

SENSOR TECHNICAL FEATURES

- ✓ Type of sensor: vibrating wire;
- ✓ Standard range: 6.9 m, 17 m (69 kPa, 170 kPa);
- ✓ Output signal: Hz;
- ✓ Pressure overload: 2x F.S.;
- ✓ Range: from 2200 to 3500 Hz;
- ✓ Electricity supply: 8-28 Vdc;
- ✓ Accuracy: +/- 0,1% F.S.;
- ✓ Non linearity: <0.5% F.S.;
- ✓ Total thermal error: 0.05% F.S./°C;
- ✓ Temperature range: from -20 °C to +80 °C;
- ✓ Sensor's protection level: IP 67;
- ✓ Thermistor: 3 kΩ;

SYSTEM TECHNICAL FEATURES

- ✓ Total accuracy: +/- 2/3 mm (depends on: length / differential sunlight exposure / placement of tubing, pressure variations over time);
- ✓ Protection level: IP 68;
- ✓ Number of sensors per reservoir: from 1 up to 7/8 sensors (number depends on the length of the tubing).



The ground hydraulic settlement system is widely used to monitor structures subject to differential settlement or heave in soil and other structures such as embankments, earthfill and rockfill dams.

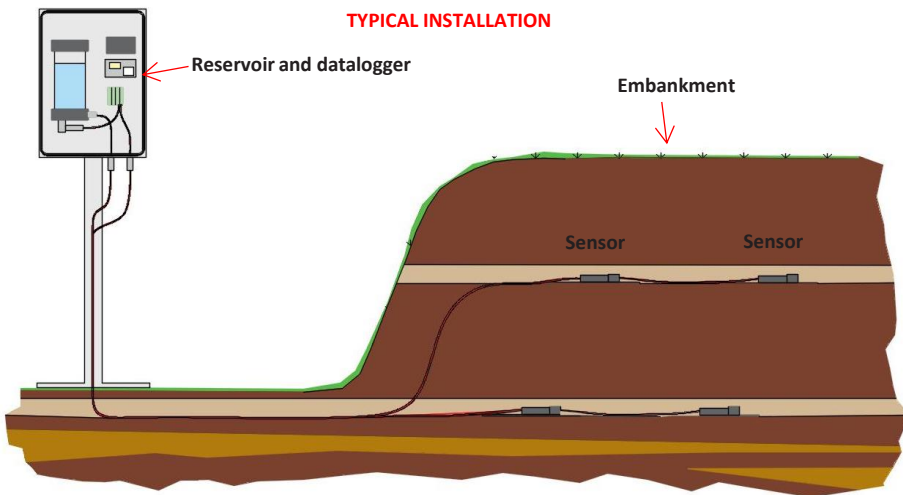
This system's main components comprise of a reservoir (single or multiple), liquid filled tubing and vibrating wire transducers placed under the soil to be monitored.

The reservoir is installed in a stable position and it is connected to each vibrating wire sensor through a line of hydraulic tubing. The change in level between the reservoir and one or more sensors, fasted to a plate and placed underneath the ground prone to settlement or heave, is measured as a pressure change. This pressure variation causes deformation of the sensor's metal diaphragm. One end of the vibrating wire is fasted onto the diaphragm, which vibrates at

a frequency proportional to the pressure exercised on it.

The transducer works on the principle that when a tensioned wire is plucked, it vibrates at its resonance frequency. The square value of this frequency is proportional to the strain in the wire. The pressure exercised by the fluid on the diaphragm causes its deflection, which in turns changes the tension of the vibrating wire altering its resonance frequency.

For greater accuracy, the settlement system also records changes in barometric pressure and air temperature over time.



Pressure sensor on anchoring plate

SYSTEM DIMENSIONS

sensor plate dimension and material	400x400x1, stainless steel
sensor dimension and material	175X75X60 mm, stainless steel and aluminium
tubing dimension and material	external diameter 6mm, polyethylene
reservoir dimension and material	700x500x250 mm, anodized aluminium

We reserve the right to carry out modifications to our products and their specifications

