

Bridges, Light the unknown!

Applications

Online condition monitoring of the structures to record the load impacts over a certain period.

- Life meter; maintenance can be planned and cost optimized.
- Track down damage sources to categorize costs.

Event trapping

- When passed what train with how many wagons how heavy and how fast the structure?



Challenge

Long lasting strain measurements

- Spot welded sensors with no drift
- Resolutions up to $0,2\mu\epsilon$

Strain measurement distributed over the key parts of the bridge.

- Multiplexing the sensors in one string
- Distances over km possible.

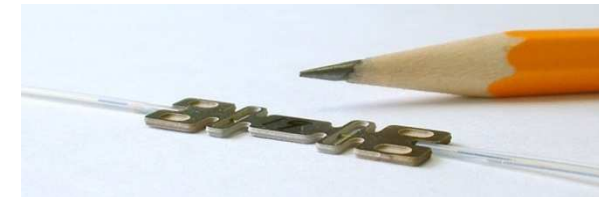
Concrete, monitoring inside the material.

- Bringing the sensor and directly inside the material. The small dimensions support this.



Fibre optical System, technical data:

Attributes / Extras	Values
Sampling rates	Up to 1 KHz (standard)
Precision (repeatability)	0,2µε 0,2pm 0,05°C
Temperature accuracy	± 1°C
Interrogation unit	Up to 120 sensors per system Up to 16 channels per system
Fibre connection between interrogation unit and sensors	Up to 1.000m possible in the standard configuration
Stability	No drift in interrogation unit and sensor
connections	Network, USB, Can, etc.
Software	Lab View, open Source Customized software adaption possible
Speicher	Extension modules for data storage



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