

Wireless ORP Sensor

Wireless Sensor Network Based on LoRa Technology



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Introduction

R718PA9 is a wireless communication device for detecting ORP value of acid/alkali/salt solution. Oxidation reduction potential, ORP for short, characterizes the relative degree of media oxidation or media reduction. ORP (oxidation reduction potential) is an important indicator of water quality. Although it cannot independently reflect the quality of water, it can integrate other water quality indicators to reflect the ecological environment in the aquarium system. R718PA9 can detect the ORP value of the solution. The host body and the ORP sensor are connected through the RS485 interface, and the detected data is transmitted to other devices through the wireless network for display. The device adopts a wireless communication method that conforms to LoRa™ protocol standard.

Operating Principle

The module R100H (R100L) communicates with OPR sensor via RS485.

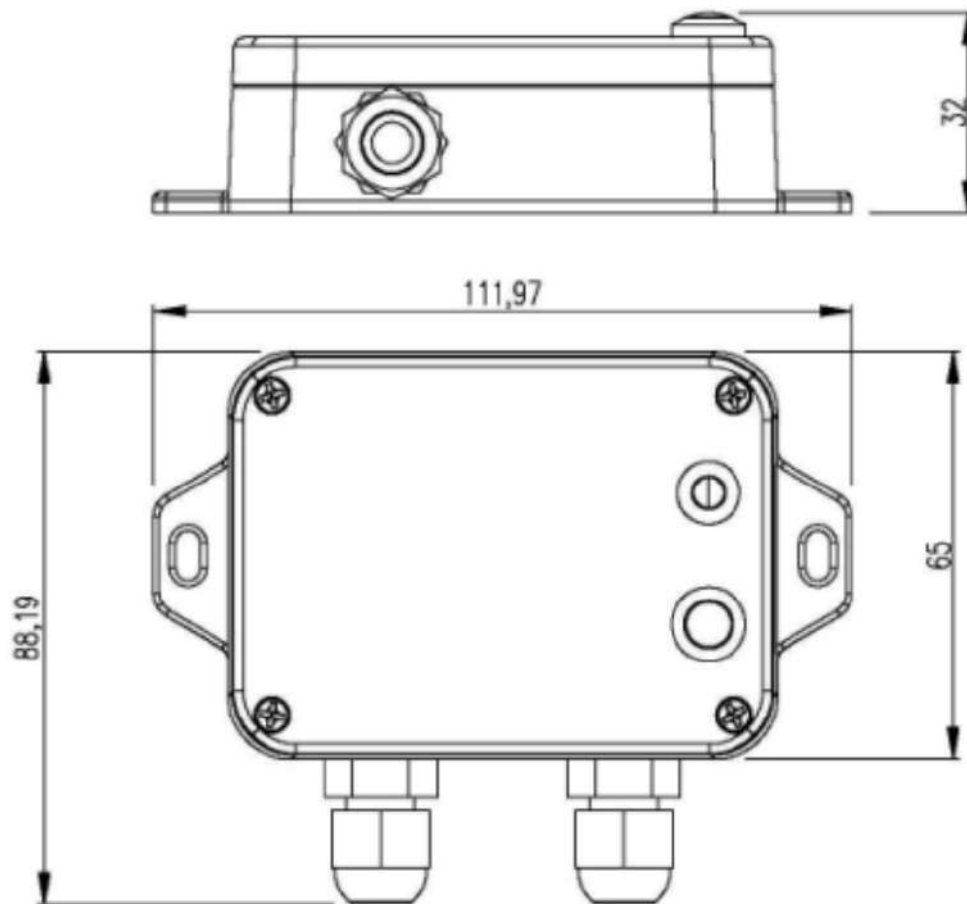
Main Characteristic

- Adopt SX1276 wireless communication module
- DC 12V adapter power supply
- Protection level IP65
- The base is equipped with a magnet that can be attached to the iron object
- RS485 communication
- Compatible with LoRaWANTM 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

Applications Feild

- ORP detection

Dimensions



Electric

Power Supply	DC 12V adapter power supply
Operating Current	<70mA (external sensor)

*Specific electric characteristics will vary depending on the power supply voltage.

ORP Sensor Parameter

Power Supply	+12V-+24VDC
ORP Sensor Measurement Range	-1500~+1500mV
Resolution	1mv
Accuracy	±6mV
Calibration Method	One-point Calibration
Cable Length	5m (Other lengths can be customized)
Liquid Container Material	PPR
Operating Pressure	<0.1MPa
Installation Method	3/4" NPT thread, immersion installation
Operating Temperature Range	0~60°C
Communication Port	RS485

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 Properties

Dimension	L 112mm* W 88.19mm* H 32mm,
Ambient Temperature Range	-20°C ~ 55°C
Host Body Weight	About 160g
Ambient Humidity Range	<90%RH (No condensation)
Storage Temperature Range	-40°C ~ 85°C