Netvox LoRa Sensors & Devices

Wireless Sensor Network Based on LoRa Technology

Product Catalogue

2019

Intellectual System Based on LoRa Technology

What is LoRa?

LoRa technology was developed by a company called Semtech and it is a new wireless protocol designed specifically for long-range, low-power communications. LoRa stands for Long Range Radio and is mainly targeted for M2M and IoT networks. This technology will enable public or multi-tenant networks to connect a number of applications running on the same network.

LoRa Alliance was formed to standardize LPWAN (Low Power Wide Area Networks) for IoT and is a non-profit association which features membership from a number of key market shareholders such as CISCO, actility, MicroChip, IBM, STMicro, SEMTECH, Orange mobile and many more. This alliance is key to providing interoperability among multiple nationwide networks.

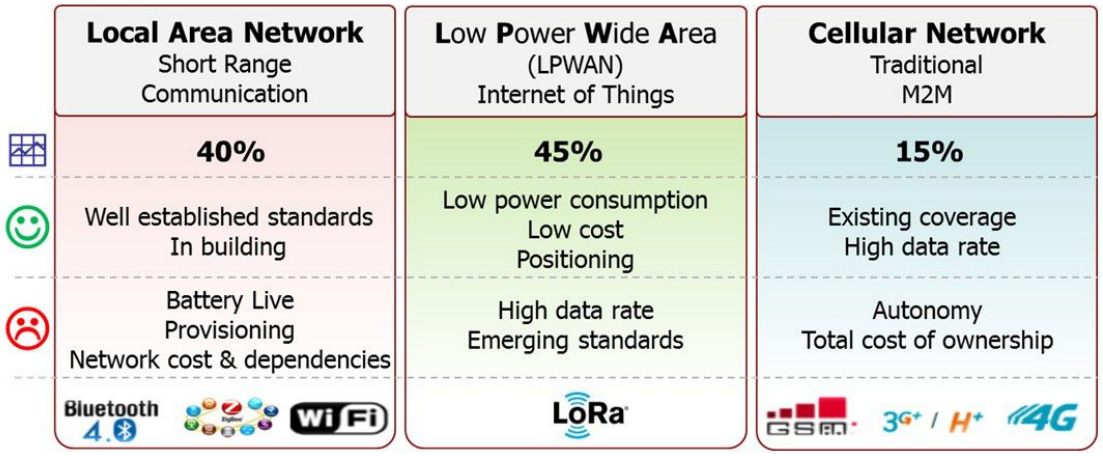
Each LoRa gateway has the ability to handle up to millions of nodes. The signals can span a significant distance, which means that there is less infrastructure required, making constructing a network much cheaper and faster to implement.

LoRa also features an adaptive data rate algorithm to help maximize the nodes life and network capacity. The LoRa protocol includes a number of different layers including encryption at the network, application and device level for secure communications.

Specification	LoRa Feature
Range	2-5Km Urban (1.24-3.1 mi), 15Km suburban (9.3 mi)
Frequency	ISM 868/915 MHz
Standard	IEEE 802.15.4g
Modulation	Spread spectrum modulation type based on FM pulses which vary.
Capacity	One LoRa gateway takes thousands of nodes
	Long life
LoRa Physical layer	Frequency, power, modulation and signaling between nodes and gateways

Where does LPWAN fit?

One technology cannot serve all of the projected applications and volumes for IoT. WiFi and BTLE are widely adopted standards and serve the applications related to communicating personal devices quite well. Cellular technology is a great fit for applications that need high data throughput and have a power source. LPWAN offers multi-year lifetime and is designed for sensors and applications that need to send small amounts of data over long distances a few times per hour from varying environments.



Important Factors in LPWAN?

The most critical factors in a LPWAN are:

- Network architecture
- Communication range
- lifetime or low power
- Robustness to interference
- Network capacity (maximum number of nodes in a network)
- Network security
- One-way vs two-way communication
- Variety of applications served

Reference: https://docs.wixstatic.com/ugd/eccc1a_ed71ea1cd969417493c74e4a13c55685.pdf

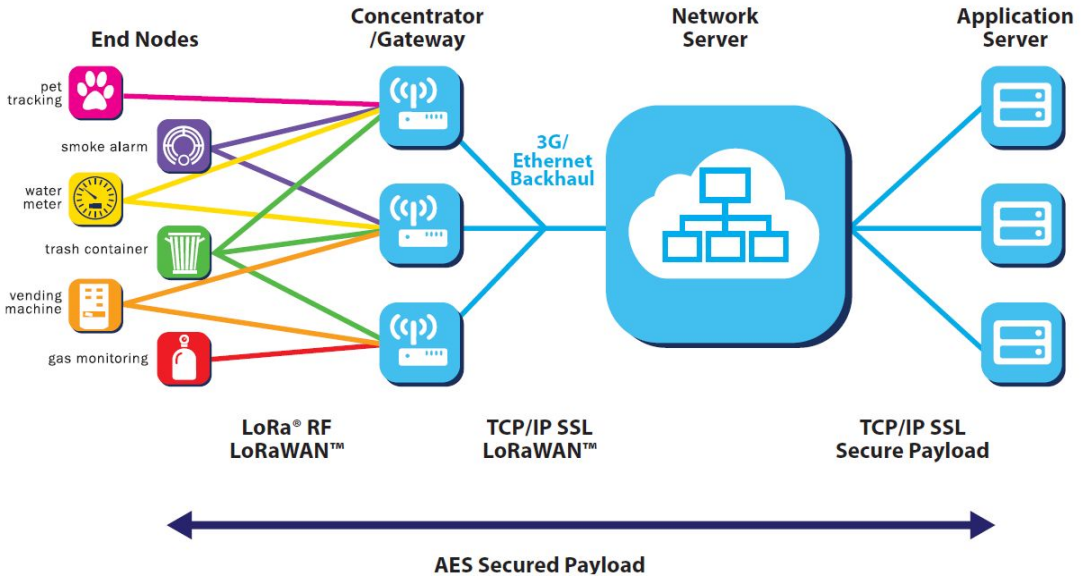
What is LoRaWAN™?

LoRaWAN™ defines the communication protocol and system architecture for the network while the LoRa® physical layer enables the long-range communication link. The protocol and network architecture have the most influence in determining the lifetime of a node, the network capacity, the quality of service, the security, and the variety of applications served by the network.

Application				
LoRa® MAC				
MAC options				
Class A (Baseline)	Class B (Baseline)	Class C (Continuous)		
LoRa® Modulation				
Regional ISM band				
EU 868	EU 433	US 915	AS 430	—

Network Architecture

Many existing deployed networks utilize a mesh network architecture. In a mesh network, the individual end-nodes forward the information of other nodes to increase the communication range and cell size of the network.



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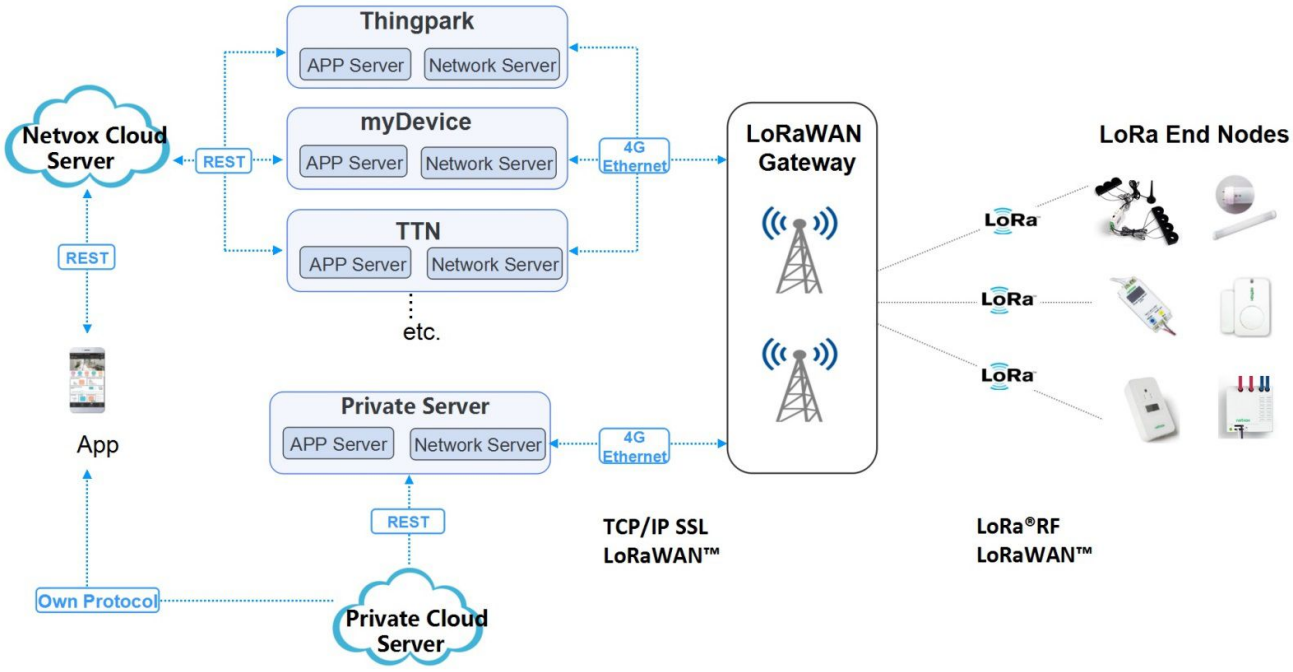
Netvox Network Architecture

While this increases the range, it also adds complexity, reduces network capacity, and reduces lifetime as nodes receive and forward information from other nodes that is likely irrelevant for them. Long range star architecture makes the most sense for preserving lifetime when long-range connectivity can be achieved.



In a LoRaWAN™ network nodes are not associated with a specific gateway. Instead, data transmitted by a node is typically received by multiple gateways. Each gateway will forward the received packet from the end-node to the cloud-based network server via some backhaul (either cellular, Ethernet, satellite, or Wi-Fi).

The intelligence and complexity is pushed to the network server, which manages the network and will filter redundant received packets, perform security checks, schedule acknowledgments through the optimal gateway, and perform adaptive data rate, etc.

If a node is mobile or moving there is no handover needed from gateway to gateway, which is a critical feature to enable asset tracking applications–a major target application vertical for IoT.

Reference: https://docs.wixstatic.com/ugd/eccc1a_ed71ea1cd969417493c74e4a13c55685.pdf

LoRaWAN™ Regional Summery

The LoRaWAN™ specification varies slightly from region to region based on the different regional spectrum allocations and regulatory requirements. The LoRaWAN™ specification for Europe and North America are defined, but other regions are still being defined by the technical committee.

Joining the LoRa® Alliance as a contributor member and participating in the technical committee can have significant advantages to companies targeting solutions for the Asia market.

	Europe	North America	China	Korea	Japan	India
Frequency band	867-869MHz	902-928MHz	470-510MHz	920-925MHz	920-925MHz	865-867MHz
Channels	10	64 + 8 +8	In definition by Technical Committee	In definition by Technical Committee	In definition by Technical Committee	In definition by Technical Committee
Channel BW Up	125/250kHz	125/500kHz				
Channel BW Dn	125kHz	500kHz				
TX Power Up	+14dBm	+20dBm typ (+30dBm allowed)				
TX Power Dn	+14dBm	+27dBm				
SF Up	7-12	7-10				
Data rate	250bps- 50kbps	980bps-21.9kpbs				
Link Budget Up	155dB	154dB				
Link Budget Dn	155dB	157dB				

Reference: https://docs.wixstatic.com/ugd/eccc1a_ed71ea1cd969417493c74e4a13c55685.pdf

Intellectual System Based on LoRa Technology

LoRaWAN™ Features

Long Range

1. Greater than cellular
2. Deep indoor coverage
3. Star topology

Max Lifetime

4. Low power optimized
5. 10-20yr lifetime
6. >10x vs cellular M2M

Multi-Usage

7. High capacity
8. Multi-tenant
9. Public network

Low Cost

10. Minimal infrastructure
11. Low cost end node
12. Open SW

Reference: https://docs.wixstatic.com/ugd/eccc1a_ed71ea1cd969417493c74e4a13c55685.pdf

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Note.

*1. Actual data sheet value may vary depending on developing progress and other variables. Please contact sales department for detail data sheet document.

Frequency Characters for All Netvox LoRa Devices

The LoRa frequency characters are shown as below. Applicable to all Netvox LoRa Devices which are equipped with SX1276 wireless communication module.

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LoRa Frequency Characters

TX Power	19dBm±1dBm
Rx 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	Up to10 km, the actual transmission distance depends on the environment.
Data Transfer Rate	0.3kbps～50kbps
Spread Technique	LoRa/FSK
Available Frequency	EU863-870，US902-928，AU915-928， KR920-923，AS923，CN470-510 Configured before shipment

Frequency Characters for All Netvox LoRa Devices

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Wireless IoT Controller

R206

R206 is a highly reliable cloud-based wireless smart gateway. As the core of the entire wireless smart IoT system, R206 is the first to achieve the perfect combination of cloud technology, WiFi mobile networking technology and LoRa wireless IoT technology.

Third-party software can control the device through R206, such as R206 and Android client can achieve mode control. At the same time, users can monitor all changes in the network by accessing R206 through the cloud.

** Only used in Netvox M2 private LoRa Solution

** The LoRaWAN gateway is not supported

Technical Parameter

Electric

Working power	Input: 100～240V AC Output:12V/1.5A DC
Power consumption	2.2W（28mA @230V 50Hz）(typical)

Physical

Dimensions	124mm * 155mm * 65mm
Shell Material	PC510
Operating Temperature	-10℃～50℃
Storage Temperature	-20℃～60℃
Working Humidity	0～95%RH
Storage Humidity	0～95%RH

Frequency

	LoRa	Wifi
Frequency Bandwidth	410-525MHz 862-1020MHz (User can select the desired frequency band)	2.4 to 2.4835 GHz
Communication Channel	(Users can choose according to their needs)	11, 13 or 1 4 C h1 — 2412MHz C h2 — 2417MHz C h3 — 2422MHz～ Ch1 4 —2477MHz

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Dual-Mode IoT Controller

R206A

R206A is a smart gateway for Samrt and high reliability. As the core of the entire Samrt system, R206A is the first to achieve the perfect combination of cloud technology / WiFi and Netvox LoRa / ZigBee proprietary protocol Internet of Things.

R206A acts as a gateway in the LoRa network and can be automatically screened and configured. Third-party software can control the device through it, for example, the Android client side can achieve mode control. At the same time, users can monitor all the changes of devices through the cloud access R206A.

** Only used in Netvox M2 private LoRa Solution

** The LoRaWAN gateway is not supported

Technical Parameter

Electric

Working Power	Input: 100～240V AC Output: 12V/1.5A DC（Power Adapter)
Power Consumption	2.2W（28mA @230V 50Hz） (typical)

Frequency

	LoRa	ZigBee	WiFi
Frequency Range	410-525MHz 862-1020MHz (User can select the desired frequency band)	2.4～2.4835 GHz	2.4～2.4835 GHz
Communication Channel	(Users can choose according to their needs)	16 ISM 11th ～26th channel	11, 13 or 14 Ch1—2412MHz Ch2—2417MHz Ch3—2422MHz ～ Ch14—2477MHz
Bandwidth	TBD	2MHZ	20/40MHz
Antenna Type	Built-in antenna	Built-in antenna	Built-in PCB antenna
TX Power	19dBm±1dBm (maximum, can be set according to requirements)	7dBm （Max.）	18.5dBm (maximum, can be set according to requirements)

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Door/Window Sensor

R311A

LoRa Alliance Certified

When the window is opened, R311A sends alarm message to the control center. R311A utilizes the latest ultra-low power consumption technology and requires no wiring. It requires just button batteries to support its operation.

The communication method is compatible with LoRaWAN™ protocol (ClassA).

R311A has been LoRaWAN ™ certified.

Technical Parameter

Input Power	2 x 3.0V CR2450 button batteries
Working Voltage	DC 2.4V～3V
Standby Current	12uA/3.0V
Transmitting Current (max)	120mA/3.0V
Receiving Current (max)	11mA @3.0V
Low Voltage Threshold	2.4V
Voltage Measurement Accuracy	±0.1V

Main Body Dimension	57mm x 35mm x 15mm
Magnet Dimension	43mm x 13mm x 12mm
Weight	43.8g
Operating Temperature	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Asset Sensor

R311D

The device is a simple positioning function (which can detect the position status of the device), periodically reports RSSI and SNR information to the gateway for processing and can locate the position status of the device according to the reported RSSI and SNR information, and adopts SX1276 wireless communication module.

Technical Parameter

Input Power	2pcs 3.0V CR2450 button battery
Working Voltage	DC 2.4V～3.0V
Standby Current	16uA /3.0V
Transmitting Current (max)	120mA / 3.0V
Receiving Current (max)	11mA / 3.0V
Battery Voltage Measurement Accuracy	±0.1V

Physical

Main Body Dimension	57mm x 35mm x 15.2mm
Weight	48.9 g
Operating Temperature	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Door Bell Button

R312

The wireless doorbell switch of this device adopts a tact switch, which is easy to operate and easy to carry. When the wireless doorbell switch is pressed, the module's IO port KEY1 (the 19th pin of U1) detects a low level. When the wireless doorbell switch is released, the module's IO port KEY1 (the 19th pin of U1) A high level was detected.

Main Feature

- 2 section 3.0V CR2450 button batteries in parallel
- Adopt SX1276 wireless communication module
- Simple operation, no wiring required

Application scenario

- Villa; office; hotel; apartment

Technical Parameter

Input Power	2 sections of 3V CR2450 button batteries in parallel (single CR2450 battery capacity 620mah)
Working Voltage	DC 2.4V～3V
Standby Current	14uA/3.0V
Transmitting Current (max)	120mA/3.0V
Receiving Current (max)	11mA @3.0V
Low Voltage Threshold	2.4V
Voltage Measurement Accuracy	±0.1V

Main Body Dimension	57mm x 35mm x 15.2mm
Weight	45g
Operating Temperature	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Emergency Button

R312A

The R312A is an emergency button switch device that detects the closing or opening signal of the emergency button switch and sends an alarm signal to the gateway for processing. It uses the SX1276 wireless communication module.

