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 temperature 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 °C to +250 °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.

**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**

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## Specifications

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

Product specifications are subject to change without prior notice