

Pressure Transducer Capabilities

When “off the shelf” pressure transducers won't satisfy your requirements, contact Ashcroft Inc. and put our customization services to the test. With 160+ years of expertise in pressure measurement, expert engineering staff and state-of-the-art test facility, we have the capability to customize and verify sensors for the special requirements of your application.

Custom Product Modifications Include:

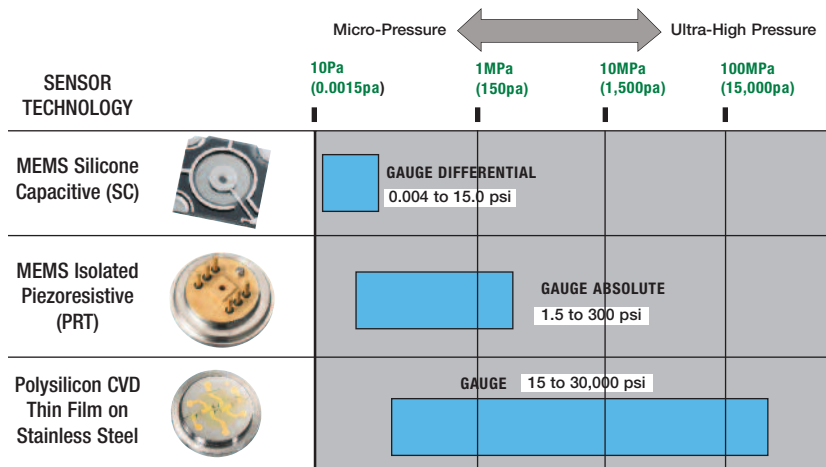
- Outputs (Analog & Digital)
- Electrical Terminations
- Pressure Fittings
- Ranges/Units of Measure
- Calibration
- Circuit Boards
- Enclosures
- Process Protection/Isolation
- Mounting
- Product Labeling

In addition to the standard products shown on our website and catalogs, we offer additional capabilities to meet the needs of the Original Equipment Manufacturer (OEM) – particularly in support of demanding applications found in market segments such as mobile hydraulics, railway/transportation, performance race, medical and HVAC (critical room monitoring and flow measurements).



Pressure Transducer Capabilities - Technology

Employing the correct sensor technology is critical, and is the starting point in serving challenging applications from a specification and cost perspective, We have been developing and improving pressure sensing technology for over 30 years.



Polysilicon CVD Thin Film Sensors;

- High Repeatability, <0.05% Span and Stability, <0.25% Span/year under operating conditions.
- Extreme Durability, tested to 50 million pressure cycles. Rated for temperature ranges from -40° to +125°C (-40° to +257°F).
- Hydraulic Transient Resistance, standard proof pressure of 200+% FS with higher proof capability available.

MEMS Silicone Capacitive Sensors;

Capacitive sensors are a silicon structure fabricated by using state-of-the-art semiconductor processes resulting in sensors designed for differential full scale measurements from +/- 0.05IWC to 400IWC (+/- 12Pa to 1000kPa), providing the following benefits to designers of products / systems for critical room monitoring, air flow measurements and leak detection systems:

- High repeatability, <0.03% Span and Stability, <0.25% Span / year under operating conditions.
- High sensitivity, resolution from 0.03% Span across all pressure ranges.
- Response time variable from <1ms to 1s.
- High Proof Pressure ratings, starting at 10 psid.

MEMS Isolated Piezoresistive Sensors;

are based upon silicon micro-machined elements which provide the user with high stability and pressure sensitivity for low gauge and absolute pressure measurements.

- Silicon exposed sensors for a cost effective method of measuring low, from 1.5 psi (0.1 bar), air and oil pressures.
- 316L SS isolated sensors to address media compatibility requirements, typical of oil, gas and alternative energy applications.



Pressure Transducer Capabilities - Design

Our dedicated engineering team is customer-focused to ensure you receive the solution for your needs.

- **Technology Ownership**, calibration and testing programs to meet specific performance objectives.
- **Electrical Engineering**, providing both analog and digital output design capability. Addressing agency approval requirements such as UL, CSA, FM, ATEX.



- **Mechanical Engineering**, supporting the environmental packaging, pressure connection and electrical termination specifications with advanced computer aided analysis tools.
- **Software Engineering**, supporting firmware design, embedded code and product communication protocols.



Pressure Transducer Capabilities - Manufacturing

Our in-house Design Validation and Product Test Lab allows for on-site industry standard and customized testing.

- Vibration tables, 0 to 9500 Hz (including combined temperature environment)
- Temperature testing from -100° to 350°F (-75° to 175°C)
- Cycle testing from 0 to 10,000 psi (700 bar)
- Burst pressure testing to 150,000 psi (10,300 bar)
- Primary pressure standards from 0.06 IWC (15 Pa) to 100,000 psi (6,800 bar)
- GTEM cell - tests immunity to radiated electromagnetic fields to 100 V/m from 80 MHz to 1GHz
- EM clamp - tests immunity to conducted electric fields to 30V from 150 kHz to 80 MHz
- ESD gun - test immunity up to +/- 15.5 kV contact/air discharge
- Burst/EFT & Surge generator - tests immunity to transient EMI

Manufacturing processes are designed to support low volume as well as customer dedicated, high volume production.

- ESD protected inspection, sensor assembly and test
- Wire bonding and laser welding
- Product compensation and calibration systems from -40° to 257°F (-40° to 125°C)
- Quality program, ISO 9001 Certified

