VOXiLink

MP87X Series Fixed Wireless Gas Detectors

User's Guide



mPower Electronics

Making Powerful Senses

Rev 1

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1 Safety Precautions

Read Before Operating

This manual 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. The user should understand how to set the correct parameters and interpret the obtained results.

⚠ WARNINGS ⚠

- Never operate the transmitter when the cover is removed.
- Remove the transmitter cover only in an area known to be non-hazardous.
- Use only mPower's sensor and accessories. Substitution of components will impair suitability for intrinsic safety and void warranty.
- The instrument should be calibrated after installation before initial use and checked by exposing it to a known concentration calibration on a regular basis.
- Ensure that the gas inlet is not blocked.
- Make sure 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 removed and re-inserted or replaced.
- Contact the original manufacturer for information on the dimensions of the flameproof joints.
- During the installation and operation in explosive gas and combustible dust atmospheres, the cable glands with size of 3/4 NPT shall be suitably rated flameproof and dust protection by enclosure cable glands for the explosive atmospheres marked.
- During the installation and operation, observe the warning "WARNING-DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT." and "WARNING-POTENTIAL ELECTROSTATIC CHARGING HAZARD IN EXPLOSIVE DUST ATMOSPHERES-SEE INSTRUCTIONS."
- Service temperature at the entry point may be higher than 70°C, use proper cable during installation rated for at least 70℃.
- *The internal grounding terminal shall be used for the equipment grounding connection and the external terminal is for a supplementary bonding connection where local codes or authorities permit or require such connection.*
- *Control of environmental humidity to minimize the generation of static electricity.*
- *Protection from direct airflow causing a charge transfer.*
- *The instrument is not intended to be used when the area is known to be hazardous.*

CAUTION!

To reduce the risk of electric shock, turn the power off before removing the instrument cover. Disconnect the power before removing the sensor module for service. Never operate the instrument when the cover is removed. Remove instrument cover and sensor module only in an area known to be non- hazardous.
POUR RÉDUIRE LE RISQUE DE CHOC ÉLECTRIQUE, ÉTEINDRE L'ALIMENTATION AVANT DE RETIRER LE COUVERCLE DE L'INSTRUMENT. DÉCONNECTER L'ALIMENTATION AVANT DE RETIRER LE MODULE DE CAPTEUR POUR SERVICE. NE JAMAIS UTILISER L'INSTRUMENT LORSQUE LE COUVERCLE EST RETIRÉ. RETIRER LE COUVERCLE DE L'INSTRUMENT ET LE MODULE DE CAPTEUR UNIQUEMENT DANS UNE ZONE CONNUE POUR ÊTRE NON DANGEREUSE.
Sensors are not interchangeable; use only mPower electronics sensors, and use only the sensor type specified for your monitor. Use of non- mPower electronics components will void the warranty and can compromise the safe performance of this product.
LES CAPTEURS NE SONT PAS INTERCHANGEABLES; UTILISER UNIQUEMENT LES CAPTEURS MPOWER ELECTRONICS, ET UTILISER UNIQUEMENT LE TYPE DE CAPTEUR SPÉCIFIÉ POUR VOTRE MONITEUR. L'UTILISATION DE COMPOSANTS NON MPOWER ELECTRONICS ANNULERA LA GARANTIE ET POURRA COMPROMETTRE LA SÉCURITÉ DE CE PRODUIT.

Special Conditions for Safe Use

The VOXi Transmitter must be calibrated if it does not pass a bump test, when a new sensor has been installed, or at least once every 180 days, depending on use and sensor exposure to poisons and contaminants.

2 General Information

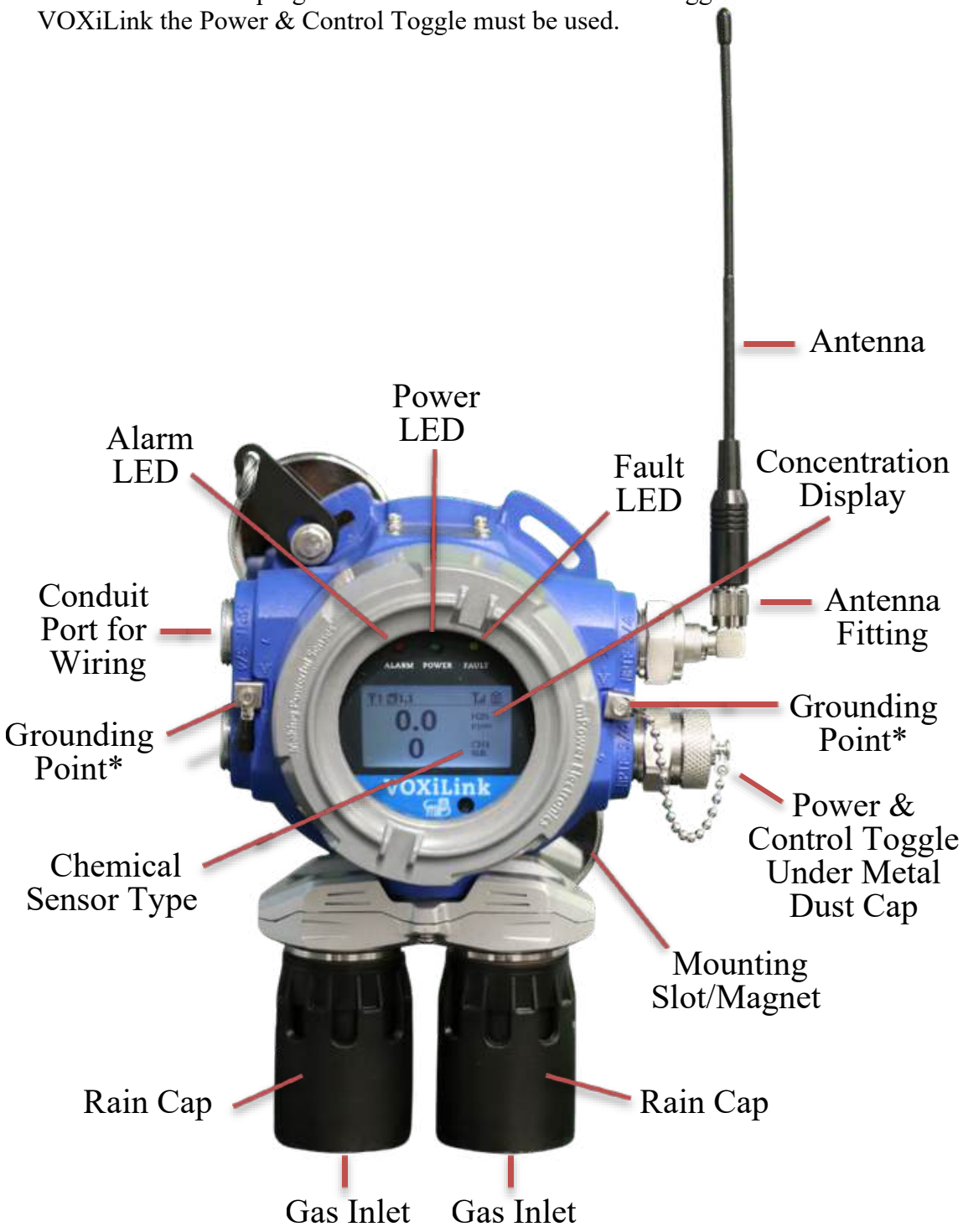
The VOXiLink is a fixed gas transmitter designed with an integral flameproof enclosure. Combustible gases are measured with NDIR sensor technology, or CO_2 can be measured by NDIR. The versatile platform offers auto-zeroing and offline calibration. LoRA wireless (2 Miles or 3.2 km LOS) signal outputs are standard. Three sets of programmable relays allow triggering of external alarms such as a siren or visual beacon. Various applications include oil & gas, petrochemical, chemical, metallurgical, pharmaceutical, semiconductor, environmental monitoring, and other industry facilities.

