LoRa / LoRaWAN Radio Module   RP02RH1PN063   RP02RH1PNLB063

RP02RH3PN063   RP02RH3PNLB063

Wireless Miniature Circuit Breaker

with Power Meter

RP02RH Series

Data Sheet

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Wireless Miniature Circuit Breaker with Power Meter

Introduction

RP02RH1PN063 Wireless 1P+N Miniature Circuit Breaker with Power Meter

RP02RH1PNLB063 Wireless 1P+N Miniature Circuit Breaker with Power Meter and Leak Detection

RP02RH3PN063 Wireless 3P+N Miniature Circuit Breaker with Power Meter

RP02RH3PNLB063 Wireless 3P+N Miniature Circuit Breaker with Power Meter and Leak Detection

RP02RH series is a class C smart Miniature Circuit Breaker based on LoRaWAN open protocol. It can monitor the status of all external circuit breakers in real time. (connect up to 9 poles)

When the wire is abnormal, such as undervoltage, overvoltage, overload, leakage, etc., the system will automatically warn, alarm, and power off. It can also periodically detect the temperature, energy, current, voltage, power, leakage current, circuit breaker status, etc. of all external short circuit breakers.
The detected data will be reported to the gateway. With the system, it can be controlled remotely and regularly. It can be timing switched and automatically perform monthly leakage self-check, power limit, and electricity limit. It has the self-check function and reports the detected information to the gateway.

It can be switched to serial port transparent transmission mode which supports replying to up to 128 bytes of data (depending on the communication rate).
The serial port transparent transmission only supports the RS-485 protocol.

Wireless Miniature Circuit Breaker with Power Meter

Main Characteristic

- Apply SX1276 wireless communication module

- The output voltage of 12V provides power for LoRa/LoRaWAN Radio Module in the form of 4-pin terminal interface, in which 12V is the input voltage of LoRa/LoRaWAN Radio Module, B and A are RS-485 signals, and GND is the ground.
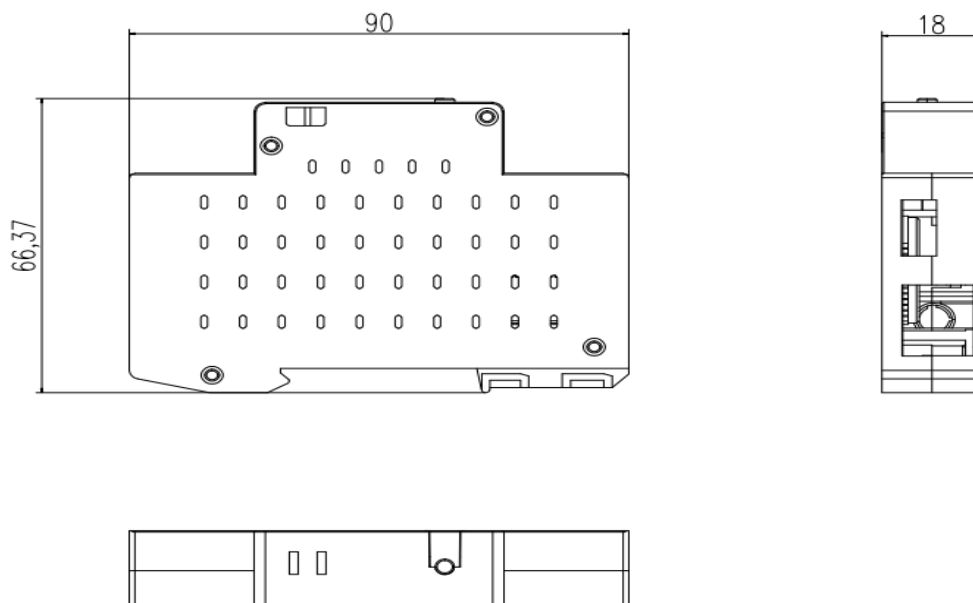The 4-pin terminal of LoRa/LoRaWAN Radio Module interface is marked with a silkscreen, and the terminal is foolproof.

- RS485 communication

- LoRaWAN^{TM} Class C compatible

- Frequency Hopping Spread Spectrum (FHSS)

- Applicable to third-party platforms: Actility/ThingPark, TTN, MyDevices/Cayenne

Application

- School, shopping mall, supermarket, etc.

- Other

Dimension

Wireless Miniature Circuit Breaker with Power Meter

Electrical Characteristics

LoRa/LoRaWAN Radio Module

Power Supply	DC 12V
Operation Current	<100mA (when there is the RF signal transmission)

* Specific electrical characteristics may vary depending on the power supply voltage.

