Wireless Turbidity Sensor
RA0710 Data Sheet

Wireless Sensor Network Based on LoRa Technology



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Wireless Turbidity Sensor

General Description

The RA0710 is connected to the ZS-206 integrated online turbidity sensor, and the ZS-206 is designed and manufactured using the principle of scattered light turbidity measurement. The LoRa module of the RA0710 communicates with the turbidity sensor in the form of RS485 communication to obtain the current turbidity signal value and display it through the wireless gateway.

Principle of Operation

When a beam of light is incident on a water sample, the light is scattered by the turbidity substance in the water sample, and the intensity of the scattered light in the direction perpendicular to the incident light is measured and compared with the internal calibration value to calculate the turbidity in the water sample which will be linearized to output the final value.

Example Applications

- Water quality turbidity test
- Smart washing machine
- Other

Features of NETVOX Sensors

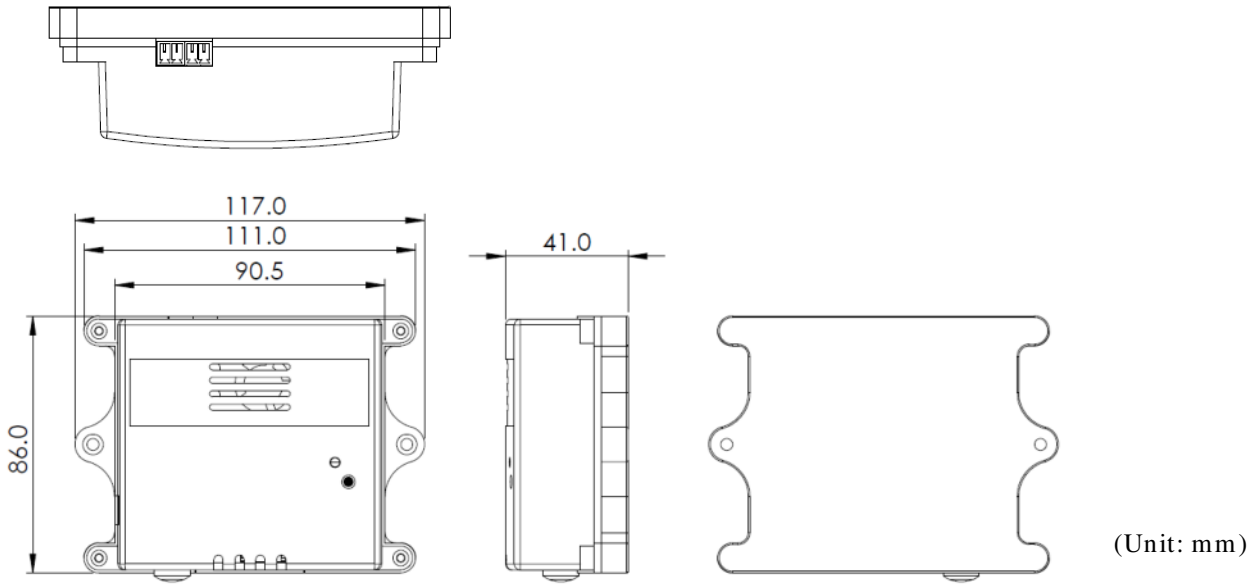
- LoRaWAN™ Class A compatible
- Frequency Hopping Spread Spectrum (FHSS)
- Improved interference immunity
- Improved power management for longer battery life
- Third-Party online wireless sensor monitoring and notification system to configure sensors, view data and set alerts via SMS text and email (optional)
- Available third-party platform: Actility/ThingPark, TTN, MyDevices/Cayenne
- 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

*1. Actual range may vary depending on environment.

*2. Battery life is determined by sensor reporting frequency and other variables

Wireless Turbidity Sensor

Technical Specifications



(Unit: mm)

Electric

Power Supply	DC12V/1A
Operating Current 1	50mA (no RF signal emission)
Operating Current 2	90mA (with RF signal emission)

Turbidity Sensor

Model	ZS-206
Measuring principle	Scattered light method
Range	0-1000NTU
Resolution	0.1NTU, 0.1˚C
Accuracy	±5% F.S., ±0.5˚C
Correction Function	Supported
Temperature Compensation	Supported
Output Mode	RS-485 bus, MODBUS-RTU protocol
Working Conditions	0-50 ˚ C, <0.2MPa
Storage Temperature	-5˚C - 65˚C
Installation Method	3/4” NPT thread, immersion installation
Cable Length	5 meters, other lengths can be customized
Power Supply	12V-24VDC ±10%
Protection Level	IP68

Wireless Turbidity Sensor

Frequency

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	10 km (line-of-sight, 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, AS923-1,AS923-2,AS923-3,IN865-867,CN470-510 Configured before shipment

Physical

Dimension	111mm*86mm*41mm
Working Temp	-20° C ~ +55° C
Storage Temp	-40°C ~ +85°C
Humidity Detecting Range	＜90%RH