



## Product Data Sheet: GeoWAN Vibrating Wire Nodes

The GeoWAN Vibrating Wire Sensor Nodes family bring a wide variety of vibrating wire sensors into the GeoWAN system. These highly integrated products are capable of exciting and sampling vibrating wire sensors and reporting using Senceive's GeoWAN wireless communications network to a GeoWAN Gateway.

Examples of the sensors supported:

- Piezometers
- Strain Gauges
- Crack Meters
- Load Cells
- Pressure Cells
- Extensometers
- In-Place  
Inclinometers



### Key Features

- High performance, easy to connect multichannel connectors
- Waterproof, robust connectors for simple installation
- Resolution of 0.001 Hz and repeatability of  $\pm 0.02$  Hz
- Integrated long life battery
- 10-12 year battery life
- Integrated temperature sensor
- Versatile mounting options
- Waterproof to IP66 / IP67 / IP68

#### CONTACT US

For information on our award-winning wireless asset condition monitoring solutions, call **+44 (0) 207 731 8269**, email **info@senceive.com**, visit **www.senceive.com**

## Specifications

### Channel Combinations

Model	Ports	Typical Applications
LR3N-VW11	1 VW and 1 Thermistor Channel	Single sensor
LR3N-VW41	1 VW and 1 Thermistor Channel (x4)	Four strain gauges in an array 2+ sensors in close proximity

### Physical Specification

	LR3N-VW11	LR3N-VW41
<b>Dimensions</b>	90 x 90 x 60 mm (excluding antenna and vent)	90 x 130 x 50 mm (excluding antenna and vent)
<b>Dimensions</b>	90 x 96 x 60 mm (excluding antenna)	90 x 136 x 50 mm (excluding antenna)
<b>Total Mass</b>	0.57 kg (approx.)	0.75 kg (approx.)
<b>Housing Material</b>	Die cast aluminium body	
<b>International Protection Marking</b>	IP66 / IP67 / IP68 (1m for 24 hours)	
<b>Mounting Options</b>	M4 blind holes in side 1/4" UNF holes in bottom	M6 holes in bottom
<b>Operating Temperature Range</b>	-40°C to +85°C	

### Internal Battery

	LR3N-VW11	LR3N-VW41
<b>Battery Type</b>	Lithium Thionyl Chloride, non-rechargeable	
<b>Nominal Voltage</b>	3.6V	
<b>Nominal Capacity</b>	19000mAh	34400mAh
<b>Typical Battery Life</b>	10-12 years at 1 hour reporting intervals. Consult with Senceive for your application.	

### GeoWAN Radio Specifications

<b>Communication Type</b>	Star Topology
<b>Frequency Band (868 variant)</b>	863MHz - 870MHz ISM Band
<b>Frequency Band (902 variant)</b>	902MHz - 928MHz ISM Band
<b>Frequency Band (915 variant)</b>	915MHz - 928MHz ISM Band
<b>Maximum Transmit Power (868 variant)</b>	14dBm conducted
<b>Maximum Transmit Power (902 variant)</b>	18dBm conducted
<b>Maximum Transmit Power (915 variant)</b>	18dBm conducted
<b>Maximum Antenna Gain</b>	1.8dBi
<b>Range</b>	Up to 15km depending on the environment and fitted antenna Consult with Senceive for your application

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Senceive Ltd, Imperial Studios, Imperial Wharf, London, SW6 2AG, United Kingdom

## Vibrating Wire Specifications

<b>Frequency Resolution</b>	0.001 Hz
<b>Frequency Repeatability</b>	±0.02 Hz
<b>Frequency Range</b>	200-6000Hz
<b>Stimulus Type</b>	Swept Sine Wave, 6V peak to peak
<b>Thermistor Type</b>	3kΩ NTC
<b>Temperature Resolution</b>	0.05°C
<b>Temperature Accuracy</b>	±0.1°C
<b>Temperature Range</b>	-40°C to +85°C

## Certifications

- Tested to conformity with all the essential requirements of the Radio Equipment Directive 2014/53/EU and RoHS Directive 2011/65/EU
- FCC Grant of Equipment Authorization: FCC ID 2AMFBLR3N
- ACB ISED Canada Certificate: 24373-LR3N
- RCM (Australia and New Zealand)
- Tested to conformity with IEC61010-1:2010/AMD1:2016 for CB Test Certificate GB EMT 1479 (LR3N-VW11)
- Tested to conformity with IEC61010-1:2010/AMD1:2016 for CB Test Certificate GB EMT 1480 (LR3N-VW41)

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## Ordering Information and Accessories

<b>LR3N-VW11(868)</b>	<b>GeoWAN Vibrating Wire Sensor Node (1x 1-wire port)</b> Europe
<b>LR3N-VW41(868)</b>	<b>GeoWAN Vibrating Wire Sensor Node (4x 1-wire port)</b> Europe
<b>LR3N-VW11(902)</b>	<b>GeoWAN Vibrating Wire Sensor Node (1x 1-wire port)</b> North America, South America
<b>LR3N-VW41(902)</b>	<b>GeoWAN Vibrating Wire Sensor Node (4x 1-wire port)</b> North America, South America
<b>LR3N-VW11(915)</b>	<b>GeoWAN Vibrating Wire Sensor Node (1x 1-wire port)</b> Australia, New Zealand, Chile, Brazil
<b>LR3N-VW41(915)</b>	<b>GeoWAN Vibrating Wire Sensor Node (4x 1-wire port)</b> Australia, New Zealand, Chile, Brazil
<b>FS-VWCON11</b>	<b>Sensor Connector for 1-wire sensor</b> Screw terminals for easy installation Sensor cable outside diameter 5.0-8.0 mm Suits LR3N-VW11, LR3N-VW41, FM3N-VW11, FM3N-VW41 or FM3N-VW121
<b>FT-VW-TH11</b>	<b>Test Harness for 1-wire sensors</b> Mates to FS-VWCON11 for easy connection to hand-held vibrating wire readout device (not supplied)
<b>FA-LR-WPS</b>	<b>Waterproof straight antenna</b> Overall node height 168mm (approx) when antenna fitted Maximum gain +1.8dBi

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