
Wireless Vibration Sensor, Rolling Ball Type

Wireless Vibration Sensor Rolling Ball Type R718DA Data Sheet

Wireless Sensor Network Based on LoRa Technology



R718DA

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General Description

When the vibration sensor moves or vibrates, the R718DA can detect vibrations or moving signals and transmit the detected data to other devices through the wireless network. The SX1276 wireless communication module is used.

Principle of Operation

When the vibration sensor is tilted and the tilting angle is greater than 10 degrees, it will be OFF mode. When the tilt level changes, and the triggering end is lower than tilt angle 10 degrees, it will be ON state. The module can detect open circuit OFF state and closed circuit ON state signal to detect vibration or move.

Example Applications

- Vibration Monitoring
- Burglar Alarm
- Objects to be detected vibration or movement

Features of NETVOX Sensors

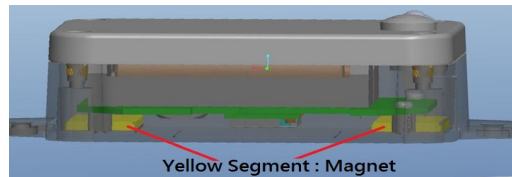
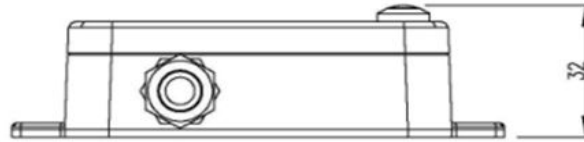
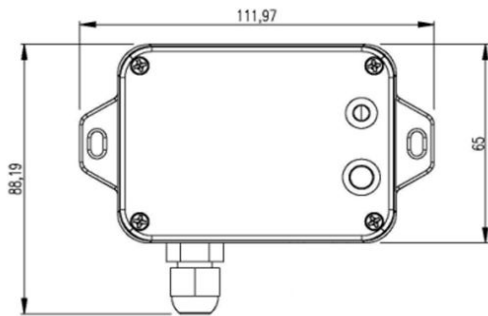
- Wireless range of 10km *1
- LoRaWAN™ Class A compatible
- Frequency Hopping Spread Spectrum (FHSS)
- Improved interference immunity
- Improved power management for longer battery life
- Encrypt-RF™ Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- Battery Life*2:
 - Please 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)



(Uni. mm)

Electric

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section)
Sleeping Mode	20uA
Wake up Mode	6.3mA@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V

* 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 100,000 times
Vibration Sensor Sensitivity	When placed horizontally, any shaking can trigger the device. When the pilot electrical end is placed downward, it is not easily to be triggered.
Vibration Sensor Characteristic (Dual ball type single direction tilt sensitive trigger sensor)	When the vibration sensor is tilted and the tilting angle is greater than 10 degrees, it will be OFF mode. When the tilt level changes, and the triggering end is lower than tilt angle 10 degrees, it will be ON state. The module can detect open circuit OFF state and closed circuit ON state signal to detect vibration or move.

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External Cable Length	1 meter
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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	EU863-870, US902-928, AU915-928, KR920-923, AS923, CN470-510 Configured before shipment

Physical

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

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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