



Optical Sensing  
Solutions for  
Structural Monitoring

## Distributed Fibre Bragg Grating Temperature Sensor Cable

The Monitor Optics distributed Fibre Bragg Grating temperature 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 inserted in an outer polymer tube. The outer polymer tube allows the inner cable to expand and contract freely with the temperature variations. The packaging protects the fibre and makes the sensor robust and easy to handle and install.

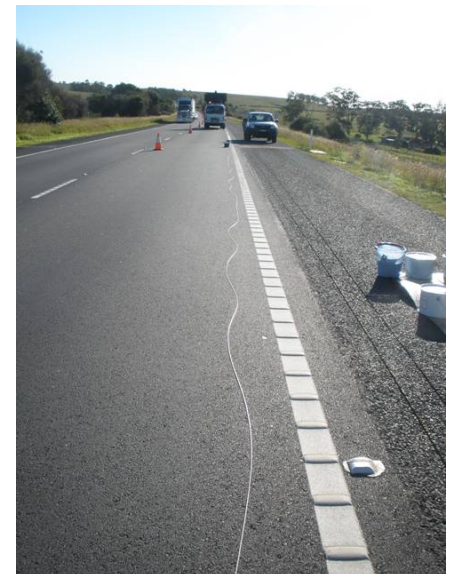
Any temperature variation is linearly converted in a wavelength shift in the Bragg Grating and this can be very accurately measured using a range of Fibre Bragg Grating interrogators.

The choice of materials allows a very good and fast response to thermal changes while the small size allows the sensor to be embedded in a number of materials. This makes the temperature sensing cable the perfect solution for the temperature compensation of Fibre Bragg Grating based strain sensing cables.

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



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## Distributed FBG Temperature Sensing Cable

### Features

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

### Applications

- Temperature compensation of strain sensing cables
- Roads
- Airport runways and taxiways
- Concrete pavements
- Tunnels

<b>Specifications</b>	
Outer diameter	4.8 ± 0.7 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
Temperature limits	-40 to +80°C
Maximum static crush load (1 week)	0.3 Kg/mm
Minimum bend radius	1 m
Weight	14 ± 1 Kg/Km
Connectors	Standard types available