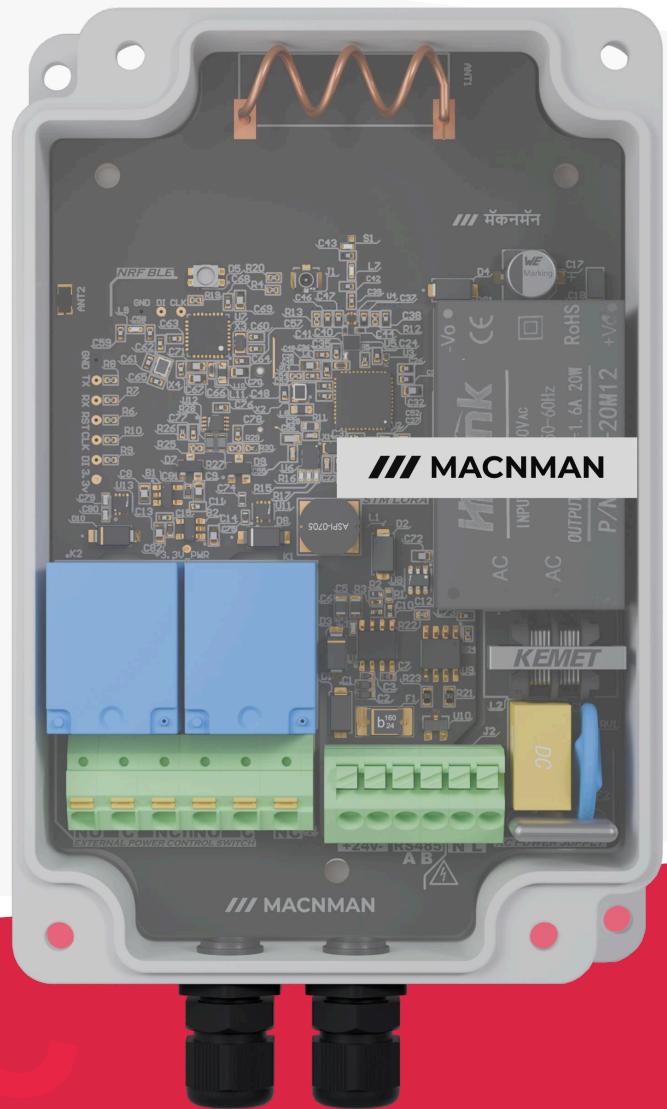




LoRaWAN® Relay Controller

MacSet LX1

Industrial LoRaWAN® relay controller with dual 16 A high-current relay outputs, RS485 Modbus RTU support, analog & digital inputs, and long-range wireless automation connectivity.



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Introduction

The MacSet LX1 is an industrial-grade LoRaWAN® Relay Controller designed for remote equipment control, industrial automation, wireless switching, and distributed asset management across factories, utilities, pump systems, process industries, smart buildings, and industrial IoT infrastructure. Engineered for reliable long-range operation, the controller enables secure wireless control of electrical equipment over LoRaWAN® networks with centralized monitoring and automation capability.

Built for harsh industrial environments, the MacSet LX1 supports real-time relay switching, configurable automation logic, event-based operation, threshold-triggered actions, BLE-based configuration, and OTA firmware upgrades. The device enables seamless integration into industrial automation systems, SCADA platforms, and remote monitoring infrastructure while reducing wiring complexity and simplifying deployment across distributed industrial sites.

Features

- 16 A Dual High-Current Relay Outputs
- Offline & Local Automation Rule Engine
- RS485 Modbus RTU Interface
- Support for Analog & Digital Inputs (0-10 V & 4-20 mA)
- Wireless Configuration via BLE (Maya App)
- Macnman MacTalk Protocol Support (Gateway-Free Device to Device Communication)
- Compatible with Public & Private LoRaWAN® Networks

Key Advantages

- Enables Remote Control of Pumps, Motors & Field Equipment
- Ideal for Industrial Automation & Smart Infrastructure Applications
- Supports Wireless Switching Across Distributed Locations
- Perfect for Water Management, Irrigation & Utility Control Systems
- Integrates Easily with PLCs, Sensors & Modbus Devices
- Minimizes Manual Intervention Through Intelligent Automation Logic
- Scales Easily Across Multi-Site Monitoring & Control Deployments

Controller Specifications

Relay Outputs	2 × 16A Relay Outputs
RS485 Interface	1 × RS485 (Switchable)
4–20 mA Analog Channels	2 × Channels (Switchable)
0–10 V Analog Channels	2 × Channels (Switchable)
Digital Inputs	2 × Channels (Switchable)

RS485 Modbus Input Specifications

Number of RS485 Ports	1 x Independently Configurable
Interface	RS485 Modbus RTU
Modbus Mode	Modbus RTU Master
Baud Rate Support	1200 bps to 115200 bps
Data Format	8 Data Bits, No/Even/Odd Parity, 1 Stop Bit
Slave Devices	Multiple Modbus RTU Slave Devices
Function Codes	Read Holding Registers, Read Input Registers, Write Single Register, Write Multiple Registers
Polling Interval	User Configurable
Communication Direction	Half-Duplex

4–20 mA Input Specifications

Number of Channels	2 × Independently Configurable
Input Type	4–20 mA Analog Input
ADC Resolution	12-bit
Sampling Interval	User Configurable
Threshold-Based Alerts	Supported

0–10 V Input Specifications

Number of Channels	2 × Independently Configurable
Input Type	0–10 V Analog Input
ADC Resolution	12-bit
Sampling Interval	User Configurable
Threshold-Based Alerts	Supported

Digital Input Specifications

Number of Channels	2 × Independently Configurable
Input Type	Digital Input
Input Logic	High / Low Detection
Event Detection	State Change Detection Supported

