GeoWAN™

Product Data Sheet

GeoWAN 2.0 Millivolt Sensor Node

The GeoWAN 2.0 Millivolt Sensor Node brings a wide variety of resistive bridge sensors into the GeoWAN system. It uses the integrated long range radio transceiver to report its measurements through Senceive's GeoWAN wireless communications network to a GeoWAN Gateway.

Examples of the sensors supported:

- Pressure sensors (differential, absolute)
- Foil strain gauges
- Torque sensors
- Load cells
- Load pins
- Moisture sensing
- Conductivity

Integrated software:

- WebMonitor (Data visualisation)
- Senceive.io (Data management)
- NFC (In-field hardware management tool)

Key features

- Waterproof, robust connector for simple installation
- Regulated sensor stimulus
- 24-bit sensing performance
- Changeable batteries
- Up to 12 year battery life
- Integrated temperature sensor
- Versatile mounting options
- Waterproof to IP66 / IP68

GeoWAN 2.0 Millivolt Sensor Node

Physical Specifications

Parameter	Value
Dimensions (L x W x H)	115 x 105 x 64 mm
Total Mass	425 g (approx.) including D-size battery
Housing Material	PC plastic body and lid cover with die cast aluminium base
Mounting Options (size and number of holes for mounting plate connection)	M4 holes in bottom, Plates and brackets available for magnetic fixing, trackbed, stake and pole mounting, and many other applications
Internal Protection Marking	IP66 IP68 (1m for 24 hours)
Operating Temperature Range	-40°C to +80°C

Internal Battery

Parameter	Value
Battery Type	Lithium Thionyl Chloride, non-rechargeable, D-cell
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*
Recommended options*	Senceive: SP-C03282-1 Saft: LS33600

*Batteries from other suppliers may work but we provide no guarantee on performance

Millivolt Sensor Interface

Parameter	Value
Range	±0.625 V (±125 mV/V)
Resolution	74.5 nV (14.9 nV/V)
Repeatability	±2.5 µV (±0.5 µV/V)
Stimulus	5.0 ±0.1 V, 150 mA max

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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
Internal Antenna Maximum Gain	+0.17 dBi (internal)
Range (with internal antenna)	Up to 12 km depending on the environment Trackbed: 1 km Tunnel: 2 km Urban: 2.3 km Line of Sight: 12 km *Consult with Senceive for your application and/or external antenna options*

Sampling and Reporting

Parameter	Value
Maximum Reporting Frequency	30 seconds
Sample Storage*	Stores up to 75,000 sampling cycles in a circular buffer

*Retrieval is only available locally via NFC. The unit is not intended to operate as an offline data logger and requires a network connection to maintain an accurate clock

Certifications - to be obtained

- 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 2.0 Millivolt Sensor Node

Ordering Information and Accessories

Model	Description
L3N1-MV5(868)	**GeoWAN 2.0 Millivolt Sensor Node** Europe
L3N1-MV5(902)	**GeoWAN 2.0 Millivolt Sensor Node** North America
L3N1-MV5(915)	**GeoWAN 2.0 Millivolt Sensor Node** Australia, New Zealand

Accessories	Description
FS-MV5CON	**Sensor Connector** With screw terminals for easy installation
FF-MP-S360N	**Swivel mounting kit with 360-degree adjustment range** Screw directly to vertical walls
FF-MP-V Order with FF-MP-S360N	**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-RSN	**G2.0 Right angle swivel mount** Screw to concrete tunnel linings and inclined walls
FF-MP-T2N	**G2.0 Trackbed two-part mounting plate kit**
FF-MP-M2N	**G2.0 Magnetic mounting kit** High degree of adjustability, perfect for cast iron lined tunnels
FF-MK-N	**G2.0 Magnetic mounting kit** Perfect for steel or cast iron structures
SP-C03282-1	**G2.0 ER34615 3.6V 19Ah Battery** Senceive provided, suitable for GeoWAN 2.0 nodes
FA-G2-SMA	**Replacement G2.0 Lid for External Antenna (SMA)**