



## 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.

It has been successfully used 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



#### 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

### Physical Specifications

<b>Dimensions</b>	90 x 90 x 60 mm (excluding antenna and vent) 90 x 96 x 60 mm (excluding antenna)
<b>Total Mass</b>	0.56 kg (single port) / 0.75kg (dual port)
<b>Housing Material</b>	Die cast aluminium body
<b>International Protection Marking</b>	IP66 / IP67 IP68 (1m for 24 hours)
<b>Mounting Options</b>	1/4" UNF holes in bottom, M4 blind holes in side Plates and brackets available for magnetic fixing, track bed, stake and pole mounting, and many other applications
<b>Operating Temperature Range</b>	-40°C to +85°C

### Internal Battery

<b>Battery Type</b>	Lithium Thionyl Chloride, non-rechargeable
<b>Nominal Voltage</b>	3.6V
<b>Nominal Capacity</b>	19000mAh
<b>Typical Battery Life</b>	12 years at 30 minute reporting intervals when using radio preset 1 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

### Crack Sensor Interface

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

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## Sampling and Reporting

<b>Maximum Reporting Frequency</b>	30 seconds
<b>Sample Storage</b>	Stores the last 61 days of samples at a reporting interval of 30 minutes (36 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: 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

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## Ordering Information and Accessories

<b>LR3N-CS(868)</b>	<b>GeoWAN Crack Sensor Node (one port)</b> Europe
<b>LR3N-CS2(868)</b>	<b>GeoWAN Crack Sensor Node (two port)</b> Europe
<b>LR3N-CS(902)</b>	<b>GeoWAN Crack Sensor Node (one port)</b> North America, South America
<b>LR3N-CS2(902)</b>	<b>GeoWAN Crack Sensor Node (two port)</b> North America, South America
<b>LR3N-CS(915)</b>	<b>GeoWAN Crack Sensor Node (one port)</b> Australia, New Zealand, Chile, Brazil
<b>LR3N-CS2(915)</b>	<b>GeoWAN Crack Sensor Node (two port)</b> Australia, New Zealand, Chile, Brazil
<b>FS-CS25</b>	<b>Potentiometric 25mm crack sensor</b> IP67 rated, with 1 metre cable and connector Other cable lengths available on request Use with FF-CS1
<b>FS-CS125</b>	<b>Potentiometric 125mm crack sensor</b> IP67 rated, with 1 metre cable and connector Other cable lengths available on request Use with FF-CS1
<b>FS-CS200</b>	<b>Potentiometric 200mm crack sensor</b> IP67 rated, with 1 metre cable and connector Other cable lengths available on request Use with FF-CS1
<b>FS-DW150</b>	<b>Potentiometric 150mm draw wire sensor</b> IP65 rated, with connector fitted
<b>FF-CS1</b>	<b>Crack Sensor mounting kit (pair)</b>
<b>FF-CS1-060</b>	<b>Crack Sensor mounting kit (pair, low-profile)</b>
<b>FF-MP-S360</b>	<b>Swivel mounting kit with 360-degree adjustment range</b> Screw directly to vertical walls
<b>FF-MP-V</b>	<b>Vertical mounting plate</b> Use U-bolts to fix to poles or stakes Use glue to fix to walls where drilling is not permitted (Order with FF-MP-S360)
<b>FF-MP-T2</b>	<b>Track bed mounting plate kit</b>
<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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