Main Feature

- 2 3.0V CR2450 button batteries in parallel
- Adopt SX1276 wireless communication module
- Easy to fix and carry with key ring

Application scenario

- Emergency button switch device
- Fire alarm
- other

Technical Parameter

Input Power	2 sections of 3V CR2450 button batteries in parallel (single CR2450 battery capacity 620mah)
Working Voltage	DC 2.4V～3V
Standby Current	13uA/3.0V
Transmitting Current (max)	120mA/3.0V
Receiving Current (max)	11mA @3.0V
Low Voltage Threshold	2.4V
Voltage Measurement Accuracy	±0.1V

Main Body Dimension	57mm x 35mm x 15.2mm
Weight	45g
Operating Temperature	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Reed Switch Open/Close Detection Sensor

R718F

R718F utilizes a reed switch to detect whether two objects are separated or not. An example of R718F's application is to detect the state of a door or window for security purposes. It is based on SX1276 wireless communication module, and the communication is fully compatible with LoRaWAN™ protocol (Class A).

Main Feature

- Body protection class IP65, sensor protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- Battery life is 5 years (condition: ambient temperature 25 ° C, 15 min report once, txpower = 20 dBm, LoRa spreading factor SF = 10)

Application scenario

- Opening and closing objects such as doors and windows

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	20 uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V
Low Voltage Threshold	3.2V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	141g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 2-Gang Reed Switch Open/Close Detection Sensor

R718F2

R718F2 utilizes a reed switch to detect whether two objects are separated or not. An example of R718F2 application is to detect the state of a door or window for security purposes. It is based on SX1276 wireless communication module, and the communication is fully compatible with LoRaWAN™ protocol (Class A).

Main Feature

- Body protection class IP65, sensor protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- Battery life is 5 years (condition: ambient temperature 25 ° C, 15 min report once, txpower = 20 dBm, LoRa spreading factor SF = 10)
- 2-way reed switch sensor

Application scenario

- Opening and closing objects such as doors and windows

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	26uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V
Low Voltage Threshold	3.2V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	150g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Item Movement Sensor

R311E

The output current of the photosensor changes in the same direction as the ambient light intensity changes, and the module can detect the light intensity signal according to the change signal. The moving sensor is equivalent to a closed switch when it is in a stationary state. When it is in a tilting or vibrating state, the moving sensor is in a constant switching state, and the module detects a rapidly changing pulse signal to judge the object to vibrate or move.

Main Feature

- 2 3.0V CR2450 button batteries in parallel
- Adopt SX1276 wireless communication module

Application scenario

- Smart farm; smart home; other

Technical Parameter

Input Power	2 sections of 3V CR2450 button batteries in parallel (single CR2450 battery capacity 620mah)
Working Voltage	DC 2.4V～3V
Standby Current	12uA/3.0V
Transmitting Current (max)	120mA/3.0V
Receiving Current (max)	11mA @3.0V
Low Voltage Threshold	2.4V
Voltage Measurement Accuracy	±0.1V

Main Body Dimension	57mm x 35mm x 15.2mm
Weight	45g
Operating Temperature	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Light Sensor

R311G

R311G has a built-in photosensitive sensor, and it measures external ambient light intensity. It can work with other devices to perform wireless dimming functions, and the wireless communication is compatible with LoRaWAN™ protocol (ClassA).

R311G is an ambient light sensor which reports the light level periodically.

R311G has been LoRaWAN ™ certified.

Main Feature

- Built-in light sensor
- Easy to install and compact
- Provides years of battery life with just two button batteries
- Communication distance up to 10Km

Technical Parameter

Input Power	2 x 3.0V CR2450 button batteries
Operating Power	DC 2.4V～3V
Standby Current	12uA/3.0V
Transmitting Current (max)	120mA/3.0V
Receiving Current (max)	11mA/3.0V
Brightness Detecting Range	1～3000LUX
Low Voltage Threshold	2.4V
Voltage Measurement Accuracy	±0.1V

Main Body Dimension	57mm x 35mm x 15mm
Weight	32.3g
Operating Temperature	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Object Fall Detection Sensor

R311K

This device is an object fall detection sensor. When the device (defaults to the vertical direction) has a tilt of 45 degrees or more in any direction, a tilt signal will be issued. The detected data is transmitted to other devices for display via the wireless network .

Main Feature

- Detect home electrical device falls and power protection
- Columns, poles and other applications such as tilt sensing, angle detection, direction discrimination, etc.

Technical Parameter

Electrical Characteristics

Input power source	2 x 3.0V CR2450 button battery
Work electric voltage range	DC +2. 4 V to 3.0V
Standby Current	TBD
Emission current (max)	120mA / 3.0V
Receiving current (max)	11mA/ 3.0V
Battery measurement accuracy	± 0.1V

Tilt Sensor Characteristics

Contact capacity	3-24VDC / less than 10mA
Conversion angle	45±5 degrees
Contact resistance	Less than 10 ohms
Insulation resistance	More than 100 megohms
Operating temperature	-40°C to 85 °C
Installation type	Suitable for PCB at vertical state

Note: Conversion angle ＝ 45±5 degrees, error may be due to installation or other factors. Please confirm whether it is applicable before use.

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Water Leak Detector

R311W

Netvox Wireless Water Sensor R311W is a LoRaWAN™ device compatible with LoRaWAN™ protocol (ClassA). When the R311W sensor detects the leak, it will send an alarm message to the gateway. When the sensor detects no leaks, it will send a message that shows no leak to the gateway. R311W has been LoRaWAN™ certified.

Main Feature

- Power: 2 x cr2450 button battery
- Simple device configuration and easy operation

Technical Parameter

Input Power	2 x 3.0V CR2450 button batteries
Operation Voltage	DC +2.4V～3.0V
Standby Current	12uA/3.0V
Transmitting Current (max)	120mA/3.0V
Receiving Current (max)	11mA @3.0V
Low Voltage Threshold	2.4V
Voltage Measurement	±0.1V

Water Leakage Material	UL2468 28AWG
Water Line Maximum Temperature	80°C
Water Line Weight	5g
Water Line Core resistance	1.3 Ohm / meter
Water Line Diameter	1mm
Water Line Length	1000mm (±5mm)
Water Line Flame Rating	VW-1

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Occupancy & Temperature & Light Sensor

RB11E

RB11E is a long distance LoRaWAN™ PIR-based device (Class A). RB11E combines motion detection, temperature, and illumination sensors. With real-time motion detection, RB11E senses the movement of people, animal or other objects, and if a person or an object moves in the monitoring area, RB11E will detect the infrared signal and report the status information to the gateway. Users can execute different instructions or scenes according to different configurations. RB11E also reports temperature and light level. It is mainly used for indoor detection.

RB11E has been LoRaWAN™ certified.

Main Feature

- 2 ER14505 lithium batteries (3.6V / section) parallel power supply
- Detection angle: 110 degrees horizontally and 60 degrees vertical.
- Mechanical rotation angle is 40 degrees
- Built-in tamper switch, light sensor, temperature sensor
- Detection speed: ⩾0.2 m (M) / sec (S) movement speed has alarm output

Application scenario

- Building automation
- Condition monitoring
- Predictive maintenance
- Security, medical, etc.

Power Supply	2pcs of 3.6V ER14505 AA
Operating Voltage Range	3V～3.6V
Standby Current	110uA
Transmitting Current (max)	120mA
Receiving Current (max)	11mA
Measurement Accuracy	±0.1V

Dimension	78mm*78.8mm*82.2mm
Weight	125.8g
Operating Humidity	＜90%RH
Operating Temperature	-20°C ～ 55°C
Storage Temperature	-40°C ～ 85°C
Built-in Devices	Tamper switch, light sensor, temperature sensor

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Smoke Detector

RA02A

RA02A is a smoke detection alarm. RA02A has built-in photoelectric smoke detector and buzzer, which can detect the smoke concentration in the environment. When the smoke density exceeds the preset value, it will generate a high sound pressure level alarm sound. At the same time, the alarm data can be transmitted to the wireless network.
The device is a LoRaWAN™ device compatible with LoRaWAN™ protocol (Class A).

Main Feature

- Compatible with the LoRaWAN standard protocol.
- Powered by 2 AAA alkaline batteries.

Application scenario

- Smart city and intelligent building
- Warehouse management
- Forest fire prevention
- Fire protection by train, high-speed rail, airplane, etc.

Technical Parameter

Input power	2 x1.5V AAA alkaline batteries
Life time	3 years (25°C, heart beat: 60 mins , txpower=20dBm, LoRa SF=10)
Standby current	12uA @3VDC
Working current while alarming	580mA/3VDC
Alarming dBm	85dBm @3m
Alarming concentration	0.65
Product Size:	D106mm , H36mm
Operating temperature:	-20℃ ~ 55℃
Environment humidity:	<90%RH (no condensation)
Storage temperature:	-40℃ ~ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless CO Detector

RA02C

RA02C is a wireless control alarm device for smart home and high reliability. It adopts wireless communication method conforming to the LoRaWAN protocol standard.

RA02C is a device for the detection of harmful gases in the home environment. It is suitable for the detection of CO (carbon monoxide). When the concentration exceeds the preset value, it will trigger the alarm and fully comply with the LoRaWAN protocol standard.

Main Feature

- Compatible with the LoRaWAN standard protocol.
- Powered by 2 AAA alkaline batteries.

Application scenario

- Carbon monoxide alarm products for families, apartments, schools, hotels, etc.

Technical Parameter

Power Input	2*AAA alkaline battery
Standby Current	18uA/3VDC
Average Operating Current	70uA/3VDC
Current While alarming	20mA/3VDC
Alarm Sound Intensity	85dBm at 3m
CO Detection Concentration Range	0 ~ 1000ppm

Product Size:	D106mm , H36mm
Operating temperature:	-20℃ ～ 55℃
Environment humidity:	<90%RH (no condensation)
Storage temperature:	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Emergency Push Button

RB02I

RB02I sends an alert to the gateway when the button is pushed. With a silicone cover, it is waterproof and widely used for smart home and building applications with high reliability. It features low standby power consumption, and the communication is fully compliant with the LoRaWAN™ protocol (Class A).

Main Feature

- Compatible with the LoRaWAN standard protocol.
- Powered by 2 AAA alkaline batteries.
- Silicone waterproof case

Application scenario

- Customer service request button
- Hotel/Motel Front Desk Call Button
- Access call button

Technical Parameters

Power supply	2 x 1.5V AAA batteries
operating voltage	2.1V-3V
Standby current	14uA
Transmitting current (max)	120mA/3.0V
Receiving current (max)	11mA/3.0V

Dimension	82mm*82mm*15mm
Working Temp	-20° C ～ +55° C
Storage Temp	-40° C ～ +85° C
Humidity Detecting Range	＜90%RH

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Siren

R602A

R602A is an intelligent wireless alarm that can communicate with other devices through wireless network. It has high-power speakers and high-brightness LEDs for sound and light alarms. It uses SX1276 wireless communication module. R602A type does not carry GSM communication function.

Main Feature

•With high-power speakers and high-brightness LEDs, it can be used as an audible and visual alarm indicator

Application scenario

- Fire alarm
- Anti-theft
- Access call

Technical Parameter

Input Power	DC +12V
Working Current (max)	250mA(DC 12V)
Standby Current (max)	30mA(DC 12V)
Alarm sound level (at three meters)	>=80dB
TX Power	19dBm±1dBm
Rx Sensitivity	-136dBm (LoRa，Spreading Factor=12，Bit Rate=293bps) -121dBm (FSK,Frequency deviation=5kHz, Bit Rate=1.2kbps)
Available Frequency	EU863-870, US902-928, AU915-928 KR920-923, AS923, CN470-510 Configured before shipment

Dimension	Φ85mm * 52mm
Environment Temperature	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Vibration Sensor, Rolling Ball Type

R718DA

R718DA is equipped with an external rolling ball type vibration sensor. When the vibration sensor moves or vibrates, R718DA can detect vibration or moving signals and send an alert to data center through LoRaWAN™. It is fully compatible with LoRaWAN™ protocol (Class A).

Main Feature

- 2 ER14505 battery AA SIZE (3.6V / section) parallel power supply
- Body protection class IP65, sensor protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object

Application scenario

- To detect vibration or moving equipment; burglar alarm.

Electric

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Battery Life	5 years (Conditions: ambient temperature 25 °C, 15 min heartbeats, txpower = 20dBm, LoRa spreading factor SF = 10)
Sleeping Mode	20uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V

Vibration Sensor

Vibration Sensor Case Size	L:43mm*W:13mm*H:12mm
Vibration Sensor Maximum Voltage	5V
Sensor Switch Life	Up to 100,000 times
Vibration Sensor Sensitivity	When placed horizontally, any shaking can trigger the device. When the pilot electrical end (without foot end) is placed downward, it is not easily to be triggered.
Vibration Sensor Characteristic (Dual ball type single direction tilt sensitive trigger sensor)	When the vibration sensor is tilted and the tilting angle is greater than 10 degrees, it will be OFF mode. When the tilt level changes, and the triggering end is lower than tilt angle 10 degrees, it will be ON state. The module can detect open circuit OFF state and closed circuit ON state signal to detect vibration or move.
External Cable Length	1 meter

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 2-Gang Vibration Sensor, Rolling Ball Type

R718DA2

When the vibration sensor moves or vibrates, the R718DA2 can detect vibrations or moving signals and transmit the detected data to other devices through the wireless network. The SX1276 wireless communication module is used.

Main Feature

- 2 ER14505 battery AA SIZE (3.6V / section) parallel power supply
- Body protection class IP65, sensor protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- 2-way vibration sensor

Application scenario

- To detect vibration or moving equipment; burglar alarm.

Electric

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	26uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V
Low Voltage Threshold	3.2V

Vibration Sensor

Vibration Sensor Case Size	L:43mm*W:13mm*H:12mm
Vibration Sensor Maximum Voltage	5V
Sensor Switch Life	Up to 100,000 times
Vibration Sensor Sensitivity	When placed horizontally, any shaking can trigger the device. When the pilot electrical end (without foot end) is placed downward, it is not easily to be triggered.
Vibration Sensor Characteristic (Dual ball type single direction tilt sensitive trigger sensor)	When the vibration sensor is tilted and the tilting angle is greater than 10 degrees, it will be OFF mode. When the tilt level changes, and the triggering end is lower than tilt angle 10 degrees, it will be ON state. The module can detect open circuit OFF state and closed circuit ON state signal to detect vibration or move.
External Cable Length	1 meter

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Vibration Sensor, Spring Type

R718DB

R718DB is equipped with an external spring type vibration sensor.. When the vibration sensor moves or vibrates, R718DB can detect vibration or moving signals and send an alert to data center through LoRaWAN™.
It is fully compatible with LoRaWAN™ protocol (Class A).

Main Feature

- 2 ER14505 battery AA SIZE (3.6V / section) parallel power supply
- Body protection class IP65, sensor protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object

Application scenario

- To detect vibration or moving equipment; burglar alarm.

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	23uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V
Low Voltage Threshold	3.2V

Vibration Sensor Case Size	L:43mm*W:13mm*H:12mm
Vibration Sensor Maximum Voltage	5V
Sensor Switch Life	Up to 200,000 times
Vibration Sensor Working Principle	When it is at rest, it is in the open state OFF state. When the external force is touched to reach the corresponding vibration force, or when the moving speed reaches the appropriate centrifugal force, the conductive pin will instantly reach the ON state. When the external force disappears, the switch returns to the OFF state.

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 2-Gang Vibration Sensor, Spring Type

R718DB2

R718DB2 is equipped with an external spring type vibration sensor.. When the vibration sensor moves or vibrates, R718DB2 can detect vibration or moving signals and send an alert to data center through LoRaWAN™.
It is fully compatible with LoRaWAN™ protocol (Class A).

Main Feature

- 2 ER14505 battery AA SIZE (3.6V / section) parallel power supply
- Body protection class IP65, sensor protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- 2-way vibration sensor

Application scenario

- To detect vibration or moving equipment; burglar alarm.

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	23uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V
Low Voltage Threshold	3.2V

Vibration Sensor Case Size	L:43mm*W:13mm*H:12mm
Vibration Sensor Maximum Voltage	5V
Sensor Switch Life	Up to 200,000 times
Vibration Sensor Working Principle	When it is at rest, it is in the open state OFF state. When the external force is touched to reach the corresponding vibration force, or when the moving speed reaches the appropriate centrifugal force, the conductive pin will instantly reach the ON state. When the external force disappears, the switch returns to the OFF state.

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Push Button Interface

R718T

The device is connected to an external push button device (2 lines are connected to the 2 end of the push button) that can detect the signal when the button is pushed.

It uses SX1276 wireless communication module, and the communication is fully compatible with LoRaWAN™ protocol (Class A).

Main Feature

- 2 sections ER14505 battery AA SIZE (3.6V / section) parallel power supply
- Body protection rating IP65, sensor protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object

Application scenario

- Customer service request button
- Hotel/Motel Front Desk Call Button
- Access call button
- Emergency call button

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	22 uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	141g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 2-Input Push Button Interface

R718T2

The device is connected to an external push button device (2 lines are connected to the 2 end of the push button) that can detect the signal when the button is pushed.

It uses SX1276 wireless communication module, and the communication is fully compatible with LoRaWAN™ protocol (Class A).

Main Feature

- 2 sections ER14505 battery AA SIZE (3.6V / section) parallel power supply
- Body protection rating IP65, sensor protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- External 2-way emergency switch button

Application scenario

- Customer service request button
- Hotel/Motel Front Desk Call Button
- Access call button
- Emergency call button

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	24uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	150g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Light Sensor

R311B

The R311B device has a built-in Wireless Light Sensor that can be used for ambient light intensity detection.

