

sensor & calibration tips



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Your one-stop sound & vibration shop

Greetings,

Welcome to Issue #52

Welcome to our final Sensor & Calibration Tips of the year. We appreciate the opportunity to serve you and want to share that this has been an exceptional year for both The Modal Shop and all the companies of PCB Group. With PCB Group's growth around the world this year, we are happy to be doing our part to help fuel the return of economic stability through quality products and service excellence. We hope your business is also thriving. During this Holiday season please accept our best wishes to you for Peace, Health and Prosperity in the New Year...

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Tip of the Month

An ICP® preamplifier and precision prepolarized condenser microphone significantly reduces per channel cost, allows for ordinary coaxial cables and has an equivalent resolution to traditional acoustic measurement channels of a condenser microphone, preamplifier and laboratory power supply with polarization voltage. The compromise in the voltage swing only affects the high end of the dynamic range reducing it by about 10 dB, making ICP operation a preferred and common choice in general purpose acoustic applications.

Quick Links

[NCSL](#)

[IMEKO](#)

[PTB](#)

[NIST](#)

[ISO TC 108](#) - Mechanical vibration,

Nontraditional Uses of ICP® 'Power' New Sensors

Modern dynamic signal analyzers (DSAs) provide ICP® sensor power as the de-facto standard for dynamic sensor signal conditioning. From the humble beginnings of single- and dual-channel analyzers of the late 1960s and early '70s, modern analyzers serving the sound and vibration market have matured into PC based, modular structures typically providing multiples of 4, 8, or 16 channels. The liberal channel counts of these modern analyzers result in available 'space' for a new class of ICP additional sensors such as microphones, strain gages and tachometers...



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<http://www.modalshop.com/calibration.asp?ID=661>

Low Frequency Calibration with Structural Gravimetric Technique

Structural dynamics play an important role in today's highly technological world. Engineers typically sense, test, model, and modify vibratory behavior to improve how structures function, feel, look, sound, interact or cope. An integral part of this process involves calibration of test instrumentation.

In universal structural testing terminology, calibration is testing the functional

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

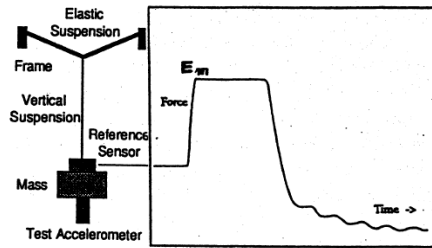
[SAVIAC](#)

[Vibration Institute](#)

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

[TMS Video Vault](#)

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transfer behavior, including sensitivity and phase, of sensor structures in

controlled transactions and environments. An ideal measurement system...

[Click here to read more](#)

<http://www.modalshop.com/calibration.asp?ID=660>

Previous Newsletter

[sensor & cal tips #51 -](#)

Understanding ICP Sensor Bias; Devil is in the Calibration Details

[sensor & cal tips #50 -](#)

Language of Metrology; Novel Uses for Accelerometers

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

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[IMI website](#)

[Larson Davis website](#)

[PCB Load & Torque website](#)

[SimuTech website](#)

Blast from the Past

For those who may be new to our newsletter, we wanted to highlight an article from a previous sensor & calibration tips - "[Behavior of Accelerometers](#)"...

Ever heard the old saying, "No one believes the results of a theoretical analysis except the analyst. And everyone believes the results of an experiment, except the experimentalist"?



In the test and measurement world, this applies to the fact that vibration sensors are structures just like cars, computers, satellites and machinery that they are used to test. This means that accelerometers undergo stress and show strain, they move, bend, deflect and often show signs of

their real world behavior. Test engineers and technicians need to understand the real world behavior of their measurement equipment to ensure that both valid data and valid results are produced.

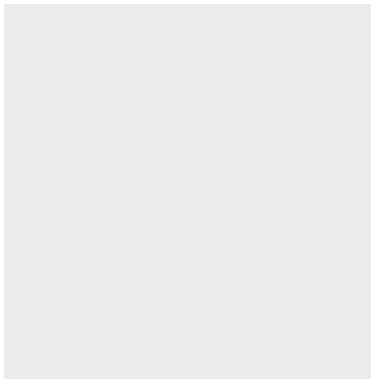
[Click here to read more](#)

<http://www.modalshop.com/calibration.asp?ID=200>

As The Modal Shop wraps up another year, we continue to innovate! We invite you to visit our [Facebook page](#) and become a fan or [follow us on Twitter](#). We've been adding both our tradeshow schedule and information about recent events around The Modal Shop. Come and see how we live some of our core values of "Total Customer Satisfaction, Innovation and Community"!

Sincerely,

Michael J. Lally



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