Keywords A to Z Vol.5

Keyword

Measurement and Industrial Metrology

Measurement refers to taking the measure of substances or objects based on a predetermined standard. Industrial metrology involves gaining a comprehensive understanding of the target amount for some particular purpose.

Ensuring fair transactions by using measurement and metrology to safeguard the quality and safety of products and services

Measurement and industrial metrology. Are you aware of the difference between these two terms?

Measurement is the technique or method of taking the measure of a specific substance or object based on a predetermined standard. Industrial metrology, on the other hand, includes measurement, but in addition implies a technique or method of comprehensively understanding the target amount for some particular purpose. Measurement and industrial metrology are used in every kind of situation in the industrial world. This is because accurate measurement and metrology are indispensable for securing the consistent quality of products and services, and for providing safety and peace of mind to customers and others at all times.

In recent years, there has been an increasing need for measurement and metrology in order to supply a comprehensive understanding and evaluation of the amount of energy consumption of an entire building. Many kinds of equipment and devices operate in factories and buildings, and the work environment of the staff at such places is of course not the same everywhere. Accordingly, in such environments where there are a large number of variables, there is a need for methods and techniques that accurately measure and meter the amount of energy consumed. This is useful for purposes such as compliance with laws and regulations and for business continuity.

Aiming at further evolution to achieve global cooperation and expanded applicability

As a basis for the continuing accuracy of measurement and metrology, standards are required. In order to establish these standards, prototypes or master standards for measures such as the meter or the kilogram are used. For a master standard to exhibit the correct values, it must be made of a material whose properties do not change easily. However, it is impossible to prevent minute errors from occurring as time passes. Therefore, recently, rather than establishing master standards based on particular manmade objects, universal physical constants are used to define standards. For example the length measurement in meters is defined as the path length travelled by light in a vacuum during a time interval of 1/299,792,458 of a second in 1983.

To facilitate international commerce and partnerships, there is widespread support for adoption of the International System of Units (SI).*1 The base units of the International System of Units include the meter (m) as the unit of length, the kilogram (kg) as the unit of mass, and the second (s) as the unit of time.

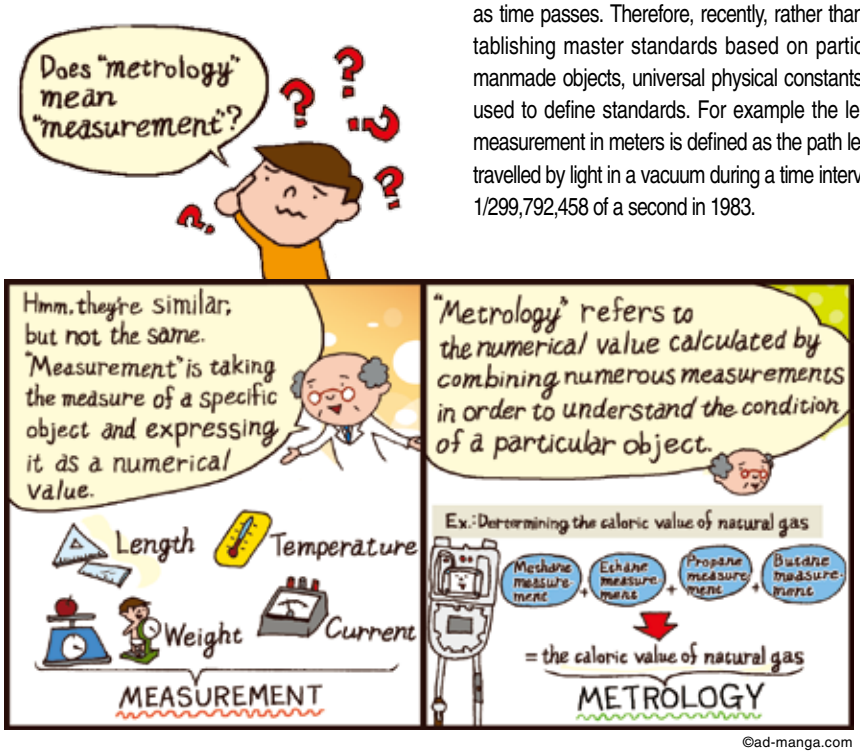
With the advancement of globalization and expansion of free trade by means such as FTAs,*2 measurement and metrology are playing increasingly important roles. Through the use of correct standards, variability of the amounts in transactions can be prevented. Accordingly, there is a need for mutual authentication between the concerned countries, not only by adopting international standards and SI units, but also with regard to various standards established in the business world. Without mutual authentication between countries, international partnerships and the free circulation of products and services cannot easily come into existence. With the advancement of globalization, the advancement of measurement and industrial metrology are also required.

*1. International System of Units

A system adopted by the General Conference on Weights and Measures in 1960 in order to provide standard international units to replace the varying units used in different countries and different subject areas. SI is the abbreviation of the system's name in French, Système International d'Unités.

*2. FTA (free trade agreement)

An agreement for promoting free trade that removes trade barriers such as tariffs on goods and other obstacles to commerce such as regulations that restrict trade in goods or services.



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Yamatake Corporation changed its name to Azbil Corporation on April 1, 2012.

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