Welcome to Issue #94

Welcome to the 94th edition of our Dynamic Sensors & Calibration Tips newsletter! That means we've been sharing education, tips and tricks for more than seven years now. You can see that we link to the most recent two issues in the left-hand column and include a "Blast from the Past" article. If you are a more recent member of our subscription list, please visit our newsletter web page for the full suite of almost 200 archived newsletter articles sorted by topic.

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Tip of the Month: Always Look for the Laser Etching on the Sensor

Sensors can easily be placed in the wrong boxes. When calibrating a sensor, always look for the laser etching on the sensor for the model number and serial number information. If the serial number cannot be read from the sensor, it should be sent back to the manufacturer for proper marking.

Technical Exchanges

NI Week
August 3-6, 2015
Austin, TX

Inter-Noise
August 9-12, 2015
San Francisco, CA

UC-SDRL Experimental Techniques Seminar Series:

How Does Relative Motion Affect My Calibration?
By Patrick Timmons, Calibration Systems Engineer

A frequent calibration question we receive here at The Modal Shop, Inc. is: "Should I bolt my shaker to a heavy table?" The difference in answer depends on which reference you are using with the shaker. For back-to-back calibration, we typically answer "no;" for optical encoder calibrations we typically answer "yes." The reason we require bolting a shaker with an encoder displacement reference to a table or large mass is reference motion, often called relative motion...

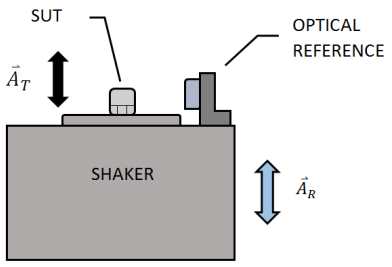

Figure 1: Optical Encoder Calibration

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modalshop.com/calibration.asp?ID=1060

Accelerometer Frequency Range: A Tale of Two Specs
By Mike Dillon, Calibration Product Manager

In a previous article titled "**Percent Difference vs Deviation in Calibration: What Do They Mean for Your Accelerometer Calibrations?**," we reviewed the meaning of "percent deviation" when interpreting the frequency range specifications of accelerometers. The previous article included Figure 1 (below).

Figure 1 - Typical Accelerometer Frequency Range Specifications

This article will take a slightly deeper look at this and explain the accelerometer design choices that affect this specification....

Structural Measurements
August 12-14, 2015

Modal Analysis
August 17-19, 2015
Cincinnati, OH

Dynamic Sensors & Calibration Techniques Seminar
By The Modal Shop, Inc.
August 13, 2015
Phoenix, AZ

IMEKO XXI World Congress
August 30-September 4, 2015
Prague, Czech Republic

SAVE
October 5-8
Orlando, FL

Automotive Testing Expo
October 20-22, 2015
Novi, MI

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
Calibration - Learn More

Previous Newsletters

Dynamic Sensors & Calibration #93
Small Arms Ammunition Manufacturer's Institute (SAAMI) Discusses High Pressure Sensors and Calibration; Microphone Calibration Part II

Dynamic Sensors & Calibration #92
Calibration from the Risk Management Perspective; Microphone Calibration Part I

Select Newsletter Articles by Topic

Function and Structure of Accelerometers

Similarities Between Charge and ICP Operation

Selecting Accelerometers for

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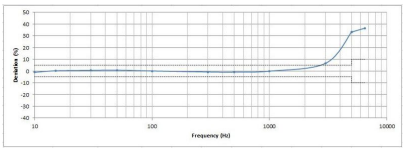
Blast from the Past: Why Proper Mounting is Essential to Calibration



A calibration laboratory was having a hard time calibrating a particular accelerometer. The sensor's specification according to the manufacturer's website, indicated a sensitivity value of 100 mV/g (±10%) and a frequency response up to 6500 Hz (±10%). The initial calibration results at the reference frequency (100 Hz) were good and a sensitivity value of 99.97mV/g was measured, really close to the sensor's nominal sensitivity. Surprisingly enough, the sensor would repeatedly fail its frequency response calibration...

Click to read full article
modalshop.com/calibration.asp?ID=800

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,

Michael J. Lally
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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