OT2155954

~ *Multi-Axis Load Cell Calibration Summary*~

Model Number: 260A11/FCS-DN

Customer:

Serial Number: 16936

P.O. Number:

Description: Charge® 3-Component Force Sensor

Manufacturer: PCB Piezotronics, Inc.

Method: Back to Back Comparison (Test Procedure AT501-3)

Calibration Data

Temperature: 73 °F = 23 °C Humidity: 44 %

		X	Y	Z
Input:	(lbs.)	225	225	225
	(N)	**1001**	**1001**	**1001**
Sensitivity:	(pC/lb)	34.19	34.53	15.54
	(pC/N)	**7.685**	**7.763**	**3.493**
Linearity:	(% FS)	0.4	0.3	0.1
Capacitance:	(pF)	18.6	18.6	18.4

Cross Talk Percentage

Cross Talk	%
X to Y	0.20
Y to X	2.34
X to Z	1.45
Y to Z	2.05
Z to X	1.71
Z to Y	0.19

Condition of Unit

As Found: In tolerance

As Left: In tolerance

Notes

1. Station #24 Sensivitity at 6744 lb is 17.30 pC/lb (30 kN is 3.89 pC/N)
2. This sensor is calbrated with a 081A70 beryllium copper mounting stud.
3. The sensor is preloaded to 5000 lbs. (22.24 kN) prior to calibration.
4. Calibration is N.I.S.T. Traceable thru Project # TA333
5. This certificate shall not be reproduced, except in full, without written approval from PCB Piezotronics, Inc.
6. Calibration is performed in compliance with ISO 9001, ISO 10012-1, ANSI/NCSL Z540-1-1994 and ISO 17025.
7. See Manufacturer's Specification Sheet for a detailed listing of performance specifications.
8. Measurement uncertainty (95% confidence level with a coverage factor of 2) is +/-1%.

Technician: Fran Coleman FC

Date: 1/19/2018

ACCREDITED
Cert. No. 1862.01

PCB PIEZOTRONICS INC
FORCE / TORQUE DIVISION
3425 Walden Avenue
Depew, New York 14043
TEL: 888-684-0013 FAX: 716-685-3886 www.pcb.com

