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**Wireless 0-10V ADC Sampling Interface**

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# Wireless 0-10V ADC Sampling Interface R718IB Data Sheet

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Wireless Sensor Network Based on LoRa Technology



**R718IB**

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## Wireless 0-10V ADC Sampling Interface

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### General Description

The device is designed for a variety of resistive bridge-sensing applications like pressure, temperature, and level-sensing applications. It can also support other applications, weight scale and force-sensing applications that use strain gauge load cells, and other general resistive bridge signal-conditioning applications.

### Principle of Operation

This device can be connected to an ADC sampling interface device. Bare line black is the ground line; red one is the ADC sampling interface line, and the ADC sampling voltage range is 0-10V, which uses the SX1276 wireless communication module.

### Example Applications

- Battery Health
- Voltage Measurement
- Transducer Measurement
- Machinery
- Electrical Motors
- Weight Scale and Force-sensing
- Pressure, Temperature, Level-sensing Applications
- And many more...

### Features of NETVOX Sensors

- Wireless range of 10km \*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](http://www.netvox.com.tw/electric/electric_calc.html)

At this website, users can find battery life time for varier models at different configurations.

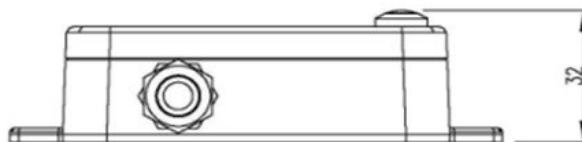
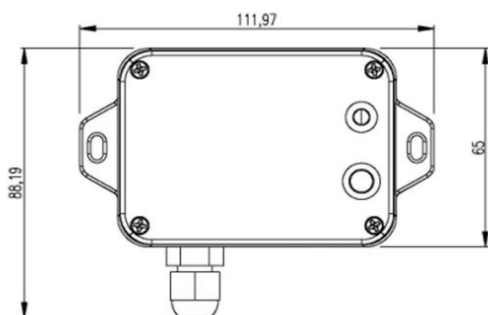
- Over-the-air updates (future)
- Third-Party online wireless sensor monitoring and notification system to configure sensors, view data and set alerts via SMS text and email (optional)
- Available third-party platform: Actility/ThingPark, TTN, MyDevices/Cayenne
- R718X series carry magnets which can be attached to ferromagnetic materials and objects

\*1. Actual range may vary depending on environment.

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

## Wireless 0-10V ADC Sampling Interface

### Technical Specifications (Main Part)



(Uni. mm)

### Electric

|                                      |  |
|--------------------------------------|--|
| Input Power                          | 2 x 3.6V ER14505 AA lithium batteries<br>(3.6V2400mah/section) |
| Sleeping Mode                        | 22uA   |
| Wake up Mode                         | 6.3mA@3.3V   |
| Receiving Current (max)              | 11mA @3.3V   |
| Transmitting Current (max)           | 120mA/3.3V   |
| Battery Voltage Measurement Accuracy | ±0.1V  |
| Low Voltage Threshold                | 3.2V   |

\* Specific electrical characteristics may vary depending on the power supply voltage.

### Frequency

|                     |   |
|---------------------|---|
| TX Power            | 19dBm±1dBm  |
| Rx Sensitivity      | -136dBm (LoRa, Spreading Factor=12, Bit Rate=293bps )<br>-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 | US915 AU915 AS923 EU868 KR920 CN470<br>Configured before shipment   |

