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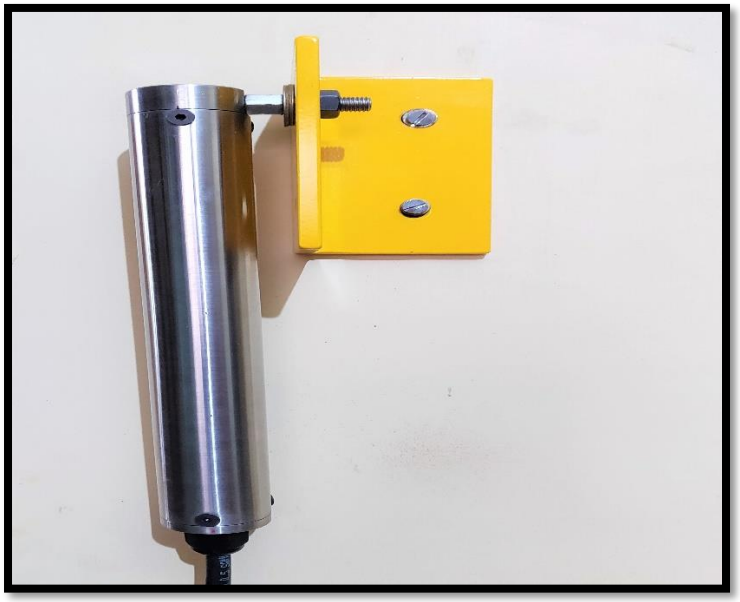
MEMS TILT METER



The Data Digger Equipment model DDE-20M-U/DDE-20M-B tilt meter is suitable for monitoring of inclination and vertical rotation in structures. It is a high resolution tilt meter, is rugged in construction and has an 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.

FEATURES

- Suitable for severe environment.
- Provides reliable and high resolution readings
- Rugged & robust construction and excellent temperature stability.
- Easy to install and take readings
- Readings can be taken by remote data-logger.

APPLICATION

- 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. To monitor deformation of embankments, retaining walls etc.

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

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DESCRIPTION

Model DDE-20M tilt meter consists of a MEMS sensor, mounted inside stainless steel housing. 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, long term stability and a low thermal sensitivity. The tilt meter (uniaxial and biaxial) is fixed on to a vertical or horizontal surface by means of an adjustable bracket and expandable anchor. Movement of the structure causes change in tilt of the tilt meter, which results in change in output of the sensor. Measurements can be made on horizontal or vertical surfaces. Subsequent sets of readings, shows how the structure is behaving and will give an indication of permanent deformations as time progresses.

MOUNTING VARIANTS

Model DDE-90M tilt meter is supplied with standard mounting 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/DATA LOGGER

Model DDE-20M tilt meter can be read by our DDE-103 series portable digital read-out unit suitable for MEMS tilt-meters. The readings can also be read or logged at a remote location by an automatic data acquisition system like DDE model DDEDAS-10. In the latter case also, it is recommended to take readings with readout unit while installation and for troubleshooting until the tilt meter is connected to DDEDAS-10.

SPECIFICATION

Sensor:	Uniaxial, Biaxial also available on request.
Standard Range:	±15°
Sensitivity:	±10 Arc second
Accuracy:	±0.1% fs
Temperature Range:	-20°C to 80°C
Sensor Dimension	35mm Dia X 230mm Length
Bracket Dimension: (wall Mounting)	65mm X 65mm X 100mm, 6mm Thickness