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	Up to 23 dBm @ 865 MHz
Sensitivity	Up to -137 dBm Sensitivity
LoRaWAN® Class	Class A (Default), Configurable to Class C via Maya
Device Activation	OTAA
Supported LNS	Private LNS ,Chirpstack ,The Things Networks , MQTT, Orbiwise

Automation Rule Engine Modes

Regular Mode	Time-based relay automation where relay actions are executed at scheduled timings configured by the user
Trigger Mode	Event-based relay automation using Analog Inputs or RS485 Modbus sensor data to trigger relay actions
Cyclic Mode	Repetitive relay ON/OFF operation based on user-defined cyclic timing sequences

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	Configurable uplink interval for optimized power consumption
Threshold-Based Alerts	Configurable parameters threshold for event-triggered transmission
Sampling Interval	Configurable data acquisition interval (e.g., 1 min to 24 hours)

Power Performance

AC Power Input	230V AC
DC Power Input	12–36V DC
Input Power Modes	AC / DC Supported
Protection	Reverse Polarity

Physical & Environmental Specifications

Enclosure & Mechanical

Material	Glass Filled Nylon
Protection Rating	IP 65
Dimensions	142 mm × 80 mm × 32 mm
Weight	175 grams

Mounting & Installation

Wall-mounted installation	Supported
Pole - mounted installation	Supported with External Clip

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 ?

- MacSet LX1 Device
- Mounting Clip
- User Manual
- Warranty Card
- IP68 Cable Extender *
- Mounting Screws
- Power Adapters *

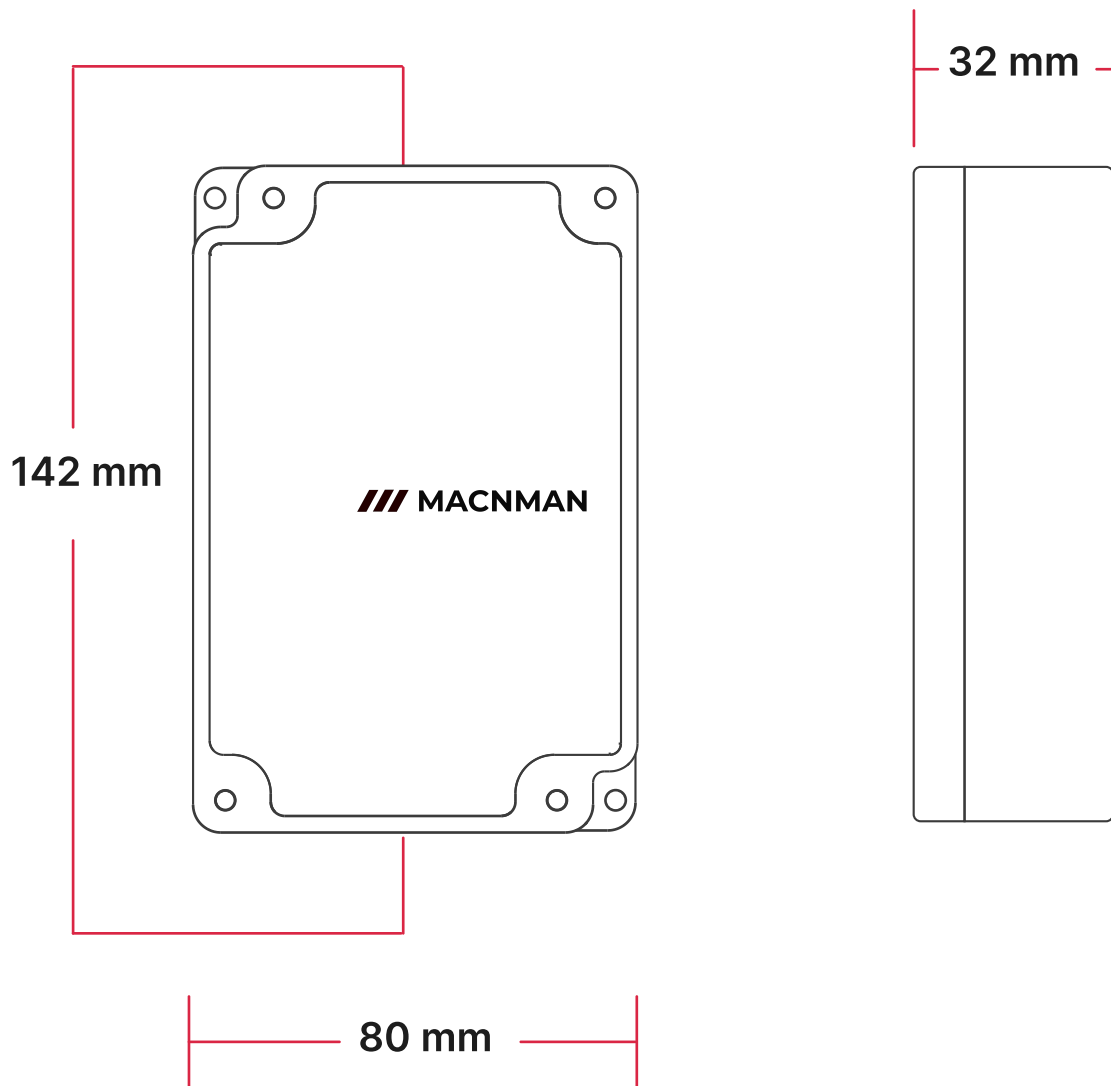
Models & Ordering Information

Variant Name	Power Source
MacSet LX1	External Power (AC/DC Supported)

Notes

- Power operated models are only available with external probe option
- (*) Marked accessories are need to be purchased separately
- Only one interface can be used at a time E.g. Only RS485 or Analog Interface

Device Dimensions






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