



SENSORS FOR TORQUE, LOAD, STRAIN & DYNAMIC FORCE

PCB Piezotronics, Inc. is Uniquely positioned in the sensor industry to satisfy a wide range of research, test, measurement, monitoring and control applications.

PCB Piezotronics, Inc. Specializes in the development, application and support of piezoelectric & strain gauge force sensors, load cells and torque sensors. Strain gage technology is utilized for Load cells and Torque sensors, while Piezoelectric quartz sensing technology forms the sensing principle for Strain and Dynamic force sensors. PCB provides a wide range of sensors to address the needs of those involved with the measurement of Load, Torque, Strain and Dynamic Force.

Structural Solutions Private Limited exclusively represents PCB Piezotronics, Inc., U.S.A in India. **Structural Solutions Private Limited** is a professional engineering company engaged in offering high end technology intensive products and system solutions to Indian industry for Torque, Load, Strain & Dynamic Force Measurements



■ TORQUE SENSORS ■

Torque sensors fall into two categories of measurement: Reaction torque and Rotational torque.

Reaction torque sensors are rigid structures with no moving parts and are typically mounted in a fixed position. Their applications include Torsional testing machines, Brake testing, Bearing friction studies, Dynamometer testing and Viscosity&Lubrication studies. Rotary torque sensors employ a freely rotating shaft within a fixed housing. Applications include Electric motor testing, Automotive engine testing, Dynamometer testing, Transmission testing and Gearbox testing.

■ Reaction torque sensors

- Capacities 0.56N-m to 56.5k N-m
- Sensitivity : 2mV/V
- Temperature range : -54° to +93° C
- Flange mount both ends
- High torsional stiffness
- High accuracy
- Short overall length



Series 2303

■ Rotary transformer torque sensors

Shaft end

- Capacities 0.35N-m to 11.3k N-m
- Sensitivity : 2mV/V, 2.5mV/V
- Temperature range : -45° to +77° C
- Series 4100 sensors have integral shunt calibration network and are temperature compensated
- Series 4200 features high accuracy, high speeds, high signal to noise ratio, high torsional stiffness



Series 4206

Flange end

- Capacities 5.6N-m to 13.5k N-m
- Sensitivity : 2mV/V
- Temperature range : -45° to +77° C
- High signal to noise ratio
- High torsional stiffness
- Upto 300% overload protection



Series 4149

Torkdisc

- Capacities 226 to 25.4k N-m
- Temperature range: -29° to 85° C
- Compact, Low weight, High torsional stiffness
- Low sensitivity to axial and thrust bending moments
- 16-bit digital telemetry
- Immune to RF interference
- Robust construction



Series 5302C

■ LOAD CELLS ■

Load cells address force measurement, monitoring and control requirements in laboratory testing, industrial, and process control applications.

Load cells are classified into General purpose and Fatigue rated load cells. A few Load cell applications include Component testing, Weighing, Quality control, Material testing, Torque arm, Life cycle testing, Structural testing, Calibration standards, Hydraulic actuators, Production monitoring.

■ General purpose load cells

- Capacities 110N to 89k N
- Sensitivity : 2mV/V, 3mV/V
- Temperature range : -54° to +93° C
- Canister-style design
- Low deflection, High accuracy
- Temperature, Barometric pressure compensated



Series 1107

Series 1102

■ General purpose Low profile load cells

- Capacities 900N to 900k N
- Sensitivity : 2mV/V, 3mV/V
- Temperature range : -54° to +93° C
- Optional mounting base available
- Low deflection, High accuracy
- Temperature compensated



Series 1204

■ General purpose Rod-style load cells

- Capacities 4450N to 220k N
- Sensitivity : 2mv/V
- Temperature range : -54° to +93° C
- Small diameter with male/female threads



Series 1303

■ General purpose S-beam load cells

- Capacities 445N to 44.5k N
- Sensitivity : 2mV/V
- Temperature range : -54° to +93° C
- Low deflection, Temperature compensated



Series 1539

■ Fatigue rated load cells

- Capacities 1100N to 450k N
- Sensitivity : 1mV/V, 1.5 mV/V
- Temperature range : -54° to +93° C
- Low profile design, Low deflection, High accuracy



Series 1403

■ Hollow compression load cells

- Capacities 225N to 220kN
- Sensitivity : 2mV/V
- Temperature range : -54° to +93° C
- Calibrated for compression only
- Used for applications requiring a load structure to pass directly through load structure.



