

Wireless Turbidity Sensor RA0710 Data Sheet

Wireless Sensor Network Based on LoRa Technology

DIREKTRONIK
Dataprodukter utöver det vanliga



RA0710

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 **LoRa Alliance Member™** **zigbee alliance member**

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

- Wireless range of 10 km *1
- LoRaWAN™ Class A compatible
- Frequency Hopping Spread Spectrum (FHSS)
- Improved interference immunity
- Improved power management for longer battery life
- Encrypt-RF™ Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- 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.

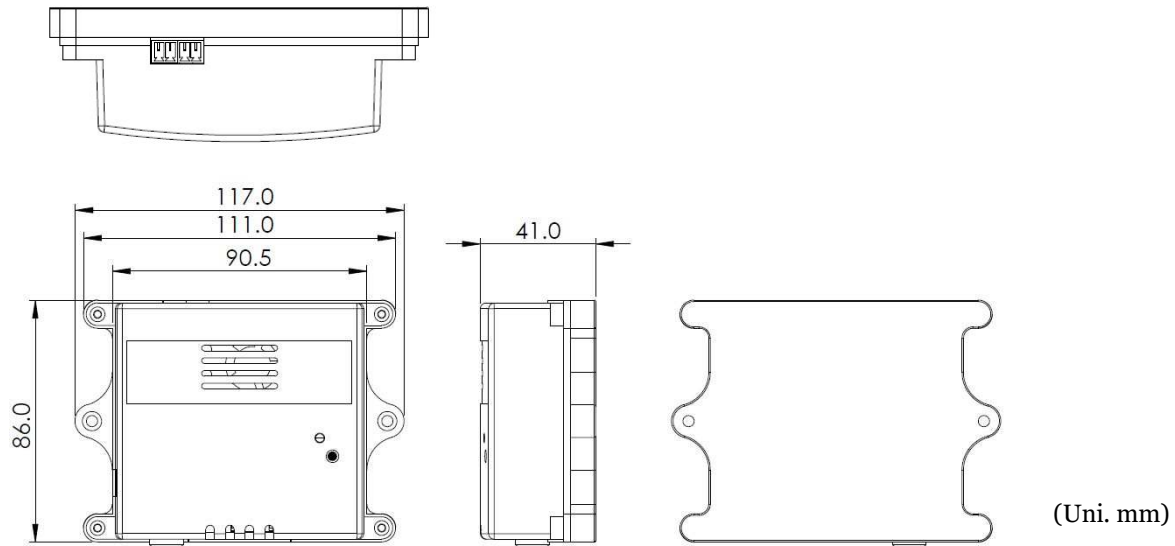
- Over-the-air updates (future)
- Third-Party online wireless sensor monitoring and notification system to configure sensors, view data and set alerts via SMS text and email (optional)
- Available third-party platform: Actility/ThingPark, TTN, MyDevices/Cayenne

*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



Electric

| | |
|---------------------------|--------------------------------|
| Power Supply Power Supply | DC 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 | 19dBm±1dBm |
| 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, 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 |

Contact: