FlatMesh™



Product Data Sheet:

Nano Triaxial Tilt Sensor Node

The FlatMesh Nano is an extremely high precision and exceptionally stable three axis tilt sensor which reports its measurements through Senceive's FlatMesh wireless communications network to a FlatMesh Gateway.

The FlatMesh Nano comes with Near Field Communication (NFC)™ capability, enabling on the spot interactions with the node.

Successfully applied in many applications, including those measuring:

- Tunnel distortion
- Tunnel heave/settlement
- Embankment slippage
- Structural movement

Key features

- Integrated triaxial tilt sensor
- Extremely low noise performance
- Extremely low profile
- Resolution of 0.0001° (0.0018 mm/m) and repeatability of ±0.0005° (±0.009 mm/m)
- Operational in any orientation
- Integrated battery
- 1 year battery life, including when acting as a relay node within the mesh communications network
- Integrated temperature sensor
- Versatile mounting options
- Waterproof to IP67 / IP68
- NFC capability, enabling on the spot adjustments to the node
- "Sleep mode" functionality

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Nano Triaxial Tilt Sensor Node



Physical Specifications

Parameter	Value
Diameter	40 mm
Height	30 mm
Total Mass	40 g
Housing Material	PVC and Aluminium
Protection (BS EN 60529: 1992 + A2: 2013)	IP67 IP68 at 2 m for 24 hours
Mounting Options	Magnetic, screws, gluing
Operating Temperature Range	-40°C to +85°C

FlatMesh Radio Specifications

Parameter	Value
Communication Type	Proprietary FlatMesh v3 Mesh Networking Protocols IEEE 802.15.4 compliant
Frequency Band	2400 – 2485 MHz ISM Band
Maximum Transmit Power (EN 300 328 v2.2.2)	6.5 dBm
Range	Up to 300 m depending on the environment and fitted antenna Consult with Senceive for your application
RF Module	FM3Nano

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Tilt Sensor Specifications

Parameter	Value
Resolution	0.0001° (0.00175 mm/m)
Repeatability	±0.0005° (±0.0087 mm/m)
Range	±90°

Internal Battery

Parameter	Value
Battery Type	Lithium Manganese Dioxide
Nominal Voltage	3.0 V
Nominal Capacity	1000 mAh
Typical Battery Life	9 – 12 months at 20-30 minute reporting intervals, including when acting as a relay node Consult with Senceive for your application

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

Patent No. US 11,425,471, EP 3596935

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Nano Triaxial Tilt Sensor Node



Ordering Information and Accessories

Model	Description
FM3NT-10	FlatMesh Nano
FF-GS10	**Direct gluing plate** Single use direct gluing to structures.
FF-MK10	**Magnetic mounting kit** Perfect for steel or cast iron structures
FS-FM3NT-NFC	Contactless NFC Reader

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