

Hydraulic Settlement Cell System – HSCE01

Hydraulic settlement cells are single (or multiple) units which are connected to a fixed base reservoir to show any settlement (or heave) at their installation point. The cells are connected to the reservoir by hydraulic and air tubes. Settlement of each unit causes a change in its fluid level which due to buoyancy force imposes a movement to the suspended cylinder. A precise displacement sensor measures minute changes in cylinder location which in turn reflects the settlement or heave in the structure. Data from the sensors can be collected either by a read out unit or an automatic data acquisition system.

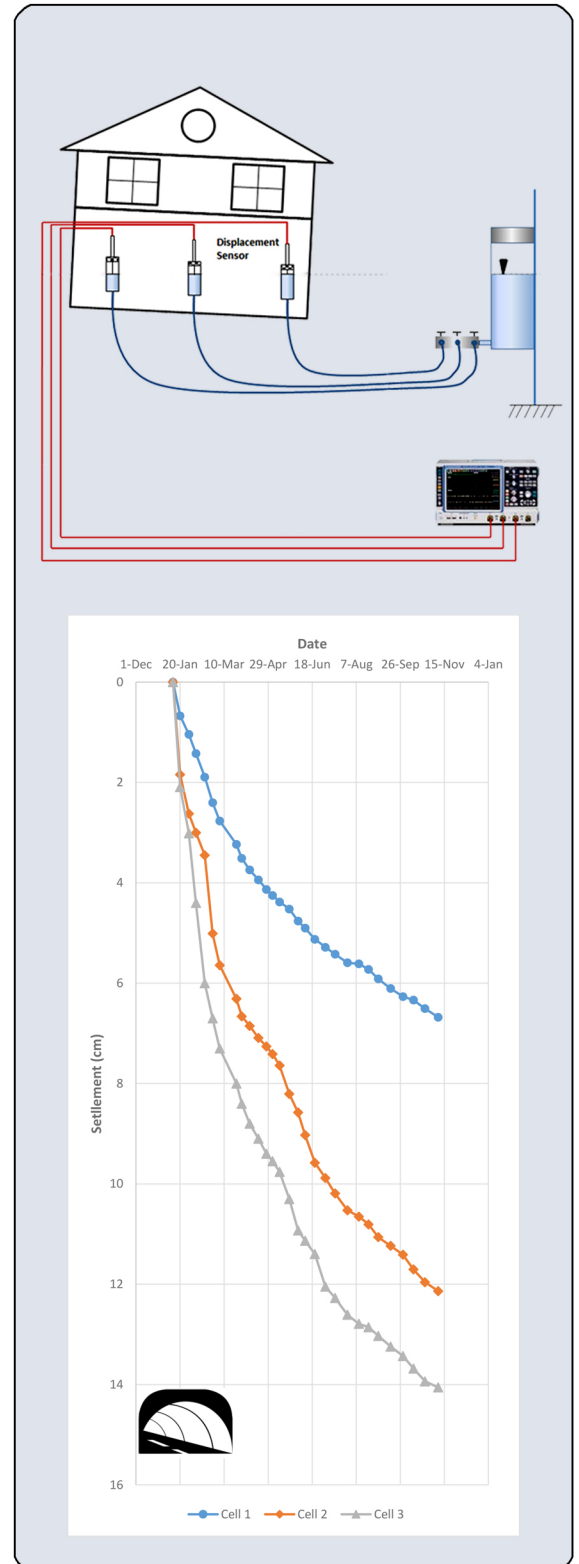
Application

- Some of the applications of this instrument are:
- Measuring settlement of important points in a structure as a result of nearby tunneling or open excavations.
 - Settlement monitoring under embankments or fills .
 - Recording heave in structures and bottom of tunnels.
 - Controlling movement of structures adjacent to grouting operations.
 - Settlement monitoring of large surface tanks and reservoirs.

Operation and Installation

The reference reservoir is installed on a fix ground far from the tilting structure. The cells are installed on the points of interest even singularly or in a row. The hydraulic pipes and vent tubes are attached to the cells and are connected to the main reservoir. These are filled with de-aired liquid. The sensor cables are then connected to the reading unit or a data acquisition system.

Technical Spec	
Range	10, 30, 60 cm
Resolution	0.1 mm
Accuracy	±0.1% full scale
Temperature range	-20 to +70°C
Material	Aluminum
Cell weight	1200 gr
Input Voltage	5-10 V
Cable type	4 core, PU sheathed
Liquid tubes	Nylon



Order information

HSCE01-AA-B
AA: Range of movement in cm
B: Number of cells