

# sensor & calibration tips



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Your one-stop sound & vibration shop

Greetings,

## Welcome to issue #37-

The candle is burning on summertime and fall is just around the corner. While we enjoy the last warm weeks of summer and prepare for Mother Nature to dazzle us with her brilliance of fall foliage, here is the latest edition of our Dynamic Sensors and Calibration Newsletter. You can see we've been at it for over three years now so remember to check links in the [left hand column](#) for past articles useful for sharing and training. You can also find us at the [ISMA conference](#) at KU Leuven in Belgium next month.

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## Tip of the Month

TEDS technology enables transducer users to gain digital access to on-board calibration information. TEDS transducers have plug-n-play capability with most current state-of-the-art data acquisition hardware, allowing the users to access current calibration data thus eliminating the need for hardcopy calibration certificates.

[Click here for TEDS FAQ](#)

## Quick Links

[NCSL](#)

[IMEKO](#)

[PTB](#)

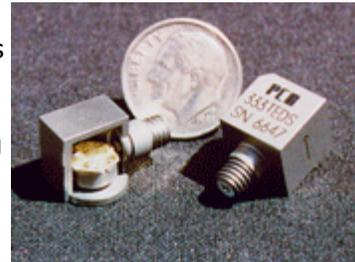
[NIST](#)

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

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

## Does TEDS Add To My Uncertainty?

A vibration/structural test customer in Italy, brought us this perplexing observation. After entering and writing the sensitivity of a 100 mV/g in to the TEDS (Transducer Electronic Data Sheet) storage memory of his accelerometer, his data



acquisition software would then read and display the value as 0.010 V/m/sec<sup>2</sup>. Glancing at the single zero to the right of digit one, **he became concerned that the TEDS functionality was limiting the "resolution" of the recorded calibration value to within 10%** (=0.001/0.010 which is the resolution of the display divided by the setting). To understand the answer to this question...

[Click here to read more about TEDS](#)

<http://www.modalshop.com/calibration.asp?ID=338>

## Intro To Single Input Modal Testing With Shaker Excitation

Here's the next installation of our simplified series of introductions to various aspects of dynamic testing. Produced by TMS structural test product manager *Mr. Marco Peres* and narrated by *Mr. Matt Witter*, principle consultant of Structural Dynalysis, this short video addresses some of the basics of vibration test set up with a single electrodynamic shaker and stinger. [Click here to view the video](#) and be sure to call, click or connect with us to let us know what other types of



measuring instruments

[ISMA](#) - Leuven, Belgium  
(September 20-22)

[SAVIAC](#) - Orlando, FL (October 24-28)

[SAVIAC](#)  
[Vibration Institute](#)

#### Previous Newsletter

[sensor & cal tips #36](#) - Bone Health Monitoring, Vibration Videos, and Transduction Types

#### Select Newsletter Articles by Topic

[Function and Structure of Accelerometers](#)

[Similarities Between Charge and ICP Operation](#)

[Overview of ISO 16063 Accelerometer Calibration Standards](#)

[Selecting Accelerometers for Mechanical Shock](#)

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

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[Larson Davis website](#)  
[PCB Load & Torque website](#)

material you would like to see presented in video training format. We are here to help!

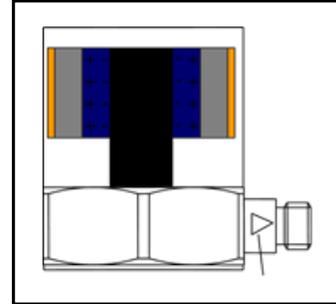
[Click here to view the video](#)

<http://www.youtube.com/watch?v=u9CuzMAywbw>

#### Blast from the Past...

For those who may be new to our newsletter, we wanted to highlight an article from one of the first sensor & calibration tips newsletters - **Internal Structure of Accelerometers...**

This month we'll look at a few of the common designs for a piezoelectric accelerometer's internal sensing element construction. Both the piezoelectric material (**quartz** or **ceramic**) and geometry (**Shear, Compression, Inverted Compression** or **Flexure Beam**) are discussed. These designs are applicable



whether the accelerometer is ICP or charge mode operation. More detailed information on the [structure of accelerometers](#) can be found on the PCB website under the technical reference section.

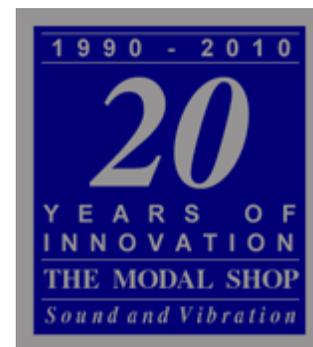
[Click here for more information on the internal structure of accelerometers](#)

<http://www.modalshop.com/calibration.asp?ID=176>

As The Modal Shop continues to celebrate our 20th Anniversary, 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,

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