IEC 61987-22

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Industrial-process measurement and control – Data structures and elements in process equipment catalogues – Part 22: Lists of Properties (LOPs) of valve body assemblies for electronic data exchange

Mesure et commande dans les processus industriels – Structures de données et éléments dans les catalogues d'équipement de processus – Partie 22: Listes de propriétés (LOP) des ensembles de corps de vannes pour l'échange électronique de données

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The text of this standard is based on the following documents:

FDIS	Report on voting
65B/997/FDIS	65B/1018/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 61987 series, 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.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

The exchange of product data between companies, business systems, engineering tools, data systems within companies and, in the future, control systems (electrical, measuring and control technology) can run smoothly only when both the information to be exchanged and the use of this information have been clearly defined.

Prior to this standard, requirements on process control devices and systems were specified by customers in various ways when suppliers or manufacturers were asked to quote for suitable equipment. The suppliers in their turn described the devices according to their own documentation schemes, often using different terms, structures and media (paper, databases, CDs, e-catalogues, etc.). The situation was similar in the planning and development process, with device information frequently being duplicated in a number of different information technology (IT) systems.

Any method that is capable of recording all existing information only once during the planning and ordering process and making it available for further processing, gives all parties involved an opportunity to concentrate on the essentials. A precondition for this is the standardization of both the descriptions of the objects and the exchange of information.

The IEC 61987 series proposes a method for standardization which will help both suppliers and users of process control equipment to optimize workflows both within their own companies and in their exchanges with other companies. Depending on their role in the process, engineering firms may be considered here to be either users or suppliers.

The method specifies process control equipment by means of blocks of properties. These blocks are compiled into Lists of Properties (LOPs), each of which describes a specific equipment (device) type. The IEC 61987 series covers both properties that may be used in an inquiry or a proposal and detailed properties required for integration of the equipment in computer systems for other tasks.

IEC 61987-10 defines structure elements for constructing lists of properties for electrical and process control equipment in order to facilitate automatic data exchange between any two computer systems in any possible workflow, for example engineering, maintenance or purchasing workflow and to allow both the customers and the suppliers of the equipment to optimize their processes and workflows. IEC 61987-10 also provides the data model for assembling the LOPs.

IEC 61987-11, while specifying a generic structure for measuring equipment, provides several important detail descriptions, such as the handling of composite devices that are also required for LOPs describing devices of other areas like the automated valves.

IEC 61987-21 specifies the generic structure for Operating and Device Lists of Properties (OLOPs and DLOPs) for automated valves. It lays down the framework for further parts of IEC 61987 in which complete LOPs for final control elements of different construction and functional principle will be specified. The generic structure may also serve as a basis for the specification of LOPs for other industrial-process control instrument types.

This part of IEC 61987 concerns valve body assemblies and process regulators. It provides an operating LOP which can be used, for example, as a request for quotation for various purposes. The DLOPs provided in this standard can be used in very different ways in the computer systems of equipment manufacturers and suppliers, in Computer Aided Engineering (CAE) and similar systems of Engineering Procurement and Construction (EPC) contractors and other engineering companies and especially in the various plant maintenance systems of plant owners. The OLOP and the DLOPs provided correspond to the guidelines specified in IEC 61987-10, IEC 61987-11 and IEC 61987-21.

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

Part 22: Lists of Properties (LOPs) of valve body assemblies for electronic data exchange

1 Scope

This part of IEC 61987 provides

- Operating Lists of Properties (OLOP) for the description of the operating parameters and the collection of requirements for valve body assemblies and process regulators,
- Device Lists of Properties (DLOPs) for the description of various types of valve body assemblies and process regulators.

The structures of the OLOP and the DLOP conform to the general structures defined in IEC 61987-11 and IEC 61987-21 as well as to the fundamentals for the construction of LOPs defined in IEC 61987-10. The DLOPs conform additionally with terms defined in IEC 60534-7.

Libraries of properties and of blocks used in the LOPs are listed in Annexes A and B respectively.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 61360-1, *Standard data element types with associated classification scheme for electric components – Part 1: Definitions – Principles and methods*

IEC 61987-10:2009, *Industrial-process measurement and control – Data structures and elements in process equipment catalogues – Part 10: List of Properties (LOPs) for Industrial-Process Measurement and Control for Electronic Data Exchange – Fundamentals*

IEC 61987-11, *Industrial-process measurement and control – Data structures and elements in process equipment catalogues – Part 11: List of Properties (LOP) of measuring equipment for electronic data exchange – Generic structures*

IEC 61987-21:2015, *Industrial-process measurement and control – Data structures and elements in process equipment catalogues – Part 21: List of Properties (LOP) of automated valves for electronic data exchange – Generic structures*

3 Terms and definitions

For the purposes of this document, the terms and definitions in IEC 61987-10 and IEC 61987-11 apply.

4 General

4.1 Overview

The LOPs provided by this standard are intended for use in electronic data exchange processes performed between any two computer systems. The computer systems can belong to the same company or they can belong to different companies as described in IEC 61987-10:2009, Annex C.

