



## WLRC-S31



### Three-Axis Digital Accelerometer & NTC Thermistor

WLRC-S31 can detect the movement or vibration of any attached device, along with the surface temperature. This product is great to monitor pumps, motors, and industrial/commercial equipment for stress and working over the recommended temperature. It can prevent equipment failure that requires 24-hour operation.

#### Features:

- Super Long Range Signal Penetration
- 5 years plus Battery Life\*
- Easy Installation
- Frequency Hopping Spread Spectrum (FHSS)
- Improved interference immunity
- Encrypt-RF™ Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- Over-the-air updates
- Interactive WatchNET IoT platform with dashboard, search and notification settings
- \* Magnetized ABS enclosure for easy installation

#### Applications:

- Industrial equipment monitoring
- Surface temperature measurement
- Movement and vibration sensing

#### Schematic Diagram:



## Technical Specifications

Electrical	
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
Low Voltage Threshold	3.2V
Battery Voltage Measurement Accuracy	±0.1%

\*The actual electrical characteristics will vary depending on the power supply voltage.

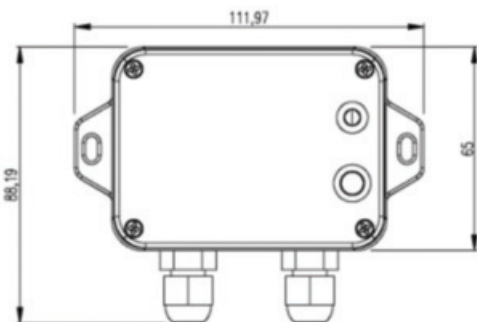
NTC Thermistor Sensor	
NTC Temperature Range	-40°C ~ 125°C / -40°F ~ 257°F
25 Degree Resistance Value	10k (typical)
B value B25/50	3990
Temperature Measurement Accuracy	The basic error limit of NTC thermistor: -40~125°C / -40°F ~ 257°F, ±3°C / ± 37.4°F Measurement error caused by the wire : ≤ 2°C / ≤ 35.6°F

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	Built-in antenna
Communication Range	Up to 5km/3.11miles, the actual transmission distance depends on the environment*
Data Transfer Rate	0.3kbps ~ 50kbps
Spread Technique	LoRa/FSK
Available Frequency	EU863-870, US902-928, Configured before shipment

Physical	
Dimension	L:112mm x W:88.19m x H:32mm / L:4.41" x W:3.47" x H:1.26"
Weight	141g / 0.31lb
Protection Class	Main Part IP65 / External Sensor IP67
Environment Temperature Range	-20°C ~ 55°C / -4°F ~ 131°F
Environment Humidity Range	<90%RH (No condensation)
Storage Temperature	-40°C ~ 85°C / -40°F ~ 185°F

3-axis Acceleration Sensor	
Operating Voltage Range	1.8V - 3.6V
Operating Temperature Range	-40°C ~ 85°C / -40°F ~ 185°F
Dac Maximum Resolution	13 Bits
Communication Form	SPI communication
3-axis Acceleration Longitude	±16g / ±0.04lb

## Dimensions



\* Actual signal range may vary depending on the environment.

\* Battery life is determined by sensor reporting frequency and other variables.

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