Sensor terminology

Calibration

Calibration is defined as a test to find correlation between output and engineering unit correspond to it.

Accuracy

Accuracy is defined as the closeness of approach of a measured value to the true value of the quantity measured, expressed as a percentage of full scale range output.

Precision

Precision is defined as the closeness of approach of each of a number of similar measurements to the arithmetic mean, It is usually expressed as a percentage of full scale range and is similar to repeatability.

Sensitivity

Sensitivity is defined as the ratio of the change in transducer output to a change in the value of the measured value.

Resolution

As a measure of sensitivity to changes in the measured value, the resolution is a measure of how closely the indication of the instrument can be separated, expressed as a percentage of the total measuring range.

Error

Error is defined as the algebraic difference between the measured value and the true value. It is usually expressed as percent of the full scale output.

System error

System error is defined as all kind of error combined with a transducer..

Linearity

The ratio of the calibration curve to the straight line connecting the no-load output to the nominal load output.

Period and Frequency

Period defined as time that a cycle takes to complete once in alternating current. Frequency is defined as the number of vibrations for one second. The period is reciprocal proportion to frequency.

$$T = 1 / F, \quad F = 1 / T$$

Gage factor

Gage factor is defined as the proportional constant number of the output corresponding to engineering unit such as force, load, stress, displacement and degree. Gage factor is used for converting the measured value into engineering unit.

ABC factor

ABC Factor is defined as the coefficient of each term in a quadratic equation, expressed as relationship between he measured value and engineering unit. The measured values include frequency in Hz, period in microsecond and microstrain.

Strain

Strain is defined as the ratio of deformed length over full length in a gage. It is usually expressed as percent of the full scale range.

Coefficient of linear expansion

Coefficient of linear expansion is defined as the ratio of expanding and contracting length over full length due to temperature changes on degree C.

Gage

Gage is defined as a general term for measuring structures.

Gage length

Gage length is defined as the distance between two measuring points for measuring displacement and strain.

Hysteresis

Hysteresis is defined as the maximum difference in output, at any pressure value within the specified range, when the pressure value is approached first with increasing and then decreasing pressure.

Insulation resistance

Insulation resistance is defined as the ratio of voltage across both ends of the insulator over the minimum current flowing through it.

Withstanding voltage

Withstanding voltage is defined as the maximum voltage that the equipment and device can retain under applying.

Leak test

Leak test is defined as ability that can prevent from water or liquid during transport, storage, operation and etc.

Reproducibility

Reproducibility is defined as the ability of how transducer output coincides with them in opposite of the different method and measuring instrument.

Stability

Stability is defined as the ability of a transducer to retain its performance characteristics for a relatively long period of time.

Reliability

Reliability is defined as the ability of a transducer to retain its performance characteristics for a relatively long period of time.

Durability

Durability is defined as the ability of a system to retain its performance for applying of external shock and internal stress such as the temperature, pressure, voltage and electrical shock.