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**NATIONAL STANDARD OF THE
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GB/T 47278-2026

**Industrial product data dictionary - Measurement and control
equipment**

工业产品数据字典 测控装备

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the China Machinery Industry Federation. This document is under the jurisdiction of the National Technical Committee on Standardization of Industrial Process Measurement, Control and Automation (SAC/TC 124). This document was drafted by: China National Institute of Standardization, Shanghai Automation Instrumentation Co., Ltd., Hollysys Technology Group Co., Ltd., and Chongqing... Sichuan Instrument Automation Co., Ltd., China Coal Research Institute Co., Ltd., Dongfang Electric Automatic Control Engineering Co., Ltd., and Machinery Industry Instrument Co., Ltd. Instrumentation Technology and Economic Research Institute, China National Institute of Metrology, Chongqing University of Posts and Telecommunications. The main drafters of this document are: Wen Na, Zhao Yong, Huang Jinsong, Tian Yingming, Wang Haijun, Zhou Honglin, Wang Chunxi, Li Zhizhuang, Shi Lei, Zhang Hong, and Lu Tielin. Wu Dayuan, Yang Lina, Yue Gaofeng, Gao Liang, Wang Shumin, Xu Kaicheng, Du Mengxin, Tian Jiaying, Huang Qingqing.

Intelligent manufacturing, based on next-generation information technology, permeates all stages of the industrial product lifecycle, including design, production, management, and service, and has the following characteristics. Features such as deep information self-sensing, intelligent optimization self-decision-making, and precise control self-execution enable intelligent, efficient, collaborative, green, and safe manufacturing. The overall goal of comprehensive development. Measurement and control equipment, as core equipment for realizing intelligent industrial processes, plays a crucial role throughout the product lifecycle, including production, sales, and maintenance. At each stage, there were problems such as unclear and non-standard user requirements, and inconsistent and incompatible formats of device description information from many different manufacturers. This has significantly impacted the electronic exchange and automatic processing of equipment information. To achieve information exchange and resource sharing at each

stage of the production process, a complete, systematic, and rigorous system suitable for industrial processes is needed. A sophisticated classification and coding system for measurement and control equipment. This system needs to clearly define the structure and attributes of equipment description information, describing and expressing them in a unified format. It facilitates electronic exchange and automated processing. This document proposes a method for constructing a data dictionary for measurement and control equipment, standardizing the coding of measurement and control equipment categories, and structuring attributes. The description, through the classification of static attribute sets such as measurement and control node identifiers, document information, and equipment information, satisfies the needs of product design, production, sales, and... The intelligent requirements of operation and maintenance processes; by classifying dynamic attribute sets such as general status, diagnostic status, and measurement/feedback values, to meet the needs of equipment. The need for intelligent operation and management guides data sharing among equipment production, sales, and users, improving product operation and maintenance efficiency and technical level, and reducing costs. Low management costs provide a scientific basis for product lifecycle management. Industrial product data dictionary measurement and control equipment

1 Scope

GB/T 47278-2026 is the Chinese national standard covering the data dictionary for instrumentation and control equipment - every property by which a sensor, a transmitter or a controller is described, with its definition, unit and permitted values, so that a catalogue can be machine-read and a selection automated. At 35,500 words it is a reference work rather than a specification. First edition, in force since 1 October 2026. It was issued on 31 March 2026 and takes effect on 1 October 2026, as a first edition. 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.

This document outlines the composition framework, classification coding, and data dictionary structure of measurement and control equipment. This document is intended to guide the construction of data dictionaries for measurement and control equipment used in industrial processes.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are listed below. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB 3100 International System of Units and its Applications

GB/T 20818.11-2018 Data Structures and Elements in the Catalogue of Process Equipment for Measurement and Control in Industrial Processes - Part 11. General Structure of Attribute Lists (LOPs) for Electronic Data Interchange of Measuring Equipment

GB/T 20818.21-2020 Data Structures and Elements in the Catalogue of Process Equipment for Measurement and Control in Industrial Processes - Part

21 Section. Attribute List (LOP) for Electronic Data Interchange of Automatic Valves - General Structure

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Measurement and control equipment It is applied in the design, production/manufacturing, management and service processes, directly or indirectly affecting the target product, equipment or industrial production process. A process is a device or system that has at least one function of measuring, controlling, or executing.

Note. In this document, measurement and control equipment refers to measuring instruments, control equipment, final control components, and composite equipment used in industrial production processes.

3.2 data dictionary A table containing a series of entries, where one meaning corresponds to one entry in the dictionary, and one entry in the dictionary has only one meaning. [Source: GB/T 17645.1-2008, 3.1.2]

3.3 static property Properties that do not change over time during operation.

3.4 dynamic property Attributes that change over time during operation.

3.5 Composite device/system A device/system composed of different equipment components. Example. A control valve consists of a valve body, an actuator, and a positioner.