



os9100

Optical Pressure Sensors by CMIWS

Luna's os9100 are Fiber Bragg grating (FBG) based discrete static and dynamic pressure sensors. Featuring ultra-sensitive, low profile sensors that can be dispersed over up to 10km.

The os9100 features an all new approach to pressure sensing by utilizing FBG technology to measure minute changes in pressure, all while being able to pair with various physical parameters e.g. strain, temperature, displacement, acceleration.

Installation is simple and repeatable with self-adhesive affixed on the os9100. With pressure ranges of -3,000 to 13,000Pa and a resolution of down to 2Pa, the os9100 series presents a unique capability for sensor deployments. Up to 304 os9100 sensors can be integrated on Luna's HYPERION platform.

The os9100 series of sensors is compatible with ENLIGHT Sensing Analysis Software, which provides an integrated suite of tools for data acquisition, computation and analysis of optical sensor networks as well as the HYPERION platforms comprehensive Application Programming Interface (API) and examples written in LabVIEW, Python, Matlab, C++ and C#.



Key Features

Ease of installation simple and repeatable installation

Discrete, low profile, multipoint up to 304 sensors on a single HYPERION instrument

Dynamic and static 1 to 5kHz range

Multiparameter various physical parameters measurements coupled onto the same instrumentation platform

Long distance, with over 10km of coverage

Applications

Structures

Energy

Transportation

Marine vessels

Static and dynamic, low profile multipoint, pressure measurements

Performance

| Specifications | os9110 | os9120 - Extended Range |
|----------------------|--|-------------------------|
| Measurement Type | Temperature compensated, static, and dynamic pressure | |
| Measurement Range | -2,000 to 4,000Pa | -3,000 to 13,000Pa |
| Resolution | 40Pa at full 1,000Hz data range, 2Pa with 1,000 averages | |
| Nonlinearity | 1.0% RO | |
| Hysteresis | 1.0% RO | |
| Measurement Distance | Up to 10km | |
| Measurement Points | Up to 304 with 16 channel si255, 19 sensors per channel | |
| Scan Frequency | 1kHz and 5kHz instrument options available | |
| Wavelength Options | 1512/1514, 1516/1518...1584/1586nm in 2nm interval (custom options for 1460 to 1620nm) | |
| Physical Properties | | |
| Dimensions | 14 mm x 9 mm x 0.6 mm | |
| Operating | -5 to 40° C | |

Ordering Information

os9100-pppp-tttt-0.5xx-0.5yy

| | |
|------|---|
| pppp | Pressure FBG Wavelength |
| tttt | Temperature FBG Wavelength Strain/Temp Wavelengths (+/- 1nm) Standard - 1512/1514, 1516/1518, 1520/1522, 1524/1526, 1528/1530, 1532/1534, 1536/1538, 1540/1542, 1544/1546, 1548/1550, 1552/1554, 1556/1558, 1560/1562, 1564/1566, 1568/1570, 1572/1574, 1576/1578, 1580/1582, 1584/1586 |
| xx | 0.5xx Cable 0.5, Length & Connector 0.5 m Standard, Cable Length UT Unterminated FC FC/APC Connector |
| yy | .05yy Cable 0.5, Length & Connector 0.5 m Standard, Cable Length UT Unterminated FC FC/APC Connector |

