



WC70i Gas Sensor Safety Manual



Specifications

Enclosure Size	7.1" tall × 4.6" diameter, IP44
Power Source	Internal IS Lithium battery pack
Battery	72Ah four (4) D cell 3.6V lithium battery pack. Field replaceable. Use only this replacement: FreeWave Order Code: WC-BAT-4DPak-IS
Battery Life	15 months in Continuous Sampling Mode. 36 months in Emissions Mode (Sampling @ 15 min). 48 months in Emissions Mode (Sampling @ 30 min)
Temperature Rating	-40°F to 167°F ($-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +75^{\circ}\text{C}$)
Radio Frequency	902-928MHz ISM Band, FHSS radio, internal antenna
Radio Power	40mW, Received Sensitivity -109dB
Range	0.5 Miles (800 meters)
Compliance &	Class I Zone 0 AEx ia IIC T4 Ex ia IIC T4 Class 1 Division 1, Groups A-D, T4
Hazardous Area Approvals	Conforms to UL 913, 62368-1, 60079-0, 60079-11 Certified to CSA C22.2 62368-1, 60079-0, 60079-11

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WARNING: Use of this equipment in a manner not specified by the manufacturer may impair the protection provided by the equipment.

AVERTISSEMENT: L'utilisation de cet équipement d'une manière non spécifiée par le fabricant peut nuire à la protection fournie par l'équipement.



WARNING: The use of any parts not supplied by the manufacturer violates the safety rating of the equipment.

AVERTISSEMENT: L'utilisation de pièces non fournies par le fabricant est contraire à la cote de sécurité de l'équipement.

The product includes an external conductive part (sensor holder). The product was tested for maximum capacitance, and the measured capacitance of the sensor holder is 10.6 pF. The end user shall determine the suitability of the product for the specific application.

AVERTISSEMENT: Le produit inclut une composante conductrice externe (soutiens du capteur). Le produit a été testé pour une capacitance maximale de 10.6pF du soutiens du capteur. L'utilisateur devra donc déterminer la pertinence du produit pour une application spécifique.

Connections and Components

Radio LEDs

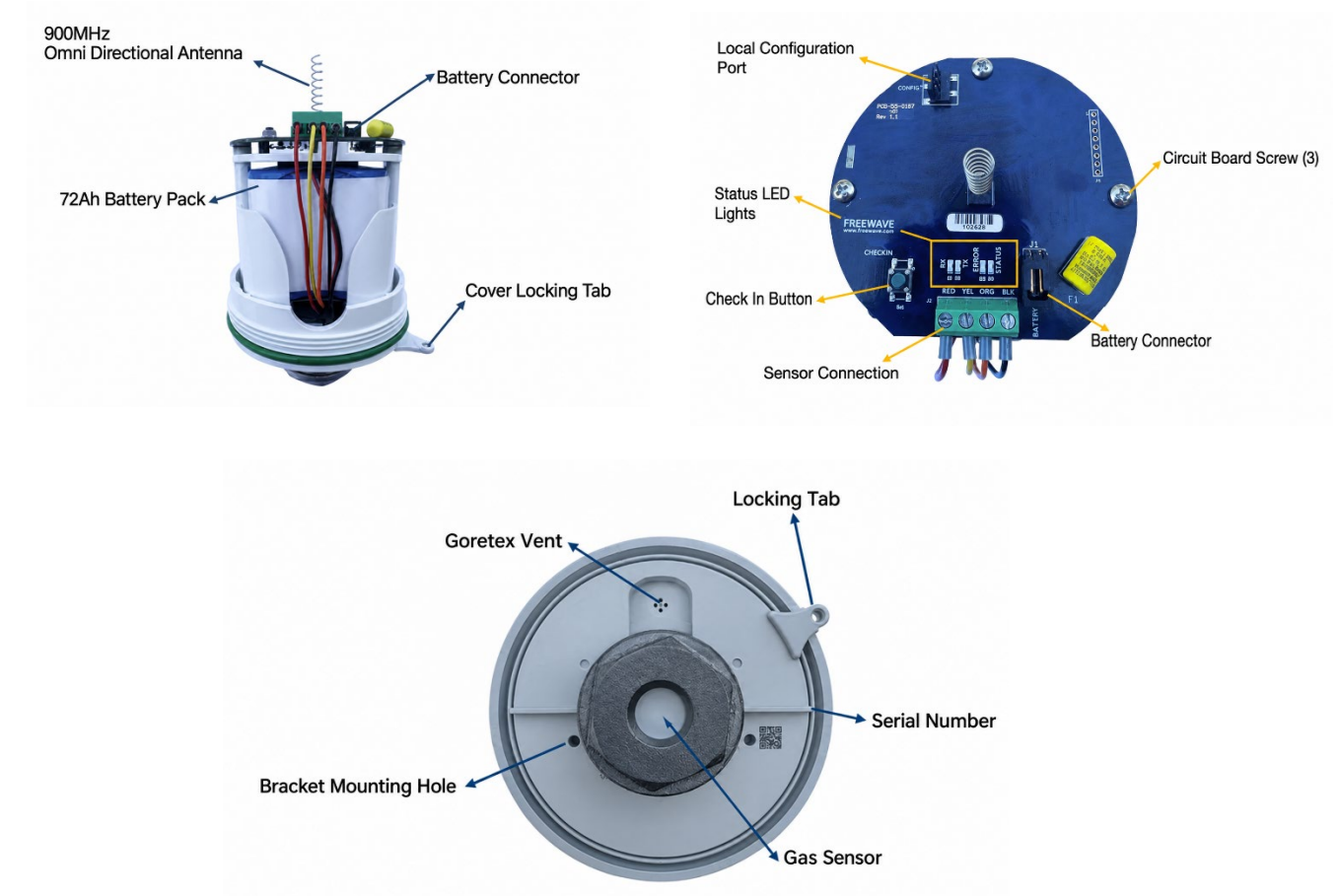
- The Radio TX LED (green) flashes each time a radio packet is sent. This LED will blink rapidly while searching for the radio network and at boot up.
- The Radio RX LED (red) blinks on each received radio packet.

