INSTRUMENTATION FOR HIGH TEMPERATURE ENVIRONMENTS
IMI Sensors is a global supplier of high temperature instrumentation. Often used in demanding industrial environments, these accelerometers and pressure sensors provide critical data that prevents failures and reduces downtime.

Our high temperature accelerometers with internal electronics (ICP®) have the best temperature capability of any design on the market today. The high temperature ICP® accelerometers are capable of withstanding continuous temperatures of 325 °F (162 °C). For applications that exceed those temperatures, IMI Sensors has a variety of charge mode accelerometers with integral ICP® amplifier that can operate at 900 °F (482 °C) and charge mode accelerometers without integral ICP® amplifier that can operate at 1200 °F (649 °C).

- Choice of charge, ICP®, and charge with integral ICP® amplifier sensors.
- Variety of sensitivities to accommodate a wide range of applications
- Broad bandwidth, high shock survivability, wide operating temperature range, high resolution, and large dynamic range options

- Commissioning of Nuclear Power Plants
- Machinery Protection in High Temperature Environments
- Power Generation Turbine Condition Monitoring
Our charge mode pressure sensors are designed to detect and measure dynamic pressure phenomena in environments with a continuous temperature up to 1200 °F (649 °C).

Many of the sensors (Models EX600B1X, 357A63, 357A100, EX356A73, EX357A9X, EX357E9X, EX611AX0, 176MXX and 176AXX) feature a UHT-12™ element. The new UHT-12™ crystal technology features:

- Proprietary crystal technology sealed in a hermetic package provides long-term reliability.
- No pyroelectric output provides accurate low-frequency measurements.
- Reduced thermal noise spikes eliminate false alarms during monitoring.
- More consistent sensitivity over a wide temperature change provides greater accuracy.
- Shear mode crystals prevent base strain and transverse measurement errors.

Our charge amplifiers are designed to convert the high impedance signal of a charge accelerometer or pressure sensor without integral signal conditioning circuits to a low-impedance voltage signal for transmission and data collection. Differential charge amplifiers should be paired with charge accelerometers and pressure sensors with a differential output (measurement output as a plus and minus signal) to convert the differential output into a single-ended output (measurement output as a signal and ground).
HIGH TEMPERATURE ACCELEROMETERS

HIGH TEMPERATURE ICP® ACCELEROMETERS
(325 °F/162 °C)
- Sensitivity: 100 mV/g
- Measurement Range: ±50 g pk
- Variety of connector and integral cable options with top or side exit versions
- Ideal for predictive maintenance on steel hot rolling machines

HIGH TEMPERATURE CHARGE ACCELEROMETERS
(500 °F/260 °C TO 550 °F/288 °C)
- Sensitivity: 20 pC/g (357B81), 50pC/g (357B82) or 100 pC/g (357B53, 357B54, 357B83 and EX615A42)
- Measurement Range: ±150 g (357B53 and 357B54), 200 g (EX615A42) 500 g (357B83), 1000 g (357B82) or 2000 g (357B81) pk
- Hermetically welded construction
- Ideal for machinery protection in high temperature environments

VERY HIGH TEMPERATURE CHARGE ACCELEROMETERS WITH INTEGRAL ICP® AMPLIFIER
(900 °F/482 °C)
- Sensitivity: 10 mV/g (EX600B14) or 100 mV/g (EX600B13)
- Measurement Range: ±50 g (EX600B13) or 500 g (EX600B14) pk
- One piece construction with charge sensor, integral charge amplifier and integral hardline cable
- Ideal for rotating machinery in very high temperature environments
VERY HIGH TEMPERATURE CHARGE ACCELEROMETERS (900 °F/482 °C TO 1000 °F/538 °C)

- Sensitivity: 0.53 pC/g (357A63), 3.2 pC/g (EX356A73), 3.5 pC/g (357B69), 5.0 pC/g (357A100), 10 pC/g (357C71, EX357C71 and 357B61), 50 pC/g (357C72, EX357C72 and EX619A11) or 100 pC/g (357C73)
- Measurement Range: ±200 g (357A100), ±300 g (357C73), ±500 g (EX356A73, 357C72, EX357C72, 357B69 and EX619A11), ±1000 g (357C71, EX357C71 and 357B61) or ±5000 g (357A63) pk
- Hermetically-sealed, nickel alloy housing
- Ideal for turbine bearing health monitoring

