



LoRaWAN® Odor Monitoring Sensor

MacSync L Odor X1

LoRaWAN® odor monitoring sensor for real-time qualitative detection of industrial odor emissions & environmental air quality conditions with long-range wireless connectivity.



Introduction

The MacSync L Odor X1 is an industrial-grade LoRaWAN® Odor Monitoring Sensor designed for qualitative detection of Hydrogen Sulfide (H₂S) and Ammonia (NH₃) emissions across wastewater treatment plants, livestock farms, sewage systems, landfills, composting facilities, and industrial environments.

With long-range LoRaWAN® connectivity, ultra-low power architecture, and rugged industrial construction, the MacSync L Odor X1 enables scalable remote odor monitoring deployments across distributed industrial and environmental sites without complex wiring infrastructure.

Features

- Real-Time H₂S & NH₃ Odor Detection
- Continuous Environmental Odor Intelligence Monitoring
- Industrial-Grade Gas Sensing Architecture
- BLE-enabled configuration and diagnostics via mobile application
- Supports periodic, event-based, and threshold-based data transmission
- Macnman MacTalk Protocol Support (Gateway-Free Device to Device Communication)
- Quick Deployment with No Wiring Infrastructure Required
- Universal LoRaWAN Gateway Compatibility

Key Advantages

- Enables Early Detection of H₂S & NH₃ Emissions
- Ideal for Wastewater Treatment & Sewage Monitoring
- Suitable for Livestock Farms & Composting Facilities
- Reduces Odor-Related Complaints Around Industrial Sites
- Supports Workplace Safety in Odor-Prone Environments
- Reduces Manual Environmental Inspection Requirements
- Supports ESG & Environmental Monitoring Initiatives

NH₃ (Ammonia) Sensor Specifications

Detection Range	1 ~ 300 ppm
Detection Principle	MEMS Semiconductor Gas Sensing
Measurement Type	Qualitative Ammonia Concentration Monitoring
Sensitivity Characteristics	R ₀ (in air) / R _s (in 50 ppm NH ₃) ≥ 3
Expected Lifespan	≥ 5 Years

Operating Temperature	-10°C ~ +50°C
Operating Humidity	15% ~ 90% RH (Non-Condensing)

H₂S Gas Sensor Specifications

Detection Range	0.5 ~ 50 ppm
Detection Principle	MEMS Semiconductor Odor Sensing
Measurement Type	Qualitative Odor & Gas Concentration Monitoring
Sensitivity Characteristics	High Sensitivity to Sulfur-Based Gases & Nuisance Odor Conditions
Expected Lifespan	≥ 5 Years

Wireless Specifications

Wireless Protocols	LoRaWAN® (v1.0.4), Macnman MacTalk Protocol
Antenna	Internal high-efficiency antenna
Supported Bands	IN865 / RU864 / EU868 / US915 / AU915
Tx Power	23 dBm @ 865 MHz
Sensitivity	-137 dBm @ 300 bps
LoRaWAN® Class	Class A (Default), Configurable to Class C via Maya
Device Activation	OTAA
Supported LNS	Private LNS ,ChirpStack ,TTN , MQTT, Orbiwise, Netmore (Activity)

Device Management

Configuration Method	Via Macnman Maya Android App
Local Configuration	BLE-Based Local Configuration
Remote Configuration	Over-the-Air Configuration (Downlink Commands)
Status LED	1 × Internal Multi-Color LED

Server Data Reporting Options

Data Reporting Mode	Periodic / Event-based / Hybrid
Transmission Interval	Independent uplink interval for optimized power consumption

Threshold-Based Alerts	Configurable gas detection thresholds for event-triggered transmission
Sampling Interval	Configurable data acquisition interval (e.g., 1 min to 24 hours)

Power & Battery Performance

Power Supply	Integrated 19 Ah Lithium Battery
Battery Type	Lithium Thionyl Chloride (Li-SOCl ₂)
Estimated Battery Life at 25 °C	
5-minute reporting interval	~ 6 Months
15-minute reporting interval	~ 1.5 years
60-minute reporting interval	~ 3 years

Physical & Environmental Specifications

Enclosure & Mechanical

Material	Glass Filled Nylon
Protection Rating	IP65
Dimensions	183 mm X 62 mm X 43 mm
Weight	~175 g

Mounting & Installation

Wall - Mounted	Supported
Pole - Mounted	Supported

Environmental Conditions

Operating Temperature	-40 °C to + 65°C
Operating Humidity	0% to 95% RH (non-condensing)

Regulatory Certifications & Compliance

Wireless Certification	WPC
Environmental	RoHS Compliant

What's in the Box?

