

# WIRELESS TILT METER

MODEL ESDL-30MT

## DATASHEET



### OVERVIEW

The Encardio Rite model ESDL-30MT Wireless Tilt Meter, equipped with an in-built datalogger, is designed for remote monitoring of inclination and vertical rotation in various structures such as buildings, metros, tunnels, underground cavities, dams, mines, high-rise buildings, historical monuments, bridges, retaining walls, etc.

This standalone unit incorporates a biaxial MEMS tilt sensor, integrated data storage and wireless transmission capabilities, making it ideal for hard-to-access locations requiring precise tilt monitoring. By providing real-time data, the ESDL-30MT wireless tilt meter allows authorities to detect even the slightest changes, facilitating timely decisions to enhance safety, reduce project delays, and improve cost-effectiveness.

The tilt meter offers programmable measurement intervals ranging from 5 seconds to 168 hours, providing flexibility to meet diverse monitoring needs. It's important to note that since the primary power mode is battery-operated, higher measurement frequencies can drain the battery more quickly.

## FEATURES

- **Integrated unit:** Equipped with MEMS tilt sensors along with in-built datalogger to log and transmit data at desired intervals.
- **Plug and play:** Effortless sensor installation and configuration with an intuitive setup process using a laptop.
- **Adjustable measurement intervals:** Data measurement intervals are programmable from every 5 seconds to every 168 hours.
- **Intergrate nearby sensors:** Supports connection to other sensors (digital or with SDI-12 interface) using a simple three-conductor cable, allowing for comprehensive monitoring setups.

Compliant with the latest SDI-12 interface standards for seamless integration with any manufacturer's sensors with SDI-12 output.

- **Wireless data transmission:** Utilizes a GSM/GPRS modem for remote data transmission to central systems, requiring only a data SIM card for operation.
- **Local data retrieval facility:** Data can be downloaded directly to a laptop or PC in the field and transferred to other systems via USB or the Internet for further analysis.
- **Two-way communication:** Allows remote configuration and management, significantly reducing field costs.

- **Extensive data storage:** Features internal non-volatile memory that stores all measurement data along with date, time, and battery voltage, ensuring data integrity and accessibility.
- **Infrastructure data intelligence platform:** Transmit data to a local or cloud server hosting the **Proqio** platform for 24/7 insights. **Proqio** enables efficient data processing, analysis and real-time visualization. Benefit from instant alerts for critical events and automated reports, supporting informed decision-making.

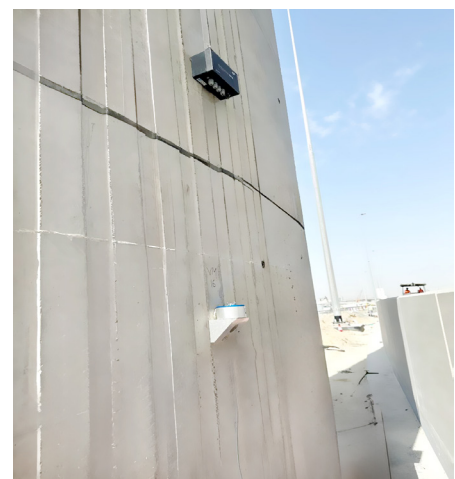
Also compatible with any manufacturer's data management system for continuous monitoring.

- **Robust weather-resistant housing:** Built with IP67 rating to withstand harsh environmental conditions, ensuring reliable operation in diverse settings; suitable for unattended applications.
- **Low power consumption:** Designed for efficient energy use to prolong battery life, ideal for extended stand-alone field usage.
- **Versatile power options:** Choose from battery, mains, or optional solar power (model ESP-12V1A). For remote sites, mains or solar power is advised.

## CONNECTION TO OTHER SENSORS

ESDL-30MT can connect, log and transmit data from nearby installed sensors - like tilt meters with digital output or crack meters, load cells and strain gages with an SDI-12 interface. This feature simplifies installation and enhances the system's capability by enabling comprehensive multi-sensor measurements.

The data can be transmitted to a central data management platform like Proqio or retrieved locally on-site.



**ESDL-30MT tilt meter installed at a site**



## SPECIFICATIONS

### TILT SENSOR

Sensor	Integral biaxial tilt sensor
Range	± 15°
Resolution	± 0.05 mm/m (8 arc seconds)
Accuracy	± 0.1% fs

### DATALOGGING

Scan/upload interval	5 seconds to 168 hours
Memory capacity	Flash Memory (64-Mbit); 2 Million data points
Internet connectivity	In-built 4G/LTE modem
Data output format	CSV text file. Can be easily imported in many third party applications like Microsoft® Excel
SDI-12 version	Version 1.3
Communication port	RS-232 (Standard) 115 kbps
Temp. measurement range	-20 to +70°C with 0.1°C resolution
Operating temperature range	-30 to 70°C
Humidity	100 %
Power supply	2 x D size 3.6 V/19 Ah Lithium cells, or 2 x D size 1.5 V Alkaline high power cells, or 12V SMF battery chargeable from AC mains or solar panel
Housing	Corrosion resistant weather proof enclosure.
Protection	IP67
Antenna (in telemetry option)	Built-in or separately mounted antenna
Dimensions LxWxH	220 x 140 x 90 mm



## ORDERING INFORMATIONS

Model code	No. of other sensors to be connected
ESDL-30MT	Wireless tilt meter, no other sensor to be connected
ESDL-30MT-1	1-5 sensors
ESDL-30MT-2	6-10 sensors
ESDL-30MT-3	11-24 sensors

Contact factory if more sensors to be connected.

\*All specifications are subject to change without prior notice

DATASHEET | 1601-16 R03



Dams



Mining



Tunnels



Transportation



Construction



Bridges



Landslides



Energy



Environmental  
Monitoring



Pipelines



Structural Health  
Monitoring



Smart  
Cities

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