Power Module Power Supply

Model	HDR-30-12V
Power Supply	AC 100 to 240V
Output Voltage	12V (Range: 10.8V to 13.8V)
Frequency	50Hz
Power	24W
Dimension	35mm * 90mm * 54.5mm
Certified	UL, CB, CE, UKCA, TUV
Suggested Number of Circuit Breakers Supported by One Power Module	The output power of the power module is 24W, and it supports connecting to 9 poles at most. 1PN (L) type circuit breaker has 2 poles. 3PN (L) type circuit breaker has 4 poles. That is, one power module can carry four 1PN (L) type circuit breakers; one can carry two 3PN (L) type circuit breakers.

Wireless Miniature Circuit Breaker with Power Meter

Frequency

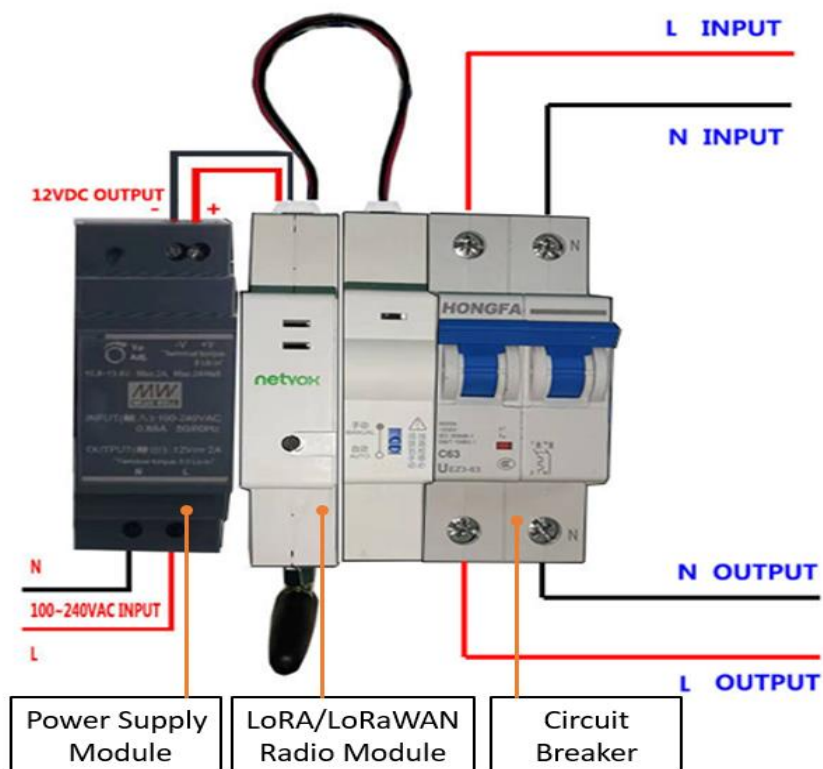|	
Frequency Range	863MHz-928MHz 470MHz-510MHz
TX Power	US915 20dbm AS923 16dbm AU915 20dbm CN470 19.15dbm EU868 16dbm KR920 14dbm IN865 20dbm
Receiving Sensitivity	-136 dBm (LoRa, Spreading Factor = 12, Bit Rate = 293bps) -121 dBm (FSK, Frequency deviation = 5kHz, Bit Rate = 1.2kbps)
Antenna Type	External rod antenna
Communication Distance	10 km (the actual transmission distance depends on the environment.)
Data Transfer Rate	0.3kbps ~ 50kbps (LoRaWAN) 1.2kbps ~ 300kbps (FSK)
Modulation Method	LoRa / FSK (Note: choose one of them)
Supportable LoRaWAN Band	EU863-870,US902-928,AU915-928,KR920-923,AS923-1,AS923-2,AS923-3,IN865-867,CN470-510 (Note: optional, to be done in the factory configuration)