EXTREME TEMPERATURE CHARGE ACCELEROMETERS (1200 °F/649 °C)

- Sensitivity: 1.15 pC/g (357A64 and 357M168), 2.3 pC/g (EX357E92 and EX357E93), 3.3 pC/g (EX357A94 and EX357A95), 5 pC/g (EX357E90 and EX357E91) or 10 pC/g (EX611A00)
- Measurement Range: ±200 g (EX611A00) or 1000 g (357A64, EX357A9X, EX357E9X and 357M168) pk
- Output: Single-ended (357A64, EX357E9X and 357M168), differential (357A9X and EX611A00)
- Ideal for monitoring gas turbines
HIGH TEMPERATURE PRESSURE SENSORS

HIGH TEMPERATURE CHARGE PRESSURE SENSORS (500 °F/260 °C TO 662 °F/350 °C)

- Sensitivity: 15.5 pC/psi (176A04) or 1,100 pC/psi (EX171M01)
- Measurement Range: 10 psi pk (EX171M01) or 300 psi (176A04)
- Stainless steel housing with 2-pin MIL-C-5015 (EX171M01) or 7/16-27 2-pin (176A04) connector
- Ideal for close-coupled combustion instability monitoring

VERY HIGH TEMPERATURE CHARGE PRESSURE SENSORS (968 °F/520 °C TO 986 °F/530 °C)

- Sensitivity: 17 pC/psi (176M03, 176M07, 176M09 and 176M12) or 52 pC/psi (176A05)
- Measurement Range: 20 psi (176M03, 176M07, 176M09 and 176M12) or 75 psi (176A05) pk
- High frequency capabilities and differential output
- Ideal for on-turbine combustion instability monitoring

EXTREME TEMPERATURE CHARGE PRESSURE SENSORS (1200 °F/649 °C)

- Sensitivity: 6 pC/psi (176A02) or 16 pC/psi (176A03)
- Measurement Range: 290 psi (176A02) or 725 psi (176A02) pk
- All-welded super alloy housing
- Ideal for on-turbine combustion instability monitoring
**CHARGE AMPLIFIERS**

**DIFFERENTIAL CHARGE AMPLIFIER**

MODEL 422M182

- Sensitivity: (Charge Conversion)(±5%) 4 mV/pC
- Output Voltage: (at specified measurement range) ±5 V pk
- Temperature Range: (Operating) -60 to +185 °F (-51 to +85 °C)
- Housing Material: Aluminum

**IN-LINE CHARGE AMPLIFIER**

MODELS 422E35, 422E36 & 422E55/D

- Sensitivity: 0.5 mV/pC (422E55/D), 1 mV/pC (422E35) or 10 mV/pC (422E36)
- Voltage Output: ±2.5 V pk
- Temperature Range (Operating): -65 to +250 °F
- Stainless steel housing with input and output connectors

**DIFFERENTIAL CHARGE AMPLIFIER**

MODELS 421A3X & EX682A40

- Sensitivity: Configurable (421A3X) or 10 mV/pC (EX682A40)
- Voltage Output: ±5 V pk (421A3X) or ±2.5 V pk (EX682A40)
- Temperature Range (Operating): -22 to +185 °F (421A3X) or -40 to +176 °F (EX682A40)
- Housing with screw terminal input and output connectors

**IN-LINE CHARGE AMPLIFIER FOR RADIATION HARDENED SENSORS**

MODELS 422E65/A & 422E66/A

- Sensitivity: 1 mV/pC (422E65/A) or 10 mV/pC (422E66/A)
- Voltage Output: ±5 V pk
- Temperature Range (Operating): -65 to +250 °F
- Stainless steel housing with 10-32 coaxial input and output connectors
IMI Sensors, a division of PCB Piezotronics, Inc. manufactures industrial vibration monitoring instrumentation, such as accelerometers, vibration transmitters and switches that feature rugged stainless steel housings and survive in harsh environments like paper and steel mills, mines, gas turbines, water treatment facilities and power plants. Integrating with portable analyzers and PLC's, IMI instrumentation helps maintenance departments reduce downtime and protect critical machinery. Visit IMI Sensors at www.pcb.com. PCB Piezotronics, Inc. is a wholly owned subsidiary of MTS Systems Corporation. Additional information on MTS can be found at www.mts.com.