4.2 Depiction of OLOP and DLOPs

The OLOPs for valve body assemblies is depicted in Annex A while the DLOPs of the same device family are depicted in Annex B.

Annex A
(normative)

Operating List of Properties for valve body assembly and process pressure regulator

The considered OLOP has been created for all types of valve body assemblies and for two types of process pressure regulators.

This OLOP is assigned to the area (the named class of the classification and all sub-classes) of the valve body assembly in the classification scheme for the final control elements (see IEC 61987-21:2015, Table A.1):

– valve body assembly node ID: IEC-ABD342

as well as to the following two nodes of the classification:

– pressure reducing regulator node ID: IEC-ABD386
– back pressure/excess pressure regulator node ID: IEC-ABD387

NOTE The OLOP is also found in the Properties Tree field and has the ID IEC-ABE307.

The OLOP is available with all blocks and properties in the IEC Common Data Dictionary (CDD) at: http://std.iec.ch/cdd/iec61987/cdddev.nsf/.

Annex B
(normative)

Device Lists of Properties for different types of valve body assembly and process pressure regulator

B.1 Device LOP for valve body assembly

The DLOPs of Annex B correspond to the classification scheme for the final control elements placed in IEC 61987-21:2015, Annex A.

The DLOP for a valve body assembly is assigned to the node of the classification:

– valve body assembly (generic) node ID: IEC-ABE330

NOTE The DLOP is also found in the Properties Tree field and has the ID IEC-ABE310.

The DLOP is available with all blocks and properties in the IEC CDD at: http://std.iec.ch/cdd/iec61987/cdddev.nsf/.

B.2 Device LOP for globe valve

The DLOP for a globe valve is assigned to the following node of the classification (IEC 61987-21:2015, Table A.1):

– globe valve node ID: IEC-ABD344

NOTE The DLOP is also found in the Properties Tree field and has the ID IEC-ABE311.

The DLOP is available with all blocks and properties in the IEC CDD at http://std.iec.ch/cdd/iec61987/cdddev.nsf/.

B.3 Device LOP for diaphragm/pinch valve

The DLOP for a diaphragm/pinch valve is assigned to the following node of the classification (IEC 61987-21:2015, Table A.1):

– diaphragm/pinch valve node ID: IEC-ABD346

NOTE The DLOP is also found in the Properties Tree field and has the ID IEC-ABE313.

The DLOP is available with all blocks and properties in the IEC CDD at http://std.iec.ch/cdd/iec61987/cdddev.nsf/.

B.4 Device LOP for gate valve

The DLOP for a gate valve is assigned to the following node of the classification (IEC 61987-21:2015, Table A.1):

– gate valve node ID: IEC-ABD345

NOTE The DLOP is also found in the Properties Tree field and has the ID IEC-ABE312.

The DLOP is available with all blocks and properties in the IEC CDD at http://std.iec.ch/cdd/iec61987/cdddev.nsf/.

B.5 Device LOP for ball valve

The DLOP for a ball valve is assigned to the following node of the classification (IEC 61987-21:2015, Table A.1):

– ball valve node ID: IEC-ABD349

NOTE The DLOP is also found in the Properties Tree field and has the ID IEC-ABE317.

The DLOP is available with all blocks and properties in the IEC CDD at http://std.iec.ch/cdd/iec61987/cdddev.nsf/.

B.6 Device LOP for butterfly valve

The DLOP for a butterfly valve is assigned to the following node of the classification (IEC 61987-21:2015, Table A.1):

– butterfly valve node ID: IEC-ABD352

NOTE The DLOP is also found in the Properties Tree field and has the ID IEC-ABE314.

The DLOP is available with all blocks and properties in the IEC CDD at http://std.iec.ch/cdd/iec61987/cdddev.nsf/.

B.7 Device LOP for eccentric plug valve

The DLOP for an eccentric plug valve is assigned to the following node of the classification (IEC 61987-21:2015, Table A.1):

– eccentric plug valve node ID: IEC-ABD348

NOTE The DLOP is also found in the Properties Tree field and has the ID IEC-ABE315.

The DLOP is available with all blocks and properties in the IEC CDD at

http://std.iec.ch/cdd/iec61987/cdddev.nsf/.

B.8 Device LOP for plug valve

The DLOP for a plug valve is assigned to the following node of the classification (IEC 61987-21:2005, Table A.1):

– plug valve node ID: IEC-ABD351

NOTE The DLOP is also found in the Properties Tree field and has the ID IEC-ABE316.

The DLOP is available with all blocks and properties in the IEC CDD at http://std.iec.ch/cdd/iec61987/cdddev.nsf/.

B.9 Device LOP for pressure reducing regulator and back pressure/excess pressure regulator

The DLOP for a pressure reducing regulator and a back pressure/excess pressure regulator are assigned to the following two nodes of the classification (IEC 61987-21:2015, Table A.1):

– pressure reducing regulator node ID: IEC-ABD386
– back pressure/excess pressure regulator node ID: IEC-ABD387

NOTE The DLOP is also found in the Properties Tree field and has the ID IEC-ABE318.