Wireless Vibration Sensor, Spring Type

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R718DB Data Sheet

Wireless Sensor Network Based on LoRa Technology

R718DB

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General Description

When the vibration sensor moves or vibrates, the R718DB can detect the vibration or movement signal, and transmit the detected data to other devices through the wireless network. It uses the SX1276 wireless communication module.

Principle of Operation

When the shock sensor is touched by an external force to reach the corresponding vibration force or the moving speed reaches an appropriate centrifugal force, the module can detect the vibration signal or the movement signal.

Example Applications

• Equipment that needs to be detected vibration or movement

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

   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

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Technical Specifications (Main Part)

Yellow Segment : Magnet
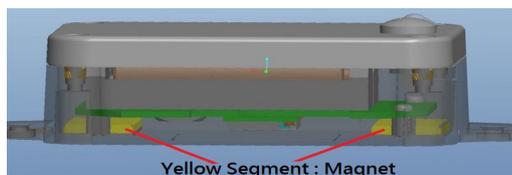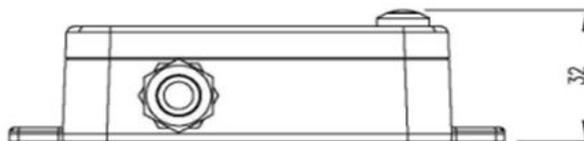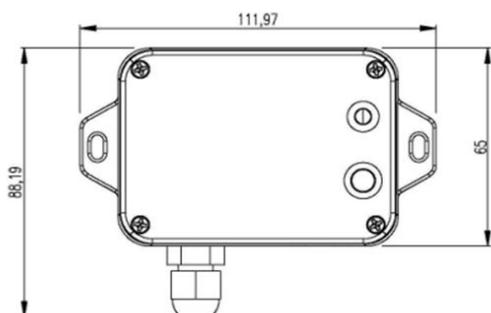
(Uni. mm)

Electric

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section）
Sleeping Mode	23uA
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.

Vibration Sensor

Vibration Sensor Case Size	L:43mm*W:13mm*H:12mm
Vibration Sensor Maximum Voltage	5V
Sensor Switch Life	Up to 200,000 times
Vibration Sensor Working Principle	When it is at rest, it is in the open state OFF state. When the external force is touched to reach the corresponding vibration force, or when the moving speed reaches the appropriate centrifugal force, the conductive pin will instantly reach the ON state. When the external force disappears, the switch returns to the OFF state.

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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	US915　　AU915　　AS923 EU868　　KR920　　CN470 Configured before shipment

Physical

Dimension	Main Part: L: 112mm*W: 65mm*H: 32mm
Weight	150g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

Contact: