



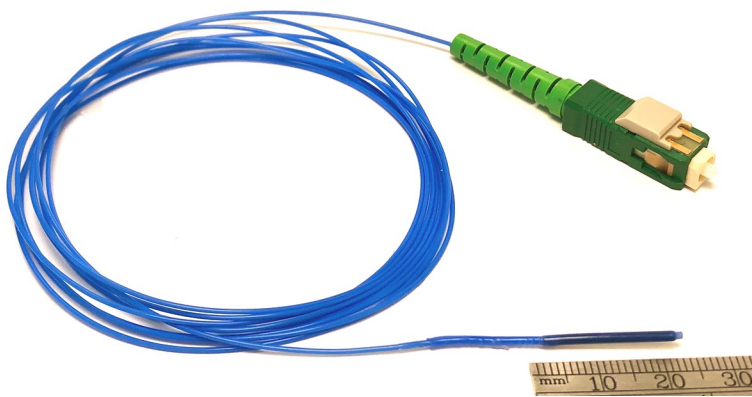
Description

FISO's Fiber Optic Temperature (FOT) sensors are perfectly suited for harsh environmental conditions such as in cryogenics, nuclear and strong RF applications. They are not electronically active and do not emit nor are they affected by any type of EM radiation, whether it is microwave, RF or MRI.

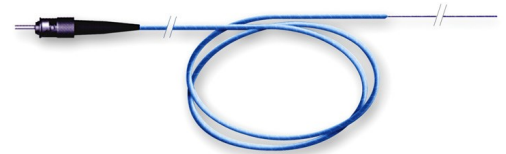
Those are built-in safety for hazardous environments, extreme temperature resistance, high precision, and resistance to corrosive environments.

An important advantage of optical fibers is the capability it provides to produce miniature components without compromising the physical characteristics of the bulk material. It may feature tip diameters as small as 0.8 mm.

FISO's fiber optic temperature sensors provide accurate, stable, and repeatable measurements. These measurements are based on variations of the reflected light — when compared to the emitted light — due to thermal expansion of the highly stable glass used within the sensor.



Fiber Optic Temperature Sensor



Key Features

- Intrinsically safe / Explosion proof
- Miniature size
- Immune to EMI / RFI / MW
- Up to 300°C
- High accuracy
- No interference due to cable bending
- No corrosion
- Long distance interrogation

Applications

- Microwave
- High EMI / RFI environments
- Nuclear environments (call FISO for details)
- Battery testing
- Aerospace
- Metallurgy & Defense
- Industrial *in-situ* process monitoring
- HV cable teting
- Harsh and hazardous environments
- Wood drying in microwave
- Food packaging development

Specification

Temperature Range	R1: -40°C to 250°C	R1: -40°C to 300°C	R2: 20°C to 85°C	R4: 25°C to 45°C	R5: -10°C to 120°C
Model	FOT-L-BA-...-R1	FOT-L-SD-...-R1	FOT-L-BA-...-R2 FOT-L-SD-...-R2	FOT-L-BA-...-R4 FOT-L-SD-...-R4	FOT-L-BA-...-R5 FOT-L-SD-...-R5

Performance with EVOLUTION conditioners (FPI-HR and FPI-HS)

Accuracy ¹ (°C)	N/A	N/A	N/A	±0.25	±0.40
Resolution ² (°C)	N/A	N/A	N/A	0.01	0.01

Performance with CLASSIC conditioners (FTI, UMI)

Accuracy ¹ (°C)	±1.0	±1.0	±0.5	N/A	N/A
Resolution ² (°C)	0.1	0.1	0.1	N/A	N/A

Response time (s) Model FOT-L-SD ≤ 1.5 s, Model FOT-L-BA ≤ 0.5 s, Model FOT-L-M ≤ 0.75 s

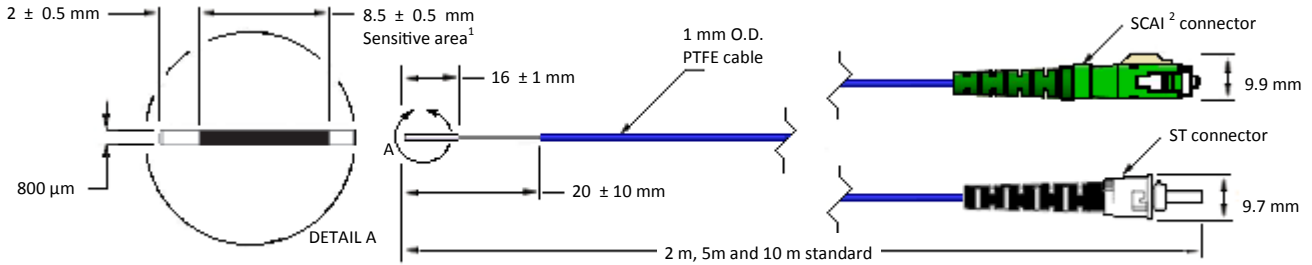
Storage temperature -30°C to 80°C

Note 1. Accuracy of the system (conditioner and sensor together)

