Description

The 4-20mA Piezometer is designed for accurately measuring pore water pressures in fully or partially saturated soil and rock.

The transducer is fitted with a sintered Stainless Steel filter disc and is available as a vented (gauge) piezometer or a non-vented (absolute) piezometer.

The Piezometer is built from high quality 316 grade Stainless Steel and is fitted with a thermistor for temperature monitoring.

The 4-20mA Piezometer is devised for pressure ranges from -50 to 3500 kPa.

Features

- **Accurate with excellent long-term stability**
- **Fitted with thermistor for temperature monitoring**
- **Fast response to pressure changes**
- **Advanced design prevents case stresses from affecting readings**
- **Capable of measuring negative pore pressures to -50 kPa (absolute non-vented unit)**

Benefits

- **Small diameter device**
- **Manufactured from high grade 316 Stainless Steel for extended operation**
- **Hermetically sealed, ensures long working life of the instrument**
- **Connecting cable is strong, screened and flexible**

Operation

The 4-20mA Piezometer is designed for the accurate measurement of pore water pressures in fully or partially saturated soil and rock.

The Piezometer is buried in fill, suspended in a borehole or pushed into soil.

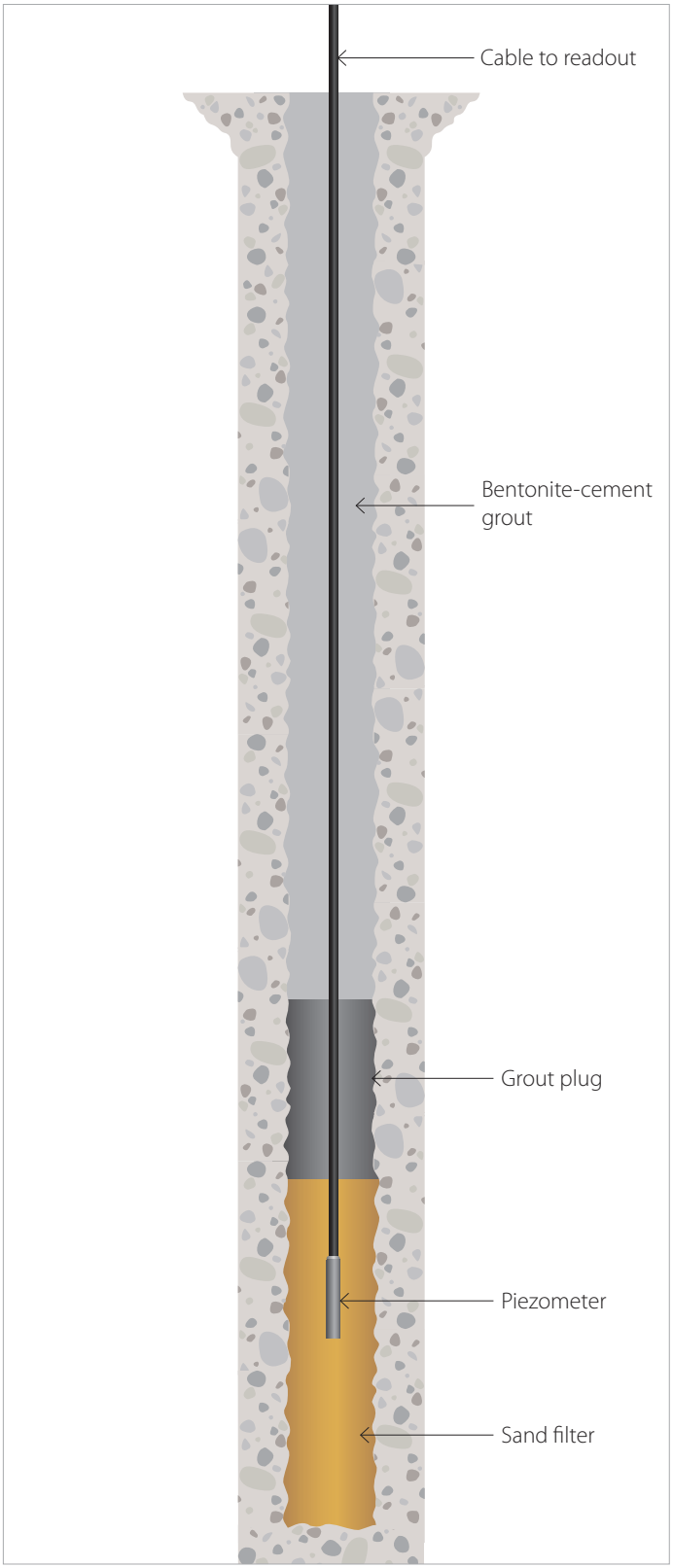
The Piezometer tip comprises a porous filter element integral with a diaphragm type pressure transducer. A cable connects the transducer to a readout, terminal unit or datalogger.

