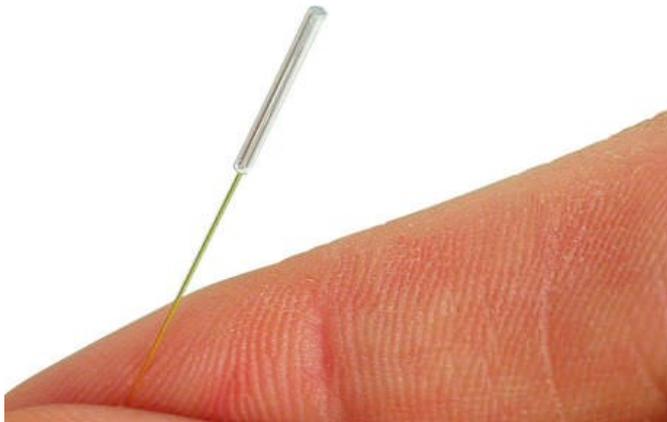




# FOP-M Pressure Sensor

Industrial, Laboratories, Process, R&D



## Description

The FOP-M is a fiber optic pressure sensor designed mainly for applications where high temperature conditions can be found such as in aerospace and automotive R&D. This is a useful tool for general industrial applications in harsh and hazardous environments. The FOP-M pressure sensor offers immunity to EMI / RFI / MW, a small size, reliable measurements under harsh conditions, high accuracy, and resistance to corrosive environments.

The FOP-M fiber optic pressure sensor is based on proven White-Light Fabry-Pérot Interferometry technology. The sensor's unique design is based on deflection measurement of a silicon diaphragm, as opposed to more conventional stress measurement techniques. Pressure creates a variation in the length of the Fabry-Pérot cavity and our optical signal conditioners can consistently measure the cavity length with high accuracy under all adverse conditions of temperature, EMI, humidity and vibration.

With a temperature range of up to 150°C, it is ideal for applications in any research and development field. For those extreme conditions, the fiber optic lead cable is available in different types and may be delivered up to several kilometers long.

## Specification

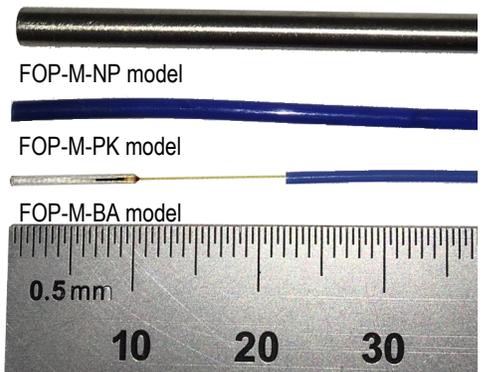
Pressure Range <sup>1</sup>	R0: 0 to 2 psi	R1: 0 to 5 psi	R2: 0 to 50 psi	R3: 0 to 150 psi	R4: 0 to 1000 psi	R5: 0 to 3000 psi <sup>2</sup>
<b>Performance with EVOLUTION conditioners (FPI-HR and FPI-HS)</b>						
Accuracy <sup>3</sup> (psi)	±0.05	±0.06	±0.25	±1.00	±2	±15
Resolution <sup>4</sup> (psi)	0.002	0.0025	0.025	0.075	0.5	1.5
<b>Performance with CLASSIC conditioners (FTI, UMI, VELOCE<sup>5</sup>)</b>						
Accuracy <sup>3</sup> (psi)	±0.20	±0.20	±0.5	±1.5	±8	±60
Resolution <sup>4</sup> (psi)	0.008	0.01	0.1	0.3	2	15
<b>Proof pressure (psi)</b>	10	90	250	450	2000	5000
<b>Storage temperature</b>	-30°C to 80°C					
<b>Operating temperature <sup>6</sup></b>	-20°C to +150°C (option for up to 300°C, ask for FOP-MH)					

## Key Features

- Immune to EMI / RFI / MW
- Intrinsically safe (explosion proof)
- High accuracy and sensitivity
- Up to 150°C (option for up to 300°C)
- Ranges 0-2 psi to 0-3000 psi
- Miniature size
- Long distance interrogation

## Applications

- Sealed environments
- Aerospace
- Defense and Security
- Metallurgy
- Industrial *in-situ* process monitoring
- High temperature
- Automotive R&D
- Harsh and hazardous environments
- Oil well and natural gas pumping station
- Plastic injection molding & extrusion monitoring
- Food packaging development



