OT 2155953

~ *Multi-Axis Load Cell Calibration Summary*~

Model Number: 260A11/FCS-DN

Customer:

Serial Number: 16937

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)	34.70	34.61	15.74
	(pC/N)	**7.802**	**7.782**	**3.539**
Linearity:	(% FS)	0.1	0.1	0.2
Capacitance:	(pF)	18.5	18.7	18.6

Cross Talk Percentage

Cross Talk	%
X to Y	1.19
Y to X	1.42
X to Z	1.99
Y to Z	0.75
Z to X	0.91
Z to Y	1.35

Condition of Unit

As Found: In tolerance

As Left: In tolerance

Notes

1. Station #25 Sensivitity at 6744 lb is 17.48 pC/lb (30 kN is 3.93 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 # KE104
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: Ryan Roskwitalski RR

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

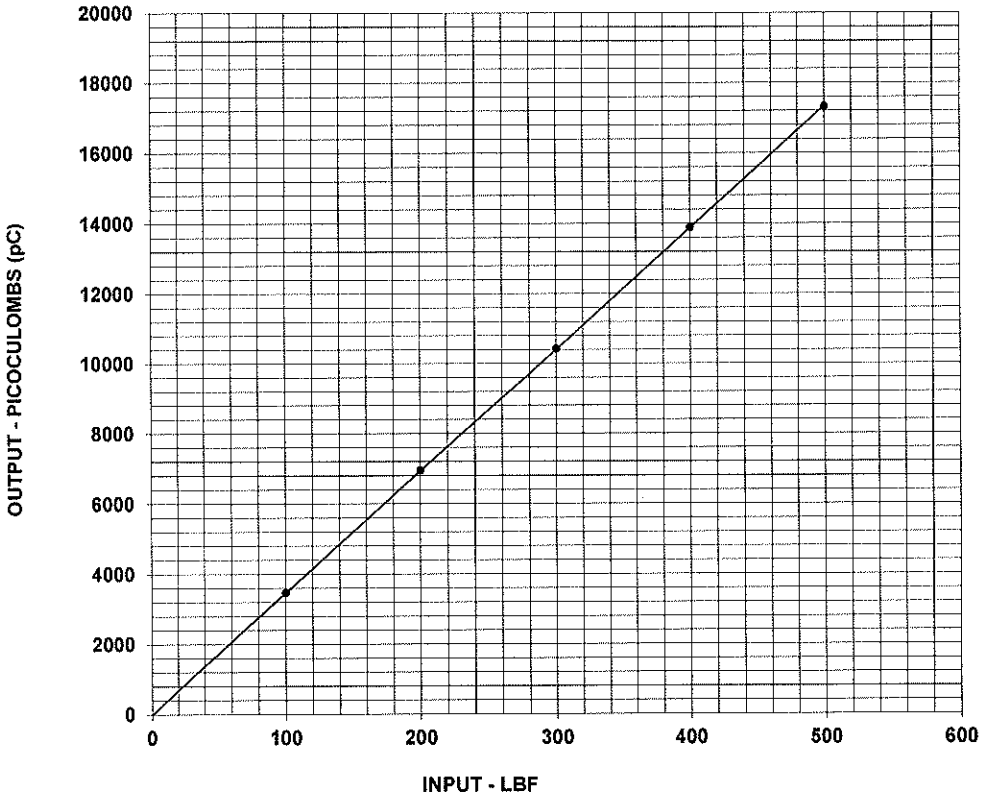
CALIBRATION CERTIFICATE

Model:	260A11/FCS-DN			**Date:**	1/19/2018
Serial #:	16937 X - Axis			**By:**	Ryan Roskwitalski, Cal. Tech. *RR*
Description:	Force Sensor			**Station:**	0-1000 lb Load Cell (Test Procedure AT-501-3)
Type:	Charge	**Capacitance:**	18.5 pF		
Sensitivity*:	34.70 pC/LBF			**Temp:**	73 deg F [23deg C]
	7.802 pC/N			**Humidity:**	44 %
Linearity*:	0.1% FS			**Cert #:**	685688
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	3471
200	6955
300	10431
400	13890
500	17326

Notes:

1 Station #25
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 # KE104.
5 This certificate may not be reproduced, except in full, without written approval from PCB Piezotronics, Inc.

ACCREDITED
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
Serial #: 16937 Y - Axis
Description: Force Sensor
Type: Charge
Capacitance: 18.7 pF

Date: 1/19/2018
By: Ryan Roskwitalski, Cal. Tech. RR
Station: 0-1000 lb Load Cell (Test Procedure AT-501-3)

