

PK45I

— DRIVE-IN
PIEZOMETERS

PIEZOMETERS





DRIVE-IN PIEZOMETERS

Drive-in piezometers, also called push-in piezometers, are designed for installation in soft clays, organic or fine grained cohesionless soils.

The piezometers are pushed directly into the soil using conventional cone penetrometer or drilling rods with adapters.

The large diameter nose cone decreases the chance of overpressure while the piezometer is pushed into the soil.

APPLICATIONS

- Pore pressure in soft soils
- Dams and fill embankments
- Dewatering activities
- Natural or cut slope sites
- Deep excavations
- Diaphragm walls

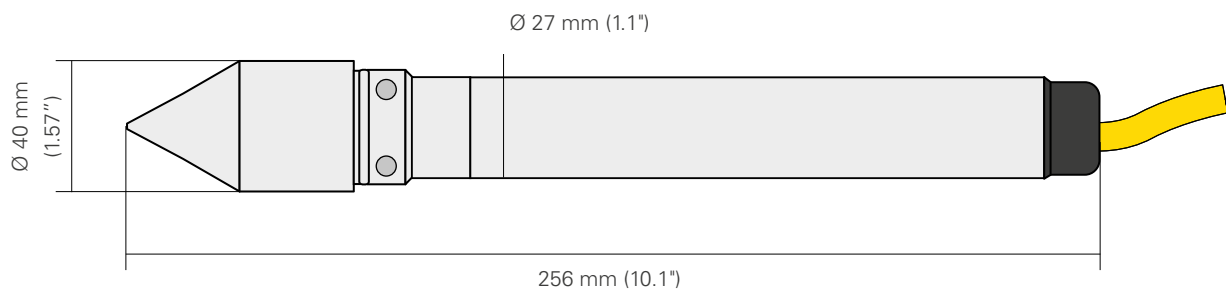
FEATURES

- Cable length does not affect reading
- Long working life and reliability
- Built-in surge protection (vibrating wire only)
- Built-in temperature sensor
- Dynamic pore pressure monitoring (piezo-resistive only)

TECHNICAL SPECIFICATIONS

	VIBRATING WIRE PIEZOMETERS	PIEZO-RESISTIVE PIEZOMETERS
APPLICATION	Pore pressure monitoring with direct push-in installation in the soil	Pore pressure monitoring with direct push-in installation in the soil
MODEL	PK45I	P235I
Range	0-350 kPa up to 0-2.0 MPa 0-51 psi up to 0-290 psi	0-200 kPa up to 0-5.0 MPa 0-29 psi up to 0-725 psi
Overpressure	2 x range	1.3 x range
Sensitivity	0.025% FS	0.01% FS
Linearity ⁽¹⁾	< ±0.4% FS	< ±0.25% FS
Total Accuracy ⁽²⁾	< ±0.25% FS (< ±0.1% FS on request)	< ±0.20% FS (for 200 kPa FS) < ±0.15% FS (all other FS)
Signal output	frequency (VW), resistance (T)	4 - 20 mA (current loop)
Electric supply	-	12 -24 V DC
Thermal zero shift	0.01÷0.03 % FS /°C	0.00025 % FS /°C
Electric insulation	> 50 MΩ	4 kV
Temp. operating range	-20 to +80 °C	-20 to +80 °C
Temperature sensor	thermistor	thermistor (on request)
Material	stainless steel	stainless steel
Body diameter	Ø 27 mm (1.1")	Ø 27 mm (1.1")
FILTER UNIT		
Material	ceramic	ceramic
Pore size	0.25 µm	0.25 µm
CABLE		
Signal cable	0WE104K00ZH (LSZH jacket) 0WE104K00PV (PVC jacket)	0WE102KEOZH (LSZH jacket)
Max cable length to logger ⁽³⁾	1000 m (for more information see FAQ#77)	1000 m (for more information see FAQ#77)

(1) including hysteresis (2) including linearity, hysteresis and repeatability, calculated with 3rd degree polynomial (3) refer to FAQ section of Sisgeo website: www.sisgeo.com/faq