2.1 Key Features

- Wireless VOXi gas transmitters have one of EC sensors, Ultra-low power NDIR sensor
- Ultra-low power design and continuous operation for min 6 or 12 months using 3pcs or 4pcs primary batteries, respectively
- Long distance wireless data transmission up to 2mile (3.2 km) LOS
- Infrared remote programmer and Push-button switch（5 Keys are fixed at 3/4 NPT with waterproof protective cover)
- IECEx
- Rugged enclosure with IP67

3 User Interface

The VOXiLink user interface consists of one large LCD Display with backlight showing the gas concentration, a power status LED, alarm LEDs, and a fault indicator LED. Calibration is performed, and operating parameters are entered using a handheld IR remote programmer or the Power & Control Toggle. To turn on the VOXiLink the Power & Control Toggle must be used.



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

4 Installation

WARNING!

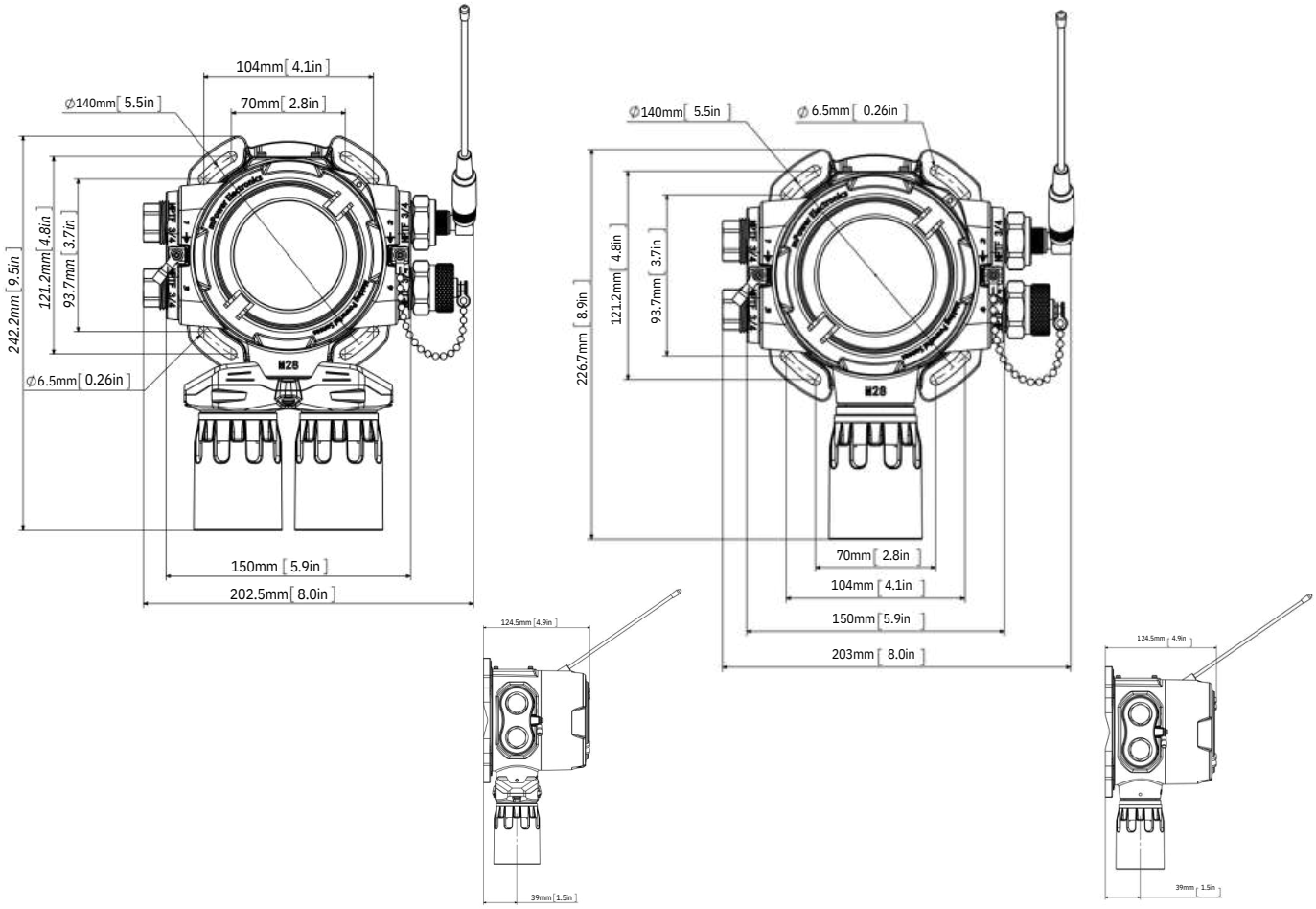
- The VOXiLink has ATEX (pending), CSA (pending), IECEx, and European Conformity certifications for use in hazardous gas locations. Check for certification requirements before installing.
- Before installation, ensure that all power is disconnected.
- Before removing the transmitter cover for service, disconnect the power supply and ensure that the area is free of combustible gases and vapors.
- For European locations, installation must comply with EN-60079-14.
- The instrument should be calibrated after installation before initial use and checked by exposing it to a known concentration calibration gas on a regular basis.
- Remove the sensor only if necessary for repair. Zero and span calibration are required once the sensor is removed and re-inserted or replaced.

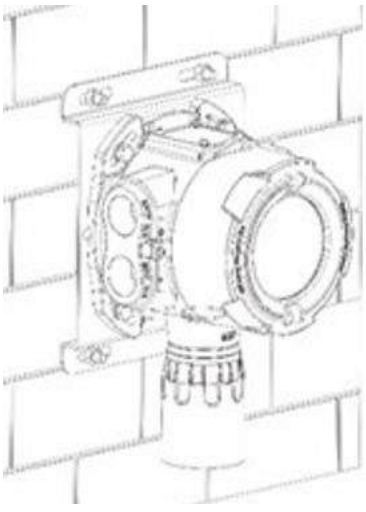
4.1 Mounting

4.1.1 Mounting Location

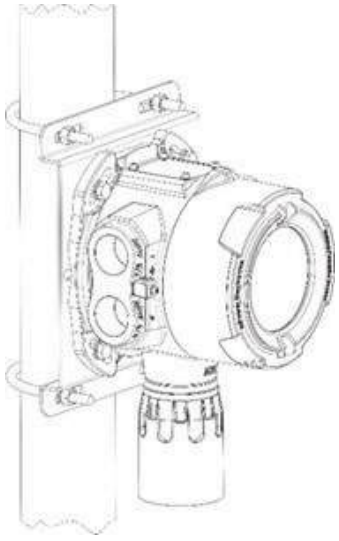
Because the VOXiLink samples by diffusion, it should be installed directly in the area to be measured.*[1] For an entire room to be monitored, there is a reliance on good air circulation within the room, since the VOXiLink can only measure in the immediate vicinity of its inlet. If the VOXiLink must be mounted remotely, the gas must be pumped to the inlet because it has no sampling pump of its own.

