

Welcome to Issue #85

Welcome to this month's issue. You may have seen in the news that there was a catastrophic launch failure of an unmanned launch vehicle carrying a satellite and supplies. Disasters like this remind us of the engineering vigilance needed to maintain quality and safety in all our jobs. Keeping up your education in dynamic sensing and calibration is one way you can continue your commitment to excellence, along with selecting quality vendors who provide you with the needed control and confidence in your measurement systems.

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Tip of the Month: Equipment Rental Helps with Short-Term Needs

Test equipment rental is often an overlooked option in supporting short-term or one-off test needs.

[Click here to download The Modal Shop's Sound and Vibration Rental Selection Guide.](#)

Technical Exchanges

[SAVE \(Formerly SAVIAC\) Shock & Vibration Exchange](#)

October 26-30
Reston, VA

[AutoTest Expo](#)

October 28-30
Novi, MI

[IMAC XXXIII](#)

February 2-5, 2015

Why the Word 'Hermetic' is Important to Your Piezoelectric Sensors

One of the most significant investments for manufacturers of quality dynamic piezoelectric sensors (force, pressure, vibration) is the machinery to ensure a hermetic seal of the transducer casing from contaminants in the outside world. Specifically, this means the technology and equipment to produce the glass-to-metal seal in a hermetic signal cable connector, and also the laser welder to seal the finished transducer casing.



The sensor sealing is critical due to the high impedance signal path at the heart of the piezoelectric crystal transduction. A typical piezoelectric sensor signal starts as a high impedance charge collected...

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modalshop.com/calibration.asp?ID=1018

Frequently Asked Questions: When An Accelerometer Fails Calibration [Adapted from a LinkedIn Sound & Vibration Group Discussion Thread]

By Mike Dillon, Calibration Product Manager

Q: I use this sensor on a daily basis, and haven't noticed a difference in any of my measurement results. Could it be that signals I am measuring do not have significant activity in the "failure" frequency range or that my measurements are not sensitive enough for me to have picked up on differences between the two sensors?

A: Yes, it is quite possible. It seems you have the benefit of some quantitative information in the calibration results, i.e., "X%". If the usual behavior of

Orlando, FL

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 #84](#)

Know Your Standard: ISO 16063; University of Buffalo Calibrates Seismic Sensors for Earthquake Simulation

[Dynamic Sensors & Calibration #83](#)

Potentially Confusing Uncertainty Contributors; Pressure Calibration Techniques

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](#)

[IML Monitoring Website](#)

[Larson Davis Acoustics Website](#)

[PCB Load & Torque Website](#)

[SimuTech FEA Website](#)

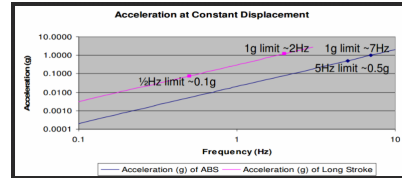
the sensor was 4.9% at "Y" Hz and is now 5.1% (crossing a 5% criteria for an acceptable calibration), you would have a 0.2% change in your sensitivity, and your data. This may or may not be detectable, depending on the predictability of your measured structure's behavior...

[Click to read full article.](#)

modalshop.com/calibration.asp?ID=1017

Blast from the Past: Improved Low-Frequency Accelerometer Calibration

Discussion about accelerometer calibration often refers primarily to the measurement of voltage sensitivity across a frequency range. The most common way to calibrate accelerometer sensitivity is by



comparison to a reference transducer, generally another accelerometer designed to have stable low noise sensitivity in the conditions of calibration. Comparison methods are performed by back-to-back measurements, typically as a stepped sinusoid across an appropriate frequency range. The Sensor Under Test (SUT) is mounted...

[Click to read full paper.](#)

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

Sincerely,

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