The R311B uses a photosensor. The output current of the photosensor changes in the same direction as the ambient light intensity changes. By detecting the change in the input level value, the corresponding illumination intensity is detected.

It uses the SX1276 wireless communication module.

Application scenario

- Villa; hotel; office; apartment

Technical Parameter

Input Power	2pcs 3.0V CR2450 button battery (Single CR2450 battery capacity 620mah)
Working Voltage	DC 2.4V～3V
Standby Current	12uA/3.0V
Transmitting Current (max)	120mA/3.0V
Receiving Current (max)	11mA @3.0V
Low Voltage Threshold	2.4V
Battery Voltage Measurement Accuracy	±0.1V
Detecting Illumination Range	1～3000LUX

Main Body Dimension	57mm x 35mm x 15.2mm
Weight	45g
Operating Temperature	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Dry Contact Sensor

R311CA

Netvox wireless dry contact sensors can be used to detect contact between two wired contact points.
It can realize wireless alarm and other functions through built-in wireless module, and is compatible with LoRaWAN protocol.

It can be easily networked with other related devices.
The R311CA is durable and ensures optimum use and is a low power consumption device. Due to their small size, they can be installed anywhere, they are wireless, so they take up very little space.

Application scenario

•Condition monitoring of doors and windows such as home or business

Technical Parameter

Input Power	2 x 3.0V CR2450 button batteries
Working Voltage	DC 2.4V～3V
Standby Current	10uA /3.0V
Transmitting Current (max)	120mA/3.0V
Receiving Current (max)	11mA @3.0V
Voltage Measurement Accuracy	±0.1V

External Wire Specification

Wire material	UL2468 28AWG
Wire maximum temperature	80° C
Wire weight	5g
Maximum outer diameter of the wire	1mm
Wire length	1000mm（±5mm）
Wire flame resistance rating	VW-1

Physical

Main Body Dimension	57mm x 35mm x 15.2mm
Weight	48.9 g

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Window Sensor with Glass Break Detector

R311CB

The built-in reed switch and the externally connected reed switch are in a series connection state; when the reed switch state is to be detected, a high level state is detected when all the reed switches are closed.
Similarly, when the reed switch is not fully closed, it detects a low level state. When the glass is broken, the glass breakage detection will change its resistance value, and there is a high and low level change for its detection port.

Application scenario

•Condition monitoring of doors and windows such as home or business

Technical Parameter

Input Power	2pcs 3.0V CR2450 button battery
Working Voltage	DC 2.4V～3.0V
Standby Current	10uA /3.0V
Transmitting Current (max)	120mA / 3.0V
Receiving Current (max)	11mA / 3.0V
Battery Voltage Measurement Accuracy	±0.1V

Reed Switch Sensor Specification

Sensor Case Size	L:42mm*W:13mm*H:12mm
Sensor Characteristic	Inside the magnetic rang, it is at on state (conducting). When out of the magnetic range, it is at off state (non-conducting). Sensing distance inside magnetic rang is 2cm.
Reed solderability	Good solderability
External Cable Length	1 meter

Physical

Main Body Dimension	57mm x 35mm x 15.2mm
Weight	45 g
Operating Temperature	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 2-Gang Door/Window Sensor

R311CC

The R311CC device is equipped with two external reed switches, which can be used for door and window switch state detection. It can be easily networked with other related devices. The R311CC is durable and ensures optimum use and is a low power consumption device. Due to their small size, they can be installed anywhere. They are wireless so they take up very little space.

Application scenario

- Condition monitoring of doors and windows such as home or business

Input Power	2pcs 3.0V CR2450 button battery
Working Voltage	DC 2.4V～3.0V
Standby Current	10uA /3.0V
Transmitting Current (max)	120mA / 3.0V
Receiving Current (max)	11mA / 3.0V
Battery Voltage Measurement Accuracy	±0.1V

Reed Switch Sensor Specification

Sensor Case Size	L:42mm*W:13mm*H:12mm
Sensor Characteristic	Inside the magnetic rang, it is at on state (conducting). When out of the magnetic range, it is at off state (non-conducting). Sensing distance inside magnetic rang is 2cm.
Reed solderability	Good solderability
External Cable Length	1 meter

Physical

Main Body Dimension	57mm x 35mm x 15.2mm
Weight	48.9 g
Operating Temperature	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Seat Sensor

R31WA

The NETVOX Wireless Seat Sensor R311WA is a device that detects the presence of a seat and is compatible with the LoRaWAN protocol. When any sensor detects someone in the seat, the R311WA sends a message to the gateway. When sensors detect that there is no one in the seat, it sends a message back to the gateway.

Application scenario

- Theater seat detection
- Conference room seat detection
- Large classroom seating detection
- Performance venue detection

Input Power	2pcs 3.0V CR2450 button battery
Working Voltage	DC 2.4V～3.0V
Standby Current	12uA /3.0V
Transmitting Current (max)	120mA / 3.0V
Receiving Current (max)	11mA / 3.0V
Battery Voltage Measurement Accuracy	±0.1V

Seat Sensor Specification

Maximum working voltage	20V (DC)
Maximum operating current	50mA
Maximum output resistance	50Ω
Substrate pressure resistance	2KV (DC)
Durability	At least 150,000 times
Pressure range	Minimum value is 200-300g

External Wire Specification

Wire material	UL1571 26AWG
Wire maximum temperature	80° C
Maximum outer diameter of the wire	1mm
Wire length	1000mm（±5mm）
Wire flame resistance rating	VW-1

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Short-Range Occupancy Sensor

R718PQ

The R718Q is a wireless communication device that detects toilet occupancy. The device has a built-in PIR sensor (pyroelectric human body infrared sensor) to detect whether someone has entered; the detected data is transmitted to other devices through the wireless network, and the SX1276 wireless communication module is used.

Application scenario
- Occupancy detection
- other

Technical Parameter

Electric

Power supply	2 ER14505 lithium batteries (3.6 V, 2400 mAh /section) in parallel
Battery life	Battery life is 4.5 years (condition: ambient temperature 25°C, 15 min report once, txpower=20 dBm, LoRa spreading factor SF = 10)
Standby current	About 34 uA
Wake-up current	6.3mA @3.3V
Low battery alarm	3.2V
RF receiving current	11mA @3.3V
RF emission current	120mA @3 .3 V

PIR Sensor

Model	AS312
Power supply	+3VDC
Measuring distance	3.8M (from the main unit)

Physical Characteristics

Size	L: 112 mm*W: 65 mm*H: 32 mm
Body weight	About 150g
Ambient temperature range	-20°C to 55°C
Ambient humidity range	<90% RH (no condense)
Storage temperature range	-40°C ~ 85°C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Flush Toilet /Washing Liquid Bottle/ Toilet Paper Detection Sensor

R718VA

R718VA is a device to detect the status of toilet water, hand sanitizer level, presence or absence of tissue. This device is connected with a non-contact capacitive sensor can be mounted to the exterior of the container, without direct contact with the object to be detected, which may detect the current water level of positions mounted, or the presence or absence of liquid soap or toilet paper.

- Flush toilet water level detection
- Hand sanitizer level detection
- Whether toilet paper presence or absence
- Other

Technical Parameter

Electric

Power supply	2 ER14505 lithium batteries (3.6 V, 2400 mAh / section) in parallel
Battery life	Battery life are 3.5 years (condition: ambient temperature 25°C, report once every 15 minutes, txpower = 20 dBm , LoRa spreading factor SF = 10)
Standby current	About 30 uA
Wake-up current	6.3mA @3.3V
Low battery alarm	3.2V
RF receiving current	11 mA @3.3V
RF emission current	120mA @3 .3 V

Non-contact Capacitive Sensor

Model	XKC-Y25-V
Power supply	+5 V
Working temperature	-5~100°C
Working humidity	5%~100%
Sensing container (non-metal) wall thickness	≤20mm (glass, plastic, non-absorbent ceramic, acrylic, rubber, etc. or composite materials thereof)
Material	ABS
Waterproof level	IP67
* Sensitivity	The sensitivity of the non-contact capacitive sensor must be adjusted in the field according to different liquids or objects and the thickness of non-metallic containers.

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Flush Toilet /Washing Liquid Bottle/ Toilet Paper/Non-metallic Pipe Detection Sensor

R718VB

R718VB can detect the toilet water level, hand sanitizer level, presence or absence of toilet paper, it may also be applied to non-metallic pipes (pipe diameter D≥11MM) liquid level detector. This device is connected with a non-contact capacitive sensor which can be mounted to the exterior of the container, without direct contact with the object to be detected, which may detect the current position of liquid level, or the presence or absence of liquid soap, toilet paper.

- Flush toilet water level detection
- Hand sanitizer level detection
- Toilet paper presence or absence
- Non-metallic pipe liquid level detection
- Other

Technical Parameter

Electric

Power supply	2 ER14505 lithium batteries (3.6V, 2400 mAh / section) in parallel
Standby current	About 30 uA
Wake-up current	6.3mA @3.3V
Low battery alarm	3.2V
RF receiving current	11 mA @3.3V
RF emission current	12 0mA @3 .3 V

Non-contact Capacitive Sensor

Model	XKC-Y26-V
Power supply	+ 5 V
Working temperature	-5~105 °C
Working humidity	5%~100%
Induction container (non-metal) wall thickness	≤20mm (glass, plastic, non-absorbent ceramic, acrylic, rubber, etc. or composite materials thereof)
Applicable pipe diameter range	≥11mm
Material	ABS
Waterproof level	IP65

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Toilet Occupancy Sensor

R718PQA

The R718PQA is a wireless communication device that detects toilet occupancy. The device is equipped with a reed switch sensor for detecting the switch status of the door; a built-in PIR sensor (pyroelectric human body infrared sensor) to detect whether someone enters the toilet; two simultaneous tests to determine if the toilet is present.
Through the wireless networ, the detected data is transmitted to other devices for display, which uses the SX1276 wireless communication module.

Application scenario
- Occupancy detection
- other

Technical Parameter

Electric

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V, 2400mah/section）
Life Time	Battery life are 4.5 years (condition: ambient temperature 25 ° C, report every 15 mins, txpower = 20 dBm, LoRa spreading factor SF = 10)
Sleeping Mode	34uA
Wake up Mode	6.3mA@3.3V
Low Voltage Threshold	3.2V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V

PIR Sensor

Power Supply	+3VDC
Measurement Range	5M

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Indoor Temperature Humidity Sensor

R711

LoRa Alliance Certified

Netvox R711, mainly used to measure the indoor ambient temperature and humidity, collects the data and sends it to the gateway through the wireless network communication module. The wireless communication is compatible with LoRaWAN™ protocol (ClassA).

R711 has been LoRaWAN™ certified.

Technical Parameter

Input power	2 x 1.5V AA batteries
Operating power	DC 2.4V～3V
Standby current	12uA/3V
Transmitting current (max)	120mA/3V
Receiving current (max)	11mA/3V
Voltage Measurement	±0.1V

Dimension	L:112mm*W:34mm*H:17mm
Weight	83.8g
Operating Humidity	＜90%RH
Operating Temperature	-20°C - 55°C
Storage Temperature	-40°C ～ 85°C
Temperature Measurement Range	-20°C ～ 55°C
Temperature Measurement Accuracy	±0.5°C @25°C Max. +/-0.8°C@ -20°C~55°C
Humidity Measurement Range	10%RH ～ 90%RH
Humidity Measurement Accuracy	±4%RH @25°C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Outdoor Temperature Humidity Sensor

R712

R712 is a long-range wireless temperature and humidity device based on the LoRaWAN™ open protocol (Class A). R712 carries a splash-proof housing, and it is mainly used to measure the outdoor ambient temperature and humidity. It collects data and sends it to the gateway through LoRaWAN™.

Technical Parameter

Input power	2 x 1.5V AA batteries
operating voltage	DC 2.4V～3V
Standby current	12uA/3V
Transmitting current (max)	120mA/3.6V
Receiving current (max)	11mA/3.6V

Dimension	L:222mm*W:130mm*H:195mm
Working Temp	-20°C - 55°C
Storage Temp	-40°C — 85°C
Working Humidity	<90% RH (no condensation)
Temperature Detecting Range	-20°C - 55°C
Temperature Accuracy	±1℃ @25℃
Humidity Detecting Range	10%RH～90%RH
Humidity Accuracy	±4.5%RH @25℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Temperature and Humidity Sensor for Low Temperature Environment

R718A

R718A is mainly used to measure the temperature and humidity in low temperature environment such as a freezer. It collects data and sends it to the gateway through LoRaWAN™. It is fully compatible with LoRaWAN™ protocol (Class A).

Main Feature

- Compatible with the LoRaWAN standard protocol.
- 2 ER14505 battery AA SIZE (3.6V / section) parallel power supply
- Air temperature and humidity detection
- Body protection class IP65, sensor protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- Battery life is 5 years (condition: ambient temperature 25 ° C, 15 min report once, txpower = 20 dBm, LoRa spreading factor SF = 10)

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V 2400mAh/pc)
Sleeping Mode	20uA
Wake up Mode	6.3mA@3.3V
Low Voltage Threshold	3.2V
Transmitting current (max)	120mA@3.3V
Receiving current (max)	11mA @3.3V

Dimension	Main Body: L: 112mm*W: 65mm*H: 28.8mm Sensor cover size: D: 16mm*L: 34.5mm,
Weight	141g
Environment Temperature Range	-40℃ ～ 55℃
Environment Humidity Range	< 90% RH (No condensation)
Temperature Measurement Range	-40℃～55℃ (+-0.8%)
Humidity Measurement Range	0%RH～80%RH (+-3%)
Build-in Temp. & Humi. Sensor	SHT-35

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Temperature and Humidity Sensor

R718AB

R718AB is mainly used to measure the ambient temperature and humidity. Fully compatible with LoRaWAN™ protocol (Class A), it collects data and sends it to the gateway through LoRaWAN™.

Main Feature

- Adopt SX1276 wireless communication module
- 2 ER14505 battery AA SIZE (3.6V / section) parallel power supply
- Air temperature and humidity detection
- The base is attached with a magnet that can be attached to a ferrous object
- Body protection class IP65, sensor protection class IP65

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V 2400mAh/pc)
Sleeping Mode	24uA
Wake up Mode	6.3mA@3.3V
Low Voltage Threshold	3.2V
Transmitting current (max)	120mA@3.3V
Receiving current (max)	11mA @3.3V

Dimension	Main Body: L: 112mm*W: 65mm*H: 28.8mm Sensor cover size: D: 16mm*L: 34.5mm,
Weight	141g
Environment Temperature Range	-20° C—55° C
Environment Humidity Range	< 90% RH (No condensation)
Temperature Measurement Range	-20° C—55° C
Humidity Measurement Range	10%RH-90%RH
Build-in Temp. & Humi. Sensor	SHT-30

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Temperature Sensor

R718AD

The R718AD is a wireless communication device for detecting temperature. The temperature sensor probe contacts an object to detect the temperature, and the detected data is transmitted to other devices through a wireless network. The SX1276 wireless communication module is used.

Technical Parameter

Electric

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Battery Life	5 years (Conditions: ambient temperature 25 °C, 15 min heartbeats, txpower = 20dBm, LoRa spreading factor SF = 10)
Sleeping Mode	24uA
Wake up Mode	6.3mA@3.3V
Transmitting current (max)	120mA/3.3V
Receiving current (max)	11mA @3.3V
Battery Measurement Accuracy	±0.1V

Temperature Sensor DS18B20

Power Supply	+3V～+5.5V
Temperature Accuracy	<±1℃（-40℃ to +125℃）
Cable Length	1 meter

Physical

Dimension	Main Body: L:112mm*W:88.19mm*H:32mm
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Resistance Temperature Detector

R718B

This equipment is used to detect the temperature of medium and objects . It carries a PT100 platinum thermal resistors. It uses SX1276 wireless communication module.

Technical Parameter

Electric

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	21uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V
Low Voltage Threshold	3.2V

PT100 Platinum Thermal Resistance

Temperature Range	-50-200°C
Lead Length	1m (default) 2m, 5m, 10m, others
Probe Specification	4mm in diameter and 30mm in length
Standard	IEC751-1995/JIS

Physical

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	141g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 2-Gang Resistance Temperature Detector

R718B2

This equipment is used to detect the temperature of medium and objects . It carries two PT100 platinum thermal resistors at the same time. It uses SX1276 wireless communication module.

Technical Parameter

Electric

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	23uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V
Low Voltage Threshold	3.2V

PT100 Platinum Thermal Resistance

Temperature Range	-50-200°C
Lead Length	1m (default) 2m, 5m, 10m, others
Probe Specification	4mm in diameter and 30mm in length
Standard	IEC751-1995/JIS

Physical

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	141g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Thermocouple Sensor - Type K

R718CK

This equipment is used to detect temperature of the object and medium which thermocouple is contacted. It can be connected to two thermocouples for sampling. It uses SX1276 wireless communication module.

R718CX can be connected according to requirements: type T thermocouple (R718CT), type K thermocouple (R718CK).

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Battery Life	5 years (Conditions: ambient temperature 25 °C, 15 min heartbeats, txpower = 20dBm, LoRa spreading factor SF = 10)
Sleeping Mode	34uA
Wake up Mode	6.3mA@3.3V
Transmitting current (max)	120mA/3.3V
Receiving current (max)	11mA @3.3V
Battery Measurement Accuracy	±0.1V

Thermocouple characteristics

Measurement accuracy	Measurement error which the wire causes : ≦ 2℃
	The basic error limit of the thermocoupl: Type K thermocouple: -40~375℃ +-1.5℃
Thermocouple Wire Length	1 meter

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Thermocouple Sensor - Type N

R718CN

This equipment is used to detect temperature of the object and medium which thermocouple is contacted. It can be connected to two thermocouples for sampling. It uses SX1276 wireless communication module.

