

Distributed Fibre Bragg Grating Strain Sensor Cable

The Monitor Optics distributed Fibre Bragg Grating strain sensor is the ideal solution in any application where a high number of sensing points must be installed over long distances.

The sensor consists of a Fibre Bragg Grating array encapsulated in a small diameter fibreglass cable of circular section. This protects the fibre and makes the sensor robust and easy to handle and install.

Any strain on the sensor surface is linearly converted in a wavelength shift in the Bragg Grating and this can be very accurately measured using a range of Fibre Bragg Grating interrogators.

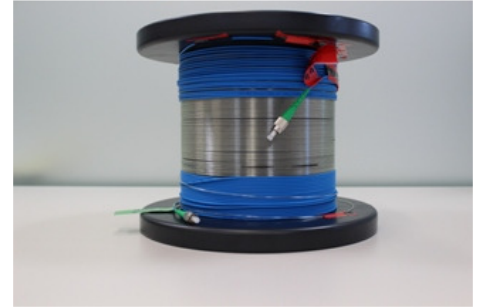
The choice of materials allows a very good strain transfer from the final host material to the Bragg Gratings while the small size allows the sensor to be embedded in a number of materials without reinforcing the structure.

Thanks to its rugged design, the sensor can be embedded during the construction phase in very harsh environments like concrete structures and asphalt pavements.

The sensor can as well be retrofitted to a number of structures using appropriate adhesives.

The sensing cables can be provided with standard fibre optics connectors and both standard and armoured pigtails and can be multiplexed together in series and/or parallel to achieve the sensing network required.

The cables are available in a number of standard configurations. Custom designed configurations are available on request.



Optical Sensing
Solutions for
Structural Monitoring

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Distributed FBG Strain Sensing Cable

Features

- Easy to install
- Long lifetime
- Rugged
- High survivability in harsh environments
- Small size
- Resistant to high temperatures

Applications

- Roads
- Airport runways and taxiways
- Asphalt pavements
- Concrete pavements

Specifications	
Diameter	1.0 ± 0.05 mm
Number of FBG	10 for standard products. Others available on request
FBG spacing	1,5,10 m for standard products. Others available on request
FBG wavelength spacing	5 nm for standard products. Others available on request
Maximum tensile strain	10,000 µε
Maximum longitudinal load	235 N
Temperature limits	-65 to +200 °C
Minimum bend radius	250 mm
Weight	1,6 ± 0,1 Kg/Km
Connectors	Standard types available