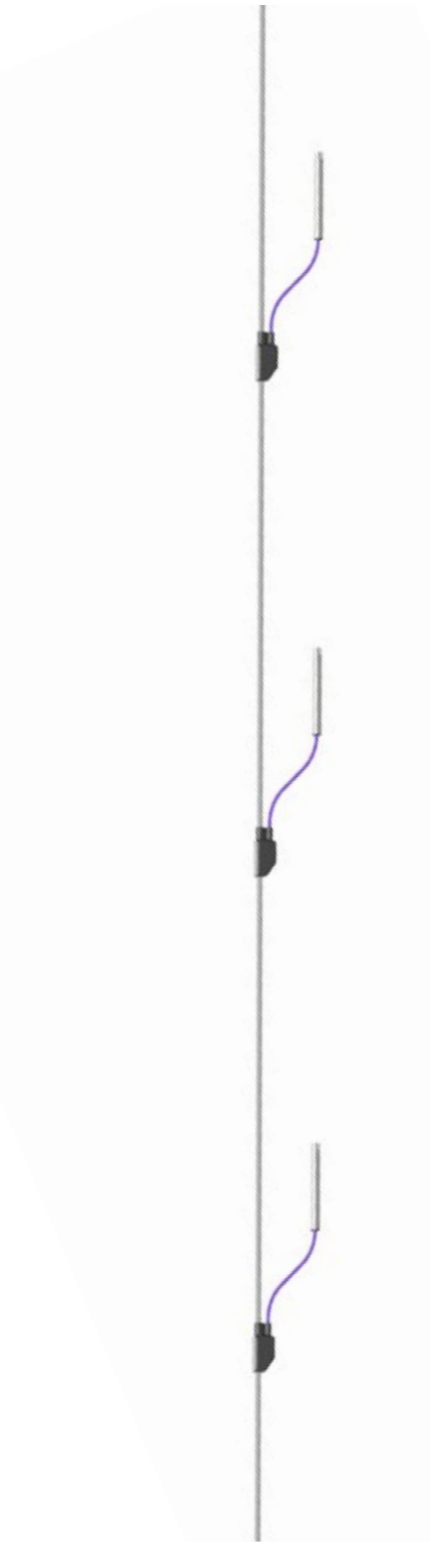
PK20M

_ MULTIPOINT PIEZOMETERS

PIEZOMETERS

SISGEO®

PK20M_EN_05_03/2024



MULTIPOINT PIEZOMETERS

Multipoint vibrating wire piezometers, also called multilevel piezometers, provide measurements of pore-water pressure at different elevations in the same borehole.

A string of multipoint piezometer is composed by a multicore cable with connected at desired depth a PK20 vibrating wire piezometer.

Isolation of the pore-water pressure at each elevation is achieved by the fully-grouted installation method.

To facilitate installation, the multipoint piezometer chain is usually lowered into the borehole with the support of a steel or fiberglass rod (not supplied by Sisgeo).

APPLICATIONS

- Measurement of ground water pressure at different elevations
- Monitoring soil consolidation activities
- Dams and fill embankments
- Landslides monitoring
- Natural or cut slope sites
- Deep excavation

