SVENSK STANDARD SS-EN 61987-1

Fastställd	Utgåva	Sida	Ansvarig kommitté
2007-10-22	1	1 (1+51)	SEK TK 65

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Industriell processtyrning – Datastrukturer och dataelement i kataloger över processutrustning – Del 1: Mätutrustning med analog och digital utgång

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

Som svensk standard gäller europastandarden EN 61987-1:2007. Den svenska standarden innehåller den officiella engelska språkversionen av EN 61987-1:2007.

Nationellt förord

Europastandarden EN 61987-1:2007*)

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC

– **IEC 61987-1, First edition, 2006 - Industrial-process measurement and control - Data structures and elements in process equipment catalogues - Part 1: Measuring equipment with analogue and digital output**

utarbetad inom International Electrotechnical Commission, IEC.

*) EN 61987-1:2007 ikraftsattes 2007-10-22 som SS-EN 61987-1 genom offentliggörande, d v s utan utgivning av något svenskt dokument.

ICS 25.040.40; 35.240.50

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61987-1

February 2007

ICS 25.040.40;35.240.50

English version

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

(IEC 61987-1:2006)

Mesure et commande
dans les processus industriels -
Structures et éléments de données
dans les catalogues d'équipement
de processus -
Partie 1: Equipement de mesure
à sortie analogique et numérique
(CEI 61987-1:2006)

Industrielle Leittechnik -
Datenstrukturen und -elemente
in Katalogen der Prozessleittechnik -
Teil 1: Messeinrichtungen mit analogen
und digitalen Ausgängen
(IEC 61987-1:2006)

This European Standard was approved by CENELEC on 2007-02-01. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

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Ref. No. EN 61987-1:2007 E

SEK Svensk Elstandard

Foreword

The text of document 65B/599/FDIS, future edition 1 of IEC 61987-1, prepared by SC 65B, Devices & process analysis, of IEC TC 65, Industrial-process measurement and control, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61987-1 on 2007-02-01.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2007-11-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2010-02-01

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 61987-1:2006 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 standards indicated:

IEC 60068	NOTE	Harmonized in EN 60068 series (not modified).
IEC 60751	NOTE	Harmonized as EN 60751:1995 (not modified).
IEC 60770-2	NOTE	Harmonized as EN 60770-2:2003 (not modified).
IEC 61082	NOTE	Harmonized in EN 61082 series (not modified).
IEC 61326	NOTE	Harmonized in EN 61326 series (not modified).
IEC 61360	NOTE	Harmonized in EN 61360 series (not modified).
IEC 82045-1	NOTE	Harmonized as EN 82045-1:2001 (not modified).
ISO 8879	NOTE	Harmonized as EN 28879:1990 (not modified).
ISO 10303-21	NOTE	Harmonized as ENV ISO 10303-21:1995 (not modified).

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Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 1993
A1	1999		A1	2000
IEC 60559	1989	Binary floating-point arithmetic for microprocessor systems	HD 592 S1	1991
IEC 60654-1	1993	Industrial-process measurement and control equipment - Operating conditions - Part 1: Climatic conditions	EN 60654-1	1993
IEC 60770-1	1999	Transmitters for use in industrial-process control systems - Part 1: Methods for performance evaluation	EN 60770-1	1999
IEC 61000-4	Series	Electromagnetic compatibility (EMC)	EN 61000-4	Series
IEC 61069	Series	Industrial-process measurement and control - Evaluation of system properties for the purpose of system assessment	EN 61069	Series
IEC 61298	Series	Process measurement and control devices - General methods and procedures for evaluating performance	EN 61298	Series
ISO 3511-1	1977	Process measurement control functions and instrumentation - Symbolic representation - Part 1: Basic requirements	-	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 1: Measuring equipment with analogue and digital output

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 61987-1 has been prepared by subcommittee 65B: Devices, of IEC technical committee 65: Industrial-process measurement and control.

This standard cancels and replaces IEC/PAS 61987-1 published in 2002. This first edition constitutes a technical revision.

This bilingual version (2012-12) corresponds to the monolingual English version, published in 2006-12.

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

FDIS	Report on voting
65B/599/FDIS	65B/602/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.

The French version of this standard has not been voted upon.

