



LoRaWAN® Pressure Sensor

MacSync LPS Xx

LoRaWAN® pressure sensor for real-time industrial pressure monitoring with long-range wireless connectivity and ultra-low power operation.



Introduction

The MacSync LPS Xx is an industrial-grade LoRaWAN® Pressure Sensor designed for accurate real-time pressure monitoring across industrial automation, water systems, pipelines, hydraulic systems, tanks, utilities, smart agriculture, and process monitoring applications.

Built for harsh industrial and outdoor deployments, the sensor continuously measures pressure parameters and securely transmits real-time data over LoRaWAN® networks using ultra-low power wireless communication. The device enables scalable remote pressure monitoring infrastructure with minimal installation complexity and maintenance requirements.

Features

- Industrial LoRaWAN® Pressure Monitoring Sensor
- High-Accuracy Pressure Measurement
- Industrial-Grade Transducer with Standard Mounting Threads
- Configurable Sampling & Transmission Intervals
- Designed for Continuous Industrial Pressure Monitoring
- Macnman MacTalk Protocol Support (Gateway-Free Communication Device to Device Communication)
- Stable Performance in Industrial & Outdoor Environments
- Compatible with Public & Private LoRaWAN® Networks

Key Advantages

- Ideal for Pipeline & Water Pressure Monitoring
- Suitable for Hydraulic & Pneumatic Systems
- Reduces Manual Inspection Requirements
- Enables Remote Industrial Pressure Monitoring
- Enables Real-Time Pressure Visibility Across Assets

Pressure Sensor Measurement

	Model X1	Model X2	Model X3
Working Pressure	0 ~ 2.5 MPa	0 ~ 5 MPa	0 ~ 10 MPa
Thread Size	G1/4	G1/4	G1/4
Measurement Accuracy	±0.5 % FS	±0.5 % FS	±0.5 % FS
Temperature Effects	±0.02 %FS/°C	±0.02 %FS/°C	±0.02 %FS/°C
Breaking Pressure	300%	300%	300%
Cycle Life	≥1,000,000 cycles	≥1,000,000 cycles	≥1,000,000 cycles

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 , 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)
Cloud-Based	Configuration via Macnman IoT platform *
Status LED	1 x 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 Pressure Level Threshold 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 , Optional Solar Panel
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	~7+ years

Physical & Environmental Specifications

Enclosure & Mechanical

Material	Glass Filled Nylon
Protection Rating	IP 65
Dimensions	152 mm X 62 mm X 43 mm (Without Sensor Probe)
Weight	~175 g

Mounting & Installation

Wall-mounted installation	Yes , With Clip
Pole - mounted installation	Yes , 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 LPS Xx Sensor
- Mounting Clip
- User Manual
- Warranty Card
- IP68 Cable Extender *
- Mounting Screws
- Power Adapters *

