

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Industrial-process measurement and control – Data structures and elements in process equipment catalogues –  
Part 100: Data base standard for process measurement, control and automation equipment**

**Mesure et commande dans les processus industriels – Éléments et structures de données dans les catalogues d'équipements de processus –  
Partie 100: Norme de base de données des équipements de mesure, de commande et d'automatisation pour les processus**



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**INDUSTRIAL-PROCESS MEASUREMENT AND CONTROL –  
DATA STRUCTURES AND ELEMENTS IN PROCESS  
EQUIPMENT CATALOGUES –****Part 100: Data base standard for process measurement,  
control and automation equipment**

## FOREWORD

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IEC 61987-100 has been prepared by subcommittee SC 65E: Devices and integration in enterprise systems, of IEC technical committee TC 65: Industrial-process measurement, control and automation. It is an International Standard.

The text of this International Standard is based on the following documents:

Draft	Report on voting
65E/1089/CDV	65E/1145/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

A list of all parts in the IEC 61987, published under the general title *Industrial-process measurement and control – Data structures and elements in process equipment catalogues*, can be found on the IEC website.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

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- reconfirmed,
- withdrawn, or
- revised.

## INTRODUCTION

IEC common data dictionary (CDD – <https://cdd.iec.ch>) provides classifications and descriptions of products to enable unambiguous electronic data exchange for e-commerce and business opportunities along the product life cycle.

Several IEC standards for classifying and describing products with classes and properties have been developed as database standards (DB standards) and published via IEC CDD, e.g. IEC 62683 and IEC 63213. Today, numerous parts of IEC 61987, which also classify and describe products with classes and properties, have already been created and published via IEC CDD.

With IEC 61987 DB, IEC responds to the rising market needs to support machine-readable communication for e-commerce, engineering, maintenance and Smart Manufacturing.

The IEC CDD (common data dictionary) is an IEC-hosted system that includes a common repository with data dictionaries for all ISO and IEC industrial/technical related domains and that complies with the data model for data dictionaries defined in IEC 61300-2/ISO 13584-42 with an enhancement of its modelling capability adopted from IEC 62656-1.

NOTE 1 Data dictionaries can include data from electrotechnical and non-electrotechnical domains.

NOTE 2 Content published in data dictionaries will become an ISO or IEC standard.

By using the dictionary, applications can interact and share data in an unambiguous way with clear semantic meaning.

Domain: Process automation (IEC 61987 series)

Open all | Close all

Process automation (IEC 61987 series)

- 0112/2//61987#ABA000 - Equipment for industrial-process a
  - ABV000 - Characterization
    - ABA001 - Measuring instrument
      - ABA643 - Gauge
      - ABA684 - Measuring assembly
      - ABA689 - Sight indicator
      - ABA697 - Switch
      - ABA751 - Transmitter
        - ABA752 - Accelerometer
        - ABA753 - Current transmitter
        - ABA754 - Density transmitter
        - ABA761 - Flow transmitter
        - ABA803 - Level transmitter
        - ABA830 - Power transmitter
        - ABA831 - Pressure transmitter
          - ABA832 - Absolute pressure transmitter
          - ABA833 - Differential pressure transmitter
          - ABA834 - Gauge pressure transmitter
        - ABA835 - Temperature transmitter
        - ABA839 - Velocity transmitter
        - ABA841 - Voltage transmitter
        - ABA842 - Weight transmitter
      - ABA845 - Measuring instrument component
        - ABA846 - Analog signal switch
        - ABA847 - Connection head
        - ABA849 - Converter
        - ABA856 - Fitting
        - ABA861 - Remote seal
        - ABA866 - Relay
        - ABA870 - Sensing element
        - ABA880 - Transmitter
        - ABA884 - Primary element
        - ABD337 - Manifold for pressure measurement
        - ABE362 - Insert/element
      - ABD340 - Final control element
        - ABD341 - Control valve or automatic on/off-valve
        - ABD385 - Process regulator
      - ABN977 - Infrastructure device
        - ABN985 - Calculator
        - ABN988 - Controller
        - ABO001 - Communication adapter
        - ABO002 - Converter
        - ABO003 - Indicating device
        - ABO005 - I/O assembly
        - ABO006 - I/O module
        - ABO045 - Network component
        - ABO062 - Power supply
        - ABO066 - Protection device
        - ABO077 - Recorder
    - ABV001 - Libraries
      - ABJ604 - LOQ
      - ABJ725 - LOPD
      - ABV500 - LOP
      - ABV501 - Block

IEC

**Figure 1 – Screenshot of the current content of the IEC 61987 public domain**

The characterization, found in Figure 1, is an ontology of device classes that have already been developed and are being worked on in ongoing projects. All created property classes are summarized in the libraries. Further extensions of device classes will be found in the characterization tree.

# INDUSTRIAL-PROCESS MEASUREMENT AND CONTROL – DATA STRUCTURES AND ELEMENTS IN PROCESS EQUIPMENT CATALOGUES –

## Part 100: Data base standard for process measurement, control and automation equipment

### 1 Scope

This part of the IEC 61987 series provides the semantics of the data needed for the area of process automation, the Industrial Internet of Things (IIoT), and smart manufacturing. Classification and description of products with classes and properties for future objects within the scope of TC 65 (Industrial-process measurement, control and automation) will be developed as IEC 61987 DB standard and published via IEC CDD data dictionary IEC 61987.

### 2 Normative references

There are no normative references in this document.

### 3 Terms, definitions and abbreviated terms

#### 3.1 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology data bases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

#### 3.2 Abbreviated terms

IEC CDD IEC Common Data Dictionary available at <https://cdd.iec.ch>

DB data base

IIoT Industrial Internet of Things

LOP list of properties

LOPD list of dynamic properties

LOQ list of qualifiers

### 4 Development and maintenance of IEC 61987 data dictionary

#### 4.1 Overview of the generic structures

Figure 2 shows the current state of development of the IEC 61987 domain in the IEC CDD.