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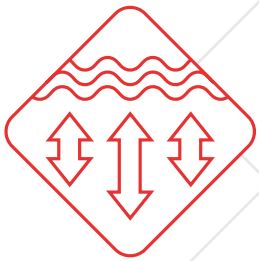
Casagrande Piezometer



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Instruments and Systems for Geotechnical and Structural Monitoring

Casagrande Piezometer

Descrizione

The Casagrande piezometer is an instrument used to measure groundwater levels or neutral pressures in soils with different permeability.

It is composed by a filter head and one or two PVC tubes which connect the porous element to the surface.

Measurement of groundwater levels is generally performed with “electrical sensor”.

The filter head of the Casagrande piezometer is made of tubes (mixture of conglomerate silicates) 400 mm long, connected to a plastic head which enables connection to the measuring tube and forms an accumulation chamber for impurities. Upon request, the piezometer can be provided with different filter elements, the porous element with various degrees of permeability, in order to meet varying requirements. The piezometer can be completed with a metal head including anchor device and sealing plug devices.

As an alternative to porous cells a slotted PVC pipe covered with geotextile can be used.

Also available are filters for coupling the two tubes to enable draining of the filter itself, as well as automated versions that allow the use of electric or vibrating wire pressiometric cells.

Applications

Typical uses for these instruments include: monitoring of groundwater levels, pore pressures and subsoil water, monitoring of groundwater quotas during construction or excavation, hydraulic tests of permeability or pumping, the monitoring of landslides .

The main applications of Casagrande piezometers and open standpipe piezometers are:

- **Monitoring groundwater levels**
- **Monitoring pore pressures**
- **Hydraulic permeability and pumping tests**
- **Landslides**
- **Test holes**

Features and benefits

- **Speed of measurement**
- **BPVC pipes linkable to required depths**
- **Low cost**

- **Ease of use**
- **Double pipe draining facility**
- **Periodic cleaning of pipes**

Principio di misura

The difference between the Casagrande piezometer and the open pipe piezometer is that the former measures pore pressures in soils and the latter measures groundwater levels.

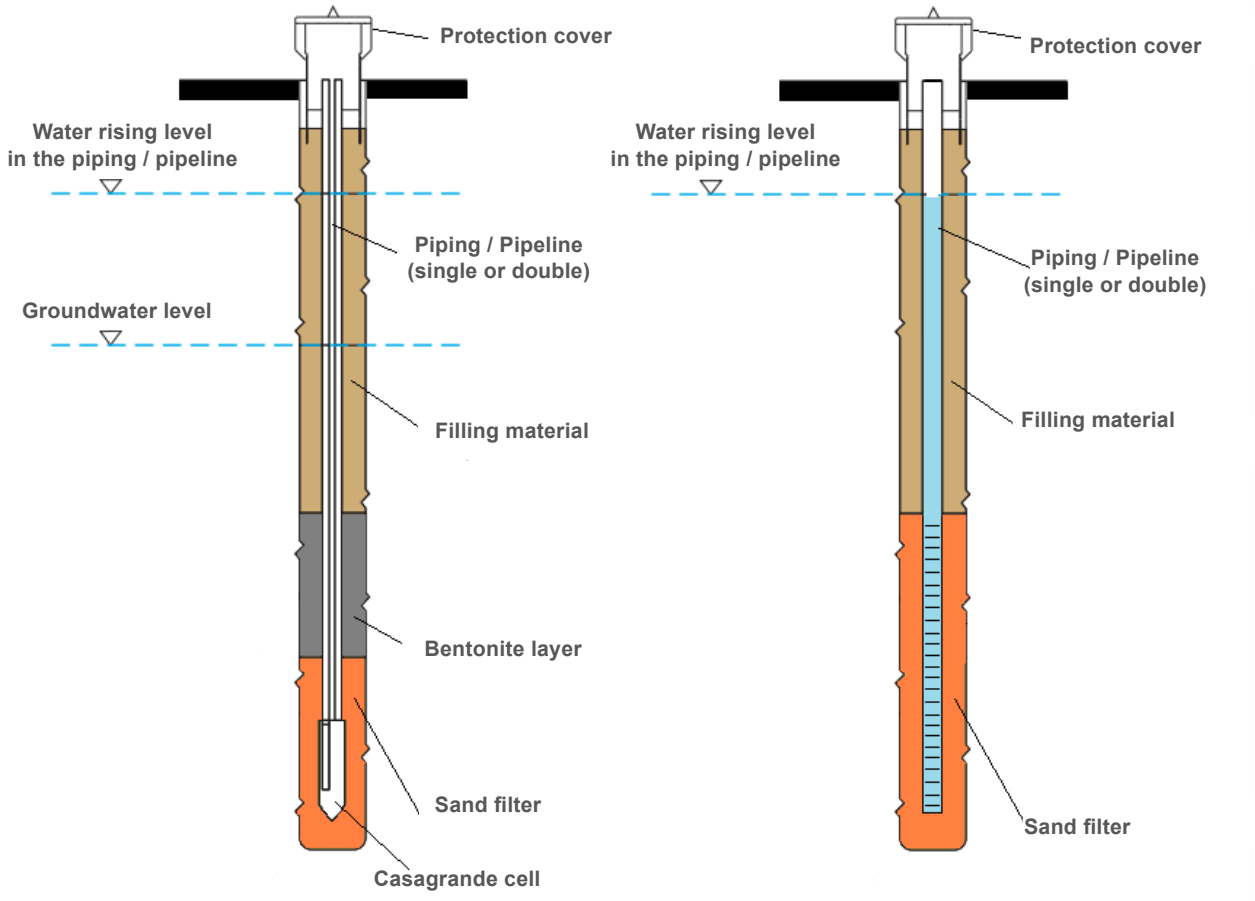
Both models are installed in boreholes by connecting a micro-perforated tube or filter element to jointed PVC pipes to reach the required depth.