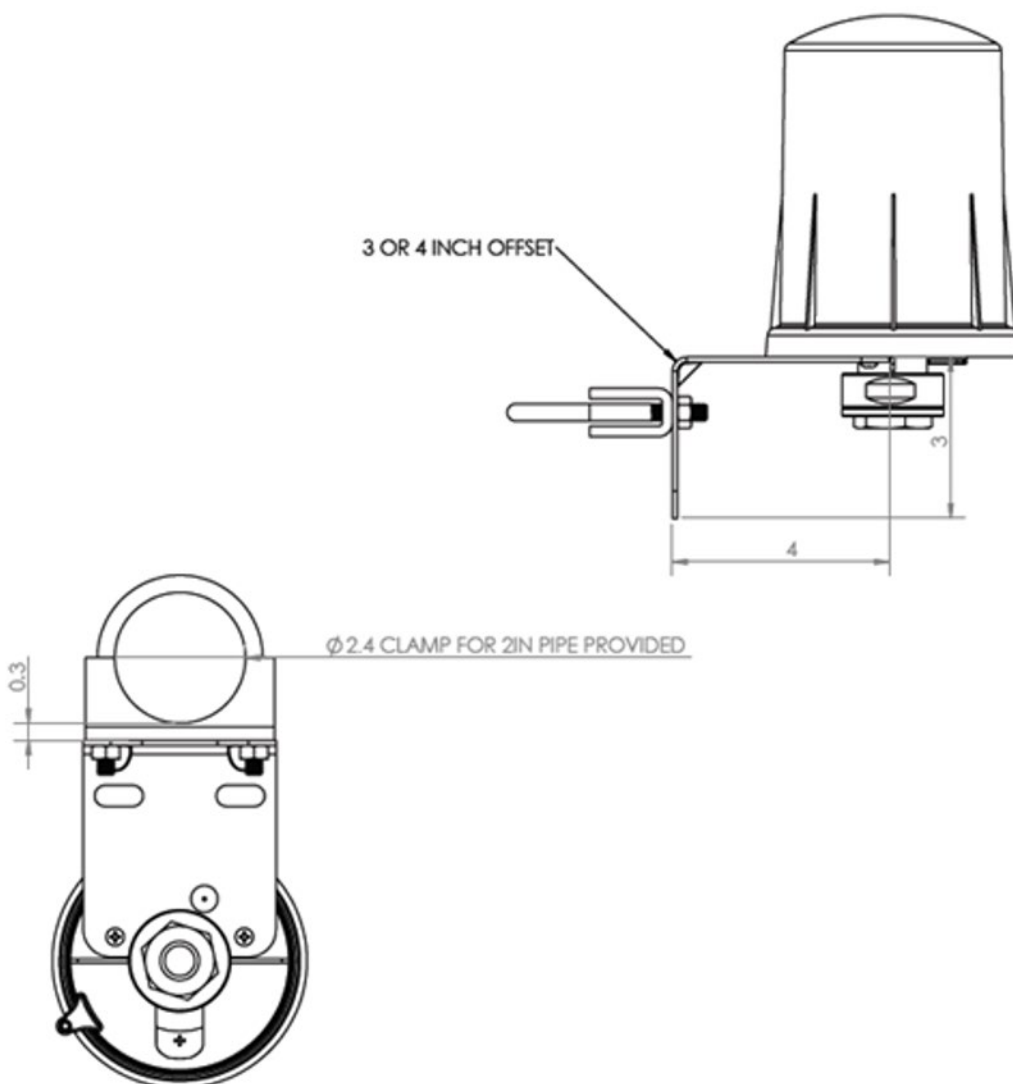
Status LEDs

- The STATUS LED (green) will blink on when the WC70i sensor is sampled.
- The ERROR LED (red) will blink to indicate an error condition.

