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Industrial-process measurement and control - Data structures and elements in process equipment catalogues - Part 24-1: Lists of Properties (LOPs) of positioners and I/P converters for electronic data exchange

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 04/16

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English Version

**Industrial-process measurement and control - Data structures  
and elements in process equipment catalogues - Part 24-1: Lists  
of Properties (LOPs) of positioners and I/P converters for  
electronic data exchange  
(IEC 61987-24-1:2015)**

Mesure et commande dans les processus industriels -  
Structures de données et éléments dans les catalogues  
d'équipement de processus - Partie 24-1: Listes de  
propriétés (LOP) des positionneurs et des convertisseurs  
I/P pour l'échange électronique de données  
(IEC 61987-24-1:2015)

Industrielle Leittechnik - Datenstrukturen und -elemente in  
Katalogen der Prozessleittechnik - Teil 24-1:  
Merkmaleisten (ML) für Stellungsregler für den  
elektronischen Datenaustausch  
(IEC 61987-24-1:2015)

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European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

## European foreword

The text of document 65B/999/FDIS, future edition 1 of IEC 61987-24-1, prepared by SC 65B "Measurement and control devices", of IEC/TC 65 "Industrial-process measurement, control and automation" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61987-24-1:2016.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2016-07-20
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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60534-7	NOTE	Harmonized as EN 60534-7.
IEC 61360-1	NOTE	Harmonized as EN 61360-1.
IEC 61360-2	NOTE	Harmonized as EN 61360-2.
IEC 61360-5	NOTE	Harmonized as EN 61360-5.
IEC 61514	NOTE	Harmonized as EN 61514.
IEC 61514-2	NOTE	Harmonized as EN 61514-2.
IEC 61987-1	NOTE	Harmonized as EN 61987-1.
IEC 61987-21:2015	NOTE	Harmonized as EN 61987-21:2016 (not modified).

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61987-10	2009	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 for Electronic Data Exchange - Fundamentals	EN 61987-10	2009
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	EN 61987-11	-
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	EN 61987-21	2016



# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

**Industrial-process measurement and control – Data structures and elements in process equipment catalogues –  
Part 24-1: Lists of Properties (LOPs) of positioners and I/P converters for electronic data exchange**

**Mesure et commande dans les processus industriels – Structures de données et éléments dans les catalogues d'équipement de processus –  
Partie 24-1: Listes de propriétés (LOP) des positionneurs et des convertisseurs I/P pour l'échange électronique de données**





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# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**Industrial-process measurement and control – Data structures and elements in process equipment catalogues –  
Part 24-1: Lists of Properties (LOPs) of positioners and I/P converters for electronic data exchange**

**Mesure et commande dans les processus industriels – Structures de données et éléments dans les catalogues d'équipement de processus –  
Partie 24-1: Listes de propriétés (LOP) des positionneurs et des convertisseurs I/P pour l'échange électronique de données**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

**Part 24-1: Lists of Properties (LOPs) of positioners  
and I/P converters for electronic data exchange**

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61987-24-1 has been prepared by subcommittee 65B: Measurement and control devices, of IEC technical committee 65: Industrial-process measurement, control and automation.

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

FDIS	Report on voting
65B/999/FDIS	65B/1020/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 positioners and I/P converters. It provides an operating LOP for valve/actuator accessories which can be used, for example, as a request for quotation for various purposes. The DLOPs for the positioners and I/P converters 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 24-1: Lists of Properties (LOPs) of positioners and I/P converters for electronic data exchange

### 1 Scope

This part of IEC 61987 provides

- Operating Lists of Properties (OLOPs) for the description of the operating parameters and the collection of requirements for valve/actuator accessories, that can be used for every valve/actuator accessory,
- Device Lists of Properties (DLOPs) for positioners and I/P converters.

The structures of the OLOP and the DLOPs 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 the 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 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*

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