R718CX can be connected according to requirements:Type T (R718CT), Type K Thermocouple (R718CK), Type N Thermocouple (R718CN), Type R Thermocouple (R718CR)

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Battery Life	5 years (Conditions: ambient temperature 25 °C, 15 min heartbeats, txpower = 20dBm, LoRa spreading factor SF = 10)
Sleeping Mode	34uA
Wake up Mode	6.3mA@3.3V
Transmitting current (max)	120mA/3.3V
Receiving current (max)	11mA @3.3V
Battery Measurement Accuracy	±0.1V

Thermocouple characteristics

Measurement accuracy	Measurement error which the wire causes : ≦ 2℃
	The basic error limit of the thermocouple: Type N thermocouple: -40~375° C±1.5° C; 375~800° C±0.4% t (t is temperature).
Thermocouple Wire Length	1 meter

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Thermocouple Sensor - Type R

R718CR

This equipment is used to detect temperature of the object and medium which thermocouple is contacted. It can be connected to two thermocouples for sampling. It uses SX1276 wireless communication module.

R718CX can be connected according to requirements:Type T (R718CT), Type K Thermocouple (R718CK), Type N Thermocouple (R718CN), Type R Thermocouple (R718CR)

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Battery Life	5 years (Conditions: ambient temperature 25 °C, 15 min heartbeats, txpower = 20dBm, LoRa spreading factor SF = 10)
Sleeping Mode	34uA
Wake up Mode	6.3mA@3.3V
Transmitting current (max)	120mA/3.3V
Receiving current (max)	11mA @3.3V
Battery Measurement Accuracy	±0.1V

Thermocouple characteristics

Measurement accuracy	Measurement error which the wire causes : ≦ 2℃
	The basic error limit of the thermocouple: Type R thermocouple: 0~1100℃±1℃。
Thermocouple Wire Length	1 meter

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Thermocouple Sensor - Type T

R718CT

This equipment is used to detect temperature of the object and medium which thermocouple is contacted. It can be connected to two thermocouples for sampling. It uses SX1276 wireless communication module.

R718CX can be connected according to requirements:Type T (R718CT), Type K Thermocouple (R718CK), Type N Thermocouple (R718CN), Type R Thermocouple (R718CR)

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Battery Life	5 years (Conditions: ambient temperature 25 °C, 15 min heartbeats, txpower = 20dBm, LoRa spreading factor SF = 10)
Sleeping Mode	34uA
Wake up Mode	6.3mA@3.3V
Transmitting current (max)	120mA/3.3V
Receiving current (max)	11mA @3.3V
Battery Measurement Accuracy	±0.1V

Thermocouple characteristics

Measurement accuracy	Measurement error which the wire causes : ≦ 2℃
	The basic error limit of the thermocoupl: Type T thermocouple: -40~125℃ +-0.5℃
Thermocouple Wire Length	1 meter

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 2-Gang Thermocouple Sensor - Type K

R718CK2

This equipment is used to detect temperature of the object and medium which thermocouple is contacted. It can be connected to two thermocouples for testing. It uses SX1276 wireless communication module.

R718CX2 can be connected according to requirements: Type T (R718CT2), Type K Thermocouple (R718CK2), Type N Thermocouple (R718CN2), Type R Thermocouple (R718CR2)

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Battery Life	5 years (Conditions: ambient temperature 25 °C, 15 min heartbeats, txpower = 20dBm, LoRa spreading factor SF = 10)
Sleeping Mode	36uA
Wake up Mode	6.3mA@3.3V
Transmitting current (max)	120mA/3.3V
Receiving current (max)	11mA @3.3V
Battery Measurement Accuracy	±0.1V

Thermocouple characteristics

Measurement accuracy	Measurement error which the wire causes : ≦ 2℃
	The basic error limit of the thermocoupl: Type K thermocouple: -40~375℃ +-1.5℃
Thermocouple Wire Length	1 meter

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Thermocouple Sensor - Type N

R718CN2

This equipment is used to detect temperature of the object and medium which thermocouple is contacted. It can be connected to two thermocouples for sampling. It uses SX1276 wireless communication module.

R718CX2 can be connected according to requirements: Type T (R718CT2), Type K Thermocouple (R718CK2), Type N Thermocouple (R718CN2), Type R Thermocouple (R718CR2)

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Battery Life	5 years (Conditions: ambient temperature 25 °C, 15 min heartbeats, txpower = 20dBm, LoRa spreading factor SF = 10)
Sleeping Mode	36uA
Wake up Mode	6.3mA@3.3V
Transmitting current (max)	120mA/3.3V
Receiving current (max)	11mA @3.3V
Battery Measurement Accuracy	±0.1V

Thermocouple characteristics

Measurement accuracy	Measurement error which the wire causes : ≦ 2℃
	The basic error limit of the thermocouple: Type N thermocouple: -40~375° C±1.5° C; 375~800° C±0.4% t (t is temperature).
Thermocouple Wire Length	1 meter

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Thermocouple Sensor - Type R

R718CR2

This equipment is used to detect temperature of the object and medium which thermocouple is contacted. It can be connected to two thermocouples for sampling. It uses SX1276 wireless communication module.

R718CX2 can be connected according to requirements: Type T (R718CT2), Type K Thermocouple (R718CK2), Type N Thermocouple (R718CN2), Type R Thermocouple (R718CR2)

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Battery Life	5 years (Conditions: ambient temperature 25 °C, 15 min heartbeats, txpower = 20dBm, LoRa spreading factor SF = 10)
Sleeping Mode	36uA
Wake up Mode	6.3mA@3.3V
Transmitting current (max)	120mA/3.3V
Receiving current (max)	11mA @3.3V
Battery Measurement Accuracy	±0.1V

Thermocouple characteristics

Measurement accuracy	Measurement error which the wire causes : ≦ 2℃
	The basic error limit of the thermocouple: Type R thermocouple: 0~1100℃±1℃。
Thermocouple Wire Length	1 meter

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Thermocouple Sensor - Type T

R718CT2

This equipment is used to detect temperature of the object and medium which thermocouple is contacted. It can be connected to two thermocouples for sampling. It uses SX1276 wireless communication module.

R718CX2 can be connected according to requirements: Type T (R718CT2), Type K Thermocouple (R718CK2), Type N Thermocouple (R718CN2), Type R Thermocouple (R718CR2)

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Battery Life	5 years (Conditions: ambient temperature 25 °C, 15 min heartbeats, txpower = 20dBm, LoRa spreading factor SF = 10)
Sleeping Mode	36uA
Wake up Mode	6.3mA@3.3V
Transmitting current (max)	120mA/3.3V
Receiving current (max)	11mA @3.3V
Battery Measurement Accuracy	±0.1V

Thermocouple characteristics

Measurement accuracy	Measurement error which the wire causes : ≦ 2℃
	The basic error limit of the thermocoupl: Type T thermocouple: -40~125℃ +-0.5℃
Thermocouple Wire Length	1 meter

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Light Sensor

R718G

The device has a built-in light sensor that can be used for ambient light intensity detection. It uses the SX1276 wireless communication module. The R718G detects the ambient light intensity value and adds it to the gateway. The collected data is displayed in other devices.

Application scenario

- Illuminance detection
- other

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	18uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V
Low Voltage Threshold	3.2V

Light Sensor

Supply Voltage Range	2.3VDC-3.3VDC
Light Sensor Model	TSL45315
Illuminance Range	3LUX~220KLUX
Communication Method	I2C communication

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

R718PA1

The R718PA1 can detect the concentration of CO in the air. The body and the sensor are connected via the RS485 interface, and the detected data is transmitted to other devices through the wireless network. The wireless communication method conforms to the LoRaTM protocol standard

Main Feature

- Adopt SX1276 wireless communication module
- DC 12V power supply
- Protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- RS485 communication

Application scenario

- CO concentration detection

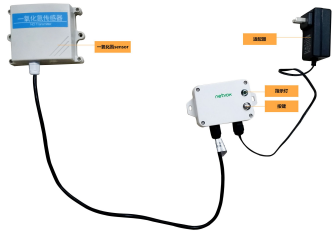
Technical Parameter

Power supply:	DC 12V adapter power supply
Working current 1:	40mA (when there is no RF signal)
Working current 2:	80mA (when there is RF signal transmission)

CO sensor parameters

Power supply:	+12VDC
CO measurement range:	0-1000ppm
CO measurement method:	Electrochemical sensors
CO measurement accuracy:	<± reading 3% (@25°C)
CO measurement resolution:	0.5ppm
Response time:	≤50s
Life time:	In the air >5 years
Working pressure range	Standard atmospheric pressure ±10%

R718PA2



The R718PA2 can detect the concentration of NO in the air. The body and the NO sensor are connected via the RS485 interface, and the detected data is transmitted to other devices through the wireless network. The wireless communication method conforms to the LoRaTM protocol standard.

Main Feature

- Adopt SX1276 wireless communication module
- DC 12V power supply
- Protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- RS485 communication

Application scenario

- NO concentration detection

Technical Parameter

Power supply:	DC 12V adapter power supply
Working current:	50mA (external sensor)

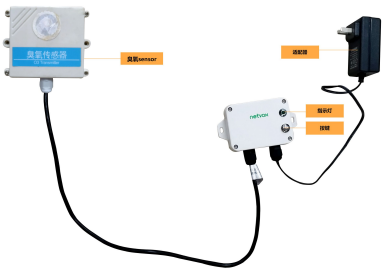
NO sensor parameters

Power supply:	+9V-+24V DC
NO measurement range:	0-1000ppm
NO measurement method:	Electrochemical sensors
NO measurement accuracy:	<± reading 2% (@25°C)
NO measurement resolution:	< 1ppm
Response time:	≤60s
Life time:	In the air 25 years

Weight	160g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

Wireless O3 Sensor

R718PA3



The R718PA3 can detect the concentration of O3 in the air. The body and the O3 sensor are connected via the RS485 interface, and the detected data is transmitted to other devices through the wireless network. The wireless communication method conforms to the LoRaTM protocol standard.

Main Feature

- Adopt SX1276 wireless communication module
- DC 12V power supply
- Protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- RS485 communication

Application scenario

- O3 concentration detection

Technical Parameter

Power supply:	DC 12V adapter power supply
Working current:	55mA (external sensor)

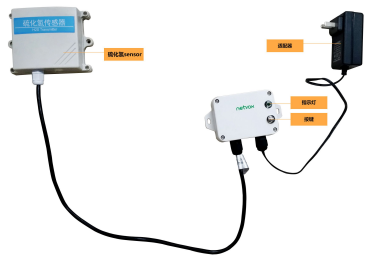
O3 sensor parameters

Power supply:	+9V-+24V DC
O3 measurement range:	0-20ppm
O3 measurement method:	Electrochemical sensors
O3 measurement accuracy:	<± reading 3% (@25°C)
Detectin Limit	＜20ppb
Response time:	≤ 15s
Life time:	In the air 1 year

Weight	160g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

Wireless H2S Sensor

R718PA4



The R718PA4 can detect the concentration of H2S in the air. The body and the H2S sensor are connected via the RS485 interface, and the detected data is transmitted to other devices through the wireless network. The wireless communication method conforms to the LoRaTM protocol standard.

Main Feature

- Adopt SX1276 wireless communication module
- DC 12V power supply
- Protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- RS485 communication

Application scenario

- H2S concentration detection

Technical Parameter

Power supply:	DC 12V adapter power supply
Working current:	60mA (external sensor)

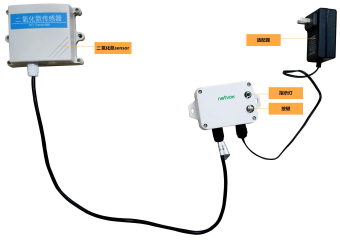
H2S sensor parameters

Power supply:	+10V-+24V DC
H2S measurement range:	0-100ppm
H2S measurement method:	Electrochemical sensors
H2S measurement accuracy:	<± reading 2%
H2S measurement resolution:	＜0.1ppm
Response time:	≤ 30s
Life time:	In the air 2 years

Weight	160g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

Wireless NO2 Sensor

R718PA5



The R718PA5 can detect the concentration of NO2 in the air. The body and the NO2 sensor are connected via the RS485 interface, and the detected data is transmitted to other devices through the wireless network. The wireless communication method conforms to the LoRaTM protocol standard.

Main Feature

- Adopt SX1276 wireless communication module
- DC 12V power supply
- Protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- RS485 communication

Application scenario

- NO2 concentration detection

Technical Parameter

Power supply:	DC 12V adapter power supply
Working current:	< 70mA (external sensor)

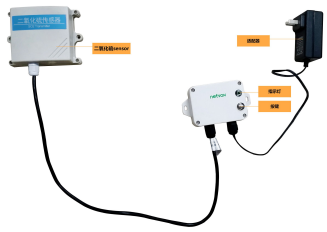
H2S sensor parameters

Power supply:	+12V-+24V DC
H2S measurement range:	0-20ppm
H2S measurement method:	Electrochemical sensors
H2S measurement accuracy:	<± reading 3% （@25℃）
Response time:	≤ 15s
Life time:	In the air 1 year

Weight	160g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

Wireless SO2 Sensor

R718PA6



The R718PA6 can detect the concentration of SO2 in the air. The body and the SO2 sensor are connected via the RS485 interface, and the detected data is transmitted to other devices through the wireless network. The wireless communication method conforms to the LoRaTM protocol standard.

Main Feature

- Adopt SX1276 wireless communication module
- DC 12V power supply
- Protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- RS485 communication

Application scenario

- SO2 concentration detection

Technical Parameter

Power supply:	DC 12V adapter power supply
Working current:	< 70mA (external sensor)

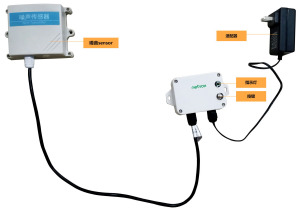
SO2 sensor parameters

Power supply:	+12V-+24V DC
SO2 measurement range:	0-20ppm
SO2 measurement method:	Electrochemical sensors
SO2 measurement accuracy:	<± reading 3% （@25℃）
Response time:	≤ 15s
Life time:	In the air 1 year

Weight	160g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

Wireless Noise Sensor

R718PA7



The R718PA7 can detect the noise in the air. The body and the noise sensor are connected via the RS485 interface, and the detected data is transmitted to other devices through the wireless network. The wireless communication method conforms to the LoRaTM protocol standard.

Main Feature

- Adopt SX1276 wireless communication module
- DC 12V power supply
- Protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- RS485 communication

Application scenario

- Noise detection

Technical Parameter

Power supply:	DC 12V adapter power supply
Working current:	< 70mA (external sensor)

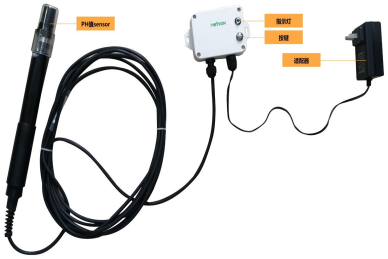
Noise sensor parameters

Power supply:	+12V-+24V DC
Noise sensor measurement range:	30dB-130dB
Resolution:	0.1dB
Measurement error:	3% FS
Response time:	≤2s
Frequency weighting characteristics:	A weighting
Frequency response:	35Hz-20Khz

Weight	160g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

Wireless PH Sensor

R718PA8



R718PA8 can detect the PH value of the solution. The body and PH sensor are connected via RS485 interface, and the detected data is transmitted to other devices through the wireless network. It adopts the wireless communication method conforming to the LoRaTM protocol standard.

Main Feature

- Adopt SX1276 wireless communication module
- DC 12V power supply
- Protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- RS485 communication

Application scenario

- PH detection

Technical Parameter

Power supply:	DC 12V adapter power supply
Working current:	< 70mA (external sensor)

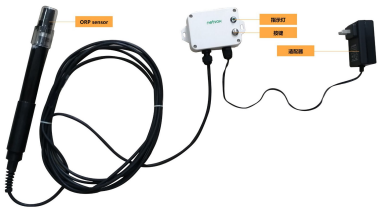
PH sensor parameters

Power supply:	+12V-+24V DC
PH sensor measurement range:	0-14PH
Resolution:	0.01PH
Accuracy:	0.01PH
Calibration method:	2-point calibration
Probe cable length:	5M, other lengths can be customized
Wetted material:	PPR

Weight	160g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

Wireless ORP Sensor

R718PA9



The R718PA9 can detect the ORP value of the solution. The body and the ORP sensor are connected through the RS485 interface, and the detected data is transmitted to other devices through the wireless network for display. The wireless communication method conforms to the LoRaTM protocol standard.

Main Feature

- Adopt SX1276 wireless communication module
- DC 12V power supply
- Protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- RS485 communication

Application scenario

- ORP detection

Technical Parameter

Power supply:	DC 12V adapter power supply
Working current:	< 70mA (external sensor)

ORP sensor parameters

Power supply:	+12V-+24V DC
ORP sensor measurement range:	-1500~+1500mV
Resolution:	1mV
Accuracy:	±6mV
Calibration method:	1-point calibration
Probe cable length:	5M, other lengths can be customized
Wetted material:	PPR

Weight	160g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

Wireless Turbidity Sensor

R718PA10

R718PA10 can detect the turbidity value of the solution. The body and turbidity sensor are connected through the RS485 interface, and the detected data is transmitted to other devices through the wireless network for display. It adopts the wireless communication method conforming to the LoRaTM protocol standard.

