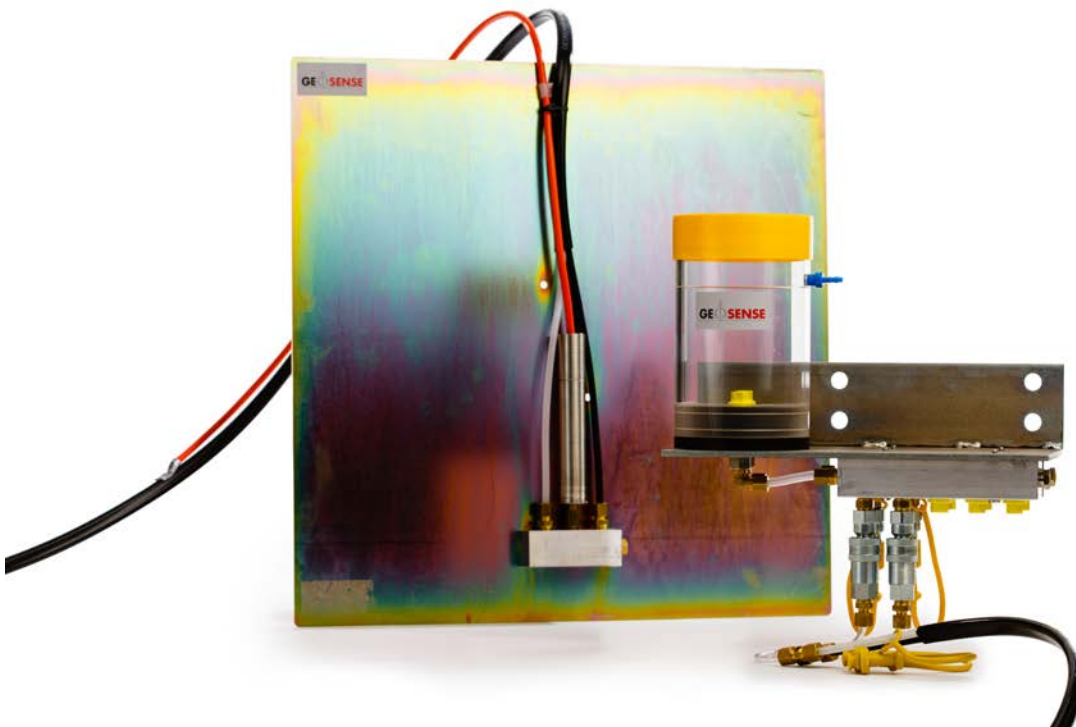


VW Liquid Settlement System VWLSS-200

The Geosense® VWLSS-200 Vibrating Wire Liquid Settlement System is used to monitor settlement or heave in soils and other structures such as embankments, earth and rockfill dams



VW Liquid Settlement System VWLSS-200



Overview



The Geosense® VWLSS-200 Vibrating Wire Liquid Settlement System is used to monitor settlement or heave in soils and other structures such as embankments, earth and rockfill dams.

The main components are a reservoir (single or multiple), liquid-filled tubing and a vibrating wire pressure transducer cell mounted on a plate or, for borehole application, attached to an anchor.

The vibrating wire sensor is attached to a settlement plate at the point of estimated settlement. The sensor is connected via two liquid-filled tubes which are connected to a reservoir located on stable ground.

As the transducer settles with the surrounding ground the height of the column is increased and the corresponding higher pressure is measured by the transducer.

Settlements are calculated by converting the pressure to millimetres of liquid head.

APPLICATIONS

Sub-surface point settlements/heave beneath:

Embankments

Surcharges

Fills

Dams

Landfills

FEATURES

Not affected by barometric pressure

In-situ checks available

Air can be easily removed

Manual or automated readout

Reservoir can be sited away from construction area

Not affected by cable length

VW Liquid Settlement System VWLSS-200

Specifications

GENERAL

Standard Range*	7, 17 metres
Sensor accuracy	0.1% full scale
System accuracy	Site dependent
Resolution	0.025% full scale
Temperature range	-20°C to +80°C

