



**Solutions, When the Conventional Ones  
Run Out of Breath**



# DISPLACEMENT SENSOR

FBG SENSORS & DETECTORS

## Displacement sensor for continuous structure behavior monitoring

The Displacement Sensor (FBGD-01) is a fiber optic displacement sensor specially designed for long term monitoring of structure behavior. It uses the state of the art optical FBG approach and keeps the critical infrastructure still under supervision.

The sensor is a fiber optic equivalent of a potentiometric, inductive or capacitive displacement gauges. It is supplied with mounting plates which facilitate direct mounting on the surface of a monitored structure. In this way, the fiber sensor makes direct contact with the surface and therefore accurately measures the displacement changes between two points in the range of 50 mm.

### 100% passive sensor

As the sensor doesn't need the power supply, it easily monitors places without electricity and hazardous or hard to reach areas.

### Temperature compensation

The sensor is designed to compensate temperature and doesn't require another FBG grating.

### Universal platform

Together with the strain sensor you can also use additional sensor types (temperature, inclination, vibration, strain, etc.).

## KEY PRODUCT FEATURES & BENEFITS

### Protected as IP68 rated devices

The protection comparable to the international standard rating of IP68 guarantees complete dust-tightness and protection against the effects of long periods of immersion in water.

### Connectivity

The sensor can be used as a standalone sensor or in series as part of a larger sensing network regardless of sensor interconnections.

### Installation costs

Installation and cabling for such sensor networks is much less expensive and less cumbersome than comparable electronic gauge networks.

### Immune to EMI/RFI

The sensor enables operation even in harsh environments, as the technology is fully passive, explosion safe and immune to electro-magnetic/radio frequency interference.

### Leverage existing fiber optic network

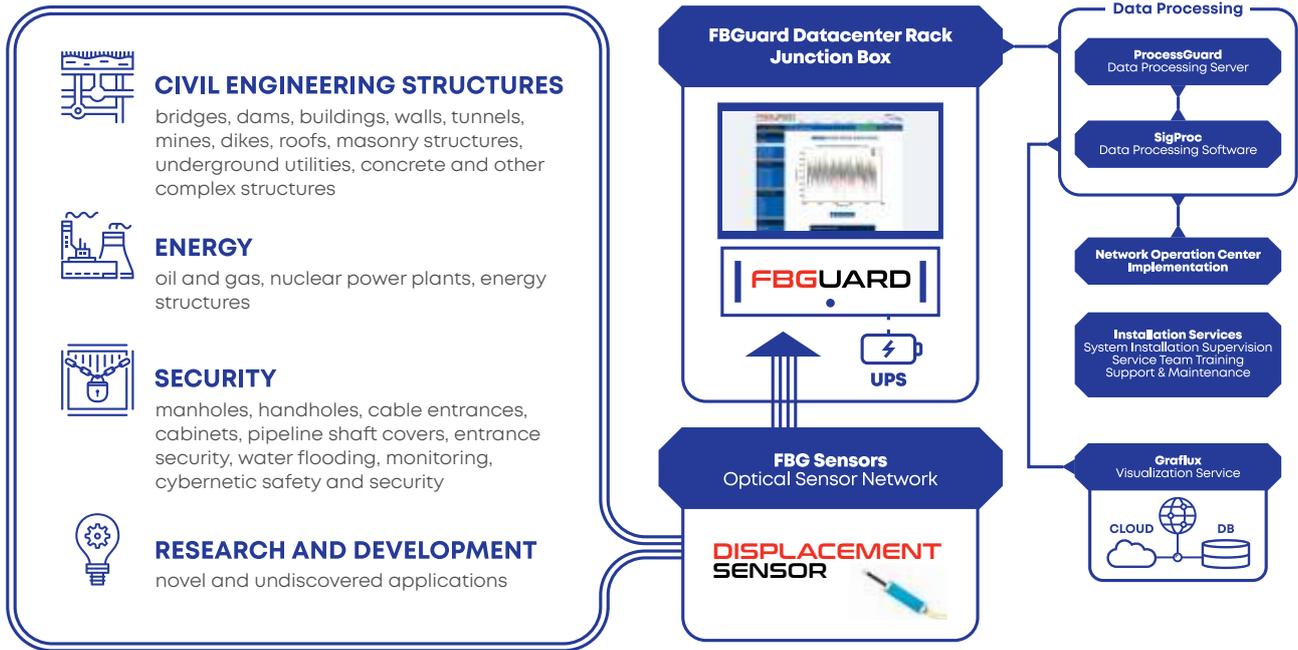
The connection between unit and sensors is ensured via standard telecommunication optical fibers (e.g. dark fibers), which is very economical even for a large area of monitored objects.

### Advanced customization available

The sensor can be modified in order to meet your project's needs, e.g. plastic material for high-voltage environments.



# PROJECT REQUIREMENTS



# TECHNICAL PARAMETERS

## Optical, Environmental and Mechanical

Sensor mechanical range	0 to 50 mm*
Sensor spectral range	8 - 9 nm*
FBG central wavelength	1505 to 1590 nm @ FBGuard system typ.
Temperature sensitivity	0,05 %/°C of full range
Operational temperature range	-20 - +60 °C
Waterproof design	IP68

## Fiber Optic Cable

Fiber type	SMF G.652d
Fiber input/output	<b>Ruggedized</b> (protected against rough manipulation)
Lead in/out fiber length	1 m each side*
Fiber termination	<b>Bare fiber</b> (scissor cut for splicing) - default <b>FC/APC</b> - optional*

## Mounting

Mounting surface	Any
Mounting brackets	Basic (four Ø3,2 mm corner holes) Delivered together with the detector Special or L-shaped Supplied upon request

\* These parameters can be customized upon request.

**GET IN TOUCH WITH US**  
and we will recommend you the most suitable solution for your project.

SAFIBRA, s.r.o., U Sanitasu 1621, 251 01 Říčany, Czech Republic  
 ☎ +420 323 601 615 ✉ safibra@safibra.cz 🌐 www.safibra.cz