Main Feature

- Adopt SX1276 wireless communication module
- DC 12V power supply
- Protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- RS485 communication

Application scenario

- Turbidity detection

Technical Parameter

Power supply:	DC 12V adapter power supply
Working current:	< 70mA (external sensor)

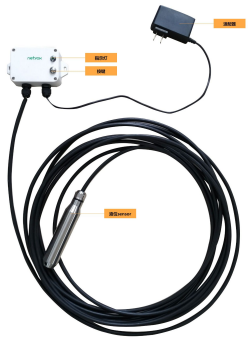
Turbidity sensor parameters

Power supply:	DC12V±5%
Turbidity sensor measurement range:	0.1～1000NTU
Resolution:	0.1NTU
Accuracy:	＜5% or 0.3NTU
Deepest depth:	10M underwater
Probe cable length:	10M, other lengths can be customized
Shell material:	POW

Weight	160g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

Wireless Liquid Level Sensor

R718PA11



The R718PA11 detects the depth of the liquid in the container. The body and the sensor are connected via the RS485 interface, and the detected data is transmitted to other devices through the wireless network. The wireless communication method conforms to the LoRaTM protocol standard.

Main Feature

- Adopt SX1276 wireless communication module
- DC 12V power supply
- Protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- RS485 communication

Application scenario

- Lequid level detection

Technical Parameter

Power supply:	DC 12V adapter power supply
Working current:	< 80mA (external sensor)

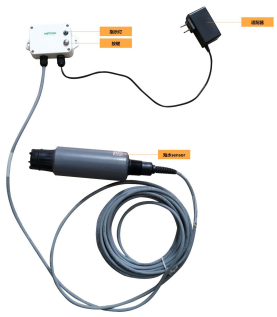
Lequid level sensor parameters

Power supply:	DC12V±5%
Lequid level sensor measurement range:	3m, 5m, 10m, etc. (requires selection confirmation)
Accuracy:	0.25% FS (typical)

Weight	160g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

R718PA12

R718PA12 can detect seawater salt, dissolved oxygen saturation and water temperature. The body and sensor are connected through RS485 interface, and the detected data is transmitted to other devices through wireless network. It adopts wireless communication method conforming to LoRaTM protocol standard.



Main Feature

- Adopt SX1276 wireless communication module
- DC 12V power supply
- Protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- RS485 communication

Application scenario

- Seawater salinity
- Seawater dissolved oxygen saturation, water temperature

Technical Parameter

Power supply:	DC 12V adapter power supply
Working current:	< 100 mA (external sensor)

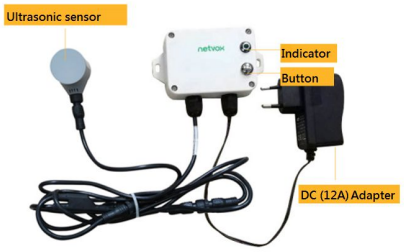
Seawater sensor parameters

Power supply:	12VDC
Dissolved oxygen measurement range:	0-20mg/L
Water temperature measurement range:	0-50℃

Weight	160g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

Wireless Bottom-installed Ultrasonic Liquid Level Sensor

R718PA22



The R718PA22 is a wireless communication device that measures the liquid level with an ultrasonic liquid level sensor. Ultrasonic liquid level sensor installed at the bottom of the container, it may measure water, gasoline, diesel and small, medium, large capacity storage tanks (metal, plastic, glass material). R718PA22 main unit and the ultrasonic liquid level sensor communicate via RS485 interface, and the detected data is sent to the other equipment shown which employs compliance LoraWANTM wireless communication protocol standards.

Technical Parameter

Electric

Power supply	DC 12V
Working current	<50mA (external sensor)

Ultrasonic Liquid Level Sensor Specifications

Power supply	9-36V Power Supply
Working current	Less than 50mA
Measuring range	0.12-3m (0-0.12m is a blind spot)
Beam angle	8°
Measurement accuracy	1 %
Temperature accuracy	+-2-3°C, - 40~ 125°C (NTC thermistor)
Housing material	PVDF/ABS
Size and weight	Diameter 39*32mm, 40g
*Installation method	Bottom mounting (AB glue)

Physical

Size	L: 112 mm*W: 88.19 mm*H: 32 mm
Ambient temperature range	-20°C to 55°C
Body weight	About 200g
Ambient humidity range	<90% RH (no condense)
Storage temperature range	-40°C ~ 80°C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Soil Moisture Sensor

R718PB13

The device is a wireless communication device that detects the moisture content of the soil. It can detect the moisture content of the soil and transmit the detected data to other devices through the wireless network. It uses the SX1276 wireless communication method.

Main Feature

- Adopt SX1276 wireless communication module
- DC 12V power supply
- Protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- RS485 communication

Application scenario

- Soil moisture content detection
- other

Technical Parameter

Power supply:	2 ER14505 lithium batteries (3.6V, 2400mAh / section) in parallel
Stand by current:	38uA
Wake up current:	6.3mA@3.3V
RF receiving current:	11mA @3.3V
RF emission current:	120mA @3.3V
Battery measurement accuracy:	±0.1V
Low battery voltage:	3.2V

EC-5 sensor parameters

Rated power supply:	2.5VCD
Water content detection accuracy:	±3%VWC
Moisture content resolution:	0.1% VWC in mineral soil, 0.25% VWC in growth medium
Water content detection range:	0-100%VWC
Size	89*18*1.8mm
Weight	131g
Line length	5m

Wireless Soil Moisture/Temperature/Electrical Conductivity Sensor

R718PB14

The device is a wireless communication device that detects soil temperature and moisture content and soil conductivity, and transmits the detected data to other devices through a wireless network. It uses the SX1276 wireless communication method.

Main Feature

- Adopt SX1276 wireless communication module
- DC 12V power supply
- Protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- RS485 communication

Application scenario

- Soil moisture content detection
- Soil temperature detection
- Soil conductivity
- other

Technical Parameter

Power supply:	2 ER14505 lithium batteries (3.6V, 2400mAh / section) in parallel
Stand by current:	38uA
Wake up current:	6.3mA@3.3V
RF receiving current:	11mA @3.3V
RF emission current:	120mA @3.3V
Battery measurement accuracy:	±0.1V
Low battery voltage:	3.2V

5TE sensor parameters

Rated power supply:	3.6VDC-15VDC
Soil temperature measurement accuracy:	+/-1°C @25°C
Moisture content resolution:	0.08%vwc (0-50%vwc)
Soil moisture content accuracy:	±3%vwc（typical）
Size	108*1840*1.8mm
Weight	110g
Line length	3m

R718PB15

The device is a wireless communication device that detects soil temperature and moisture content and soil conductivity, and transmits the detected data to other devices through a wireless network. It uses the SX1276 wireless communication method.

Main Feature

- Adopt SX1276 wireless communication module
- DC 12V power supply
- Protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- RS485 communication

Application scenario

- Soil moisture content detection
- Soil temperature detection
- Soil conductivity
- other

Power supply:	2 ER14505 lithium batteries (3.6V, 2400mAh / section) in parallel
Stand by current:	20uA
Wake up current:	6.3mA@3.3V
RF receiving current:	11mA @3.3V
RF emission current:	120mA @3.3V
Battery measurement accuracy:	±0.1V
Low battery voltage:	3.2V

Conductivity /Soil temperature / Moisture three-in-one sensor parameters

Rated power supply:	5VDC-30VDC
Soil temperature resolution:	0.1℃
Soil temperature measurement accuracy:	±0.5℃
Soil temperature range:	-40~+80℃
Soil moisture content resolution:	0-50%: 0.03%，50-100%: 1%
Soil water measurement range:	0-100%
Conductivity resolution:	0-10000us/cm: 10us/cm ； 100000-20000us/cm :50us/cm

Wireless Soil Moisture/Temperature/Electrical Conductivity Sensor

R718PB15A

The device is a wireless communication device that detects soil temperature and moisture content and soil conductivity, and transmits the detected data to other devices through a wireless network. It uses the SX1276 wireless communication method.

Main Feature

- Adopt SX1276 wireless communication module
- Protection class IP65
- The base is attached with a magnet that can be attached to a ferrous object
- RS485 communication

Application scenario

- Soil moisture content detection
- Soil temperature detection
- Soil conductivity
- Golf course lawn moisture detection

Power supply:	2 ER14505 lithium batteries (3.6V, 2400mAh / section) in parallel
Stand by current:	20uA
Wake up current:	6.3mA@3.3V
RF receiving current:	11mA @3.3V
RF emission current:	120mA @3.3V
Battery measurement accuracy:	±0.1V
Low battery voltage:	3.2V

Conductivity /Soil temperature / Moisture three-in-one sensor parameters

Rated power supply:	5VDC-30VDC
Soil temperature resolution:	0.1℃
Soil temperature measurement accuracy:	±0.5℃
Soil temperature range:	-40~+80℃
Soil moisture content resolution:	0-50%: 0.03%，50-100%: 1%
Soil water measurement range:	0-100%
Conductivity resolution:	0-10000us/cm: 10us/cm ； 100000-20000us/cm :50us/cm

Wireless Water Leak Detector

R718WA

The device is a LoRaWAN™ device compatible with LoRaWAN™ protocol (Class A). When the sensor detects the leak, it will send an alarm message to the gateway.

R718WA carries 1 water leak sensor.
It uses SX1276 wireless communication module.

Application Scenario

- Computer room; warehouse; family; archives; semiconductor factory; data center

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	22 uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	141g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 2-Gang Water Leak Detector

R718WA2

The device is a LoRaWAN™ device compatible with LoRaWAN™ protocol (Class A). When the sensor detects the leak, it will send an alarm message to the gateway.

R718WA2 carries 2 water leak sensors.
It uses SX1276 wireless communication module.

Application Scenario

- Computer room; warehouse; family; archives; semiconductor factory; data center

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	23uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	150g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Water Leak Detector with Rope Sensor

R718WB

The device is a LoRaWAN™ device compatible with LoRaWAN™ protocol (Class A). When the sensor detects the leak, it will send an alarm message to the gateway.

R718WB carries 1-gang water rope sensor.

It uses SX1276 wireless communication module.

Application Scenario

- Computer room; warehouse; family; archives; semiconductor factory; data center

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	22 uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	141g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Two-Gang Water Leak Detector with Rope Sensor

R718WB2

The device is a LoRaWAN™ device compatible with LoRaWAN™ protocol (Class A). When the sensor detects the leak, it will send an alarm message to the gateway.

R718WB2 carries 2 water rope sensors.

It uses SX1276 wireless communication module.

Application Scenario

- Computer room; warehouse; family; archives; semiconductor factory; data center

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	22uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	150g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Temperature and Humidity Sensor & Water Leakage Sensor

R718WBA

The R718WBA detects the temperature and humidity of the air. At the same time, it detects the presence or absence of water leakage through the 2-core non-locating leak detection sensor line, and transmits the detected data to the gateway through the wireless network.

Application Scenario

- Computer room; warehouse; family; archives; semiconductor factory; data center

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V, 2400mah/section）
Battery Life	5 years (Conditions: ambient temperature 25 °C, 15 min heartbeats, txpower = 20dBm, LoRa spreading factor SF = 10)
Sleeping Mode	25uA
Wake up Mode	6.3mA@3.3V
Low Voltage Threshold	3.2V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V

Non-positioning Leakage Rope Sensor

Material	Conductive Polyethylene + Alloy Wire
Working Temperature (Max.)	75° C
Diameter	5.5mm
Length	3000mm (±5mm)
Fire Rating Grade	Level 2 Pressure Vent Cable
Quality	18g/m
Color	Orange
Breaking Strength	60 kg
Detect Core Resistance	Less than 5 ohms/100 meters
Recommended Max. Length	300 meters (Theoretical value)

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Outdoor Liquid Level Sensor with Solar Panel

R72611

The R72611 detects the depth of the liquid in the container. The body and the sensor are connected via an RS485 interface, and the detected data is transmitted to other devices via a wireless network. The wireless communication method conforms to the LoRaTM protocol.

Application Scenario

- Level deepth detection / other

Technical Parameter

Power supply:	3 rechargeable lithium batteries in series (single-section rechargeable lithium battery 3.7V, capacity recommended 5000mah)
Operating voltage range:	9VDC to 12.6VDC
Working current 1:	15mA (standby mode)
Working current 2:	30mA (when the sensor is working)

Lequid level sensor parameters

Power supply:	DC12V±5%
Lequid level sensor measurement range:	3m, 5m, 10m, etc. (requires selection confirmation)
Accuracy:	0.25% FS (typical)

Size:	Mask part: D220mm*H280mm, Solar panel size: 290mm*150mm*25mm, Main body size: 117mm x 89mm x 41mm
Mask life time:	The mask material is ABS material, can be used outdoors for 3 years
Working temperature :	-20 ° C ~ 55 ° C
Operating humidity range:	<90% RH (no condensation)
Storage temperature range:	-40° C to 85° C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Outdoor CO2/Temperature/Humidity Sensor with Solar Panel

R72615

The R72615 is equipped with a temperature and humidity sensor that detects and transmits ambient temperature and humidity data. It is a wireless communication method that uses the SX1276 wireless communication module. The R72615 has a CO2 sensor that detects the concentration of CO2 in the air.

•Application Scenario

•Smart Home / Outdoor Air Detection / Smart Farm

Technical Parameter

Power Supply	3 rechargeable lithium batteries in series (single-cell rechargeable lithium battery 3.7V, capacity recommended 5000mah)
Operating Voltage Range	9VDC ~ 12.6VDC
Operating Current 1	15mA (Standby mode)
Operating Current 2	30mA (When the sensor is working.)

CO2 Sensor Characteristic

Operating Voltage	4.5VDC-5.5VDC
Working Current	<85mA
CO2 Accuracy	+/-（100ppm+6% read value）
CO2 Range	0-5000ppm
Preheat Time	3min
Response Time	T<90s
Output Signal	UART

SHT-30 Temperature and Humidity Sensor

Operating Voltage	+3.3VDC
Temperature Measurement Range	-20°C－55°C
Temperature Measurement Accuracy	+/-0.5°C@25°C Max.+/-0.8°C@ -20°C－55°C
Humidity Measurement Range	0%RH-100%RH
Humidity Measurement Accuracy	+/-4%RH @25°C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless CO2/Temperature/Humidity Sensor

R72615A

R72615A has a temperature and humidity sensor that detects and transmits ambient temperature and humidity data. It applies wireless communication method that uses the SX1276 wireless communication module. The R72615A has a CO_2 sensor that detects the concentration of CO_2 in the air.

•Application Scenario
•Smart home
•Smart farm
•other

Electric

Power Supply	A total of 8 ER14505 lithium batteries, lithium battery power supply voltage 7.2v, total capacity of 9600mah. (Single-cell lithium battery 3.6V 2400mAH).
Battery Life Time	The battery life is about 1 year (Condition: ambient temperature 25 ° C. Report once every 720 minutes. Txpower = 20 dBm. LoRa spreading factor SF = 10), which is subject to actual measurement.
Working Voltage Range	6.4VDC～7.2VDC
Sleeping Current	300uA
Working Current	65mA（When the sensor is working.）
Module Wake-up Current	6.3mA@3.3V
RF Receiving Current (RX)	11mA @3.3V
RF Emission Current (TX)	120mA @3.3V
Battery Measurement Accuracy	±0.1V

CO_2 Sensor

Working Voltage	4.5VDC-5.5VDC
Working Current	<85mA
Accuracy	+/-（100ppm+6%{Value}）
Range	0-5000ppm
Worm-up Time	3min

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless PM2.5/Temperature/Humidity Sensor

R72616

The R72616 is equipped with a temperature and humidity sensor that detects and transmits ambient temperature and humidity data. It is a wireless communication method that uses the SX1276 wireless communication module. The R72616 has a PM2.5 dust sensor that can be used to obtain the concentration of suspended particulates in air per unit volume.

•Application Scenario
•Smart home / atmospheric detection

PM2.5 Particle Concentration Sensor

Working Voltage	5VDC
Operating Current	100mA (typical)
Particle Measurement Range	0.3~1.0; 1.0~2.5um
Particle Count Efficiency	50%@0.3um, 98%@≥0.5um
Particle Mass Concentration Effective Range (PM2.5 Standard Value)	0~500 μg/m3
Particle mass concentration resolution	1ug/m3
Particle mass concentration consistency	±10%@100-500ug/m3 ±10ug/m3@0-100ug/m3
Comprehensive response time	≤10s

SHT-30 Temperature and Humidity Sensor

Operating Voltage	+3.3VDC
Temperature Measurement Range	-20°C－55°C
Temperature Measurement Accuracy	+/-0.5°C@25°C Max.+/-0.8°C@ -20°C－55°C
Humidity Measurement Range	0%RH-100%RH
Humidity Measurement Accuracy	+/-4%RH @25°C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless PM2.5/Temperature/Humidity Sensor

R72616A

R72616A with temperature and humidity sensor can detect and send the temperature and humidity data of the environment. The device is in line with the LoRa protocol standard. R72616A with PM2.5 dust sensor can be used to obtain the concentration of suspended particulates in air per unit volume.

•Application Scenario
•Smart home
•Atmospheric detection
•Temperature and humidity detection
• other

Electric

Power Supply Mode	Apply 8 sections of ER14505 lithium batteries, lithium battery power supply voltage 7.2v, total capacity 9600mah, (single-section lithium battery: 3.6V 2400mAH).
Battery Life Time	The battery life is about 1 year (condition: ambient temperature 25 ° C, 150 min report once, txpower = 20 dBm, LoRa spread factor SF = 10)); the actual measurement shall prevail.
Operating Voltage Range	6.4VDC ~ 7.2VDC
Sleep Current	250uA
Working Current	60mA (when the sensor is working)
Module Wake-up Current	6.3mA@3.3V
RF Receiving Current (RX)	11mA @3.3V
RF Emission Current (TX)	120mA @3.3V
Battery Measurement Accuracy	±0.1V

PM2.5 Particle Concentration Sensor

Working Voltage	5VDC
Operating Current	100mA (typical)
Particle Measurement Range	0.3~1.0; 1.0~2.5um
Particle Count Efficiency	50%@0.3um, 98%@≥0.5um
Particle Mass Concentration Effective Range (PM2.5 Standard Value)	0~500 μg/m3

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Outdoor PM2.5/Noise/Temperature/ Humidity Sensor with Solar Panel

R72623

NETVOX Wireless Sensor R72623 is capable to measure PM2.5 / noise / temperature / humidity at outdoor environment.
R72623 can be used in construction site / agricultural environment / airport surroundings / business environment data collection. Suitable as a data logger.

