

Wireless Outdoor Wind Speed / Wind Direction / Temperature / Humidity Sensor with a Solar Panel

Wireless Sensor Network Based on LoRa Technology



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Introduction

R72630 is equipped with a wind speed sensor, wind direction sensor, and temperature and humidity sensor. It can detect and send data on 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.

Features

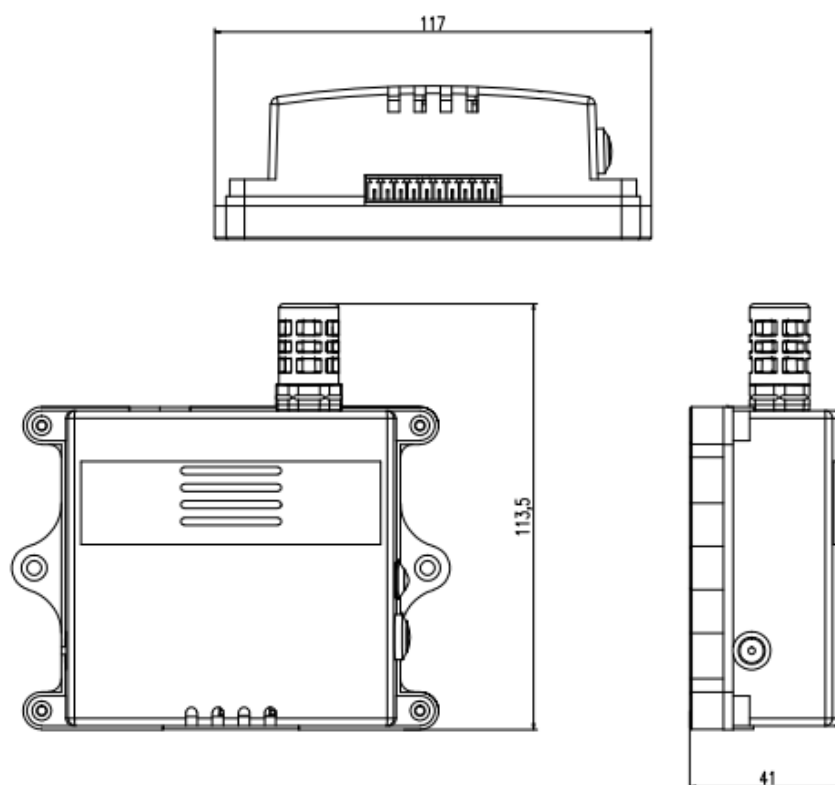
- Overcharge, over-discharge, and overcurrent protection for rechargeable batteries
- Temperature and humidity detection
- Adopt SX1276 wireless communication module
- Solar panel charging function
- A rechargeable battery box (Rechargeable lithium batteries need to be purchased by users.)
- Wind speed and wind direction detection
- Compatible with LoRaWAN™ Class A
- Frequency hopping spread spectrum
- 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 the battery life of various models in different configurations.

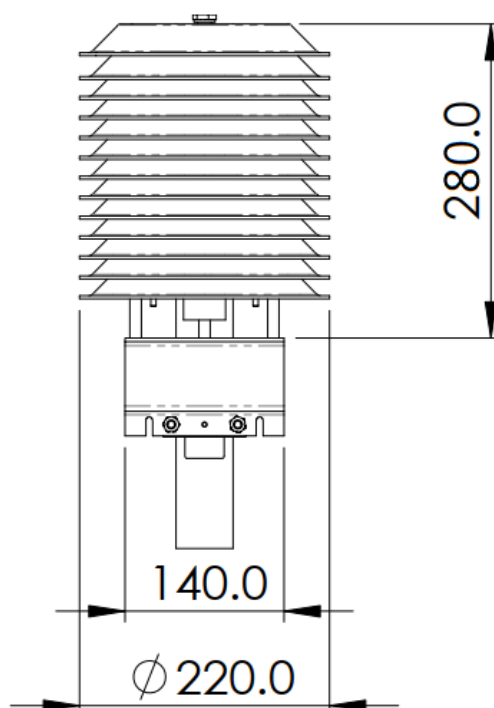
Applications

- Temperature and humidity detection
- Wind speed and wind direction detection

Dimensions



▲ Main body: 117mm x 113.5mm x 41mm



▲ Cover: 220mm (D) x 280mm (H)

Electrical Specifications

Power Supply	3* 3.7V rechargeable lithium batteries in series
Operating Voltage Range	9.8VDC to 12.6VDC
Low Voltage Warning	10.5V
Operating Current	<150mA

Battery

Solar Panel Specification	5W / 18VDC
Lithium battery specification	3* 3.7V rechargeable lithium batteries in series
Lithium Battery Charging Current	About 300mA (charge with sufficient sunlight)
Lithium Battery Charging Time	About 4 days to fully charge Under the conditions: a. the battery capacity is 3200mAh; b. the battery is charged in sufficient sunlight
Operation Time after Fully Charged	About 760 hours (typical value) Under the conditions: a. the battery capacity is 3200mAh; b. the data are reported every 15 minutes

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%

Wind Speed Sensor

Output Signal	RS-485
Measurement	0 – 30m/s
Wind Speed Measurement Accuracy	±1m/s

Wind Direction Sensor

Output Signal	RS-485
Response Time	Less than 2 seconds
Wind Direction Measurement Accuracy	$\pm 3^\circ$

Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
TX Power	US915 20dbm EU868 16dbm AS923 16dbm KR920 14dbm AU915 20dbm IN865 20dbm CN470 19.15dbm
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 (line of sight) Note: The actual transmission distance depends on the environment.
Data Transfer Rate	LoRa: 0.3kbps – 50kbps FSK: 1.2kbps – 300kbps
Modulation Method	LoRa/FSK Note: One modulation method is required.
Supportable LoRaWAN Band	EU863-870, US902-928, AU915-928, KR920-923, AS923-1, AS923-2, AS923-3, IN865-867, CN470-510 Note: The frequency band is optional and needs to be configured before shipment.

Physical Properties

Dimensions	Cover: 220mm (D) x 280mm (H) Main Body: 117mm x 113.5mm x 41mm
Operating Temperature Range	-20°C to +55°C
Operating Humidity Range	<90%RH (No condensation)
Storage Temperature Range	-40°C to +85°C