



Instrument Datasheet

# Strain Gauge Piezometer



## DESCRIPTION

Strain Gauge Piezometers are designed for monitoring soil pore pressure or changes in water level and are also suitable for dynamic monitoring such as pumping tests.

They are accurate, highly-reliable and suitable for use in the harsh environments often found within civil engineering including water wells, boreholes, dams, reservoirs, rivers, tanks or any other body of water.

The sensor is housed in a robust stainless steel sealed body with a porous filter tip which are available in different porosities to suit specific site conditions. It comprises a highly sensitive stainless

steel diaphragm onto which a Wheatstone bridge strain gauge is mounted and connected to a signal-conditioning board to convert to a 4-20mA output within the piezometer housing.

When liquid pressure is applied to the diaphragm it causes the Wheatstone bridge strain gauge to output a signal which is directly proportional to the applied pressure.

They are available in standard or vented versions and can be read by simple hand held readout units or integrated into a data logger for fully automated monitoring.

## FEATURES

- ✓ Fast response
- ✓ Suitable for dynamic measurements
- ✓ High accuracy
- ✓ Easy to read
- ✓ Can be easily automated
- ✓ Various outputs
- ✓ Temperature compensation

## APPLICATIONS

- ✓ Well monitoring
- ✓ Groundwater & surface water monitoring
- ✓ Dewatering
- ✓ Percolation testing
- ✓ Slug testing
- ✓ Pore water pressure

## SPECIFICATIONS



| MODEL    | DESCRIPTION  | PRESSURE RANGE KPA             | OVER RANGE <sup>1</sup> | ACCURACY   | NONLINEARITY | TEMP RANGE    |
|----------|--------------|--------------------------------|-------------------------|------------|--------------|---------------|
| SGP-3400 | Standard LAE | 100, 200, 350, 700, 2000, 3500 | 150% FS                 | ±0.05 % FS | ±0.2 % FS    | -20 to + 80°C |
| SGP-3401 | Standard HAE | 100, 200, 350, 700, 2000, 3500 | 150% FS                 | ±0.05 % FS | ±0.2 % FS    | -20 to + 80°C |
| SGP-3450 | Vented LAE   | 100, 200, 350, 700, 2000, 3500 | 150% FS                 | ±0.05 % FS | ±0.2 % FS    | -20 to + 80°C |
| SGP-3451 | Vented HAE   | 100, 200, 350, 700, 2000, 3500 | 150% FS                 | ±0.05 % FS | ±0.2 % FS    | -20 to + 80°C |
| SGP-3500 | Drive-in     | 100, 200, 350, 700, 2000, 3500 | 150% FS                 | ±0.05 % FS | ±0.2 % FS    | -20 to + 80°C |

### ALL MODELS

|                     |                     |
|---------------------|---------------------|
| Output              | 4-20mA              |
| Materials           | 316 Stainless Steel |
| Diameter x Length   | 25 x 182mm          |
| Power supply        | 12-24V DC           |
| Thermistor          | 3k Ohms @25°C       |
| Thermal error       | > 0.04%/°C          |
| Long-term stability | 0.1% FS/year        |
| Insulation          | >100MΩ              |

### CABLE TYPE

- Type 900 VW Sensor with Foil Screen & Drain wire
- Type 920 Vented with Drain wire

### FILTER OPTIONS

- AE (Low resistance to air entry) 50µ 316 sintered stainless steel
- HAE (High resistance to air entry) 2µ alumo silicate ceramic - 1 bar

### ORDERING INFORMATION

- Type
- Cable length
- Pressure Range

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