SOUTHWEST RESEARCH INSTITUTE **CALIBRATION LABORATORY MEMORANDUM**

October 4, 2004

To:

BRITT HILL DIV20 B189

From:

Walt Hill, Metrology Group Leader Institute Calibration Laboratory

Subject: Status of Calibration Supplier

Manufacturer/Model: PCB PIEZOTRONICS 113A21

Description: PRESSURE TRANSDUCER

Serial Number: 10543

Asset Number: 009019

Work Order Number: 444060771

Date Calibrated: September 20, 2004

Supplier: PCB PIEZOTRONICS, DEPEW NY - A2LA - 716 684-0001

Remarks:

(Supplier is on the Approved Suppliers List (ASL).

() Supplier is <u>not</u> on the Approved Suppliers List.

(Calibration is ISO 17025 accredited.

- () Calibration is not ISO 17025 accredited.
- () There is no known supplier to meet ISO 17025 accreditation at this time.

Please notify the Institute Calibration Laboratory, extension 5215, of any discrepancies with the item or calibration documentation.

Attachment(s)____

CALIBRATION CERTIFICATE

Date:

Station:

Temp:

Cert #:

Humidity: 34 %

Bv:

9/20/2004

180089

Chris Schultz, Cal. Tech.

71 deg F [22deg C]

907 Dyn. Med. Press. #1 (Test Procedure AT601-11)

Model: Serial #: 113A21 10543

Description:

Pressure Sensor

Type:

Sensitivity*:

: ICP

20.21 mV/PSI

2931 mV/MPa

Linearity*: Uncertainty**: 0.0% FS +/- 1.3 %

10.4 VDC

- * Zero based, least-squares straight line.
- ** Measurement uncertainty represented using a coverage factor of k=2 which provides a level of confidence of approximately 95 %.

Condition of Unit:

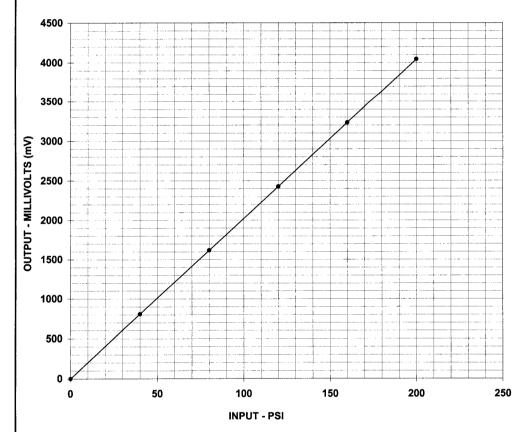
As Found:

Out of tolerance low sensitivity

As Left:

Bias:

Out of tolerance, customer accepts as is



Notes:

- 1 STATION #16
- 2 Calibration is traceable to NIST and is accredited to ISO 17025 and ANSI/NCSL Z540-1-1994.
- 3 NIST traceability through PCB control # CA334.
- 4 This certificate may not be reproduced, except in full, without written approval from PCB Piezotronics, Inc.

TEST DATA

INPUT	OUTPUT
(PSI)	(mV)
40.0	807
80.0	1618
120	2426
160	3232
200	4043

Calibration Data Card PRESSURE SENSOR

MODEL # 113A21 SERIAL # 10543

VOLTAGE SENSITIVITY 20 21 mV/psi 2931 mV/MPa

OUTPUT BIAS LEVEL: 10.4 VDC

Date: 09/20/04 By: Chris Schultz

For further information, please refer to the Calibration Certificate.



3425 Wallen Assi - Depev, NY 14043 888-684-0011





Tel: 716-684-0001 Fax: 716-684-0987 Email: sales@pcb.com 3425 Walden Avenue, Depew NY 14043

ISO 9001 CERTIFIED

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CALIBRATION CERTIFICATE

Model:

113A21

Serial #:

10543

Description:

Pressure Sensor

Type: Sensitivity*:

20.35 mV/PSI

2.952 mV/kPa

Linearity*: Uncertainty**: 0.3% FS +/- 1.3 %

Date:

9/20/2004

Ву:

Chris Schultz, Cal. Tech. Station: 907 Dyn. Med. Press. #1 (Test Procedure AT601-11)

Temp:

71 deg F [22deg C]

Humidity: 34 %

Cert #:

180104

Bias:

10.2 VDC

- * Zero based, least-squares straight line.
- ** Measurement uncertainty represented using a coverage factor of k=2 which provides a level of confidence of approximately 95 %.

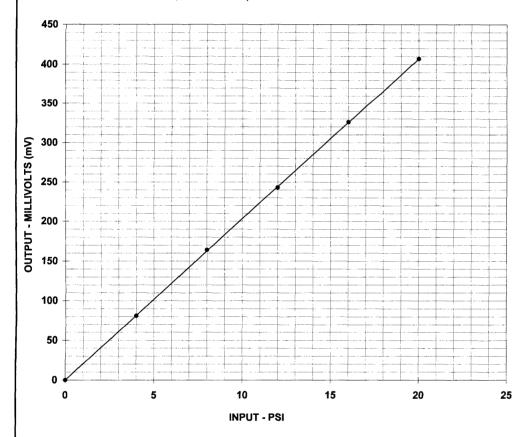
Condition of Unit:

As Found:

Out of tolerance low sensitivity

As Left:

Out of tolerance, customer accepts as is



TEST DATA

INPUT	OUTPUT
(PSI)	(mV)
4.00	81
8.00	164
12.0	243
16.0	326
20.0	407

Notes:

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Cert. No. 1862.01

Tel: 716-684-0001 Fax: 716-684-0987 Email: sales@pcb.com 3425 Walden Avenue, Depew NY 14043

ISO 9001 CERTIFIED

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