

Wireless PH Sensor

Wireless Sensor Network Based on LoRa Technology



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Introduction

R72608 is a device used for pH and water temperature detection of the water environment. It can detect and send the data of pH and temperature by the wireless communication method which adopts SX1276 wireless communication module.

Main Characteristic

- Adopt SX1276 wireless communication module
- Solar panel charging function
- A rechargeable battery box (Users can purchase and install rechargeable lithium batteries by self.)
- PH value detection
- Water temperature detection
- Compatible with LoRaWAN™ Class A
- Frequency hopping spread spectrum technology
- 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/ Cayenn
- Low power consumption and long battery life

Note*:

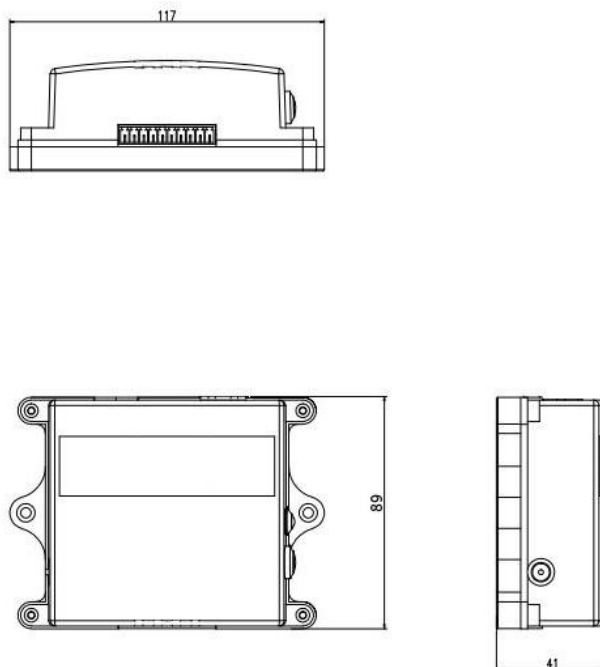
Battery life is determined by the sensor reporting frequency and other variables, please refer to http://www.netvox.com.tw/electric/electric_calc.html

On this website, users can find battery life of various models in different configurations.

Application Field

- PH detection
- Water temperature detection
- Other

Dimension (The Host Body)



Electric

Power Supply	3 rechargeable lithium batteries in series (each section of rechargeable lithium battery 3.7V)
Operating Voltage Range	9.8VDC to 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)
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 793 hours (typical value, report the data once every 30 minutes, the value is calculated with a rechargeable battery capacity being 3200mah)

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PH Sensor Parameter

Operating Temperature Range	0 to 65°C
Operating Water Temperature Range	12VDC-24VDC
Water Temperature Accuracy	±1.5% F.S.
PH Value Range	0-14PH
PH Value Resolution	0.01PH
PH Value Accuracy	±0.3PH
Usable Pressure Range	<0.2MPa
Temperature Compensation	Automatic Temperature Compensation (NTC)
Signal Output	RS485
Wetted Part Material	PPR
Installation	Immersion mounting, 3/4 NPT thread
Cable length	5m, other lengths can be customized
Calibration method	Two-point calibration
Power Consumption	0.2W@12V
IP Grade	IP68

*The bare 4 pin wiring terminal on PH sensor, please keep it dry

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	-121dBm (FSK,Frequency deviation=5kHz, Bit Rate=1.2kbps) -136dBm (LoRa, Spreading Factor=12, Bit Rate=293bps)
Antenna type	Built-in antenna
Communication Distance	10km(visible linear obstacle-free transmission distance, actual transmission distance depending on the environment)

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Data Transfer Rate	LoRa: 0.3kbps ~ 50kbps FSK: 1.2kbps ~ 300kbps
Modulation	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

Ambient Temperature Range	-20°C ~ 55°C
Ambient Humidity Range	< 90%RH (No condensation)
Storage Temperature Range	-40°C ~ 85°C