



ENCARDIO RITE

PORTABLE TILT METER

MODEL EAN-70M

OVERVIEW

The Encardio-rite model EAN-70M portable tilt meter is suitable for monitoring change in inclination of a structure. It is a high resolution tilt meter using the same proven technology as used in our inclinometer probe. It 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 affects 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-70M tilt meter provides early warning of threatening deformation, allowing time for corrective action to be taken or if necessary for safe evacuation of the area.

The tilt meter system includes tilt plates, a portable tilt meter and a readout unit. Bronze tilt plates, available from Encardio-rite are dimensionally stable and weather resistant. Protective covers are available for these tilt plates.

The EAN-70M portable tilt meter consists of a basic sensor housed in a rugged frame with machined surfaces that facilitate accurate positioning on the tilt plate. The bottom surface is used with horizontally-mounted tilt plates and the side surfaces are used with vertically-mounted tilt plates.

OPERATION

Tilt plates are mounted on the structure at specified locations. They are typically bonded to the structure, but may also be screwed to the surface.

To obtain tilt readings, the operator connects the tilt meter to the readout unit, positions the tilt meter on the tilt plate, and notes the displayed reading.

The operator then rotates the tilt meter 180° and obtains a second reading. Later, the two readings are averaged to cancel sensor offset. Changes in tilt are determined by comparing the current reading with the initial reading.

FEATURES

- ♦ Suitable for hostile & severe environment.
- ♦ Provides reliable, high resolution readings.
- ♦ Rugged & robust construction and excellent temperature stability.
- ♦ Economical to use as one tilt meter can be used to monitor any number of inexpensive tilt plates.
- ♦ Its design ensures ease in installation as the bronze tilt plates can either be bonded or screwed to the structure.
- ♦ Tilt readings are obtained quickly and easily by a single operator.

APPLICATIONS

- ♦ Monitoring critical buildings, structures, utilities etc. located in the zone of influence of cut and cover excavation/tunneling activities.
- ♦ Monitoring vertical rotation of retaining walls.
- ♦ Monitoring inclination and rotation of dams, piers and piles, etc.
- ♦ Monitoring stability of structures in landslide areas.
- ♦ To evaluate performance of bridges and struts under load.



SPECIFICATIONS

Portable tilt meter

Sensor	Uniaxial
Measuring range	$\pm 15^\circ$ from vertical
Sensitivity	10 arc second
Accuracy ¹	$\pm 0.1\%$ fs
Output	± 4.1 V nominal at 15°
Material	Stainless steel frame, anodized aluminium housing
Dimensions	162 L x 90 B x 145 H mm
Net weight	3.6 kg
Temp. range	-20 to 50°C
Temp. coeff.	0.005 % per $^\circ\text{C}$

¹ As tested under laboratory conditions

Tilt plate and accessories

Bronze tilt plate

Mounting method	Epoxy bonding compound or anchors
Diameter	125 mm
Height	30 mm
Weight	0.65 kg



Readout unit

Compatible portable digital readout unit model EDI-53 is available for taking readings from EAN-70M portable tilt meter.

All specifications are subject to change without prior notice

ENCARDIO-RITE ELECTRONICS PVT. LTD.

A-7 Industrial Estate, Talkatora Road, Lucknow, UP 226011, India

Tel +91 (522) 2661044, 2661040 Fax +91 (522) 2661043 E-mail sales@encardio.com

Visit us at: www.encardio.com

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