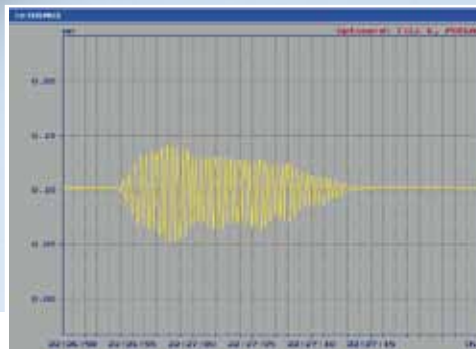
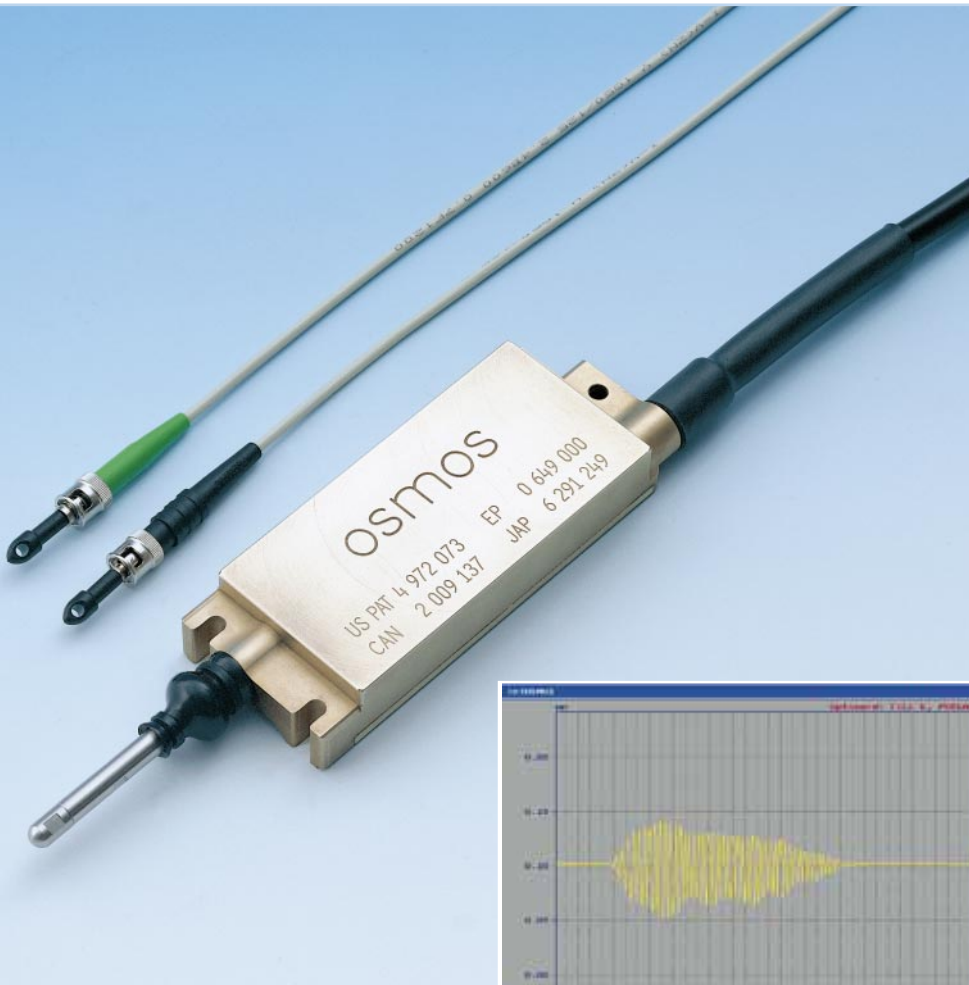


Optical Extensometer

Description

The optical Extensometer is a robust and extremely accurate fiber-optic displacement transducer. Its compact design allows it to measure a wide range of length changes and displacements of up to 5 mm.

The optical Extensometer registers these mechanical variables with a sensing head and converts them internally into optical signals. Conversion is performed in accordance with a patented microbending principle. The optical Extensometer is able to register static and dynamic measurement variables over periods ranging from brief to many years, in accordance with the user's requirements.



Dynamic measurement curve.

Applications



Extensometer on a wooden structure.



Extensometer as a fissure monitor.



Extensometer as a probe on a steel structure.

Technical specifications

Measuring range

Measuring path:	5 mm
Measuring range:	0.1 m to 10 m
Resolution:	0.001 mm
Measuring accuracy:	Type ± 0.002 mm during dynamic monitoring; 2 % of final value during long-term monitoring
Measuring frequency:	Up to 100 Hz
Repeating accuracy:	1 %
Response speed:	Infinite (dead time = zero)
Temperature range:	-20 °C to +60 °C, operating range -30 °C to +60 °C, storage
Temperature sensitivity:	0.6×10^{-6} m/K
Stability, fatigue behaviour:	> 150 million measuring cycles without drift
Electromagnetic compatibility:	Insensitive and neutral
Service life:	> 20 years
Connection:	Customizable fiber-optic cable with a length of up to 1 kilometer to the OSMOS monitoring station

Without intermediate amplification: Sheathed optical cable with protective hose and plug connection

Housing

Housing dimensions [L x W x D]:	[120 x 46 x 20] mm
Weight:	525 g
Sensing head:	High-grade steel, 50 mm long with hemisphere ± 6 mm or adapter M5
Material:	Messing
Protection class:	IP65

Accessories:

Sensing head:	50 mm, extensible to 10 m on request by means of a coupling or spring box
Special fastening material:	On request

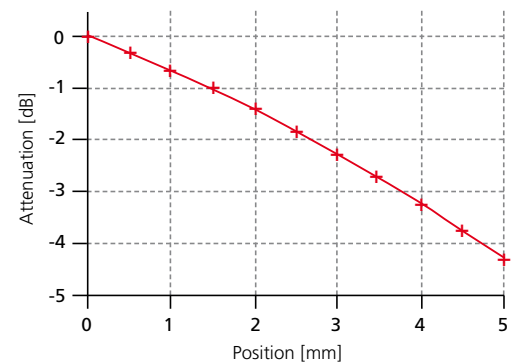
Test

Vibration test:	55 hours at 20 Hz, ± 1 mm \rightarrow no drift
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Order

Please fill out the spaces below. Select an underscored letter or value for each of the option fields provided.

Quantity:	<input type="text"/>	Example:	Quantity:	<input type="text" value="1"/>
Sensor type:	<input type="text" value="EX"/>	Sensor type:	<input type="text" value="EX"/>	
Application:	<input type="text"/> <u>P</u> robe / <u>S</u> ensor	Application:	<input type="text" value="S"/>	
Measuring base:	<input type="text"/> (0.1 to 10) m	Measuring base:	<input type="text" value="0.5"/>	
Connection length: Optical cable (m)	<input type="text"/> Standard: 30 m	Connection length: Optical cable (m)	<input type="text" value="40"/>	
Operating mode:	<input type="text"/> <u>P</u> ermanent / <u>S</u> leeping	Operating mode:	<input type="text" value="P"/>	



Calibration curve of an extensometer.

CAD drawing

