

## VW Piezometers, VWP-3000 Series

Pore pressure measurement in soils and rocks & fluid pressures in hydro-fracture and pump tests using the well-proven method of converting fluid pressures on a sensitive diaphragm into a frequency signal



# VWP-3000 Series

## Overview



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.

### APPLICATIONS

Pore pressure measurement in soils and rocks

Fluid pressures in hydro-fracture and pump tests

### FEATURES

Reliable long-term performance

Rugged, suitable for demanding environments

High accuracy

Insensitive to long cable lengths

### FILTER OPTIONS

LAE (Low resistance to air entry) 50µ sintered stainless steel, Vyon®

HAE (High resistance to air entry) Alumina silicate ceramic - 1 & 3 bar

### CABLE TYPE

Type 900 VW Sensor with Foil Screen & Drain Wire

Type 920 Vented with Drain Wire

Type 710 Heavy Duty



# VWP-3000 Series

## Models



VWP-3000/3310

### VWP-3000 (STANDARD)

Standard construction with high & low air entry filters to measure groundwater elevations and pore pressures.

### VWP-3310 (STANDARD VENTED)

Standard construction but vented to compensate for barometric pressure changes. Available with high & low air entry filters.



VWP-3100

### VWP-3100 (HEAVY DUTY)

Heavy duty body for direct burial in fills and dam embankments. Available with high & low air entry filters, standard and heavy duty cable.



VWP-3200/3300

### VWP-3200 (LOW PRESSURE)

Low pressure version to measure groundwater elevations and pore pressures. Available with high & low air entry filters.

### VWP-3300 (LOW PRESSURE VENTED)

Low pressure vented version to compensate for barometric pressure changes. Available with high & low air entry filters.



VWP-3400/3401

### VWP-3400 (DRIVE-IN)

Drive-in version available for use with CPT rods

### VWP-3401 (DRIVE-IN)

Drive-in version available for use with 1" BSPM rods

A range of drive-in adaptors, including R32, are available.

# VWP-3000 Series

## Specifications

| TYPE     | DESCRIPTION             | PRESSURE RANGE                               | OVER RANGE PRESSURE <sup>1</sup> | RESOLUTION | ACCURACY  | NON LINEARITY <sup>2</sup> | CALIB. TEMP RANGE | THERMAL EFFECT | DIAMETER X LENGTH | WEIGHT |
|----------|-------------------------|----------------------------------------------|----------------------------------|------------|-----------|----------------------------|-------------------|----------------|-------------------|--------|
| VWP-3000 | Standard LAE            | 345, 518, 690 kPa 1, 2, 3.5 MPa              | 1.5                              | 0.025% FS  | ± 0.1% FS | <0.5% FS                   | -20 to + 80 °C    | <0.05% FS/°C   | 20 x 178mm        | 240g   |
| VWP-3001 | Standard HAE            | 345, 518, 690 kPa 1, 2, 3.5 MPa              | 1.5                              | 0.025% FS  | ± 0.1% FS | <0.5% FS                   | -20 to + 80 °C    | <0.05% FS/°C   | 20 x 178mm        | 240g   |
| VWP-3310 | Standard Vented LAE     | 345, 518, 690 kPa 1, 2, 3.5 MPa              | 1.5                              | 0.025% FS  | ± 0.1% FS | <0.5% FS                   | -20 to + 80 °C    | <0.05% FS/°C   | 20 x 178mm        | 240g   |
| VWP-3311 | Standard Vented HAE     | 345, 518, 690 kPa 1, 2, 3.5 MPa              | 1.5                              | 0.025% FS  | ± 0.1% FS | <0.5% FS                   | -20 to + 80 °C    | <0.05% FS/°C   | 20 x 1mm          | 240g   |
| VWP-3100 | Heavy Duty LAE          | 345, 518, 690 kPa 1, 2, 3.5, 5, 7 10, 20 MPa | 1.5                              | 0.025% FS  | ± 0.1% FS | <0.5% FS                   | -20 to + 80 °C    | <0.05% FS/°C   | 25 x 182mm        | 500g   |
| VWP-3101 | Heavy Duty HAE          | 345, 518, 690 kPa 1, 2, 3.5, 5, 7 10, 20 MPa | 1.5                              | 0.025% FS  | ± 0.1% FS | <0.5% FS                   | -20 to + 80 °C    | <0.05% FS/°C   | 25 x 182mm        | 500g   |
| VWP-3200 | Low Pressure LAE        | 70, 173 kPa                                  | 1.5                              | 0.025% FS  | ± 0.1% FS | <0.5% FS                   | -20 to + 80 °C    | <0.05% FS/°C   | 32 x 179mm        | 600g   |
| VWP-3201 | Low Pressure HAE        | 70, 173 kPa                                  | 1.5                              | 0.025% FS  | ± 0.1% FS | <0.5% FS                   | -20 to + 80 °C    | <0.05% FS/°C   | 32 x 179mm        | 600g   |
| VWP-3300 | Low Pressure Vented LAE | 70, 173 kPa                                  | 1.5                              | 0.025% FS  | ± 0.1% FS | <0.5% FS                   | -20 to + 80 °C    | <0.05% FS/°C   | 32 x 179mm        | 600g   |
| VWP-3301 | Low Pressure Vented HAE | 70, 173 kPa                                  | 1.5                              | 0.025% FS  | ± 0.1% FS | <0.5% FS                   | -20 to + 80 °C    | <0.05% FS/°C   | 32 x 179mm        | 600g   |
| VWP-3400 | Drive-in LAE CPT        | 345, 518, 690 kPa 1, 2, 3.5 MPa              | 1.5                              | 0.025% FS  | ± 0.1% FS | <0.5% FS                   | -20 to + 80 °C    | <0.05% FS/°C   | 35 x 200mm        | 550g   |
| VWP-3401 | Drive-in LAE 1" BSPM    | 345, 518, 690 kPa 1, 2, 3.5 MPa              | 1.5                              | 0.025% FS  | ± 0.1% FS | <0.5% FS                   | -20 to + 80 °C    | <0.05% FS/°C   | 35 x 200mm        | 550g   |

