

ICS 25.040
CCS N 10



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

GB/T 20818.10-2017

**Industrial-process measurement and control -- Data structures and elements in process
equipment catalogues -- Part 10: Lists of properties (LOPs) for industrial-process
measurement and control electronic data exchange fundamentals -- Fundamentals**

(English Translation)

Issued on: July 12, 2017

Implemented on: February 1, 2018

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China**

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3.1 Terms and definitions

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Foreword

GB/T 20818 "Industrial process measurement and control in the process equipment directory data structure and elements" is divided into the following five parts.

- Part 1. Measuring equipment with analog and digital outputs;
- Part 10. List of attributes (LOPs) for industrial process measurement and control of electronic data interchange - Basic rules;
- Part 11. List of attributes for measuring devices for electronic data interchange (LOP) - General structure;
- Part 12. List of attributes (LOP) for flow measurement devices for electronic data interchange;
- Part 13. List of attributes (LOP) for pressure measurement devices for electronic data interchange.

This part is part 10 of GB/T 20818.

This part is drafted in accordance with the rules given in GB/T 1.1-2009 and GB/T .20000.2-2009.

This part uses the translation method equivalent to IEC 61987-10.:2009 "Industrial process measurement and control of data in the process equipment catalog Structures and elements - Part 10. Basic list of attributes (LOPs) for industrial process measurement and control of electronic data interchange.

In this part of the normative reference to the international documents have a consistent correspondence between the following documents.

International Standard Systems and Applications (neqISO 1000..1992);

--- GB 4208-1993 enclosure protection class (IP code) (EQV, IEC 60529. 1989);

--- GB/T 17564 (all parts) Standard data element type and associated classification mode with electrical components [IEC 61360 section)];

GB/T 17564.1-2011 Standard data element type and associated classification pattern for electrical items Part 1. Definitions and methods (IEC 61360-1.:2009, IDT);

GB/T 17564.2-2005 Standard data element type and associated classification pattern for electrical element equipment Part 2. EX-PRESS dictionary mode (IEC 61360-2.:2004, IDT);

--- GB/T 17645 (all parts) Industrial automation systems and integrated parts libraries [ISO 13584 (all parts)];

GB/T 17645.42-2001 Industrial automation systems and integrated parts libraries - Part 42. Description Methodology. Constructs zero (ISO 13584-42.:1998, IDT);

--- GB/T 20818.1-2007 Industrial process measurement and control process equipment Product catalog data structure and elements of the first Section. Measuring equipment with analog and digital outputs (IEC 61987-1.:2002, NEQ).

This part is made by the China Machinery Industry Federation.

This part is headed by the National Industrial Process Measurement Control and Automation Standardization Technical Committee (SAC/TC124).

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Introduction

The smooth progress of product data exchange, whether in the company, trading systems, engineering design tools or in the future control system (electrical, Measurement and control technology), are dependent on the exchange of information and the use of information have been made a clear definition.

In the past, when the user asked the supplier or the manufacturer for the quotation of the applicable device, they had a representation of the process control device and the system requirements Type can be said to be varied. And suppliers in the answer is usually based on their own file system, using different from the user's terms, structure and vector (paper files, databases, laser discs, electronic catalogs, etc.). Since the information of these devices is frequently in different information Technical system replication, such a dilemma often appear in the planning and design and follow-up process.

Any method that can record all of the data in the planning and ordering process and can be used in subsequent processes will cause the relevant Side of the high degree of concern, the prerequisite for the expression of the target and the standardization of data exchange.

IEC 61987-1 By defining the generic architecture of analog or digital output industrial process measurement and control device product attributes, the above goal has taken an important step. When the product moves from one party to the other, it helps to understand the product. This series of standards the first part applies to the catalog of paper products for process measurement and control devices provided by the product manufacturer.

The purpose of this section is to make process measurement and control devices more efficient. Ie the information contained in the IEC 61987-1 Equipment Product List and then add information about device operation and environmental requirements. The form used to describe and express these aspects should be applied to electrons Exchange and automatic processing.

In this section, the device is described in detail by creating a property table column (LOPs). These properties are compiled into the presentation device Specific attribute in the section. By compiling these sections, it is possible to produce a complete description of a particular device category or such device installation and a list of properties for running the environment information.

This section covers the following.

- It focuses primarily on the various attributes that can be used for business inquiry and quotation, in relation to planning and design, such as computer-aided engineering Design system (CAE), routine maintenance and enterprise resource planning system (ERP) and other business, because of its system process control System integration requirements, but also need to involve some of its detailed attributes.
- It provides a standardized method to help process control equipment and system suppliers and users both optimize their own company Internal and in the exchange of information with other companies when the work flow. According to the role in the project process, engineering design, procurement and Construction (EPC) The general contractor can be either a user or a supplier.
- It ensures that the information provided is clear and clear by its unquestionable data and structural representations.

It should also be noted that the component data dictionary has other uses, such as the production of spare parts list, it can also be used to generate the traditional rules the book.

Electronic data interchange layer.

Figure 1 The level of the electronic exchange process in this standard

This section describes the various levels of data exchange as follows (see Figure 1).

The dictionary layer. In order to achieve the standardization of all types of devices, distributed and general semantics, the standard defines a term for the capture, defined to and the relationship between devices used in the dictionary. It is based on the IEC industrial process measurement and control device component data dictionary, which uses IEC 61360-2 and ISO 13584-42. The proposed IEC 61987-11 will include the attributes and sections of the contents of the dictionary and so on. Other similar series of standards are defined in the various types of process measurement and control device properties list.

Note 1: The first version of the dictionary can not be all-encompassing, in the new technology applications and new devices appear, you can add a new device category.

Specification. The plant's process engineer can use a catalog of electronic specifications when planning a particular area. The content is from the group Data dictionary. Similarly, manufacturers of industrial process measurement devices, when making quotations that meet the conditions of the specification form, it produces the device, will have to be based on another specification form, its content also comes from this component data dictionary. In order to make a solution to the specification, The use of its base or polymorphism assessment method.

Message. The message generated by the product specification, including the sender, the receiver, and the transport protocol.

Note 2: The generation of messages is outside the scope of this standard.

Data exchange framework. Messages are sent from one business partner to other businesses through a data exchange framework. These messages can be used the format shown in Appendix C of this standard is sent in a conventional manner (eg e-mail, fax), or in an XML-based message distribution box Frame of the way to send.

Example. GB/T 19256 is an XML messaging framework.

This standard specifies the methods and mechanisms described in the creation of these specifications, which are required to compile meaningful data into the specifications of. Several aspects of the device are also the standardization of this standard. For example. one is about the device installation site environment, that is, process measurement the amount of equipment that should be operated under its conditions, and the other is how the device specifications meet the requirements of these conditions.

The component data dictionary contains the various attributes that can also be used for other purposes, such as the production unit required for administrative and commercial exchange the precise position or the way the control loop works. Similarly, more accurate engineering data, such as terminal or device tuning data authority, Or by adding a device specification or a supplemental device specification.

The specifications of the transaction data required to exchange electronic specifications between companies, as shown in the message layer of Figure 1, are beyond the scope of