MODEL

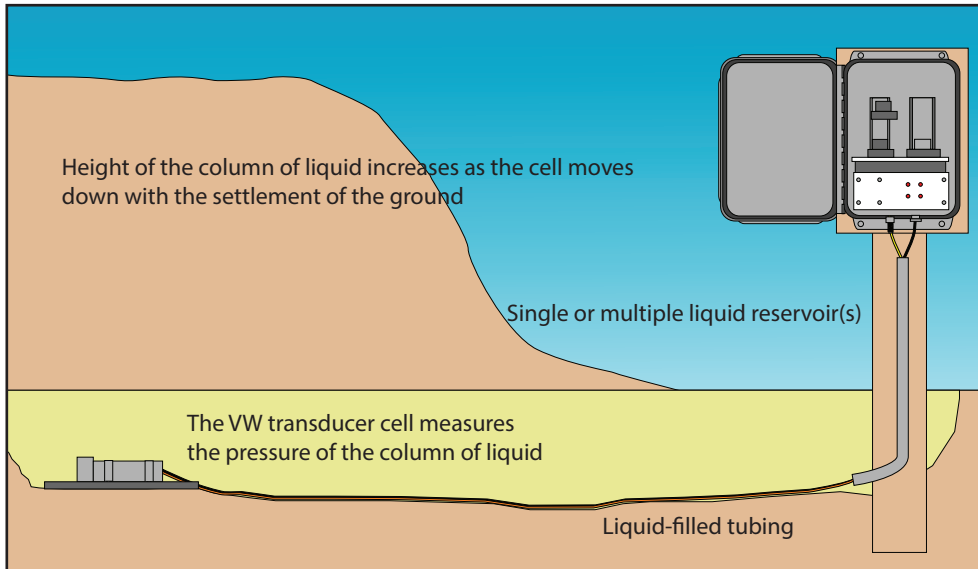
DESCRIPTION

VWPS-201V	VW vented pressure sensor 70 kPa
VWPS-202V	VW vented pressure sensor 140 kPa
VWPS-203V	VW vented pressure sensor 175 kPa
VWPS-204V	VW vented pressure sensor 345 kPa
VWPS-201S	VW sealed pressure sensor 70 kPa
VWPS-202S	VW sealed pressure sensor 140 kPa
VWPS-203S	VW sealed pressure sensor 175 kPa
VWPS-204S	VW sealed pressure sensor 345 kPa
VWSR211R	1 cell reservoir
VWSR212R	2 cell reservoir
VWSR213R	3 cell reservoir
VWSR214R	4 cell reservoir
VWSR215R	5 cell reservoir
VWSR216R	6 cell reservoir
VWSR217R	7 cell reservoir
VWSR218R	8 cell reservoir
VWSR219R	9 cell reservoir
VWSR220R	10 cell reservoir
VWSP230	450 x 450mm plate
VWSP231	500 x 500mm plate
K10-045	6mm OD x 4mm ID twin nylon tubing with PVC outer sheath - per metre
Q10-020	Type 900- VW Sensor with Foil Screen & Drain Wire 1 cable - per metre

VW Liquid Settlement System VWLSS-200



Overview



The pressure sensor transducer uses a pressure sensitive diaphragm with a vibrating wire element attached to it which is mounted inside an evacuated and hermetically sealed housing. Various housings are available to suit application.

The transducer operates on the principle that a tensioned wire, when plucked, vibrates at its resonant frequency. The square of this frequency is proportional to the strain in the wire.

Fluid pressures acting on the diaphragm causes a deflection of the diaphragm which then changes the tension in the vibrating wire thus altering the resonant frequency of the wire.

Vented System: The pressure sensor is vented so that it is automatically compensated for changes in atmospheric pressure.

Sealed System: The pressure sensor is sealed and therefore independent atmospheric readings should be taken and compensations made accordingly.

VWLSS-200 vibrating wire settlement sensors may be read by the VW-2106 or any vibrating wire readout device and may be readily data logged using Campbell Scientific or any other data loggers with vibrating wire interface modules.

Vibrating wire transducers output a frequency signal, and are therefore insensitive to resistance changes in connecting cables caused by contact resistance or leakage to ground.

Cable may be readily and simply extended on site without special precautions. Gauges may be read up to 1000 metres away from their installed location without change in calibration.

ORDERING INFORMATION

Sensor type

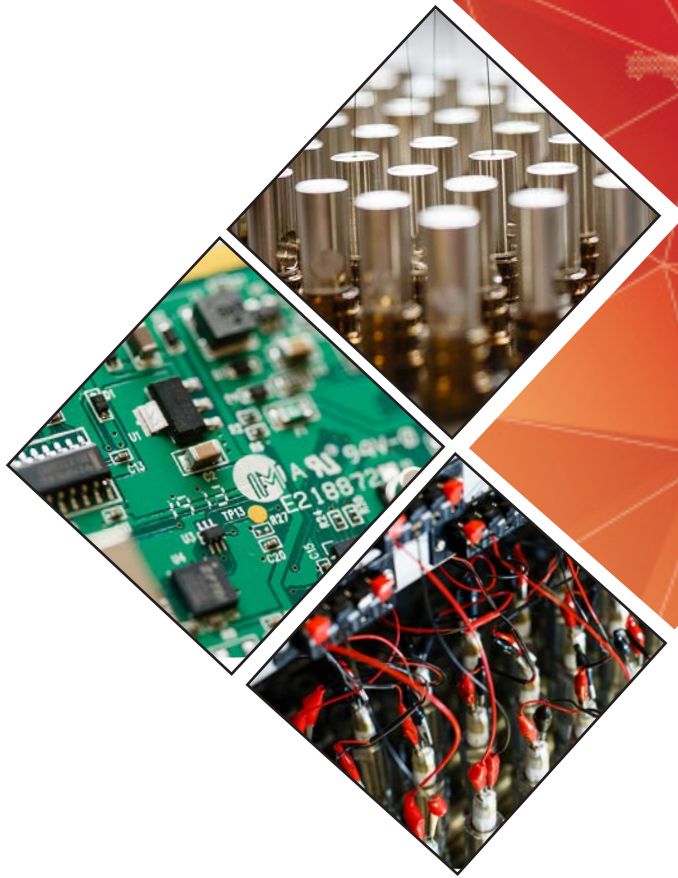
Sensor range

Plate size

Number of reservoirs

Tube length

Cable length



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