Pressure Terminology

Gage Pressure: Pressure measured relative to ambient atmospheric pressure. Referred to as pounds per square inch.

Absolute Pressure: Pressure measured relative to high vacuum. Referred to as pounds per square inch (absolute) or psia.

Vacuum: Vacuum measured relative to ambient atmospheric pressure. Referred to as pounds per square inch (vacuum) or psiv.

Differential Pressure: Pressure measured relative to a reference pressure. Referred to as pounds per square inch (differential) or psid.

Pressure Transducer: Provides a linear D.C. voltage output proportional to applied pressure.

Pressure Transmitter: Provides a linear current output proportional to applied pressure.

Proof Pressure: The maximum pressure that may be applied without changing performance beyond specifications.

Burst Pressure: The maximum pressure that may be applied without physical damage to the sensing element.

Accuracy: Combined error of linearity, hysteresis and repeatability. (Setra uses the root sum of the squares (RSS) method).

Linearity: The maximum deviation of any calibration point on a specified straight line, during any one calibration cycle. (Setra uses the best straight line method).

Hysteresis: The maximum difference in output, at any measured value within the specified range, when the value is approached first when increasing and then decreasing pressure.

Repeatability: The ability to reproduce output readings when the same pressure value is applied consecutively, under the same conditions, and in the same direction.

Excitation: The external electrical voltage and/or current applied to a transducer for its proper operation.

Ambient Conditions: The conditions (pressure, temperature, etc.) of the medium surrounding the case of the transducer.

Response Time: The length of time required for the output to rise to a specified percentage of its final value as a result of a step change in pressure.

Thermal Error: The maximum change in output, at any pressure value within the specified range, when the temperature is changed from room temperature to specified temperature extremes.

Thermal Zero Shift: The zero shift due to changes of the ambient temperature from room temperature to the specified limits of the operating temperature range.