

Pneumatic piezometer



Description

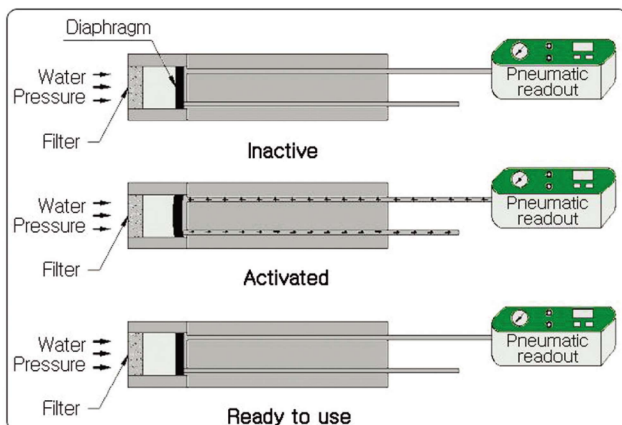
In a typical installation, the model 2510 **pneumatic piezometer** is sealed in a borehole, embedded in fill, or suspended in a standpipe. Twin pneumatic tubes run from the piezometer to a terminal at the surface. Readings are obtained with a pneumatic indicator.

The pneumatic piezometer contains a flexible rubber diaphragm. Water pressure acts on one side of the diaphragm and nitrogen gas pressure acts on the other. When a reading is required, a pneumatic indicator is connected to the terminal or directly to the tubing. Compressed nitrogen gas from the indicator flows down the input tube to increase gas pressure on the diaphragm. When gas pressure exceeds water pressure, the diaphragm is forced away from the vent tube, allowing excess gas to escape via the vent tube. When the return flow of gas is detected at the surface, the gas supply is shut off. Gas pressure in the piezometer decreases until water pressure forces the diaphragm to its original position, preventing further escape of gas through the vent tube.

Applications

The pneumatic piezometers are designed to measure pore water and fluid pressure.

- Measurement of the effects of drainage systems used for excavations.
- Measurement of the pore water pressure to determine safety factor under excavation or banking.
- Measurement of the water level to check the performance in rivers, reservoirs, standpipes.
- Measurement of the pore water pressure to determine slope stability.
- Measurement of flows of underground water and water leakage in embankments, dams and artificial lakes.



[Principle of pneumatic piezometer]

Features

- High stability and reliability
- High sensitivity
- Optimum design
- Low cost

Ordering information

- Application field
- Twin tube length

The readout

- **ACE-2500** (pneumatic readout)



Specification

Model	2510	
Sensor element	Pneumatic sensor	
Range	0~15kg/cm ²	
Accuracy	±0.5% FSR	
Resolution	0.001kg/cm ²	
Twin tube	Material	PE tube / PE sheath
	Dimensions	∅2.5 × ∅4.0mm
	Approval pressure	33kg/cm ² (@20°C)
	Length	5m / Connector
Filter	50 micron sintered stainless filter	
Diaphragm	Synthetic rubber	
Dimensions	∅20 × 80mm	
Waterproof	200m H ₂ O	
Material	Polyamid	
Weight	0.5kg / including twin tube 5m	
(Note) The accuracy and repeatability depends on the pneumatic readout		