

Product Data Sheet: FlatMesh Nano

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.

It has been successfully applied in many applications, including those measuring:

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



Key Features

- Integrated triaxial tilt sensor
- Extremely low noise performance
- Extremely low profile
- Resolution of 0.0001° (0.0018mm/m) and repeatability of ±0.0005° (±0.009mm/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

Physical Specifications

| Parameter | Value |
|--------------------------------|--------------------------|
| Diameter | 40mm |
| Height | 30mm |
| Total Mass | 40g |
| Housing Material | PVC and Aluminium |
| Protection | IP67 |
| (BS EN 60529: 1992 + A2: 2013) | IP68 at 2m 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) | 6.5dBm |
| Range | Up to 300m depending on the environment Consult with Senceive for your application |
| RF Module | Senceive FM3Node |

Tilt Sensor Specifications

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

Internal Battery

| Parameter | Value |
|----------------------|---|
| Battery Type | Lithium Manganese Dioxide |
| Nominal Voltage | 3.0V |
| Nominal Capacity | 1000mAh |
| 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: FCC ID 2AMFBFM3NT

Ordering Information and Accessories

| Model | Description |
|----------|--|
| FM3NT-10 | FlatMesh Nano |
| FF-GS10 | Direct gluing plate <ul style="list-style-type: none">- Single use direct gluing to structures. |
| FF-MK10 | Magnetic mounting kit <ul style="list-style-type: none">- Perfect for steel or cast iron structures |

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