Wireless Vibration Sensor,Rolling Ball Type

Wireless Sensor Network Based on LoRa Technology

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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.
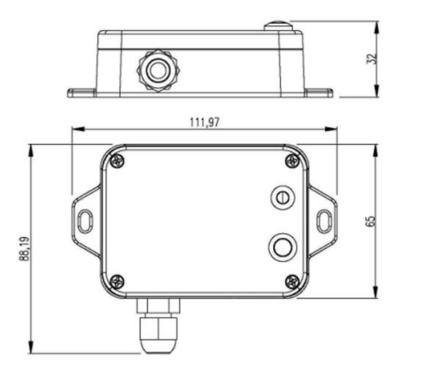
Main Characters

- Apply SX1276 wireless communication module
- 2 section ER14505 batteries AA size (3.6V/section) parallel power supply
- Vibration detection
- The base is equipped with a magnet that can be attached to the magnetic substance
- IP Ratings: Main part- IP65/IP67 (Optional), Sensor-/IP67
- LoRaWAN^{TM} Class A compatible
- Frequency Hopping Spread Spectrum (FHSS)
- Improved interference immunity
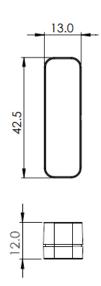- Improved power management for longer battery life

Example Applications

- The device which needs to detect the vibration or the movement Objects to be detected
- The burglar alarm
- Other

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Technical Specifications

Unit: mm

Electric

Input Power	2 x 3.6V ER14505 AAsize lithium batteries
Operating Voltage	3.1v to 3.65v
Low Voltage Threshold	3.2v
Battery Life	5 years (Conditions: ambient temperature 25 °C, 15 min heartbeats, txpower = 20dBm, LoRa spreading factor SF = 10)
Standby Current	20uA
Wakeup Current	When not transmitting / receiving LoRa data: 0.8mA-20 mA Module: 0.8mA to 8mA @ 3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V
Battery Voltage Accuracy	±0.1V

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Vibration Sensor

Vibration Sensor Case Size	L:43mm*W:13mm*H:12mm
Vibration Sensor MaximumVoltage	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 (without foot 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.
External Cable Length	1 meter

Frequency

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
Communication Range	Up to 10 km, the actual transmission distance depends on the environment.
Data Transfer Rate	0.3kbps ~ 50kbps (LoRa) 1.2kbps ~ 300kbps (FSK)

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Modulation	LoRa/FSK
Available Frequency	EU863-870,US902-928,AU915-928,KR920-923, AS923-1,AS923-2,AS923-3,IN865-867,CN470-510 (Note: optional, to be done in the factory configuration)

Physical

Dimension	Main Part: L: 112mm*W: 89mm*H: 32mm
Weight	141g
Environment Temperature Range	-20℃ ~ 55℃
Environment Humidity Range	< 90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