~ Calibration Certificate ~

Model Number: 356A01 Serial Number: LW248201 (x axis) ICP® Triaxial Accelerometer Description: **PCB** Manufacturer: Back-to-Back Comparison Method: Calibration Data Sensitivity @ 100 Hz 4.98 mV/g **Output Bias** 10.0 VDC 4.3 % (0.508 mV/m/s^2) Transverse Sensitivity Discharge Time Constant 0.37 seconds Sensitivity Plot Temperature: 71 °F (22 °C) Relative Humidity: 44 % 3.0 2.0 dB 0.0 -2 0 100.0 1000.0 5000 0 Hz Data Points Dev. (%) Frequency (Hz) Dev. (%) Frequency (Hz) 10 0.1 300 0.4500 0.4 15 -0.31000 -0.10.6 30 50 0.0 3000 1.7 5000 REF. FREQ. 0.0 3.3 Mounting Surface: Tungsten Adapter Fastener. Adhesive Fixture Orientation: Inverted Vertical Acceleration Level (pk): 10.0g (9k J m/s²)

The acceleration level may be limited by shaker displacement at low frequencies. If the listed level cannot be obtained, the calibration system uses the following formula to set the vibration amplitude: Acceleration Level (g) = 0.008 x (freq)². The gravitational constant used for calculations by the calibration system is: 1 g = 9.80665 m/s². Condition of Unit As Found: As Left: New Unit, In Tolerance Notes 1. Calibration is NIST Traceable thru Project 683/287323 and PTB Traceable thru Project 17014. 2. This certificate shall not be reproduced, except in full, without written approval from PCB Piezotronics, Inc. 3. Calibration is performed in compliance with ISO 10012-1, ANSI Z540.3 and ISO 17025. 4. See Manufacturer's Specification Sheet for a detailed listing of performance specifications. 5. Measurement uncertainty (95% confidence level with coverage factor of 2) for frequency ranges tested during calibration are as follows: 5-9 Hz; +/- 2.0%, 10-99 Hz; +/- 1.5%, 100-1999 Hz; +/- 1.0%, 2-10 kHz; +/- 2.5%. Gary Oatis Date: 8/24/2018 Technician: VIBRATION DIVISION
Headquarters: 3425 Walden Avenue, Depew, NY 14043 ACCREDITED Calibration Performed at: 10869 Highway 903, Halifax, NC 27839

www.pcb.com

TEL: SSS-684-0013

~ Calibration Certificate ~

Model Number: 356A01 Serial Number: LW248201 (y axis) ICP® Triaxial Accelerometer Description: **PCB** Manufacturer: Back-to-Back Comparison AT401-3 Method: Calibration Data Sensitivity @ 100 Hz **Output Bias** 9.8 VDC 4.97 mV/g 2.4 % (0.507 mV/m/s^2) Transverse Sensitivity 0.39 seconds Discharge Time Constant Sensitivity Plot Temperature: 71 °F (22 °C) Relative Humidity: 44 % 2.0 1.0 dB 0.0 -1.0 -2.0 1000.0 8000.0 10.0 Hz Data Points Frequency (Hz) Frequency (Hz) Dev. (%) Frequency (Hz) Dev. (%) Dev. (%) 7000 300 0.3 -3.1 -0.210 8000 15 -0.7500 0.3 -2.8-0.31000 0.3 30 -0.1 3000 -0.750 0.0 5000 -2.4REF. FREQ. Mounting Surface Tungsten Adapter Fastener. Adhesive Fryture Orientation Vertical Acceleration Level (pg): 10.0g (98.1 m/s²)

The acceleration level may be limited by shaker displacement at low frequencies. If the listed level cannot be obtained, the calibration system uses the following formula to set the vibration amplitude. Acceleration Level (g) = 0.008 V (freq)² The gravitational constant used for calculations by the calibration system is; 1 g = 9.80665 m/s². Condition of Unit As Found: n/a As Left: New Unit, In Tolerance Notes 1. Calibration is NIST Traceable thru Project 683/287323 and PTB Traceable thru Project 17014. 2. This certificate shall not be reproduced, except in full, without written approval from PCB Piezotronics, Inc. 3. Calibration is performed in compliance with ISO 10012-1, ANSI Z540.3 and ISO 17025. 4. See Manufacturer's Specification Sheet for a detailed listing of performance specifications. 5. Measurement uncertainty (95% confidence level with coverage factor of 2) for frequency ranges tested during calibration are as follows: 5-9 Hz; +/- 2.0%, 10-99 Hz; +/- 1.5%, 100-1999 Hz; +/- 1.0%, 2-10 kHz; +/- 2.5%. Gary Oatis



VIBRATION DIVISION
Headquarters: 3425 Walden Avenue, Depew, NY 14043 Calibration Performed at: 10869 Highway 903, Halifax, NC 27839 FAX: 716-685-3886 www.pcb.com

~ Calibration Certificate ~

Model Number: 356A01 Serial Number: LW248201 (z axis) ICP® Triaxial Accelerometer Description: **PCB** Manufacturer: Back-to-Back Comparison AT401-3 Method: Calibration Data Sensitivity @ 100 Hz 4.85 mV/g **Output Bias** 9.9 VDC (0.494 mV/m/s^2) Transverse Sensitivity 4.0 % Discharge Time Constant 0.50 seconds Sensitivity Plot Temperature: 71 °F (22 °C) Relative Humidity: 44 % 3.0 2.0 1.0 dB 0.0 -1.0 -2.0 1000.0 8000.0 Hz Data Points Dev. (%) Frequency (Hz) Dev. (%) Frequency (Hz) Dev. (%) Frequency (Hz) -0.3300 0.6 7000 -3.3 10 8000 0.0 500 0.5 -3.015 0.1 1000 0.4 30 50 0.2 3000 -0.75000 -2.6 0.0REF. FREQ. Mounting Surface: Tungsten Adapter | Fastener: Adhesive | Fixture Orientation: Vertical Acceleration Level (pk)*: 10.0 g (98.1 m/s²) |

The acceleration level may be limited by shaker displacement at low frequencies. If the listed level cannot be obtained, the calibration system uses the following formula to set the vibration amplitude: Acceleration Level *The gravitational constant used for calculations by the calibrat Condition of Unit As Found: As Left: New Unit, In Tolerance Notes 1. Calibration is NIST Traceable thru Project 683/287323 and PTB Traceable thru Project 17014. 2. This certificate shall not be reproduced, except in full, without written approval from PCB Piezotronics, Inc. 3. Calibration is performed in compliance with ISO 10012-1, ANSI Z540.3 and ISO 17025. 4. See Manufacturer's Specification Sheet for a detailed listing of performance specifications. 5. Measurement uncertainty (95% confidence level with coverage factor of 2) for frequency ranges tested during calibration are as follows: 5-9 Hz; +/- 2.0%, 10-99 Hz; +/- 1.5%, 100-1999 Hz; +/- 1.0%, 2-10 kHz; +/- 2.5%. Gary Oatis Technician: Date: 8/23/2018



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