•Main Feature

- •Compatible with LoRaWAN standard protocol
- •Detection of PM2.5 particulate matter concentration in the environment
- •Detecting noise intensity values in the environment
- •Detect air temperature and humidity values
- •Built-in lithium battery pack power supply
- •With solar panel charging function

Technical Parameter

PM2.5 Particle Concentration Sensor

Particle measurement range	0.3~1.0; 1.0~2.5um
Particle counting efficiency	50% @ 0.3um, 98% @ ≥ 0.5um
Particle mass concentration effective range (PM2.5 standard value)	0~500 μg/m³
Particle mass concentration resolution	1ug/m³
Particle mass concentration consistency (PM2.5 standard value)	±10% @100-500ug/m³ ±10ug/m3@0-100ug/m³
Comprehensive response time	≤10s

Noise Sensor Specifications

Operating Voltage	10VDC
Power Consumption	0.4W（Max.）
Measuring Range	30dB-130dB
Measurement Error	3% F.S
Resolution	0.1dB
Frequency Weighting Characteristics	A weighted
Frequency Response	35Hz-20kHz
Response Time	⩽2 seconds
Output Interface	RS485 output

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Outdoor Noise/Temperature/Humidity Sensor with Solar Panel

R72624

NETVOX Wireless Sensor R72624 is capable to measure noise / temperature / humidity at outdoor environment.
R72624 can be used in construction site / agricultural environment / airport surroundings / business environment data collection. Suitable as a data logger.

•Main Feature

- •Adopt SX1276 wireless communication module
- •Detecting noise intensity values in the environment
- •Detect air temperature and humidity values
- •Built-in lithium battery pack power supply
- •With solar panel charging function

Technical Parameter

Power Supply	3 rechargeable lithium batteries in series (single-cell rechargeable lithium battery 3.7V, capacity recommended 5000mah)
Operating Voltage range	9VDC～12.6VDC
Operating Current 1	15mA (Standby mode）
Operating Current 2	30mA
Wireless idle mode Cycle	3 minutes

Noise Sensor Specifications

Operating Voltage	10VDC
Power Consumption	0.4W（Max.）
Measuring Range	30dB-130dB
Measurement Error	3% F.S
Resolution	0.1dB
Frequency Weighting Characteristics	A weighted
Frequency Response	35Hz-20kHz
Response Time	≤2 seconds
Output Interface	RS485 output

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Outdoor CO2/Temperature/Humidity Sensor

RA0715Y

The RA0715Y has a temperature and humidity sensor that detects and transmits ambient temperature and humidity data. The RA0715Y has a CO2 sensor that detects the concentration of CO2 in the air and transmits the detected data to other devices via LoRa wireless network. It uses the SX1276 wireless communication method.

Application Scenario

- Outdoor environmental monitoring
- Smart city and smart home
- Smart agriculture
- Airport environment
- Site environmental monitoring

Electric

Power Supply	Power adapter DC power supply, DC12V/1A
Operating Current 1	40mA (No radio frequency signal transmission)
Operating Current 2	80mA (With radio frequency signal transmission)

CO2 Sensor Characteristic

Working Voltage	4.5VDC-5.5VDC
Working Current	<85mA
CO2 Accuracy	+/- (100ppm + 6% reading)
CO2 Range	0-5000ppm
Warm-up Time	3mins
Response Time	T<90s
Output Signal	PWM UART

SHT-30 Temperature and Humidity Sensor

Operating Voltage	+3.3VDC
Temperature Measurement Range	-20°C－55°C
Temperature Measurement Accuracy	+/-0.5°C@25°C Max.+/-0.8°C@ -20°C－55°C
Humidity Measurement Range	0%RH-100%RH
Humidity Measurement Accuracy	+/-4%RH @25°C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Outdoor PM2.5/Temperature/Humidity Sensor

RA0716Y

RA0716Y carrying temperature and humidity sensors that can detect and send the environment temperature and humidity data with wireless communication, compatible with LoRa protocol standards. RA0716Y carrying PM2.5 dust sensor which can obtain the concentration of suspended particulate matter in the air per unit volume.

Main Feature

- Compatible with LoraWAN standard protocol
- Temperature and humidity detection
- Air particle concentration detection (PM2.5)

Application scenario

- Outdoor environmental monitoring
- Smart city and smart home
- Smart agriculture
- Airport environment
- Site environmental monitoring

Technical Parameter

Power supply	Adapter DC powered
Working voltage	40mA/12V(DC)
RX current	11mA @3.3V
TX current	120mA @3.3V
Particle measurement range	0.3~1.0
Particle mass concentration Effective range (PM2.5 standard value)	0~500 (μg/m3)
Temperature measurement range	0°C
Temperature measurement accuracy	+-0.5°C @25°C
Humidity measurement range	10%RH---90%RH
Humidity measurement accuracy	+/-4%RH @25°C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Outdoor PM2.5/Noise/Temperature& Humidity Environment Sensor

RA0723Y

RA0723Y with temperature and humidity sensor, can detect and send the temperature and humidity data of the environment, is a wireless communication method, in line with the LoRa protocol standard. The RA0723Y with PM2.5 dust sensor can be used to obtain the concentration of suspended particulates in air per unit volume.
RA0723Y external noise sensor can detect the noise of the atmospheric environment.

Main Feature

- Compatible with LoraWAN standard protocol
- Temperature and humidity detection
- Air particle concentration detection (PM2.5)
- Noise sensor (RS485 type)

Application scenario

- Outdoor environment testing
- Smart city and smart building
- Data center monitoring
- Intelligent agriculture

PM2.5 Particle Concentration Sensor

Particle measurement range	0.3~1.0; 1.0~2.5um
Particle counting efficiency	50% @ 0.3um, 98% @ ≥ 0.5um
Particle mass concentration effective range (PM2.5 standard value)	0~500 μg/m^3
Particle mass concentration resolution	1ug/m^3
Particle mass concentration consistency (PM2.5 standard value)	±10% @100-500ug/m^3 ±10ug/m3@0-100ug/m^3
Comprehensive response time	≤10s

Noise Sensor Specifications

Operating Voltage	10VDC
Power Consumption	0.4W（Max.）
Measuring Range	30dB-130dB
Measurement Error	3% F.S
Resolution	0.1dB
Frequency Weighting Characteristics	A weighted
Frequency Response	35Hz-20kHz
Response Time	≤2 seconds
Output Interface	RS485 output

Wireless Water Leak Detection & Location Sensor

RA07W

RA07W is a water leak detection and location sensor. Its external four-core positioning leak detection rope sensor can detect the water leak location and transmit the detected data to the gateway through the wireless network. It is fully compatible with LoRaWAN™ protocol (Class A).

Application scenario

- Wheel warehouse
- Smart home
- Archives

Technical Parameters

Power supply	Adapter DC powered（12V/1A）
Working power（max）	40mA(RX)， 80mA (TX)
Position Water Leak Detector	100M（max）
Leak detection error range	1% ± 0.5 meters of sensor cable length

Dimension	111mm*86mm*41mm
Working Temp	-20°C ～ 55°C
Humidity Detecting Range	5%RH～95%RH
Storage Temp	-40°C ～ 85°C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless CO Sensor

RA0701

RA0701 is a wireless communication device that detects the carbon monoxide content in ambient air. RA0701 can detect the concentration of CO in the air. The body and the sensor are connected through the RS485 interface, and the detected data is transmitted to data center through the wireless network for display.

Application scenario

- Railway station / airport traffic
- Metallurgical plant / chemical plant / thermal power plant
- Underground pipe or mine
- Warehouse

Technical Parameter

Power Supply	Adapter (12VDC/1A)
Operating Current 1	80mA (no RF signal transmission)
Operating Current 2	120mA (with RF signal emission)

CO Sensor Power supply	+12VDC
CO measurement range	0-1000ppm
CO measurement method	Electrochemical sensor
CO measurement accuracy	<± reading 3% (@25°C)
CO measurement resolution	0.5ppm
Response time	≤50s
Service life	>5 years in the air
Working pressure range	Standard atmospheric pressure ±10%

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless pH Sensor

RA0708

RA0708 is a device for pH detection in water environment. It can detect and send environmental pH data. to data center. It is a wireless communication method. It adopts SX1276 wireless communication module

Application scenario

- Pig farm
- Metallurgical plant / chemical plant
- Intelligent agriculture

Electric

Power Supply	Adapter DC Power Supply (12V/1A)
Operating Current 1	40mA (RX)
Operating Current 2	80mA (TX)

PH Sensor

Operating voltage	12VDC-24VCD±10%
Operating temperature range	0-65° C
Range	0-14PH
Accuracy	±0.01PH
Working pressure	<0.2MPa
Temperature Compensation	Automatic Temperature Compensation (NTC)
Signal output	RS485
Wet material	PPR
Mounting Method	3/4" NPT Thread, Immersion Mount
Cable length	5m, other lengths can be customized
Calibration method	2-point calibration
Power Consumption	<0.5W
Protection class	IP68

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Turbidity Sensor

RA0710

The RA0710 is connected to the ZS-206 integrated online turbidity sensor, and the ZS-206 is designed and manufactured using the principle of scattered light turbidity measurement. The LoRa module of the RA0710 communicates with the turbidity sensor in the form of RS485 communication to obtain the current turbidity signal value and display it through the wireless gateway.

Application scenario

- Water quality turbidity test
- Smart washing machine
- Other

Electric

Power Supply Power Supply	DC Power Supply, DC12V/1A
Operating current 1	50mA (RX)
Operating current 2	90mA (TX)

Turbidity Sensor

Model	ZS-206
Measuring principle	Scattered light method
Range	0-1000NTU
Resolution	0.1NTU, 0.1°C
Accuracy	±5% F.S., ±0.5°C
Correction Function	Supported
Temperature Compensation	Supported
Output Mode	RS-485 bus, MODBUS-RTU protocol
Working Conditions	0-50 ° C, <0.2MPa
Storage Temperature	-5°C - 65°C
Installation Method	3/4” NPT thread, immersion installation
Cable Length	5 meters, other lengths can be customized
Power Supply	12V-24VDC ±10%
Protection Level	IP68

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Liquid Level Sensor

RA0711

RA07 carries an RS485 communication interface, and RA0711 comes with an external water level sensor (RS485). The communication is fully compatible with LoRaWAN™ protocol (Class A).

RA0711 is mainly used to measure water level.

Application scenario

- Monitor and track tank level
- Monitor and track container levels
- Detection of non-corrosive liquid levels
- Monitoring the pit water level

Technical Parameter

Power Supply	Adapter (12VDC/1A)
Operating Current 1	80mA (RX)
Operating Current 2	120mA (TX)

Power supply	12VDC
Level sensor range	3m, 5m, 10m, etc. (requires confirmation of model selection)
Level sensor accuracy class	0.25%FS (typical)

Dimension	Main Body: 111mm*86mm*42mm
Environment Humidity Range	< 90% RH (No condensation)
Working Temp	-20°C ～ +55°C
Storage Temp	-40°C ～ +85°C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Soil Moisture Sensor

RA0713

RA0713 can be used to measure the amount of soil water and transmit the data to the gateway through the wireless network. It is fully compatible with LoRaWAN™ protocol (Class A).

Application scenario

- Smart agriculture.
- Soil moisture testing.

Technical Parameter

Electric (EC-5 sensor parameters)

Power supply	Adapter DC powered
Working power（max）	70mA(RX) 110mA(TX)
Sensor resolution	0.1% vwc in mineral soil 0.25% vwc in growth medium
Sensor accuracy	+-3%
Sensor detect range	0-100%VWC

Physical

Dimension	111mm*86mm*42mm
Working Temp	-20°C ～ +55°C
Storage Temp	-40°C ～ +85°C
Humidity Detecting Range	＜90%RH

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless CO2/Temperature/Humidity Sensor

RA0715

Netvox RA0715 is designed to monitor temperature, humidity and CO2 for Indoor Air Quality (IAQ) applications based on LoRa® wireless connectivity.

The communication is fully compatible with LoRaWAN™ protocol (Class A).

Application scenario

- Smart home / smart farm

Technical Parameter

Input power	DC 12V /1A
Working Current	40mA (RX), 80mA (TX)

CO2 Sensor

Working Voltage	4.5VDC-5.5VDC
Working Current	<85mA
Accuracy	+/- (100ppm + 6% reading)
Range	0-5000ppm
Worm-up Time	3min
Response Time	T<90s
Output	PWM UART

SHT-30 T/H Sensor

Working Voltage	+3.3VDC
Temperature Range	-20°C
Temperature Accuracy	+/-0.8°C
Humidity Range	10%RH-90%RH
Humidity Accuracy	+/-4%RH @25°C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless PM2.5/Temperature/Humidity Sensor

RA0716

Netvox RA0716 is mainly used to measure PM2.5, ambient temperature and humidity in an indoor environment, communicating over the LoRa® network with standard LoRaWAN™ protocol (Class A). RA0716 carries a PM2.5 sensor that can be used to obtain the concentration of suspended particles per unit volume in the air.

RA0716 has been LoRaWAN™ certified.

Application scenario

- Smart home / smart farm

Technical Parameter

Input power	12VDC/1A
Operating current 1	40mA (RX)
Operating current 2	80mA (TX)
Particle measurement range	0.3~1.0；1.0~2.5（um）
Particle counting efficiency	50%@0.3um，98%@≥0.5um
Particle mass concentration effective range (PM2.5 standard value)	0~500 ug/m^3
Particle mass concentration resolution	1ug/m^3
Particle mass concentration accuracy (PM2.5 standard value)	±10%@100-500ug/ m^3 ±10ug/ m^3@0-100ug/ m^3
Response time	≤10s
Temperature measurement range	-20°C 55°C
Temperature measurement accuracy	±0.8°C @25°C
Humidity measurement range	10%RH －90%RH
Humidity measurement accuracy	±4%RH @25°C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Temperature and Humidity Sensor

R720A

The R720A is a wireless communication device that detects ambient air temperature and humidity. The R720A detects the temperature and humidity of the air and transmits the detected data to other devices via a wireless network using the SX1276 wireless communication module.

Application scenario

- Environmental temperature and humidity testing for homes, venues, etc.
- other

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V 2400mah/section）
Battery Life	5 years (Conditions: ambient temperature 25 °C, 15 min heartbeats, txpower = 20dBm, LoRa spreading factor SF = 10)
Sleeping Mode	24uA
Wake up Mode	6.3mA@3.3V
Low Voltage Threshold	3.2V
Transmitting current (max)	120mA@3.3V
Receiving current (max)	11mA @3.3V

Thermistor SHT-35

Model	SHT-35 （Brand：Sensirion）
Power Supply	+3.3VDC
Temperature Detecting Range	-40℃～55℃
Temperature Accuracy	±0.8℃ @25℃
Humidity Detecting Range	0%RH～80%RH
Humidity Accuracy	±4%RH @25℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Temperature and Humidity Sensor with 3-axis Accelerometer

R720B

The R720B is a wireless communication device that detects ambient air temperature and humidity. The R720B also detects if it is being moved. The R720B can transmit the detected data to other devices via the wireless network, using the SX1276 wireless communication module.

Application scenario

- Smart home
- Atmospheric detection

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V 2400mah/section）
Battery Life	3 years (Conditions: ambient temperature 25 °C, 15 min heartbeats, txpower = 20dBm, LoRa spreading factor SF = 10)
Sleeping Mode	80uA
Wake up Mode	6.3mA@3.3V
Low Voltage Threshold	3.2V
Transmitting current (max)	120mA@3.3V
Receiving current (max)	11mA @3.3V

Thermistor SHT-35

Model	SHT-35 （Brand：Sensirion）
Power Supply	+3.3VDC
Temperature Detecting Range	-40℃～55℃
Temperature Accuracy	±0.8℃ @25℃
Humidity Detecting Range	0%RH～80%RH
Humidity Accuracy	±3%RH @25℃

3-axis Accelerometer

Model	ADXL345
Power Supply	+3.3VDC
Range	±2/4/8/16g (optional)
Resolution	10 bit or 4mg/lsb (full scale) 13 bit @±16g

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Pressure Sensor

R720C

The R720C is a wireless communication device that detects ambient air pressure and temperature. The R720C detects ambient air pressure and temperature and transmits the detected data to other devices via a wireless network using the SX1276 wireless communication module.

Application scenario

- Environmental temperature and humidity testing for homes, venues, etc.
- other

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V 2400mah/section）
Battery Life	5 years (Conditions: ambient temperature 25 °C, 15 min heartbeats, txpower = 20dBm, LoRa spreading factor SF = 10)
Sleeping Mode	24uA
Wake up Mode	6.3mA@3.3V
Low Voltage Threshold	3.2V
Transmitting current (max)	120mA@3.3V
Receiving current (max)	11mA @3.3V

BMP280 Pressure Sensor

Model Name	BMP280
Power Supply	+3.3VDC
Air Pressure Measurement Range	300-1100hPa
Air Pressure Measurement Accuracy	±1hPa (950 ... 1050 hPa, 0 ... +40 °C) TBD
Temperature Measurement Range	-40°C～55°C
Temperature Measurement Accuracy	±1 °C @25 °C TBD

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless IR Blaster

R211

The R211 is an indoor use for smart homes that integrates a chip module that complies with the LoRa TM wireless protocol.

R211 is a LoRa device capable of IR infrared learning and IR application. After IR learning, it can directly control the electrical equipment that can receive IR control, and can receive the IR signal from the infrared remote control to directly control the LoRa device.

