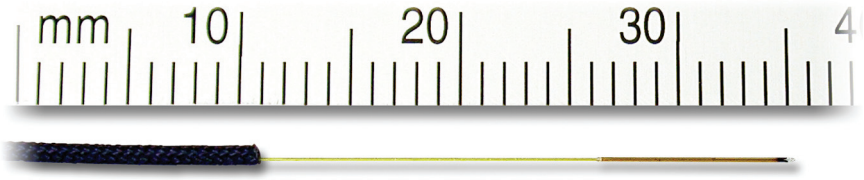
FOS-N Strain Sensor



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

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

Manufacturers, civil structure designers, and research engineers may now improve structure technology by developing and testing composite materials in a range of applications. The capability to monitor the performance of new materials and structures is crucial to evaluate them objectively. Monitoring specific properties over time will help improve the safety and durability of civil structures. The deployment of sensors within a structure, whether it is a bridge or a dam, provides accurate information on changes in strains in the structure. Monitoring stresses in structural members of buildings, bridges, tunnel linings and supports during and after construction is also possible with the FOS-N fiber optic strain sensor. The use of the FOS-N strain sensor allows a complete stress/strain analysis in the most challenging environments.

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
- High sensitivity and resolution: 0.01% full scale
- Signal transmitted over long distances
- No interference due to cable bending
- Absolute measurements in engineering units

Applications

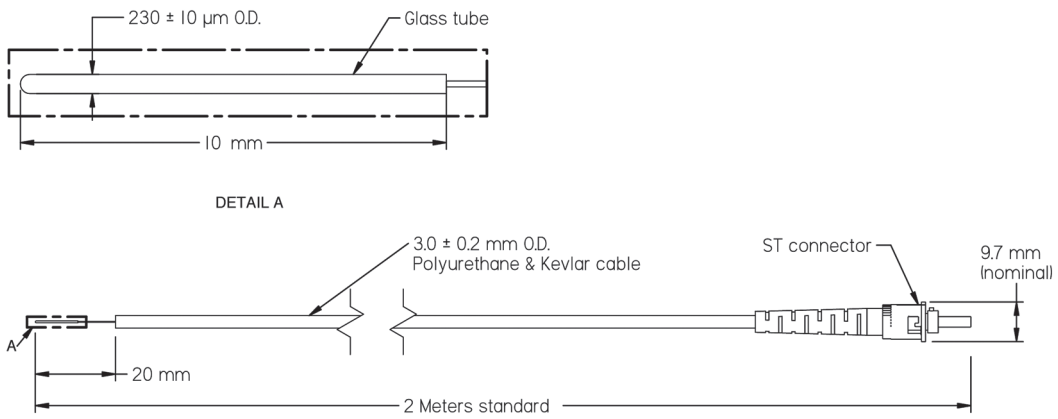
- Torque measurement
- New material research and development
- Civil engineering
- Tunnel linings
- Nuclear power plants
- Structural health monitoring
- Corrosive environments
- High EMI/RFI environments

Specifications

Strain range	±1000 με, ±2500 με, ±5000 με
Resolution[1]	0.01% of full scale
Transverse sensitivity	<0.1% of full scale
Connector type	ST connector
Operating temperature[2]	–40°C to 250°C (–40°F to 482°F)
Glass tube dimensions	±1000 με: 10 mm ; ±2500 or ±5000 με: 8.5 mm

1. Signal conditioner dependent.
2. Adhesive dependent. Installation over 200°C (392°F) susceptible to creeping.

FOS-N Dimensions



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