

TILT METER AND BEAM SENSOR ELECTROLYTIC LEVEL TYPE

**MODEL EAN-31EL/
EAN-31EL-B**

DATASHEET



OVERVIEW

The Encardio Rite models EAN-31EL and EAN-31EL-B are electrolytic level tilt meters designed for high-resolution monitoring of tilt and vertical rotation in structures. This high-resolution tilt meter is ruggedly constructed to provide reliable readings, making it suitable for a variety of applications, including monitoring the stability of structures such as dams, piers, and retaining walls, especially in environments affected by tunneling, excavation, or other construction activities.

The EAN-31EL tilt meter features a precision ceramic encapsulated electrolytic bubble-level sensor that operates as a resistance bridge for electrical measurement. It provides a nominal output voltage of ± 1 V dc at a tilt of 0.5° , requiring a nominal 12 V dc excitation supply. The model EAN-31EL-B includes a beam sensor, which mounts the tilt meter on an aluminum beam available in lengths of 1 m, 2 m, or 3 m. This configuration facilitates the monitoring of differential movement and rotation within structures, providing early warning of deformation and allowing for timely corrective action.

FEATURES

- **High precision:** Engineered for accurate tilt and deformation monitoring in critical structures.
- **Durable construction:** Features robust design suitable for harsh environments.
- **Application versatility:** Ideal for dams, tunnels, retaining walls, and similar applications.
- **Enhanced monitoring:** EAN-31EL-B includes a beam for differential movement analysis.
- **Reliable performance:** Ensures long-term stability and reliability in structural health monitoring.
- **Structural deflection and deformation monitoring:** Ideal for high-rise buildings, retaining, and diaphragm walls.
- **Tilt change detection:** From construction activities like excavation, tunneling, and de-watering.
- **Load change response:** Observes effects on structures from dam loading, wall excavation, or bridge traffic.
- **Versatile datalogging:** The sensor is compatible with various readout units for manual data collection. For continuous monitoring, it can be connected to a suitable datalogger, allowing for data acquisition at desired frequencies. 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.

PRODUCT OFFERING

The Encardio Rite EAN-31EL and EAN-31EL-B are designed for accurate tilt monitoring in structures, capturing small tilt changes for various engineering needs.

EAN-31EL Tilt Meter: The Encardio Rite EAN-31EL is a compact tilt meter designed for monitoring inclination and vertical rotation at a single point, ideal for various structures. It features a high-resolution, ceramic-encapsulated electrolytic level sensor within a weatherproof aluminum die-cast enclosure.

EAN-31EL-B Beam Sensor: The EAN-31EL-B extends the capabilities of the EAN-31EL by mounting it on an aluminum beam, available in lengths of 1, 2, or 3 meters. This model is tailored for monitoring differential movement and rotation across structures, enhancing its application for linked or extended monitoring setups.





SPECIFICATIONS



ORDERING CODE

EAN-31EL-B-X–Length of beam

Probe specification

Sensor	Electrolytic level type Uniaxial
Measuring range**	$\pm 1^\circ$ (60 arc minute)
Linear range	$\pm 0.5^\circ$ (30 arc minute)
Output (nominal)	± 1 Volt (nominal) at 0.5°
Resolution	1 arc second
Zero adjustment	Each sensor is provided with a thumb screw arrangement for fine adjustment of mechanical sensor zero. Available adjustment range is approximately ± 4 degree.
Repeatability	± 3 arc second
Temperature limit	-20° to 50°C
Sensor dimension	125 x 80 x 57 mm (EAN-31EL)
Beam dimension	38 x 38 mm, aluminium
Beam length	1, 2, 3 m; specify
Output cable	6 core PU shielded cable.

** Polynomial linearization co-efficients are provided for utilizing full measurement range of $\pm 1^\circ$.

*All specifications are subject to change without prior notice

DATASHEET | 1113-12 R04



Dams



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Energy



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