

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

Compatible with all Opsens' WLPI series of 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 version available

Description

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

Combined with Opsens' WLPI signal conditioning technology (Patent # 7,259,862) and with the inherent advantages of fiber optics, the OS-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 OS-A uses two optical fibers that are precisely aligned inside a microcapillary tube to form an optical Fabry-Pérot interferometer. This makes the OS-A strain gauge completely immune to any electromagnetic interference.

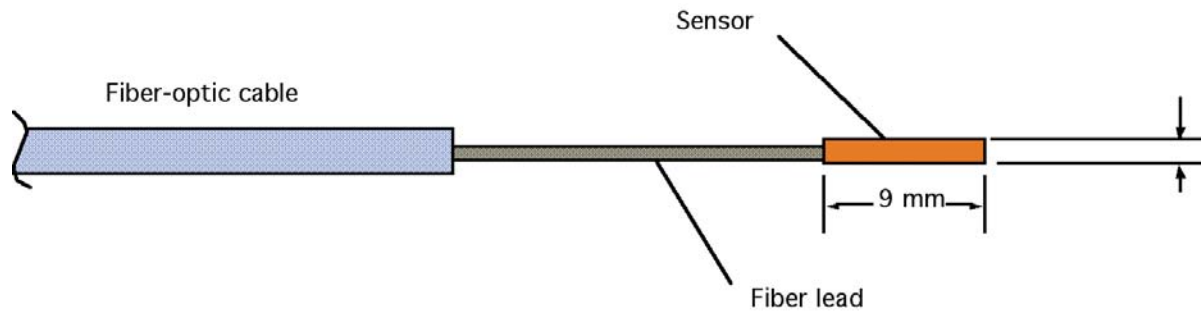
It is also completely insensitive to transverse strains and temperature, as opposed to fiber Bragg gratings. Its micro-miniature size also makes the OSP-A fiber optic sensor ideal for space-constrained applications such as intelligent load-sensing bolts and studs. Careful choice of materials for the sensor, fiber coating and cable buffering permits 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, is customizable according to customer specific applications 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 available on request | | |
| Signal conditioner compatibility | All Opsens WLPI signal conditioners | | |

All specifications are subject to change without prior notifications