W3 PNEUMATIC PIEZOMETER

Datasheet W3

Description

The Pneumatic Piezometer is designed for accurately measuring pore water pressures in fully or partially saturated soil and rock.

The Pneumatic Piezometer tip comprises an integral porous element with a high quality diaphragm transducer, installed either down a borehole, by burying in fill or by pushing into shallow depths in soft soil.

Twin nylon tubes in a polythene sheath can connect the transducer to a terminal panel or to the portable readout unit directly.

Features

- **Low volume change**
- **Can be installed in horizontal and upholes**
- **Pneumatic tubing is strong and flexible and can be installed in lengths of up to 500m**
- **All piezometer components corrosion proof**

Benefits

- **Small, accurate and reliable design**
- **Fast response**
- **Ideal for underground works**
- **Suitable for flow or no-flow operation**
- **Level of tubing in relation to readout is not critical**

Comprehensive information about this product and our full range is available at www.soil.co.uk
If you would like to speak with someone directly please call +44 (0)1825 765044 or email sales@soil.co.uk

Operation

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

Twin tubes connect the transducer within the piezometer tip to either a pneumatic terminal panel or a readout unit. When pore water pressure is exerted on the diaphragm, reverse pressure is applied until pressure equilibrium is reached, then the readout unit displays the reading.

The readout displays engineering-based units. Readings can be taken up to 500m from the tip.

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.

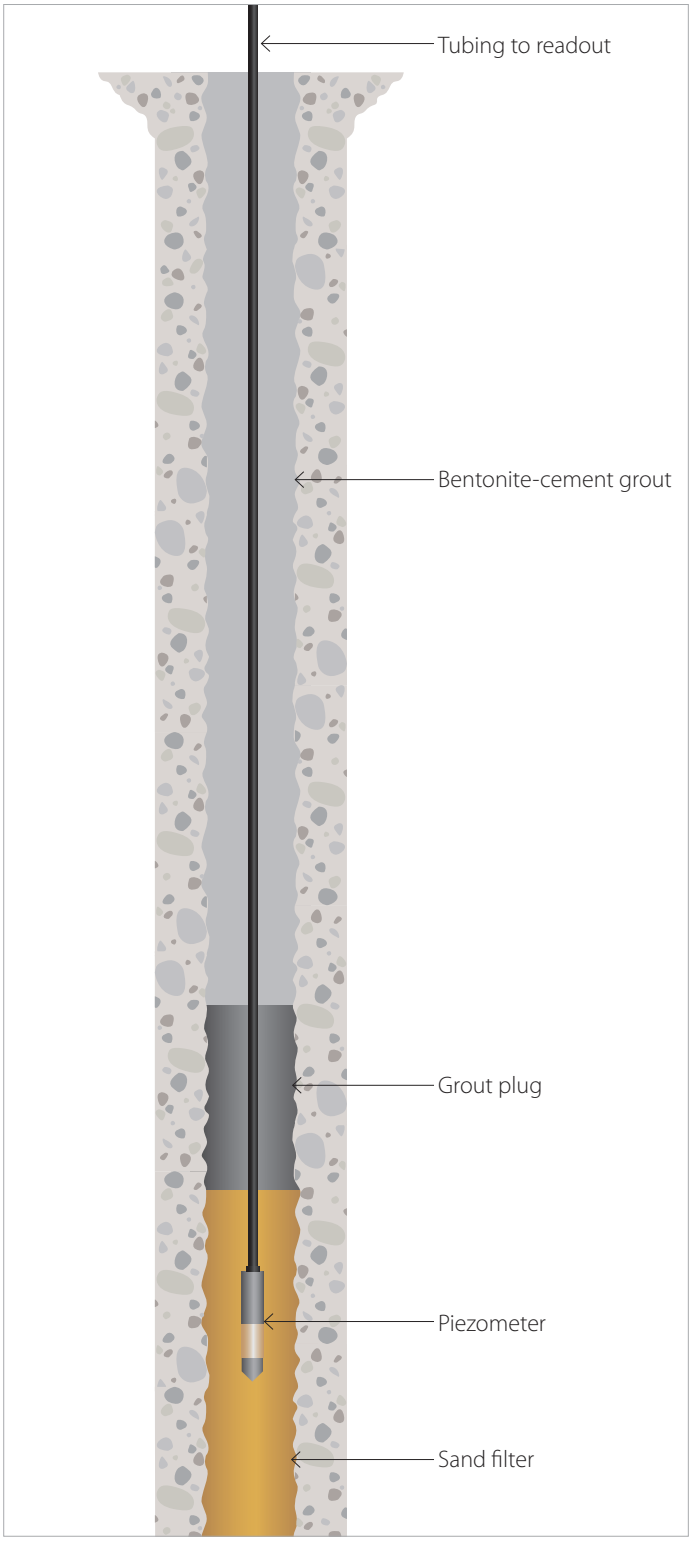
Typical applications include:

- 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

Associated products

For details on:	Catalogue code:
Gauge Pneumatic Readouts	RO-2-GPR-1/2/3/4/5

View our full product range on www.soil.co.uk



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

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.

