

About PCB Piezotronics, Inc.

www.pcb.com

Highlights

- PCB Piezotronics, Inc.
- PCB® Group Companies
- Manufacturing Capabilities
- 24-hour Customer Service (SensorLineSM)
- Representation in More than 60 Countries
- ISO 9001:2000 Certified
- A2LA Accredited to ISO 17025
- AS9100:2004 Certified



PCB Piezotronics was founded in 1967 as a manufacturer of piezoelectric quartz sensors, accelerometers, and associated electronics for the measurement of dynamic pressure, force, and vibration. The unique expertise of the company was the incorporation of microelectronic signal conditioning circuitry within the sensors to make them easier to use and more environmentally compatible. These piezoelectric ICP® sensors gained wide popularity and became the foundation for the company's success.

Subsequent growth and steady investment in facilities, machinery, and equipment permit a constant broadening of the product offering. Expanded measurement capabilities include piezoceramic, tourmaline, capacitive, piezoresistive, and strain gage sensing technologies. Ensuing products include industrial and DC response accelerometers, load cells, Modally Tuned® impact hammers, torque sensors, microphones, pressure transmitters and calibration equipment.

The backbone of the company is its mission statement: *Total Customer Satisfaction*. This mission is not only supported by products that offer great value, but also by an unconditional warranty. Factory applications engineering and a worldwide network of sales offices and representatives are readily available 24-hours per day, seven days a week, to assist with customer requests.

Depew, New York



Provo, Utah



Cincinnati, Ohio



Virginia Beach, Virginia



Rochester, New York



Lackawanna, New York



PCB® Group Companies

The PCB “Measurement” Group, is a family of technology based companies offering a wide range of sensor technologies. With PCB Piezotronics as its flagship, individual PCB Group companies and core competencies include:

PCB Piezotronics, Inc. (www.pcb.com) specializes in piezoelectric, ICP®, charge output, piezoresistive and capacitive accelerometers, microphones, pressure sensors, force sensors, load cells, torque sensors, and signal conditioners for test, measurement, monitoring, and research & development.

Toll-free in USA: 800-828-8840 ■ 24-hour SensorLineSM: 716-684-0001

IMI Sensors (www.imi-sensors.com) division of PCB Piezotronics specializes in vibration sensors, transmitters, switches, instrumentation, and accessories for machinery vibration monitoring and predictive maintenance in harsh industrial environments.

Toll-free in USA: 800-959-4464

24-hour SensorLineSM: 716-684-0001

Larson Davis (www.larsondavis.com) division of PCB Piezotronics specializes in sound level meters and precision microphones, portable and fixed noise monitoring systems, noise dosimeters, human vibration meters, and report generation software for industrial hygiene.

Toll-free in USA: 888-258-3222 ■ Phone: 716-926-8243

The Modal Shop, Inc. (www.modalshop.com) specializes in multi-channel sound and vibration sensing systems for lab measurements and industrial process monitoring, including calibration systems and test and measurement equipment rental. Also, smart sensing systems applied to parts quality NDT analysis, process monitoring and machinery gauging.

Toll-free in USA: 800-860-4867 ■ Phone: 513-351-9919

Oceana Sensor Technologies (www.oceanasensor.com) specializes in automated assembly of piezoelectric sensors for high-volume, low-cost OEM applications; Wireless e-Diagnostics® products, highlighting open system wireless platforms, including Bluetooth® and 802.11b.

Phone: 757-426-3678

STI Technologies, Inc. (www.sti-tech.com) is a mechanical engineering consulting firm specializing in finite element analysis, advanced analytical techniques, experimentation, technology development, and design optimization for life prediction, condition-based monitoring, as well as performance enhancement of turbomachinery, rotating machinery systems, and mechanical structures/components.

