



### HIGH RESOLUTION FIBER OPTIC PIEZOMETER FOR HARSH ENVIRONMENTS

The rugged FOP piezometer is immune to EMI/RFI/Lightning and suitable for use in harsh environments. It offers a very long term reliability.

#### Description

Our **FOP** unique design is based on non-contact deflection measurement of a stainless steel diaphragm, as opposed to more conventional measurement techniques.

The pressure transducer is based on Fabry-Perot interferometry. Pressure creates a variation in the length of a Fabry-Perot cavity consisting of the inner surface of the stainless steel diaphragm on one side and of an optical fiber on the other.

Since fiber optic readout units and dataloggers can consistently and accurately measure the cavity length under all conditions of temperature, EMI, humidity and vibration, the system delivers reliable pressure measurements in the most adverse conditions. The mechanical robustness is assured by the all-welded stainless steel construction, with no epoxy, sealing rubber or other sort of polymeric material.

Four models of **FOP** piezometers are available:

The **FOP** is designed to be embedded in earth fills, at concrete/earth interfaces or inserted into boreholes and small-diameter pipes. The end of the FOP is fitted with a high or low air entry filter, which protects the sensing element from solid particles, allowing this model to sense only the fluid pressure to be measured. The filter is easily removable for saturation.

The **FOP-F** is a thick-wall version of the FOP for use in direct burial applications.

The **FOP-C** is provided with a pipe thread adapter enabling the piezometer to be used as a pressure transducer.

The **FOP-P** is designed to be driven into unconsolidated fine grain materials such as sand, silt or clay. The external housing is a thick-wall cylinder fitted with a conical shoe at one end and an EW drill rod or standpipe thread adapter at the cable entry end.

#### Key Features

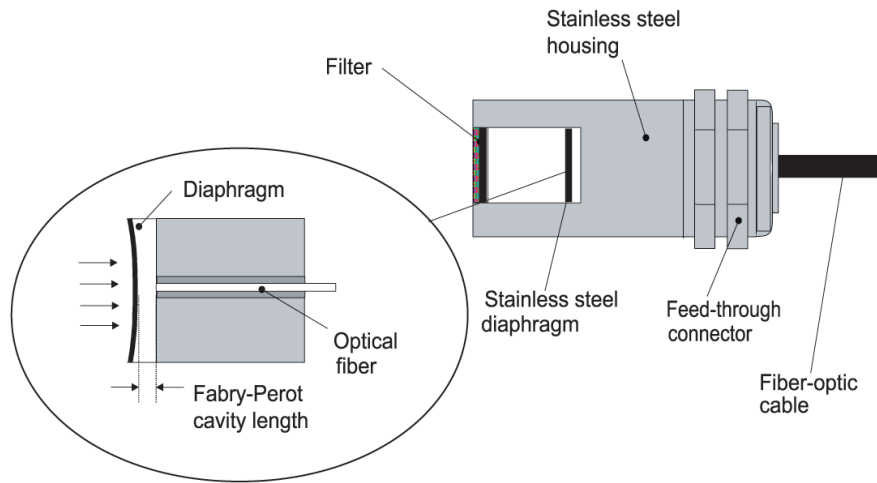
- Rugged stainless steel construction
- Ideal for harsh environments
- Immune to EMI/RFI/Lightning
- Accuracy of  $\pm 0.25\%$  F.S.
- Long-term reliability
- Intrinsically safe
- High resolution

#### Applications

- Dams
- Natural and cut slopes
- Embankments and backfill
- Foundations (seepage and uplift)
- Retaining walls, piles, culverts and tunnel linings
- Waste disposal sites
- Excavations

**Specifications**

PERFORMANCE				
Range <sup>1</sup> (kPa)	200, 350, 500, 750, 1000, 1500, 2000, 3000, 5000, 7000 kP			
Accuracy <sup>2</sup>	±0.25% F.S.			
Resolution	0.025% F.S.			
Overload	1.5 × F.S.			
MODEL	FOP	FOP-F	FOP-C	FOP-P
Outside diameter	19 mm	25.4 mm	19 mm	33.4 mm
Length	100 mm	100 mm	100 mm	210 mm
Material	Stainless steel			
Filter	Stainless steel, ~ 50 µm, ~ 10 kPa, low air entry Ceramic, ~ 1 µm, ~ 450 kPa, high air entry			



**Ordering Information**

- Please specify:
- Model and range
  - Cable Length
  - Filter

**Optional Accessories**

- Fiber optic readout instruments