Wireless Temperature and Humidity Sensor with 1 x Digital Output

Wireless Sensor Network Based on LoRa Technology

R900A01O1 Data Sheet

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Introduction

R900A01O1 is a wireless temperature and humidity sensor with a digital output. It transmits digital signals to a third-party device when temperature or humidity exceeds the thresholds. With up to 7 flexible installation options, R900A01O1 integrates easily into various environments. In addition, with support for Netvox NFC app, users can easily configure settings, update firmware, and access data simply by tapping their smartphone to the device.

Features

- Powered by 2* 3.6V ER18505 batteries (also support ER14505 batteries with battery converter case)
- Main unit: IP65
- Output digital signals when temperature and humidity exceed the thresholds
- Built-in vibration sensor for tamper alarm
- Up to 7 installation methods for different kinds of applications
- Support NFC. Configure and upgrade firmware on Netvox NFC app
- Store up to 10000 data
- LoRaWAN™ Class A compatible
- Frequency hopping spread spectrum
- Configuration parameters can be configured through third-party software platforms, data can be read, and alarms can be set via SMS text and email (optional)
- Applicable to the third-party platforms: Actility/ThingPark, TTN, MyDevices/Cayenne
- Low power consumption and longer battery life

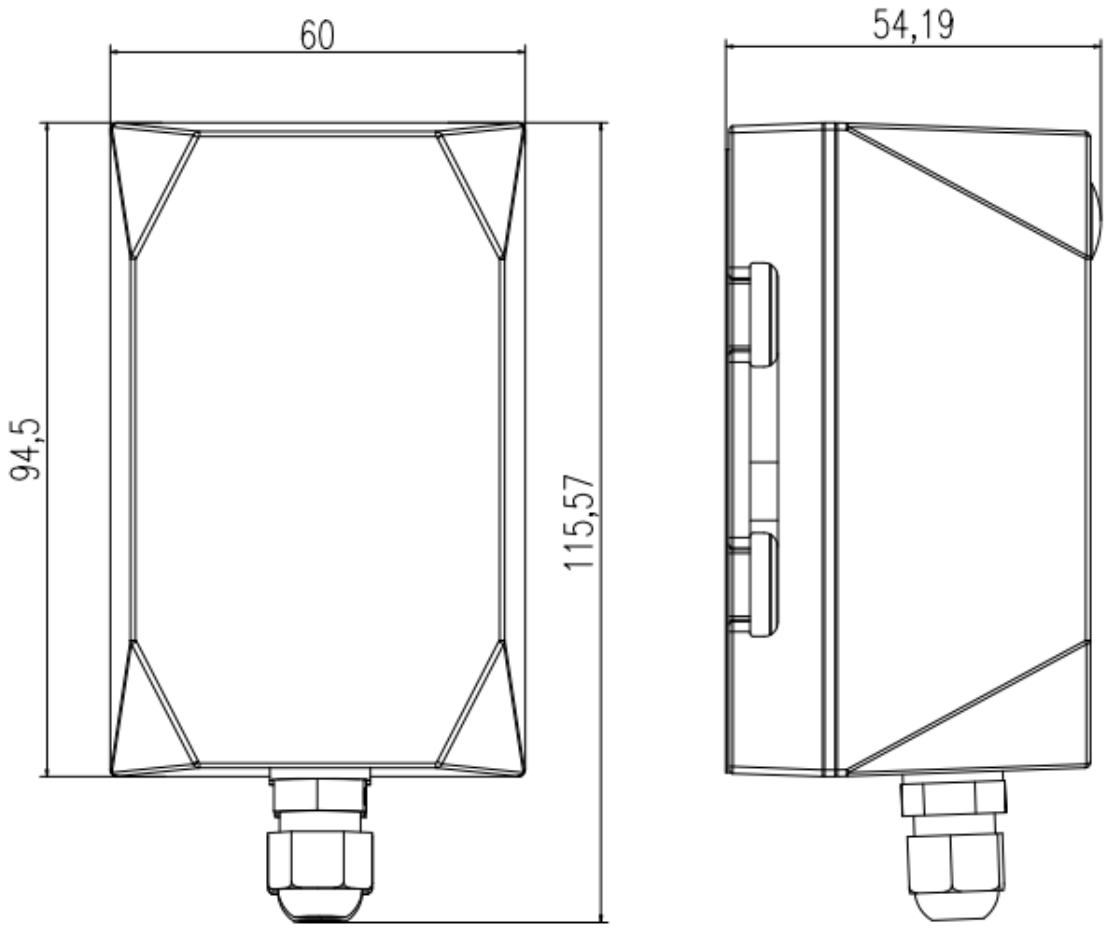
Note: Battery life is determined by the sensor reporting frequency and other variables, please visit http://www.netvox.com.tw/electric/electric_calc.html for battery life and calculation.

Applications

- Smart Home
- Train station
- Warehousing and transportation
- Textile industry

Dimensions

R900 (main unit)



Electrical Specifications

Power Supply	2* ER18505 3.6V 4000mAh lithium batteries in parallel (or 2* ER14505 3.6V 2400mAh lithium batteries with battery converter case)
Battery Lifespan	5.59 years (when powered by 2* ER18505 batteries, the temperature = 25℃, report interval = 15 minutes, TX power = 20dBm, and LoRa SF = 10)
Standby Current	35uA
Wake-up Current	7mA
RF Receiving Current	12mA @3.3V
RF Transmitting Current	138mA @3.3V, TX power = 22dB
Low voltage alarm	3.2V
Battery Measurement Error	±0.1V

Note: The electrical specifications may vary due to the voltage of the power supply.

Temperature and Humidity Sensor

-Temperature

Measurement Range	-20°C to +55°C
Accuracy	± 0.7°C

-Humidity

Measurement Range	0%RH – 100%RH
Accuracy	±4%RH（0-70%RH） ±8%RH（70%-100%RH）

Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
TX Power	US915 22dBm AS923 16dBm AU915 22dBm CN470 19.15dBm EU868 16dBm KR920 14dBm IN865 20dBm
RX Sensitivity	–123 dBm for 2-FSK (at 1.2 Kbit/s), –148 dBm for LoRa® (at 10.4 kHz, SF= 12)
Antenna Type	Built-in antenna
Communication Range	10km (line of sight) Note: The actual transmission distance depends on the environment.
Data Transfer Rate	FSK: 0.6 – 300Kbit/s Lora: 0.018 – 62.5Kbit/s
Modulation	LoRa / FSK Note: One modulation is required.
Available LoRaWan Band	EU863-870, US902-928, AU915-928, KR920-923, AS923-1, AS923-2, AS923-3, IN865-867, CN470-510 Note: configured before shipment

Physical Properties

Main Unit

Dimensions	L: 94.5mm x W:60mm x H: 54.19mm
Ambient Operating Temperature	-20℃ to +55℃
Ambient Storage Temperature	-40℃ to +85℃
Ambient Humidity	<90%RH (no condensation)
Installation	Standard: (1) screws + bracket (2) screws (3) double-sided tape Optional: (1) magnet (2) DIN rail buckle (3) swivel bracket Prepared by customers: (1) cable tie

Digital Output

Cable Length	1m