Phone: 585-424-2010

PCB Machining Solutions, Inc. (www.pcbmsi.com) specializes in precision machine components for the industrial, medical, aerospace, and defense industries. **Phone: 716-823-3193**

Precision Component Manufacturing & Machining

PCB® has a long history of sensor manufacturing and has invested heavily in facilities and equipment to ensure high quality standards and availability of key components. A vertically integrated manufacturing approach keeps PCB® in control of critical parts, processes, and procedures surrounding sensor assembly and testing to meet customer needs. A quality system based on ISO 9001 and AS9100:2004 requirements ensures any non-conforming product or process is addressed in a timely manner for continuous quality improvement. In addition to our 100,000 square foot Sensor Technology Center in Depew, New York; additional manufacturing operations in Lackawanna, New York; Roanoke Rapids, North Carolina; Virginia Beach, Virginia; Provo, Utah; and Cincinnati, Ohio; provide manufacturing support.

In-house Machining Capabilities

- Precision CNC Turning & Milling
- Wire EDM
- Sheet Metal Fabrication
- Grinding
- Lapping and Finishing
- Microscopic Deburring
- Tool Room



Approximately 125,000 individual parts per month are machined in-house using the latest CNC machinery



Skilled machinists create low-volume parts for customized products & engineering prototypes



Lapping and finishing machines provide product finishes down to four micro inches & flatness of three light bands or better; microscopic deburring is available for the most demanding part applications

Crystals Manufacturing

- Raw ceramic & quartz crystals
- Fully equipped mixing, firing & polling facilities
- Ensures quality, expedited delivery & reduced cost



Raw ceramic materials are mixed, fired & polled into a piezoelectric state



Quartz crystal used in piezoelectric sensors

Specialized Machining Components

In addition to PCB® manufacturing capabilities shown here, sister company **PCB Machining Solutions, Inc.**, located in Lackawanna, New York, specializes in precision machined components for the Industrial, Aerospace, Defense and Medical industries. PCB Machining Solutions offers an additional 25,000 square feet of machining capability, on state-of-the-art equipment, in their ISO 9001:2000 certified facility. Production runs range from single specialty prototypes to production runs of more than 10,000 pieces. For more information on available services, please visit www.pcbmsi.com.



Sensor Microfabrication, Finishing and Housing Capabilities

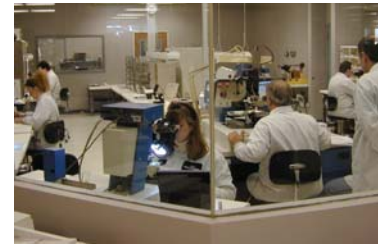
As part of PCB®'s commitment to quality, in-house sensor finishing capabilities include precision etching of sensors and sensor housing, laser welding, microelectronics fabrication; and hermetic connectors manufacturing and assembly. These processes are internally managed, according to industry standards and our ISO 9001 quality system. With these capabilities, the development of sensors, cables and connectors are molded, manufactured and assembled to fit.

Microelectronics Fabrication & Assembly

- Controlled clean room environment ensures quality
- Sensors are meticulously assembled under microscope
- All technicians highly trained in micro assembly procedures
- Rigorous testing of sensors & components before delivery



Precision sensor assembly under microscope



Microelectronic circuit fabrication is conducted in a clean room environment



Electronics assembly utilizes lean manufacturing techniques



Electronic devices are meticulously tested & calibrated to ensure proper performance

Laser Welding/Etching

- Precision parts marking without damage to housing
- State-of-the-art marking machines with fiber optic beam delivery system
- Single units to high volume runs may be accommodated



Laser welding fuses metal parts together without excessive heat, which could be damaging to internal electronics



Glove box handling with laser welding permits inert gas to be added within the sensor

Cables & Connector Manufacturing

- Injector molded connectors
- Hermetically sealed electrical connectors
- Specialty cables & connectors to meet specific customer requests



Electrical connectors with glass-to-metal fused hermetic sealing are processed in a conveyor furnace



Injection molding for watertight sealing of submersible integral cables, cable strain relieving boots & sensor accessories