

Wi-SOS 480 Wireless Tilt Meter

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Overview



The Geosense® Wi-SOS 480 Wireless Tilt Meter is used for long-range, remote readings in geotechnical monitoring applications.

The tilt meter combines a high-precision biaxial MEMS sensor with a radio transmission network to provide accurate measurements with the benefits of long-range wireless communication and extended battery life.

What makes Wi-SOS 480 different to other wireless systems is the use of data modulation via the WorldSensing G6 Platform which uses the latest LoRa spread spectrum technology. This technology means Long Range, Low Cost, Low Power Consumption and High Connectivity.

Each unit is individually calibrated to provide the ultimate in system accuracy and repeatability.

Several hundred Wireless Tilt Meters can be supported by one Gateway in the same network and it can also be used as a stand-alone logger for manual monitoring, capable of storing up to 200,000 readings.

It can easily be configured and connected with a USB cable and an Android device. Connectivity to the Gateway can be checked in the field and its global location displayed via the Wi-SOS WebCentre.

APPLICATIONS

Monitoring tilt in:

Retaining & diaphragm walls

Rail tracks

Party walls

Structures

Tunnels

Bridges

Slopes

Piles

Concrete dams

FEATURES

Highly accurate and reliable biaxial tilt sensor

Individual calibration UKAS traceable

Long-range 868/915MHz radio

Long-range communications (up to 15km)

Low-power LoRa® spread spectrum technology

Up to 8 years battery life

Robust, small and weather-proof box for harsh environments

Easy configuration

User-friendly configuration with Android device

Web browser software

Standard CSV download, FTP push and API access



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Specifications

GENERAL

Battery life – sampling rate 5 min	1.2 years
Battery life – sampling rate 1 h	5.8 years
Battery life – sampling rate 6 h	8.3 years
Battery type	2 x 3.6V C-Size Lithium
Sampling rate	30 seconds to 1 day
Configuration software	Android App, G-LOG

SENSOR

Type	MEMS (Micro-Electro-Mechanical) Inclinometer
Range	± 15°
Accuracy (± 5°)	0.03% FS / 0.004°
Accuracy full range	0.17% FS / 0.025°
Resolution	0.001°
Repeatability	0.005°
Axis	Biaxial
Temperature sensor resolution	0.1 °C
Temperature sensor accuracy	±0.5 °C

MEMORY

Date storage	200,000 readings
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PHYSICAL

Box dimensions (W x L x H)	100 x 100 x 61 mm
Overall dimensions	150 x 120 x 61 mm (excluding antenna)
Operating temperature	-40°C to 80°C
Weather protection	IP67
External antenna	100 mm length (including connector)
Box material	Aluminium alloy

RADIO

Range open sight	15km
Range urban	> 1km
Maximum link budget	151 dB
Configuration	Star (no repeaters needed)



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