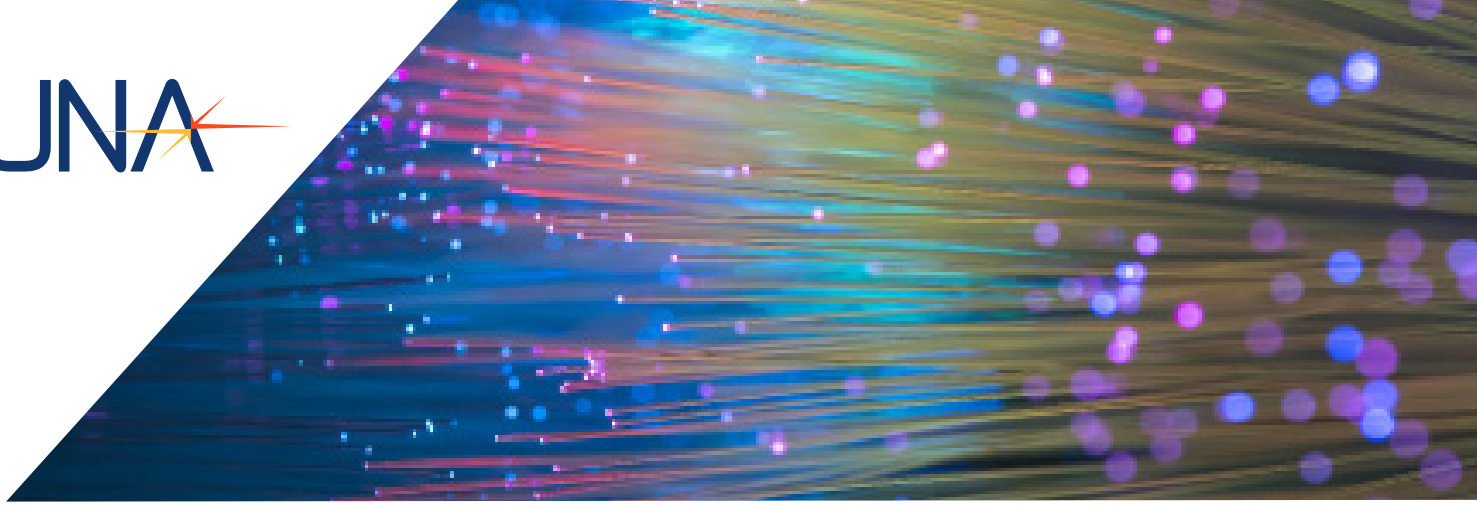
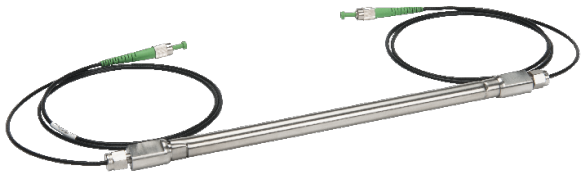


os3610

Surface Mount Strain Sensor



The os3610 is based on fiber Bragg grating (FBG) technology and is available two gage lengths of 25 or 100 cm. It is intended exclusively for surface mounting. Each end of the os3610 is attached to the structure via rigid brackets that are either welded, bolted, epoxied, or grouted to the surface of a concrete, rock, steel, composite, or other structure.

Armored cables, a rugged sealed steel body, and optional connector protection fittings make the os3610 suitable for harsh environments. Two FBGs are well protected inside the os3610 body. One FBG measures strain, and the other provides for integrated temperature compensation. Since there are no epoxies holding the fiber to the carrier, long-term stability is ensured by design.

In side-by-side comparisons with vibrating wire and foil strain gages, the os3610 is equally sensitive and accurate, while providing corrosion insensitivity and 100 times more fatigue life. The os3610 strain gage is qualified for use in harsh environments and delivers the many advantages inherent to all FBG based sensors.

This sensor can be used alone or in series as a part of an FBG sensor array. Installation and cabling for such arrays is much less expensive and less cumbersome than comparable electronic gage networks.

The os3610 Surface Mount Strain Sensor measures average strain over the length of the gage while providing integrated temperature compensation.

Key Features

Temperature compensation sensor integrated inside. Measurement of relative temperature for compensation of strain measurements.

User adjustable zero point optimizes full use of strain range

Two standard gage lengths of 25 and 100 cm

Fast, simple, repeatable installation

Qualified to same rigorous standards used for comparable electronic gages.

Cable integrated with sensor package for fiber protection and strain relief

Connector protection fittings available for harsh environment

Included in ENLIGHT's sensor templates - allows for quick and easy optical to mechanical conversions.

IP67 rated for protection from dust and water ingress

Applications

Structures (bridges, dams, tunnels, mines, buildings, oil platforms)

Energy (wind turbines, oil wells, pipelines, nuclear reactors, generators)

Transportation (railways, trains, roadways, specialty vehicles, cranes)

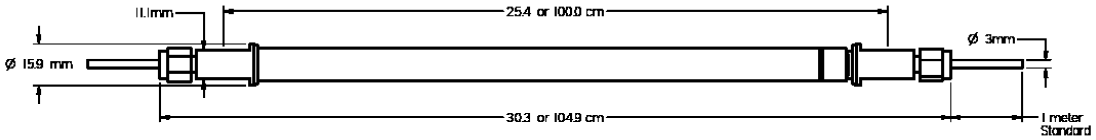
Marine vessels (hull, deck, cargo containers)

Aerospace (airframes, composite structures, wind tunnels, static and dynamic tests)

Homeland Security (perimeter intrusion, heat detection, security gate monitoring

Properties

Performance Properties	os3610
Strain; Temperature Sensitivity[1]	~ 1.2 pm/με; 22pm/°C
Temperature Compensation	Integrated into each gage
Gage Length	25 or 100cm
Operating Temperature Range	-40 to 80° C
Strain Limits	5,000 με (zero point set by user)
Fatigue Life	>1x10^8 cycles @+/- 2,000 με
Physical Properties	
Dimensions (mm)	See Diagram Below
Weight	190 g (25 cm); 384 g (100 cm)
Material	Stainless Steel/teflon construction
Cable Type	3 mm armored cable
Cable Bend Radius	≥ 17 mm
Anchoring Methods[2]	Surface mount only: bolt-on, grout-in, weldable brackets available
Optical Properties	
Peak Reflectivity (Rmax)	> 70%
FWHM (- 3 dB point)	0.25 nm (± .05 nm)
Isolation	> 15 dB (@ ± 0.4 nm around center wavelength)



Ordering Information

os3610-ggg-tttt/ssss-1xx-1yy

ggg Gage Length
- 025 25cm
- 100 100cm

tttt/ssss Strain/Temp Wavelengths (+/- 1nm)

Standard - 1462/1466, 1472/1476, 1482/1486, 1492/1496, 1502/1506, 1512/1516, 1522/1526, 1532/1536, 1542/1546, 1552/1556, 1562/1566, 1572/1576, 1582/1588, 1592/1596, 1602/1606, 1612/1616

xx Termination type
- 1xx Cable 1, Length & Connector
- 1 1 m Standard, Cable Length
- UT Unterminated
- FC FC/APC Connector

yy Termination type
- 1yy Cable 2, Length & Connector
- 1 1 m Standard, Cable Length
- UT Unterminated
- FC FC/APC Connector

Ordering Information Example

o3610-025-1512/1516-1FC-1FC

Notes

1 Actual gage factor provided with gage.

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