



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.

Successfully applied in many applications, including those measuring:

- Tunnel distortion
- Tunnel heave/settlement
- Embankment slippage
- Structural movement
- Rail track heave/settlement
- Rail trackbed cant and twist

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



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 v1.8.1) | 6.5 dBm |
| Range | Up to 300 m depending on the environment and fitted antenna Consult with Senceive for your application |
| RF Module | FM3Nano |



Nano Triaxial Tilt Sensor Node

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

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 |