Temperature And Humidity Sensor

User Manual

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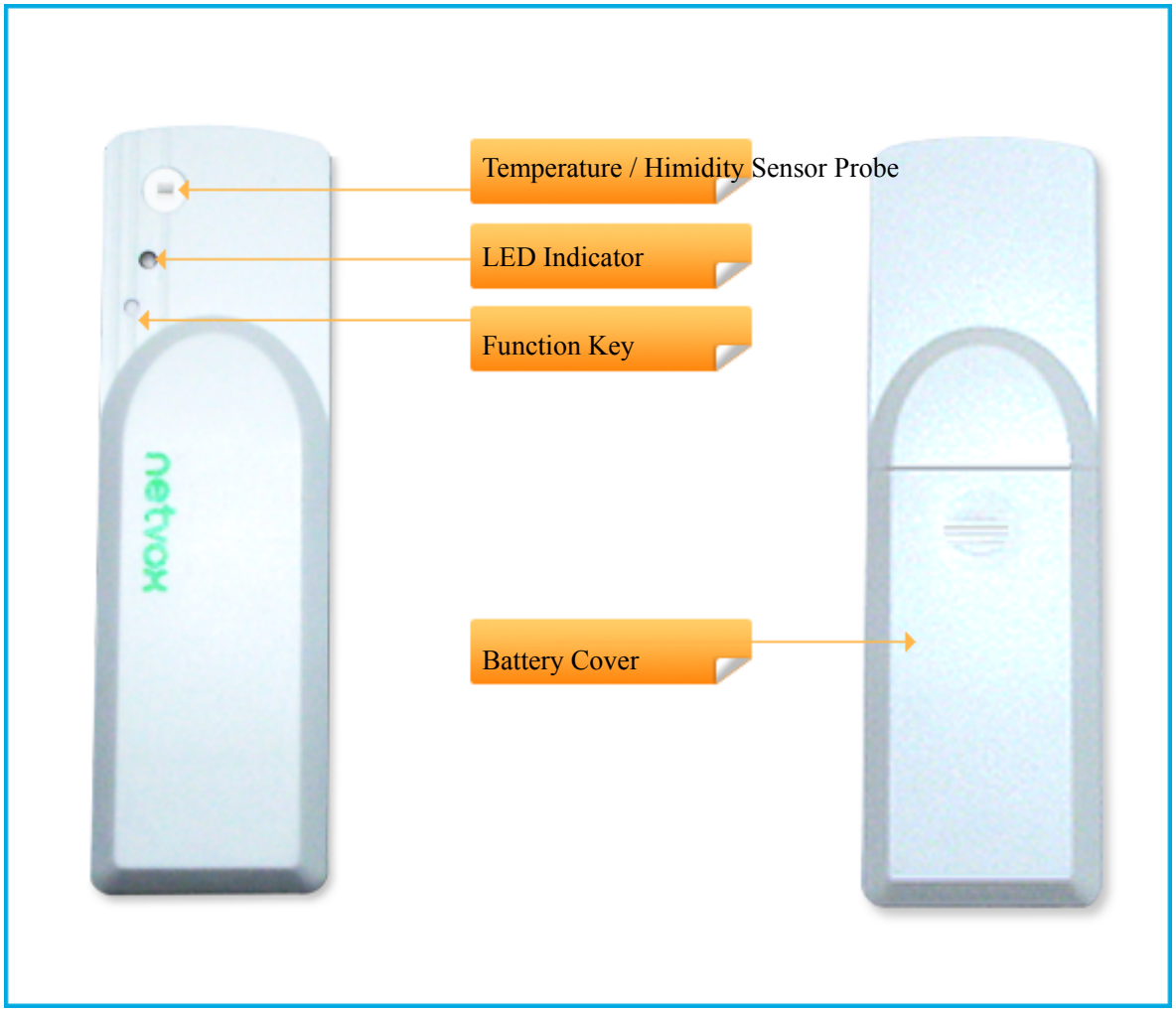
1. Introduction

R711 is a long distance wireless temperature and humidity sensor based on LoRaWAN open protocol (Class A).

LoRa Wireless Technology:
LoRa is a wireless communication technology dedicated to long distance and low power consumption. Compared with other communication methods, LoRa spread spectrum modulation method greatly increases to expand the communication distance. Widely used in long-distance, low-data wireless communications. For example, automatic meter reading, building automation equipment, wireless security systems, industrial monitoring. Main features include small size, low power consumption, transmission distance, anti-interference ability and so on.

LoRaWAN:
LoRaWAN uses LoRa technology to define end-to-end standard specifications to ensure interoperability between devices and gateways from different manufacturers.