Main Feature

- C ompatible with LoRaWAN standard protocol
- Built-in serial communication FLASH memory AT25SF041, 4M capacity
- Infrared receiving and transmitting functions

Technical Parameter

Working power:	12V DC adapter
Standby current:	50mA/12V/0.6W
Infrared signal learning frequency:	38KHz
Infrared signal control distance:	About 32 meters

Product Size:	Diameter 106mm Height 30.6mm
Operating temperature:	-20 ° C ~ 55 ° C
Storage temperature:	-40°C～85°C
Working humidity:	5% RH ~ 95% RH (no condensation)

Wireless Activity Detection Sensor

R311FA

It can detect the sudden movement or vibration of the device and send an alarm signal to the gateway for processing. It uses the SX1276 wireless communication module.

Application scenario

- Smart home
- Anti-theft system
- Industrial equipment
- Security field

Technical Parameter

Input Power	2 x 3.0V CR2450 button batteries
Working Voltage	DC 2.4V～3V
Standby Current	40uA /3.0V
Transmitting Current (max)	120mA/3.0V
Receiving Current (max)	11mA @3.0V
Low Voltage Threshold	2.4V
Voltage Measurement Accuracy	±0.1V

Main Body Dimension	57mm x 35mm x 15mm
Weight	48.9g
Operating Temperature	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Activity Event Counter

R311FB

The device detects the number of movements or vibrations (such as detecting the motor a few times a day), the maximum number of movements or vibrations can reach 232 times (theoretical value), and sends the information of the number of movements or vibrations to the gateway for processing. Apply SX1276 wireless communication module.

Application scenario

- Smart home
- Industrial equipment
- other

Technical Parameter

Input Power	2 x 3.0V CR2450 button batteries
Working Voltage	DC 2.4V～3V
Standby Current	41uA /3.0V
Transmitting Current (max)	120mA/3.0V
Receiving Current (max)	11mA @3.0V
Low Voltage Threshold	2.4V
Voltage Measurement Accuracy	±0.1V

Main Body Dimension	57mm x 35mm x 14mm
Weight	48.9g
Operating Temperature	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Activity Timer

R311FC

The device detects the duration of the movement or vibration (timekeeping) and sends the duration or timing information of the movement or vibration to the gateway for processing. The duration of the movement or vibration can be up to 1000 hours (theoretical value). Apply SX1276 wireless communication module.

Application scenario

- Smart home
- Industrial equipment
- other

Technical Parameter

Input Power	2 x 3.0V CR2450 button batteries
Working Voltage	DC 2.4V～3V
Standby Current	42uA /3.0V
Transmitting Current (max)	120mA/3.0V
Receiving Current (max)	11mA @3.0V
Low Voltage Threshold	2.4V
Voltage Measurement Accuracy	±0.1V

Main Body Dimension	57mm x 35mm x 14mm
Weight	48.9g
Operating Temperature	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Accelerometer and Surface Temperature Sensor

R718E

It can detect the movement or vibration of the device, send a signal to the gateway for processing, and externally connect one NTC thermistor to detect the surface temperature of the measured object. It uses the SX1276 wireless communication module.

Application scenario

- Industrial equipment
- other

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V 2400mah/section）
Sleeping Mode	80uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V
Low Voltage Threshold	3.2V

NTC Thermistor Sensor

NTC Temperature Range	-40℃ -125℃
25 Degree Resistance Value	10k (typical)
B value B25/50	3990
Temperature Measurement Accuracy	The basic error limit of NTC thermistor: -40~125°C +-3°C; Measurement error caused by the wire : ≦ 2 ° C.

Physical

Dimension	Main Part: L: 112mm*W: 88.19mm*H: 32mm
Weight	141g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 0-5V ADC Sampling Interface

R718IA

This device can be connected to an ADC sampling interface device. As shown in the figure, black is the ground line, red is the ADC sampling interface line, and the ADC sampling voltage range is 0-5V. It uses the SX1276 wireless communication module. The wireless communication is compatible with LoRaWAN™ protocol (ClassA).

Application scenario

- ADC sampling interface device (0-5V)

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	22 uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V
Low Voltage Threshold	3.2V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	141g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 2-Input 0-5V ADC Sampling Interface

R718IA2

This device can be connected to an ADC sampling interface device. As shown in the figure, black is the ground line, red is the ADC sampling interface line, and the ADC sampling voltage range is 0-5V. It uses the SX1276 wireless communication module. The wireless communication is compatible with LoRaWAN™ protocol (ClassA).

Application scenario

- ADC sampling interface device (0-5V)

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	26uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V
Low Voltage Threshold	3.2V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	150g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 0-10V ADC Sampling Interface

R718IB

This device can be connected to an ADC sampling interface device. As shown in the figure, black is the ground line, red is the ADC sampling interface line, and the ADC sampling voltage range is 0-10V. It uses the SX1276 wireless communication module.

The wireless communication is compatible with LoRaWAN™ protocol (ClassA).

Application scenario

- ADC sampling interface device (0-10V)

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	22 uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V
Low Voltage Threshold	3.2V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	141g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 2-Input 0-10V ADC Sampling Interface

R718IB2

This device can be connected to an ADC sampling interface device. As shown in the figure, black is the ground line, red is the ADC sampling interface line, and the ADC sampling voltage range is 0-10V. It uses the SX1276 wireless communication module. The wireless communication is compatible with LoRaWAN™ protocol (ClassA).

Application scenario

- ADC sampling interface device (0-10V)

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	27uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V
Low Voltage Threshold	3.2V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	150g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Dry Contact Interface

R718J

R718Jcan be connected to external dry contact devices, such as various switches, buttons, relays and reed switch outputs. It can detect the closure or disconnection signal of the dry contacts. Based on SX1276 wireless communication module, the wireless communication is compatible with LoRaWAN™ protocol (ClassA).

Application scenario

- Dry contact device

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	22uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V
Low Voltage Threshold	3.2V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	141g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 2-Input Dry Contact Interface

R718J2

R718J2 can be connected to external dry contact devices, such as various switches, buttons, relays and reed switch outputs. It can detect the closure or disconnection signal of the dry contacts. Based on SX1276 wireless communication module, the wireless communication is compatible with LoRaWAN™ protocol (ClassA).

Application scenario

- Dry contact device

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	22uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V
Low Voltage Threshold	3.2V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	150g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Pulse Counter Interface

R718H

R718H wireless pulse counter series can be integrated with up to four dry contact or mechanical switch and closure devices to count the number of actuations occurring within a given time frame for each input. The wireless communication is compatible with LoRaWAN™ protocol (ClassA).

Application scenario

- Contacts that require pulse detection counting

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	23 uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	141g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 2-Input Pulse Counter Interface

R718H2

R718H2 wireless pulse counter series can be integrated with up to four dry contact or mechanical switch and closure devices to count the number of actuations occurring within a given time frame for each input. The wireless communication is compatible with LoRaWAN™ protocol (ClassA).

Application scenario

- Contacts that require pulse detection counting

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	24 uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	150g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Hall Type Open/Close Detection Sensor

R718LB

This device is equipped with a Hall sensor, which can be used for door and window switch state detection. It can realize wireless alarm and other functions through the built-in wireless module. It adopts SX1276 wireless communication module.

Application scenario

- Door and window sensor

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	23 uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V
Low Voltage Threshold	3.2V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	141g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 2-Gang Hall Type Open/Close Detection Sensor

R718LB2

R718L2 is a open/close detection sensor based on hall effect sensors. Unlike the R718F2 devices, the two ferromagnetic contacts do not have to be joined together for the device to detect the closed state. The communication is fully compatible with LoRaWAN™ protocol (Class A).

Application scenario

- Door and window sensor

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	26uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V
Low Voltage Threshold	3.2V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	150g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Asset Sensor

R718MA

R718MA has a simple positioning function that detects the position status of the device. It regularly reports RSSI and SNR information to the gateway for processing. Users can locate the device's position according to the reported RSSI and SNR information.

The communication is fully compatible with LoRaWAN™ protocol (Class A).

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	22 uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	141g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Activity Detection Sensor

R718MBA

It detects the sudden movement or vibration of the device and sends an alarm signal to the gateway for processing. It uses the SX1276 wireless communication module.

Application scenario

- Smart home; anti-theft system; industrial equipment; security field

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	76 uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	141g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Activity Event Counter

R718MBB

The device detects the number of movements or vibrations (such as detecting the motor a few times a day), the maximum number of movements or vibrations can reach 2^{32} times (theoretical value), and sends the information of the number of movements or vibrations to the gateway for processing. Apply SX1276 wireless communication module.

Application scenario

- Smart home; industrial equipment

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	R718MBB: 76 uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	141g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Activity Timer

R718MBC

The device detects the duration of the movement or vibration (timekeeping) and sends the duration or timing information of the movement or vibration to the gateway for processing. The duration of the movement or vibration can be up to 1000 hours (theoretical value). SX1276 wireless communication module.

Application scenario

- Smart home; industrial equipment

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	76 uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	141g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless mA Current Meter Interface, 4~20mA

R718KA

The Wireless 4-20 mA DC Current Meter is designed to offer a large selection of easy-to-use current 4-20 mA data loggers for load monitoring. The wireless communication is compatible with LoRaWAN™ protocol (ClassA).

Application scenario

- Sensors, measuring equipment, instrumentation, others

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	21 uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V
Low Voltage Threshold	3.2V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	141g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 2-Input mA Current Meter Interface, 4~20mA

R718KA2

The Wireless 4-20 mA DC Current Meter is designed to offer a large selection of easy-to-use current 4-20 mA data loggers for load monitoring. The wireless communication is compatible with LoRaWAN™ protocol (ClassA).

Application scenario

- Sensors, measuring equipment, instrumentation, others

Technical Parameter

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	21uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Measurement Accuracy	±0.1V
Low Voltage Threshold	3.2V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	150g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless RS485 Adapter

R718PC

This device only supports RS485 serial port transparent transmission (RS485sensor power supply is DC12V), which can send read commands to the sensor supporting RS-485 protocol according to the configured cycle time. The information returned by the sensor will be directly reported to the gateway, and in the interface on the gateway to display, it uses SX1276 wireless communication.

Main Feature

- Adopt SX1276 wireless communication module
- DC 12V adapter power supply
- Protection level IP65
- The base is attached with a magnet that can be attached to a ferrous object
- RS485 serial port transparent transmission

Application scenario

- RS485 serial port transparent transmission
- Smart home products
- Wireless transmission product

Technical Parameter

Power supply:	12V DC adapter
Working current:	35mA (when there is no external sensor)
Wake up current:	7mA
RF receiving current:	11mA @3.3V
RF emission current:	127mA @3.3V
Battery measurement accuracy:	±0.1V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	160g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless RS232 Adapter

R718PDA

This device only supports RS232 serial port transparent transmission. It can send read commands to the sensor supporting RS-232 protocol according to the configured cycle time. The information returned by the sensor will be directly reported to the gateway and displayed on the gateway for the interface. It adopts SX1276. Wireless communication method.

Main Feature

- Adopt SX1276 wireless communication module
- DC 12V adapter power supply
- Protection level IP65
- The base is attached with a magnet that can be attached to a ferrous object
- RS232 serial port transparent transmission

Application scenario

- RS232 serial port transparent transmission
- Smart home products
- Wireless transmission product

Power supply:	12V DC adapter
Working current:	35mA (when there is no external sensor)
Wake up current:	7mA
RF receiving current:	11mA @3.3V
RF emission current:	127mA @3.3V
Battery measurement accuracy:	±0.1V

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	160g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

Wireless 1-Phase Current Meter with 1 x 30A CT

R718N1

The NETVOX wireless single-phase current detector is used to detect single-phase electrical input current. The device is compatible with the LoRaWAN protocol, and integrates a chip module that conforms to the LoRaWAN wireless protocol, and joins the gateway to display the collected data in the gateway. The device is a battery and receives the load AC current through a current transformer.

Application scenario

- Devices requires current detection in the city such as home or business
- Thermal system equipment

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Current	25uA
Wake up Current	7mA
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	127mA @3.3V
Battery Voltage Measurement Accuracy	±0.1V
Current Measurement Accuracy	<+-1%
Current measurement Accuracy Range	100mA to 30A (depending on the current transformer configuration)

Rated Input Current	30A, 50Hz~60Hz
Rated Output Current	10mA
Ratio	3000:1
Phase Difference (at rated input)	≤10' (100Ω)
Linearity	0.1%
Isolation Withstand Voltage	3000V
Housing Material	Flame Retardant Grade 94-V0 UL Material
Environmentally Friendly	In line with ROHS
Working Temperature	-40° C~+85° C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 1-Phase Current Meter with 1 x 75A CT

R718N17

The NETVOX wireless single-phase current detector is used to detect single-phase electrical input current. The device is compatible with the LoRaWAN protocol, and integrates a chip module that conforms to the LoRaWAN wireless protocol, and joins the gateway to display the collected data in the gateway.
The device is a battery and obtains the load AC current value through a current transformer. The device adopts a switch-on current transformer, which can be conveniently connected to the device to be measured.

Application scenario

- Devices requires current detection in the city such as home or business
- Thermal system equipment

Input Power	2 x 3.6V ER14505 lithium batteries parallel power supply (3.6V2400mah/section）
Sleeping Current	25uA
Wake up Current	7mA
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	127mA @3.3V
Battery Voltage Measurement Accuracy	±0.1V
Current Measurement Accuracy	<+-1%
Current measurement Accuracy Range	100mA to 75A (depending on the current transformer configuration)
Rated Input Current	30A, 50Hz~60Hz
Rated Output Current	10mA
Saturation Current	≥75A
Ratio	3000:1
Load Resistance	10Ω
Accuracy Level	1%
Isolation Withstand Voltage	3000V
Housing Material	Flame Retardant Grade 94-V0 UL Material
Environmentally Friendly	In line with ROHS
Working Temperature	-40° C~+85° C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 1-Phase Current Meter with 1 x 150A CT

R718N115

The NETVOX wireless single-phase current detector is used to detect single-phase electrical input current. The device is compatible with the LoRaWAN protocol, and integrates a chip module that conforms to the LoRaWAN wireless protocol, and joins the gateway to display the collected data in the gateway.
The device is a battery and obtains the load AC current value through a current transformer. The device adopts a switch-on current transformer, which can be conveniently connected to the device to be measured.

Application scenario

- Devices requires current detection in the city such as home or business
- Thermal system equipment

Input Power	2 x 3.6V ER14505 lithium batteries parallel power supply (3.6V2400mah/section）
Sleeping Current	25uA
Wake up Current	7mA
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	127mA @3.3V
Battery Voltage Measurement Accuracy	±0.1V
Current Measurement Accuracy	<+-1%
Current measurement Accuracy Range	1A to 150A (depending on the current transformer configuration)

Rated Input Current	100A, 50Hz~60Hz
Rated Output Current	33.33mA
Saturation Current	⩾150A
Ratio	3000:1
Load Resistance	10Ω
Accuracy Level	1%（1A-150A）
Isolation Withstand Voltage	3000V
Housing Material	Flame Retardant Grade 94-V0 UL Material
Environmentally Friendly	In line with ROHS
Working Temperature	-40° C~+85° C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 1-Phase Current Meter with 1 x 250A CT

R718N125

The NETVOX wireless single-phase current detector is used to detect single-phase electrical input current. The device is compatible with the LoRaWAN protocol, and integrates a chip module that conforms to the LoRaWAN wireless protocol, and joins the gateway to display the collected data in the gateway.
The device is a battery and obtains the load AC current value through a current transformer. The device adopts a switch-on current transformer, which can be conveniently connected to the device to be measured.

Application scenario

- Devices requires current detection in the city such as home or business
- Thermal system equipment

Input Power	2 x 3.6V ER14505 lithium batteries parallel power supply (3.6V2400mah/section）
Sleeping Current	25uA
Wake up Current	7mA
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	127mA @3.3V
Battery Voltage Measurement Accuracy	±0.1V
Current Measurement Accuracy	<+-1%
Current measurement Accuracy Range	1A to 250A (depending on the current transformer configuration)
Rated Input Current	200A, 50Hz~60Hz
Rated Output Current	66.66 mA
Saturation Current	≥250A
Ratio	3000:1
Load Resistance	10Ω
Accuracy Level	1%（1A-250A）
Isolation Withstand Voltage	3000V
Housing Material	Flame Retardant Grade 94-V0 UL Material
Environmentally Friendly	In line with ROHS
Working Temperature	-40° C~+85° C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 1-Phase Current Meter with 1 x 630A CT

R718N163

The NETVOX wireless single-phase current detector is used to detect single-phase electrical input current. The device is compatible with the LoRaWAN protocol, and integrates a chip module that conforms to the LoRaWAN wireless protocol, and joins the gateway to display the collected data in the gateway.
The device is a battery and obtains the load AC current value through a current transformer. The device adopts a switch-on current transformer, which can be conveniently connected to the device to be measured.

Application scenario

- Devices requires current detection in the city such as home or business
- Thermal system equipment

Input Power	2 x 3.6V ER14505 lithium batteries parallel power supply (3.6V2400mah/section）
Sleeping Current	25uA
Wake up Current	7mA
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	127mA @3.3V
Battery Voltage Measurement Accuracy	±0.1V
Current Measurement Accuracy	<+-1%
Current measurement Accuracy Range	5A to 630A (depending on the current transformer configuration)
Rated Input Current	300A, 50Hz~60Hz
Rated Output Current	50mA
Saturation Current	≥630A
Ratio	6000:1
Load Resistance	10Ω
Accuracy Level	1%（1A-250A）
Isolation Withstand Voltage	3000V
Housing Material	Flame Retardant Grade 94-V0 UL Material
Environmentally Friendly	In line with ROHS
Working Temperature	-40° C~+85° C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 3-Phase Current Meter with 3 x 60A CT

R718N3

The NETVOX wireless 3-phase current detector is used to detect 3-phase electrical input current. The device is compatible with the LoRaWAN protocol, and integrates a chip module that conforms to the LoRaWAN wireless protocol, and joins the gateway to display the collected data in the gateway.
The device is batteries and receives the load AC current through a current transformer.