- MacSync L Odor X1 Sensor
- Mounting Clip
- User Manual
- Warranty Card
- IP68 Cable Extender *
- Mounting Screws
- Power Adapters *

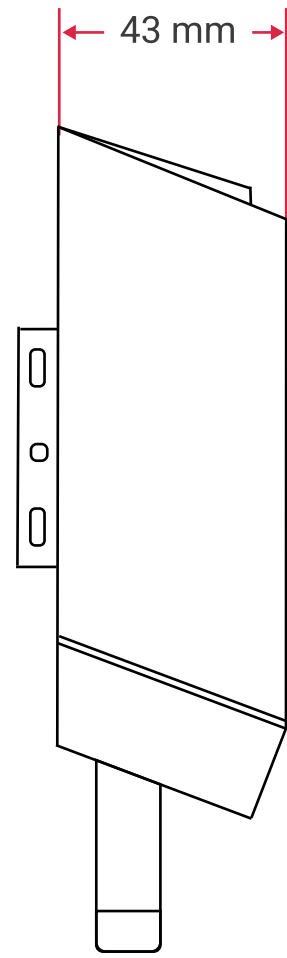
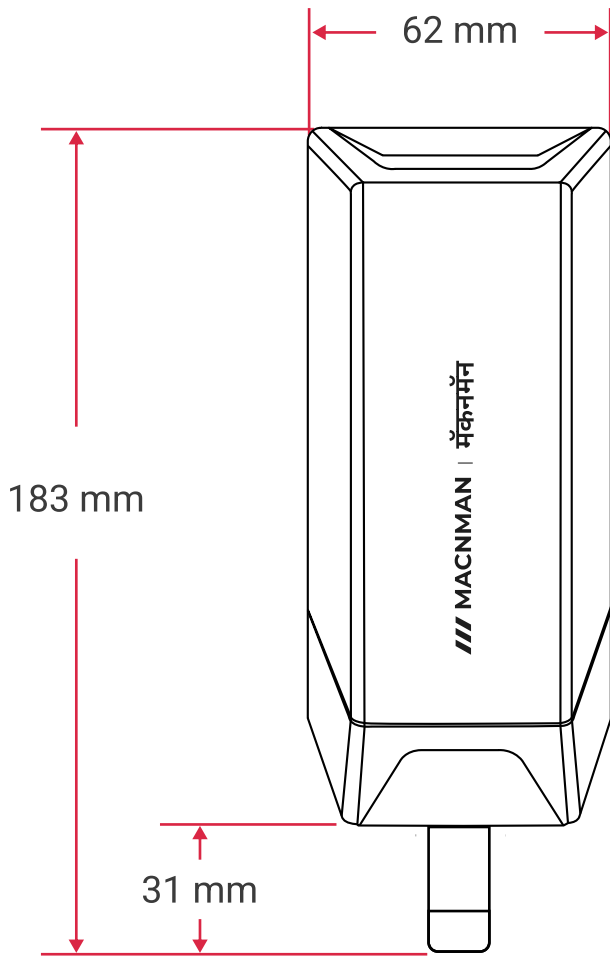
Models & Ordering Information

Variant Name	Power Source
MacSync L Odor X1 PO	External Power (9–36 V DC)
MacSync L Odor X1 BO	Integrated 19 Ah Lithium Battery

Notes

- Power operated models are only available with external probe option
- (*) Marked accessories must be purchased separately
- Battery life is estimated under standard operating conditions

Device Dimensions






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