# sensor & calibration tips

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## Dear Kathleen,

**Welcome to issue #15-**

If you are new to our newsletter, please enjoy this short communication, share it with a colleague and have a look at the archive links below where you'll find all the back issues with their wealth of information. We're glad to have you on board!

Join Our Mailing List!

## Tip of the Month

**Low-noise cables**

For high impedance, charge-style piezoelectric accelerometers, use only "low noise" cabling that significantly reduces risks of signal degradation. Be careful to use the shortest length possible and not to kink or knot your test cables because the insulation or noise treatment can be damaged. As an alternative, low impedance ICP® accelerometers are much less susceptible to noise contamination from dirt, kinks and/or triboelectric effects.

## Quick Links

NCSL
IMEKO
NIST
PTB

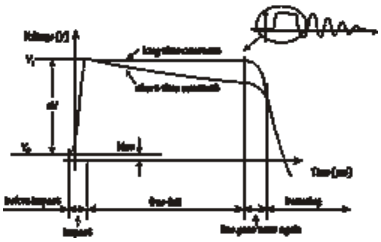
NAPT
NIST uncertainty guideline
Wiki on uncertainty

The Modal Shop website
PCB Piezotronics website

## Newsletter Archive

sensor & cal tips #11 - Mechanical

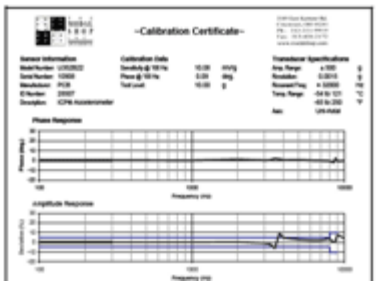
## Summary on Discharge Time Constant



New users of piezoelectric (PE) type accelerometers are always fascinated with the concept of zero biased response. Maybe it's the general prevalence of slow speed, static type measurements, or maybe it's the dominance of "mechanical oriented" people in the vibration test/measurement field, but AC coupled operation is always a question of early intrigue. The discussion of AC coupling, discharge time constants (DTC) and system operation inevitably follows.

Click to read more about discharge time constant
(http://www.modalshop.com/test_calibration.asp?ID=228)

## Interpreting Calibration Results



As you may remember from your studies (or maybe you read the first newsletter in this series), ideal sensors provide straight line performance. That is to say, they treat amplitudes proportionally (straight line linearity), frequencies of interest the same (flat amplitude frequency response), and do not appreciably delay the signal (flat phase frequency response). Hence, the frequency response output plot from an accelerometer and on a calibration system should be a flat line. In the real world, however, things are not perfect...

Click to read more about interpreting calibration results
(http://www.modalshop.com/test_calibration.asp?ID=229)

Shock Accelerometer; More Uncertainty Contributors

sensor & cal tips #12 - Flight Test Accels; Random Uncertainty

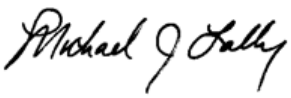
sensor & cal tips #13 - ESS Accelerometer considerations; Relative motion in calibration

sensor & cal tips #14 - Proficiency in calibration; Sensor considerations for NVH

Archived sensor & cal tips - all the back issues

We appreciate your interest and are glad to be providing you regular information to help with your dynamic testing and calibration needs. If you have any questions you would like answered or have a topic you would like to see covered, please contact us and we'll be glad to help out.

Sincerely,



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