

Wireless Multifunctional Control Box

R831A Data Sheet

Wireless Sensor Network Based on LoRa Technology



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Wireless Multifunctional Control Box

1. Introduction

R831 can be equipped with a three-way controllable relay switch. The three-way relay output can be used as a dry contact. The user can separately control it through wireless commands which adopts SX1276 wireless communication module.

R831 series has 4 types: R831A, R831B, R831C, and R831D.

R831A

Power Supply Mode

- ① Connect electric curtain, garage door, and electric folding gate
- ② Control the opening, closing, and stopping of connected devices

2. Features

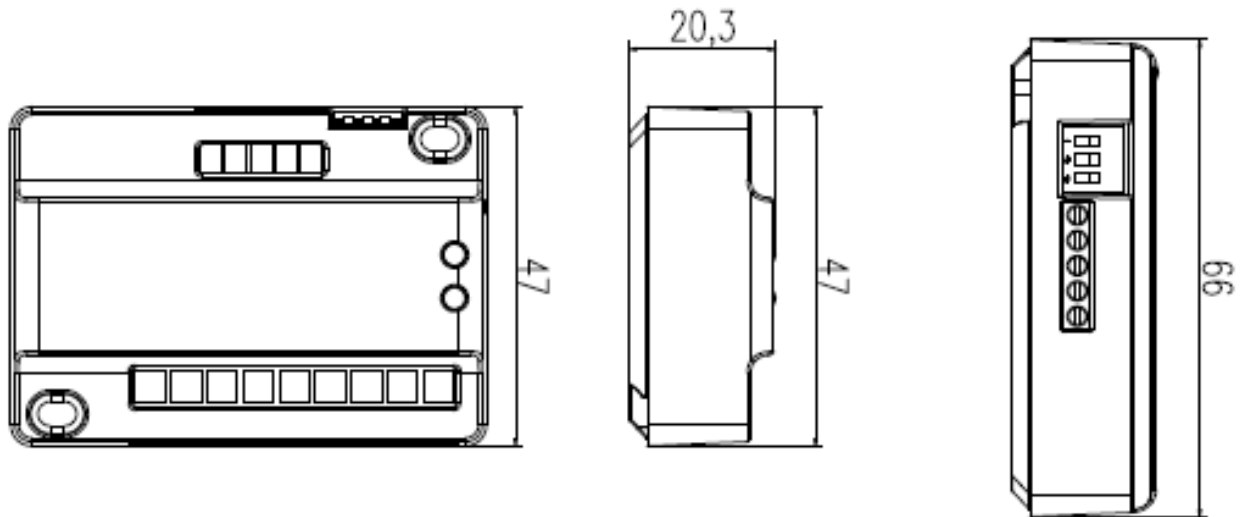
- SX1276 wireless communication module
- Three-way relay control
- Compatible with LoRaWAN™ Class C
- Frequency hopping spread spectrum
- Configuring parameters and reading data via the third-party software platforms, and set alarms via SMS text and email (optional)
- Applicable to the third-party platforms: Actility/ ThingPark, TTN, MyDevices/Cayenne

3. Applications

- Indoor smart switch for home or business
- Real-time remote controlled equipment

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4. Dimensions



5. Electrical Specifications

Operating Voltage	Adapter DC 12V/1A
Operating Current	20mA (12V): no relay action status and data sent by LoRa. <250mA (12V): relay action status and data sent by LoRa.
Relay Switch Load Characteristic	Contact load: AC250V/5A, DC30V/5A
Relay Coil Power Consumption	300mW
Relay Model	HFE60/5-1HSTGL2R
Relay Type	Magnetic latching relay

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6. Frequency

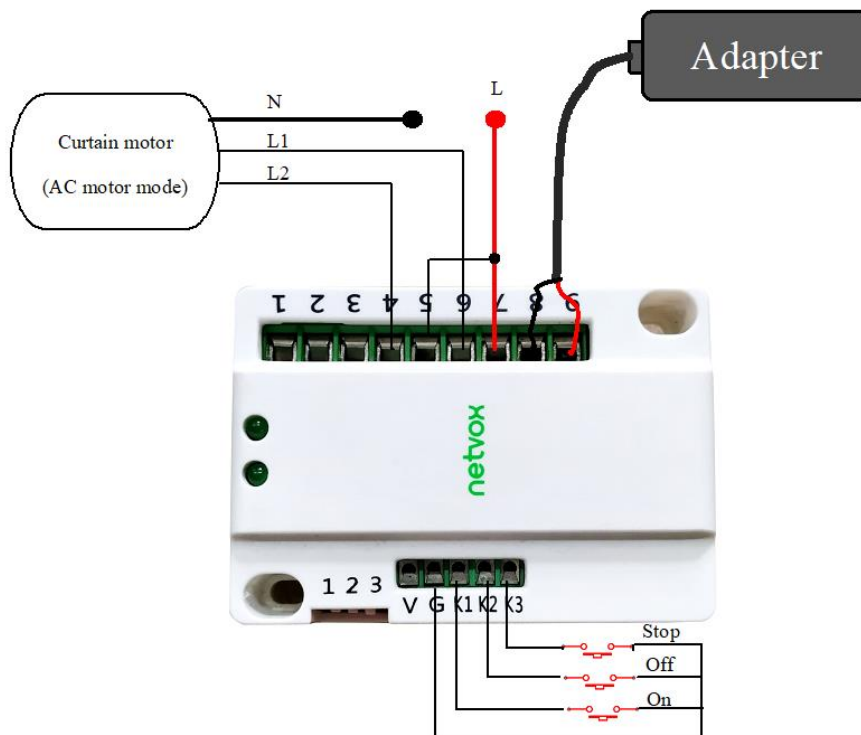
Frequency Range	863MHz-928MHz 470MHz-510MHz
TX Power	US915 20dbm AS923 16dbm AU915 20dbm CN470 19.15dbm EU868 16dbm KR920 14dbm IN865 20dbm
Receive Sensitivity	-136dBm (LoRa, Spreading Factor=12, Bit Rate=293bps) -121dBm (FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps)
Antenna Type	Built-in antenna
Communication Range	10km (line of sight) Note: The communication range may vary due to the environment.
Data Transfer Rate	0.3kbps – 50k bps (LoRa) 1.2kbps – 300k bps (FSK)
Modulation Method	LoRa/FSK (Note: One modulation method is required.)
Supportable LoRaWAN Band	EU863-870, US902-928, AU915-928, KR920-923, AS923-1, AS923-2, AS923-3, IN865, CN470-510 (Note: optional, to be configured before shipment)

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7. Physical Properties

Main Body Dimensions	66mm x 47mm x 20.3mm
Ambient Temperature Range	-20°C – 55°C
Ambient Humidity Range	<90%RH (No condensation)
Storage Temperature Range	-40°C – 85°C

8. Wiring Diagram



▲ R831A Wiring Diagram (Relay Load: AC250V/5A)

Note: Improper wiring could cause danger to users. Please follow the wiring diagram while installing.