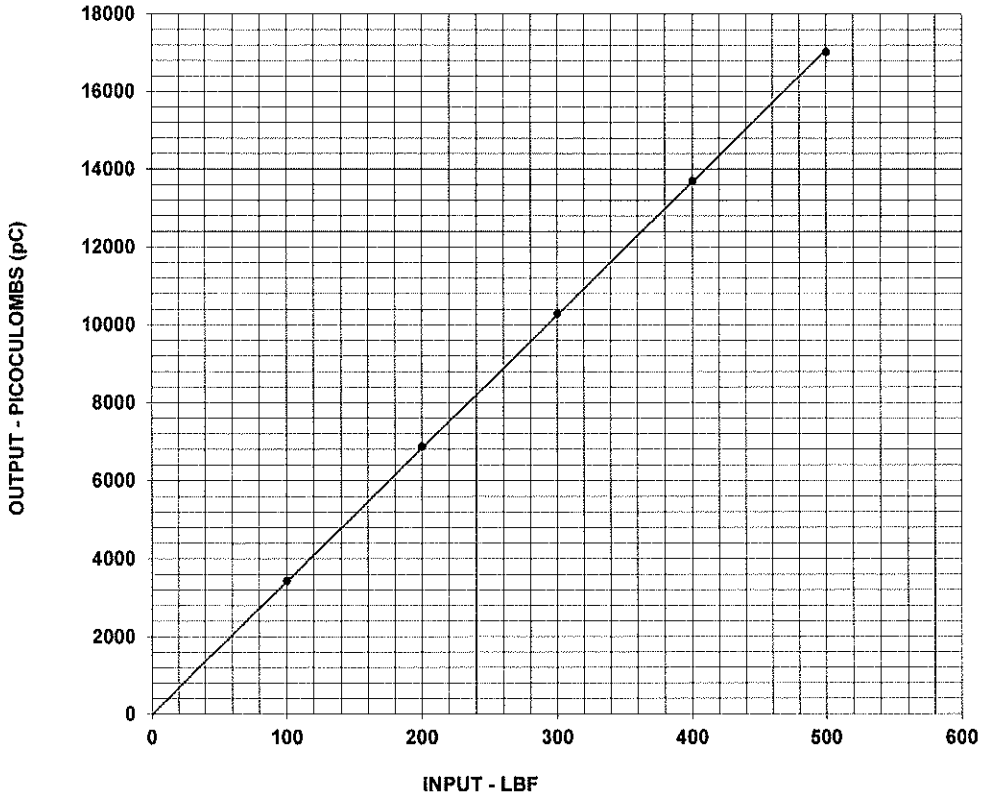
CALIBRATION CERTIFICATE

Model:	260A11/FCS-DN			**Date:**	1/19/2018
Serial #:	16936 X - AXIS			**By:**	Fran Coleman, Cal. Tech.
Description:	Force Sensor				
Type:	Charge	**Capacitance:**	18.6 pF	**Station:**	0-1,000 lb. Load Cell (Test Procedure AT501-3)
Sensitivity*:	34.19 pC/LBF			**Temp:**	73 deg F [23deg C]
	7.685 pC/N			**Humidity:**	44 %
Linearity*:	0.4% FS			**Cert #:**	685672
Uncertainty:**	+/- 1 %				

* 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: In tolerance
As Left: In tolerance



TEST DATA

INPUT (LBF)	OUTPUT (pC)
100	3437
200	6870
300	10296
400	13702
500	17029

Notes:

1 Station # 24
2 The sensor is preloaded to 5000 lbs. prior to calibration. The preload is applied to fixtures that do not shunt forces through the mounting stud.
3 Calibration is traceable to NIST and is accredited to ISO 17025 and ANSI/NCSL Z540.3.
4 NIST traceability through PCB control # TA333.
5 This certificate may not be reproduced, except in full, without written approval from PCB Piezotronics, Inc.

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CALIBRATION CERT #1862.01

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

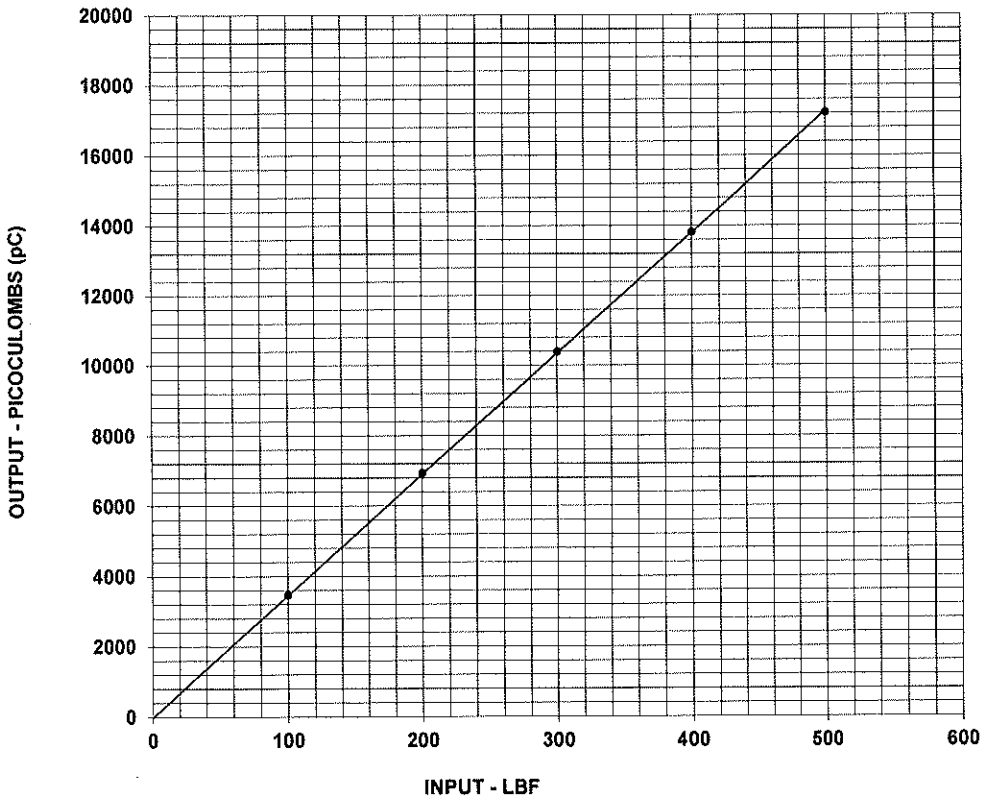
CALIBRATION CERTIFICATE

Model:	260A11/FCS-DN			**Date:**	1/19/2018
Serial #:	16936 Y - AXIS			**By:**	Fran Coleman, Cal. Tech.
Description:	Force Sensor				
Type:	Charge	**Capacitance:**	18.6 pF	**Station:**	0-1,000 lb. Load Cell (Test Procedure AT501-3)
Sensitivity*:	34.53 pC/LBF			**Temp:**	73 deg F [23deg C]
	7.763 pC/N			**Humidity:**	44 %
Linearity*:	0.3% FS			**Cert #:**	685674
Uncertainty:**	+/- 1 %				