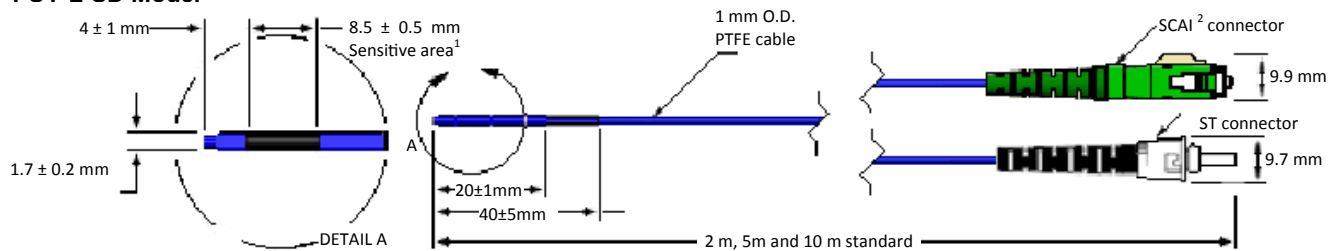
Note 2. Signal conditioner dependent

Description

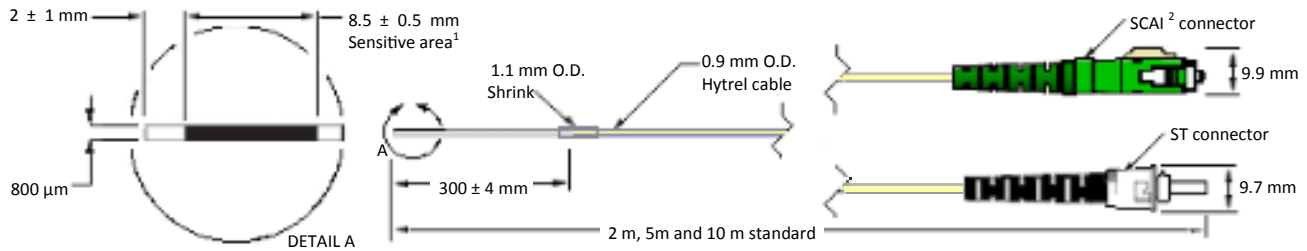
FOT-L-BA Model



FOT-L-SD Model



FOT-M-SD Model



Ordering information

Example: FOT- L - BA - C1 - F1 - M2 - R1 - ST

Distal tip packaging	Cable	Sensor overall length	Sensor overall length	Range	Connector
FOT-L-BA- 20mm of section of 0.8 mm O.D. FOT-L-SD- Packaged 1.7 mm O.D. PTFE tube FOT-M-SD- 0.8mm O.D., 30 cm long tip	FOT-L-BA or SD-C1- 1 mm O.D. PTFE cable FOT-L-BA or SD-C2- 1.7 mm O.D. PTFE cable FOT-M-SD-C4- 1 mm O.D. Hytrel cable	F1- 50µm CLASSIC (FTI, UMI, DMI, DMI-LR) F2- 62.5µm, EVOLUTION (FPI-HR, FPI-HS)	M2- 2 meters total length M5- 5 meters total length M10- 10 meters total length	FOT-L-BA-... -R1-ST: -40°C to 250°C FOT-L-SD-... -R1-ST: -40°C to 300°C FOT-L or M - BA or SD -...-R2-SCAI: 20°C to 85°C FOT-L or M - BA or SD -...-R4-SCAI: 25°C to 45°C FOT-L or M - BA or SD -...-R5-SCAI: -10°C to 120°C	ST- for CLASSIC (FTI, UMI) SCAI²- for EVOLUTION (FPI-HR, FPI-HS)

Other configurations may be possible. Call FISO for availability.

Note 1. The sensitive area of the sensor should not be bent
Note 2. SCAI² is a SCA connector with smart chip communicating calibration data to the signal conditioner module