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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 7665-2026

Replacing GB/T 7665-2005

General terminology for transducers

传感器通用术语

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1 Scope

GB/T 7665-2026 is the Chinese national standard covering the general vocabulary of sensors and transducers - the terms for the sensing principles, the characteristics and errors, the outputs and interfaces, and the environmental and reliability quantities. At 31,000 words it replaces GB/T 7665-2005 after twenty-one years, and it is the vocabulary that GB/T 18459-2026 on static performance calculation is written against. In force from 1 December 2026. It was issued on 25 May 2026 and takes effect on 1 December 2026, replacing GB/T 7665-2005. The document is under the responsibility of the China Machinery Industry Federation. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

2.Sensitive element refers to the part of a sensor that can directly sense or respond to the measured quantity. Note

3.The conversion element refers to the part of the sensor that can convert the measured quantity sensed or responded to by the sensitive element into an electrical signal suitable for transmission or measurement. Note

4.When the output is a specified standard signal, it is called a transmitter. Note

5.The slash "/" in English words indicates that the words before and after it are interchangeable.

3.1.2 Physical transducer/sensor A sensor that can sense a specified physical quantity and convert it into a usable output signal.

3.1.3 Chemical transducer/sensor A sensor that can detect a specified chemical quantity and convert it into a usable output signal.

3.1.4 biomass sensor (biological transducer/sensor) A sensor that can sense a specified biomass and convert it into a usable output signal.

3.1.5 Intelligent transducer/sensor A sensor with information processing capabilities, used to send measurement and status information, and to receive and process external commands.

3.1.6 Digital transducer/sensor A sensor whose output signal is a digital quantity or a digitally encoded signal.

3.1.7 Analog transducer/sensor A sensor that outputs an analog signal.

3.1.8 Mechanical structure type transducer/sensor Sensors that detect the measurement by utilizing the deformation of mechanical components (such as metal diaphragms).

3.1.9 Physical property type transducer/sensor Sensors that utilize the physical properties of materials and their various physical and chemical effects to detect the measured quantity.

3.1.10 Quantum transducer/sensor A sensor that uses quantum effects to convert changes in a measured quantity into a usable output signal.

3.1.11 Discrete transducer/sensor A sensor that outputs a discontinuous signal.

2 Normative references

This document has no normative references.

3.1 General Classification Terminology for Sensors

3.1.1 A device or apparatus that can sense the measured quantity and convert it into a usable output signal according to a certain rule. Note

3.2 Terminology for Physical Quantity Sensors

3.2.1 Mechanical quantity transducer/sensor A sensor that can sense mechanical quantities and convert them into usable output signals.

3.2.1.1 pressure transducer/sensor A sensor that can sense pressure and convert it into a usable output signal. 3.2.1.1.1 static pressure transducer/sensor A sensor that can sense static pressure and convert it into a usable output signal. 3.2.1.1.2 Dynamic pressure transducer/sensor A sensor that can sense dynamic pressure and convert it into a usable output signal. 3.2.1.1.3 Gauge pressure transducer/sensor A sensor that can sense pressure relative to atmospheric pressure and convert it into a usable output signal. 3.2.1.1.4 Differential pressure transducer/sensor A sensor that can sense the pressure difference between two measurement points and convert it into a usable output signal. 3.2.1.1.5 Absolute pressure transducer/sensor A sensor that can sense absolute pressure and convert it into a usable output signal. 3.2.1.1.6 Vacuum transducer/sensor A sensor that can sense the vacuum level and convert it into a usable output signal. 3.2.1.1.7

Miniature pressure transducer/sensor Pressure sensor manufactured using microfabrication and micropackaging technologies.

Note. The dimensions of the miniature pressure sensor are on the order of millimeters.

3.2.1.1.8 Ceramic pressure transducer/sensor A sensor that converts pressure into a usable output signal by utilizing the properties of ceramic materials. 3.2.1.1.9 Silicon-based pressure transducer/sensor Sensors that utilize the properties of silicon or silicon composite materials to achieve pressure measurement functions. 3.2.1.1.10 Silicon capacitive transducer/sensor A sensor that converts pressure changes into capacitance changes by utilizing the properties of silicon.

3.2.1.2 Force transducer/sensor A sensor that can sense external forces and convert them into usable output signals. 3.2.1.2.1 Weight (weighing) sensor A sensor that can sense the weight of an object and convert it into a usable output signal. 3.2.1.2.2 stress transducer/sensor A sensor that can sense stress and convert it into a usable output signal. 3.2.1.2.3 Tension transducer/sensor A sensor that can sense tension and convert it into a usable output signal. 3.2.1.2.4 Six-axis force transducer/sensor A sensor capable of simultaneously sensing three force components and three torque components and converting them into usable output signals. 3.2.1.2.5 Shear stress transducer/sensor A sensor that can sense shear stress and convert it into a usable output signal.

3.2.1.3 Momental transducer/sensor A sensor that can sense torque and convert it into a usable output signal. 3.2.1.3.1 Torque transducer/sensor A sensor that can sense torque and convert it into a usable output signal.