Physical

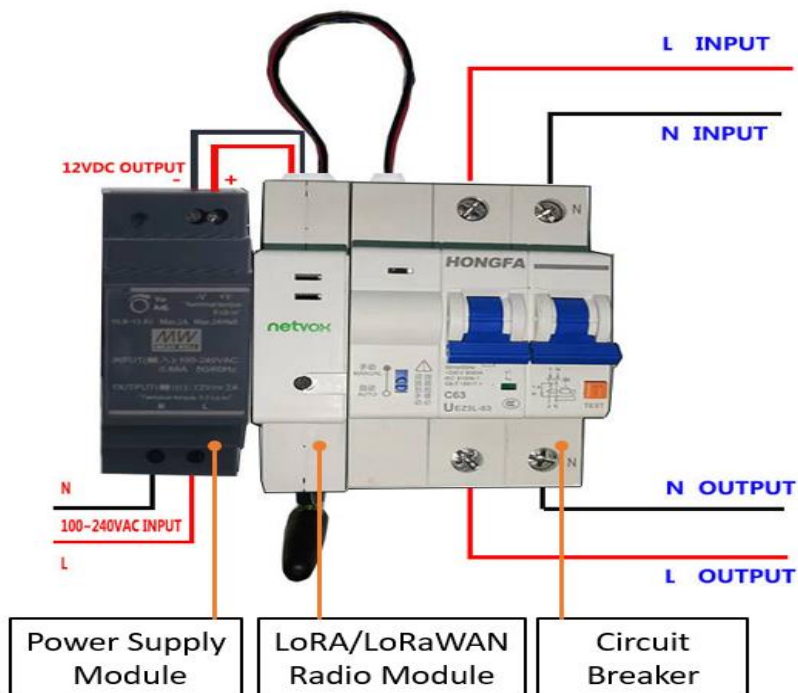|	
Dimension	Radio Module: L: 66.37 mm *W: 90 mm *H: 18 mm
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature Range	-40℃ ～ 85℃

Wireless Miniature Circuit Breaker with Power Meter

Single-Phase Power Supply Wiring Instructions

RP02RH1PN063

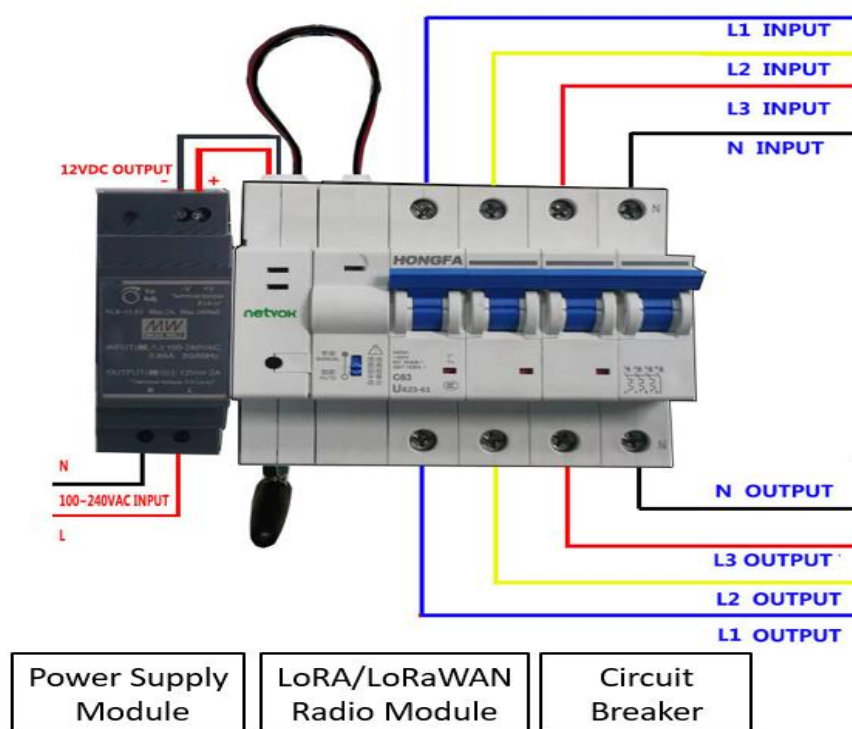(LoRa/LoRaWAN Radio Module + Power Module + 1PN)