2. Appearance



3. Main Features

- Compatible with LoRaWAN
- 2 section 1.5V AA Alkaline battery
- Report voltage status, temperature and humidity of indoor air
- Easy set up and installation

4.Set up Instruction

4.1 Power on and Turn on / off

(1) Power on = Insert batteries: open the battery cover; insert two sections of 1.5V AA batteries and close the battery cover.
(2) If the device had never joined in any network or at factory setting mode, after powering on, the device is at off mode by default setting. Press function key and release to turn on the device. The green indicator will flash once to show that R711 is turned on.
(3) Press and hold function key for 5 seconds till the green indicator flashes quickly and release. The green indicator will flash 20 times to show that R711 is turned off.

Note: the interval between shutting down twice or power off/on is suggested to be about 10s to avoid the interference of capacitor inductance and other energy storage components.

4.2 Join Into Lora Network

To join R711 into LoRa network to communicate with LoRa gateway (OTAA network mode by default).
The network operation is as following:
(1) If R711 had never joined any network, turn on the device; it will search an available LoRa network to join. The green indicator will stay on for 5 seconds to show it joins into the network, otherwise, the green indicator will be off.
(2) If R711 had been joined into a LoRa network, remove and insert the batteries; the green indicator will stay on for 5 seconds to show it joins into the network.

4.3 Function Key

(1) Press and hold function key for 5 seconds to reset to factory setting. After restoring to factory setting successfully, the green indicator will flashes quickly 20 times.
(2) Press function key to turn on the device and it will send a data report.

4.4 Data Report

When the device is turned on, it will immediately send a version package and a data report of temperature/humidity/voltage. The transmission frequency of data report is once every three minutes.
Temperature default report value: mintime = maxtime = 180s, reportchange = 0x0064 (1 ℃),
Humidity default report value: mintime = maxtime = 180s, reportchange = 0x0064 (1%),
Battery voltage default report value: mintime = 180s maxtime = 180s, reportchange = 0x01 (0.1V).

Note: MinInterval is the sampling period for the Sensor. Sampling period >= MinInterval.

Data report configuration and sending period are as following:

Min Interval (Unit:second)	Max Interval (Unit:second)	Reportable Change	Current Change≥ Reportable Change	Current Change < Reportable Change
Any number between 1~65535	Any number between 1~65535	Can not be 0.	Report per Min Interval	Report per Max Interval

5. Restore to Factory Setting

R711 saves data including network key information, configuration information, etc. To restore to factory setting, users need to execute below operations.
1. Press and hold function key for 5 seconds till the green indicator flashes and then release; LED flashes quickly 20 times.
2. R711 will stay off after restoring to factory setting. Press function key to turn on R711 and to join a new LoRa network.

6. Sleeping Mode

R711 is designed to enter sleeping mode for power-saving in some situations:

(A) While the device is in the network → the sleeping period is 3 minutes. (During this period, if the reportchange is larger than setting value, it will wake up and send a data report).
(B) When it is not in the network to join → R711 will enter sleeping mode and wake up every 15 seconds to search a network to join in the first two minutes. After two minutes, it will wake up every 15 minutes to request to join the network.

If it's at (B) status, to prevent this unwanted power consumption, we recommend that users remove the batteries to power off the device.

7. Low Voltage Alarming

The operating voltage threshold is 2.4V. If the voltage is lower than 2.4V, R712 will send a low-power report to the Lora network.

8. Important Maintenance Instruction

- This device is NOT truly waterproof/ resistant and is for indoor use.
- Please keep the device in a dry place. Precipitation, humidity, and all types of liquids or moisture can contain minerals that corrode electronic circuits. In cases of accidental liquid spills to a device, please leave the device dry properly before storing or using.
- Do not use or store the device in dusty or dirty areas.
- Do not use or store the device in extremely hot temperatures. High temperatures may damage the device or battery.
- Do not use or store the device in extremely cold temperatures. When the device warms to its normal temperature, moisture can form inside the device and damage the device or battery.
- Do not drop, knock, or shake the device. Rough handling would break it.
- Do not use strong chemicals or washing to clean the device.
- Do not paint the device. Paint would cause improper operation.

Handle your device, battery, and accessories with care. The suggestions above help you keep your device operational. For damaged device, please contact the authorized service center in your area.

FCC Statement:
This device complies with part 15 of the FCC Rules. Operation is subject to the following
two conditions: (1) This device may not cause harmful interference, and (2) this device
must accept any interference received, including interference that may cause undesired
operation.
This equipment has been tested and found to comply with the limits for a Class B digital
device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the
user is encouraged to try to correct the interference by one or more of the following measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.
Caution: Any changes or modifications not expressly approved by the party responsible
for compliance could void the user's authority to operate the equipment.
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.