

## GT-TI-MB MEMS Digital Tiltmeter



### Features

- Highly accurate and reliable biaxial tilt sensor
- Long-range Bluetooth communications
- Easy configuration
- User-friendly configuration with Android device
- Standard CSV download
- Robust and weather-proof structures
- Rug construction
- MeasureAPP compatible any Android Devices

### Introduction

Geotech Model GT-TI-MB is designed to accurately measure the tilt of structure. In general, the tiltmeter is placed to a bronze tiltplate, and protected by a rugged protection cap. The tiltmeter contains biaxial MEMS sensors to measure tilt from two axes simultaneously. The measurement range is +/-30 degrees from vertical. Digital output makes the signal insensitive to external noise.

The measurement data can be directly transferred to a reader via Bluetooth connection. The reader integrated with APP can view the measurement data, and can send the data via internet and cloud services.

### Operation Principle

The Model GT-TI-MB was designed as a low-cost, portable tiltmeter, for use in various locations, with a standard resolution of  $\pm 5$  arc seconds.

The sensor has outstanding temperature stability, with minimal warm-up time and very low power requirements, provided by the internal 12 V Li-On battery.

The electronics and sensor are enclosed inside a fully sealed, waterproof housing and signal transmission to the Android Devices is achieved via Bluetooth® wireless technology.

The sensing elements are two highly accurate MEMS tilt sensors, which are practically immune to shock.

### Applications

- Building
- Dams
- Embankments
- Slopes
- Excavation walls
- Open pits

### Advantages

MEMS Technology

Wireless Communication

Easy Operation

## System Component

The heart of the tiltmeter is a pair of state-of-the-art MEMS (Micro-Electro-Mechanical Systems) sensors, elements with onboard self-test electronics and temperature compensation. The MEMS sensors are highly accurate and stable, and practically immune to temperature changes and shocks.

The Model GT-TI-MB MEMS Digital Tiltmeter is used in conjunction with Measure APP in android or iOS device (see inset photo at below). Three styles of tiltplates are available – ceramic, aluminum and stainless steel. The stainless steel tiltplates are recommended where vandalism may be a problem.

## Measure App



coming soon

### Download

Using the Android, iOS device visit google play store and iOS app store, search for "Measure APP"

### Requirements

Android 5.0 and iOS 8.0 above

## Technical Specifications

Type	<b>MEMS (Micro-Electro-Mechanical)</b>
Output	<b>Digital</b>
Resolution	<b>±5 arc seconds</b>
Accuracy full range	<b>±0.02% F.S.</b>
Range	<b>30°</b>
Axis	<b>Biaxial</b>
Temperature Range	<b>0 to 55°C (operating, storage)</b>
Shock Survival	<b>20,000 N</b>
Weight	<b>2.0 Kg</b>
Dimensions (L × W × H)	<b>172 × 90 × 185 mm</b>
Battery type	<b>12V Li-On Battery</b>
External antenna	<b>100mm length</b>
Material	<b>Aluminium alloy</b>

### Measure

Number of tiltmeter and data measurement are limited only by device memory. Graph Displays list of tiltmeter. Tap to start a measure. It have auto-save function to make the measurement easier.

### Graph

Large, readable characters. Shows active depth, depth last recorded, X and Y readings in mm, checksums, and for any different time. Other features can make device easy to use.

### Data

Plots checksums, change-from-initial, and change-from-last in high resolution. Displays data table for inspection and corrections.

### Export

Sends tiltmeter data to PC as email attachments or syncs via Dropbox. If internet is not available, data files are transferred via USBcable and Windows file manager.