

18.2.2 Measurements

Measurement

Set of operations having the object of determining a value of a quantity.

Note: The operations may be performed automatically.

Metrology

Science of measurement

Note: Metrology includes all aspects both theoretical and practical with reference to measurements, whatever their uncertainty, and in whatever fields of science or technology they occur.

Principle of measurement

Scientific basis of a measurement.

Examples:

- a) The thermoelectric effect applied to the measurement of temperature.
- b) The Raman effect applied to the measurement of the wave numbers of molecular vibrations.

Method of measurement

Logical sequence of operations, described generically, used in the performance of measurements.

Note: Method of measurement may be qualified in various ways such as:

- substitution methods,
- differential method,
- null method.

Measurement procedure

Set of operations, described specifically, used in the performance of particular measurements according to a given method.

Note: A measurement procedure is usually recorded in a document that is sometimes itself called a "measurement procedure" (or a measurement method) and is usually in sufficient detail to enable an operator to carry out a measurement without additional information.

Measurand

Particular quantity subject to measurement.

Measurement signal

Quantity that represents the measurand and which is functionally related to it.

Example: The electromotive force of an electrochemical concentration cell used to measure a difference in concentration.

Note: The input signal to a measuring system may be called the *stimulus*; the output signal may be called the *response*.