

## DATA SHEET



## PORTABLE TILT METER

MODEL EAN-70M

### INTRODUCTION

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.

### FEATURES

- Rugged & robust construction with excellent temperature stability.
- Provides reliable, high resolution readings.
- Economical to use as one tilt meter can be used to monitor any number of inexpensive tilt plates.
- Ease in installation as tilt plate can be anchored to structure or even bonded in case of a smooth surface.
- Ease in monitoring tilt by a single operator.

### APPLICATION

- 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.



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.

## OVERVIEW

The Encardio-rite portable tilt meter system includes a portable tilt meter model EAN-70M, tilt plates, and a readout unit. Die-cast aluminium tilt plates, available from Encardio-rite are dimensionally stable and weather resistant. Protective covers are available for the tilt plates if specifically ordered.

The EAN-70M portable tilt meter incorporates a sensor based on precision MEMS accelerometer technology. It is housed in a rugged frame with machined surfaces that facilitate accurate positioning on the tilt plate.

## OPERATION

Tilt plates are mounted on the structure at specified locations. Tilt plates are typically anchored to the structure, but may also be bonded to a smooth clean surface i.e. granite, stone, tiles. The bottom surface of the portable tilt meter is used to take readings from horizontally-mounted tilt plates and the side surfaces are used to take readings from vertically-mounted tilt plates. The EAN-70M monitors change of tilt of structures over a period of time. Tilt measurement is done by taking two readings for each tilt plate - one reading in plus direction and another in minus direction as per the + and - orientation provided in the base plate of tilt meter. Initial tilt reading for each tilt plate is recorded after it is mounted on the structure and stored in the readout logger. Change in tilt with time is obtained by comparing the initial tilt reading with the subsequent tilt reading.

## SPECIFICATION

Sensor	Uniaxial
Measuring range	± 15° from vertical
Sensitivity	10 arc second
Accuracy <sup>1</sup>	± 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 80°C
Die cast Aluminium tilt plate and accessories	
Mounting method	Hilti anchor HPS 1-6/15x40 # 260350 or equivalent
Diameter	142 mm
Height	24 mm
Weight	0.25 kg

## READ-OUT

Compatible portable digital readout unit model EDI-53UTM is available for storing and monitoring tilt from EAN-70M portable tilt meter with date and time.



\*All specifications are subject to change without prior notice

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