Wireless Water Leak Detector / Temperature / Humidity Sensor

Wireless Sensor Network Based on LoRa Technology

R718WAA

Data Sheet

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Introduction

This device is used for water leakage detection and environmental temperature and humidity detection. When the water leakage sensor detects water leakage, it will send an alarm message to the gateway. When the water leakage sensor detects no water leakage, it will send the message of returning to normal to the gateway. At the same time, it can detect the temperature and humidity value of the current environment and send the temperature and humidity value information to the gateway for processing. It uses SX1276 wireless communication module.

Main Characteristic

- Adopt SX1276 wireless communication module
- 2 ER14505 battery AA size (3.6V / section) in parallel
- Water leak detection, temperature and humidity detection
- The base is attached with a magnet that can be attached to a ferromagnetic material object
- IP rating: Main body-IP65, water leakage sensor-IP67
- Compatible with LoRaWAN™ Class A
- Frequency hopping spread spectrum technology
- Configuring parameters and reading data via the third-party software platforms, and set alarms via SMS text and email (optional)
- Applicable to the third-party platforms: Actility / ThingPark / TTN / MyDevices / Cayenne
- Low power consumption and long battery life

Note:

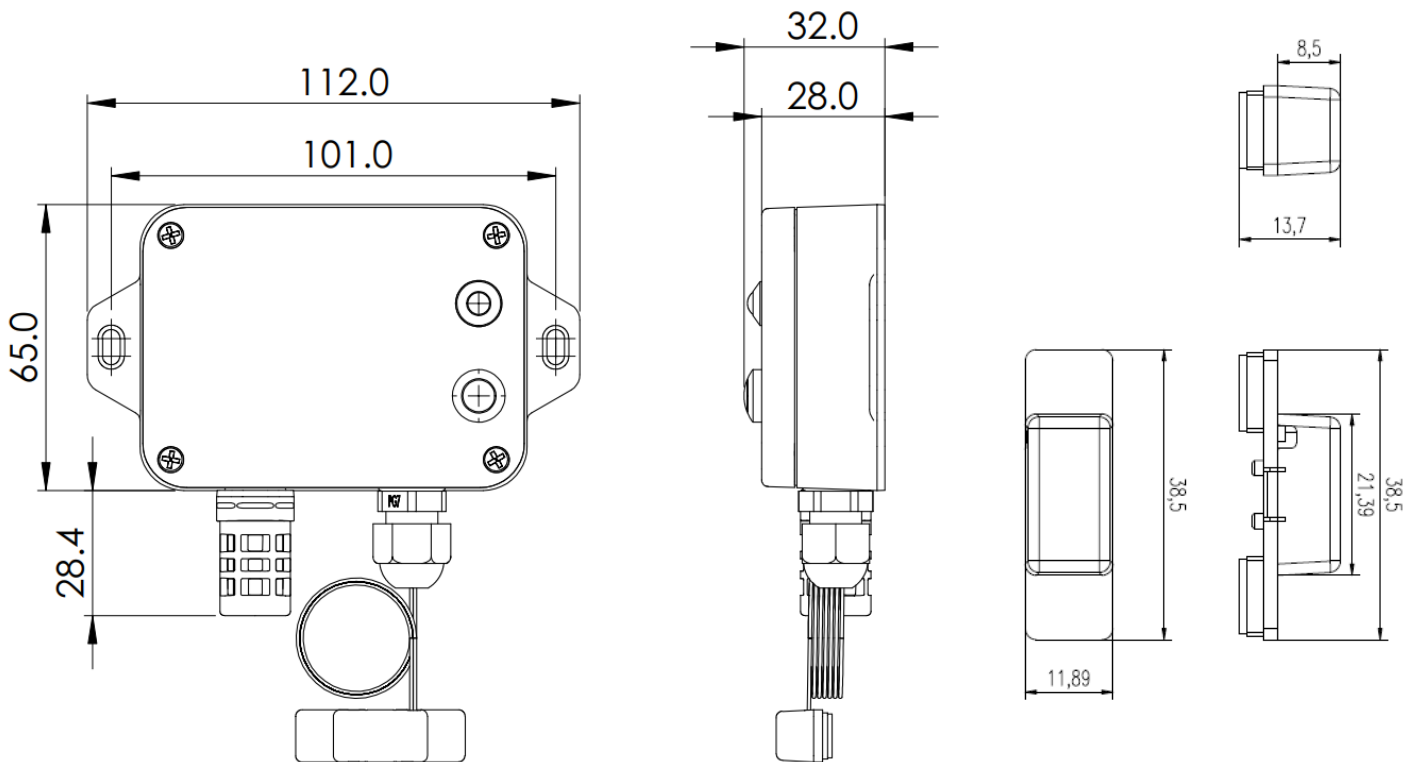Battery life is determined by the sensor reporting frequency and other variables.

