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

GB/T 20818.1-2015

Replacing GB/T 20818.1-2007

**Industrial-process measurement and control -- Data structures
and element in process equipment catalogues -- Part 1:
Measuring equipment with analogue and digital output**

工业过程测量和控制 过程设备目录中的数据结构和元素 第1部分：带模拟量和数字量输出的测量设备

(English Translation)

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Foreword

GB/T 20818 "industrial process measurement and process control equipment directory structures and data elements" temporarily divided into the following five sections.

--- Part 1. With analog and digital outputs of the measuring device;

--- Part 10. Electronic Data Interchange for industrial process measurement and control property list (LOPs) basic principles;

--- Part 11. Measurement Equipment Electronic Data Interchange list of properties (LOP) general structure;

--- Part 12. Electronic Data Interchange flow measuring device with a list of properties (LOP);

--- Part 13. Pressure measuring equipment electronic data interchange property list (LOP).

This part of GB/T 20818 Part 1.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This Part replaces GB/T 20818.1-2007 "industrial process measurement and process control equipment directory data structures and Elements Part 1. With analog and digital outputs measuring equipment. " This section compared with the GB/T 20818.1-2007, in addition to editorial changes outside the main technical Surgery changes are as follows.

--- Increasing the content of specific provisions of terms and definitions, 2007 edition of the removed appendix C alphabetical terms, definitions and sources (See Appendix version of 3,2007 C);

--- Remove the process measurement equipment element of the document annotation (see the edition of 20,075);

--- Standardized process measurement equipment yuan title of the document format (see the edition of 5,2007 5);

--- Standardized process measurement equipment element described in this document regarding security (see version 5.3.4.4,2007 5.3.5.4);

--- Increased installation Climate class, removed edition 2007 Function and system design of the climatic class (see the edition 5.7.1.1,2007 5.3.4, as well as amendments to Appendices A and B before and after each table);

--- Increasing the relative humidity of the environment (see 5.7.2.4 and amendments before and after the table in Appendix A and Appendix B);

--- Increasing the tables in Appendix A and Appendix B of the analog output signal related to the characteristics of units with dark slashes unit label (see Before and after the revision of Appendix A and Appendix B in the tables);

--- Increasing the tables in Appendix A and Appendix B of the device structure of the characteristics of the unit with a light-colored slash unit label (see Amendment Appendices A and B before and after each table);

--- Increased process measurement device classification figure gray background resistance thermometer unit (see Figure 1);

--- Remove the 2007 version of "Appendix D Document Type Definition (DTD) in SGML notation and meta-document" (see 2007 edition Appendix D).

This section uses the translation method is equivalent to using IEC 61987-1:2006

"industrial process measurement and control data in process equipment catalogs Structure and elements Part 1 with analog and digital outputs measuring device "(in English).

Consistency correspondence between this part of international documents and normative references of our files are as follows.

GB/T 17626 (all parts), electromagnetic compatibility test and measurement technology (IEC 61000-4, IDT) Tests under reference conditions. GB/T 18271.2 process measurement and control devices - General methods and procedures for evaluating performance - Part 2 (GB/T 18271.2-2000, idt IEC 61298-2:1995) GB/T 18271.3 process measurement and assessment methods and procedures - Part 3 common control device performance. effects of influence quantities test (GB/T 18271.3-2000, idt IEC 61298-3:1998) GB/T 18271.4 process measurement and control devices - General methods and procedures for evaluating performance - Part 4. Evaluation report content (GB/T 18271.4-2000, idt IEC 61298-4:1995) GB/T 18272.5-2000 industrial process measurement and control system evaluation assessment - Part 5 System features. Trusted Systems Assessment (idt IEC 61069-5:1994) GB/T 18272.6-2006 industrial process measurement and control system evaluation assessment - Part 6 System Characteristics. The system can be operated for assessment (IEC 61069-6:1998, IDT) this part of IEC 61987-1:2006 includes the following editorial changes.

- Remove the IEC 61987-1:2006 Foreword;
- Where "IEC 61987" where to "GB/T 20818";
- By decimal points instead of as a decimal comma ",", ".", ";
- For IEC 61987-1:2006 and other international standards have been cited as identical with our standard of reference in this section National standards instead of the corresponding international standards;
- Modify the original text clearly wrong places, such as in the original source "3.18 limit conditions" mistaken for "[VIM4.9]", now corrected to "[VIM5.6]";
- Corrected Appendix B in the original article number errors, such as the original B.2.3 should be corrected to B.2.2.1, B.2.3.1 should be corrected to original B.2.2.2 etc;
- Deleted Table B.3 and Table B.4 in "7.1 Installation" under the measuring device no correspondence between the characteristics of "emission angle." this part is proposed by China Machinery Industry Federation.

This part of the measurement and control of Standardization Technical Committee (SAC/TC124) is administered by the National industrial processes.

This section is drafted. Xiamen-Automation Technology Co., Ltd., Shenzhen City superscript Li Technology Development Co., Southwest University, Mechanical Engineering Industry Instrumentation Technology and Economy Institute.

Introduction

In recent years, the industry has realized that the measuring device converts data from one form into another form will spend a lot of time and energy. For example, an instrument of technical data, the manufacturer will exist in paper and electronic documents two separate data sets, and eventually Users require product specifications, engineering database or data are consistent with commercial databases. However, since the devices have different uses for each respective Since the data storage format, so in most cases, the data can not be shared.

Technical data sharing and contradict the second problem lies in the product description itself. To express specific performance test results, for example, Technical data sheet should contain information on what should be how to organize, how to express, or ultimate, manufacturers rarely reach a consensus. That most End user the relevant information into the database, the data is always found inconsistencies or different meanings, making it difficult to establish a database.

This section aims to define a common measurement and control equipment structure and its contents to solve the problem of industrial processes. This is based on the following Conception. Press measuring device type (for example, pressure measuring devices, temperature measuring equipment or electromagnetic flow meter device) provides a common structure and product A collection of properties. The final document is not limited to the electronic exchange, and easy for users to read and understand.

This section applies to the electronic catalog processes with analogue and digital outputs of the measuring device. The future will continue to develop similar classification structure Applicable to the process with binary output and the rest of the interface device measuring equipment. This section describes the structure has been included with the binary input the measuring equipment most commonly used product features. Appendix B also take into account the future standardization.

This section relates to all hope for future process measurement device documentation standardized criteria to develop guidance documents. Each revision in the future now Bank standards, the structure and characteristics of the product in Chapter 5 of this section defined, are advised to adopt or try to reach consensus.

Appendix A contains a measuring device classification process list and directory structure. Appendix B contains a specific measured variables are further subdivided

Sub-classification.

This structure as much as possible the use of existing international standard terminology to name the product characteristics. ISO 10241-1 according to the provisions of this Part Chapter 3 lists the terms and definitions and references.