

# Wireless Turbidity Sensor

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Wireless Sensor Network Based on LoRa Technology



## RA0710 Data Sheet

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## Introduction

RA0710 connects an external turbidity sensor to detect water turbidity and temperature.

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.

## Main Characteristics

- LoRaWAN™ Class A compatible
- Turbidity detection
- Frequency Hopping Spread Spectrum (FHSS)
- Available third-party platform: 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](http://www.netvox.com.tw/electric/electric_calc.html)

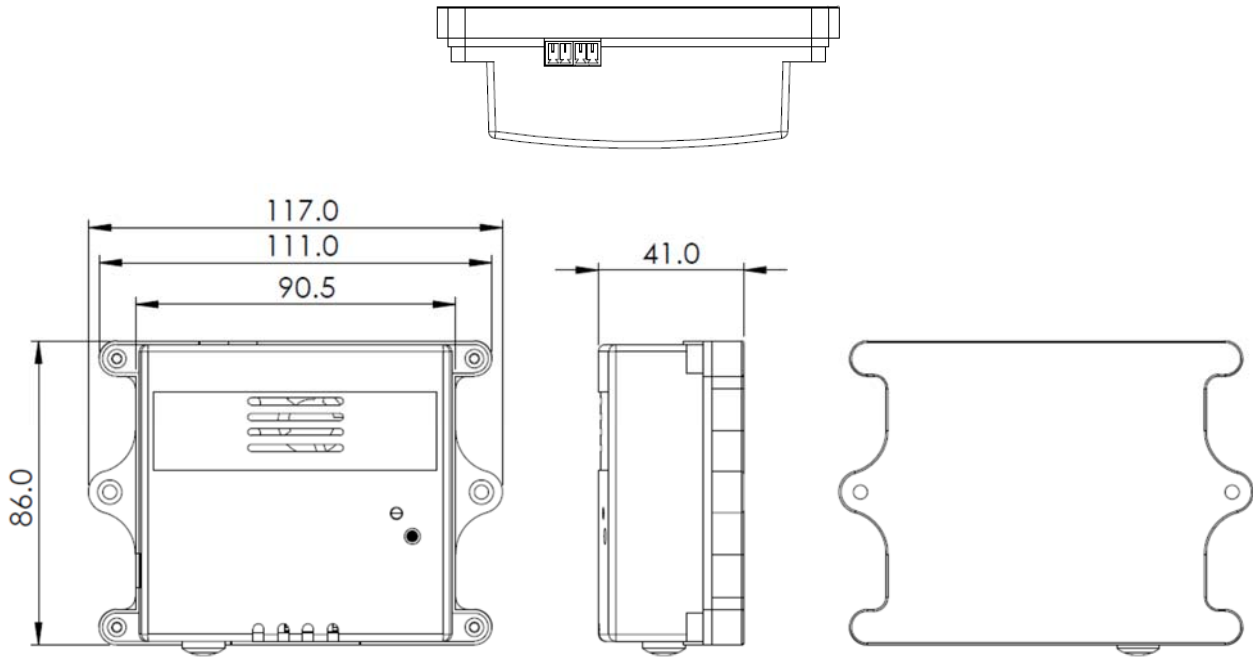
On this website, users can find battery life of various models in different configurations.

## Applications

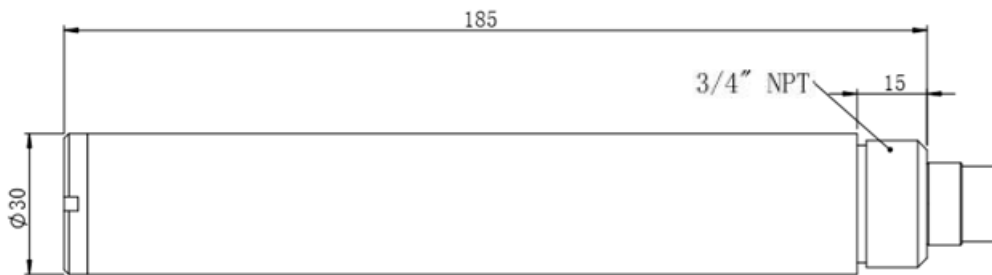
- Water quality turbidity test
- Smart washing machine
- Other

Wireless Turbidity Sensor

Dimension



Host body



Turbidity Sensor

Electrical Characteristics

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

**Wireless Turbidity Sensor**
**Turbidity Sensor**

Measuring principle	Scattered light method
Measurement Range/Resolution	0~1000 NTU/ 0.1NTU/ 0.1°C
Accuracy	±5% or ±3NTU ±0.5°C
Calibration	Two Point Calibration
Temperature Compensation	Automatic temperature compensation (Pt1000)
Working Conditions	0-50 ° C, <0.2MPa
Storage Temperature	-5°C to 65°C
Installation Method	3/4" NPT thread, immersion installation
Cable Length	5 meters, other lengths can be customized
Power Consumption	<0.3W@12V
Sensor Protection Level	IP68
Service Life	1 year

\* If the user needs a range of **0~100 NTU / 0~20 NTU**, the user needs to purchase the sensor of this range.

**Frequency**

Frequency Range	863MHz-928MHz, 470MHz-510MHz
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

**Wireless Turbidity Sensor**

Communication Range	10 km (the actual transmission distance depends on the environment)
Data Transfer Rate	LoRa: 0.3kbps ~ 50kbps FSK: 1.2kbps ~ 300kbps
Spread Technique	LoRa/FSK (Note: choose one of them)
Available Frequency	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**

Dimension	111mm*86mm*41mm
Working Temperature	-20°C ~ 55°C
Storage Temperature	-40°C ~ 85°C
Humidity Detecting Range	< 90%RH (No condensation)