Applications

Piezometers are used in geotechnical, environmental, and hydrological applications. They can be installed in boreholes and placed in fill materials or open wells to measure water levels or pore water pressures to enable engineers to verify design assumptions and control placement of fill.

Typical applications include:

- For environmental management including landfill sites
- Monitoring of aquifers
- Monitor tidal effects on coastal soils
- Dams
- Embankments
- Potential landslide sites
- Dewatering excavations
- Tailings lagoons
- Pumping tests
- Monitor seepage
- Control placement of fill



THE TECHNICAL RATING FOR THIS PRODUCT: **INTERMEDIATE**

As the correct installation of any monitoring sensor or system is vital to maximise performance and accuracy, Soil Instruments makes the following recommendations, for the skill level of the installation contractor.

ADVANCED	The installer is trained and experienced in the installation of this type of instrument or systems, and is ideally a specialist Instrumentation and Monitoring contractor.
INTERMEDIATE	The installer already has previous experience and/or training in the installation of this instrument or system.
BASIC	As a minimum the installer has read and fully comprehends the manual, and if possible has observed these instruments or systems being installed by others.

Specifications

Sensor

Ranges kPa	100 | 200 | 350 | 700 | 2000 | 3500
Material	316 grade Stainless Steel
Accuracy	±0.1% full scale
Linearity	±0.5% full scale
Resolution[1]	0.025% full scale (minimum)
Over range	200% of full scale
Diaphragm displacement	< 0.001 cm^3
Diameter	19mm
Weight (without cable)	130g
Temperature range	-20 to +80°C
Excitation method	4-20mA loop

Hermetic Sealing

Piezometer	Cable gland, cable potting compound and 'O' ring seals

Thermistor

Piezometer	NTC 3k Ω
Accuracy	0.5°C
Resolution[1]	0.1°C

Filter Type

Sintered Stainless Steel	Ø12.5mm	3mm Thick	50 Micron pore size

Cable

Type	4 core screened Polyurethane outer sheath
Diameter	5.0mm
Weight /m	26g

[1]Dependant on readout

Ordering Information

4-20mA Piezometer - Absolute Pressure Range

4-20mA Output 2-wire; 19mm outer diameter, sintered Stainless Steel filter disc (50micron) with customer specified length of cable.
Armoured cable to be joined using joint sealing kit CA-4.1

W12-10	75-125 kPa Barometer
W12-20	200kPa pressure range
W12-35	350kPa pressure range
W12-70	700kPa pressure range
W12-200	2000kPa pressure range
W12-340	3500kPa pressure range

4-20mA Vented Piezometer - Gauge Pressure Range

4-20mA Output 2-wire; 19mm outer diameter, sintered Stainless Steel filter disc (50micron) with customer specified length of vented cable.
Not compatible with armoured cable.

W12V-10	100kPa pressure range
W12V-20	200kPa pressure range
W12V-35	350kPa pressure range
W12V-70	700kPa pressure range
W12V-200	2000kPa pressure range
W12V-340	3500kPa pressure range

Connecting Cables and Fittings

CA-3.1-4-IC	Instrument cable, 4 core, 7/0.20, screened; Polyurethane jacket, priced per metre
CA-1.1-4-A	Armoured cable, 4 cores; 1.5mm^2, PVC jacket, for instruments with thermistors, priced per metre
CA-3.3-4-V	Vented cable, 4 cores, 0.22, screened; PVC jacket, priced per metre
W12-MT-VC	Moisture trap for 4-20mA Vented Piezometer
W10-2.1	Spare desiccant tablets for moisture trap; set of 20No.
CA-4.1	Joint sealing kit, not for use with vented cables
CA-4.2	Coloured adhesive tapes; set of 10No.
CA-4.3	Crimping tool
CA-4.4	Crimping sleeves; set of 100 No.
W6-6.1	Nylon ties; 150mm x 3.5mm, pack of 100No.
ST1-3.5	Nylon ties; 370mm x 4.7mm, pack of 100No.

Manuals

MAN-194	4-20mA Piezometer