



Product Data Sheet: GeoWAN PT100 RTD Sensor Node

The GeoWAN PT100 RTD Sensor Node allows precision temperature sensing in many different situations. It uses the integrated low range radio transceiver to report its measurements through Senceive's GeoWAN wireless communications network to a GeoWAN Gateway.

Temperature monitoring applications include:

- Steel structures
- Rail, for critical rail temperature alerting
- Concrete structures, including during curing
- Heating, Ventilation, and Air Conditioning (HVAC) systems
- Ambient/environment



Key Features

- Waterproof, robust connectors for simple installation
- Accuracy of $\pm 0.1^{\circ}\text{C}$
- Can have an integrated triaxial tilt sensor for combined tilt and temperature sensing in one unit
- Integrated long life battery
- Up to 12 year battery life
- 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
FM3N-RTD	1 PT100 RTD Channel	Single point temperature monitoring
FM3N-IX-RTD	1 PT100 RTD Channel	Structural monitoring with precision temperature compensation
FM3N-IXH-RTD	1 Integrated high precision triaxial tilt sensor	Railway deformation and critical rail temperature monitoring

Physical Specifications

Dimensions	90 x 90 x 60 mm (excluding antenna and vent) 90 x 96 x 60 mm (excluding antenna)
Total Mass	0.57 kg
Housing Material	Die cast aluminium body
International Protection	IP66 / IP67
Marking	IP68 (1m for 24 hours)
Mounting Options	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
Operating Temperature Range	-40°C to +85°C

Internal Battery

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

GeoWAN Radio Specifications

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

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PT100 RTD Interface

Connector	M12 Female 5-pole A-coded Screw-in type
Accuracy	$\pm 0.1^{\circ}\text{C}$
Resolution	0.01°C
Stimulus Type	Constant Current

Tilt Sensor Specification

Resolution	0.0001° (0.00175mm/m)
Repeatability (-IX variant)	$\pm 0.0005^{\circ}$ ($\pm 0.0087\text{mm/m}$)
Repeatability (-IXH variant)	$\pm 0.0025^{\circ}$ ($\pm 0.0436\text{mm/m}$)
Range	$\pm 90^{\circ}$

Sampling and Reporting

Maximum Reporting Frequency	30 seconds
Sample Storage	Stores the last 61 days of samples at a reporting interval of 30 minutes

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

LR3N-RTD(868)	GeoWAN PT100 RTD Sensor Node Europe
LR3N-IX-RTD(868)	GeoWAN Triaxial Tilt and PT100 RTD Sensor Node Europe
LR3N-IXH-RTD(868)	GeoWAN Triaxial High-g Tilt and PT100 RTD Sensor Node Europe
LR3N-RTD(902)	GeoWAN PT100 RTD Sensor Node North America, South America
LR3N-IX-RTD(902)	GeoWAN Triaxial Tilt and PT100 RTD Sensor Node North America, South America
LR3N-IXH-RTD(902)	GeoWAN Triaxial High-g Tilt and PT100 RTD Sensor Node North America, South America
LR3N-RTD(915)	GeoWAN PT100 RTD Sensor Node Australia, New Zealand, Chile, Brazil
LR3N-IX-RTD(915)	GeoWAN Triaxial Tilt and PT100 RTD Sensor Node Australia, New Zealand, Chile, Brazil
LR3N-IXH-RTD(915)	GeoWAN Triaxial High-g Tilt and PT100 RTD Sensor Node Australia, New Zealand, Chile, Brazil
FS-PT100R-xxxxx	Round Bead Temperature Sensor For fluid temperature (and air temperature) sensing or for drilled holes xxxxx is the cable length in millimetres
FS-PT100S-xxxxx	Surface Mount Temperature Sensor Metal leaf can be glued or spot welded to a surface xxxxx is the cable length in millimetres
FS-PT100M-xxxxx	Magnetic Temperature Sensor Surface temperature of metal structures xxxxx is the cable length in millimetres
FF-MP-S360	Swivel mounting kit with 360-degree adjustment range Screw directly to vertical walls
FF-MP-V	Vertical mounting plate 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)
FF-MP-H	Horizontal mounting plate
FF-MP-HM	Horizontal magnetic mounting plate
FF-MP-T2	Track bed mounting plate kit
FF-MP-M2	Magnetic mounting kit High degree of adjustability, perfect for cast iron lined tunnels
FF-BK-xxxx	Tilt beam kit
FF-BE	See separate datasheet for more information
FA-LR-WPS	Waterproof straight antenna Overall node height 168mm (approx) when antenna fitted Maximum gain +1.8dBi

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