Welcome to Issue #82

We are excited to let you know that the new USB ICPD™ Digital Accelerometer is under consideration by NASA Tech Briefs for the "Create the Future" contest. If you've enjoyed this newsletter each month and would like to help us out with this competition, please visit the competition page and **cast your ballot** for this new technology. We appreciate your support!

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Fun Link of the Month: Paper Sizes Explained

Have you ever wondered why paper sizes are the way they are? As Matt Parker explains, the A4 paper scale is based on a meter and one meter is exactly one forty millionth of the circumference of the earth.

Watch the video for the full explanation.

Technical Exchanges

NI Week
August 4-7
Austin, TX

UC-SDRL Structural Measurements Seminar
August 13-15
Cincinnati, OH

UC-SDRL Modal Analysis Seminar
August 18-20
Cincinnati, OH

Successful Measurement of

Uncertain About Uncertainty? Certainly!

In last month's issue, we talked about the responsibility of a laboratory to "make sure that the reported values of expanded uncertainty are credible." This month we intend to answer the resulting questions: why and how?

Why does understanding the uncertainty of a measurement matter? A particularly egregious example would be filling up your 15-gallon gasoline tank with the meter (and subsequently the price) reading 42 gallons. This example would be sure to catch the attention (and incite the anger of) the consumer quickly. However, in other more critical situations, such as ensuring the shutdown of a nuclear reactor during a seismic event, vibration measurement levels need not only report values close to the actual physical event, but the uncertainty of vibration measurement should be known...

Click to read full article.
modalshop.com/calibration.asp?ID=990

How To Calibrate Awkwardly-Shaped Accelerometers
By Marco Peres, Product Manager

Proper mounting techniques are essential to calibrate all accelerometers. The mounted resonance of a vibration sensor directly affects the practical upper limit of the flat frequency response of

Dynamic Force, Pressure and Acceleration
By Dr. Pat Walter, Professor, Texas Christian University
August 19-20
El Segundo, CA

NoiseCon
September 8-10
Ft. Lauderdale, FL

ISMA
September 15-17
Leuven, Belgium

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 #81
Guidelines Within Standards...Thou Shall or Thou Should Think...?

Dynamic Sensors & Calibration #80
New Calibration Units for Digital Accelerometers

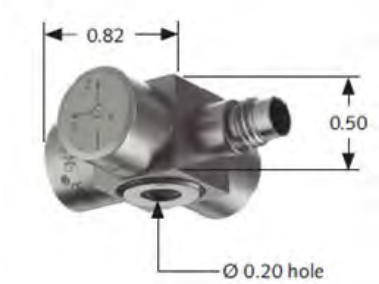
Select Newsletter Articles by Topic

Function and Structure of Accelerometers

Similarities Between Charge and ICP Operation

Selecting Accelerometers for Mechanical Shock

Master List of Topics (T.O.C.)

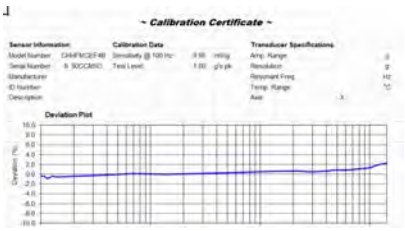


that sensor. Cleanliness; surface finish and flatness; the light use of a coupling fluid (like silicone grease) between the accelerometer base and the mounting surface; and the right amount of torque (if stud mounted) as recommended by the sensor manufacturer; these all play a significant role when calibrating an accelerometer as we covered in a previous newsletter article entitled, **"Why Proper Mounting is Essential to Calibration."**

The good news for metrology is that most accelerometer designs are built symmetrical to allow...

Click to read full article.
modalshop.com/calibration.asp?ID=981

Blast from the Past: Calibrating the Calibration System



Control, confidence and low uncertainties are the hallmark characteristics of a quality metrology laboratory. The basis for this operation is quality calibration equipment, sensor specific operator knowledge, as well as solid business and calibration processes. One vital key in this type of operation is maintaining proper control and calibration of the calibration system. In general there are three reference calibration paths a laboratory can choose which provide various trade-offs during downtime, cost and risk...

Click to read more.
modalshop.com/calibration.asp?ID=461

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

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

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