

Wireless Temperature and Humidity Sensor R718AB Data Sheet

Wireless Sensor Network Based on LoRa Technology



R718AB

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Wireless Temperature and Humidity Sensor

General Description

NETVOX Wireless Sensor R718AB is capable to measure temperature and humidity.

Principle of Operation

The R718AB is a wireless communication device that detects ambient air temperature and humidity. R718AB can detect the temperature and humidity of the air and transmit the detected data to data center through the wireless network. It uses the SX1276 wireless communication module.

Example Applications

- Ambient Temperature Monitoring
- Environmental Monitoring
- Smart City & Smart Building
- HVAC Operation & Testing
- Data Center Monitoring
- Stores
- Medicines
- On the Walls or in Logistics
- And many more...

Features of NETVOX Sensors

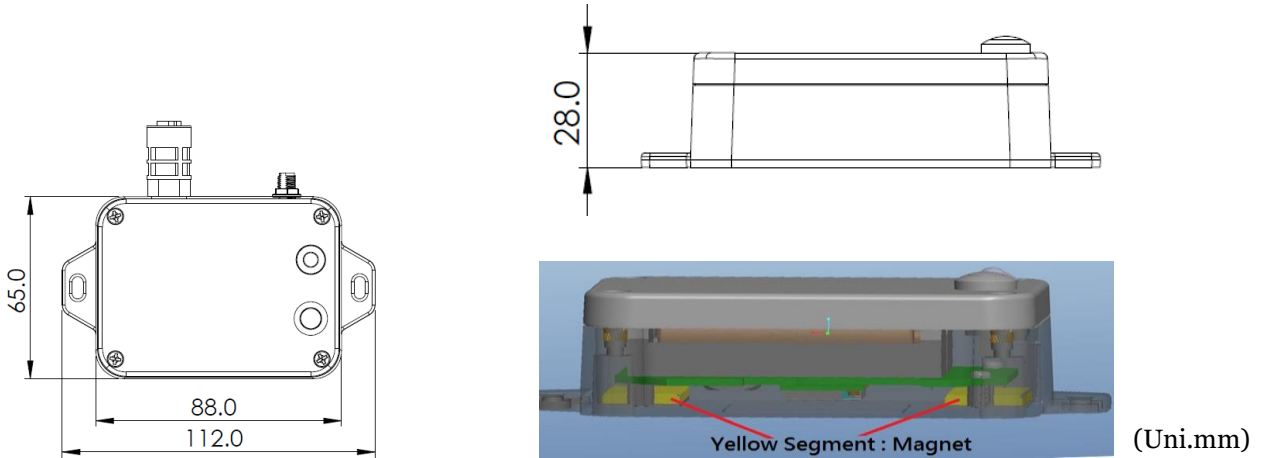
- Wireless range of 10km *1
- LoRaWAN™ Class A compatible
- Frequency Hopping Spread Spectrum (FHSS)
- Improved interference immunity
- Improved power management for longer battery life
- Encrypt-RF™ Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- Battery Life*2:
 - 15 min heartbeats = 5 years
(Conditions: ambient temperature 25 °C, txpower = 20dBm, LoRa spreading factor SF = 10)
- Over-the-air updates (future)
- Third-Party online wireless sensor monitoring and notification system to configure sensors, view data and set alerts via SMS text and email (optional)
- Available third-party platform: Actility/ThingPark, TTN, MyDevices/Cayenne
- R718X series carry magnets which can be attached to ferromagnetic materials and objects

*1. Actual range may vary depending on environment.

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

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Technical Specifications



Electric

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section)
Battery Life $\pm 0.1V$	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
Battery Measurement Accuracy	$\pm 0.1V$

Thermistor SHT-30

Model	SHT-30 (Brand : Sensirion)
Power Supply	+3.3VDC
Temperature Detecting Range	-20°C ~ 55°C
Temperature Accuracy	+/-0.5°C@25°C Max +/-0.8°C@ -20°C – 55°C
Humidity Detecting Range	10%RH-90%RH
Humidity Accuracy	+/-4%RH @25°C

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Frequency

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	Build-in antenna
Communication Range	10 km (line-of-sight, the actual transmission distance depends on the environment)
Data Transfer Rate	0.3kbps ~ 50kbps
Spread Technique	LoRa/FSK
Available Frequency	EU863-870, US902-928, U915-928, KR920-923, AS923, CN470-510 Configured before shipment

Physical

Dimension	Main Body: L: 112mm*W: 65mm*H: 32mm Sensor cover size: D: 16mm*L: 34.5mm,
Weight	141g
Environment Temperature Range	-20°C ~ 55°C
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40°C ~ 85°C

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