GeoWAN™

Product Data Sheet

GeoWAN Vibrating Wire Sensor Node

The GeoWAN Vibrating Wire Sensor Node 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 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 ±0.02 Hz
- Integrated long life battery
- 10-12 year battery life
- Integrated temperature sensor
- Versatile mounting options
- Waterproof to IP66 / IP67 / IP68

GeoWAN Vibrating Wire Sensor Node

Physical Specifications

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

Internal Battery

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

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

Sampling and Reporting

Parameter	LR3N-VW11	LR3N-VW41
Maximum Reporting Frequency	30 seconds	
Sample Storage	Stores the last 37 days of samples at a reporting interval of 30 minutes	Stores the last 14 days of samples at a reporting interval of 30 minutes

GeoWAN Vibrating Wire Sensor Node

GeoWAN Radio Specifications

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

Vibrating Wire Specifications

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

GeoWAN Vibrating Wire Sensor Node

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
- ACB ISED Canada Certificate: 24373-LR3N
- RCM (Australia and New Zealand)

Ordering Information and Accessories

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