



FIBER OPTIC STRAIN SENSOR FOR COMPOSITE MATERIAL & INDUSTRIAL APPLICATIONS

**Small size, Accuracy and Reliability
for Extreme Temperature and Hostile Environment.**

Description

The FOS-N is a fiber optic strain sensor, ideal for composite material engineering research and industrial applications such as structural health monitoring of buildings, bridges, tunnel linings, supports, ships and power transformers.

The FOS-N strain sensor offers small size, high accuracy, immunity to EMI/RFI, and resistance to corrosive environments with a high temperature range.

Based on proven Fabry-Perot interferometer technology, FISO's fiber optic strain sensors are the best choice for high performance strain measurements. The technology upon which are based the FOS-N strain sensor and the compatible monitoring system provide absolute strain measurements at very long distances without affecting the reliability of the readings.

The FOS-N strain sensor is not sensitive to any pulling or manipulation of the incoming fiber. This feature is advantageous when the sensor is embedded into composite materials.

The FOS-N fiber optic strain sensor withstands harsh chemical environments and offers ruggedness and flexibility for today's high-performance composite material research and civil structure monitoring requirements.

Key Features

- Immune to EMI/RFI/lightning
- Intrinsically safe
- Static/dynamic response
- 0.01% full scale resolution
- No interference due to cable bending
- Signal transmitted over long distances
- Absolute measurements in engineering units
- Unidirectional

Applications

- Torque measurement
- New material R&D
- Ships, Power transformers
- Nuclear power plants
- Structural health monitoring
- Corrosive environments
- High EMI/RFI environments

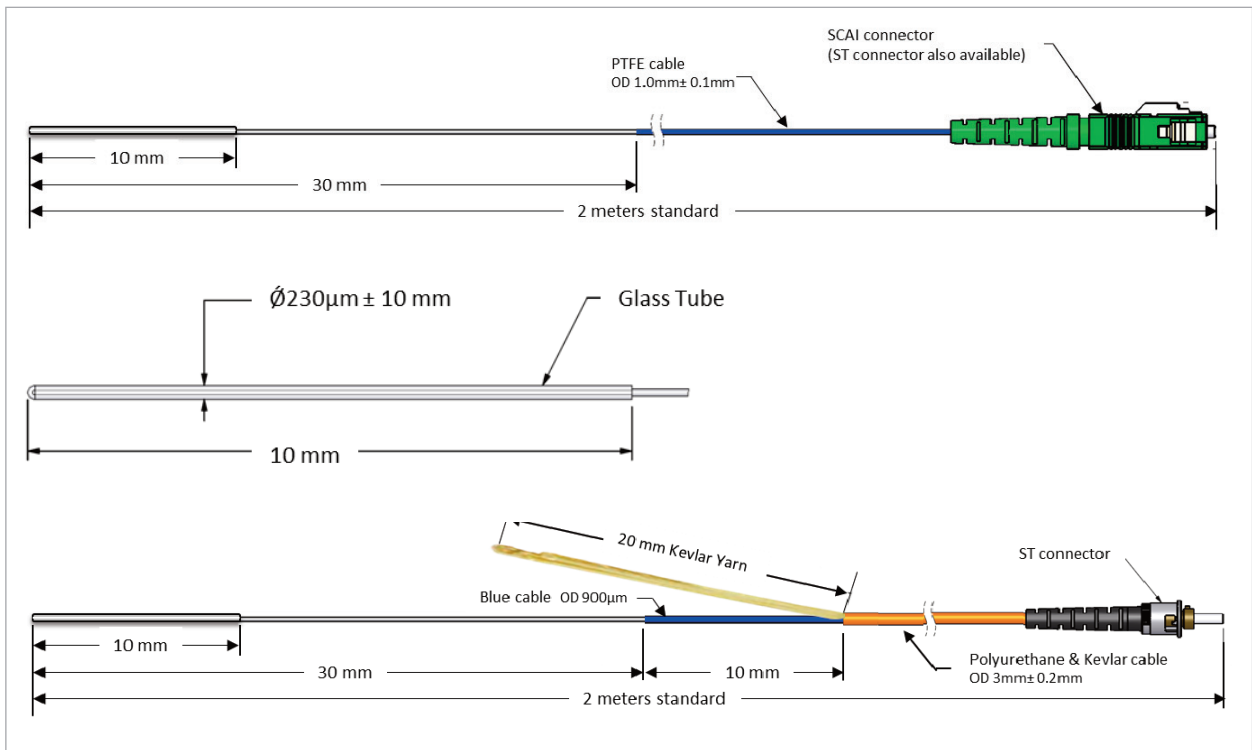


FOS-N Strain Sensor

INDUSTRIAL

Specifications

Strain Range	±1000 µε, ±2500 µε, ±5000 µε (in the fiber orientation)
Resolution	0.01% of full scale (signal conditioner dependent)
Transverse sensitivity	<0.1% of full scale (90° to the fiber orientation)
Connector type	ST connector (for FTI, UMI, DMI, VELOCE-50) SCAI intelligent connector (for FPI-HR, HS)
Operating temperature range	-40°C to 250°C (-40°F to 482°F) (cable & adhesive dependent)
Glass tube dimensions	±1000 µε : 10mm , ±2500 µε and ±5000 µε: 8.5mm



FOS-N BA - C6 - F1 - M2 - R1 - ST

FOS-N

Package	ST connector (for FTI, TMI, UMI, DMI, BUS, VELOCE-50) SCAI intelligent connector (for FPI-HR, HS)
Cable	R1 ± 1000 µε R2 ± 2500 µε R3 ± 5000 µε* <i>Not available for FPI-HR, HS, VELOCE-50 (Out of range)</i> RX Special range call FISO
Fiber	M1 1 meter total length M2 2 meters total length M5 5 meters total length M10 10 meters total length Other configuration may be possible Call FISO for availability
Sensor length	
Range	
BA- 30mm bare tip (exposed fiber) 30mm bare tip (exposed fiber) & 10mm of blue cable 900 µm O.D. with C6 cable	
C1- 1 mm O.D. PTFE cable 250°C max C6- 3 mm O.D. Polyurethane & Kevlar cable 85°C max	
F1- 50µm (FTI, TMI, UMI, DMI, BUS, VELOCE-50) F2- 62.5µm (FPI-HR, HS)	