<sup>1</sup> The maximum pressure that may be applied continuously without causing damage and maintaining set point repeatability.

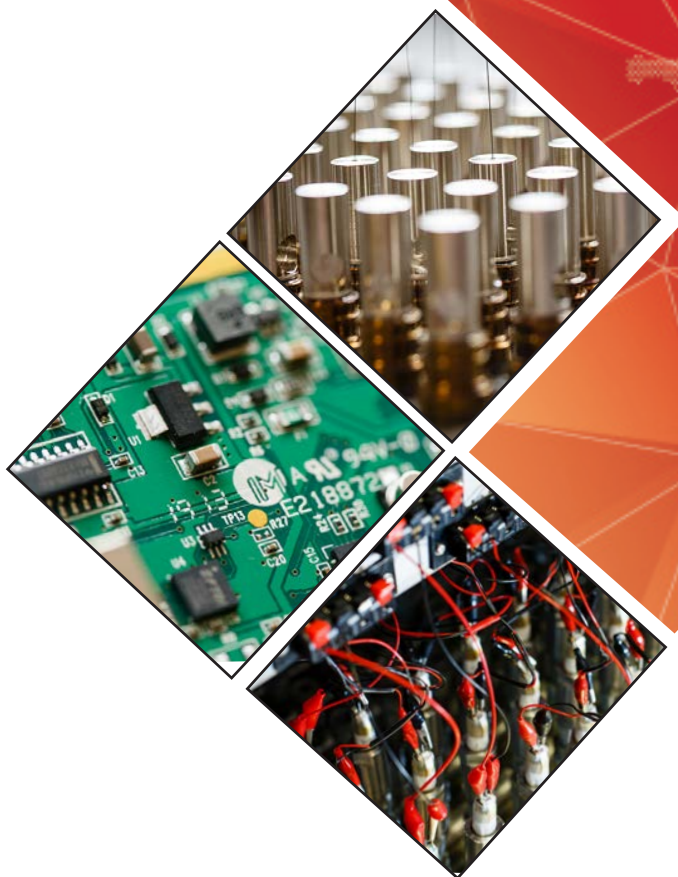
<sup>2</sup> ± 0.1% FS available on request.

### ALL MODELS

|                         |                         |
|-------------------------|-------------------------|
| Materials               | 316 Stainless Steel     |
| Operating Temp Range    | 0 to +70°C              |
| Over Voltage Protection | 90V Gas Plasma Arrester |
| Thermistor              | 3k Ohms @ 25°C          |
| Frequency Range         | 1850-3500 Hz            |

### ORDERING INFORMATION

|                |
|----------------|
| Type           |
| Cable Length   |
| Pressure Range |
| Filter         |
| Cable Type     |
| Adaptor Type   |



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