*[1] Although the VOXiLink is certified to be installed and operated in hazardous-gas locations, the housing cannot be opened for service in the presence of flammable gases. The VOXiLink is easier to maintain if installed in an area that can be vented to remove hazardous gases before opening the housing.

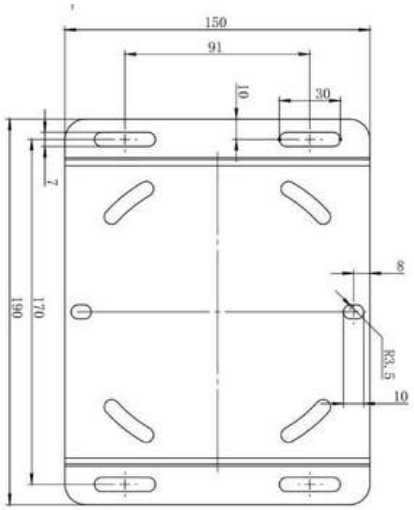




Wall Mount



Pole Mount



Bracket Dimensions (mm)

4.2 Rain Cap

If mounted outdoors, the rain cap should be installed to reduce the chance of precipitation ingress. If mounted indoors, the rain cap may be removed.



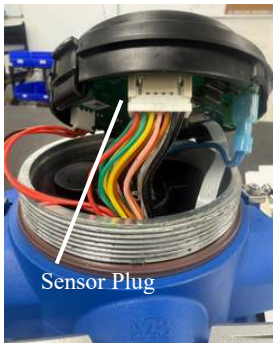
4.3 Electrical Connections

4.3.1 Internal Wiring

Four openings are provided in the explosion-proof housing, covered by hex-head plugs which can be removed to attach conduit for remote wiring, alarm beacon, antenna, and/or other wire connections. For internal connections, unscrew and remove the cover by first loosening the lock screw located on the side, using an Allen wrench. Pinch the buckles on both sides of the instrument assembly to release and then lift it out. Unplug the sensor plug from the PC board.

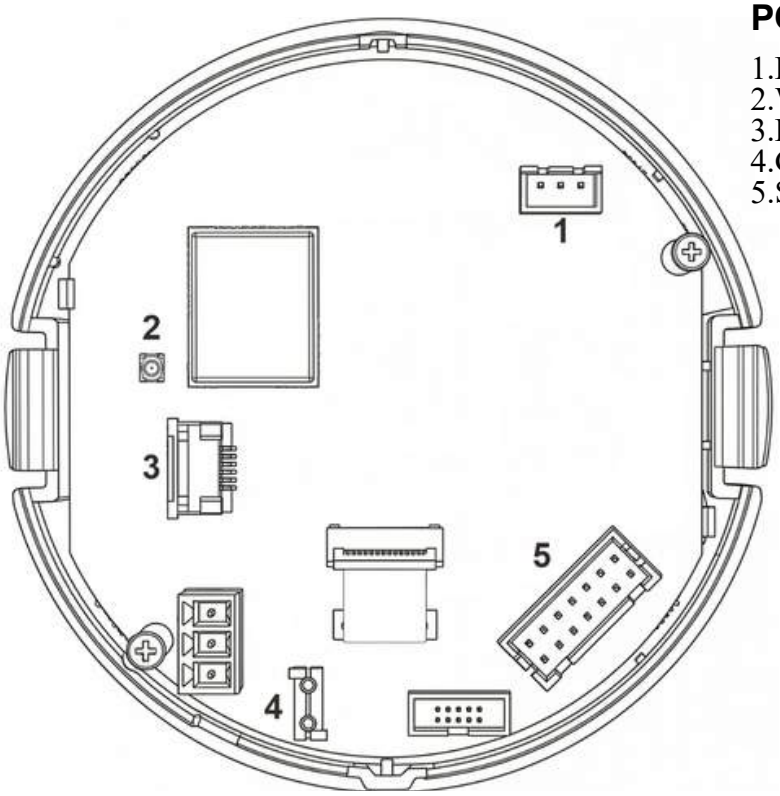








PCB Board

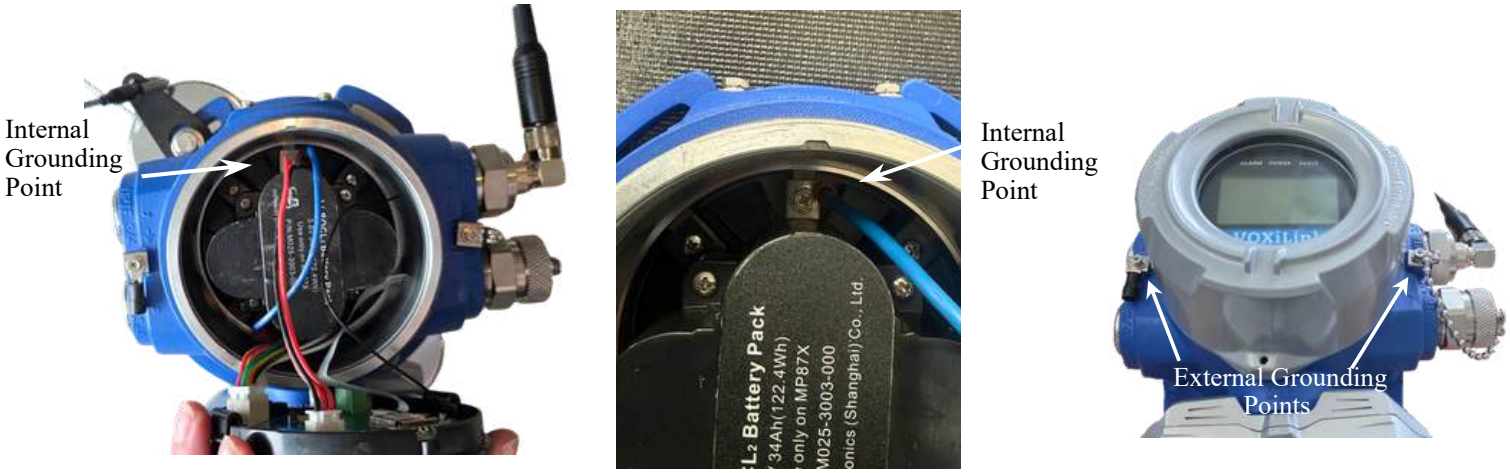


PCB Connection

1.Battery pack socket
2.Wireless module socket
3.Button socket
4.Ground (GND)
5.Sensor socket

4.3.2 Grounding

The internal ground point is shown in the left figure below. An external ground wire (AWG11 recommended) should be connected to the VOXiLink housing (right figure below).



5 Wireless Communication

5.1 Wireless Network Overview

The VOXiLink Wireless Gas Transmitter uses LoRa® wireless communication technology to transmit gas concentration, alarm, fault, and status information to a compatible VOXiWatch 8W Wireless Controller.