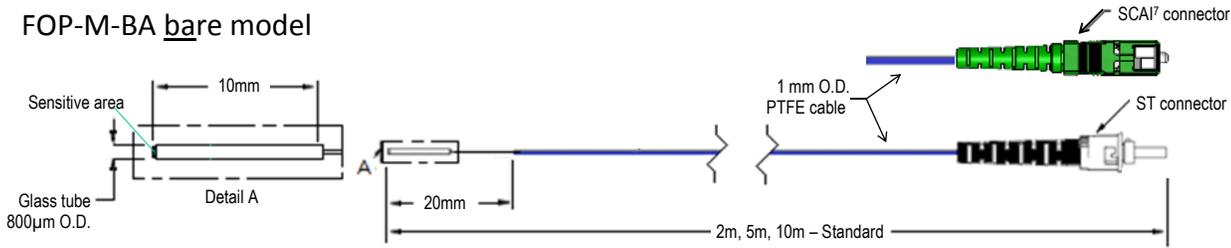


# FOP-M Pressure Sensor

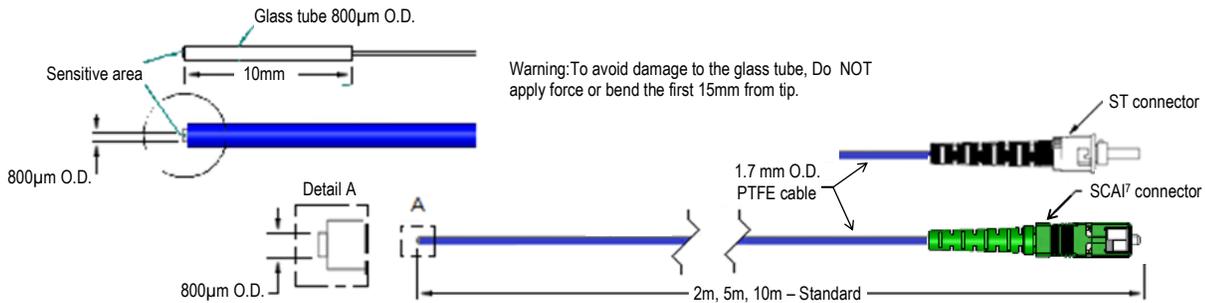
Industrial, Laboratories, Process, R&D

## Dimensions

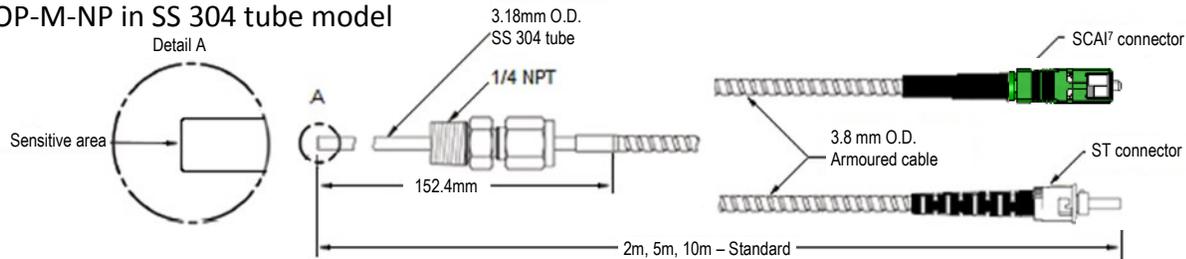
### FOP-M-BA bare model



### FOP-M-PK packaged model



### FOP-M-NP in SS 304 tube model



## Ordering information

Example: FOP - M - BA - C1 - F1 - M2 - R0 - ST

Op. Range	Distal tip	Cable	Fiber	Sensor overall length	Range	Connector
M- -20°C to +150°C MH- -20°C to +300°C						ST- for CLASSIC (FTI, UMI, VELOCE <sup>5</sup> ) SCAI <sup>7</sup> - for EVOLUTION (FPI-HR, FPI-HS)
	BA- 20 mm sensor and bare fiber exposed PK- Packaged 1.7 mm O.D. PTFE tube NP- Packaged 3.18 mm O.D. stainless steel				R0 0 to 2 psi R1 0 to 5 psi R2 0 to 50 psi R3 0 to 150 psi R4 0 to 1000 psi R5 0 to 3000 psi <sup>2</sup>	
		C1- 1 mm O.D. PTFE cable for BA model C2- 1.7 mm O.D. PTFE cable for PK model C5- 3.8 mm O.D. armoured cable for NP model				
			F1- 50µm CLASSIC (FTI, UMI, VELOCE <sup>5</sup> ) F2- 62.5µm, EVOLUTION (FPI-HR, FPI-HS)	M2 - 2 meters total length M5 - 5 meters total length M10- 10 meters total length		

Other configurations may be possible. Call FISO for availability.

- Note 1. Relative to atmospheric pressure, at room temperature  
 Note 2. Calibration up to 1000 psi, extrapolation and verification up to 3000 psi  
 Note 3. Accuracy of the system (conditioner and sensor together)  
 Note 4. Signal conditioner dependent  
 Note 5. This system is obsolete  
 Note 6. Temperature at which the sensing tip can be exposed  
 Note 7. SCAI is a SCA connector with smart chip communicating calibration data to the signal conditioner module

