

**MINIATURE, EMI/RFI IMMUNE
FIBER OPTIC STRAIN GAUGE**

Compatible with Opsens' WLPI series signal conditioners

Key Features

- Miniature design (230 μm diameter)
- Outstanding repeatability
- Temperature independent
- Insensitive to transverse strains
- EMI/RFI and microwave immune
- Intrinsically safe

Applications

- EM, RF and microwave environments
- High voltage environments
- Nuclear and hazardous environments
- Civil engineering and geotechnical applications
- OEM-type and custom versions available

Description

Opsens' fabrication processes ensure an exact definition of the gauge factor, making the OSP-A sensor the most accurate fiber-optic strain gauge sensor in the industry.

Combined with Opsens' WLPI signal conditioning technology (Patent # 7,259,862) and the inherent advantages of fiber optics, the OSP-A delivers unprecedented repeatability and reliability in the most adverse conditions such as high levels of electromagnetic fields as well as high voltage and rapid temperature cycling conditions.



The OSP-A uses two optical fibers that are precisely aligned inside a microcapillary tube to form an optical Fabry-Pérot interferometer. This makes the OSP-A strain gauge completely immune to any electromagnetic interference.

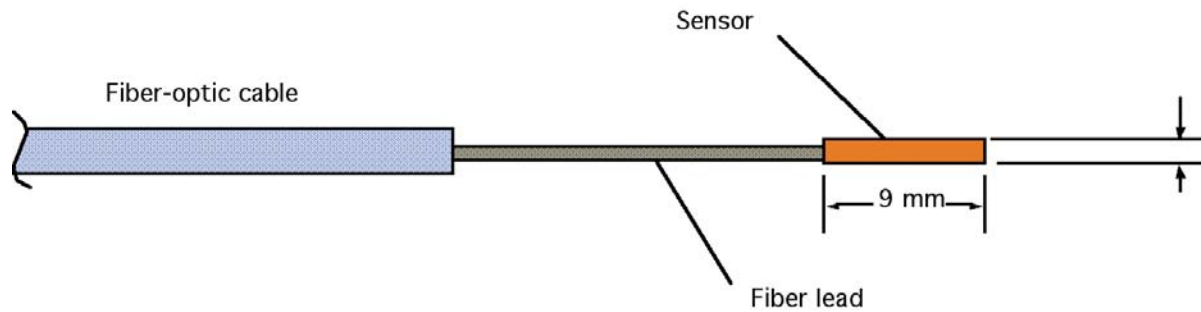
It is completely insensitive to transverse strains and temperatures and its micro-miniature size makes the OSP-A fiber optic sensor ideal for space-constrained applications such as intelligent load-sensing bolts and studs. Careful choice of materials for the sensor, fiber coating and cable buffering permit a high temperature operating range from $-40\text{ }^{\circ}\text{C}$ to $+250\text{ }^{\circ}\text{C}$.

This miniature and robust fiber optic strain gauge sensor, available in different cables and sheath options, may be customized to customer specific requirements or for OEM-type applications.

Opsens

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Standard dimensions: custom size with smaller or larger dimensions available on demand

Specifications

Strain (other ranges available on request)	-1 000 to +1 000 me	-2 500 to +2 500 me	-5 000 to +5 000 me
Resolution	0.15 me	0.3 me	0.5 me
Gauge factor accuracy	± 3 %	± 5 %	± 10 %
Temperature sensitivity	Temperature insensitive		
Transverse strain sensitivity	Transverse strain insensitive		
Temperature operating range	-40 °C to +250 °C (other ranges available upon request)		
EMI/RFI susceptibility	Complete immunity		
Cable length	1.5 meters standard (other lengths available)		
Optical connector	SC standard, ST available on request		
Cable sheathing	0.9 mm O.D. acrylate tight-buffer or 1.0 mm O.D. braided fiberglass, other types available upon request		
Signal conditioner compatibility	All Opsens WLPI signal conditioners		