The wireless monitoring system consists of:

- VOXiLink Wireless Gas Transmitters
- VOXiWatch 8W Wireless Controller
- LoRa wireless communication network

5.2 Communication Specifications

Wireless Technology: LoRa

Output Power: 100 mW

Frequency Bands:

- 902–928 MHz (915 MHz region)
- 868 MHz region

Maximum Communication Distance: Up to 2 miles (3.2 km) line-of-sight under ideal conditions.

5.3 Wireless Network Configuration

Wireless communication settings are configured through the transmitter programming menu and controller setup interface.
Configuration parameters include:

- Channel
- Network ID
- Network Address

All transmitters communicating with the same controller must be configured with compatible network settings.

5.3.1 Wireless Menu

From the advanced Main Menu, select Wireless.



There are five options on the Wireless submenu:
Channel ID
Network ID
Network Address
Radio Wake Up
PING

Scroll through the submenu by using the Up and Down arrows or toggle.
Press OK on the remote or push toggle to make a selection.

5.3.2 Channel ID

From the Wireless submenu select Channel.

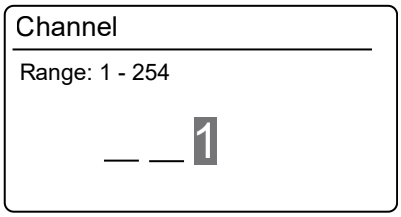
Use the Up and Down arrows or toggle change the highlighted number.
Press OK on the remote or push toggle to save the changed value or use the back button or double push the toggle to return to the previous screen without saving.



To connect to the VOXiLink Transmitterr to the VOXiWatch 8W Controller, make sure that the Channel ID and Network ID are the same on both the VOXiWatch 8W Controller and the VOXiLink Transmitters.
(See VOXiWatch 8W Controller manual for more information on how to set the Channel ID and Network ID on the controller.)

5.3.3 Network ID

From the Wireless submenu select Network ID

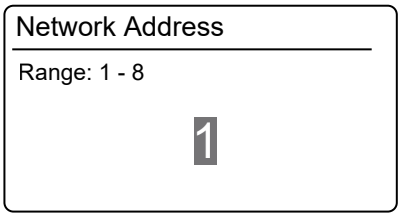


Use the Up and Down arrows or toggle change the highlighted number.
Press OK on the remote or push toggle to save the changed value or use the back button or double push the toggle to return to the previous screen without saving.

To connect to the VOXiLink Transmitterr to the VOXiWatch 8W Controller, make sure that the Channel ID and Network ID are the same on both the VOXiWatch 8W Controller and the VOXiLink Transmitters.
(See VOXiWatch 8W Controller manual for more information on how to set the Channel ID and Network ID on the controller.)

5.3.4 Network Address

From the Wireless submenu select Network Address

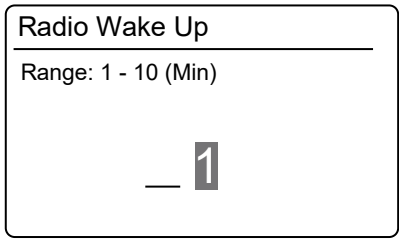


The Network Address determines which controller channel is assigned to the transmitter. If you are connecting more than one transmitter to a controller, each transmitter must have a unique Network Address.

Use the Up and Down arrows or toggle change the highlighted number.
Press OK on the remote or push toggle to save the changed value or use the back button or double push the toggle to return to the previous screen without saving.

5.3.5 Radio Wake Up

From the Wireless submenu select Radio Wake Up

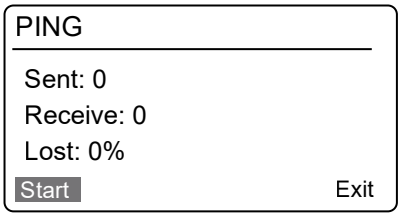


Radio Wake Up determines how often the transmitter sends a signal to the controller. This can be between 1 to 10 minutes.

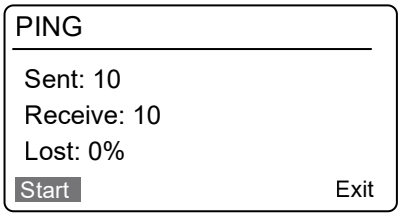
Use the Up and Down arrows or toggle change the highlighted number.
Press OK on the remote or push toggle to save the changed value or use the back button or double push the toggle to return to the previous screen without saving.

5.3.6 PING

From the Wireless submenu select PING



The PING will manually test network connectivity. If the PING is successful, the screen will read the Sent, Receive, and Lost values. If the transmitter is more correctly connected to the controller, the screen will read Failed.



To start the PING, press OK on the remote or push the toggle when Start is highlighted.
To Exit, use the Right button or toggle to highlight Exit and press OK.

5.4 Antenna Installation

For reliable wireless communication:

- Ensure the antenna is securely installed before operation.
- Mount the transmitter in a location that minimizes obstructions between the transmitter and controller.
- Maintain adequate separation from high-power RF transmitters and sources of electrical interference.

Improper antenna installation may reduce communication range and reliability.

5.5 Communication Loss

If communication between the transmitter and controller is interrupted:

- Gas monitoring continues locally at the transmitter.
- The controller will indicate a communication fault condition.
- Alarm and fault responses will follow the controller configuration settings.
- Communication will automatically resume when the wireless link is restored.

No user intervention is normally required once communication is re-established.

5.5.1 Wireless Communication Troubleshooting

Possible Causes for Communication Interruptions:

- Transmitter powered off
- Controller powered off
- Antenna not installed
- Incorrect wireless configuration
- Excessive distance between devices
- Physical obstructions blocking the signal

Corrective Actions:

