SLOVENSKI STANDARD
SIST EN IEC 61987-31:2023

01-april-2023

Merjenje in nadzor industrijskega procesa - Strukture podatkov in elementi v katalogih procesne opreme - 31. del: Seznam lastnosti (LOP) infrastrukturnih naprav za elektronsko izmenjavo podatkov - Generična struktura (IEC 61987-31:2022)

Industrial-process measurement and control - Data structures and elements in process equipment catalogues - Part 31: List of Properties (LOPs) of infrastructure devices for electronic data exchange - Generic structures (IEC 61987-31:2022)

Industrielle Automatisierungs- und Leittechnik - Datenstrukturen und -elemente in Katalogen der Prozessleittechnik - Teil 31: Liste der Eigenschaften (LOP) von Infrastrukturgeräten für den elektronischen Datenaustausch - Allgemeine Strukturen (IEC 61987-31:2022)

Mesure et commande des processus industriels - Structures de données et éléments dans les catalogues d'équipement de processus - Partie 31: Listes des propriétés (LOP) d'appareils d'infrastructure pour l'échange électronique de données - Structures génériques (IEC 61987-31:2022)

Ta slovenski standard je istoveten z: **EN IEC 61987-31:2023**

ICS:

01.110	Tehnična dokumentacija za izdelke	Technical product documentation
25.040.40	Merjenje in krmiljenje industrijskih postopkov	Industrial process measurement and control
35.240.50	Uporabniške rešitve IT v industriji	IT applications in industry

SIST EN IEC 61987-31:2023 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 61987-31

January 2023

ICS 25.040.40

English Version

Industrial-process measurement and control - Data structures and elements in process equipment catalogues - Part 31: List of Properties (LOPs) of infrastructure devices for electronic data exchange - Generic structures (IEC 61987-31:2022)

Mesure et commande des processus industriels - Structures de données et éléments dans les catalogues d'équipement de processus - Partie 31: Listes des propriétés (LOP) d'appareils d'infrastructure pour l'échange électronique de données - Structures génériques (IEC 61987-31:2022)

Industrielle Automatisierungs- und Leittechnik - Datenstrukturen und -elemente in Katalogen der Prozessleittechnik - Teil 31: Liste der Eigenschaften (LOP) von Infrastrukturgeräten für den elektronischen Datenaustausch - Allgemeine Strukturen (IEC 61987-31:2022)

This European Standard was approved by CENELEC on 2023-01-18. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 65E/802/CDV, future edition 1 of IEC 61987-31, prepared by SC 65E "Devices and integration in enterprise systems" of IEC/TC 65 "Industrial-process measurement, control and automation" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61987-31:2023.

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)	2023-10-18
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2026-01-18

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 61987-31:2022 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standard indicated:

IEC 62828-1	NOTE	Approved as EN IEC 62828-1
IEC 61360-1	NOTE	Approved as EN 61360-1
IEC 61360-2	NOTE	Approved as EN 61360-2
IEC 61987 (series)	NOTE	Approved as EN IEC 61987 (series)

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where 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.

Publication	Year	Title	EN/HD	Year
IEC 60534-1	-	Industrial-process control valves - Part 1: Control valve terminology and general considerations	EN 60534-1	-
IEC 61069-5	-	Industrial-process measurement, control and automation - Evaluation of system properties for the purpose of system assessment - Part 5: Assessment of system dependability	EN 61069-5	-
IEC 61508-6	-	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 6: Guidelines on the application of IEC 61508-2 and IEC 61508-3	EN 61508-6	-
IEC 61987-1	2006	Industrial-process measurement and control - Data structures and elements in process equipment catalogues - Part 1: Measuring equipment with analogue and digital output	EN 61987-1	2007
IEC 61987-10	-	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	EN 61987-10	-
IEC 61987-11	-	Industrial-process measurement and control - Data structures and elements in process equipment catalogues - Part 11: List of properties (LOPs) of measuring equipment for electronic data exchange - Generic structures	EN 61987-11	-

IEC 61987-31

Edition 1.0 2022-12

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Industrial-process measurement and control – Data structures and elements in process equipment catalogues – Part 31: Lists of Properties (LOPs) of infrastructure devices for electronic data exchange – Generic structures

Mesure et commande des processus industriels – Structures de données et éléments dans les catalogues d'équipement de processus – Partie 31: Listes des propriétés (LOP) d'appareils d'infrastructure pour l'échange électronique de données – Structures génériques

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 25.040.40

ISBN 978-2-8322-6145-3

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

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

Part 31: Lists of Properties (LOPs) of infrastructure devices for electronic data exchange – Generic structures

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.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 61987-31 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 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/802/CDV	65E/895/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.

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. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

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 document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document 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 can 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 can 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 automated industrial valves.

IEC 61987-31 specifies the generic structure for operating (OLOPs) and device lists of properties (DLOPs) for infrastructure devices. Infrastructure devices are devices installed, for example, in network equipment and control rooms. It lays down the framework for further parts of IEC 61987-3x series in which complete LOPs for infrastructure devices of different construction and functional principle will be specified. The generic structure can also serve as a basis for the specification of LOPs for other industrial-process control device types.

Annex A contains a characterisation of infrastructure devices. This is a tree of relationships between different device types. Starting at the root "equipment for industrial-process automation", it introduces the infrastructure devices. This characterisation is used in the Process Automation Domain of the IEC Common Data Dictionary (CDD).