Application scenario

- Devices requires current detection in the city such as home or business
- Thermal system equipment

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Current	25uA
Wake up Current	7mA
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	127mA @3.3V
Battery Voltage Measurement Accuracy	±0.1V
Current Measurement Accuracy	<+-1%
Current measurement Accuracy Range	100mA to 60A (depending on the current transformer configuration)
Rated Input Current	60A, 50Hz~60Hz
Rated Output Current	20mA
Ratio	3000:1
Phase Difference (at rated input)	≤10' (100Ω)
Linearity	0.1%
Isolation Withstand Voltage	3000V
Housing Material	Flame Retardant Grade 94-V0 UL Material
Environmentally Friendly	In line with ROHS
Working Temperature	-40° C~+85° C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 3-Phase Current Meter with 3 x 75A CT

R718N37

The NETVOX wireless three-phase current detector is used to detect three-phase electrical input current. The device is a battery and receives AC current through a current transformer.
This device adopts open-loop current transformer, which can be easily connected to the device to be tested. The A phase line, the B phase line and the C phase line of the three-phase electric power are respectively connected into the corresponding current transformers.

Application scenario

- Devices requires current detection in the city such as home or business
- Thermal system equipment

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Current	25uA
Wake up Current	7mA
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	127mA @3.3V
Battery Voltage Measurement Accuracy	±0.1V
Current Measurement Accuracy	<+-1%
Current measurement Accuracy Range	1A to 75A (depending on the current transformer configuration)
Rated Input Current	75A, 50Hz~60Hz
Rated Output Current	10mA
Saturation Current	≥75A
Ratio	3000:1
Load Resistance	10Ω
Accuracy Level	1%
Isolation Withstand Voltage	3000V
Housing Material	Flame Retardant Grade 94-V0 UL Material
Environmentally Friendly	In line with ROHS
Working Temperature	-40° C~+85° C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 3-Phase Current Meter with 3 x 150A CT

R718N315

The NETVOX wireless three-phase current detector is used to detect three-phase electrical input current. The device is a battery and receives AC current through a current transformer.

This device adopts open-loop current transformer, which can be easily connected to the device to be tested. The A phase line, the B phase line and the C phase line of the three-phase electric power are respectively connected into the corresponding current transformers.

Application scenario

- Devices requires current detection in the city such as home or business
- Thermal system equipment

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Current	25uA
Wake up Current	7mA
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	127mA @3.3V
Battery Voltage Measurement Accuracy	±0.1V
Current Measurement Accuracy	<+-1%
Current measurement Accuracy Range	1A to 150A (depending on the current transformer configuration)
Rated Input Current	100A, 50Hz~60Hz
Rated Output Current	33.33mA
Saturation Current	≥150A
Ratio	3000:1
Load Resistance	10Ω
Accuracy Level	1%（1A-150A）
Isolation Withstand Voltage	3000V
Housing Material	Flame Retardant Grade 94-V0 UL Material
Environmentally Friendly	In line with ROHS
Working Temperature	-40° C~+85° C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 3-Phase Current Meter with 3 x 250A CT

R718N325

The NETVOX wireless three-phase current detector is used to detect three-phase electrical input current. The device is a battery and receives AC current through a current transformer.

This device adopts open-loop current transformer, which can be easily connected to the device to be tested. The A phase line, the B phase line and the C phase line of the three-phase electric power are respectively connected into the corresponding current transformers.

Application scenario

- Devices requires current detection in the city such as home or business
- Thermal system equipment

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Current	25uA
Wake up Current	7mA
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	127mA @3.3V
Battery Voltage Measurement Accuracy	±0.1V
Current Measurement Accuracy	<+-1%
Current measurement Accuracy Range	1A to 250A (depending on the current transformer configuration)

Rated Input Current	200A, 50Hz~60Hz
Rated Output Current	66.66 mA
Saturation Current	≥250A
Ratio	3000:1
Load Resistance	10Ω
Accuracy Level	1%（1A-250A）
Isolation Withstand Voltage	3000V
Housing Material	Flame Retardant Grade 94-V0 UL Material
Environmentally Friendly	In line with ROHS
Working Temperature	-40° C~+85° C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless 3-Phase Current Meter with 3 x 630A CT

R718N363

The NETVOX wireless three-phase current detector is used to detect three-phase electrical input current. The device is a battery and receives AC current through a current transformer.

This device adopts open-loop current transformer, which can be easily connected to the device to be tested. The A phase line, the B phase line and the C phase line of the three-phase electric power are respectively connected into the corresponding current transformers.

Application scenario

- Devices requires current detection in the city such as home or business
- Thermal system equipment

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Current	25uA
Wake up Current	7mA
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	127mA @3.3V
Battery Voltage Measurement Accuracy	±0.1V
Current Measurement Accuracy	<+-1%
Current measurement Accuracy Range	10A~630A (depending on the current transformer configuration)
Rated Input Current	300A，50Hz~60Hz
Rated Output Current	50mA
Saturation Current	≥630A
Ratio	6000:1
Load Resistance	10Ω
Accuracy Level	1%（5A-720A）
Isolation Withstand Voltage	3000V
Housing Material	Flame Retardant Grade 94-V0 UL Material
Environmentally Friendly	In line with ROHS
Working Temperature	-40° C~+85° C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

R718IJK

This device is used to detect 4mA-20mA signal equipment, 0-24V DC ADC sampling and dry contact function, and it adopts SX1276 wireless communication module.

R718IJK can detect 4mA-20mA signal, 0-24V DC ADC sampling signal and dry contact input signal, and add detection signal data to the gateway, and display the collected data in the gateway.

Main Feature

- Adopt SX1276 wireless communication module
- 2 sections ER14505 battery AA SIZE (3.6V / section) parallel power supply
- Body protection rating IP63, sensor protection class IP30
- The base is attached with a magnet that can be attached to a ferrous object

Application scenario

- Sensor
- Testing Equipment

Power supply:	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Standby current:	22.7uA
Wake up current:	6.3mA@3.3V
RF receiving current:	11mA @3.3V
RF emission current:	120mA @3.3V
Battery measurement accuracy:	±0.1V

物理特性

Size:	L: 112mm*W: 88.19mm*H: 32mm
Body weight:	About 141g
Ambient temperature range:	-20 ° C ~ 55 ° C
Ambient humidity range:	**<90% RH (non-condensing)**
Housing material:	Flame retardant grade 94-V0 UL material
Environmental protection:	Compliance with ROHS

Wireless Valve Keeper

RA10

The valve disconnector RA10 is a wireless smart device for home security and automatic irrigation. It uses SX1276 wireless communication. Join RA10 to the gateway and realizes the operation of automatically opening and closing the valve through the instructions of other devices in the network. It can also use the manual switch function.

Technical Parameter

Power Supply	DC12V
Working Voltage	12 VDC
Standby Current	25 mA
Maximum Load Current Consumption	550 mA

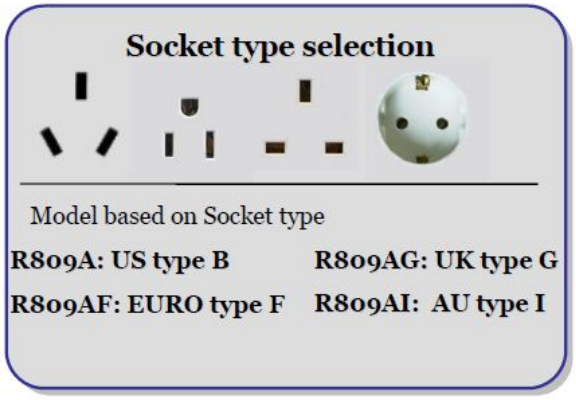
Physical

Physical Size	152.99mm x 70.99mm x128.3mm
Operating Temperature	-20 ° C ~ 55 ° C
Storage Temperature	-40 ° C ~ 85 ° C
Ambient Humidity	<90% RH (non-condensing)
Applicable Pipe Diameter	6 points (3/4 inch)
Drive Arm End Maximum Output Force	7.5 kgf
Switching Angle	90 degrees

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Plug-and-Play Power Outlet with Consumption Monitoring

R809A



Socket Type Selection

The R809A is a wireless power plug converter for indoor use. It can remotely control the output switch and detect the output power. It integrates the LoRa/FSK modulation communication wireless module SX1276, which can realize wireless remote control. R809A is primarily used to measure electrical power consumption and wireless switch control.

Technical Parameter

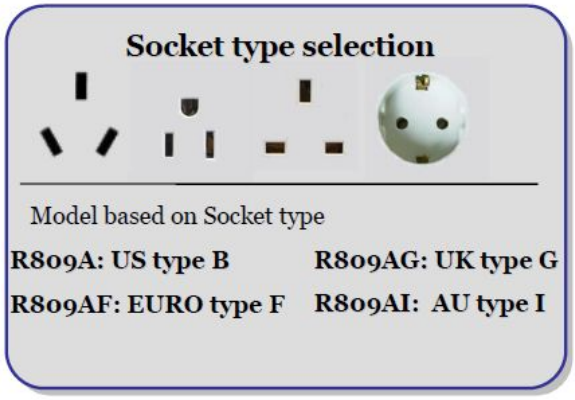
Rated working power supply	100-240VAC, 50/60Hz
Typical operating power	0.6W/11mA/220VA
Typical Load Characteristics	Resistive load: 16A/250VAC; P: 4000VA Inductive load: 8A/220VAC; P: 1760VA (COSφ=0.4) Motor load: 1.5HP/240VAC White Lamp, fluorescent lamp, gold halogen lamp: 3000W/220VAC
Relay Switch Life Times	100,000 times
Current Measurement Range	100mA~16A
Energy Measurement Error	<+-1%
Dimension	95mm*58mm*42.5mm (without plug part)

Rated Load （AC）**Remark**	Max. Load with LEDs **Remark**	Max. Inductive Load（cosφ=0.4）	Max. Load with Electric Motors	Overload Protection with Auto Power Cutoff
EU Type：16A/250V～ UK Type：13A/250V～ AU Type：10A/250V～ US Type：15A/125V～	LED power is less than 400W and less than 8 LEDs	8A/250V	1.5HP/250V	YES

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless Plug-and-Play Power Outlet with Consumption Monitoring (Power-off Alarm)

R809A01



Socket Type Selection

The R809A01 is a wireless power plug converter for indoor use. It can remotely control the output switch and detect the output power. It integrates the LoRa/FSK modulation communication wireless module SX1276, which can realize wireless remote control. R809A01 has a 10A/230VAC output load capability and is primarily used to measure electrical power consumption and wireless switch control. R809A01 supports the wireless module to send a power off alarm signal to the gateway after power off.

Technical Parameter

Rated working power supply	100-240VAC, 50/60Hz
Typical Operating Current	15mA/220VAC/1W
Typical Load Characteristics	Resistive load: 16A/250VAC; P: 4000VA Inductive load: 8A/220VAC; P: 1760VA (COSφ=0.4) Motor load: 1.5HP/240VAC White Lamp, fluorescent lamp, gold halogen lamp: 3000W/220VAC
Relay Switch Life Times	100,000 times
Current Measurement Accuracy Range	100mA~16A
Energy Measurement Error	<+-1%

Rated Load（AC）**Remark**	Max. Load with LEDs **Remark**	Max. Inductive Load（cosφ=0.4）	Max. Load with Electric Motors	Overload Protection with Auto Power Cutoff
EU Type：16A/250V～ UK Type：13A/250V～ AU Type：10A/250V～ US Type：15A/125V～	LED power is less than 400W and less than 8 LEDs	8A/250V	1.5HP/250V	YES

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless US Type Wall Socket with Power Meter

R816B

R816B (wireless wall socket with energy consumption monitoring (US)) is a smart electrical switch socket for indoor use. It is suitable for US standard wall cassette installation. The output socket is suitable for US standard 2 or 3 pole plug; rated output load is 15A/120V.

(Note: the output of the upper socket is uncontrolled, the output of the lower socket is the relay control output, and the output power detection function is provided. There is a relay control button and two LED indicators between the two sockets.)

Technical Parameter

Electrical characteristics

Input power	100-240VAC, 50/60Hz
Typical power consumption	13mA/120VAC/0.8W
Built-in relay load characteristics	Resistive load: 16A/250VAC; P: 4000VAInductive load:8A/220VAC; P:1760VA (COS φ =0.4)Motor load: 0.5HP/120VACIncandescent, fluorescent, gold halogen lamps: 3000W/220VACAnti-surge current 200A/2ms
Relay switch life time (on/off)	100,000 times (pure resistive load)
Energy measurement error	<±1%
Energy measurement accuracy range	100mA~15A
Flammability rating	UL 94V-0

Physical characteristics

Shape size	113.0 mm * 69.0 mm * 39.5 mm (without wires)
Wire length (exposed)	160mm
Working environment humidity	5% to 85% RH (no condense)
Working environment temperature	-10°C to 50°C
Storage ambient temperature	-40°C to 85 °C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

Wireless US Type Wall Socket with Power Meter (Power-off Alarm)

R809B01

R816B (wireless wall socket with energy consumption monitoring (US)) is a smart electrical switch socket for indoor use. It is suitable for US standard wall cassette installation. The output socket is suitable for US standard 2 or 3 pole plug; rated output load is 15A/120V.

(Note: the output of the upper socket is uncontrolled, the output of the lower socket is the relay control output, and the output power detection function is provided. There is a relay control button and two LED indicators between the two sockets.)

**When the R816B01 is powered off, the R816B01 will issue a power-off alarm command.

Technical Parameter

Electrical characteristics

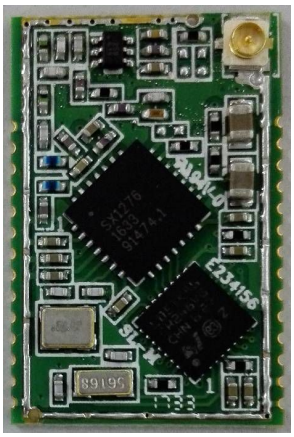
Power supply	100-240VAC,50/60Hz
Typical power consumption	13mA/120VAC/0.8W
Built-in relay load characteristics	Resistive resistance load: 16A/250VAC; P:4000VAInductive load: 8A/220VAC; P:1760VA (COS=0.4)Motor load: 0.5HP/120VACIncandescent, fluorescent, gold halogen lamps:3000W/220VACAnti-surge current 200A/2ms
Number of relay switch life	100,000 times (purely resistive load)
Energy measurement error	＜±1%
Energy measurement accuracy range	100mA~15A
Flame retardant rating	UL 94V-0

Physical properties

Size	113.0mm x 69.0mm x39.5mm(without wires)
Wire length (exposed)	160mm
Working environment humidity	5% ~ 85%RH (no condense)
Working environment temperature	-10°C to 50°C
Storage ambient temperature	-40°C to 85 °C

* Actual range may vary depending on environment.
** Life is determined by sensor reporting frequency and other variables.

R100H



R100H
LoRa Module

The R100H is a low power transceiver based on the SX1276 chip LoRaTM solution. The R100H is designed for SMD mounting to the main PCB. SMD installations provide the best RF performance at the lowest cost. In addition, the R100H is designed to take up minimal board space on the host PCB, which already includes a rich set of interface ports and power management circuitry. As a result, it can be easily integrated into other devices without the need for RF experience and expertise.

The R100H operates in the 862-1020MHz band.

Main Feature

- High performance and low power 32-bit ARM Cortex-M0 microprocessor
- Up to 20dBm power output
- Wide supply voltage range (1.8V - 3.6V DC)
- Provide powerful and flexible development tools

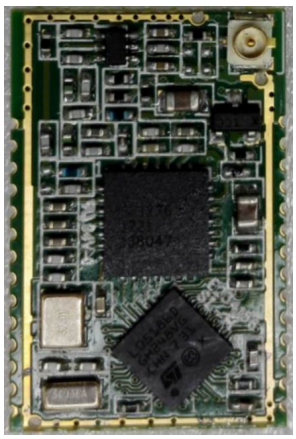
Output Power:	19dBm±1dBm
Communication distance:	TBD
Data transfer rate:	1.2～300kbps
Bandwidth:	862-928MHz
Modulation:	LoRa/FSK (Remarks: Choose one of them)
Receive sensitivity:	-121dBm (Frequency deviation=5kHz,Bit Rate=1.2kb/s)
Operating Voltage:	1.8 to 3.6 V DC
Receiving current:	11mA (typical value)
Emission current:	120mA (typical value)
Working current:	2mA (typical value)
stand-by current:	8uA
Operating temperature:	-20～85℃
Storage temperature:	-55～115℃
Product Size:	16.0×24.5×3.0mm

R100L

The Lora RF module R100L from NETVOX is a low-power transceiver based on the SX1276 chip LoRaTM solution.

The R100L is designed for SMD mounting on the main PCB. SMD installations provide the best RF performance at the lowest cost. In addition, the R100L is designed to take up minimal board space on the host PCB, which already includes a rich set of interface ports and power management circuitry. As a result, it can be easily integrated into other devices without the need for RF experience and expertise.

The R100L operates in the 470-510MHz band.



R100L
LoRa Module

Main Feature

- High performance and low power 32-bit ARM Cortex-M0 microprocessor
- Up to 19dBm power output
- Wide supply voltage range (1.8V - 3.6V DC)
- Provide powerful and flexible development tools

Output Power:	19dBm±1dBm
Communication distance:	TBD
Data transfer rate:	1.2～300kbps
Bandwidth:	470-510MHz
Modulation:	LoRa/FSK (Remarks: Choose one of them)
Receive sensitivity:	-121dBm (Frequency deviation=5kHz,Bit Rate=1.2kb/s)
Operating Voltage:	1.8 to 3.6 V DC
Receiving current:	11mA (typical value)
Emission current:	120mA (typical value)
Working current:	2mA (typical value)
stand-by current:	8uA
Operating temperature:	-20～85℃
Storage temperature:	-55～115℃
Product Size:	16.0×24.5×3.0mm

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