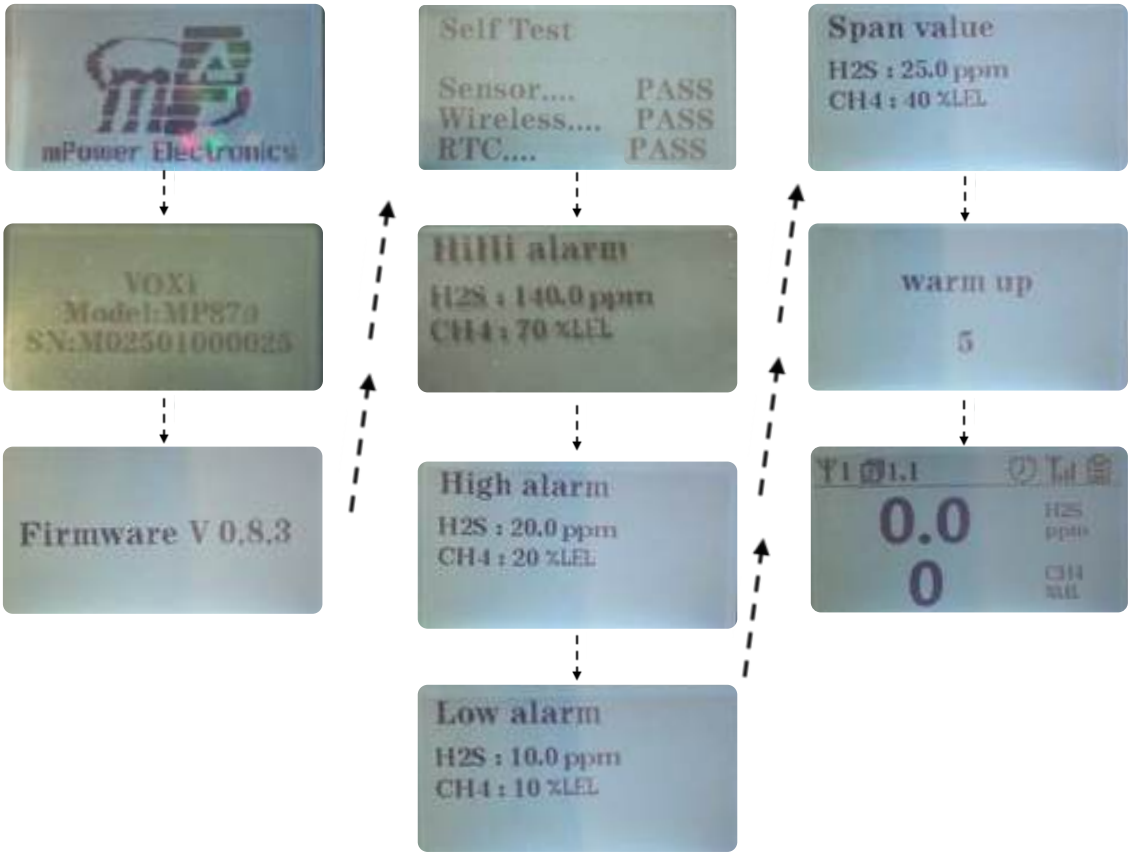
- Verify power to both devices.
- Verify antenna installation.
- Confirm network configuration settings.
- Move devices closer together for testing.
- Remove or reduce sources of interference where possible.

If communication cannot be restored, contact mPower Technical Support.

6 Operation

6.1 Standard Operation

Once installed and power is turned on, the VOXiLink cycles through a start-up sequence (below).



After start-up, the VOXiLink samples the gas by diffusion and runs continuously to measure the toxic gas (or oxygen), display the concentration readout and any alarms, and send any output and alarm signals to external devices. When an alarm level is exceeded, the Alarm LED flashes and the display backlight changes color.

6.2 Programming using Hand-held Remote and Power & Control Toggle

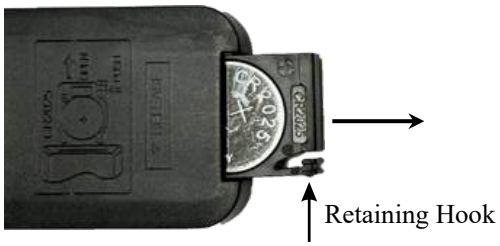
Configuring and calibrating the VOXiLink is done using a handheld remote programmer or the Power & Control Toggle. There is no magnetic key. Communication with the transmitter functions from up to 3 m (10 ft) distance when directed straight at the transmitter display instead of from an angle.

WARNING!

- VOXiLink monitoring is turned off during communication with external devices.
- Perform programming and calibrations only during times known to be free of toxic or combustible gases and vapors.

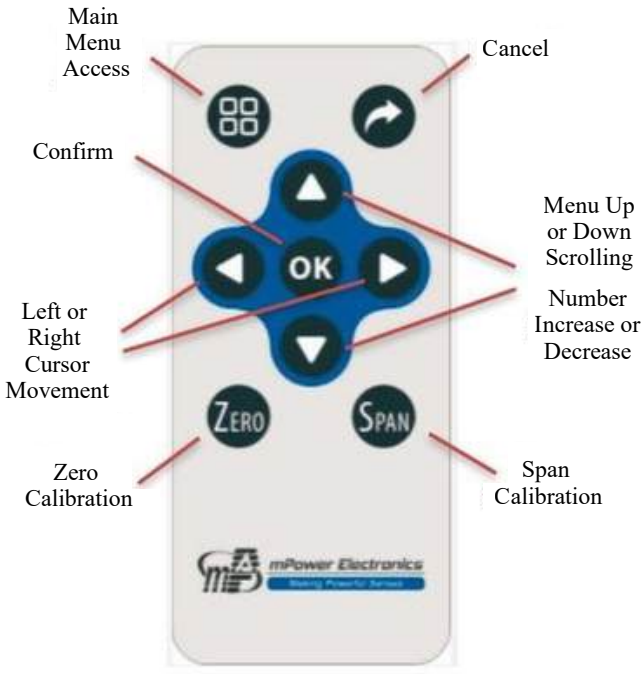
6.2.1 Battery Installation

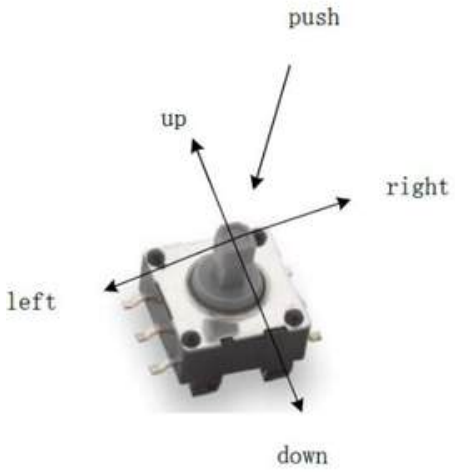
The remote programmer uses a CR2025 3V battery or equivalent. To remove or replace the battery, place the unit face down, push the retaining hook inward and slide out the battery holder.



6.2.2 User Interface

Press the Main Menu Access button on the Remote Programmer or the Power & Control Toggle to display the user interface on the VOXi LCD. Program operations can be selected using the cursor movement arrows. The firmware is factory-set and currently cannot be changed by the user.



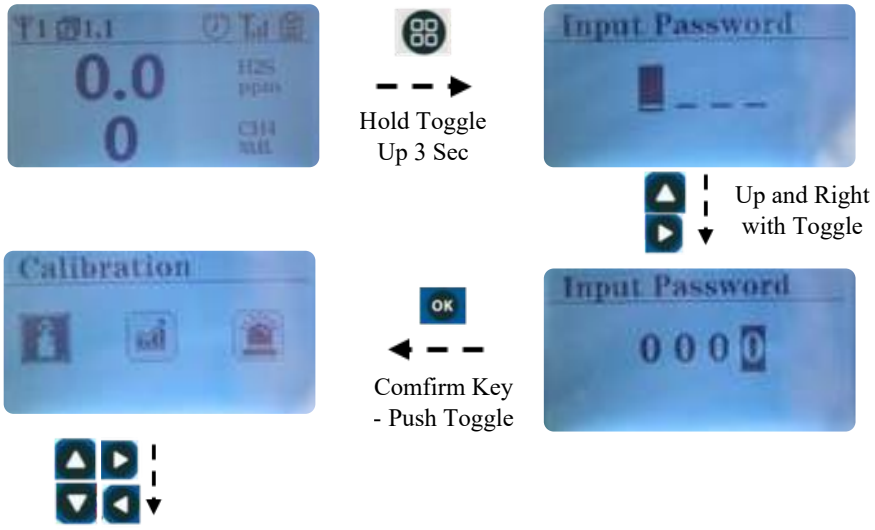


Control	Toggle Action
Menu	**Long Up (3 Sec)**
Up Key	**Up**
Return Key	**Double Push**
Right Key	**Right**
Down Key	**Down**
Confirm Key	**Push**
Left Key	**Left**

6.2.3 Navigating Menus and Sub-Menus

Press the Main Menu Access button or press up and hold Power & Control Toggle for 3 seconds and use the Up and Down arrows or toggle to scroll through the menu. Use the Right and Left arrows to enter or exit a menu item. When entering numerical values, use the Left or Right arrows to move the cursor, and the Up and Down arrows to increase or decrease the values. When the cursor is moved to the "?", press OK or push Power & Control Toggle to save or enter. To exit a sub-menu, press the cancel key or double-push Power & Control Toggle. To exit the Main Menu, double-push Power & Control Toggle. The display will also automatically return to concentration readings after about a minute of non-use.

