SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017
& ANSI/NCSL Z540-1-1994 & ANSI/NCSL Z540.3-2006

PCB PIEZOTRONICS OF NORTH CAROLINA, INC. DBA ENDEVCO
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CALIBRATION

Valid To: February 28, 2026 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 calibrations[1, 6]:

I. Electrical – DC/Low Frequency

| Parameter/Equipment | Range | CMC[2, 3, 5] (±) | Comments |
|---|---|---|---|
| DC Voltage – Measure | 100 V<br>10 V<br>5 V<br>2 V<br>1 V<br>500 mV<br>200 mV<br>100 mV | 0.082 %<br>0.064 %<br>0.066 %<br>0.065 %<br>0.067 %<br>0.073 %<br>0.081 %<br>0.099 % | Data acquisition card & voltage divider |
| DC Current – Measure | (0.5 to 100) mA | 1.3 % | Data acquisition card & standard resistor |
| AC Voltage – Measure | ± 10 V<br>± 5 V<br>± 2 V<br>± 1 V<br>± 500 mV<br>± 200 mV<br>± 100 mV | 0.064 %<br>0.065 %<br>0.065 %<br>0.068 %<br>0.071 %<br>0.081 %<br>0.087 % | Data acquisition card |



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II. Mechanical

| Parameter/Equipment | Range | CMC[2, 3, 4, 5] (±) | Comments |
|---|---|---|---|
| Dynamic Force (Compression/Tension) – Measure | (0 to 10 000) lbf | 1 % full scale (*FS*) | Reference load cell |
| Static Pressure | Up to 500 psia or psig<br>Up to 1000 psia or psig<br>Up to 2000 psia or psig<br>Up to 20 000 psia or psig | 0.018 % *FS*<br>0.025 % *FS*<br>0.018 % *FS*<br>0.018 % *FS* | Pressure controller/calibrator w/built in reference |
| Vibration General Purpose – Sensitivity Magnitude | | | |
| Accelerometers | (5 to 9) Hz<br>(10 to 99) Hz<br>(100 to 1999) Hz<br>(2000 to 10 000) Hz<br>(10 001 to 15 000) Hz<br>(15 001 to 20 000) Hz | 2 %<br>1.5 %<br>1 %<br>2.5 %<br>5 %<br>9 % | Reference accelerometer, back-to-back comparison method |
| Low Frequency – Sensors | (0.5 to 0.99) Hz<br>(1 to 30) Hz<br>(30.01 to 199) Hz<br>(200 to 1000) Hz | 1.8 %<br>1 %<br>1.5 %<br>3 % | Reference accelerometer with long stroke shaker, back-to-back comparison method |
| Vibration General Purpose – Acceleration Level | | | |
| Portable Shakers | (79.6 to 159.2) Hz | 1.5 % rdg | Accelerometer, back-to-back comparison method |

| Parameter/Equipment | Range | CMC[2, 3, 5] (±) | Comments |
|---|---|---|---|
| Vibration General Purpose – Sensitivity Phase – Measure | | | |
| Accelerometers | (≥5 to <10) Hz<br>≥10 Hz to <5 kHz<br>(≥5 to <11) kHz<br>(≥11 to <16) kHz<br>(≥16 to ≤20) kHz | 1°<br>0.75°<br>1.5°<br>2°<br>3° | Reference accelerometer, back-to-back comparison method |
| Low Frequency – Sensors | (≥0.5 to <10) Hz<br>(≥10 to <200) Hz<br>≥200 Hz to ≤1 kHz | 2.5°<br>0.75°<br>1.5° | Reference accelerometer with long stroke shaker, back-to-back comparison method |
| Impulse Force Sensitivity (Voltage/Force) – Measure | Up to 5000 lb<br>Up to 1000 Hz | 3.8 %<br>3.8 % | Quartz reference accelerometer |

III. Time & Frequency

| Parameter/Equipment | Range | CMC[2, 3, 5] (±) | Comments |
|---|---|---|---|
| Angular Rate – Measuring Equipment | Up to 3000 °/s | 0.3 % | Acutronic AC1120S |

[1] This laboratory offers commercial calibration service.

[2] Calibration and Measurement Capability Uncertainty (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. CMCs 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] In the statement of CMC, percentage (%) refers to percent of reading, unless otherwise noted.

[4] CMCs for Vibration parameters are for Sensitivity (accelerometer/sensor) or Acceleration level (shakers).

[5] The type of instrument or material being calibrated is defined by the parameter. This indicates the laboratory is capable of calibrating instruments that measure or generate the values in the ranges indicated for the listed measurement parameter.

[6] This scope meets A2LA's *P112 Flexible Scope Policy*.

# Accredited Laboratory

A2LA has accredited

## PCB PIEZOTRONICS OF NORTH CAROLINA, INC.
## DBA ENDEVCO

*Halifax, NC*

for technical competence in the field of

## Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and the requirements of ANSI/NCSL Z540.3-2006 and R205 – Specific Requirements: Calibration Laboratory Accreditation Program. 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 April 2017*).

Presented this 11th day of March 2024.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1862.02
Valid to February 28, 2026

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