



WLRC-S19R / WLRC-S19R2



Wireless Vibration Sensor Rolling ball type

Pick up small vibrations or movements with this rolling ball type vibration detector. It can be used as a glass break sensor, material or surface vibration, intruder prevention, etc. This device has a magnetic back panel that can be mounted on any metal surfaces. Immediate alerts can be sent by SMS, email or phone call from our hosted web platform.

Features:

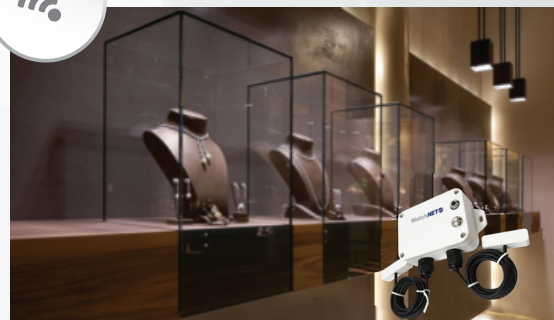
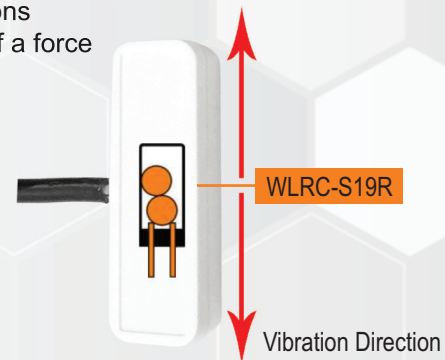
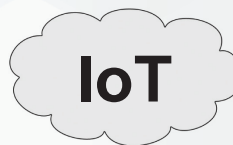
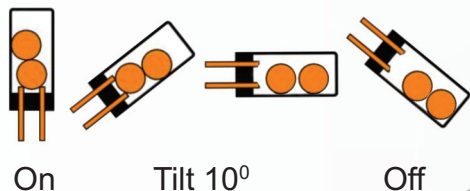
- Super Long Range Signal Penetration
- 5 years plus Battery Life*
- Easy Installation
- Frequency Hopping Spread Spectrum (FHSS)
- Improved interference immunity
- Encrypt-RF™ Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- Over-the-air updates
- Interactive WatchNET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



Applications:

- Vibration count per day
- Monitor machinery to know whether it is On/Off
- Equipment cycle per period
- Excessive vibrations
- Sudden impact off a force

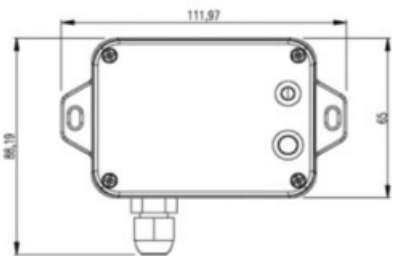
Schematic Diagram:



Technical Specifications

Electrical	
Input Power	2x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section)*
Battery Life	5years (Conditions: ambient temperature 25°C/77°F, 15min heartbeats, txpower = 20dBm, LoRa spreading factor SF = 10)
Sleeping Mode	20uA (WLRC-S19R) / 26uA (WLRC-S19R2)
Wake up Mode	6.3mA@3.3V
Low Voltage Threshold	3.2V
Transmitting current (max)	120mA@3.3V
Receiving current (max)	11mA @3.3V
Battery Measurement Accuracy	±0.1V
<i>*Specific electrical characteristics may vary depending on the power supply voltage.</i>	
Vibration Sensor	
Vibration Sensor Case Size	L:43mm x W:13mm x H:12mm / L:1.69" x W:0.51"x H:0.47"mm
Vibration Sensor Maximum Voltage	5V
Sensor Switch Life	Up to 100,000 times
Vibration Sensor Sensitivity	This switch has a metal ball inside. It's like a normally closed (ON) switch and when the sensor reaches a 10 degrees angle the circuit is open (OFF state). Great for tilt, shake and sensing projects!
Vibration Sensor Characteristic (Dual ball type single direction tilt sensitive trigger sensor)	The tilt sensor is a component (switch) that can detect the orientation of an object (upright or not). It is equivalent to a pushbutton activated through its physical orientation. It contains a metallic ball inside that will commute the two pins of the device from CLOSED to OPEN if the sensor exceeds a certain angle and vice-versa. Only when the tilt sensor is in its upright position, metallic balls inside the tilt sensor bridges the two contacts, completing the circuit. When the sensor is tilted beyond the sensitivity range, the contacts move away, and thus opens the circuit
External Cable Length	1meter / 39.37"
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	Built-in antenna
Communication Range	Up to 500m/0.310miles, the actual transmission distance depends on the environment*
Data Transfer Rate	0.3kbps ~ 50kbps
Spread Technique	LoRa/FSK
Available Frequency	US915 / EU868. Configured before shipment.
Physical	
Dimension	L:112mm x W:65mm x H:32mm / L:4.41" x W:2.6" x H:1.26"
Weight	141g / 0.31lb (WLRC-S19R / 150g / 0.33lb (WLRC-S19R2)
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
IP Rating	Main Part IP65 / External Sensor IP65

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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CANADA:

351 Ferrier Street, Unit 5
Markham, ON L3R 5Z2
Toll Free: 1-866-843-6865
Tel: 416-410-6865

USA:

171 Cooper Ave. Suite 110
Tonawanda, NY 14150 USA
Toll Free: 1-866-843-6865
Local: 1-716-877-7277

UAE:

PO Box No 126312
Office Suite 703, Oxford Towers
Business Bay, Dubai, UAE
Tel: + 971 4 2767117

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www.watchnetiot.com
info@watchnetiot.com