

Wireless Differential Pressure and Temperature Sensor

Wireless Sensor Network Based on LoRa Technology



R718Y Data Sheet

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Wireless Differential Pressure and Temperature Sensor

Introduction

R718Y is a wireless communication device which can detect the pressure difference. It will transmit the detected data to other devices for display through the wireless network. It adopts the SX1276 wireless communication module.

Main Characteristic

- Apply SX1276 wireless communication module
- 2 ER14505 batteries AA size (3.6V / section) in parallel
- Differential pressure sensor
- Protection class IP40
- The base is attached with a magnet that can be attached to a ferrous object
- Compatible with LoRaWAN™ Class A
- Frequency hopping spread spectrum
- Configuration parameters can be configured via a third-party software platform, data can be read and alerts can be set via SMS text and email (optional)
- Applicable to the third-party platforms: 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.

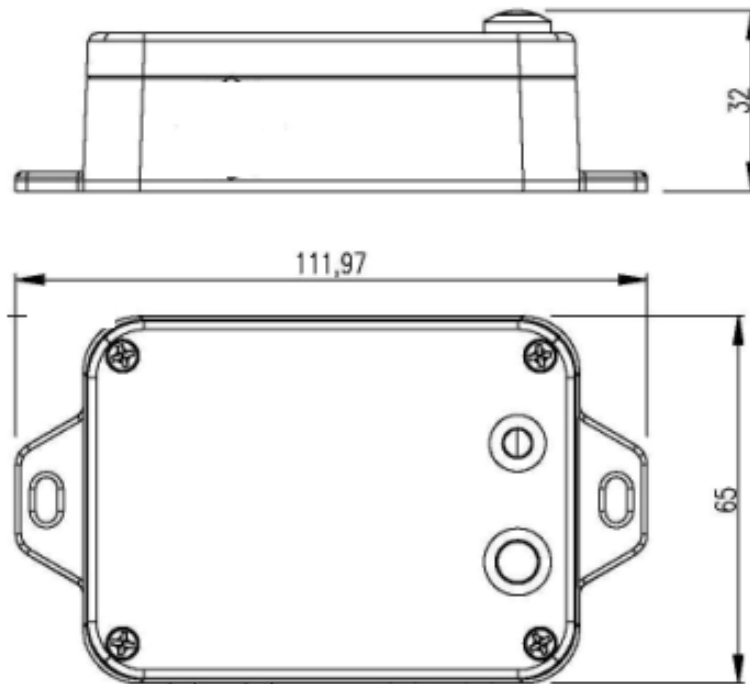
On this website, users can find various types of batteries in different configurations.

Application

- Duct Filter Detection
- Other

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Dimension



Electric

Power Supply	2 sections ER14505 lithium batteries (3.6V, 2400mAh/ section) in parallel
Battery Lifetime	Battery lifetime 3.8 years (Condition: ambient temperature 25°C, report once every 15min, TX power = 20dBm, LoRa spreading factor SF = 10)
Standby Current	<30uA
Wake-up Current	7.11mA (Typical value) Wakeup current range 0.8mA - 20mA * When not transmitting /receiving LoRa data
Low Voltage Threshold	3.2V

R100H Module

RF Receiving Current	11mA @3.3V
RF Transmitting Current	120mA @3.3V

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

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Differential Pressure, Temperature Sensor

Operation Current	Typical value 3.8mA during measurement
Measuring Range	-500 Pa to 500 Pa
Allowable Overpressure	100 kPa
Rated Burst Pressure	500 kPa
Accuracy	3% of reading \pm 0.1 Pa
Span Repeatability	0.5% of reading
Span Shift Due To Temperature Variation	< 0.5% of reading per 10°C
Offset Stability	< 0.05 Pa/year
Temperature Accuracy	\pm 3°C (-20°C to 50°C)
Media Compatibility	Air, Nitrogen, Oxygen, Non-condensing
Communication Method	I2C
Max Humidity For Long-Term Exposure	40°C dew point
External Hose Dimension	Outer diameter: 6mm Inner diameter: 4mm

* Note:

Pressurizing the positive side of the hose will generate a positive data ;
pressurizing the negative side of the hose will generate a negative data.

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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 (LoRa) 1.2kbps ~ 300kbps (FSK)
Modulation Method	LoRa/FSK (Note: choose one of them)
Supportable LoRaWAN Band	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	L 112mm* W 65mm* H 32mm
Host Body Weight	About 181g
Ambient Temperature Range	-20°C ~ 50°C
Storage Temperature Range	-40°C ~ 85°C
Ambient Humidity Range	<90%RH (No condensation)