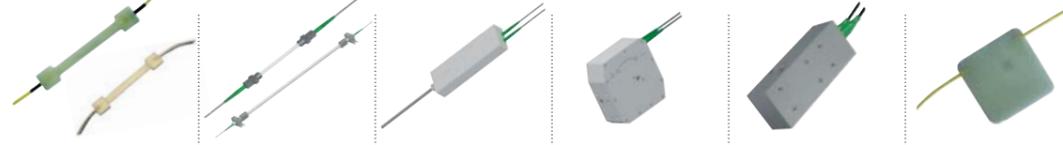


**SENSORS**



Model	OBSG, OBEG	OBSGW, OBLG	OBDI	OBTI	OBAC	OBTS
Type	Extensometers		Displacement sensors	Tilt-meters	Accelerometers	Temperature sensors
Capacity	-5 000 ... 5 000 $\mu\text{m}/\text{m}$	-2 000 ... 2 000 $\mu\text{m}/\text{m}$	25/50/100 mm	-3 ... 3°	-2 ... +2 g	-30 ... +180 °C
Sensitivity	1.2 $\mu\text{m}/\mu\text{m}/\text{m}$	1.25 $\mu\text{m}/\mu\text{m}/\text{m}$	9/17/33 $\mu\text{m}/\mu\text{m}$	$2 \times 10^{-3}$ °/ $\mu\text{m}$	$\pm 3.3 \times 10^{-3}$ g/ $\mu\text{m}$	10 ... 25 $\mu\text{m}/^\circ\text{C}$
Resolution	1 $\mu\text{m}/\text{m}$	1 $\mu\text{m}/\text{m}$	10/25/50 $\mu\text{m}$	0.002°	0.10 %	0.05 ... 01.1°C
Combined Error (% F.S.)	0.25 %	1 %	0.5 %	0.5 %	0.5 %	0.4 % ... 1 %

**ACQUISITION UNITS**



Model	MDX-100	MDX-400	MDX-8000
Number of optical lines	1, 3 or 4	3 or 4	4 or 8
Frequency	1.6 Hz	100 Hz	1 ou 2 kHz
Resolution	<1 $\mu\text{m}$	<1 $\mu\text{m}$	2 $\mu\text{m}$
Repeatability	2 $\mu\text{m}$	2 $\mu\text{m}$	3 $\mu\text{m}$
Digital I/O	1 I / 4 O	1 I / 4 O	1 I / 4 O
GPS antenna connectivity	✓	✓	✓
Communication	Ethernet / CANopen®	Ethernet / CANopen®	Ethernet
Storage capacity	32 Go	32 Go	32 Go
Housing	Stainless steel IP 66 or Rack 19" IP30	Stainless steel IP 66 or Rack 19" IP30	Rack 19" IP30
Operating temperature	-30 / +50°C	-30 / +50°C	-20 / +45°C
Vibrations	IEC 60721-3-5 cat. 5M2	IEC 60721-3-5 cat. 5M2	N/A
Damp heat	IEC 60068-2-30	IEC 60068-2-30	N/A



Civil Engineering  
Structural Health Monitoring



Headquarter : Technosite Altéa - 294, Rue Georges Charpak - 74100 JUVIGNY - FRANCE  
 SCAIME SAS - 294, RUE GEORGES CHARPAK - CS 50501 - 74105 ANNEMASSE CEDEX - FRANCE  
 Tél. : +33 (0)4 50 87 78 64 - Fax : +33 (0)4 50 87 78 46 - info@scaime.com - [www.scaime.com](http://www.scaime.com)  
 Download all our documents on our website

FA-CIVIL\_ENGINEERING-E0917 - SCAIME - SIREN 389 325 283 - R.C.S. THONON LES BAINS - Noncontractual pictures - SCAIME reserves the right to bring any modification without prior notice.

# Optimizing Assets with Optical Sensors

SCAIME designs solutions offering accuracy, robustness and reliability for the structural health monitoring of civil engineering structures. The sensors and acquisition units offered by SCAIME measure the mechanical behavior of the structure with high accuracy.

## SCAIME industrial solutions:

Based on Bragg grating technology, our fiber optics sensors present a set of characteristics opening new horizons for measurement:

- Insensitive to electromagnetic interferences, resistant to water and corrosion and intrinsically non explosive, they allow totally secured measurements in harsh environments.
- Highly resistant to fatigue, they can provide measurements on permanently stressed structures for more than 20 years.
- Sensors can be spread in series over several kilometers, thus measurement can be done over very long distances.



