

PRODUCT DATASHEET

FOT-M Temperature Sensor



The FOT-M is a fiber optic temperature sensor specifically designed for medical applications. The FOT-M temperature sensor combines all the desired characteristics you would expect from the ideal sensor. Its compact size, immunity to microwave and RF, resistance to corrosion, high accuracy and reliability make it the best choice for temperature measurements in harsh environments.

FISO's FOT-M fiber optic temperature sensor features complete immunity to EMI and RFI, built-in safety for medical applications, and high accuracy for temperature measurement. The FOT-M temperature sensor provides the medical industry with higher fidelity temperature measurements for demanding applications, like MRI applications.

Since the FOT-M temperature sensor is designed to measure temperature under all conditions of EMI, humidity and vibration, the system delivers reliable temperature measurements under the most adverse situations. For those extreme conditions, the fiber optic lead cable is available in different types.

Fiber optic technology provides intrinsic immunity to EMI and RFI. Fiber optic sensors are not electronically active and do not emit nor are they affected by any type of EM radiation, whether it is microwave, RF, or NMR.

The FOT-M fiber optic temperature sensor is based on proven Fabry-Perot interferometer technology. The sensor's unique design is based on deflection measurement of a silicon diaphragm, as opposed to more conventional temperature measurement techniques. Changes in temperature create 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.

In addition to the advantages inherent to fiber optic sensors, our white light interrogation technique assures highly accurate and reliable measurements. Through the use of a white-light cross-correlator, our signal conditioners are capable of astonishing performance, providing highly accurate and reliable measurements.

Key Features

- Intrinsically safe
- Immune to EMI/RFI
- Up to 85°C (180°F)
- Accuracy of $\pm 0.3^{\circ}\text{C}$
- Miniature and rugged sensor
- Fast response time

Applications

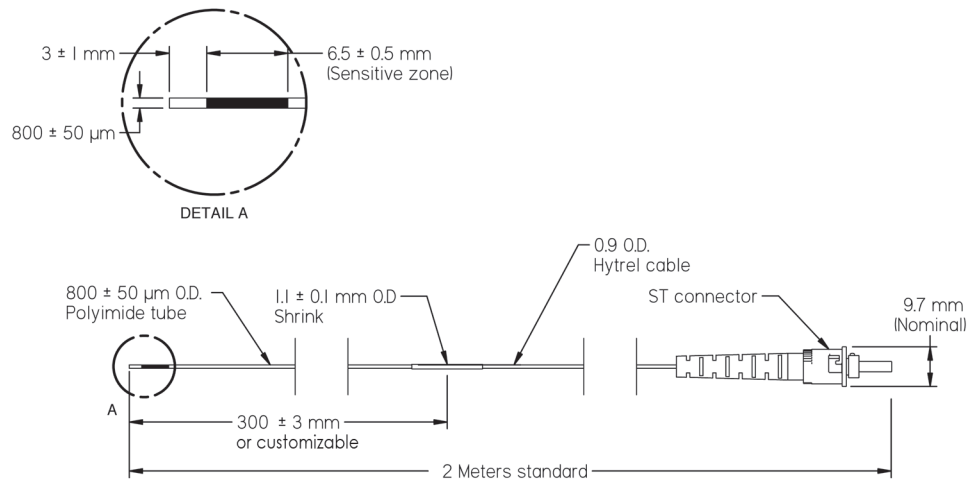
- Medical applications
- Industrial environments
- Harsh and hazardous environments
- MRI environment
- Immune to microwaves and RF

Specifications

Resolution	0.1°C with FTI-10 Signal Conditioner 0.01°C with TMI-HR Signal Conditioner
Accuracy	±0.2°C with FTI-10 Signal Conditioner on 20–85°C temperature range ±0.3°C ¹ with TMI-HR Signal Conditioner on 25–45°C temperature range ±0.1°C with one point on-site calibration with TMI-HR Signal Conditioner on 36–41°C temperature range
Response time	Less than 750 ms
Connector type	ST with FTI-10 Signal Conditioner SC with TMI-HR Signal Conditioner

1. Channel specific calibration.

FOT-M Dimensions



Drawing Number SCH-00510