

SERIES 208C

GENERAL PURPOSE ICP® QUARTZ FORCE SENSORS



Sensitivities from 1 mV/lb to 500 mV/lb

Factory preloaded for both tension and compression measurement

High resolution with low noise floor

Includes impact cap, calibration certificate, UNF & metric mounting studs.

TYPICAL APPLICATIONS

Validation of dynamic force in repetitive process operations

Drop testing & integrated into force plates

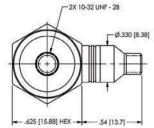
Automation & machine tool processes

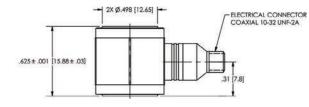
Material sample testing equipment

General purpose force sensors are constructed with stainless steel housings and piezoelectric quartz sensing elements, which are "sandwiched" between upper and lower base plates. The sensing elements are preloaded in compression to a specific value and welded into an assembly. This construction results in an extremely stiff sensor with an upper frequency limit of 36000 Hz. Each unit is factory calibrated for dynamic force measurement applications; compression, tension, and impact.

PCB[®] Platinum models (208C01-208C05) referenced here are internally threaded and hermetically sealed with side mounted connectors. The internal threads can accommodate stud mounting and/or threaded fasteners. Note that tensile measurement is limited by internal, factory preload, the number of threads engaged, and tensile yield strength of associated fasteners. Five measurement ranges are offered with full-scale measurement ranges from 10 lb (45 N) to 5000 lb (22k N) compression and up to 500 lb (2200 N) tension. For higher measurement ranges, consider other PCB designs such as: Force Ring, Force Link, or Impact-style sensors.

Model Number	🚺 208C01		108C02		🐌 208C03		🐌 208C04		😻 208C05		
	English	SI	English	SI	English	SI	English	SI	English	SI	
Performance											
Sensitivity (±15%)	500 mV/lb	112410 mV/kN	50 mV/lb	11241 mV/kN	10 mV/lb	2248 mV/kN	5 mV/lb	1124 mV/kN	1 mV/lb	224.82 mV/kN	
Measurement Range (Compression)	10 lb	0.0445 kN	100 lb	0.445 kN	500 lb	2.224 kN	1000 lb	4.448 kN	5000 lb	22.24 kN	
Measurement Range (Tension)	10 lb	0.0445 kN	100 lb	0.445 kN	500 lb	2.224 kN	500 lb	2.224 kN	500 lb	2.224 kN	
Maximum Static Force (Compression)	60 lb	0.27 kN	600 lb	2.669 kN	3000 lb	13.50 kN	6000 lb	26.69 kN	8000 lb	35.59 kN	
Maximum Static Force (Tension)	60 lb	0.27 kN	500 lb	2.224 kN	500 lb	2.224 kN	500 lb	2.224 kN	500 lb	2.224 kN	
Broadband Resolution (1 to 10000 Hz)	0.0001 Ib-rms	0.0005 N-rms	0.001 Ib-rms	0.004 N-rms	0.005 Ib-rms	0.02 N-rms	0.01 Ib-rms	0.0445 N-rms	0.05 Ib-rms	0.222 N-rms	
Upper Frequency Limit		36000 Hz									
Non-Linearity		≤ 1 % FS									
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	≥ 50	sec	≥ 500 sec ≥ 2000 sec								
Excitation Voltage	18 to 3	18 to 30 VDC 20 to 30 VDC									
Constant Current Excitation		2 to 20 mA									
Output Impedance		≤ 100 Ohm									
Output Bias Voltage	8 to 12	8 to 12 VDC 8 to 14 VDC									
Spectral Noise (1Hz)	0.0000126 Ib/√Hz	0.000056 N/√Hz	0.000135 Ib/√Hz	0.000603 N/√Hz	0.000211 Ib/√Hz	0.000942 N/√Hz	0.000798 Ib/√Hz	0.00356 N/√Hz	0.00168 Ib/√Hz	0.00750 N/√Hz	
Spectral Noise (10Hz)	0.00000424 Ib/√Hz	0.0000189 N√Hz	0.0000276 Ib/√Hz	0.000123 N√Hz	0.000109 Ib/√Hz	0.000488 N√Hz	0.000286 Ib/√Hz	0.00128 N√Hz	0.00112 Ib/√Hz	0.00501 N√Hz	
Spectral Noise (100Hz)	0.00000149 Ib/√Hz	0.0000067 N/√Hz	0.0000096 Ib/√Hz	0.000043 N/√Hz	0.000039 Ib/√Hz	0.000173 N/√Hz	0.000086 Ib/√Hz	0.000384 N/√Hz	0.000459 Ib/√Hz	0.00205 N/√Hz	
Spectral Noise (1000Hz)	0.00000052 Ib/√Hz	0.0000023 N/√Hz	0.0000021 Ib/√Hz	0.0000095 N/√Hz	0.0000086 Ib/√Hz	0.000039 N/√Hz	0.000028 Ib/√Hz	0.000123 N/√Hz	0.000133 Ib/√Hz	0.000592 N/√Hz	
Output Polarity, Compression		Positive									
Physical											
Stiffness - typical		6 lb/µin (1.05 kN/µm)									
Weight		0.80 oz (22.7 gm)									
Housing / Connector / Mount		Hermetic stainless steel housing, side mounted 10-32 coaxial jack, 10-32 internal mounting thread									
Supplied Accessories											
084A03 Impact Cap, Qty 1 080A81 Thread Locker, Qty 1 081B05 Mounting Stud, BeCu (10-32 to 10- M081A62 Mounting stud, BeCu (10-32 to N Calibration per FCS-46, Full Scale Range in	16 x 1), Qty 2	mpression on	ly - certificate	provided.							







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