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sensor & calibration tips

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Greetings,

Welcome to issue #40-

Welcome to yet another addition of our Dynamic Sensing and Calibration Newsletter. As we have just last week celebrated the "Thanksgiving" holiday here in the United States, I want to say "Thank you!" to the many readers who have taken the time to send in additional questions and comments each month. We are glad to provide you with the insights and answers from across the resources of the PCB Group to help you solve your measurement challenges... so go ahead and give us your toughest questions! We are here to help you...

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Tip of the Month

Do not attempt to remove an adhesively mounted accelerometer with tools such as knives, chisels, screwdrivers or hammers. Always apply an appropriate solvent, such as acetone, to loosen the adhesive bond.

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 measuring instruments

IMAC - Jacksonville, FL (January 31 - February 3)

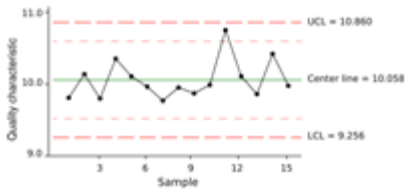
SAVIAC

Calibration and Engine Vibration Monitoring Accelerometer Cable Challenges...

So you think your work environment is tough? You have multiple projects, competing priorities, shifting deadlines and drastically limited resources. Well at least you have a padded chair, nearby coffee and an office/lab. Now imagine the "work environment" of an aircraft engine monitoring accelerometer...the environment can be: hot to 1200 deg F (650 deg C), wet to 100% humidity condensing, violent seeing shocks up to 1000 g and precarious often on cantilevered mounting brackets and snaking in a cable around components and through passages to the signal conditioning and/or engine monitoring unit (EMU). Sounds like an environment worse than the biggest earthquake, the hottest desert and the wettest rainforest...

Click here to read more about Cable Challenges
http://www.modalshop.com/calibration.asp?ID=358

Statistically Speaking...



Here is another outstanding article I read this month that talks about engineering decision making but frames it in a world extremely relevant to

Vibration Institute

Previous Newsletter

sensor & cal tips #39 - Primary Calibration of Accelerometers and Dynamic Sensors for Extreme Environments

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 website
PCB Piezotronics website
IMI website
Larson Davis website
PCB Load & Torque website

measurement systems and calibration. The first pretense is similar to understanding Control Charts. When making "corrections" to a system let's make sure that we are acting on special causes creating system performance outside the control limits. A second piece of advice in the article is to respect errors. This is very much the same as what we deal with in measurement systems and uncertainty (Guide to Measurement Uncertainty). For a quick read on how these topics combine to be useful for solid engineering decisions, follow this link on statistical basis for engineering decisions.

Click here to read full article
http://www.modalshop.com/calibration.asp?ID=355

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 - **Similarities between Charge and ICP...**

Piezoelectric accelerometers can be broken down into two categories, defined by their mode of operation: traditional **charge mode** operation and the now standard **ICP®** mode operation. These two approaches accomplish the same end function of supplying a low impedance varying voltage signal suitable for data acquisition...

Click here to learn more about the similarities of charge output and ICP/voltage output accelerometers. Adapted from an application note by James F. Lally, co-founder of PCB Piezotronics, Inc.
http://www.modalshop.com/calibration.asp?P=Similarities_Between_ICP_and_Charge_Mode&ID=197

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,

Michael J. Lally
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A PCB Group Company
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Forward email