Scan/Check-in Button

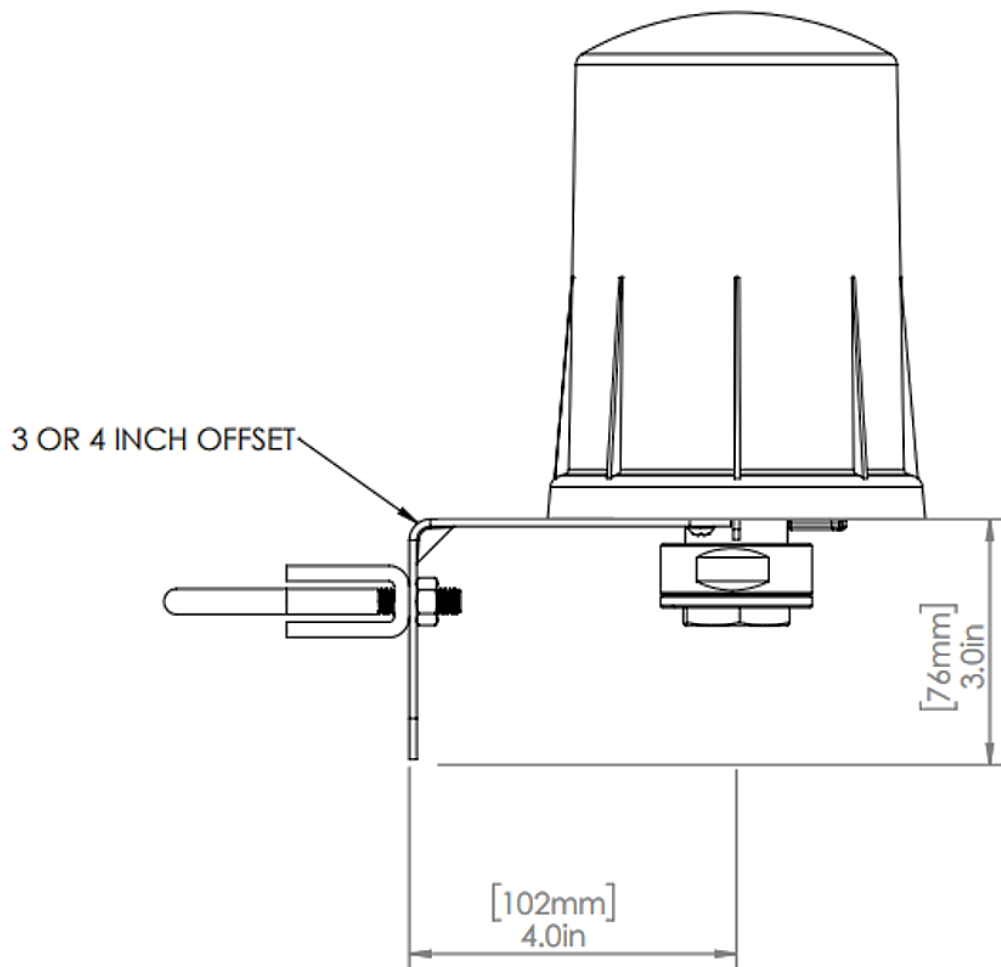
- If this button is pressed the WC70i will take a reading from the MEMS sensor and send the data to the gateway.