Enter the menu:



Scroll through the Menu



Exit the Menu



6.2.4 BASIC and ADVANCED Menus

There are two menus

- **Basic Menu** is accessed using default Password 0000. This allows basic field operations such as calibration, setting alarm levels, and communication with PC for firmware upgrades.
- **Advanced Menu** is accessed using default Password 8888. This allows access to additional advanced features such as changing passwords, changing concentration units, setting location ID, etc.

The Basic Menu and sub-menus are listed below

Display	Main Menu	Sub-Menu 1	Sub-Menu 2	Sub-Menu 3	Sub-Menu4
	Calibration	Fresh Air	Single Span	Single Zero	Set SpanValue
	Measurement	Gas Unit			
	Alarm Settings	Low Alarm	High Alarm		Range Alarm

The table below lists all Advanced Menus and their sub-menus.

Display	Main Menu	Sub-Menu 1	Sub-Menu 2	Sub-Menu 3	Sub-Menu 4	Sub-Menu 5	Sub-Menu 6	Sub-Menu 7
	Calibration	Fresh Air	Single Span	Single Zero	Set Span Value			
	Measurement	Gas Unit						
	Alarm Settings	Low Alarm	High Alarm		HI HI Alarm	Range		
	Wireless	Channel	Network ID		Network Address	Radio Wake Up	PING	
	Monitor Setup	LCD Contrast	Language		RTC Setup	Site ID	Basic Password	Super Password

6.3 Default Settings

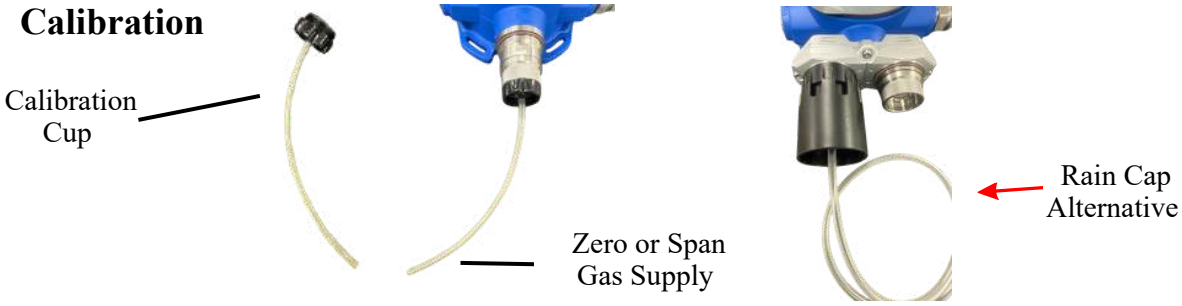
Sensor	Span Value‡	Low Alarm‡	High Alarm‡
LEL	50% LEL	10% LEL	20% LEL
CO_2	0.5% VOL	0.2% VOL	0.5% VOL
O_2	18.0%	23.0%	19.5%

6.3.1 Default Gas and Measurement Gas

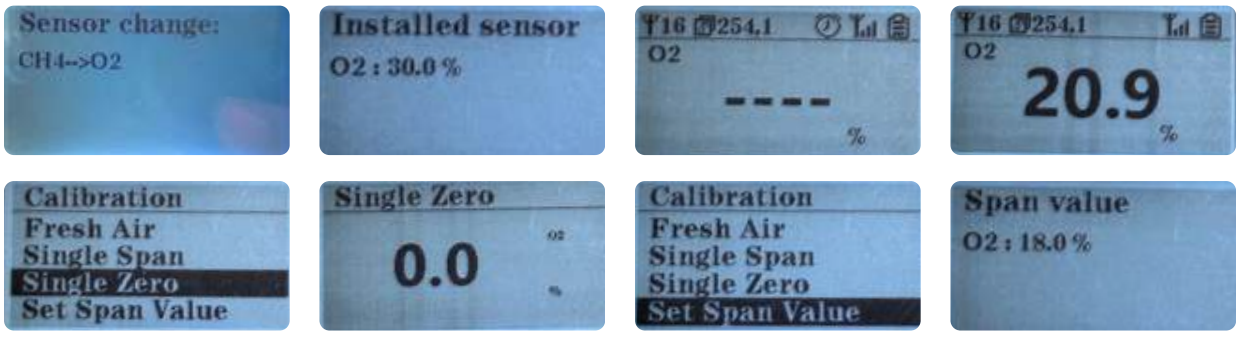
Various VOXiLink versions are available with default gas selections of methane, propane, or CO_2. These are calibrated with the respective gas at the factory. The user should calibrate using the same gas in the field, in which case the correction factor should be left at its default value of 1.0 and there is no need to change it.

Alternatively, for LEL, if only methane calibration gas is available and a different gas needs to be measured, the sensor can be calibrated to methane and programmed with a correction factor (CF) as listed in TA Note 7 available on the mPower website Technical / Application Notes | mPower Electronics Inc. (mpowerinc.com). Note that it is always most accurate to calibrate with the compound of interest because cross-sensitivities can vary from sensor to sensor and with time as a single sensor ages.

6.4 Calibration

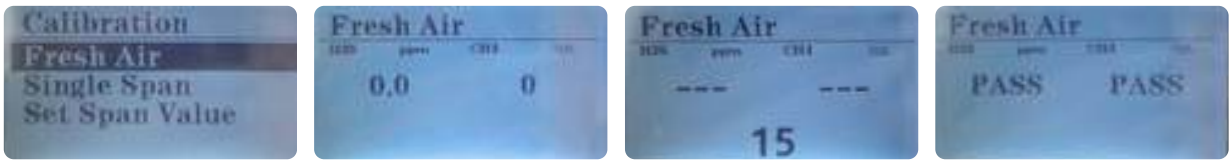


1. Before calibration, it is good practice to examine the inlet filter and replace as needed.
2. Zero Calibration of LEL sensors: Enter the main menu, scroll to Calibration and then select Fresh Air. Supply clean air to the inlet. If the VOXiLink is mounted in an area where ambient air contains detectable concentrations of gases, attach the calibration cup and supply clean gas (air) directly from a cylinder fitted with a fixed-flow regulator of about 0.3-0.6 LPM. If no calibration cap is available, the rain cap may be used. Connect the zero gas directly to the rain cap.
3. For Carbon Dioxide sensors, the zero gas is a cylinder of pure N_2 or CO_2-free air and the default span gas is 0.5% (5000 ppm) CO_2.



