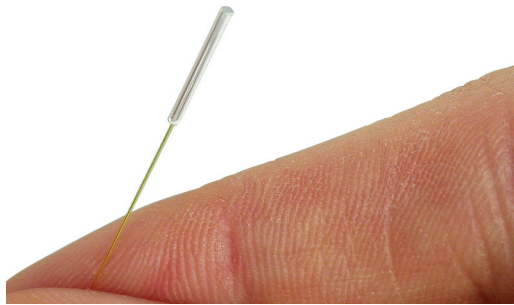


# PRODUCT DATASHEET

## FOP-MA Acoustic Pressure Sensor



The FOP-MA is a fiber optic pressure sensor designed for use in acoustics or microphone applications or whenever a very sensitive pressure sensor is needed. It features high frequency response and a high sensitivity to detect slight pressure variations under the most adverse conditions.

The FOP-MA acoustic pressure sensor offers small size, high accuracy, immunity to EMI/RFI, and resistance to corrosive environments.

Research engineers in the acoustics field may now measure acoustic phenomena on transportation vehicles and other structures. Low profile, high-sensitivity sensors are ideal for applications such as automotive and aerospace wind tunnel testing, aerodynamic testing and analysis, aircraft cabin and cockpit noise testing, and acoustic fatigue testing on airframes. They may also improve process and product technology by monitoring the performance of specific properties over time to provide accurate information on changes in pressure during the operation, the manufacturing process or throughout the lifetime of a product. The use of the FOP-MA acoustic pressure sensor allows a complete pressure analysis in the most challenging environments.

FISO has developed the FOP-MA pressure sensor as a result of its efforts to satisfy the most demanding applications. This fully optical pressure sensor has extremely small dimensions, is tolerant to cable bending and totally insensitive to high levels of electromagnetic (EMI) and radio frequency (RFI) interferences, whose effects have typically plagued critical pressure measurements until now. The device offers a resolution as low as 0.0075 psi, frequency response up to 30 kHz and can operate from  $-20^{\circ}\text{C}$  to  $150^{\circ}\text{C}$ .

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

### Key Features

- Miniature size
- All-optic
- Immune to EMI/RFI
- High resolution
- Frequency response up to 30 kHz

### Applications

- Acoustics
- Microphone
- Automotive
- Aerospace
- Aerodynamics

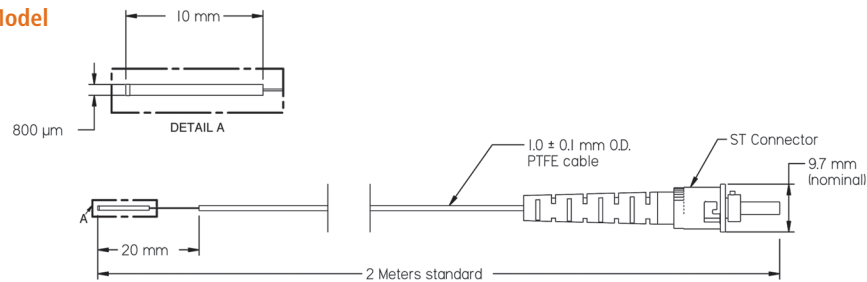
## Specifications

Pressure range	0–2 psi
Resolution <sup>1</sup>	0.0075 psi
Accuracy <sup>2</sup>	±1% of full scale
Frequency response <sup>3</sup>	Up to 30 kHz
Connector type	ST connector
Operating temperature	–20°C to 150°C (–4°F to 302°F)

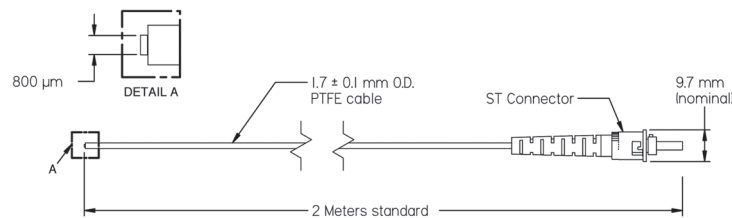
1. Signal conditioner dependent.
2. Relative to atmospheric pressure.
3. Maximum achieved with a Veloce 50 signal conditioner.

## FOP-MA Dimensions

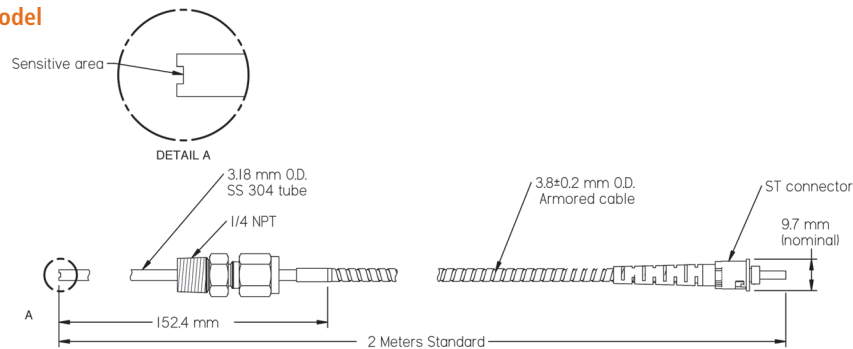
### FOP-MA-BA Model



### FOP-MA-PK Model



### FOP-MA-NP Model



Drawing Numbers: SCH-00500 – SCH-00515 – SCH-00514