

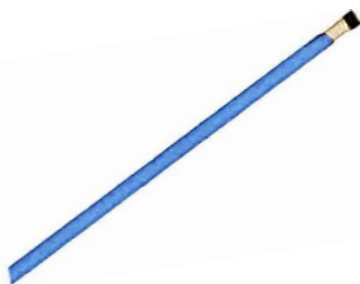
Fiber Optic Temperature Sensor

ultra-compact 1.1mm diameter, high precision, no drift, immune to RF interference



DATASHEET

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Features

- Good accuracy
- Small and robust design
- Non-metallic
- Outstanding repeatability
- EMI/RFI/RFI and microwave immune
- Intrinsically safe
- OEM-type and custom version

Applications

- Microwave assisted chemistry
- EM, RF and microwave environments
- High voltage environments
- Sterilization applications
- In-situ process control
- RF and microwave drying applications
- Nuclear and hazardous environments



The FOTS fiber optic temperature sensor probes deliver industry-leading accuracy, repeatability, and reliability across diverse applications. Based on the intrinsic temperature-dependent quantum effects of bandgap materials, the FOTS sensor features a compact sensing crystal at the fiber tip, ideal for tip measurement applications. Immune to RF interference, these probes enable precise temperature monitoring in extreme environments. They are easy to install, robust, and available with customized designs upon request, tailored for OEM applications. When paired with the SMNT readout unit, the FOTS sensor provides exceptional repeatability and reliability even in challenging conditions, including high EM, RF, MR, and microwave field environments. The standard operating range spans from -40 °C to +300 °C. Constructed with industry-standard optical fiber, this compact and robust sensor is available with various optical cable and sheath options, ensuring adaptability to specific customer applications or OEM needs.

Specifications

Parameter	Min	Typical	Max	Unit
Temperature Operating and Calibrated Range	-50		300	°C
Accuracy		± 0.5		°C
Response Time		0.5		s
Operating Humidity Range	0		100	%
Cable Length		1.5		m
EMI/RFI Susceptibility	Complete immunity			
Calibration	NIST traceable			
Optical Connector	LCA, ST standard			
Cable Sheathing	Teflon™ PTFE			

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link](#):

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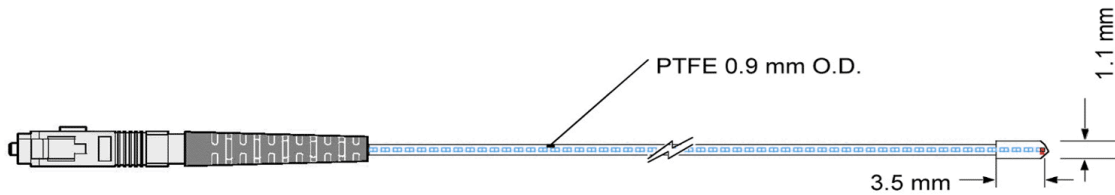
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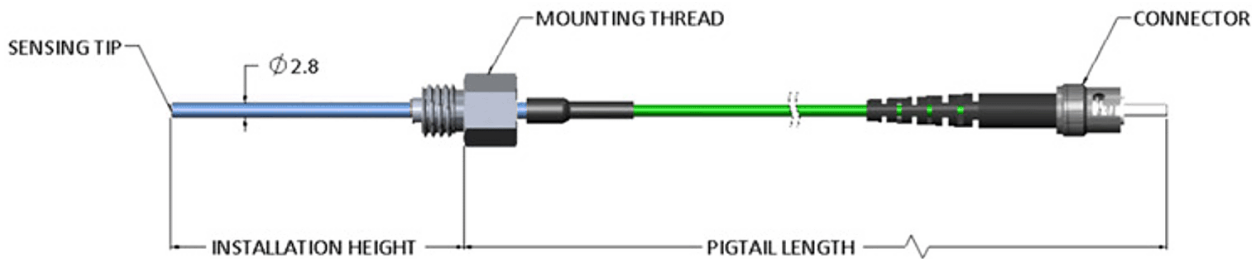


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Mechanical Dimension (mm)



Package A – Glass Head (no metal)



Package B – Metal Tube

Ordering Information (Part Number)

	☐	☐	☐	☐	☐	☐	1	1
Prefix	Package	Fiber Cover	Fiber Length	Connector ^[1]	Readout Unit	Temperature		
FOTS-	A = 1 B = 2 Special = 0	0.9mm tube = 1 3mm tube = 2 Bare fiber 0.125mm = 3 Polyimide fiber 0.125mm = 4 2.8mm peek = P Special = 0	1m = 1 2m = 2 5m = 5 Special = 0	ST = ST SC = SC FC = FC Special = 00	Single Channel = 01 Six Channel = 06 12 Channel = 12	-40 to 250°C = 1 -100 to 450°C = 2		

[1]. The default connector configuration uses fiber with 0.9 mm buffer protection. The connector cannot be installed directly onto bare fiber because the bare fiber is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer may remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SMF-28 fiber and decreases further for smaller-core fibers.

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Sensor Structure

