



Perth
West Perth
0408 034 668

Brisbane
Toowong
0419 477 715

Melbourne
Niddrie
0428 315 502

Sydney
Belrose
0418 381 709

www.pcte.com.au

Vibrating Wire Piezometer



Introduction

Geosense® VWP-3000 Series of Vibrating Wire Piezometers use the well-proven method of converting fluid pressures on a sensitive diaphragm into a frequency signal.

Frequency signals are particularly suitable for the demanding environment of Civil Engineering applications, since the signals are capable of long transmission distances without degradation, tolerant of wet wiring conditions and resistant to external electrical noise.

Working principle

The gauge operates on the principle that a tensioned wire, when plucked, vibrates at its resonant frequency. Around the wire is a magnetic coil which when pulsed by a vibrating readout or data logger interface plucks the wire and measures the resultant resonant frequency of vibration. A change in distance between the anchor and the diaphragm is related to pressure differentials and can be converted to a kPa reading. Temperature information can be used if logging regularly to determine swift temperature changes during which pressure readings may be exaggerated

Features

- Reliable long-term performance
- Rugged, suitable for demanding environments
- High accuracy
- Insensitive to long cable lengths
- All non-drive-in models can have threaded adaptors to customer specifications

Applications

- Pore pressure measurement in soils and rocks
- Fluid pressures in hydro-fracture and pump tests

Specifications

VWP-3000 Vibrating Wire Piezometers may be read by the VW-2106 or any vibrating wire readout device and may be readily connected with data loggers with vibrating wire interface modules.

Vibrating wire piezometers output a frequency signal and are therefore insensitive to resistance changes in connecting cables caused by contact resistance or leakage to ground.

Cable may be readily and simply extended on site without special precautions. Gauges may be read up to 1000 metres away from their installed location.



WVP-3000 *

Standard construction to measure groundwater elevations and pore pressures.

WVP-3100 *

Heavy duty body for direct burial in fills and dam embankments.

WVP-3200 *

Low pressure version to measure groundwater elevations and pore pressures.

WVP-3300 *

A low pressure vented version to compensate for barometric pressure changes

WVP-3400

Heavy duty Drive-in Type 1 featuring inclined ports to minimise smearing affects.

WVP-3500

Slim line Drive-in Type 2 featuring large surface area porous filter.

* Available with High or Low air entry filter



PAPWORTHS CONSTRUCTION TESTING EQUIPMENT

Perth
West Perth
0408 034 668

Brisbane
Toowong
0419 477 715

www.pcte.com.au

Melbourne
Niddrie
0428 315 502

Sydney
Belrose
0418 381 709

Specifications

Type	Description	Pressure Range kPa	Over Range	Resolution	Accuracy	Non-Linearity	Temp Range	Thermal Effect	Diameter X Length	Weight
VWP-3000	Standard LAE	345, 518, 690, 1034, 2068, 3447, 5171, 6895 kPa	2 X Rated Pressure	0.025% FS	±0.1% FS	<0.5% FS	-20 to +80 °C	<0.05 % FS/°C	20x140 mm	210 g
VWP-3001	Standard HAE	345, 518, 690, 1034, 2068, 3447, 5171, 6895 kPa	2 X Rated Pressure	0.025% FS	±0.1% FS	<0.5% FS	-20 to +80 °C	<0.05 % FS/°C	20x140 mm	210 g
VWP-3100	Heavy Duty LAE	345, 518, 690, 1034, 2068, 3447, 5171, 6895 kPa	2 X Rated Pressure	0.025% FS	±0.1% FS	<0.5% FS	-20 to +80 °C	<0.05 % FS/°C	25x151 mm	450 g
VWP-3101	Heavy Duty HAE	345, 518, 690, 1034, 2068, 3447, 5171, 6895 kPa	2 X Rated Pressure	0.025% FS	±0.1% FS	<0.5% FS	-20 to +80 °C	<0.05 % FS/°C	25x151 mm	450 g
VWP-3200	Low Pressure LAE	70, 173 kPa	2 X Rated Pressure	0.025% FS	±0.1% FS	<0.5% FS	-20 to +80 °C	<0.05 % FS/°C	25x151 mm	600 g
VWP-3201	Low Pressure HAE	70, 173 kPa	2 X Rated Pressure	0.025% FS	±0.1% FS	<0.5% FS	-20 to +80 °C	<0.05 % FS/°C	25x151 mm	600 g
VWP-3300	Low Pressure Vented LAE	70, 173 kPa	2 X Rated Pressure	0.025% FS	±0.1% FS	<0.5% FS	-20 to +80 °C	<0.05 % FS/°C	25x151 mm	600 g
VWP-3301	Low Pressure Vented HAE	70, 173 kPa	2 X Rated Pressure	0.025% FS	±0.1% FS	<0.5% FS	-20 to +80 °C	<0.05 % FS/°C	25x151 mm	600 g
VWP-3400	Drive In Type 1	345, 518, 690, 1034, 2068, 3447, 5171, 6895 kPa	2 X Rated Pressure	0.025% FS	±0.1% FS	<0.5% FS	-20 to +80 °C	<0.05 % FS/°C	35x218 mm	1335 g
VWP-3500	Drive in Type 2	345, 518, 690, 1034, 2068, 3447, 5171, 6895 kPa	2 X Rated Pressure	0.025% FS	±0.1% FS	<0.5% FS	-20 to +80 °C	<0.05 % FS/°C	33 x 470 mm	2100 g

Description	
Materials	Stainless Steel
Excitation	Pluck or Swept Frequency
Over Voltage Protection	90 V gas plasma arrester
Thermistor	3k Ohms @ 25°C
Range	2200-3500 Hz
Nominal Zero Value	3130 Hz
Thermal Effect	0.05% FS/°C

Ordering Information

- Type
- Cable length
- Pressure Range

PCTE

PCTE have over 30 years' experience in the measurement and testing of concrete.

With experience in research, consulting and construction they are able to assist you in reviewing the issues and developing solutions. PCTE can provide more than just the equipment. They can provide leading technical support for your business.

Other Equipment

GeoSense offer a complete range of structural health monitoring equipment, including VW strain gauges, extensometers, load cells and tilt meters.

The Olson Instrument range includes the NDE360, CTG, Freedom Data PC, DAS and resonance tester.

The full Proceq range of equipment is available for insitu non-destructive concrete measurement, including Schmidt Hammers, Covermeters, Half Potentials, Resistivity, Ultrasonics and Permeability.