

Model Number

209C01

## ICP® FORCE SENSOR

Revision: H

ECN #: 25168

**Performance**

	ENGLISH	SI	
Sensitivity (± 15 %)	2200 mV/lb	494,604 mV/kN	
Measurement Range (Compression)	2.2 lb	0.00979 kN	
Maximum Static Force (Compression)	11 lb	0.0489 kN	
Broadband Resolution (1 to 10,000 Hz)	0.00002 lb-rms	0.00009 N-rms	[1]
Low Frequency Response (-5 %)	0.5 Hz	0.5 Hz	[2]
Upper Frequency Limit	100 kHz	100 kHz	[3]

**Environmental**

Temperature Range	-65 to +250 °F	-54 to +121 °C	
Temperature Coefficient of Sensitivity	≤ 0.05 %/°F	≤ 0.09 %/°C	

**Electrical**

Discharge Time Constant (at room temp)	≥ 1 sec	≥ 1 sec	
Excitation Voltage	18 to 30 VDC	18 to 30 VDC	
Constant Current Excitation	2 to 20 mA	2 to 20 mA	
Output Impedance	≤ 100 ohm	≤ 100 ohm	
Output Bias Voltage	8 to 12 VDC	8 to 12 VDC	
Spectral Noise (1 Hz)	0.0000044 lb/√Hz	0.0000197 N/√Hz	[1]
Spectral Noise (10 Hz)	0.0000005 lb/√Hz	0.0000021 N/√Hz	[1]
Spectral Noise (100 Hz)	0.0000001 lb/√Hz	0.0000006 N/√Hz	[1]
Spectral Noise (1 kHz)	0.0000000 lb/√Hz	0.00000002 N/√Hz	[1]
Output Polarity (Compression)	Positive	Positive	

**Physical**

Stiffness	2 lb/μin	0.35 kN/μm	[1]
Size (Hex x Height)	0.375 in x 0.610 in	9.53 mm x 15.49 mm	
Weight	0.28 oz	8 gm	
Housing Material	Stainless Steel	Stainless Steel	
Sealing	Hermetic	Hermetic	
Electrical Connector	10-32 Coaxial Jack	10-32 Coaxial Jack	
Electrical Connection Position	Side	Side	
Mounting Thread	10-32 Female	No Metric Equivalent	
Mounting Torque (Recommended)	15 to 20	169 to 226	

**OPTIONAL VERSIONS**

Optional versions have identical specifications and accessories as listed for the standard model except where noted below. More than one option may be used.

**M** - Metric Mount

Supplied Accessory : Model M081A05 Mounting Stud 10-32 to M6 x 0.75 x 0.27" long BeCu (H900), no shoulder (1)

**N** - Negative Output Polarity  
Output Polarity (Compression)

Negative

**W** - Water Resistant Cable  
Electrical Connector  
Electrical Connection Position

Sealed Cable  
Side**NOTES:**

- [1] Typical.  
[2] Calculated from discharge time constant.  
[3] Estimated using rigid body dynamics calculations.  
[4] See PCB Declaration of Conformance PS023 for details.

**SUPPLIED ACCESSORIES:**

Model 081A05 Mounting stud, 10-32 to 10-32 x 0.27" long, BeCu (H900), no shoulder (1)  
Model 084A38 Thermal boot (for Series 209) (1)

Entered: BLS	Engineer: DMB	Sales: PDM	Approved: MJL	Spec Number:
Date: 10/20/06	Date: 10/20/06	Date: 10/23/06	Date: 10-20-06	6358



All specifications are at room temperature unless otherwise specified.  
In the interest of constant product improvement, we reserve the right to change specifications without notice.

ICP® is a registered trademark of PCB Group, Inc.

**PCB PIEZOTRONICS**  
FORCE / TORQUE DIVISION  
3425 Walden Avenue, Depew, NY 14043

Phone: 716-684-0001  
Fax: 716-684-8877  
E-Mail: force@pcb.com