* 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: In tolerance
As Left: In tolerance



TEST DATA

INPUT (LBF)	OUTPUT (pC)
100	3472
200	6941
300	10398
400	13817
500	17219

Notes:

1 Station # 24
2 The sensor is preloaded to 5000 lbs. prior to calibration. The preload is applied to fixtures that do not shunt forces through the mounting stud.
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CALIBRATION CERTIFICATE

Model:	260A11/FCS-DN			**Date:**	1/19/2018
Serial #:	16936 Z - AXIS			**By:**	Fran Coleman, Cal. Tech.
Description:	Force Sensor				
Type:	Charge	**Capacitance:**	18.4 pF	**Station:**	0-1,000 lb. Load Cell (Test Procedure AT501-3)
Sensitivity*:	15.54 pC/LBF			**Temp:**	73 deg F [23deg C]
	3.493 pC/N			**Humidity:**	44 %
Linearity*:	0.1% FS			**Cert #:**	685676
Uncertainty:**	+/- 1 %				

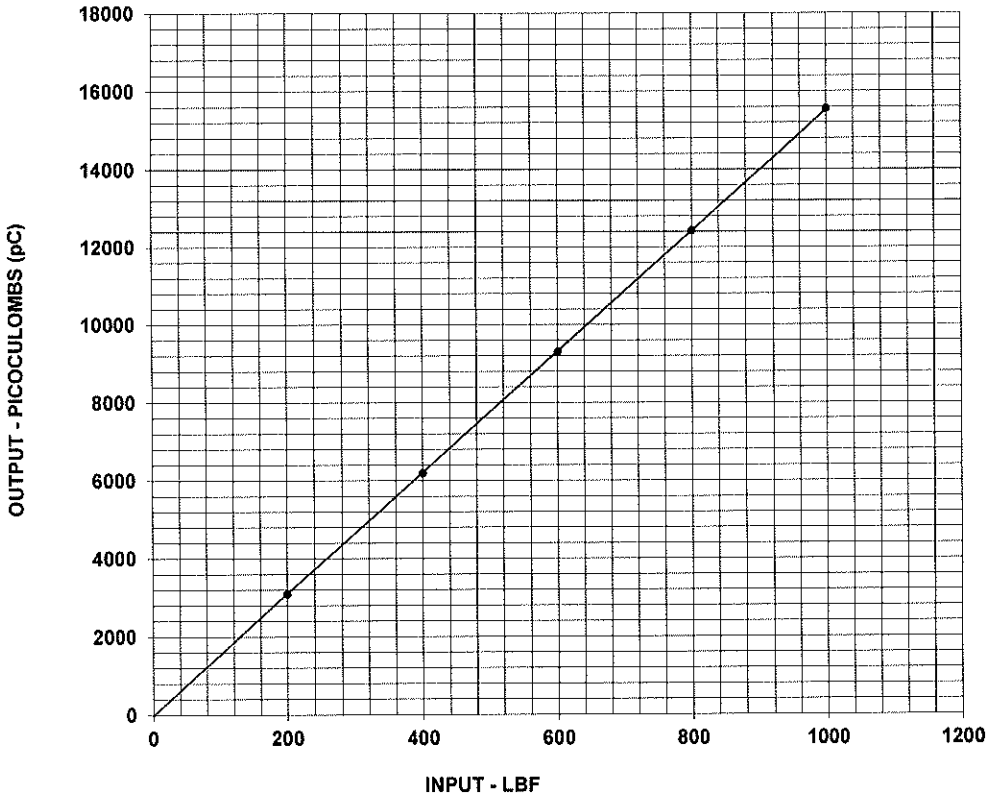
* Zero based, least-squares straight line.

** Measurement uncertainty represented using a coverage factor of k=2 which provides a level of confidence of approximately 95 %.

Condition of Unit:

As Found: In tolerance

As Left: In tolerance



TEST DATA

INPUT (LBF)	OUTPUT (pC)
200	3095
400	6192
600	9305
800	12430
1000	15560

Notes:

1 Station # 24 Sensitivity at 6744 lb is 17.30 pC/lb (30kN is 3.89 pC/N)

2 The sensor is preloaded to 5000 lbs. prior to calibration. The preload is applied to fixtures that do not shunt forces through the mounting stud.

3 Calibration is traceable to NIST and is accredited to ISO 17025 and ANSI/NCSL Z540.3.

4 NIST traceability through PCB control # TA333.

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