## ACQUISITION:

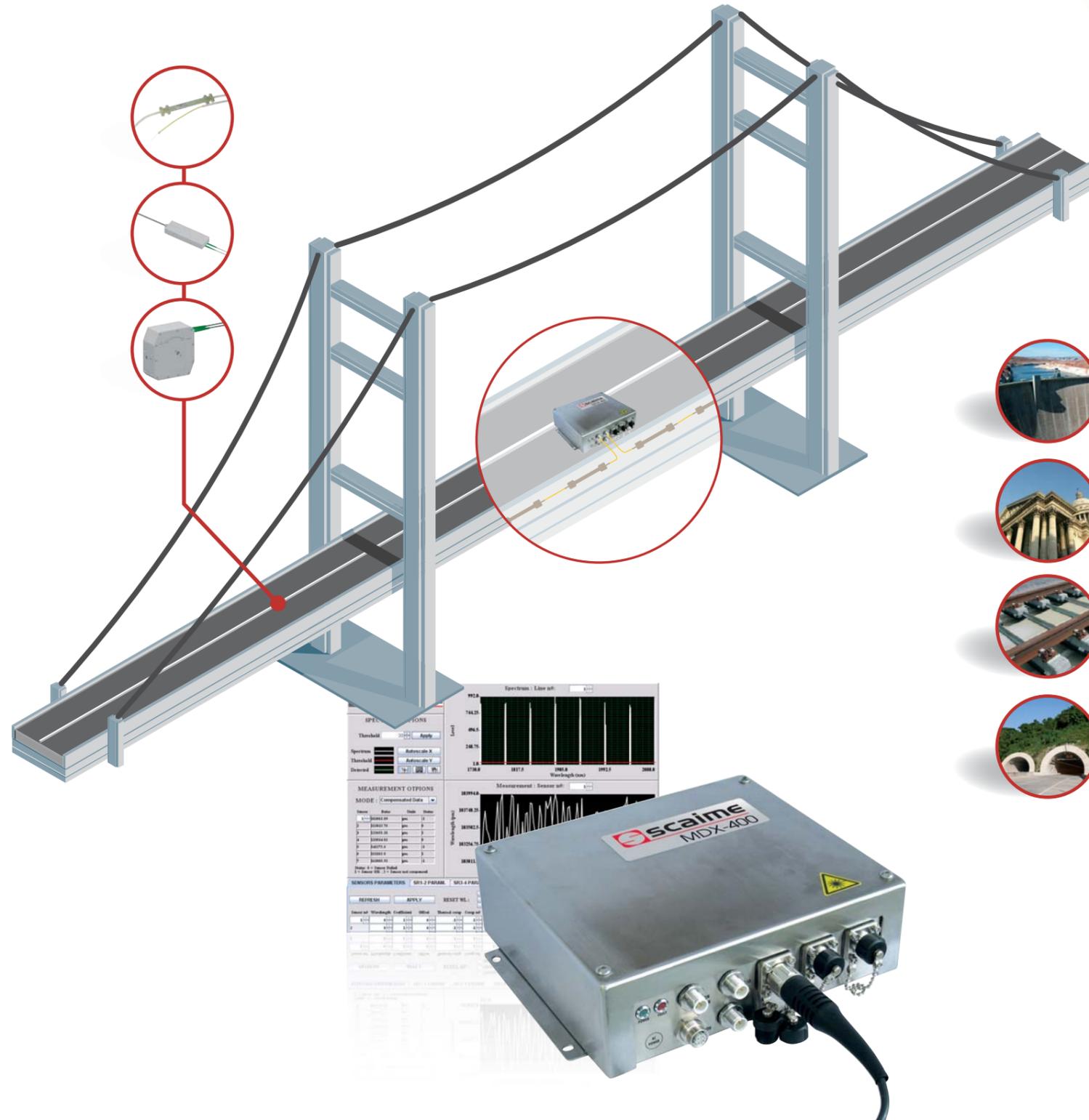
### MDX range

Performance, reliability, connectivity and ease of use are the main focuses when designing the MDX range of acquisition units.

It is housed in a rugged stainless steel IP66 enclosure particularly well suited for harsh and salty environments.

MDX-400 successfully passed IEC-70721-3-5 class 5M2 high levels of vibrations tests, certifying long term reliability when transported from sites to sites.

Beyond the robustness, the MDXs features advanced connectivity with an integrated web server for remote system and sensors setup (possible also through 3G router).



## Key benefits

- Ensure structure safety
- Improve knowledge and understanding of a structure
- Optimize operations and maintenance costs
- Safely extend the lifetime of ageing structures

## Strain:

Scaime proposes a broad range of strain sensors:

- Strain sensors to be bonded, bolted or welded on various structure materials (iron, fiber reinforced plastics, concrete...)
- Long base extensometers, either bolted or embedded for averaging of non uniformity in concrete structures
- High temperature embedded sensors that can resist tar compaction at 180°C

## Tilt:

Scaime range of tilt meters can detect very small angle variations of:

- Buildings
- Historical monuments
- Bridge piles

## Acceleration:

Scaime accelerometers are particularly well suited to measure:

- oscillations of bridge stays and roadways,
- structures Eigen frequencies measurement

## Displacement:

Our displacement sensors accuracy and reliability allow:

- Monitoring of cracks
- Measurement of expansion joints

## Temperature:

Scaime proposes a wide range of temperature sensors that can be bonded or embedded into concrete or tar.