

TILT METER & BEAM SENSOR

MODEL EAN-91M/EAN-93M
| EAN-91M-B/EAN-93-B

DATASHEET



OVERVIEW

The Encardio Rite model EAN-91M/EAN-93M tilt meters and EAN-91M-B/EAN-93M-B beam sensors are designed for monitoring small changes in inclination and vertical rotation of structures, making them ideal for applications like retaining walls, tunnels, metro stations, bridges, and landslide areas. The tilt meters use MEMS technology to provide high-resolution measurements, with output available in both analog (EAN-91M) and digital (EAN-93M) formats. The sensors are available in uniaxial or biaxial configurations, offering flexibility depending on measurement needs.

The EAN-91M and EAN-93M tilt meters come in a compact, weatherproof enclosure and can be installed on vertical or horizontal surfaces, with easy mounting using screws or fasteners. They provide accurate tilt readings with a sensitivity of ± 10 arc seconds and a measurement range of $\pm 15^\circ$. The EAN-91M has a 4V output, while the EAN-93M provides SDI-12 digital output. These sensors can be connected to a portable readout unit or a data acquisition system for remote monitoring. The system also includes options for beam sensors (EAN-91M-B and EAN-93M-B), which consist of tilt meters mounted on beams of various lengths to monitor differential movement or deformation.

For ease of use, a breakout box is available, allowing the tilt meters to connect to a readout unit for easy field measurements and troubleshooting. The breakout box also facilitates the extension of the system to a data acquisition system. This setup provides reliable, long-term performance and is essential for structural health monitoring and early detection of potential hazards.

FEATURES

- **High-resolution measurement:** Provides precise detection of minor tilts and rotations, essential for structural health monitoring.
- **Weatherproof enclosure:** Ensures durability and reliable performance in various environmental conditions.
- **Flexible mounting options:** Can be installed directly on walls or structures, or mounted on beams of lengths 1, 2, or 3 meters for beam sensors, allowing versatility in monitoring applications.
- **Easy installation and reusability:** Designed for straightforward installation and can be removed and reused as needed.
- **Reliable readings:** Ensures accurate and dependable tilt measurements.
- **Rugged construction:** Designed to withstand harsh environmental conditions, ensuring long-term reliability.
- **Versatile datalogging:** Compatible with any manufacturer's Datalogger and Data Management system for continuous monitoring. Encardio Rite offers a range of NexaWave dataloggers equipped with GSM/GPRS or RF communication capabilities, ensuring reliable and efficient data transmission.
- **Infrastructure data intelligence platform:** Proqio software facilitates data processing, analysis, and real-time visualization and generates instant alarms for critical events to all stakeholders.

SPECIFICATIONS

Sensor	Uniaxial ; Biaxial also available on request
Standard range	± 15°
Output (nominal) (EAN-91/EAN-91-B)	4 V at 15° Proportional to Sin θ of angle
Output (EAN-93/EAN-93-B)	SDI-12 Serial output
Sensitivity	± 10 arc second
Accuracy ¹	± 0.1% fs
Temperature limit	-20° to 80°C
Dimension of box (mm)	125 mm x 80 mm x 57 mm
¹ As tested under laboratory conditions	



ORDERING CODE

EAN-91M-B-Beam length (1, 2 or 3 m)

EAN-93M-B-Beam length (1, 2 or 3 m)

*All specifications are subject to change without prior notice

DATASHEET | 1217-12 R03



Dams



Mining



Tunnels



Transportation



Construction



Bridges



Landslides



Energy



Environmental Monitoring



Pipelines



Structural Health Monitoring



Smart Cities