



Welcome to Issue #89

Welcome to the February issue of "Dynamic Sensors & Calibration Tips." This month we attended IMAC XXXIII, A Conference on Structural Dynamics, and had the chance to visit with some of our university friends. Did you know that there are many universities worldwide that have structural dynamics labs dedicated to furthering structural dynamics knowledge? Visit our [Application Spotlights page](#) to read in detail about their research.

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Tip of the Month: Calibrating PR and VC Type Sensors

When calibrating piezoresistive (PR) and variable capacitive (VC) type sensors, be sure to check the zero-measured offset (ZMO) value of the sensor.

Technical Exchanges

[Dynamic Sensors & Calibration Techniques Seminar](#)

The Modal Shop, Inc.
10 am - 3 pm
March 3, 2015
Los Angeles/Torrance, CA

[Dynamic Sensors & Calibration Techniques Seminar](#)

The Modal Shop, Inc.
10 am - 3 pm
March 5, 2015
San Jose, CA

[Dynamic Sensors and Calibration Open House](#)

The Modal Shop, Inc.
May 13, 2015

How Do I Calibrate DC Response Accelerometers? By Rick Bono, Co-President, The Modal Shop, Inc.

DC response accelerometers are vibration sensors capable of measuring a DC, or 0 Hz, response. The most common types of DC response accelerometers are based upon a variable resistive or capacitive design. Generally termed piezoresistive (PR) or variable capacitive (VC) within the measurement and instrumentation industry, these transducers cover a wide range of applications, from expensive precision transducers for military and defense applications, to very inexpensive MEMS transducers built on electronic component packages for smart phones and automobile airbag deployment sensors...



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modalshop.com/calibration.asp?ID=1038

How Does Shaker Design Affect Transverse Motion? Also, How Does Transverse Motion Affect Accelerometer Calibration Results? By Mike Dillon, Calibration Product Group Manager, The Modal Shop, Inc.



There are two basic designs of calibration shakers: flexure-based shakers and air-bearing shakers. The names reflect the way in which the vibrating element is suspended. This difference in design also directly affects the transverse (commonly, the horizontal) motion of the vibrating element. In flexure shakers, the motion of the vibrating element is modeled very well by a classic second order

Cincinnati, OH

[Successful Measurement of Dynamic Force, Pressure and Acceleration Seminar](#)

PCB Piezotronics - Dr. Pat Walter
May 19-21, 2015
Buffalo, NY

[Sensors Expo](#)

June 9-11, 2015
Long Beach, CA

Quick Links

[PTB](#)

[NIST](#)

[ISO TC 108](#) - Mechanical vibration, shock and condition monitoring

[ISO TC 108/SC 3](#) - Use and calibration of vibration and shock measuring instruments

[ISO TC 108/SC 6](#) - Vibration and shock generating systems

[SAVE \(Formerly SAVIAC\)](#)

[Vibration Institute](#)

[Equipment Reliability Institute \(ERI\)](#)

[TMS Video Vault](#)

[Learn More Calibration](#)

Previous Newsletters

[Dynamic Sensors & Calibration #88](#)

How to Calibrate Your 4-20mA Current Loop Vibration Sensors; The Science of Accelerometer and Sensor Mounting

[Dynamic Sensors & Calibration #87](#)

How Do You Calibrate the Calibration System?; Eddy Current Probes Produce An Alarming Trend

Select Newsletter Articles by Topic

[Function and Structure of Accelerometers](#)

[Similarities Between Charge and ICP Operation](#)

[Selecting Accelerometers for Mechanical Shock](#)

[Master List of Topics \(T.O.C.\)](#)

PCB Group Companies

[The Modal Shop Systems & Service Website](#)

[PCB Piezotronics Sensor Website](#)

[IMI Monitoring Website](#)

[Larson Davis Acoustics Website](#)

[PCB Load & Torque Website](#)

[SimuTech FEA Website](#)

system. In this model, the vibrating element acts as the mass and the flexure suspension acts as the spring. The suspension acts not only in the axial direction but also in the transverse direction. Since the transverse stiffness is not infinite, the system has a resonance in the transverse direction, and the transverse motion at this frequency causes...

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Blast from the Past: Vibration Measurement at High Temperatures

"What do I have to do to measure vibration at high temperature?" is a common question for the extreme environments found in the automotive, aerospace and industrial vibration measurement fields. Various sensor considerations come into play including sensing element material, casing/connector construction, signal conditioning and cabling. Since there is no single right answer to this question, as you might imagine, the answer depends on just how high the temperature is ...



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modalshop.com/calibration.asp?ID=311

Thanks for joining us for another issue of "Dynamic Sensors & Calibration Tips." As always, please [let us know what you like](#). We appreciate all feedback: positive, critical or otherwise. Take care!

Sincerely,

Mike Lally signature

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A PCB Group Company
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