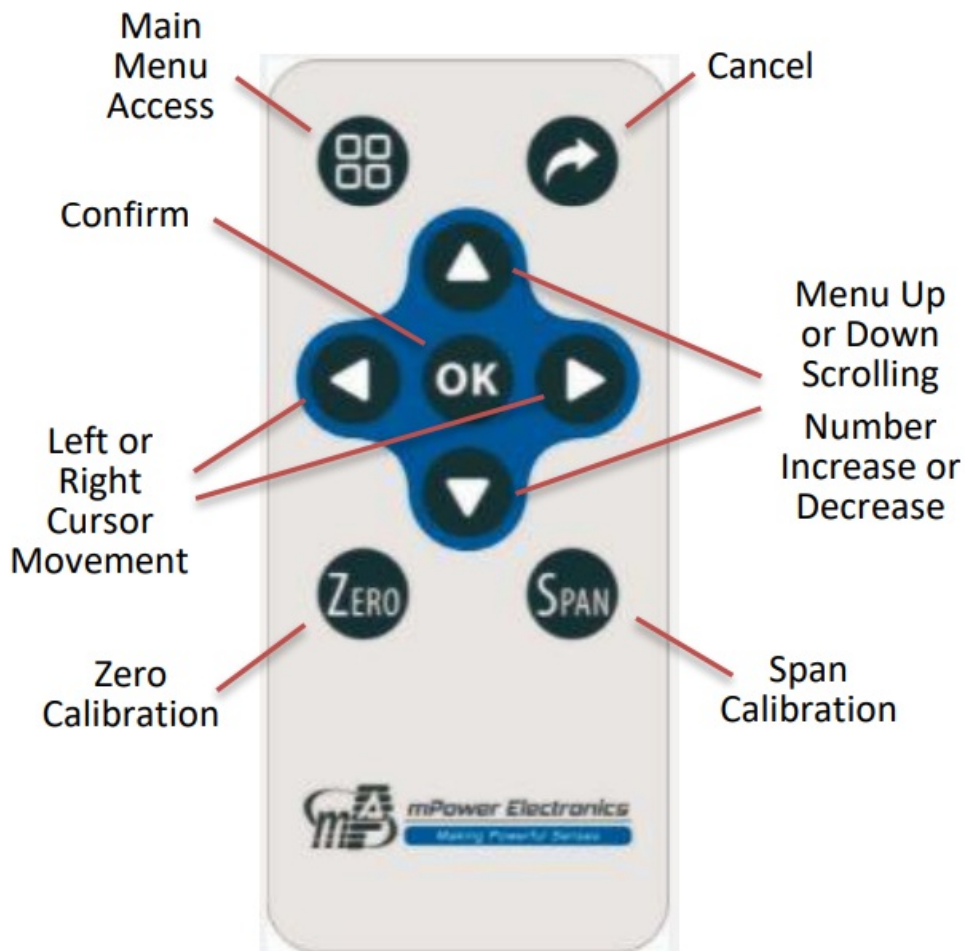
Programming Interface

The VOXI EC switches to a programming display when initiated by the infrared Remote Programmer.

- **Enter Menu**

  Press the Menu Access key and enter the password.

  Use the up/down keys to increase or decrease numbers and left/right keys to move the cursor. After entering the last digit move the cursor to the "?" and press OK to enter the menu.

