SensoBrick® – Structural Health Monitoring System

Monitoring for environmental condition: Immediate, complete, autonomous

- Turn key solution
- No data or power connection needed
- Long lifetime battery operation
- GSM / GPRS interface
- Warning & Status messaging
- Remote service and configuration
SensoBrick® – Structural Health Monitoring System

SensoBrick® – a complete and self-sufficient in-a-box monitoring solution

Structural health monitoring offers the chance to turn away from labour intensive and operator subjective visual inspection towards automated monitoring of key parameters on buildings, infrastructure or cultural heritage. Traditional systems are cost effective when the installation and infrastructure expenses are spread over a larger number of sensors. SensoBrick® is designed towards cost effectiveness in low sensor-count applications for monitoring environmental, structural or also dynamic parameters.

SensoBrick® is a complete and self-sufficient in-a-box monitoring solution. Its embedded temperature sensor for environment and substrate, biaxial inclinometer for pitch and roll, 3-axis accelerometer and seismic trigger monitors thermal-, seismic-, vibration- and settling-induced actions on buildings, infrastructures or industrial plants. Numerous additional input ports allow for integration of application specific sensors to form a modular system to cover your specific monitoring needs.

SensoBrick® is designed for immediate installation without laying additional interfacing cable. Its modular approach allows to integrate additional external sensors and link them with the main communication interface of SensoBrick®. Its intuitive user interface lets you get in touch with your structure by one click over cellular phone or internet.

SensoBrick® comes with high power battery pack to let it run for years without any additional service intervention. The integrated trigger system can be kept continuously armed even when the device is in sleep mode in order to start data acquisition in less then 150ms for acquire dynamic events. The watertight enclosure and an integrated tamper alarm sensor provides additional security for uninterrupted monitoring.

Additional Sensors for the SensoBrick®

How much sensor flexibility does your application need?

Make the SensoBrick® a flexible solution with the widest choice of factory orderable sensors

The standard SensoBrick® can cover a wide range of SHM needs just using its own embedded sensors, but from the field experience we learnt that each different application may have its own specific requirements. This is why the SensoBrick features a lot of inputs for additional sensors, and why AMS Technologies offers the possibility of ordering the device already equipped and pre-programmed with your custom choice of additional sensors.

Optional external sensors:
- meteo (wind/Rh%/rain)
- crack displacement gauges
- sub-mm LASER displacement gauge
- external 3-axes accelerometer
- additional external 2-axes inclinometer
- strain gauges and load cells
- acoustic emission (crack detector)

www.amstechnologies.com/SensoBrick
Key Features
- Integrated Temperature sensor
- Integrated 2-axis Inclinometer
- Integrated seismic Trigger
- Integrated 3-axes Accelerometer
- Quad Band GSM interface
- Tamper Sensor
- Ruggedized housing for outside use

Applications
- Monitoring of Infrastructure (bridges, dams, roads, towers)
- Monitoring of Cultural heritage (indoor & outdoor)
- Monitoring of Industrial plants
- Monitoring of Construction fields
- Monitoring of Soil displacement

Optional External sensors
- Wind, Humidity, Rain Sensor
- Crack displacement gauges
- Sub-mm Laser displacement gauge
- External 2-axis inclinometer
- External 3-axis accelerometer
- Strain gauges and load cells
- Acoustic Sensor for crack detection
- Others sensors on request

Temperature Sensor
- resolution: 0.1°C
- absolute accuracy: 1.8°C

Inclinometer
- Instrumented axes: 2 (tilt & pitch)
- Resolution: 0.001°
- typical drift: ±0.06° (-20°, +80°C)

Accelerometers
- Instrumented axes: 3 (X, Y, Z)
- Dynamic range: 1500mg(horiz.) 600mg(vert.)
- Bandwidth @ -3dB: 0.2 / 65 Hz
- Noise floor: 7mg (@ 27°C, typ.)
- sampling frequency: selectable up to 4100Hz
- recorded samples: selectable up to 32786

Seismic Trigger
- min. seismic threshold: 20mg (2 / 35Hz)

Power supply
- long life embedded batteries (2-5 years, typ.)
- external supply input (10-24V AC/DC 300mA)

Additional preconditions input ports for custom sensors
- 5 x 12bit fast sampled 0-3.3V inputs (ratiometric)
- 5 x 3V 20mA outputs for sensor excitation
- 1 x fast sampled 10V bipolar input (12bit)
- 1 x 5V excitation output (80mA max)
- 1 x 12V excitation output (120mA max)
- 5 x high resolution 24bit differential inputs
- 120W strain gauges auto
- 2 x 3V 50mA outputs excitation

Networking
- Quad-band EGSM 850-900/1800-1900 MHz

Dimensions
- WxHxD: 125x125x250 mm (4.92x4.92x9.84 in.)
- Protection grade: IP67 (IP68 upon request)
- EX (ATEX) compliance: optional
WHAT CAN WE DO FOR YOU?

Please contact us for further information