4. Press OK on remote or push toggle to start the zero calibration and initiate the 15-second count-down timer, after which Pass or Fail is displayed. Click 'OK' to move to Span or continue to Exit.

5. To abort, press during the count-down.



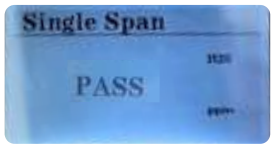
6. **Span Calibration:** Enter the main menu, scroll to Set Span Value, and press OK. Select the sensor. Select Change and adjust the span gas concentration using the up & down keys and move the cursor using the left & right keys. Press toggle or OK on the remote to save.



7. Enter the main menu, scroll to Single Span to check that the span is set to the same value as the gas cylinder.
Select the sensor. Connect the calibration gas, start the gas flow (0.5 LPM preferred), and press OK on the remote or push toggle. A countdown timer is started with length depending on sensor type, after which Pass or Fail is displayed.



8. To abort, press during the count-down.



9. Use of fixed-flow regulators below 0.3 LPM or above about 0.6 LPM may cause poor calibration. A regulator with flow higher than 0.6 LPM can be used if an open T fitting is placed in line between the regulator and VOXiLink inlet to allow excess gas flow to escape without being forced through the instrument.

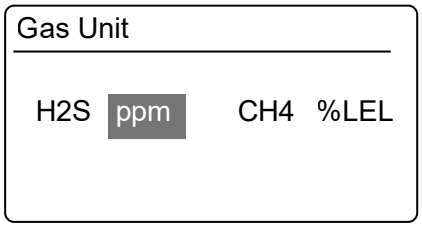
10. The Calibration Interval should be at least every 6 months. However, the interval must be defined by the user and may be shorter because it depends on the application and local conditions. We recommend starting with weekly bump tests to check the response of the sensor and need for filter changes, and then increasing the length of time between checks and calibrations as experience is gained in the application. In all cases calibration should be performed at least every 180 days. See mPower TA Note 3 for more details.

6.5 Change Gas Unit



From the main menu, basic or advanced, select Measurement.

Push toggle or press OK on the remote to select.
There is one menu option on the Measurement submenu. Select Gas Unit.
Change the highlighted selection by using the Up and Down arrows or toggle to scroll through the options. Use the Left and Right arrows or toggle to move to the next selection.



6.6 Alarm Setting



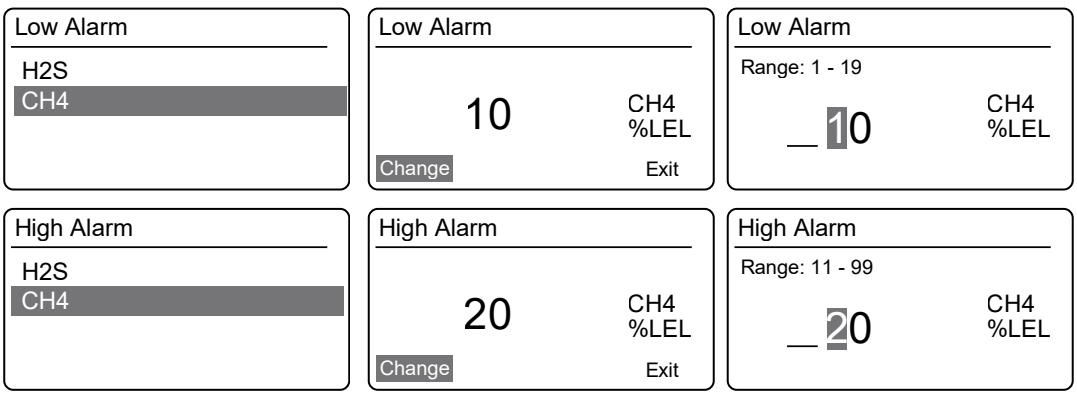
From the main menu, basic or advanced, select Alarm Setting.

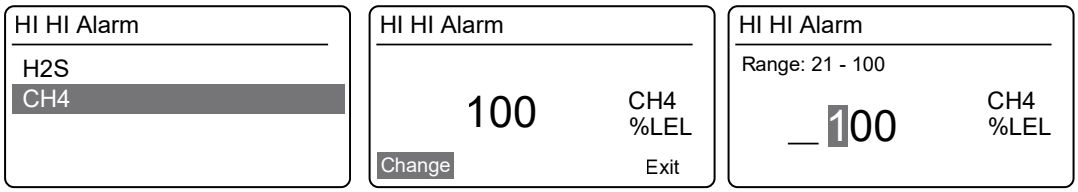
Push toggle or press OK on the remote to select.
There is three menu options on the Alarm Setting submenu: Low Alarm, High Alarm, and Range Alarm.
Change the highlighted selection by using the Up and Down arrows or toggle to scroll through the options.

6.6.1 Set Alarms

All three feature the same options for settings. Therefore, only Low Alarm is covered here. Follow the same procedures for adjusting settings in all three.

1. Select Low Alarm from the Alarm Setting submenu.
2. Select the sensor. After selecting the sensor, the current set point will be on the screen.
3. Use the Left or Right buttons or toggle to select Change to change the alarm set point or Exit to return to the previous screen.
4. Use the Up and Down buttons or toggle to change the highlighted number. Use the Left or Right buttons or toggle to move to the next selection.
5. Once you are satisfied with the alarm setting, press OK on the remote or press the toggle to save the setting.





6.7 Monitor Setup Settings

From the advanced Main Menu, select Monitor Setup



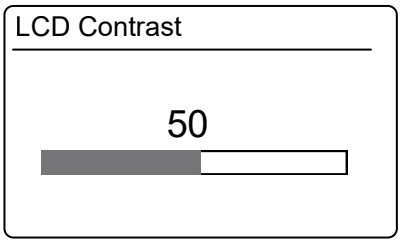
The are five options on the Monitor Setup submenu:
LCD Contrast
Language
RTC Setup
Site ID
Basic Password
Super Password

Scroll through the submenu by using the Up and Down arrows or toggle.
Press OK on the remote or push toggle to make a selection.

6.7.1 LCD Contrast

From the Monitor Setup submenu select LCD Contrast

The LCD Contrast can be changed by using the Left or Right buttons or toggle to move the slider. When you are satisfied with the selected contrast, press OK on the remote or push the toggle to save.



6.7.2 Language

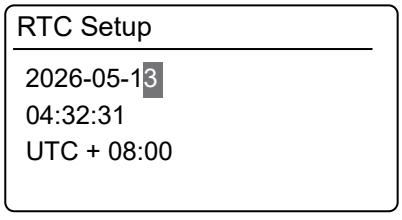
From the Monitor Setup submenu select Language

There are currently two language options, English and Chinese Simp.

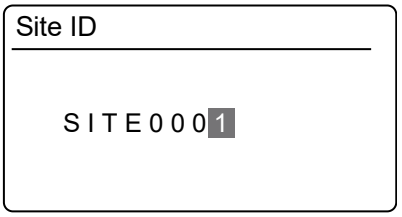
6.7.3 RTC Setup

From the Monitor Setup submenu select RTC Setup

In the RTC Setup setting, you can set the year, date, time, and time zone.
Change the highlighted number by using the Up and Down arrows or toggle to scroll. Use the Left and Right arrows or toggle to move to the next number. Press OK on the remote or push the toggle to save.



