

FiberSensing

bringing light to measurement

FS 6500 –SINGLE AXIS ACCELEROMETER
FBG ACCELEROMETER

ACCELERATION

- : high sensitivity and linearity
- : excellent sensitivity flatness
- : very low transverse sensitivity
- : intrinsically safe design
- : immunity to EMI/RFI
- : robust aluminum case design
- : IP68 protection class and armor cables
- : ideal for civil engineering applications

The FiberSensing accelerometer is a fiber optic version of the conventional accelerometer but completely passive, offering with inherent insensitivity to environmental-induced noise. It is suitable for a large range of applications where low frequency and small amplitude accelerations are present.

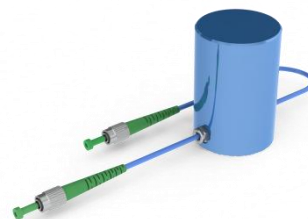
SENSOR

The high sensitivity and linearity, as well as the flat frequency response and low transverse sensitivity of the accelerometer make it especially suited for civil engineering applications. Its robust design meets the IP68 protection standards and includes aluminum case and input/output fiber optic armor cables meaning that it can be installed outdoors under severe conditions and without extra protection. It provides high accuracy and resolution measurements, and total fiber optic design ensuring intrinsic immunity to electric sparks and EMI/RFI and no ignition risk.

Compatible with most standard FBG measurement units, the accelerometer combines compact size and high resistance to corrosion and harsh environments with long-term reliability. It is also appropriate for remote sensing being possible to locate it several kilometers away from the measurement unit. It offers intrinsic multiplexing capability that allows the concatenation of a large number of sensors in a single optical fiber. This sensor is, therefore, particularly suitable for difficult-to-reach locations and large scale sensing networks.

INTEGRATION

Each FiberSensing sensor is provided with a configuration file, allowing its characteristics to be automatically inserted into FiberSensing Measurement Units.



APPLICATIONS

The accelerometer can be used in a large range of monitoring applications, including ambient vibration of civil structures.

ACCESSORIES

The implementation of complex sensing networks in large structures is made simpler with FiberSensing accessories. These include metallically protected jumpers and IP68 splices especially designed to resist the harsh environments found in civil engineering, not only during the construction of the structures, but also during its lifetime (humidity, corrosion, etc.).

Proper accessories are also provided by FiberSensing. These allow a compact in series mounting of two or three accelerometers in transversal directions for measuring vibration simultaneously along multiple-axis.

ORDERING INFORMATION

FS 6500 –Single Axis Accelerometer
Ø 3 mm Outdoor cable • 10 g

p/n	WL
006 530 100 301	X

A - 1528.9 nm
B - 1535.1 nm
C - 1541.5 nm
D - 1547.9 nm
E - 1554.3 nm
F - 1560.8 nm
G - 1567.2 nm
H - 1573.8 nm
W - xxxx.x nm (custom)

02.Oct.2009



FiberSensing

bringing light to measurement

FS 6500 – SINGLE AXIS ACCELEROMETER
FBG ACCELEROMETER

ACCELERATION

SPECIFICATIONS

Sensor	
sensitivity	75 pm/g @ 40 Hz (typical)
measurement range ¹	10 g _{0-pk}
frequency range	0 to 100 Hz
Resonance frequency	430 Hz (typical)
flatness	< 2%
resolution ²	12.5 µg/√Hz
transverse sensitivity	< 0.1%
Optical	
central wavelength	1510 to 1590 nm
spectral width (FWHM)	< 0.2 nm
reflectivity	> 75%
insertion loss	< 0.1 dB
side lobe suppression	> 10 dB

¹range may be customized upon request

²dynamic, FFT analysis

Inputs / Outputs	
cable type	Ø 3 mm Outdoor (armor)
cable length	1 m each side
connectors	FC/APC
Environmental	
operation temperature	-20 to 80 °C
relative humidity	< 90% at 80 °C
protection class	IP68
Mechanical	
packaging	aluminum
dimensions	H 70 mm · D 48 mm
weight	250 g

Specifications may change without notice

02.Oct.2009