ADDITIONAL SUPPORT

We offer installation and monitoring services to support this system. For more information please email : **sales@soil.co.uk** or call : **+44 (0) 1825 765044**

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

Range	+30 to +1000kPa	
Material	Brass/PVC	
Accuracy	±2.0% full scale	
Outside Diameter	38mm	

Filter

Type	HAE Ceramic	LAE Ceramic
Porosity	1 Micron	60 Micron
Length	48mm	
Diameter	38mm	

Tubing

Overall diameter	9mm
Internal tube outside diameter	3.2mm
Construction	Twin nylon 11 tubes, sheathed in LDP (low density polyethylene)
Weight	5.1kg/100m
Maximum length advisable	500m

Readout Unit

Type	Gauge readout
Range (m/H2O)	0-20 | 0-40 | 0-60 | 0-100 | 0-200
Accuracy	0.5% full scale
Resolution (m/H2O)	0.5 | 1 | 1 | 2 | 5
Operating temperature	-10 to +60°C
IP rating	IP65

Ordering Information

Pneumatic Piezometer Tips

For use with ⅛inch twin tube W6-2.1, Enots connections

W3-1.1	With LAE ceramic filter; low resistance to air entry (60 Micron)
W3-1.2	With HAE ceramic filter; high resistance to air entry (1 Micron)

Piezometer Tubing and Tube Fittings

W6-2.1	Twin ⅛inch tubing; round tube, 9mm outside diamteter, price per metre
W6-3.1	Straight coupling; Enots ⅛ inch, in-line tubing connections, 2No. required per twin tube connection
W6-3.2	Spare nut and olive; Enots ⅛ inch
W6-3.23	Spare nut; Wade ⅛i nch
W6-3.24	Spare olive; Wade ⅛ inch
W6-3.3	Quick release coupling set; ⅛ inch, includes one male and one female quick release coupling, Wade olives, one set required per instrument twin tube
CA-4.2	Coloured adhesive tapes; set of 10No.
W6-3.18	Connection charge per piezometer tip to twin tube
W3-4.8	Tube cutter

Terminal Equipment

For ⅛inch twin tube W6-2.1

C9-3.7	Lockable stopcock cover
W3-3.1	Lockable stopcock cover terminal unit - 1No. sensor
W3-3.2	Lockable stopcock cover terminal unit - 2No. sensors
W3-3.3	Lockable stopcock cover terminal unit - 3No. sensors
W3-3.4	Terminal panel - 5No. sensors
W3-3.5	Terminal panel - 10No. sensors
W3-3.6.6	Switched terminal panel; for 6No. sensors
W3-3.6.10	Switched terminal panel; for 10No. sensors
W3-3.6.15	Switched terminal panel; for 15No. sensors
W3-3.6.20	Switched terminal panel; for 20No. sensors
W6-5.1	Terminal cabinet - for up to 6No. sensors terminal panel, 600 x 600 x 250mm
W6-5.2	Terminal cabinet - for up to 10No. sensors terminal panel, 800 x 600 x 250mm
W6-5.3	Terminal cabinet - for up to 15No. sensors terminal panel, 1000 x 800 x 250mm
W6-5.4	Terminal cabinet - for up to 20No. sensors terminal panel, 1200 x 800 x 400mm

Ordering Information

Installation Accessories

W6-8.1	Punner; to compact material in borehole, for use with W6-8.2 or W1-2.7
W1-2.7	Galvanised standpipe tubing; mild steel, galvanised, includes coupling, 1metre length, ¾ inch nominal bore, ¾ inch BSP thread
W6-8.2	Galvanised standpipe tubing; mild steel, galvanised, includes coupling, 3metre length, ¾ inch nominal bore, ¾ inch BSP thread
W3-4.3	Placing adaptor; for use with W6-8.2 or W1-2.7
W3-4.8	Tube cutter
CA-4.2	Coloured adhesive tapes; set of 10No.
W2-4.11	Standard Tool Kit; tool box includes knife, 3m measuring tape, 8 inch adjustable spanner, 2No. flat screwdrivers, combination pliers, ball hammer, 6No. English spanners 5⁄16 to 1 inch
W6-1.2	Bentonite powder; 25kg bag
W6-1.3	Filter sand; 25kg bag
W6-1.1	Bentonite pellet; 25kg bag

Gauge Pneumatic Readout

Includes readout, pneumatic flylead (with quick release couplings), recharge flylead, pump adapter, manual and calibration certificate

RO-2-GPR-1	Pressure range 0 - 20 metres head of water
RO-2-GPR-2	Pressure range 0 - 40 metres head of water
RO-2-GPR-3	Pressure range 0 - 60 metres head of water
RO-2-GPR-4	Pressure range 0 - 100 metres head of water
RO-2-GPR-5	Pressure range 0 - 200 metres head of water

Spares & Accessories

RO-2-GPR-15	Spare pneumatic flylead
RO-2-GPR-16	Spare recharge lead
RO-2-GPR-17	Spare pump adaptor
RO-2-GPR-18	Gas pressure regulator

Manuals

MAN-014	Pneumatic Piezometers
MAN-136	Pneumatic Readout (1103)

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