Reading of level or of pressure is with pressure transducers with an electric probe. The pressure transducer is lowered inside a pipe and pressure level is detected at the surface by connection with a portable readout unit or data logger.

The electric probe is lowered into the pipe using inextensible cable with graduation in centimeters. When the probe head comes into contact with water, it closes the electrical circuit on the readout unit inside the reel, turns on a warning light and emits an audible signal as a warning.

The depth indicated on the sensor cable allows monitoring of any aquifer trends and knowing the measuring point of the tip, it is possible to calculate the absolute height of the measured level.

Twin-tube models are available which allow both simultaneous manual readings and readings via transducers.



Technical features

Model	Casagrande piezometer
Filter OD	55 mm
Filter length	250 mm
Porosity	20µm (other type upon request)
Connection on the filter	N°2 ½” gas
Made of pipe	PVC
Length of the pipe	3 m
Connection pipe	sleeve
Model	**Stand pipe piezometer**
Type of pipe	In PVC with windows opening 0,5mm
Diameter of the pipe	1”+1/2
Length of the pipe	3 m
Width cracks	0,5 mm. Possible covering in geo-textile
Made of bottom element	PVC

Accessories and related products

Electric Probe	For manual survey in Casagrande or Open Pipe
Piezometers pressure transducer	Vibrating wire or electrical for automatic acquisition

The Company

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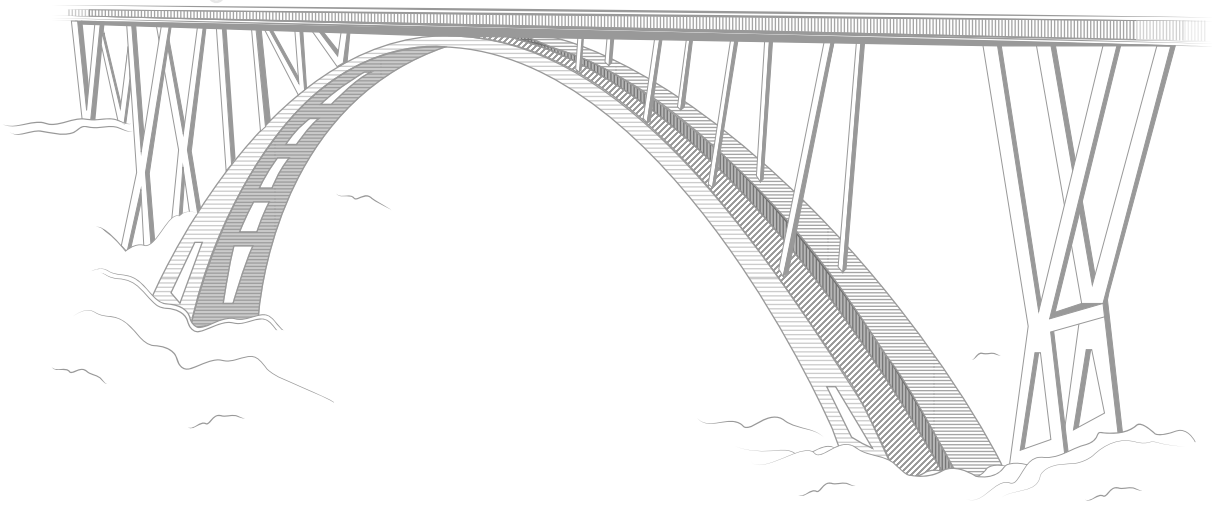

Technical assitance

If you have any requests or questions about our instruments or if you have special needs that require different solutions from the standard, please contact us. Our team will provide all the necessary information and will be very happy to work with you to study, develop and customize instruments and solutions suitable for your specific needs.

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