ENCARDIO RITE

BEAM SENSOR (HORIZONTAL & VERTICAL)

MODEL EAN-41M

OVERVIEW

EAN-41M beam sensor is attached to the structures for monitoring any differential movement and tilting of structures. It can be mounted both vertically and horizontally. Model EAN-41M beam sensor has long term reliability.

For monitoring deflection and deformation of retaining walls, sheet piling, etc., the beam sensors are mounted in vertical strings. The beam sensor can be also be installed in long horizontal strings to measure differential settlement along railway tracks, tunnels, pipelines, embankments, etc. The beam sensor is available with standard 1 m, 2 m, and 3 m beams. Other lengths are also available on request.

Tilt changes in structures may be caused due to construction activities such as excavation, tunneling and de-watering, which 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-41M beam sensor 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-41M beam sensor consists of a basic sensor housed inside a metal beam, which can be 1 m, 2 m, or 3 m long. The sensor output is 4 V nominal at ± 15°. This output can be carried over long distances without any signal degradation. The sensor provides a relatively low cost system which offers excellent resolution and long term stability.

FEATURES

- Provides reliable and high resolution readings.
- Rugged & robust construction.
- Easy to install and take readings.
- Can be removed and reused.
- Readings can be taken by remote datalogger.

APPLICATIONS

- Monitoring vertical rotation, deflection and deformation of retaining walls.
- Monitoring structures for effects of tunneling and excavation.
- Monitoring differential settlement along railway tracks.
- Monitoring stability of structures in landslide areas.
- Monitoring tunnels for convergence and other movements.
- To evaluate performance of bridges and struts under load.

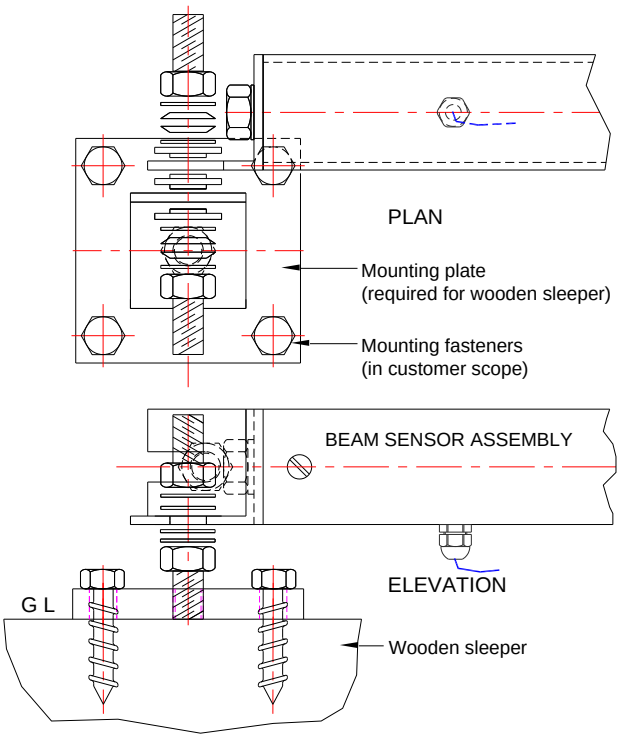
Movement of the structure causes change in tilt of the beam sensor, which results in change in output of the sensor. Measurements can be made on horizontal or vertical surfaces. Subsequent sets of readings show how the structure is behaving and will give an indication of permanent deformations as time progresses.

Model EAN-41M beam sensor is provided with special mounting fasteners for horizontal and vertical installations on concrete structures.

For monitoring differential settlement along railway tracks, installation may be required on wooden railway track sleepers. For such installation, mounting plates are available (at extra cost). Please refer to the adjacent figure. The wood mounting fasteners can be sourced locally.

ORDERING CODE

EAN-41M-X–Length of beam



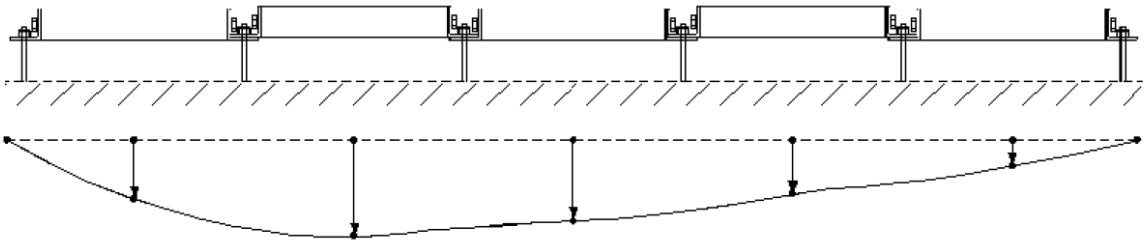
READOUT/DATALOGGER

Model EAN-41M 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. In the latter case also, EDI-53UTM is recommended for taking readings while installation and for troubleshooting until the tilt meter is connected to DAS.

SENSOR SPECIFICATIONS

Sensor	Uniaxial, mounted inside beam
Standard range	± 15°
Output (nominal)	4 V at 15° proportional to Sin θ of angle
Sensitivity	± 10 arc second
Accuracy[1]	± 0.1 % fs
Temperature range	-20°C to 80°C
Beam	38 mm x 38 mm, aluminium
Beam length	1, 2, 3 m, or specify

[1] *As tested under laboratory conditions.*



Linked horizontal beams monitor vertical settlement or heave

** All specifications are subject to change without prior notice.*

ENCARDIO-RITE ELECTRONICS PVT. LTD.
A-7 Industrial Estate, Talkatora Road, Lucknow, UP-226011, India
P +91 522 2661040, F +91 522 2662403; International: P +91 522 2661044
Email: geotech@encardio.com
www.encardio.com
INTERNATIONAL: UAE | QATAR | SAUDI ARABIA | BAHRAIN | GREECE | SINGAPORE | BHUTAN
INDIA: LUCKNOW | DELHI | KOLKATA | MUMBAI | CHENNAI | BANGALORE | HYDERABAD | J&K