Models & Ordering Information

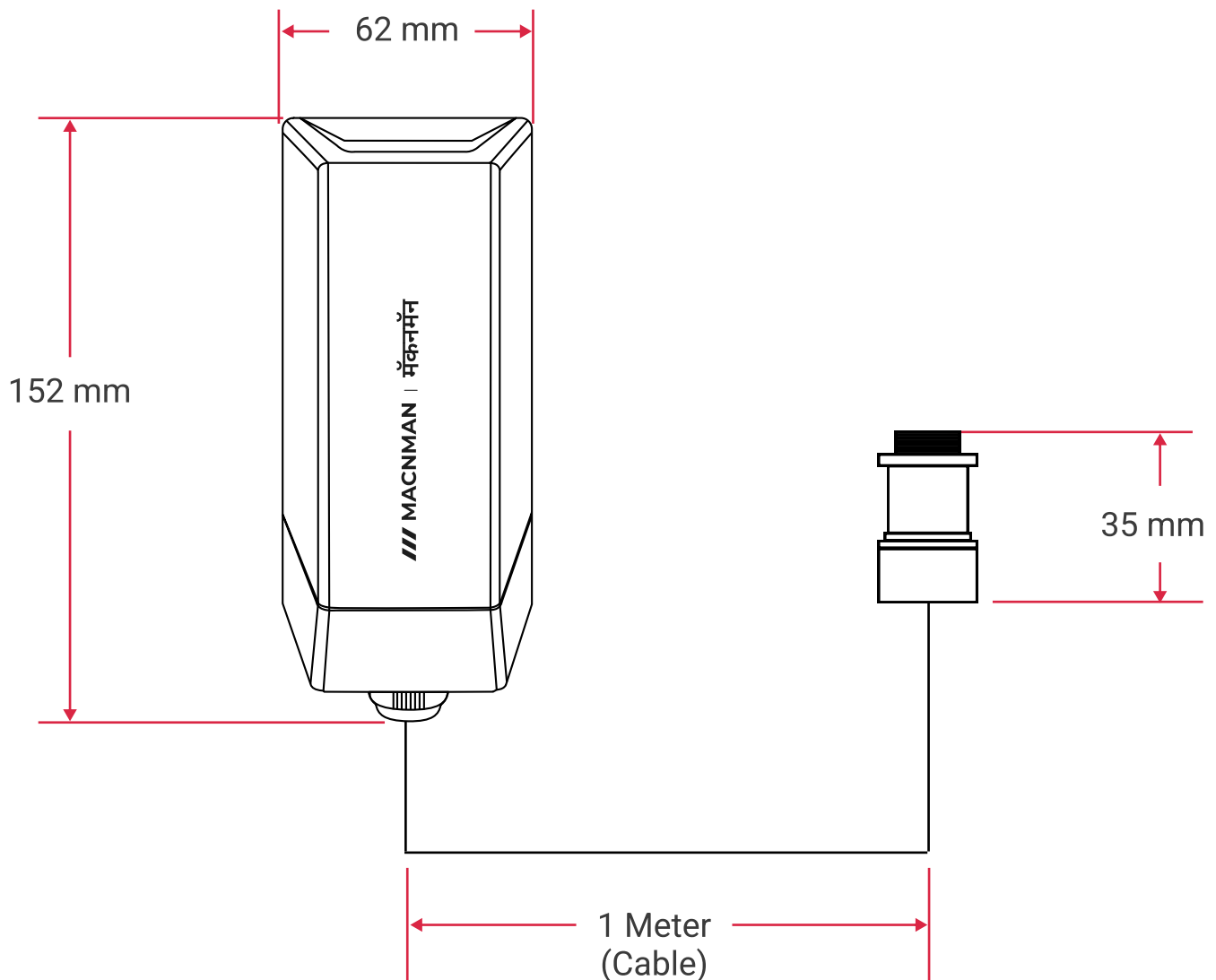
Variant Name	Pressure Range	Power Source
MacSync LPS X1 PO	0 ~ 2.5 MPa	External Power (9–36 V DC)
MacSync LPS X1 BO	0 ~ 5 MPa	Integrated Battery (19 Ah)
MacSync LPS X2 PO	0 ~ 10 MPa	External Power (9–36 V DC)

MacSync LPS X2 B0	Integrated Battery (19 Ah)
MacSync LPS X3 P0	External Power (9–36 V DC)
MacSync LPS X3 B0	Integrated Battery (19 Ah)

Notes





- Power operated models are only available with external probe option
- (*) Marked accessories must be purchased separately

Device Dimensions






y to serve you. तुमची सेवा करण्याची संधी दिल्याबद्दल धन्यवाद. మీకు సేవ చేసే అ
के अवसर के लिए धन्यवाद भवतः सेवायाः अवसरस्य कृते धन्यवादः तभारी सेवा करवानी

Say Hello 🙌

-  www.macnman.com
-  info@macnman.com
-  +91 7972856163
- 

Support Mails

-  chat@macnman.com
-  helpdesk@macnman.com
-  support@macnman.com

This manual and all its contents are the intellectual property of Macnman Technologies Pvt. Ltd. and are protected under Indian copyright laws and applicable international conventions.

All trademarks, certifications, and logos mentioned in this document or related products are used with appropriate licensing. These may include, but are not limited to, certifications such as CE, FCC, RoHS, REACH, BQB, WEEE, and others. Ownership of trademarks, logos, and trade names remains with their respective owners. For instance, the Bluetooth® trademark and logo are the property of Bluetooth SIG, Inc. Other trademarks belong to their rightful proprietors.

Given the compact size of the module, the "®" symbol is omitted from Bluetooth-related trademarks in compliance with applicable regulations.

Macnman Technologies Pvt. Ltd. reserves the right to modify the content of this manual to align with advancements in technology. Updated versions may be released without prior notification. Unauthorized modification, reproduction, or use of part or all of this manual without written consent from Macnman Technologies Pvt. Ltd. is strictly prohibited. Legal action will be taken against violators in accordance with Indian law.

By using this manual, you agree to comply with the terms stated herein.