



Product Data Sheet

GeoWAN Crack Sensor Node

The GeoWAN Crack Sensor Node interfaces to a linear displacement sensor. Its high precision sampling circuit powers the sensor and reports its measurements through Senceive's GeoWAN wireless communications network to a GeoWAN Gateway.

Successfully applied in many applications, including those measuring:

- Crack movement
- Pile separation
- Structural movement
- Expansion joint monitoring

Key features

- Waterproof, robust connectors for simple installation
- Automatic sensor type detection
- Extremely low noise performance
- 16-bit resolution (65,536 steps over the full scale)
- Integrated long life battery
- Up to 12 year battery life
- Integrated temperature sensor
- One and two channel variants readily available
- Versatile mounting options
- Waterproof to IP66 / IP67 / IP68



GeoWAN Crack Sensor Node

Physical Specifications

Parameter	Value
Dimensions (excluding antenna and vent)	90 x 90 x 60 mm
Dimensions (excluding antenna)	90 x 96 x 60 mm
Total Mass	0.56 kg (single port) / 0.75 kg (dual port)
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 Plates and brackets available for magnetic fixing, trackbed, stake and pole mounting, and many other applications
Operating Temperature Range	-40°C to +85°C

Internal Battery

Parameter	Value
Battery Type	Lithium Thionyl Chloride, non-rechargeable
Nominal Voltage	3.6 V
Nominal Capacity	19000 mAh
Typical Battery Life	12 years at 30 minute reporting intervals when using radio preset 1 Consult with Senceive for your application

Crack Sensor Interface

Parameter	Value
Circuit Topology	Voltage divider
Stimulus	2.5 V, 100 mA max
Resolution	0.0015% of full scale
Noise Level	0.005% of full scale (typical peak to peak)

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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

Sampling and Reporting

Parameter	Value
Maximum Reporting Frequency	30 seconds
Sample Storage	Stores the last 49 days of samples at a reporting interval of 30 minutes (37 days for a dual port 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)

GeoWAN Crack Sensor Node

Ordering Information and Accessories

Model	Description
LR3N-CS(868)	GeoWAN Crack Sensor Node (one port) Europe
LR3N-CS2(868)	GeoWAN Crack Sensor Node (two port) Europe
LR3N-CS(902)	GeoWAN Crack Sensor Node (one port) North America, South America
LR3N-CS2(902)	GeoWAN Crack Sensor Node (two port) North America, South America
LR3N-CS(915)	GeoWAN Crack Sensor Node (one port) Australia, New Zealand, Chile, Brazil
LR3N-CS2(915)	GeoWAN Crack Sensor Node (two port) Australia, New Zealand, Chile, Brazil
FS-CS25 Use with FF-CS1	Potentiometric 25 mm crack sensor IP67 rated, with 1 metre cable and connector Other cable lengths available on request
FS-CS125 Use with FF-CS1	Potentiometric 125 mm crack sensor IP67 rated, with 1 metre cable and connector Other cable lengths available on request
FS-CS200 Use with FF-CS1	Potentiometric 200 mm crack sensor IP67 rated, with 1 metre cable and connector Other cable lengths available on request
FS-DW150	Potentiometric 150 mm draw wire sensor IP65 rated, with connector fitted
FF-CS1	Crack Sensor mounting kit (pair)
FF-CS1-060	Crack Sensor mounting kit (pair, low-profile)
FF-MP-S360	Swivel mounting kit with 360-degree adjustment range Screw directly to vertical walls
FF-MP-V (Order with FF-MP-S360)	Vertical mounting plate Use U-bolts to fix to poles or stakes Use glue to fix to walls where drilling is not permitted
FF-MP-T2	Trackbed mounting plate kit
FA-LR-WPS	Waterproof straight antenna Overall node height 168 mm (approx) when antenna fitted Maximum gain +1.8 dBi
FS-CSCON11	Premium Connector for Potentiometric Crack Sensor

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