

SOIL EXTENSOMETER

DATASHEET

MODEL EDS-92



OVERVIEW

The Encardio Rite model EDS-92 soil extensometer is designed to monitor displacement between two surfaces that may undergo relative movement over time. The sensor is particularly useful for measuring lateral strains and settlement within or beneath earth and rock fill embankments as well as in dam applications. Additionally, it provides critical data on foundation movement and aids in the stability monitoring of natural or cut slopes. It is also effective for monitoring displacement in retaining walls, bridge piers, abutments, construction joints in concrete, and faults in rock.

The EDS-92 soil extensometer uses a vibrating wire sensor to measure displacement. The system comprises of a sensor assembly with flanges, mounted with adaptors, adjustment units, sockets, and extension rods placed between two anchors. This configuration allows the extensometer to track horizontal movement within the surrounding soil accurately. The system is enclosed in telescopic PVC tubing with O-ring seals to minimize friction and prevent water ingress. It is usually installed in approximately 500 mm wide x 600 mm deep trenches.

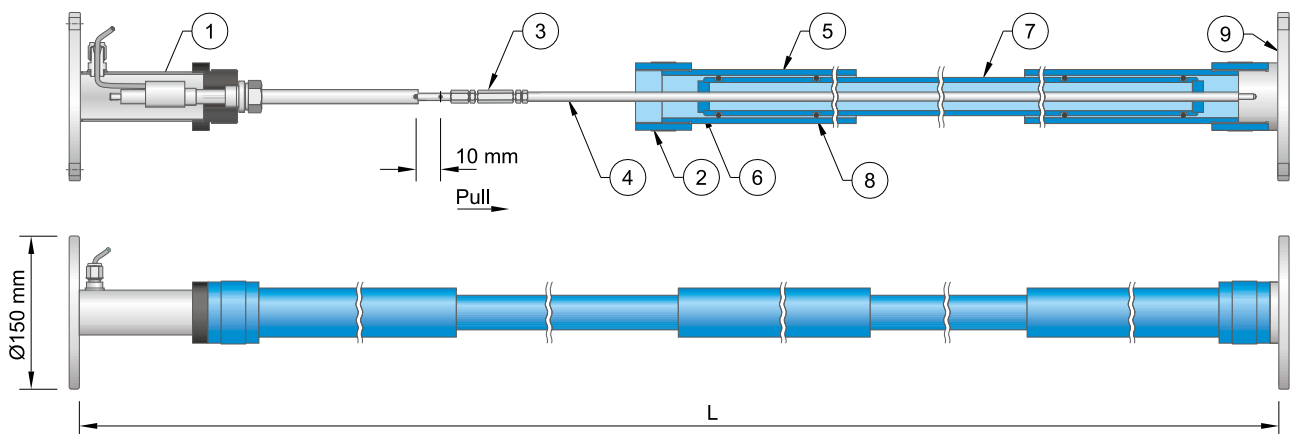
The extensometer can be supplied with different gauge lengths (distance between two anchors). Multiple units can be connected in series to monitor incremental displacements over larger areas. Displacement between the anchor points at each end of the extensometer corresponds to mass movement in the monitored area. Relative movement between these anchors changes the vibrating wire sensor's output, converting the mechanical shift into an electrical frequency output. This output can be read by any compatible vibrating wire readout unit. Data can be automatically collected, stored, and transmitted to a remote server using a suitable datalogger. The initial reading taken from the sensor serves as a baseline, with subsequent readings compared against this baseline to quantify displacement changes over time.

FEATURES

- **Reliable and accurate:** Provides precise and consistent readings for monitoring displacement.
- **Remote reading capability:** Suitable for remote monitoring of displacement using a datalogger.
- **Robust construction:** Designed to protect components from water ingress and corrosion, ensuring durability.
- **Wide range:** Capable of measuring displacement up to 100 mm.
- **Easy installation:** Simple and straightforward installation process.
- **Uniform strain transfer:** Ensures even strain transfer from surrounding soil to the sensor.
- **Versatile applications:** Suitable for various geotechnical and structural monitoring needs.
- **Versatile datalogging:** The soil extensometer can work with any manufacturer's dataloggers and Data Management Systems for continuous monitoring. Encardio Rite offers a range of NexaWave dataloggers equipped with GSM/GPRS or RF communication capabilities, ensuring reliable and efficient data transmission.
- **Infrastructure data intelligence platform:** Encardio offers Proqio software to facilitate data processing, analysis, and real-time visualization and generates instant alarms for critical events to keep all stakeholders informed.

SYSTEM COMPONENTS

Model EDS-92 Soil Extensometer



Sl. #	Description	Qty	Sl. #	Description	Qty
1	Sensor flange assembly	1	6	Guide bush	2
2	Socket	1	7	Telescopic protective tubing-B	1
3	Adjustment unit	1	8	Rubber boot	4
4	Extension rods	1	9	End flange assembly	1
5	Telescopic protective tubing-A	2			



SPECIFICATION

Sensor type	Vibrating wire
Range (mm)	15, 25, 50, 100, specify
Sensor accuracy	± 0.2 % fs normal ± 0.1 % fs optional
Sensor sensitivity	± 0.02 % fs
Sensor non linearity	± 0.5 % fs
Temperature limit	- 10° to 80°C
Thermistor	YSI 44005 or equivalent (3 kOhms at 25°C)

**All specifications are subject to change without prior notice*

DATASHEET | 1073-13 R03



Dams



Mining



Tunnels



Transportation



Construction



Bridges



Landslides



Energy



Environmental
Monitoring



Pipelines



Structural Health
Monitoring



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