



LoRaWAN® Outdoor Sound Level Sensor

MacSync LNS X1



Introduction

The MacSync LNS X1 is an industrial-grade LoRaWAN® Outdoor Sound Level Sensor designed for continuous real-time noise monitoring across smart cities, industrial facilities, construction sites, highways, airports, and environmental monitoring applications. Built for harsh outdoor deployments, the sensor combines precision acoustic sensing, long-range LoRaWAN® connectivity, and ultra-low power operation for scalable wireless noise monitoring infrastructure.

With rugged IP-rated construction, intelligent event-based reporting, configurable threshold alerts, BLE-based configuration, and support for public and private LoRaWAN® networks, the MacSync LNS X1 enables reliable environmental noise monitoring, regulatory compliance, and centralized sound level analytics for enterprise and smart city deployments.

Features

- Real-Time Outdoor Sound Level Monitoring
- Industrial-Grade Acoustic Sensing Technology
- High Stability Acoustic Measurement Performance
- Event-Based Sound Level Reporting
- Designed for Harsh Outdoor Deployments
- Compatible with Public & Private LoRaWAN® Networks & Macnman MacTalk Protocol
- Rugged IP-Rated Outdoor Enclosure

Key Advantages

- Enables Centralized Multi-Site Noise Monitoring
- Supports Smart City Infrastructure Initiatives
- Enables Data-Driven Urban Planning & Analytics
- Supports Construction & Infrastructure Noise Monitoring
- Reduces Deployment Complexity Through Wireless Connectivity
- Supports Long-Term Outdoor Environmental Monitoring
- Helps Build Intelligent Environmental Monitoring Infrastructure

Sound Level Measurement Specifications

Range	30 dB to 120 dB (Typical)
Resolution	0.1 dB
Range	20 Hz – 12.5 kHz
Accuracy	±0.5 dB (94 dB @ 1 kHz Reference)
Acoustic Stability	< 2% Variation Across Device Lifecycle

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 Macnman Maya
Device Activation	OTAA
Supported LNS	Private LNS , ChirpStack ,The Things Network , MQTT, Orbiwise

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

Device Configuration Parameters

Data Reporting Mode	Periodic / Event-based / Hybrid
Transmission Interval	Independent uplink interval for optimized power consumption
Threshold-Based Alerts	Configurable Sound Thresholds for Event-Triggered Transmission
Sampling Interval	Configurable data acquisition interval (e.g., 1 min to 24 hours)

Power & Battery Performance

Power Supply	Integrated Battery - 19,000 mAh
Battery Type	Lithium Thionyl Chloride (Li-SOCl ₂)
Estimated Battery Life at 25 °C	
5-minute reporting interval	~2 years
15-minute reporting interval	~4 years
60-minute reporting interval	~6+ years

Physical & Environmental Specifications

Enclosure & Mechanical

Material	Glass Filled Nylon
Protection Rating	IP65
Dimensions	152 mm × 62 mm × 43 mm (Without Acoustic Probe)
Weight	~175 g

Mounting & Installation

Wall - Mounted Installation	Supported , With Clip
Pole - Mounted Installation	Supported , Without Clip

Environmental Conditions

Operating Temperature	-40°C to +80°C
Operating Humidity	0% to 95% RH (Non-Condensing)

Regulatory Certifications & Compliance

Wireless Certification	WPC
Environmental	RoHS Compliant

What's in the Box?

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

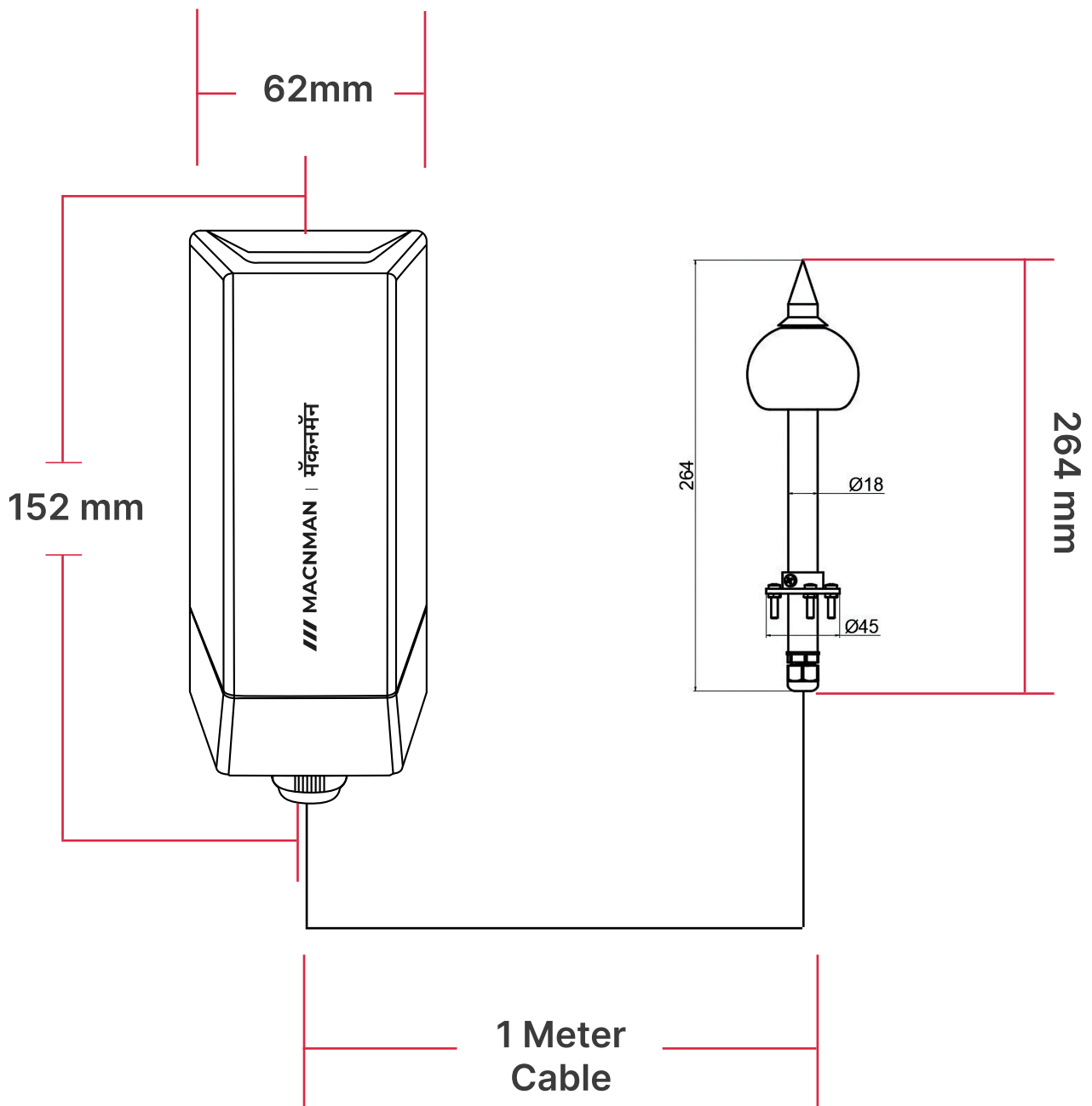
Models & Ordering Information

Variant Name	Power Source	SKU
MacSync LNS X1 BO	Integrated Battery - 19,000 mAh	845
MacSync LNS X1 PO	External Power (9–36 V DC)	846

Notes

- Power-operated variants require external DC power input & external sensor probe
- (*) Marked accessories must be purchased separately

Device Dimensions






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