FEATURES

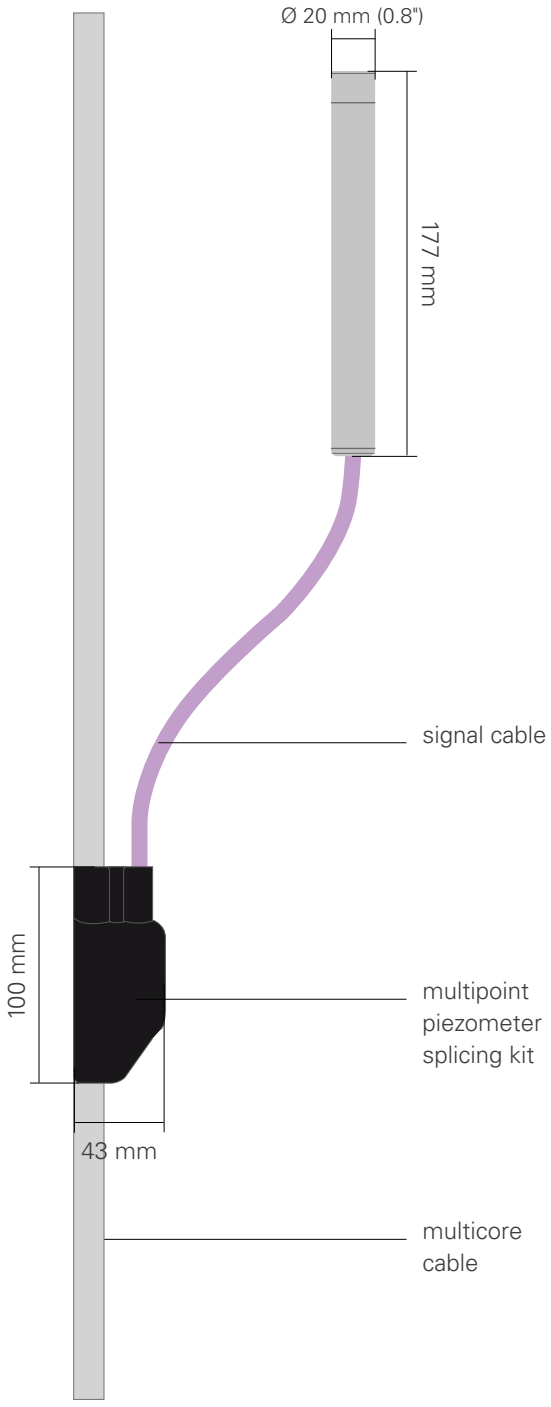
- Simple installation
- Long-term stability
- Cable length does not affect reading
- Long working life and reliability
- Built-in surge protection (overvoltage)
- Built-in temperature sensor
- Hermetically sealed

CE *Meet the essential requirements of the EMC Directive 2014/30/UE*

PK20M_EN_05_03/2024

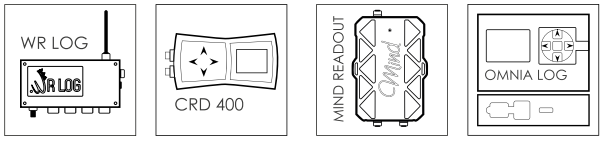
TECHNICAL SPECIFICATIONS

	MULTIPOINT PIEZOMETER
MODEL	**PK20M**
Description	Vibrating wire piezometer for multilevel installation with fully grouted method, including VW piezometers, 1m signal cable and splicing kit for multicore cable
Full scales (FS)	0-350 kPa up to 0-3.5 MPa 0-51 psi up to 0-510 psi
Overpressure	2 x Full Scale
Sensitivity	0.025% FS
Accuracy [1] Lin. MPE Pol. MPE	< ±0.4% FS < ±0.25% FS (< ±0.1% FS on request)
Typical frequency range [2]	2250 - 3000 Hz
Thermal zero shift	0.01÷0.03 % FS /°C
Electric insulation	> 50 MΩ
Temp. operating range	-20 to +80 °C
Temperature sensor	built-in thermistor
Material	stainless steel
Diameter and weight	Ø 20 mm (0.8"), 0.4 kg (0.9 lb)
FILTER UNIT	
Type	LAE filter
Material	stainless steel or Vyon®
Pore size	40-50 µm
CABLE	
Signal cables for up to 4 piezometer string	0WE1160LSZH 8-pair, LSZH jacket cable
Signal cables for up to 8 piezometer string	0WE1320LSZH 16-pair, LSZH jacket cable
Max piezos chain length [3]	200 m
Max cable length to logger [4]	1000 m (for more information see FAQ#77)



