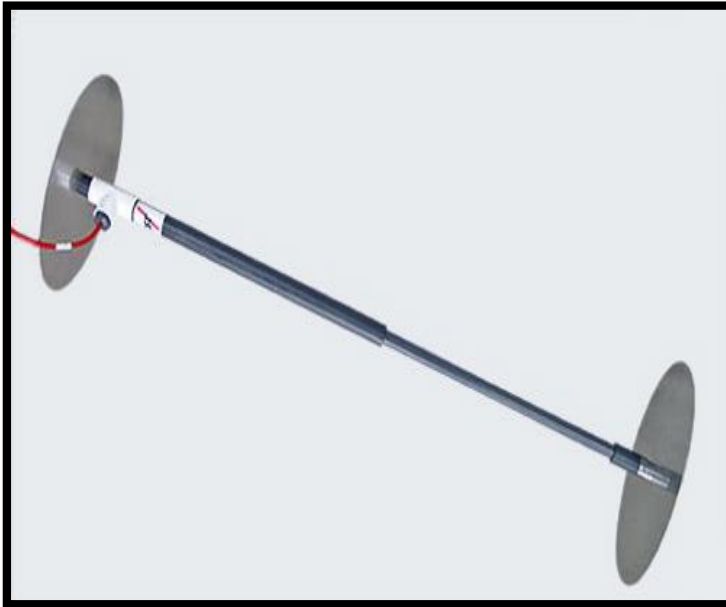




SOIL EXTENSOMETER



The Data Digger Equipment model DDE-7200 Extensometer is used for monitoring displacement between two surface that may shift with respect to each other with time. The soil with extensometer find major application in the measurement in the lateral strains and settlement in or beneath earth and rock fill embankments; and in dams. It is used in measurement of foundation movement and controlling of natural cut slopes. The displacement of retaining walls, bridge piers and abutment can also be monitored by the soil extensometer. It also finds application in the measurement of displacement across construction joints in concrete, and across joints and faults in rock. The extensometers are usually installed in approximately 500 mm wide x 600 mm deep trenches.

FEATURES

- Reliable, accurate and simple to read.
- Suitable for remote reading of displacement.
- Probe is robust, care being given to protect all component and sub-assemblies from ingress of water and corrosion,
- Range up to 100 mm of displacement.
- Easy to installed.
- Reasonably priced.

APPLICATION

- Horizontal movement in the foundations and embankments.
- Movement of natural and cut slopes, quarry and mining excavations.
- Displacement of retaining walls, piers and abutments.
- Displacement across construction joints in concrete and fault in the rocks.





OPERATION:

The soil extensometer uses a vibrating wire sensor for monitoring displacement. The system consists of a sensor assembly with flanges that is mounted with adaptors, adjustment unit, sockets and extension rods between two anchor to monitor horizontal movement of surrounding soil. The system enclosed in telescopic PVC tubing with proper 'O' ring seals to eliminate friction between the rod and surrounding the soil and to prevent any ingress of water.

The extensometer system is supplied with different gage lengths (gage length is the difference between two anchors).

A number of extensometer units can be connected in series to measure incremental displacements over large distance. Movement of relative position between two anchor channels at the end of the soil extensometer is the representative of mass movement. The relative movement between the anchor causes change in the output of the vibrating sensor. The displacement sensor converts the mechanical to an electrical frequency output.

The frequency output accurately can be measured by any vibrating wire readout unit. The data can also be automatically collected at the desired frequency, stored and transmitted to remote server by a suitable data logger.

The initial reading of the sensor is taken as the base. Subsequent reading then compared with the initial reading to determine the magnitude of change in displacement across the opening.

SPECIFICATION:

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| <u>Sensor:</u> | Vibrating wire. |
| <u>Standard Range(mm):</u> | 15, 25, 50, 100 specify. |
| <u>Sensitivity:</u> | ±0.02 % fs. |
| <u>Accuracy:</u> | ±0.2 % fs normal. ±0.1 % fs optional. |
| <u>Temperature Range:</u> | -10° – 80°C |
| <u>Thermistor:</u> | YSI 44005 or equivalent (3 kOhms at 25°C). |
| <u>Non linearity:</u> | ±0.5 % fs. |

