

# Wireless Multifunctional Control Box

## R831D Data Sheet

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Wireless Sensor Network Based on LoRa Technology



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## Wireless Multifunctional Control Box

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### 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. R831D reports the relay status and determines which relay to control through the network linkage and the instruction.

### 2. Features

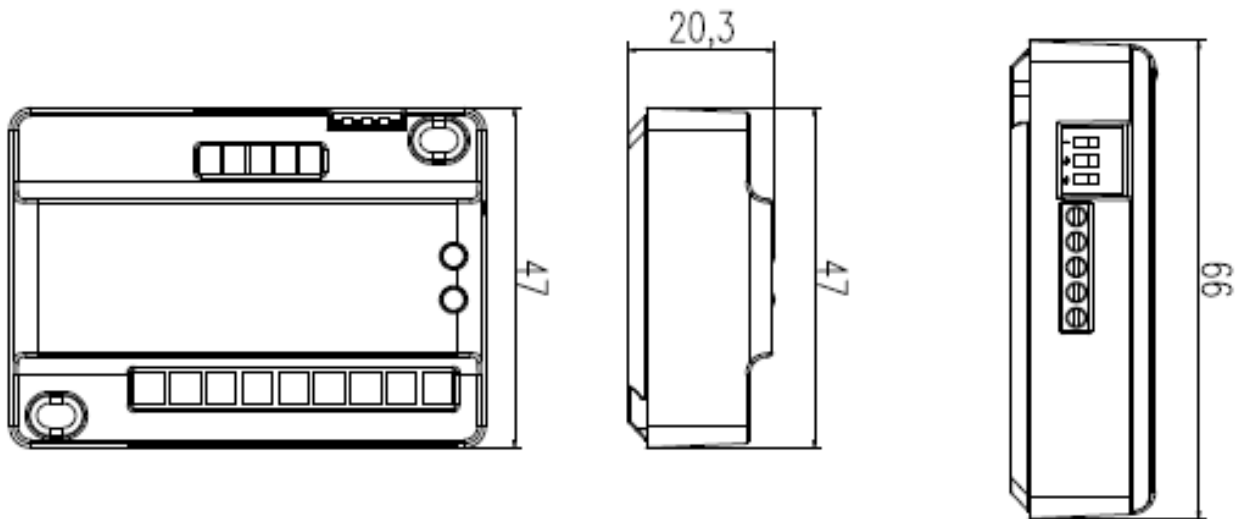
- SX1276 wireless communication module
- Three-way relay control
- Compatible with LoRaWAN™ Class C
- Frequency hopping spread spectrum
- Configuring parameters and reading data via the third-party software platforms, and set alarms via SMS text and email (optional)
- Applicable to the third-party platforms: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

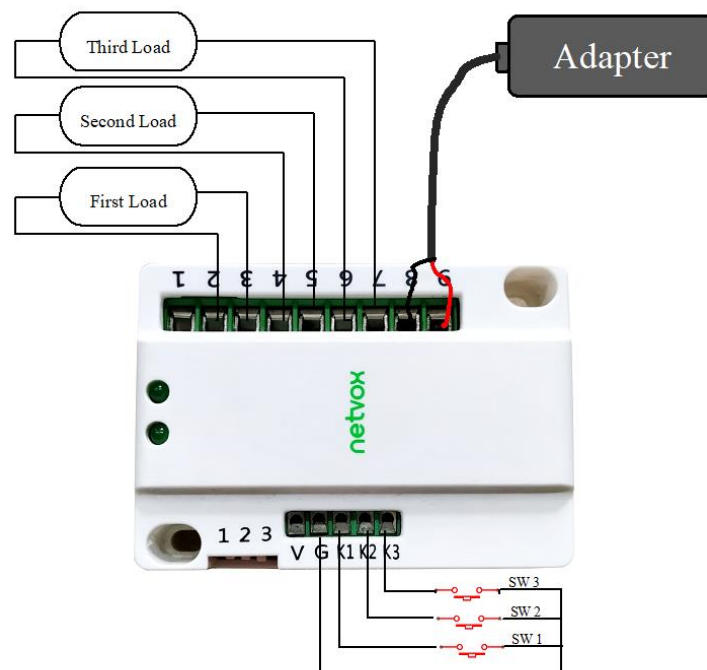
|                          |  |
|--------------------------|--|
| Frequency Range          | 863MHz-928MHz 470MHz-510MHz  |
| TX Power                 | US915 20dbm<br>AS923 16dbm<br>AU915 20dbm<br>CN470 19.15dbm<br>EU868 16dbm<br>KR920 14dbm<br>IN865 20dbm   |
| Receive Sensitivity      | -136dBm<br>(LoRa, Spreading Factor=12, Bit Rate=293bps )<br>-121dBm<br>(FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps)                         |
| Antenna Type             | Built-in antenna   |
| Communication Range      | 10km (line of sight)<br>Note: The communication range may vary due to the environment.   |
| Data Transfer Rate       | 0.3kbps – 50k bps (LoRa)<br>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,<br>AS923-1, AS923-2, AS923-3, IN865, CN470-510<br>(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**



▲ R831C & R831D Wiring Diagram

(AC Source and DC Source Load characteristics:

Relay Load: AC250V/5A, DC30V/5A)

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