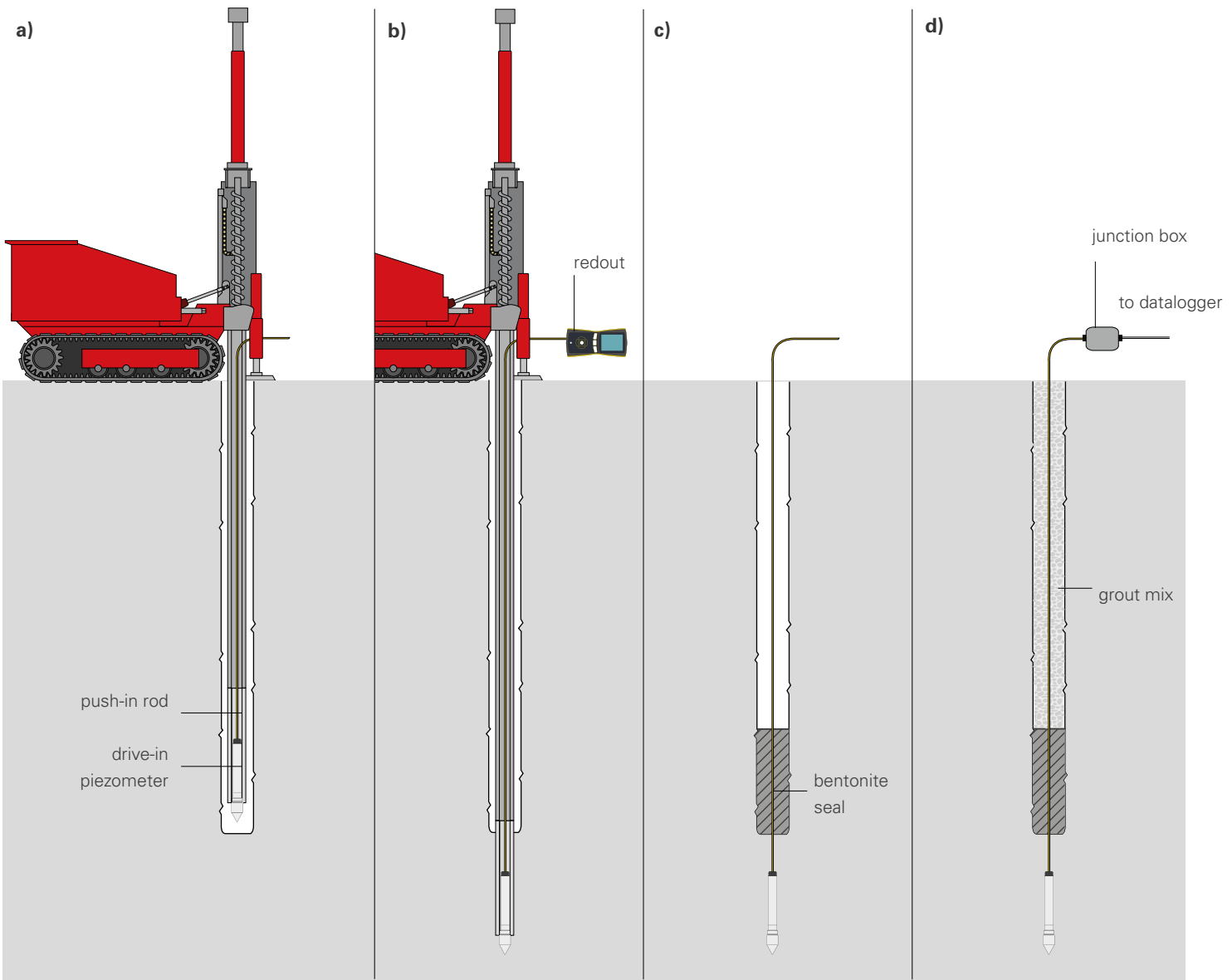


INSTALLATION METHODS

There are two methods that can be used to install the drive-in piezometers depending on the soil conditions and depth: drive the piezometer from the bottom of a borehole, or drive the piezometer from the ground surface.

For deeper installations, drill a borehole first and then push the piezometer into the soil at the bottom of the borehole.

- (a)** Insert rod over cable and onto piezo, add rods until piezo reaches bottom of borehole.
- (b)** Push piezo into soil at bottom of borehole. During the operations, the instrument shall be connected to a read-out unit to check that pressure generated by pushing does not exceed the allowed full-scale value.
- (c)** Retrieve push rods and place a bentonite seal.
- (d)** Backfill the remainder of the hole with a bentonite-cement mix.

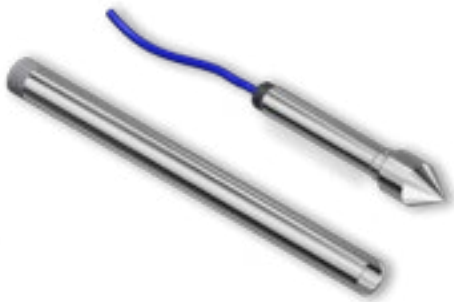


For shallower installations in very soft ground, the piezometer can be pushed from the surface to the specified depth. Monitor for over pressure during the installation. Allow excess pressure to dissipate before continuing to push. Later, when the piezometers is at the specified depth, retrieve the push rods, being careful not to twist the cable.

ACCESSORIES AND SPARE PARTS

PUSH-IN ROD OP235IROD00

Stainless steel push-in rod, 430mm long. One end fits the piezometer and the other end couples to 1" pipe (gas thread). It could be supplied without thread for welding CPT rods.



HAE DRIVE-IN TIP CONICAL TIP OPF02CON400

Spare conical tip for drive-in piezometer. Tip has ceramic filter with 0.25 micro pores.

CABLE SPLICING KIT OEGSMOK0000

Splice kit for lengthening or repairing cable.

OVP JUNCTION BOX OEPDP000W00

IP67 plastic box with 3-level OVP Over Voltage Protection boards for the connection of up to 15 instruments. Note that OVP requires connection to an adequate earth ground.

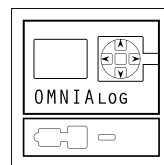
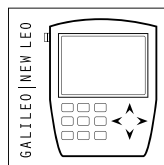
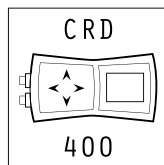
FILTER SATURATION DEVICE OPF01SAT000

Stainless steel pump for saturating HAE ceramic filters. Includes pump, 10 bar pressure gauge, and a threaded connection for the filters.



Drive-in piezometer with push-in rod

READABLE BY



Refer to separate datasheets for further information.

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