



VW2100
Standard
Vibrating Wire
Piezometer

VW2100-HD
Heavy Duty
Vibrating Wire
Piezometer

VW2100-DP
Drive Point
Vibrating Wire
Piezometer

	PRODUCT CATEGORY:
	PIEZOMETERS + TRANSDUCERS

Vibrating Wire Piezometer

The RST Vibrating Wire Piezometer provides excellent long-term accuracy, stability of readings, and reliability under demanding geotechnical conditions. Vibrating Wire Piezometers are the electrical piezometers of choice as the frequency output of VW devices is immune to external electrical noise and able to tolerate wet wiring common in geotechnical applications.

Vibrating Wire Piezometers contain a high tensile steel wire with a fixed anchor at one end and are attached to a diaphragm in contact with water pressure at the other end. The wire is electrically plucked, with the resonant frequency of vibration proportional to the tension in the wire. This frequency induces an alternating current in a coil which is detected by the readout unit, such as the VW2106 Vibrating Wire Readout (see separate brochure), and can then be converted to a pressure. The frequency output is immune to external electrical noise, and able to tolerate wet wiring common in geotechnical applications. Highly reliable lightning protection is incorporated in the vibrating wire transducer.

The frequency signal is exceptionally immune from cable effects, including length (to several kilometers), splicing, resistance, noise pickup, and moisture. The vibrating wire coil circuit contains no semiconductor devices and has built-in ionized gas discharge device protection against transient damage. As a result, the vibrating wire piezometer provides excellent reliability in typical geotechnical situations – i.e. long outdoor cables buried in saturated soil.

The piezometer is equipped with a standard sintered stainless steel porous filter to prevent soil particles from contacting the diaphragm. A thermistor is built into the piezometer body to permit temperature measurement and temperature compensation of the piezometer. Standard construction is all stainless steel. RST vibrating wire piezometers are shipped with extremely tough polyurethane-jacketed foil-shielded cable for maximum endurance in field conditions.

> APPLICATIONS

Slope stability investigations.	Monitoring well and standpipe water levels.
Assessing performance and investigating stability of earth fill dams and embankments.	
Monitoring pressures behind retaining walls and diaphragm walls.	
Monitoring pore pressures during fill or excavation.	
Monitoring pore pressure in land reclamation applications.	

> FEATURES

Field proven reliability and accuracy.	Integral lightning protection.
Signal transmission of several kilometers.	Data logger compatible.
High Accuracy - IE a low pressure vented model will measure water level changes as small as 0.5 mm (0.02 in.).	
Will tolerate wet wiring common in geotechnical applications.	
Thermistor for temperature measurement is standard.	Hermetically sealed, stainless steel construction.



Available for
QUICK DELIVERY
Info on reverse.

Negligible displacement of pore water during the measurement process.	
Can read negative pore water pressure (contact RST for details).	
Heavy case to minimize reading errors caused by overburden pressure.	
Cable lengths may be changed without affecting the calibration.	

> BENEFITS

✓ Increase Safety	✓ High Accuracy
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Vibrating Wire Piezometer



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SPECIFICATIONS + ORDERING

SPECIFICATIONS

DESCRIPTION	SPECIFICATION
Over range	2 X F.S.
Resolution	0.025% F.S. minimum
Accuracy	0.1% F.S.
Operating Temperature	-20 to 80°C (-4 to 176°F)
Diaphragm Displacement	<0.001 cc at F.S.
Thermal Zero Shift	<0.05% F.S./°C
Materials	Hermetically sealed stainless steel housing
Thermistor Type	NTC 3K Ohms @ 25°C
Thermistor Interchangeability	±0.2°C
Thermistor Resolution	0.1°C
Filter	50 micron sintered filter. (High air entry alumina filter 1, 3, 5 Bar available)

ELECTRICAL CABLE SPECS

PART #	DESCRIPTION
EL380004	Two twisted pairs cable with polyurethane jacket

Other types of cables, depending on site conditions and atmospheric reference requirements, are available upon request. These include vented, FEP, PVC, polyurethane, and armored varieties.



OPTIONS

Heavy-duty bodies for embankment use
Push-in drive points for soft soils
High air entry ceramic filters to exclude air
Low range and vented piezometers
Titanium construction for use with corrosive fluids
Multi-point/mixed type sensor strings
Kevlar® reinforced cable

OPTIONAL EQUIPMENT

VW2106 Vibrating Wire Readout
Data loggers
Terminal stations
Electrical cable
Cable splice kits
Installation geotextile and socks
Increased lightning protection

ORDERING



PART #	DESCRIPTION	PRESSURE RANGE	DIMENSION
VW2100	Standard model for general applications Contact RST for Details	0.35, 0.7, 1.0, 2.0, 3.0 MPa	19 mm Ø X 130 mm
VW2100-HD	Heavy duty piezometer for direct burial in fills and large dam embankments	0.35, 0.7, 1.0, 2.0 3.0, 5.0, 7.5, 10 MPa	25.4 mm Ø X 146 mm
VW2100-XHD	Heavy duty piezometer for direct burial in fills and large dam embankments	1.0, 2.0 3.0, 5.0, 7.5, 10 MPa	38.1 mm Ø X 146 mm
VW2100-DPC	Drive point model with CPT thread	0.07, 0.175, 0.35, 0.7, 1.0, 2.0, 3.0, 5.0, 7.5 MPa	33 mm Ø X 432 mm
VW2100-DPC-CT	Drive point model with drop off shoe	0.07, 0.175, 0.35, 0.7, 1.0, 2.0, 3.0 MPa	50.8 mm Ø (tip) 33.4 mm Ø (body) X 271 mm
VW2100-DPE	Drive point model with extension rod (1 1/4" diameter) (5' total length)		
VW2100-L	Low Pressure, unvented	70, 175 kPa	25 mm Ø X 133 mm
VW2100-LV	Low Pressure vented	70, 175 kPa	25 mm Ø X 133 mm
VW2100-M	Miniature version – 17.5 mm diameter	0.35, 0.7, 1.0, 2.0, 3.0 MPa	17.5 mm Ø X 133 mm
VW2100-MM	Micro-miniature version – 11.1 mm diameter	0.35, 0.7 MPa	11.1 mm Ø X 165 mm
VW2190	Heavy duty piezometer with bladder for brine environment	0.07, 0.175, 0.35, 0.7, 1.0, 2.0, 3.0, 5.0, 7.5 MPa	42 mm Ø X 319 mm
VW2191	Heavy duty piezometer with bladder for acidic environment with secondary corrosion protection	0.07, 0.175, 0.35, 0.7, 1.0, 2.0, 3.0, 5.0, 7.5 MPa	42 mm Ø X 319 mm