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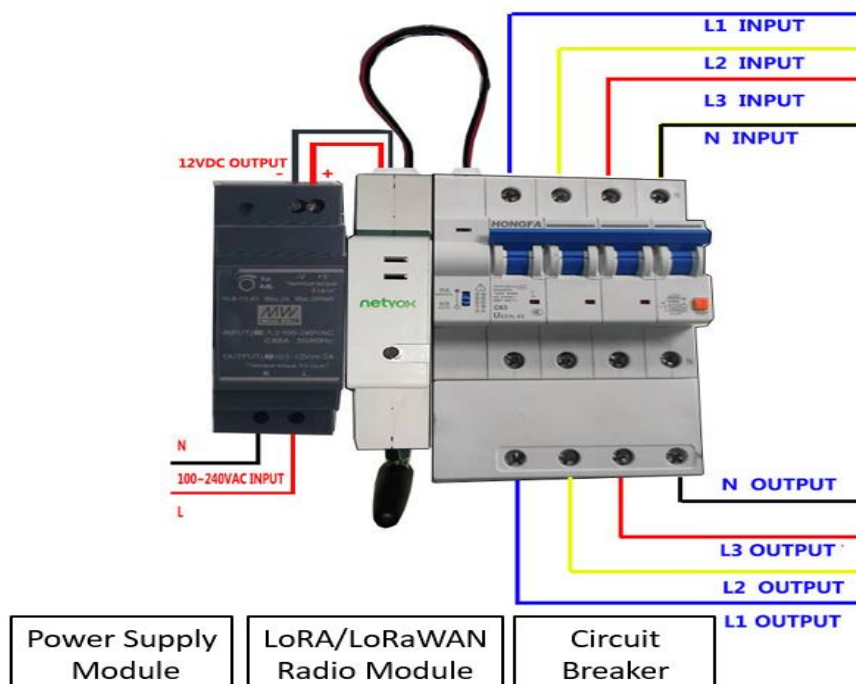
(LoRa/LoRaWAN Radio Module + Power Module + 1PNL)

Wireless Miniature Circuit Breaker with Power Meter

Three-Phase Power Supply Wiring Instructions

RP02RH3PN063

(LoRa/LoRaWAN Radio Module + Power Module + 3PN)

RP02RH3PNLB063

(LoRa/LoRaWAN Radio Module + Power Module + 3PNL)

Wireless Miniature Circuit Breaker with Power Meter

Circuit Breaker Specifications

Breaker UEZ3 (1PN)

- Rated Voltage: AC230V / 50Hz
- Rated Current: 63A
- Breaking Capacity: 6kA
- Mechanical Life: 10000 times
- Electrical Life: 6000 times
- Communication Protocol: RS485, Modbus-RTU
- Alarm Function: Overload, Overvoltage, Undervoltage, Temperature, Overpower.
- Protective Function: Short circuit protection, Overcurrent protection based on the current setting, Overvoltage protection, Undervoltage protection, Over temperature protection, Overpower protection..
- Information Collection: Current, Voltage, Power, Frequency, Temperature, Lifetime, Electricity.
- Error Message: 10 messages

Breaker UEZ3L (1PNL) with leakage detection

- Rated Voltage: AC230V / 50Hz
- Rated Current: 63A
- Breaking Capacity: 6kA
- Mechanical Life: 10000 times
- Electrical Life: 6000 times
- Communication Protocol: RS485, Modbus-RTU
- Residual Current Type: AC type
- Residual Current: 30mA
- Alarm Function: Leakage, Overload, Overvoltage, Undervoltage, Temperature, Overpower.
- Protective Function: Leakage protection, Short circuit protection, Overcurrent protection based on the current setting, Overvoltage protection, Undervoltage protection, Over temperature protection, Overpower protection.
- Information Collection: Leakage, Current, Voltage, Power, Frequency, Temperature, Lifetime, Electricity.
- Error Message: 10 messages

Wireless Miniature Circuit Breaker with Power Meter

Breaker UEZ3 (3PN)

●Rated Voltage: AC400V / 50Hz

●Rated Current: 63A

●Breaking Capacity: 6kA

●Mechanical Life: 10000 times

●Electrical Life: 6000 times

●Communication Protocol: RS485, Modbus-RTU

●Alarm Function: Overload, Overvoltage, Undervoltage, Temperature, Overpower.

●Protective Function: Short circuit protection, Overcurrent protection based on the current setting, Overvoltage protection, Undervoltage protection, Over temperature protection, Overpower protection.

●Information Collection: Current, Voltage, power, Frequency, Temperature, Lifetime, Electricity.

●Error Message: 10 messages

Breaker UEZ3L (3PNL) with leakage detection

●Rated Voltage: AC400V / 50Hz

●Rated Current: 63A

●Breaking Capacity:6kA

●Mechanical Life: 10000 times

●Electrical Life: 6000 times

●Communication Protocol: RS485, Modbus-RTU

●Residual Current Type: AC type

●Residual Current:30mA

●Alarm Function: Leakage, Overload, Overvoltage, Undervoltage, Temperature, Overpower.

●Protective Function: Leakage protection, Short circuit protection, Overcurrent protection based on the current setting, Overvoltage protection, Undervoltage protection, Over temperature protection, Overpower protection.

●Information Collection: Leakage, Current, Voltage, Power, Frequency, Temperature, Lifetime, Electricity.

●Error Message: 10 messages