Please refer to http://www.netvox.com.tw/electric/electric_calc.html

On this website, users can find various types of battery life time in different configurations.

Application

- Computer room

- Warehouse

- Archives

- Air conditioner

- Semiconductor plant

- Data Center

Dimension

(Unit mm)

Main body   Water leakage sensor

Electric

Power Supply	2 x 3.6V ER14505 AA size lithium batteries in parallel (3.6V 2400mAh/section)
Operating Voltage	3.1V to 3.65V
Battery Lifetime	5 years (Conditions: ambient temperature 25 °C, 15 min report once, TX power = 20dBm, LoRa spreading factor SF = 10)
Standby Current	22uA
Wake-up Current	0.8mA-20 mA * When not transmitting /receiving LoRa data
Low Battery Threshold	3.2V
Battery Measurement Accuracy	±0.1V

*The specific specifications of lithium batteries are subject to actual shipment.

*Before use, the user should use 67 ohm resistance and activate the battery for 8 minutes to actively

eliminate the hysteresis of the battery.

Module-R100H

Wake-up Current	0.8mA - 8mA/ 3.3V
RF Receiving Current (max)	11 mA/ 3.3V
RF Emission Current (max)	120mA/ 3.3V

* Specific electrical characteristics will vary depending on the power supply voltage

Cable

Cable Material	UL2547 28AWG
Cable Heat Resistant Temperature	80°C
Cable Diameter (max)	2mm
Cable Length	1000mm (±5mm)
Cable Flame Resistance Rating	VW-1
Cable Length Limit	300m (theoretical value)

Temperature and Humidity Sensor

Temperature Measurement Range	-20°C to 55°C
Temperature Measurement Accuracy	± 0.8°C
Humidity Measurement Range	0%RH to 100%RH
Humidity Measurement Accuracy	± 4%RH

Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
TX Power	US915 20dbm AS923 16dbm AU915 20dbm CN470 19.15dbm EU868 16dbm KR920 14dbm IN865 20dbm
Receiving Sensitivity	-136 dBm (LoRa, Spreading Factor=12, Bit Rate = 293bps) -121 dBm (FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps)
Antenna Type	Built-in antenna
Communication Distance	Up to 10 km (The actual transmission distance depends on the real environment.)
Data Transfer Rate	0.3kbps to 50kbps (LoRaWAN) 132kbps to 300kbps (FSK)
Modulation Method	LoRa/FSK (Note: choose one of them)
Supportable LoRaWAN Band	EU863-870,US902-928,AU915-928,KR920-923,AS923-1, AS923-2,AS923-3,IN865-867,CN470-510 (Note: optional, to be done in the factory configuration)

Physical

Host Body Dimension	L: 112 mm*W: 93.4 mm*H: 32 mm
Water Leak Sensor Dimension	L: 38.5 mm*W: 11.89 mm*H: 13.7mm
Host Body Weight	About 141 g
Ambient Temperature Range	-20°C to 55°C
Ambient Humidity Range	<90% RH (No condensation)
Storage Temperature Range	-40 °C ~ 85 °C