

ENCARDIO RITE



TILT METER

MODEL EAN-91M

OVERVIEW

The Encardio-rite model EAN-91M tilt meter is suitable for monitoring of small changes in inclination and vertical rotation of structures. It is a high resolution tilt meter and is rugged in construction.

The EAN-91M tilt meter can be directly fixed on a wall/structure. Option is also available to fix the EAN-91M tilt meter to a beam of length 1 m, 2 m, and 3 m and used as a beam sensor for monitoring of differential movement and rotation in structures. It is also used for monitoring deflection and deformation of retaining walls. EAN-91M beam sensor can be mounted both vertically and horizontally. The individual beam sensors can be used in linked form to give a profile.

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 the tilt meter provides early warning of threatening deformations, allowing time for corrective action to be taken or if necessary, for safe evacuation of the area.

DESCRIPTION

Model EAN-91M tilt meter consists of a basic sensor, mounted inside a compact, weatherproof enclosure. The sensor output is 4 V nominal at $\pm 15^\circ$. This output can be transmitted over long distances without any signal degradation.

The sensor provides a relatively low cost system which offers excellent resolution and long term stability.

The uniaxial tilt meter is fixed on to a vertical or horizontal surface either directly using 4 mounting



FEATURES

- ◆ Weatherproof enclosure.
- ◆ Provides reliable and high resolution readings.
- ◆ Can be removed and reused.
- ◆ Easy to install and take readings.
- ◆ Data can be transmitted to remote datalogger.

APPLICATIONS

- ◆ Monitoring vertical rotation of retaining walls.
- ◆ Monitoring inclination and rotation of Metro stations, tunnels, etc.
- ◆ Monitoring stability of structures in landslide areas.
- ◆ To evaluate performance of bridges and struts under load.
- ◆ To monitor deformation of embankments, retaining walls etc.

screws or fasteners or using a mounting kit that allows more flexibility in mounting the tilt meter.

Movement of the structure causes change in tilt of the tilt meter, which results in change in output of the sensor. Measurement can be made on horizontal or vertical surfaces.

Subsequent sets of readings show how the structure is behaving and will give an indication of permanent deformation as time progresses.

Mounting variants

Model EAN-91M tilt meter is supplied with standard mounting screws/fasteners bracket suitable for wall mounting/vertical surface. However, options are also available on request for mounting the tilt meter on a roof/suspended from ceiling or on the floor.

READOUT/DATALOGGER

Model EAN-91M tilt meter can be read by Encardio-rite model EDI-53UTM portable digital read-out unit. The readings can also be read or logged at a remote location by an automatic data acquisition system like Encardio-rite model EDAS-10.

ORDERING CODE

EAN-91M-U Uniaxial tilt meter

EAN-91M-B-X as Beam sensor with X m (1, 2 or 3 m) beam length

SENSOR SPECIFICATIONS

Sensor	Uniaxial
Standard range	$\pm 15^\circ$
Output (nominal)	4 V at 15° Proportional to $\sin \theta$ of angle
Sensitivity	± 10 arc second
Accuracy¹	$\pm 0.1\%$ fs
Temperature limit	-20°C to 80°C
Dimension (mm)	125 mm x 80 mm x 57 mm

¹As tested under laboratory conditions

* All specifications are subject to change without prior notice.

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