Wireless Wind speed sensor& Wind direction sensor& Temperature/Humidity Sensor

Wireless Sensor Network Based on LoRa Technology

Fig. R72630 Appearance (subject to the actual object)

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Introduction

R72630 is equipped with wind speed sensor, wind direction sensor, and temperature and humidity sensor. It can detect and send the data of the wind speed, wind direction, temperature and humidity of the environment. It adopts a wireless communication method and conforms to the LoRa protocol standard. It can detect the four elements of the air.

Operating Principle

The wind speed sensor and wind direction sensor of R72630 communicate with the LoRa module through RS485, and the temperature and humidity sensor communicates with the LoRa module through I^{2}C.

Main Feature

- Temperature and humidity detection
- Adopt SX1276 wireless communication module
- Solar panel charging function
- A rechargeable battery box (Users can purchase and install rechargeable lithium batteries by self.)
- Wind speed detection
- Wind direction detection
- Compatible with LoRaWAN^{TM} Class A
- Frequency hopping spread spectrum
- 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 battery life of various models in different configurations.

Application

- Smart home

- Temperature and humidity detection

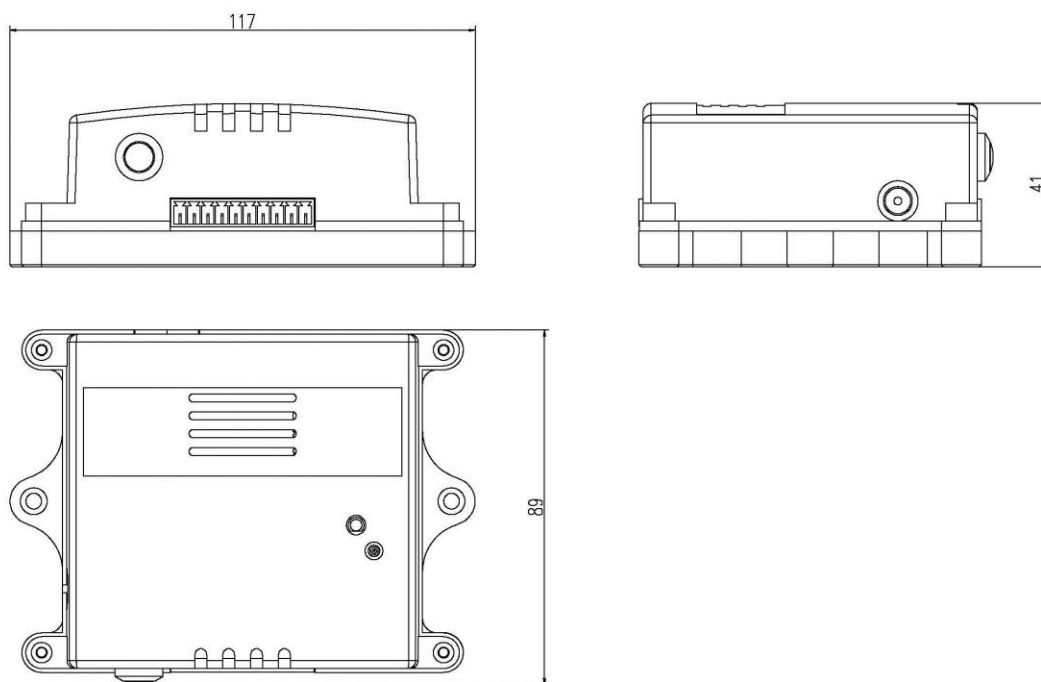- Wind speed and wind direction detection

Dimension (Host Body)

Fig. Host Body Case Dimension   (Unit: mm)

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Electric

Power Supply	3 rechargeable lithium batteries in series (each section of rechargeable lithium battery 3.7V, capacity recommended 3200mah)
Operating Voltage Range	9.8VDC～12.6VDC
Low Voltage Warning	10.5V
Operating Current	<100mA (when sensor is operating)

Battery Electric

Solar Panel Specification	5W / 18VDC
Lithium battery specification	3 rechargeable lithium batteries in series (each section of rechargeable lithium battery 3.7V, capacity recommended 3200mah, users purchase by self)
Lithium Battery Pack Charging Current	About 300mA (ensure sufficient sunshine intensity)
Lithium Battery Pack Charging Time	About 4 days to charge fully (Ensure sufficient sunshine intensity, the value is calculated with a rechargeable battery capacity being 3200mah)
The Time That the Lithium Battery Pack Can Be Used After Full Charged Once	About 760 hours (typical value, report the data once every 15 minutes, the value is calculated with a rechargeable battery capacity being 3200mah)

Temperature and Humidity Sensor Specification

Operating Voltage	+3.3VDC
Temperature Measurement Range	-20°C ~ 55°C
Temperature Measurement Accuracy	TBD
Humidity Measurement Range	0%RH~100%RH
Humidity Measurement Accuracy	TBD

Wind Speed Sensor

Operating Voltage	+12VDC
Use Place	Outdoor
Model	JXBS-3001-FS (485 wind speed sensor)
Output Signal	RS485
Measurement	0-30m/s
Waterproof Type	Waterproof

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Wind Direction Sensor

Operating Voltage	+12VDC
Use Place	Outdoor
Model	JXBS-3001-FX (485 wind direction sensor)
Output Signal	RS485
Response Time	Less than 2 seconds
Waterproof Type	Waterproof
Warranty Period	Host Body: 2 years, Gas Probe 1 year

Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
TX Power	US915 20dbm AS923 16dbm AU915 20dbm CN470 19.15dbm EU868 16dbm KR920 14dbm IN865 20dbm
Receive Sensitivity	-136dBm (LoRa, Spreading Factor=12, Bit Rate=293bps) -121dBm (FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps)
Antenna Type	Built-in antenna
Communication Distance	10km(visible linear obstacle-free transmission distance, actual transmission distance depending on the environment)
Data Transfer Rate	0.3kbps～50kbps
Modulation Method	LoRa/FSK (Note: choose one of them)
Supportable LoRaWAN Band	EU863-870, US902-928, AU915-928, KR920-923, AS923, CN470-510 (Note: The frequency band is optional and needs to be configured before shipment.)

Physical

Dimension	Mask Part: D220mm*H340mm Host Body: 117mm*89mm*41mm
Operating Temperature Range	-20℃ ～ 55℃
Operating Humidity Range	<90%RH (No condensation)
Storage Temperature Range	-40℃ ～ 85℃