## Wireless 0-10V ADC Sampling Interface

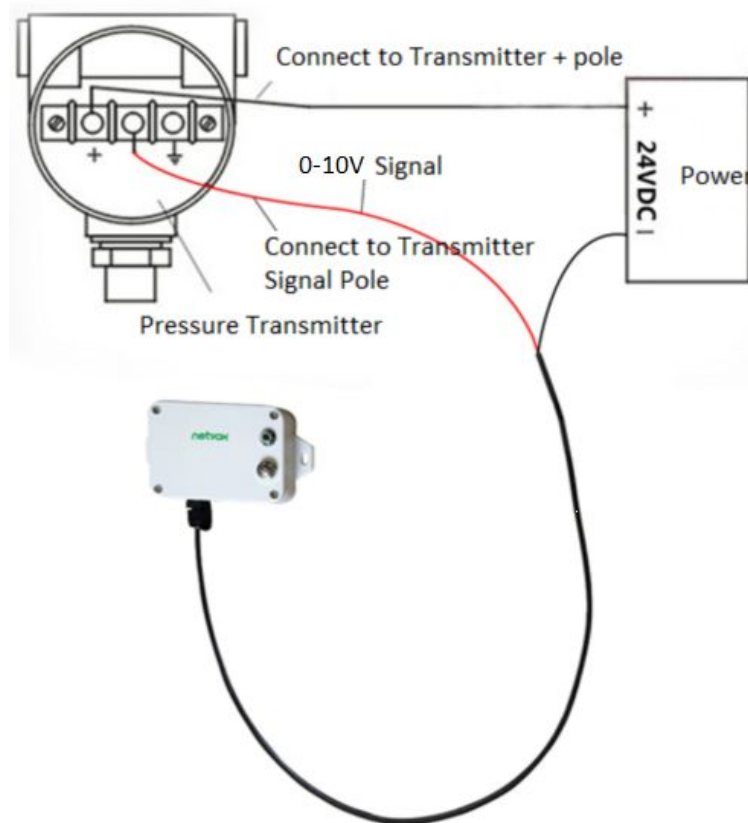
### ADC Sampling Characteristic

|                            |           |
|----------------------------|-----------|
| ADC Sampling Voltage Range | 0-10V     |
| Digit                      | 12 digits |
| ADC Conversion Rate        | 1.14 Msps |
| External Cable Length      | 1m        |

### Physical

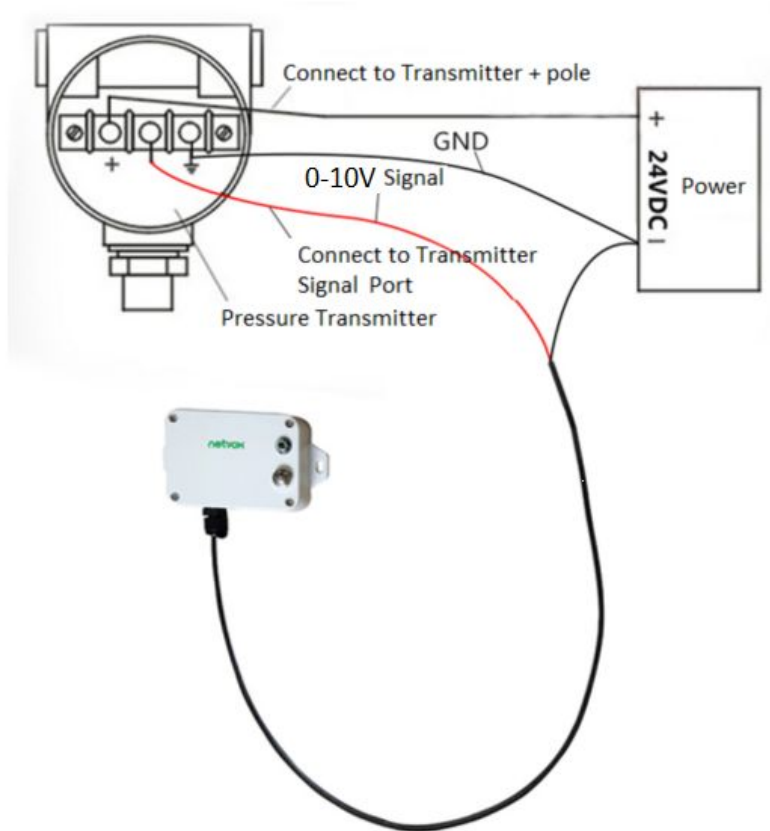
|                               |                                     |
|-------------------------------|-------------------------------------|
| Dimension                     | Main Part: L: 112mm*W: 65mm*H: 32mm |
| Weight                        | 141g                                |
| Environment Temperature Range | -20°C ~ 55°C                        |
| Environment Humidity Range    | <90% RH (No condensation)           |
| Storage Temperature           | -40°C ~ 85°C                        |

### 2-wire System Example Diagram (for wiring reference)



**Wireless 0-10V ADC Sampling Interface**

**3-wire System Example Diagram (for wiring reference)**



**Contact:**

**NETVOX TECHNOLOGY CO., LTD.**

TEL: 886-6-2617641  
 FAX: 886-6-2656120  
 E-mail: sales@netvox.com.tw  
 WEB: www.netvox.com.tw

**NETVOX TECHNOLOGY CO., LTD (XIAMEN)**

TEL: 86-592-5717188  
 FAX: 86-592-5717180  
 E-mail: dyx@netvox.com.cn  
 WEB: www.netvox.com.cn



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