

# **Three-Axis Digital Accelerometer&NTC Thermistor R718E Data Sheet**

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Wireless Sensor Network Based on LoRa Technology



**R718E**

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## Three-Axis Digital Accelerometer & NTC Thermistor

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### General Description

It can detect the movement or vibration of the device, send a signal to the gateway for processing, and externally connect one NTC thermistor to detect the surface temperature of the measured object. It uses the SX1276 wireless communication module.

### Working Principle

The module communicates with the acceleration sensor ADXL345 in SPI communication mode; the NTC temperature detection applies the method of resistance voltage divider ADC sampling.

### Main Characteristics

- Apply SX1276 wireless communication module
- 2 ER14505 battery AA SIZE (3.6V / section) parallel power supply
- Acceleration sensor detection
- The base is attached with a magnet that can be attached to a ferrous object
- Protection class IP65
- Compatible with LoRaWANTM 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 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](http://www.netvox.com.tw/electric/electric_calc.html)

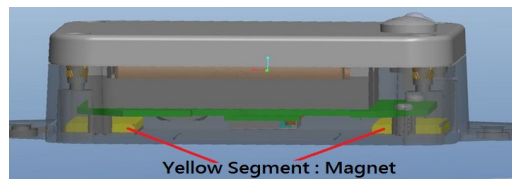
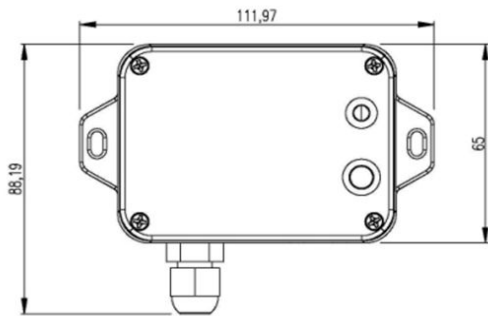
On this website, users can find battery life of various models in different configurations.

### Example Applications

- Smart home
- Industrial equipment
- Temperature measurement system
- Other

**Three-Axis Digital Accelerometer & NTC Thermistor**

**Technical Specifications (Main Part)**



(Uni. mm)

**Electric**

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V 2400mah/section)
Sleeping Mode	80uA
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.

**NTC Thermistor Sensor**

NTC Temperature Range	-40°C -125°C
25 Degree Resistance Value	10k (typical)
B value B25/50	3990
Temperature Measurement Accuracy	The basic error limit of NTC thermistor: -40~125°C +3°C; Measurement error caused by the wire : ≅ 2 ° C.

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**Frequency**

Frequency Range	863MHz-928MHz 470MHz-510MHz
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	Up to10 km, 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: 88.19mm*H: 32mm
Weight	141g
Environment Temperature Range	-20℃ ~ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ~ 85℃

**3-axis Acceleration Sensor**

Operating Voltage Range	1.8V-3.6V
Operating Temperature Range	-40~85 degrees
Dac Maximum Resolution	13 Bits
Communication Form	SPI communication
3-axis Acceleration Longitude	+16g

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