



The American Association for Laboratory Accreditation

World Class Accreditation

Accredited Laboratory

A2LA has accredited

PCB PIEZOTRONICS OF NORTH CAROLINA, INC.

Halifax, NC

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories*. This laboratory also meets the requirements of ANSI/NCSLI Z540-1-1994 and the requirements of ANSI/NCSLI Z540.3-2006 and any additional program requirements in the field of calibration. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF *Communiqué* dated 8 January 2009).



Presented this 3rd day of February 2012.


President & CEO

For the Accreditation Council

Certificate Number 1862.02

Valid to February 28, 2014

For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005
& ANSI/NCSL Z540-1-1994 & ANSI/NCSL Z540.3-2006

PCB PIEZOTRONICS OF NORTH CAROLINA, INC.
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CALIBRATION

Valid To: February 28, 2014

Certificate Number: 1862.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations¹:

I. Electrical – DC/Low Frequency

| Parameter/Equipment | Range | CMC ^{2,3} (±) | Comments |
|----------------------|---|---|---|
| DC Voltage – Measure | (0 to 20) mV (20 to 200) mV 200 mV to 2 V (2 to 25) V (25 to 250) V | 0.020 % + 6.9 µV 0.020 % + 6.9 µV 0.020 % + 12 µV 0.028 % + 1.2 mV 0.028 % + 1.5 mV | NI4060 DAQ card |
| DC Current – Measure | (0 to 200) mA | 0.048 % + 12 µA | NI4060 DAQ card |
| AC Voltage – Measure | (0 to 200) mV (200 to 500) mV 500 mV to 1 V (1 to 2) V (2 to 5) V (5 to 10) V (10 to 250) V | 0.068 % + 0.040 mV 0.068 % + 0.068 mV 0.068 % + 0.11 mV 0.068 % + 0.21 mV 0.068 % + 0.51 mV 0.13 % + 1.1 mV 0.72 % + 790 mV | NI6111E DAQ card NI4060 DAQ card |

II. Mechanical

| Parameter/Equipment | Range | CMC ² (±) | Comments |
|-----------------------------|--|---|---|
| Dynamic Force | (0 to 10 000) lbf | 1 % of full scale | Strain gauge, load cell reference |
| Vibration General Purpose – | (5 to 9) Hz (10 to 99) Hz (100 to 1999) Hz (2000 to 10 000) Hz (11 000 to 15 000) Hz | 2 % reading (rdg) 1.5 % rdg 1 % rdg 2.5 % rdg 7 % rdg | PCB quartz acceleration reference, back to back comparison method |
| Portable Shaker Table | (79.6 to 159.2) Hz | 1.4 % rdg | Surface mounted quartz reference |
| Low Frequency | (0.5 to 99) Hz (1 to 30) Hz (30.01 to 199) Hz (200 to 1000) Hz | 1.8 % rdg 1 % rdg 1.5 % rdg 3 % rdg | PCB quartz acceleration reference, back to back comparison method |
| Impulse Force | (0 to 5000) lb (0 to 1000) Hz | 3.8 % rdg | PCB quartz reference accelerometer |

¹ This laboratory offers commercial calibration service.

² Calibration and Measurement Capability (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. Calibration and Measurement Capabilities represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

³ CMCs are expressed as either a specific value that covers the full range or as a fraction of the reading plus a fixed floor specification.