



EL (ELECTROLYTIC LEVEL) TILTMETER

MODEL EAN-30EL

OVERVIEW

The Encardio-rite model EAN-30EL EL (Electrolytic Level) tiltmeter is suitable for monitoring of inclination and vertical rotation in structures. It is a high resolution tiltmeter, is rugged in construction and has excellent temperature stability.

Tilt changes in structures may be caused due to construction activities such as excavation, tunneling and de-watering, that affect the ground that supports the structure. Changes in tilt may also result from loading of a structure, such as loading of a dam during impoundment, loading of a diaphragm wall during excavation or loading of a bridge deck due to wind and traffic. Data from model EAN-30EL EL tiltmeter provides early warning of threatening deformations, allowing time for corrective action to be taken or if necessary, for safe evacuation of the area.

Model EAN-30EL EL tiltmeter consists of an electrolytic tilt sensor housed in a compact, weatherproof enclosure. The tilt sensor is a precision bubble-level that acts as resistance bridge when sensed electrically.



FEATURES

- ♦ Suitable for hostile & severe environment.
- ♦ Provides reliable and high resolution readings.
- ♦ Rugged & robust construction and excellent temperature stability.
- ♦ Easy to install and take readings.
- ♦ Can be removed and reused.
- ♦ Readings can be taken by remote datalogger.

APPLICATIONS

- ♦ Monitoring vertical rotation of retaining walls.
- ♦ Monitoring inclination and rotation of dams, piers and piles, etc.
- ♦ Monitoring stability of structures in landslide areas.
- ♦ Monitoring tunnels for convergence and other movements.
- ♦ To evaluate performance of bridges and struts under load.

The tiltmeter is fixed to the structure using two anchors. Movement of the structure causes change in tilt of the tiltmeter, which results in change in output of the sensor. This output from resistance bridge of the tilt sensor is in the form of voltage and is proportional to the tilt of EL tiltmeter.

The voltage output from the sensor can be converted to get the tilt readings in mm per meter. The change in inclination is determined by comparing current tilt reading with the initial reading taken.

The model EAN-30EL EL tiltmeter can also be used as a vertical beam sensor, where the tiltmeter is bolted to a beam.

OUTPUT OPTIONS

The model EAN-30EL EL tiltmeter is available with two output options; raw output or voltage output.

Raw output

In the raw output option, the electrolytic level sensor is directly connected to the output terminals without any signal conditioning. This sensor behaves as a half bridge and can be sensed using ac excitation. Polynomial linearisation coefficients are provided for use with Campbell Scientific's CR-10X datalogger. Up to 32 tiltmeters can be connected to a CR-10X using an AM-416 multiplexer. This is an economical sensor but is recommended for use with CR-10X datalogger only.

Voltage output

Voltage output sensor has a precision signal conditioner that provides a nominally 1 V dc full scale voltage output, proportional to the measured tilt. It can be used with virtually any available indicator or datalogger that can measure differential voltage output. It needs an auxiliary 5 V to 12 V dc excitation supply generally available in most dataloggers. Polynomial linearisation coefficients are provided with each sensor.

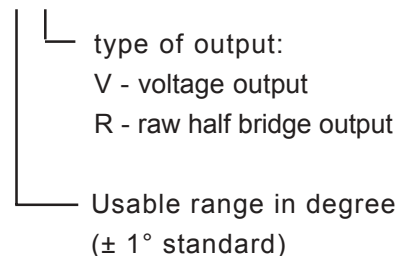
SPECIFICATIONS

Sensor	Electrolytic level type, uniaxial
Measuring range**	$\pm 1^\circ$ (60 arc minutes)
Linear range	$\pm 0.5^\circ$ (30 arc minutes)
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 degrees.
Repeatability	± 3 arc second
Temperature range	-20°C to 55°C

** Note: Polynomial-linearisation co-efficients are provided for utilising full measurement range of $\pm 1^\circ$.

ORDERING INFORMATION CODE

Model: EAN-30EL-1-X



All specifications are subject to change without prior notice

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