- **Basic vs Advanced Menus**

  The default Basic password ("0000") gives access to the most common functions such as zero calibration, span calibration, calibration gas concentration setting, high/low alarm settings. For more advanced features including concentration units, site ID, baud rate, etc. enter the Advanced password given in the full User Manual.
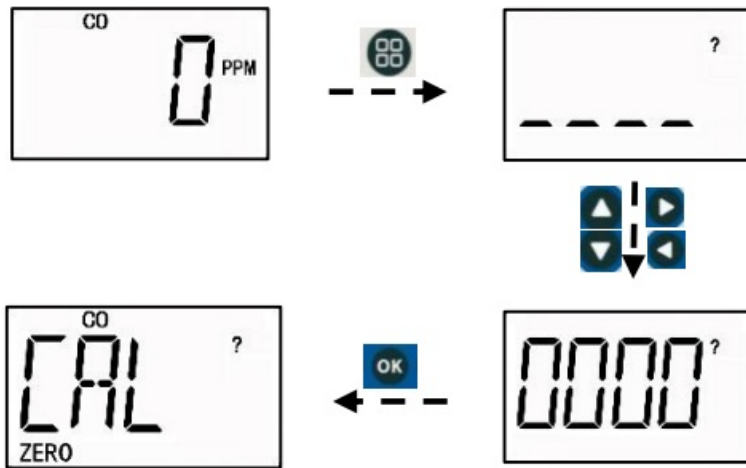
- **Enter Selection**

  Use the up/down keys to scroll through the menu, and the OK key to select the item.

- **Exit**

  To exit a sub-menu, press Cancel . To exit the Main Menu, scroll to the "EXIT" menu and press OK to return to the reading display.
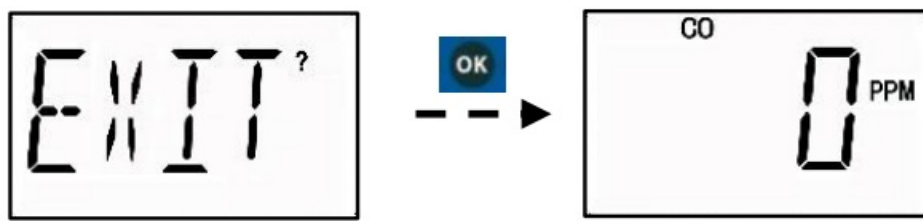
Programming Interface

- Enter the main menu, then enter the password

- Scroll through the Menu

- Exit the Menu

Zero Calibration

Zero calibration must be done with clean air. If the ambient air is suspected of having a background of detectable chemical, use pure air or nitrogen from a cylinder to ensure a proper zero. To apply gas, attach the calibration adapter, as shown to the right. If no calibration adapter is available, the rain cap can be used as an alternative.

- Enter the main menu, scroll to CAL ZERO, apply zero gas (if needed) and press OK to start the zero calibration.
- Alternatively, press the short-cut "Zero" button on the programmer front panel to go directly to zero calibration.
- A 30-second countdown is initiated, after which Pass or Fail is displayed.

- To abort, press .
- Oxygen sensors use ambient air to set the 20.9%value during "zero" calibration and 0% O2 (100%N2) during "span" calibration.

Span Calibration

- Enter the main menu, scroll to CAL SET to check that the span is set to the same value as the gas cylinder.
- Connect the calibration gas, start the gas flow (0.5 LPM preferred), scroll to CAL SPAN and press OK.
- Or, press the "Span" button on the programmer front panel to go directly to span calibration.
- A countdown timer is started with length depending on sensor type, after which
- Pass or Fail is displayed.

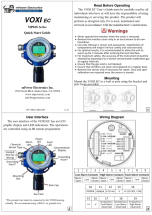- To abort, press

Span Gas Setting
Enter the main menu, scroll to CAL SET, and press OK. Adjust the span gas concentration using the up & down keys and move the cursor using the left & right keys. After the setting is complete, press OK to save.

Sensor Replacement

- Remove the Rain Cap and unscrew the Sensor Cap. Remove the 3 filter pieces, and pull out the sensor module.
- Insert a new sensor and reassemble in reverse order.

EC sensor module

Documents / Resources

[mPower Electronics MP84X Series Toxic Gas Transmitters](#) [pdf] User Guide
MP84X Series Toxic Gas Transmitters, MP84X Series, Toxic Gas Transmitters, Gas Transmitters

References

- **User Manual**