6.7.4 Site ID

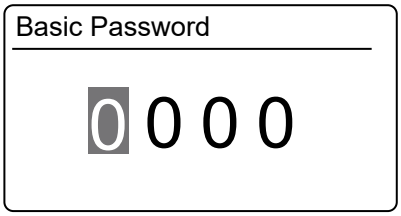


From the Monitor Setup submenu select Site ID

The Site ID can be set to any name desired by the user to help identify the transmitter, such as type, range, location, operator, or any other label.

Change the highlighted letter or number by using the Up and Down arrows or toggle to scroll. Use the Left and Right arrows or toggle to move to the next number. Press OK on the remote or push the toggle to save. Double push the toggle or the back button on the remote to return to the previous screen with out saving.

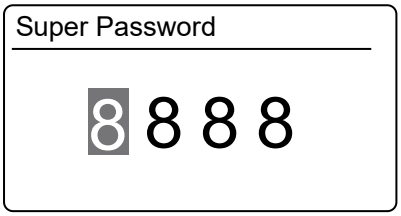
6.7.5 Basic Password



From the Monitor Setup submenu select Basic Password

Change the highlighted number by using the Up and Down arrows or toggle to scroll. Use the Left and Right arrows or toggle to move to the next number. Press OK on the remote or push the toggle to save. Double push the toggle or the back button on the remote to return to the previous screen with out saving.

6.7.6 Super Password



From the Monitor Setup submenu select Super Password

Change the highlighted number by using the Up and Down arrows or toggle to scroll. Use the Left and Right arrows or toggle to move to the next number. Press OK on the remote or push the toggle to save. Double push the toggle or the back button on the remote to return to the previous screen with out saving.

IMPORTANT!

Write down or otherwise save a copy of the password in a secure location. If you lose the password or cannot remember it, you cannot reset it yourself. The VOXiLink Transmitter must be returned to mPower to have its password reset.

7 Maintenance

The VOXiLink- CO requires regular sensor replacement if used in areas of high dust or condensation. Sensor life is typically 1-2 years depending on operating conditions.

7.1 Sensor Replacement



Replace the sensor only in non-hazardous environments.

1. Remove the rain cap (if used), unscrew the enclosure cap, and remove the LCD/circuit board assembly.
2. Disconnect the sensor cable plug from the LCD/circuit board assembly.
3. Using a large wrench, unscrew the sensor from the enclosure.
4. Screw in a new sensor assembly, tighten to the enclosure, and reassemble in reverse order.

IMPORTANT! Always perform a full calibration after removing a sensor.

7.2 LCD or Circuit Board Replacement

The entire LCD/Circuit board assembly must be replaced as a unit as they cannot be separated, as follows:

1. Open the housing and remove the cover and circuit board/LCD assembly as described above.
2. Disconnect the wiring plugs.
3. Replace the Circuit Board/LCD assembly and re-assemble in reverse order.

8 Troubleshooting

Problem	Possible Reasons & Solutions
Error Code E001	**Reason:** Firmware does not support model type. **Solution:** Install correct firmware.
Error Code E002	**Reason:** Sensor Error. **Solution:** Check or replace sensor.
Error Code E003	**Reason:** Different (supported) sensor type installed. **Solution:** Install original type sensor. Or if type change is desired, restart power and confirm sensor type change upon queries SEN CHG? and SURE?
Error Code E004	**Reason:** Sensor unsupported or not match factory setting. **Solution:** Replace sensor with a supported type or upgrade to firmware that supports the sensor.
Error Code E005	**Reason:** Calibration data invalid and no default factory calibration data. **Solution:** Calibrate properly or return unit for factory calibration.
Readings abnormally High	**Reasons:** Dirty inlet. Dirty sensor module. Excessive moisture or water condensation. Incorrect calibration. Cross-sensitive gases present. High correction factor (CF). **Solutions:** Clean or replace sensor module. Re-calibrate the unit. Install in area without cross-sensitive gases. Check CF.
Readings abnormally Low	**Reasons:** Weak or dirty sensor. Incorrect calibration. Insufficient oxygen present. Low correction factor (CF). **Solutions:** Clean or replace sensor module. Burn off poisons by exposing sensor to 100% methane for a few seconds with power on. Re-calibrate the unit. Ensure at least 5% Vol oxygen is present. Check CF.
Cannot communicate with IR Programmer	**Reasons:** Programmer's battery dead. Pointing from angle. **Solutions:** Replace battery. Point straight at VOXiLink.
Lost password	**Solutions:** Call Technical Support at (408) 320-1266

9 Technical Specifications

Size	7.1 x 8.4 x 5.0 in (191 x 220 x 127 mm)
Weight	6.6 lbs. (3 kg)
Sensors	All EC sensors, NDIR for CH_4, CO_2
Calibration	Two-point calibration
Wireless	LoRA
Wireless Certification	FCC
Communication Distance	2 miles or 3.2 km at a minimum, Line of Sight, 70% success ratio
Temperature	-40° to +140°F (-40° to +50°C)
Humidity	0-95%(non-condensing)
Frequency Band	915MHz (902MHz-928MHz) or 868MHz
Display	Dot Matrix
Configuration	Via remote infrared programmer
Outputs	LoRA wireless, 100 mW
Housing	Explosion-proof aluminum alloy
Safety Certifications	ATEX Pending CSA Pending IECEx Ex ib IIC T4 Gb (only EC sensor used) Ex ib ia op is IIC T4 Gb(when NDIR sensor is used with Mulberry-CH_4 and Mulberry-CO_2) Tamb: -40°C ~ +50°C CE European Conformity
IP Rating	IP-67
Warranty	2 Years; Extended Warranty Available (+2 year)

10 Sensor Options

Gas	Range	Resolution
O_2 (Oxygen) Lead-Free	0-30%Vol	0.1%Vol
CO (Carbon Monoxide)	0-1000 ppm	1 ppm
H_2S (Hydrogen Sulfide)	0-100 ppm	0.1 ppm
CH_4 (Methane)	100% LEL	1% LEL
CO_2 (Carbon Dioxide)	0-50000 ppm	200 ppm
SO_2 (Sulfur Dioxide)	0-20 ppm	0.1 ppm
ClO_2 (Chlorine Dioxide)*	0-1 ppm	0.03 ppm
HCN (Hydrogen Cyanide)*	0-50 ppm	0.2 ppm
NH_3 (Ammonia)	0-100 ppm	1 ppm
NO (Nitric Oxide) *	0-250 ppm	0.5 ppm
NO_2 (Nitrogen Dioxide) *	0-20 ppm	0.1 ppm
Cl_2 (Chlorine)	0-50 ppm	0.1 ppm
PH_3 (Phosphine) *	0-20 ppm	0.1 ppm
ETO (Ethylene Oxide) *	0-100 ppm	1 ppm

*Check Availability

Standard

- Gas Transmitter with Sensor installed
- Rain Shield & Calibration Cap
- Infrared Remote Programmer
- Quick Start Guide
- Calibration Certificate

Optional

- Mounting Bracket
- Strobe and Horn with 3/4" NPT Fitting

All specifications are subject to change without notice. Please check for updates at www.mpowerinc.com

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