



Structural Health Monitoring with MEMS

The challenge:

Infrastructures can have unnoticeable failures due to earthquakes, avalanches, traffic, construction work, snow load etc.

Customer challenges:

Major part of structural failures in buildings, bridges, tunnels and other infrastructures could be detected earlier or potential safety issue could be noticed faster with Structural Health Monitoring systems - measuring vibrations on or bending of structures.

To build such a system there is a need for ultimate accuracy of measurement with optimal power consumption. Such systems require components that have high reliability in various different environments where devices can be installed to.

The Murata Solution:

The Products:

SCA3300 accelerometers and SCL3300 inclinometers

How it works:

MEMS sensors offer reasonably priced opportunities to build systems for Structural Health Monitoring.

Murata MEMS sensor portfolio has options from highest accuracy and stability to solutions with low power consumption but yet high enough accuracy to monitor minor changes in structural health.

Murata sensors offer very low noise level to measure disturbing events and stability to detect smallest changes of displacement.

Product features:



SCL3300

- High temperature stability ranging from -40 to +125 degrees C
- ± 15 mg typical temperature offset performance
- Robustness against shocks and vibrations
- Excellent bias stability over time
- High resolutions with noise density of $0.001^\circ/\text{sqrt}(\text{Hz})$
- The single-chip 12-pin MEMS package measures just $8.6 \times 7.6 \times 3.3$ mm

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More info:

For further information about Murata solutions, please contact your local sales manager.

Data sheets and application notes for Murata products can be found at

www.murata.com

