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CONNECTED LUMINAIRES PLATFORM

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Temperature and Humidity Sensor for Low Temperature Environment R718A Data Sheet

Wireless Sensor Network Based on LoRa Technology

R718A

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General Description

NETVOX Wireless Sensor R718A is capable to measure temperature and humidity at low temperature environment. R718A can be used in domestic and commercial refrigerators to store and transport food, medicines, flowers and other perishable goods, on the walls or in logistics refrigerators. Suitable as a data logger.

Principle of Operation

R718A carries a built-in SHT-35 temperature and humidity sensor. SHT-35 temperature and humidity sensor can detect the current environment temperature and humidity. SHT35 temperature and humidity sensor and module (R100H/R100L) communicate through I2C.
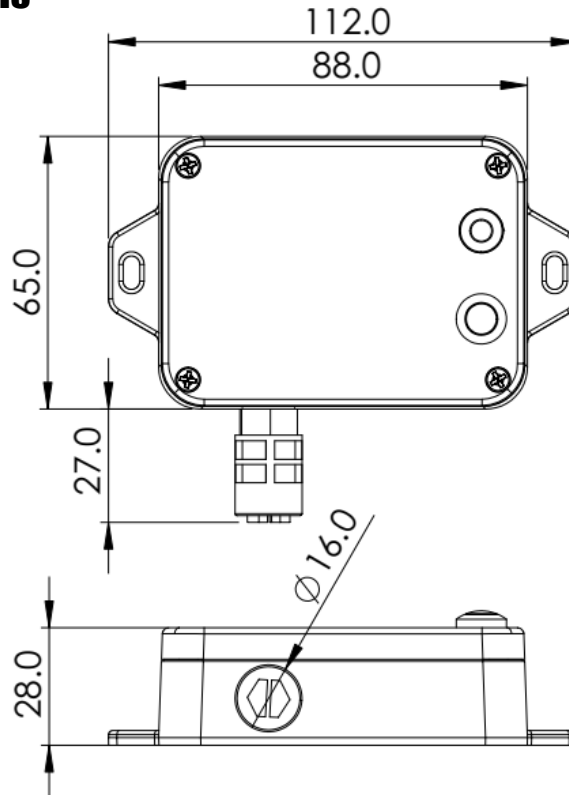
Features of NETVOX Sensors

•Apply SX1276 wireless communication module

•2 section of ER14505 battery in parallel (AA SIZE 3.6V / section)

•Temperature and humidity detection

•The base is attached with a magnet that can be attached to a ferromagnetic material object

•Protection class IP65

• LoRaWAN™ Class A compatible

• Frequency Hopping Spread Spectrum (FHSS)

•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

•Improved power management for longer battery life

• Battery Life[*2]:

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

  ⁻ At this website, users can find battery life time for varier models at different configurations.

  ⁻ Over-the-air updates (future)

*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

R718A

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V 2400mah/section）
Operating Voltage	DC 3.1V～3.65V
Battery Life	5 years (Conditions: ambient temperature 25 °C, 15 min report once, txpower = 20dBm, LoRa spreading factor SF = 10)
Standby Current	20uA
Wakeup Current	7.11mA (Typical value) Wakeup current range 0.8mA-20 mA * When not transmitting /receiving LoRa data)
Low Battery Voltage Threshold	3.2V
Battery Measurement Accuracy	±0.1V

Module-R100H

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

* The specific electrical characteristics will vary depending on the power supply voltage

Thermistor SHT-35

Model	SHT-35 （Brand：Sensirion）
Power Supply	+3.3VDC
Temperature Detecting Range	-40℃～55℃
Temperature Accuracy	±0.5℃ @25℃
Humidity Detecting Range	0%RH～100%RH
Humidity Accuracy	±3%RH @25℃

Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
TX Power	US915 20dbm； AS923 16dbm； AU915 20dbm； CN470 19.15dbm； EU868 16dbm； KR920 14dbm； IN865 20dbm；
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	Up to 10km, 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

Physical

Dimension	Main Body: L: 112mm*W: 65mm*H: 28mm Sensor cover size: D: Ø16mm*L: 27mm,
Weight	141g
Environment Temperature Range	-40℃ ∼ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ∼ 85℃