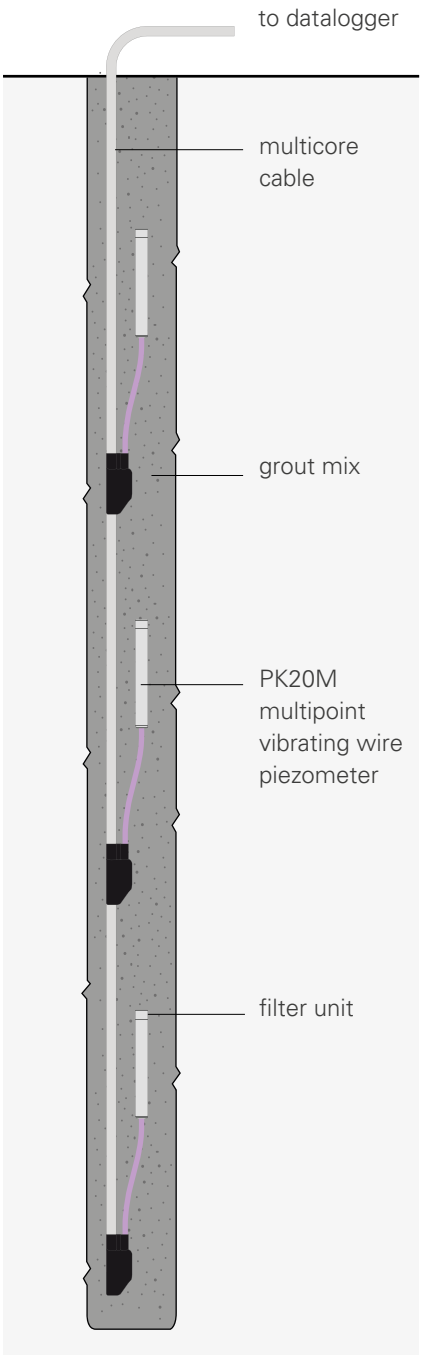
(1) MPE is the Maximum Permitted Error on the measuring range (FSR). In the Calibration Report, the accuracies of the gauge are calculated using both linear regression (≤ Lin. MPE) and polynomial correction (≤ Pol. MPE)
(2) The expressed frequency range may vary +/- 10%
(3) From lower piezo up to borehole collar. It is then possible to connect an elongation cable to reach the logger
(4) Refer to FAQ section of Sisgeo website: www.sisgeo.com/faq

READABLE BY



Refer to separate datasheets for further information

INSTALLATION METHOD AND ACCESSORIES



The fully-grouted installation method provides a reliable way to install piezometers in the same borehole, each measuring pore-water pressure at a different elevation. It eliminates problems with placing sand intake zones, bentonite seals, and channeling of water along signal cables.
The working principle is based on the idea that in a low permeability grout, radial pressure gradient around the piezometer tip is magnitudes higher than the vertical pressure gradient along the borehole, and that the response of the piezometer is controlled by the higher pressure gradient. Grout mixes (water-cement-bentonite) should be controlled by weight and proportioned to give the desired strength of the set grout. (See Mikkelsen - Piezometers in Fully Grouted Boreholes - FMGM 2003).
The fully-grouted method can also be used for Casagrande piezometers installation or for multiple-instrument columns (i.e. inclinometer tube + piezometers. See Field Performance of Fully Grouted Piezometers - Simeoni, De Polo, Caloni, Pezzetti - FMGM 2011).

LSZH CABLE, UP TO 4 PIEZO OWE1160LSZH

Multicore cable for up to 4 multipoint piezometers, with 8 twisted-pair conductors and LSZH flame retardant jacket. External diameter 9.2 mm.

LSZH CABLE, UP TO 8 PIEZO OWE1320LSZH

Multicore cable for up to 8 multipoint piezometers, with 16 twisted-pair conductors and a LSZH flame retardant jacket. External diameter 12.2 mm.

LAE STEEL FILTER OPF20D20000

Spare LAE sintered steel filter for PK20 piezometers, pore size 40/50µm.

LAE VYON® FILTER OPF20D2000P

Spare LAE Vyon® (polyetyilene) filter for PK20 piezometers, pore size 40/50µm.

SISGEO S.R.L.
Via F. Serpero 4/F1
20060 Masate (MI) Italy
Phone +39 02 95764130
Fax +39 02 95762011
info@sisgeo.com

TECHNICAL ASSISTANCE

SISGEO offers customers e-mail and phone assistance to ensure proper use of instruments and readout and to maximize performance of the system.

For more information, email us: *assistance@sisgeo.com*