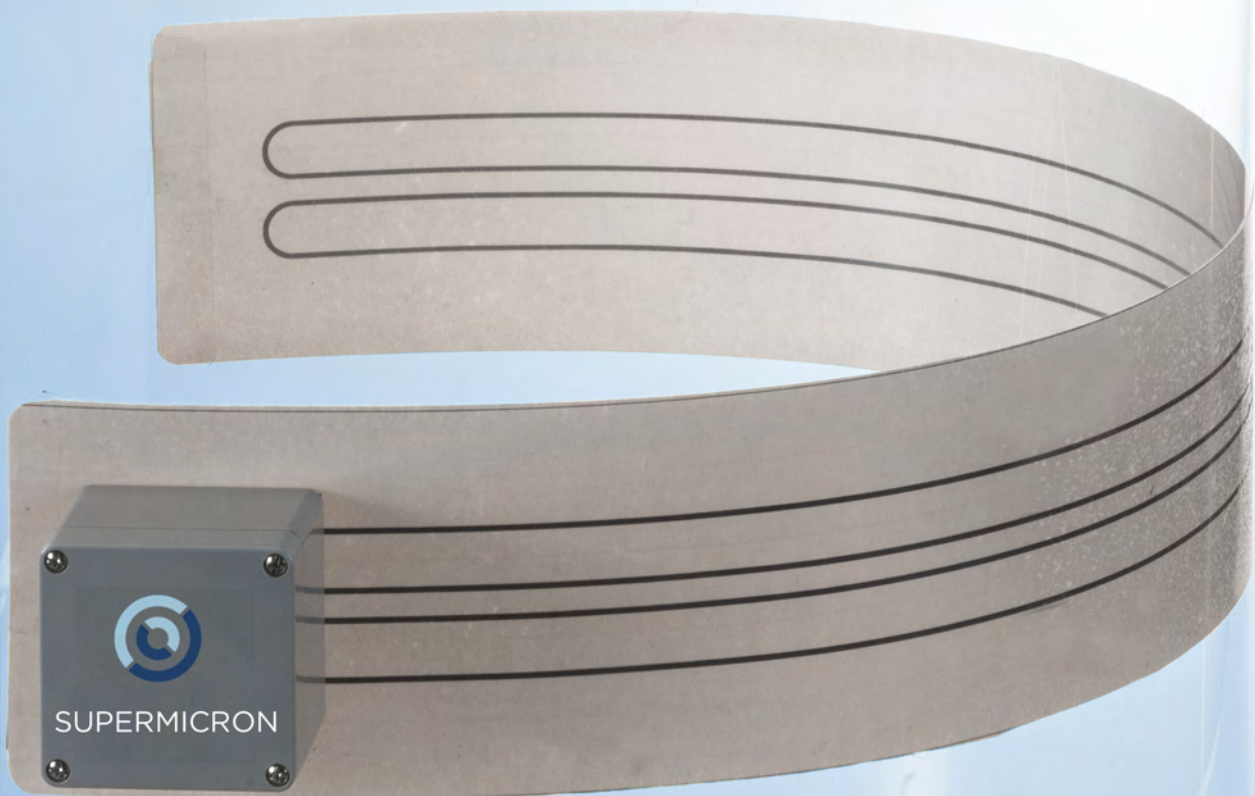# SUPERMICRON

TURN-KEY
STRUCTURAL HEALTH MONITORING
SOLUTIONS

SuperMicron stands for low cost, easy to install, easy to manage, wireless Structural Health Monitoring systems, which are durable, maintenance free and bondable to any substrate. Four main values are constantly under control: strain, temperature, tilt and vibration.
A turnkey solution from sensor to software.

NEXT GENERATION STRAIN SENSOR

- Up to 2 meters sensor length
- Extremly flexible
- Crash proof
- Water proof
- Installation time: less than 10 minutes

SMART SKIN SENSOR

The heart of the system is the Smart Skin Sensor, a next generation strain sensor made of composite materials and embedded carbon nanotubes and fibers. A thin laminate perfectly resistant to external agents. The onboard microelectronics further comprises a tilt / seismographic sensor, a temperature sensor and a transmission unit assembled in a single PCB.

GATEWAY AND CLOUD SERVICE

The Gateway offers bi-directional communication with the sensors and forwards the data to a cloud server, where a powerful user interface (GUI), accessible via web, makes the processed data available in real time. The GUI also permits remote interventions on the system and alert settings.

VALUES

STRAIN
Accuracy of +/- 1 microstrain.

TILT
Accuracy of 0,02° on three axes.

TEMPERATURE
Resolution of +/- 0.03°C (-30/+75°C range).

VIBRATION
Vibration characterization oversampling function (trigger).

SUPERMICRON

Standard
(280 x 70 x 0,25 mm)

Long
(850 x 70 x 0,25 mm).


Rod
(280 x 70 x 0,25 mm).

Custom

- Construction material: polyester fabric/epoxy resin
- Environmental protection: IP68
- Strain resolution of +/- 1 microstrain
- Temperature resolution of + / - 0,03°C
- Accelerometer: tilt on three axes x, y, z (accuracy of 0,02°), vibration reading and trigger function

- Radio range: up to 7 km
- Connectivity: wireless, 868 MHz / 915 MHz, RS-485
- Power supply: lithium-polymer battery, 3,6 V
- Battery lifespan: 8 years for type A, 12 years for type C (reading every 600 seconds)

APPLICATION FIELDS

Thanks to the extraordinary flexibility of the Smart Skin Sensor and specifically developed structural bonding for different substrates, SuperMicron can be applied to most materials: concrete, metal (steel, aluminum), composite materials, wood, stone...

The application fields of SuperMicron include infrastructures, water and oil pipelines, energy transportation infrastructures, automotive, marine and aerospace sector.
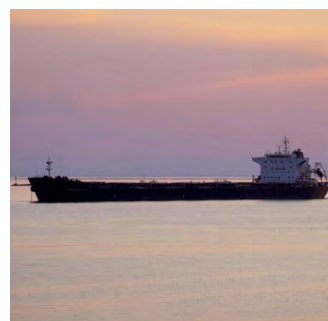
InSensus Project srl - Via Roma, 66 - 10025 Pino Torinese (Turin) - Italy
Phone +39 011 18862889 - +39 3203879859
www.supermicron.it - info@in-sensus.com - insensus.project@pec.it