Mounting and Care

The WC70i comes with a mounting bracket and U-Bolt for mounting to a vertical 2" pipe.



WARNING: The WC70i must be mounted in a location free of high vibrations. Over time vibrations can damage the sensor or battery pack, which could impair its safety ratings. Do not mount directly to continuous vibrating equipment such as pumps or compressors.

Setup

The WC70i needs to be set up for correct operation before being used in the field. The configurable items include:

1. Network selection
2. Check-in period selection
3. Modbus Server ID setting
4. Optional alarm thresholds

All settings are made using the FreeWave WaveContact Toolkit PC application and a USB-serial programming cable available from FreeWave



WARNING: Perform the steps in this section (Setup) in a safe location only.

AVERTISSEMENT: Suivez les étapes de cette section (Configuration) dans un endroit sûr uniquement.

Configuration / Debug



WARNING: Only connect to the debug port in a safe area!

AVERTISSEMENT: Se connecter uniquement au port de débogage dans une zone sûre!

Debug and configuration information is available if a connection is made via the debug port on the main board. A USB converter cable (USB-Serial-4PIN, available from FreeWave) must be used for this interface.

Debug and advanced configuration may be done using the WaveContact Toolkit PC application.

Internal Lithium Battery Replacement

Battery Packs can be changed with the node in place.

1. Unscrew the cover from the base.
2. Unplug the battery from the PCB, by depressing the locking clip on the connector.
3. Loosen the three screws that attach the circuit board assembly to the base.
4. Remove/Replace the battery.
5. Re-Install circuit board assembly. Do not overtighten the screws.
6. Connect the battery to the main PCB battery connector
7. Install the enclosure cover.



WARNING: Use of any battery other than the FreeWave part number WC-BAT-4DPak-IS will impair the protection provided by the equipment.

AVERTISSEMENT: L'utilisation d'une pile autre que la référence WC-BAT-4DPak-IS compromettra la protection fournie par l'équipement.

Cleaning Instructions

The outside of the enclosure may be cleaned with water, mild soap, and a damp cloth as needed. High Pressure washing is not recommended.



WARNING: Electrostatic Discharge Hazard! Care must be taken to avoid the potential of creating a change on the enclosure or antenna. Do not wipe with a dry cloth. Do not brush against the enclosure with clothing or gloves.

AVERTISSEMENT: Risque de décharge électrostatique! Il faut veiller à éviter tout risque de changement de l'enceinte ou de l'antenne. Ne pas essuyer avec un chiffon sec. Ne pas brosser contre l'enceinte avec des vêtements ou des gants.

Disposal

To ensure environmental safety and compliance, please follow these disposal instructions for the product and its components:

Lithium Primary Battery

This product contains lithium primary batteries, which must be removed before disposal. Lithium batteries must be recycled through specialized facilities due to their fire risk. Do not place batteries in regular trash.

Electronic Components

This product contains electronics that must be recycled through approved e-waste recycling programs. Electronics can contain harmful materials and should be prevented from entering landfills. Do not place electronics in regular trash.

Metal Parts

Any metal components can be separated and recycled through your local metal recycling facility.

Packaging Materials

Recycle or reuse packaging materials such as cardboard or plastics, following local recycling guidelines.

By following these guidelines, you help reduce waste and support environmental sustainability.

Revision	Date	Changes/Updates
1.0	1/12/2026	Initial release

Product and Technical Support

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