Sensitivity*: 34.61 pC/LBF
7.782 pC/N

Temp: 73 deg F [23deg C]
Humidity: 44 %

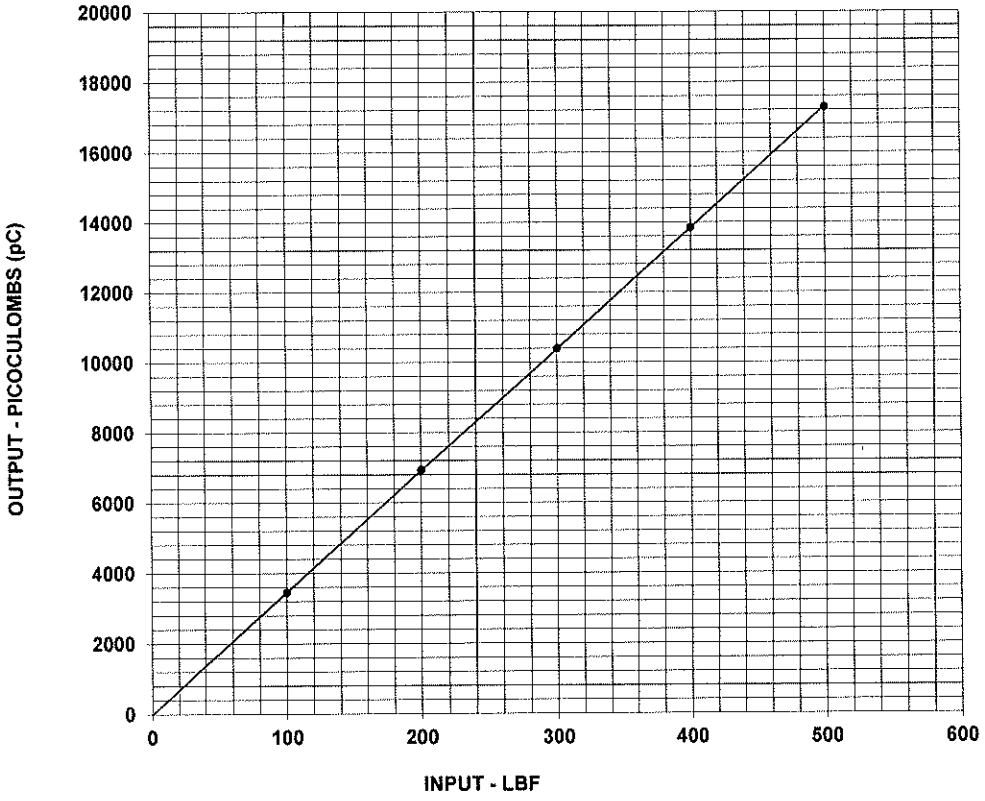
Linearity*: 0.1% FS
Uncertainty:** +/- 1 %

Cert #: 685694

* 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	3460
200	6938
300	10406
400	13851
500	17283

Notes:

1 Station# 25
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.
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CALIBRATION CERTIFICATE

Model: 260A11/FCS-DN
Serial #: 16937 Z - Axis
Description: Force Sensor
Type: Charge
Capacitance: 18.6 pF

Date: 1/19/2018
By: Ryan Roskwitalski, Cal. Tech. RR
Station: 0-1000 lb Load Cell (Test Procedure AT-501-3)

Sensitivity*: 15.74 pC/LBF
3.539 pC/N

Temp: 73 deg F [23deg C]
Humidity: 44 %

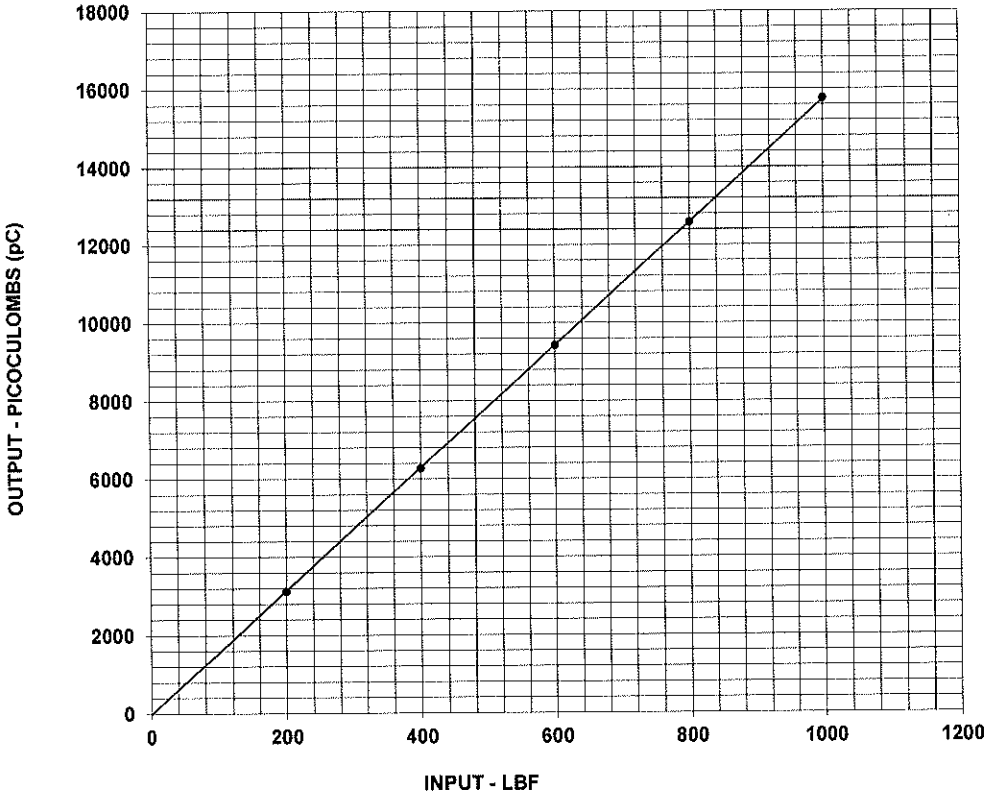
Linearity*: 0.2% FS
Uncertainty:** +/- 1 %

Cert #: 685696

* 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	3123
400	6273
600	9425
800	12590
1000	15766

Notes:

1 Station# 25 Sensitivity at 6744lb is 17.48pC/lb (30kN is 3.93pC/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 # KE104.
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