PW Series - Vibrating Wire Piezometer

Piezometer

HIGH ACCURACY
LONG -TERM RELIABILITY
WIDE MEASURING RANGE

The PW series of vibrating wire piezometers is designed to measure pore-water or other fluid pressure.

Description

The **PW** piezometer consists of a vibrating wire sensing element enclosed in a protective steel housing. The sensing element is essentially formed of a steel wire clamped to both ends of a hollow cylindrical body. An electromagnetic coil is used to excite the wire and to measure its vibration period. The period is sensitive to the pressure applied onto the sensing element.

The excellent long-term reliability of the **PW** results from the use of the latest developments in vibrating wire technology. For instance, the wire is clamped by a proven hydraulic swaging technique that ensures high stability. The sensing element is hermetically sealed in order to protect the steel wire against corrosion. All parts of the sensing element other than the wire are machined from a high-grade stainless steel. The **PW** is fitted with a surge protector and resists electrical and radio frequency interferences, as determined by tests compliant to IEEE and CEI specifications.

Five models of **PW** piezometers are available: The **PWS** is designed to be embedded in earth fills, at concrete/earth interfaces or inserted into boreholes and small-diameter pipes. The end of the PWS is fitted with a high or low air entry filter, which protects the sensing element from solid particles, allowing this model to sense only the fluid pressure to be measured. The filter is easily removable in case of saturation. The **PWF** is a thick-walled version of the PWS for use in direct burial applications. The **PWC** is provided with a pipe thread adapter, thus enabling the piezometer to be used as a pressure transducer. The **PWP** is designed to be driven into unconsolidated fine grain materials such as sand, silt or clay. The external housing is a thick-wall cylinder fitted with a conical shoe at one end and an EW drill rod or standpipe thread adapter at the cable entry end. The **PWL** is a low-pressure piezometer (35,70 kPa).

Key Features

- Rugged stainless steel construction
- High accuracy and resolution
- Triple stage water blocking
- Wide measuring range
- Temperature reading
- Long-term reliability
- Surge protection

Applications

- Hydraulic structures
- Retaining walls
- Embankments
- Dams

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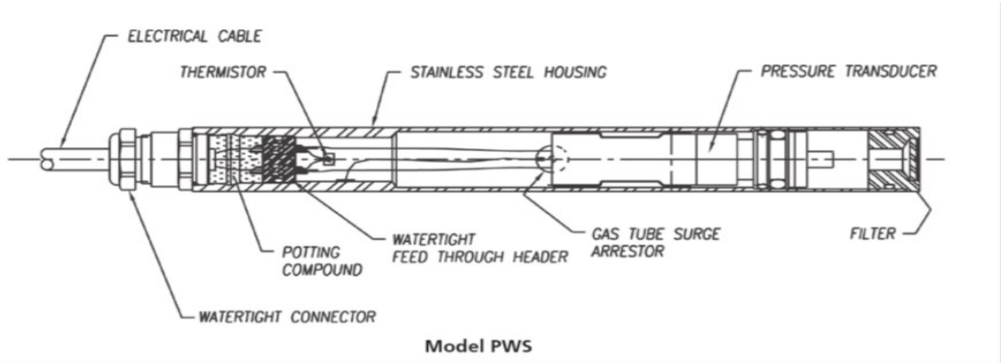
Specifications

PERFORMANCE					
Range[1]	0.035[2], 0.070[2], 0.2, 0.35, 0.5, 0.75, 1, 1.5, 2, 3, 5, 7 MPa				
Accuracy[3]	± 0.1%				
Linearity[3]	< ± 0.5% F.S				
Resolution with MB-3TL	0.025% F.S. (min.)				
Thermal drift[3]	± 0.1% F.S. / °C				
Thermistance	3 kΩ (see model TH-T)				
Cable[4]	IRC-41A, IRC-390, IRC-41AV				
MODEL	**PWS**	**PWF**	**PWC**	**PWP**	**PWL**
Housing	Slim	Thick-walled	Threaded (STD ¼ in -18 NPT male)	Push-in-point	–
Outside diameter	19 mm	28.6 mm	19 mm	33.4 mm	38 mm
Length	200 mm	200 mm	213 mm	260 mm	200 mm
Material	Stainless steel				
Filter	Stainless steel, ~ 50 µm, ~ 10 kPa, low air entry Ceramic, ~ 1 µm, ~ 450 kPa, high air entry				

[1] *Other ranges available on request. 1 MPa = 145 psi*
[2] *Available only with Model PWL*
[3] *Specifications achieved in laboratory conditions*
[4] *PWL must be used with vented cable type IRC-41AV*



Model PWS

Ordering Information

Please specify:
- Model and range
- Cable length

Optional Accessories

- Type of thermistor, filter and cable
- Calibration to -100 kPa
- Readout instrument: MB-3TL, SENSLOG

Roctest Ltd,
680 Birch Street
St-Lambert, Quebec
Canada J4P 2N3
E5001D-160208

Phone +1 450 465 1113
Fax. +1 450 465 1938
Email info@roctest.com
Web www.roctest.com