



INSTRUMENTS

GEO-Instruments Vibrating Wire Piezometer



The readout or data logger stores the reading in Hz. Calibration factors are then applied to the reading to arrive at a pressure in engineering units.

Installation Methods

- **Grout-In:** The piezometer is lowered to the specified depth, and the borehole is simply backfilled with a bentonite-cement grout.
- **Sand Filter:** The borehole is flushed with water or biodegradable drilling mud. A sand filter is placed around the piezometer at the specified depth. A bentonite plug is formed at the top of the sand filter. Then the remainder of the borehole is filled with a bentonite-cement grout.
- **Embankments:** The piezometer is embedded in sand and then covered with hand-compacted select fill. Signal cables are routed through trenches and covered with compacted fill. Bentonite water stops are placed at appropriate locations.

Applications

- Monitoring pore water pressures to determine slope stability.
- Monitoring the effects of dewatering systems used for excavations.
- Monitoring the effects of ground improvement systems such as vertical drains and sand drains.
- Monitoring pore pressures to check the performance of earth fill dams and embankments.
- Monitoring pore pressures to check containment systems at land fills and tailings dams.

Principle of Operation

The VW piezometer converts water pressure to a frequency signal via a diaphragm, a tensioned steel wire, and an electromagnetic coil.

The piezometer is designed so that a change in pressure on the diaphragm causes a change in the tension of the wire. An electro-magnetic coil is used to excite the wire, which then vibrates at its natural frequency. The vibration of the wire in the proximity of the coil generates a frequency signal that is transmitted to the readout device.

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get the data you need.

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Features

- **Groutable:** The VW piezometer can be installed without a sand filter or bentonite seal. This greatly simplifies same-hole installation of multiple piezometers or piezometers with inclinometer casing.
- **High Resolution:** VW Piezometers provide a resolution of 0.025% of full scale.
- **High Accuracy:** Geo-Instrument's automated, precision calibration system ensures that VW Piezometers meet or exceed specifications.
- **Rapid Response:** VW Piezometers respond very quickly to small changes in pore-water pressure, whether they are grouted in, pushed into cohesive soils, or embedded in a sand filter zone.
- **Reliable Signal Transmission:** With properly shielded cable, signals from the VW piezometer can be transmitted long distances.

Specifications

Sensor Type	Pluck-type vibrating wire sensor with built-in thermistor
Range	50, 100 and other ranges on request
Resolution	0.025%FS
Accuracy	± 0.1% FS
Temperature Range	-20 to +50°C
Temperature Coefficient	< 0.04% FS per °C
Maximum Pressure	1.5 x rated range
Filter	50-micron sintered stainless steel
Weight	0.16 kg (0.3 lb)
Materials	Stainless Steel
Dimension	0.75 x 7.75"
Model Numbers	<ul style="list-style-type: none"> • GEO-VW-PZO-50 • GEO-VW-PZO-100