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

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site 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

In recent years, industry has become alert to the fact that a great deal of time and effort is wasted in the transposition of measuring equipment data from one form to another. The technical data of an instrument, for example, may exist at the manufacturer's facilty as two separate data sets for paper and electronic presentation: the end-user requires much the same data for works standards, engineering data bases or commercial data bases. In most cases, however, the data cannot be automatically re-used because each application has its own particular data storage format.

A second problem that belies the re-use of technical data is the content of the product descriptions themselves. There is little agreement between manufacturers on what information a technical data sheet should contain, how it should be arranged or how the results, for example, of particular performance tests should be presented. When transferring this information into a data base, an end-user will always find gaps and proprietary interpretations that make the task more difficult.

This standard aims at solving these problems by defining a generic structure and its content for industrial-process measuring and control equipment. It builds upon the assumption that, for a given class of measuring equipment, for example, pressure measuring equipment, temperature measuring equipment or electromagnetic flow-measuring equipment, a set of non-proprietary structures and product features can be specified. The resulting documents cannot only be exchanged electronically, they can also be presented to humans in an easily understandable form.

This standard is applicable to electronic catalogues of process measuring equipment with analogue and digital output. Further parts with similar classification structures will be produced for measuring equipment with binary output and interface equipment in the future. (The structure already contains a great many product features that are common to measuring equipment with binary output.) Similarly, Annex B has been prepared with a view to future standardization.

This standard is not intended as a replacement for existing standards, but rather as a guiding document for all future standards which are concerned with the specifications of process measuring equipment. Every revision of an existing standard should take into account the structures and product features defined in Clause 5 of this standard or work towards a harmonization.

Annex A contains a tabular overview of the classification and catalogue structure of process measuring equipment. Annex B contains tables with a further sub-classification for specific measured variables.

Wherever possible, existing terms from international standards have been used to name the product features within the structures. In accordance with ISO 10241, Clause 3 of this standard contains a list of terms, definitions and sources.

Documents created according to the standard are structured. A possible means of exchanging structured information free of layout information is given by Standard Generalized Mark-Up Language (SGML) described in ISO 8879 or Extensible Mark-Up Language (XML), which is derived from it.

This standard could also provide the basis for arranging properties (data element types) that conform to IEC 61360 or ISO 13584. This would require that the features which, in this standard, can be textual units, graphical and tabular representations, etc., be broken down into properties (data element types) conforming to the said standards. For example, a range would be expressed as a lower range-limit (LRL) and upper range-limit (URL) with unit of measure; dimensions (L × B × H) as three separate elements, length, breadth and height with unit of measure; or a derating curve as an appropriate series of data element pairs.

This standard conforms to ISO 15926-1 and ISO 15926-2 with respect to the data model and associated reference data library (ISO 15926-4), for example, as used for the limited classification structure. At the same time, it is also aligned to the Standard for the Exchange of Product Model Data (STEP). The data model and definitions of ISO 10303-21 uses the ISO 15926-4 TS reference data library as “library”. The current standard can reproduce the data fields according to this standard, including, for example, product structure data, dimensional data, electrical connection data and product properties such as measuring range or power supply.

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

Part 1: Measuring equipment with analogue and digital output

1 Scope

This part of IEC 61987 defines a generic structure in which product features of industrial-process measurement and control equipment with analogue or digital output should be arranged, in order to facilitate the understanding of product descriptions when they are transferred from one party to another. It applies to the production of catalogues of process measuring equipment supplied by the manufacturer of the product and helps the user to formulate his requirements.

This standard also serves as a reference document for all future standards which are concerned with process measuring equipment catalogues. In addition, it is intended as a guide for the production of further standards on process equipment documentation for similar systems, for example, for other measuring equipment and actuators.

2 Normative references

The following referenced documents are indispensable for the application 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.

IEC 60529:2001, *Degrees of protection provided by enclosures (IP Code)*

IEC 60559:1989, *Binary floating-point arithmetic for microprocessor systems*

IEC 60654-1:1993, *Industrial-process measurement and control equipment – Operating conditions – Part 1: Climatic conditions*

IEC 60770-1:1999, *Transmitters for use in industrial-process control systems – Part 1: Methods for performance evaluation*

IEC 61000-4 (all parts), *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques*

IEC 61069 (all parts), *Industrial-process measurement and control – Evaluation of system properties for the purpose of system assessment*

IEC 61298 (all parts), *Process measurement and control devices – General methods and procedures for evaluating performance*

ISO 3511-1:1977, *Process measurement control functions and instrumentation – Symbolic representation – Part 1: Basic requirements*