Series 1345

■ Load washers

- Capacities 13.3kN to 350kN
- Sensitivity : 2mV/V
- Temperature range : -50° to +93° C
- Calibrated for compression only
- Compact in size
- Designed to determine the clamp force vs. torque on fasteners.



Series 1355

■ Load buttons

- Capacities 45N to 220kN
- Sensitivity : 2mV/V
- Temperature range : -50° to +93° C
- Calibrated for compression only
- Low cost, compact size



Series 1348

■ Multi component Fatigue rated load cells

- Torque capacities from 55 to 565 N-m
- Thrust capacities from 2225N to 44.5k N
- Sensitivity : 1, 1.5mV/V
- Temperature range : -54° to +93° C
- Measures torque and thrust simultaneously
- Low cross talk



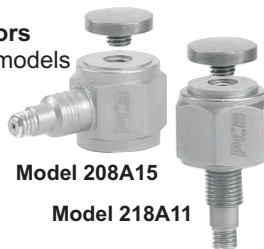
Series 6104

■ DYNAMIC FORCE AND STRAIN SENSORS ■

Quartz, Piezoelectric force sensors are the devices which possess exceptional characteristics for the measurement of dynamic force events. Applications include Balancing, Crash testing, Crimping, Crushing, Drop testing, Fatigue testing, Materials testing, Penetration testing, Press monitoring, Tensile testing and Vibration testing.

■ General Purpose Quartz Force Sensors

- Available in ICP and Charge Output models
- Compression range : 45N-22kN
- Tension range : 45- 2200 N
- Sensitivity : 0.22-110 mV/N, 4pC/N
- Temperature range : -184° - +204° C
- Time constant : 50 - ≥ 2000 sec
- Compact, Low deflection



Model 208A15

Model 218A11

■ Quartz force rings

- Available in ICP and Charge Output models
- Compression range : 45N - 450kN
- Temperature range : -73° - +204° C
- Sensitivity : 0.011-110 mV/N, 3.8 - 4pC/N
- Time constant : 50 - ≥ 2000 sec
- Low weight, Low deflection



Model 203B

Model 201A75

■ Quartz force links

- Available in ICP and Charge Output models
- Compression range : 45N - 220kN
- Tension range : 45N - 130kN
- Sensitivity : 0.022-110 mV/N, 3.8 - 4pC/N
- Temperature range : -73° - +204° C
- Time constant : 50 - ≥ 2000 sec
- Low deflection



Model 224C

■ 3-component quartz force sensors

- Available in ICP and Charge Output models
- Simultaneous measurement in Fx , Fy ,Fz axis
- Compression range(z axis) : 4500N - 45kN
- Shear range(x,y axis) : 2200N - 18kN
- Sensitivity : Z axis 0.06 - 0.56 mV/N, 3.4pC/N
X, Y axis 0.28-2.2mV/N, 7.2mV/N
- Temperature range : -73° - +177° C
- Time constant : ≥ 50 sec



Model 260A01



Model 260A13

■ Quartz Impact

- Available in ICP and Charge Output models
- Compression range : 45N - 220kN
- Temperature range : -184° - +204° C
- Sensitivity : 0.022-110 mV/N, 4pC/N
- Time constant : 50 - ≥ 2000 sec
- High frequency response, High overload



Model 200C50

■ Miniature

- Compression range : 10N
- Tension range : 4.5N
- Sensitivity : 500 mV/N
- Temperature range : -54° - +121° C
- Time constant : 1 - ≥ 10 sec



Model 209C11

■ Penetration

- Compression range : 450N-22kN
- Tension range : 2200 N
- Sensitivity : 0.22-11 mV/N
- Temperature range : -54° - +121° C
- Time constant : 200 - ≥ 2000 sec



Series 208

■ ICP strain

- Amplitude range : 50-300 pk με
- Sensitivity : 10-100 mV/με
- Operating temperature: +21° C
- Time constant : ≥ 150 sec
- Resolution 0.0002 με
- Rugged, compact size



Series M240

Complete range of Torque, Load, Strain & Dynamic Force sensors, Cables & accessories will be offered in Rupees or in Foreign Exchange at competitive prices by **Structural Solutions Private Limited**

➔ **For further product & application details please contact:**

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