



LoRaWAN RTD Temperature Sensor

MacSync LRTD X1

LoRaWAN® RTD temperature sensor for high-accuracy industrial temperature monitoring with long-range wireless connectivity.



Introduction

The MacSync LRTD X1 is a LoRaWAN®-based RTD temperature sensor designed for accurate and reliable temperature monitoring in industrial and outdoor environments. Supporting RTD probes such as PT100/PT1000, the device enables real-time wireless temperature monitoring across distributed assets and remote installations.

With ultra-low power operation, rugged industrial design, and long-range LoRaWAN® connectivity, the sensor is ideal for process monitoring, cold storage, utilities, pipelines, and industrial automation applications.

Features

- High-Accuracy RTD Temperature Monitoring
- Supports PT100/PT1000 RTD Probes
- Industrial-Grade RTD Temperature Measurement
- Configurable Sampling & Transmission Intervals
- Wireless Replacement for Wired RTD Systems
- Macnman MacTalk Protocol Support (Gateway-Free Communication Device to Device Communication)
- Ultra-Low Power Architecture for Long-Term Deployment
- Compatible with Public & Private LoRaWAN® Networks

Key Advantages

- Supports Smart Factory & Industry 4.0 Applications
- Ideal for Boilers, Pipelines & Process Equipment
- Enables Remote Industrial Temperature Monitoring
- Supports Scalable Multi-Site Temperature Monitoring
- Minimizes Maintenance Through Ultra-Low Power Operation

RTD Measurement Specifications

Sensor Type	PT100 RTD/PT1000 Temperature Sensor
Temperature Range	-200 °C to +850 °C
Sensor Linearization	IEC 60751 Standard Curve
Accuracy	±0.2 °C (Typical)
Resolution	0.1 °C
Repeatability	±0.05 °C
Self-Heating Error	< 0.1 °C @ 1 mA excitation
Probe Material	SS304

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 Networks , 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	X 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 Temperature Threshold for Event-Triggered Transmission
Sampling Interval	Configurable data acquisition interval (e.g., 1 min to 24 hours)

Power & Battery Performance

Power Supply	Inbuilt 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	IP65
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 Model
- Mounting Clip
- User Manual
- Warranty Card
- IP68 Cable Extender *
- Mounting Screws
- Power Adapters *

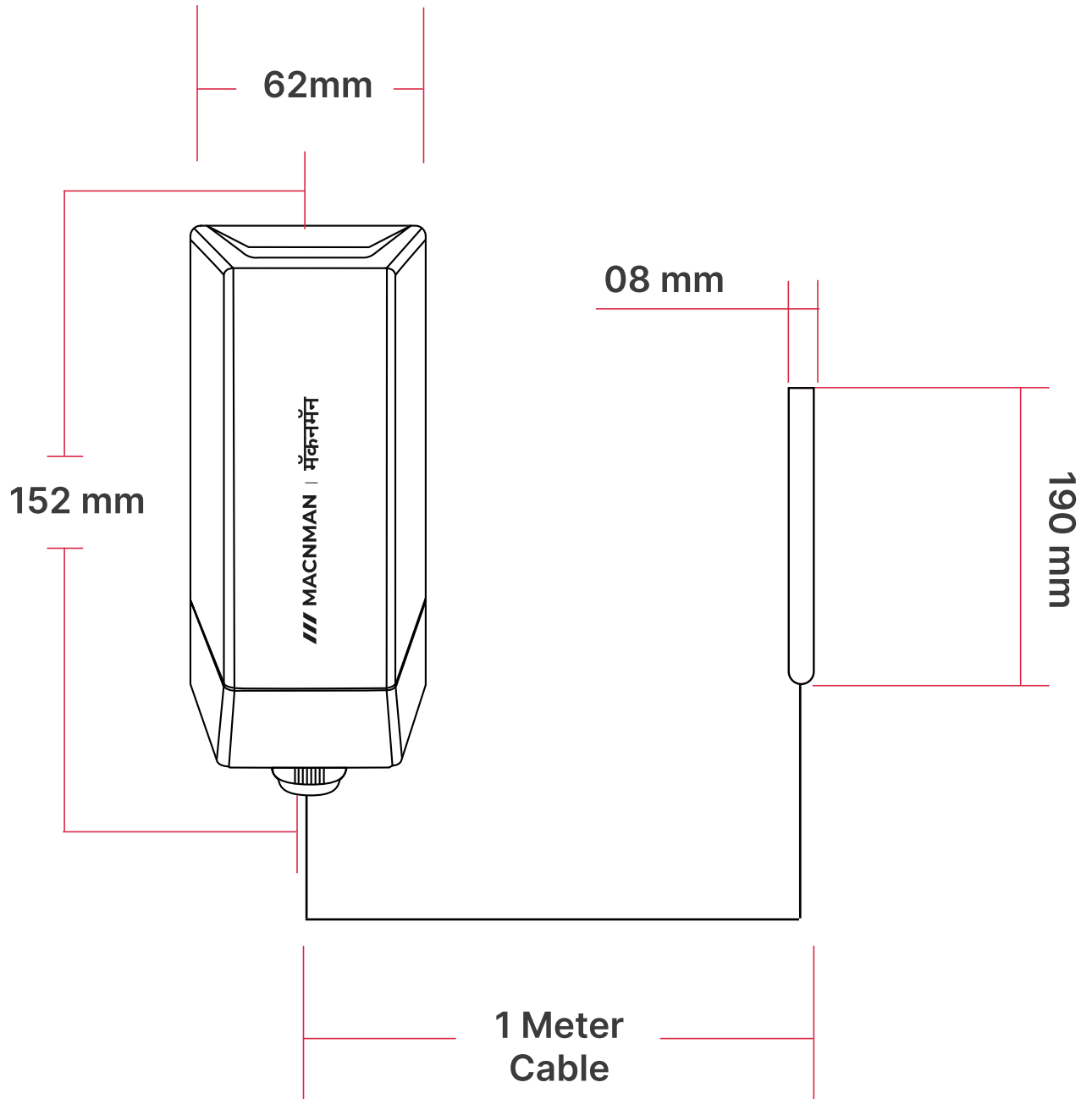
Models & Ordering Information

Variant Name	Power Source
MacSync LRTD X1 PO	External Power (9–36 V DC)
MacSync LRTD X1 BO	Inbuilt Battery (19 Ah)

Notes


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

Device Dimensions






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