
IEC 61360-5: Standardni tipi podatkovnih elementov s pripadajočo klasifikacijsko shemo za električne komponente – 5. del: Podaljški do slovarske sheme EXPRESS

Standard data element types with associated classification scheme for electric components -- Part 5: Extensions to the EXPRESS dictionary schema

Genormte Datenelementtypen mit Klassifikationsschema für elektrische Bauteile -- Teil 5: Erweiterung des EXPRESS-Datenmodells

Types normalisés d'éléments de données avec plan de classification pour composants électriques -- Partie 5: Extensions pour le schéma d'un dictionnaire EXPRESS

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**Standard data element types
with associated classification scheme for electric components
Part 5: Extensions to the EXPRESS dictionary schema
(IEC 61360-5:2004)**

Types normalisés d'éléments de données
avec plan de classification
pour composants électriques
Partie 5: Extensions pour le schéma
d'un dictionnaire EXPRESS
(CEI 61360-5:2004)

Genormte Datenelementtypen mit
Klassifikationsschema für elektrische
Bauteile
Teil 5: Erweiterung des EXPRESS-
Datenmodells
(IEC 61360-5:2004)

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This European Standard was approved by CENELEC on 2004-06-01. 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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and 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

Foreword

The text of document 3D/128/FDIS, future edition 1 of IEC 61360-5, prepared by SC 3D, Data sets for libraries, of IEC TC 3, Information structures, documentation and graphical symbols, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61360-5 on 2004-06-01.

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) 2005-03-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2007-06-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61360-5:2004 was approved by CENELEC as a European Standard without any modification.

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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 Where an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61360-1	2002	Standard data element types with associated classification scheme for electric components Part 1: Definitions - Principles and methods	EN 61360-1	2002
IEC 61360-2	2002	Part 2: EXPRESS dictionary schema	EN 61360-2	2002
IEC 61360-4	1997	Part 4: IEC reference collection of standard data element types, component classes and terms	EN 61360-4	1997
ISO 10303-11	1994	Industrial automation systems and integration - Product data representation and exchange Part 11: Description methods: The EXPRESS language reference manual	ENV ISO 10303-11	1995
ISO 13584-1	2001	Industrial automation systems and integration Parts library -- Part 1: Overview and fundamental principles	-	-
ISO 13584-24	2003	Part 24: Logical resources: Logical model of supplier library	-	-
ISO 13584-25	2004	Part 25: Logical resource: Logical model of supplier library with aggregate values and explicit content	-	-
ISO 13584-42	1998	Part 42: Description methodology: Methodology for structuring part families	-	-

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**Standard data element types with associated
classification scheme for electric components –**

**Part 5:
Extensions to the EXPRESS dictionary schema**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**STANDARD DATA ELEMENT TYPES
WITH ASSOCIATED CLASSIFICATION SCHEME
FOR ELECTRIC COMPONENTS –**
Part 5: Extensions to the EXPRESS dictionary schema

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 61360-5 has been prepared by subcommittee 3D: Data sets for libraries, of IEC technical committee 3: Information structures, documentation and graphical symbols

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

FDIS	Report on voting
3D/128/FDIS	3D/129/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.

IEC 61360 consists of the following parts, under the general title *Standard data element types with associated classification scheme for electric components*:

- Part 1: Definitions – Principles and methods
- Part 2: EXPRESS dictionary schema
- Part 3: Maintenance and validation procedures
- Part 4: IEC reference collection of standard data element types, component classes and terms.
- Part 5: Extensions to the EXPRESS dictionary schema.

The committee has decided that the contents of this publication will remain unchanged until 2005. At this date, the publication will be

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

A bilingual edition of this standard may be issued at a later date.

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INTRODUCTION

To understand the generic resources used in this part of the IEC 61360 series knowledge of EXPRESS as defined in ISO 10303-11:1994 is required. Basic knowledge of ISO 13584-24:2003, and ISO 13584-42:1998 is also required.

The generic resources specified in this document were developed as a joint effort of ISO Technical Committee 184/Subcommittee 4/Working Group 2 and IEC Subcommittee 3D. They are intended to be documented both in this part of IEC 61360 and ISO 13584. Both committees agreed not to change and/or modify the EXPRESS schemas independently of each other in order to guarantee the harmonization and the reusability of the work from both committees. Requests for amendments should therefore be sent to both committees. These requests should be adopted by both committees before modifying the EXPRESS schemas.

This document is fully compatible with ISO 13584 parts 42 and 25.

This document contains those extensions to the common ISO13584_IEC61360_dictionary_schema (IEC 61360-2) that are generated in order to fulfil user needs.

The following parts are copied from ISO 13584-25 and appear in IEC 61360-5 as follows:

ISO 13584-25	IEC 61360-5
Clause 6	Annex A (informative)
Clause 8	Annex B (informative)
Annex C	Annex C (informative)
Annex D	Annex D (informative)
Annex E	Annex E (informative)
Figure F.1	Annex F (informative)

STANDARD DATA ELEMENT TYPES WITH ASSOCIATED CLASSIFICATION SCHEME FOR ELECTRIC COMPONENTS –

Part 5: Extensions to the EXPRESS dictionary schema

1 Scope and object

The scope of this part of IEC 61360 is the extension of the common ISO/IEC dictionary schema for the definition of concepts which are used in IEC 61360-1 but which are not addressed by the information models specified in IEC 61360-2.

The object of this standard is to provide a formal model for data according to the scope as given above, and thus to provide, with IEC 61360-2, a means for the computer-sensible representation and exchange of all data which comply with IEC 61360-1.

The common ISO/IEC dictionary schema as defined in IEC 61360-2 is the common ISO/IEC dictionary schema based on the intersection of the scopes of the two base standards:

- IEC 61360-1;
- ISO 13584-42.

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and facilitates a harmonization of both.

Quotation of a relevant part from the scope and object of IEC 61360-1:

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This part of IEC 61360 provides a firm basis for the clear and unambiguous definition of characteristic properties (data element types) of all elements of electrotechnical systems from basic components to subassemblies and full systems. Although originally conceived in the context of providing a basis for the exchange of information on electric/electronic components, the principles and methods of this standard may be used in areas outside the original conception such as assemblies of components and electrotechnical systems and subsystems

Quotation of a relevant part from the introduction of ISO 13584-42:

This part of ISO 13584 provides rules and guidelines for library data suppliers to create hierarchies of families of parts according to a common methodology intended to enable multi-supplier consistency. These rules pertain to the following: the method for grouping parts into families of parts to form a hierarchy; the dictionary elements that describe the families and properties of parts.

IEC 61360-2 provides a common information model for the work of both committees, thus allowing for the implementation of dictionary systems dealing with data delivered according to either of the standards elaborated by both committees.

This part of IEC 61360 provides a Library Integrated Information Model (liim) that, with resources from IEC 61360-2, ISO 13584 and ISO 10303, allows modelling and exchanging dictionary information compliant with IEC 61360-1.

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 61360-1:2002, *Standard data element types with associated classification scheme for electric components – Part 1: Definitions – Principles and methods*

IEC 61360-2:2002, *Standard data element types with associated classification scheme for electric components – Part 2: EXPRESS dictionary schema*

IEC 61360-4:1997, *Standard data element types with associated classification scheme for electric components – Part 4: IEC reference collection of standard data element types, component classes and terms*

ISO 10303-11:1994, *Industrial automation systems and integration – Product data representation and exchange – Part 11: Description methods: The EXPRESS language reference manual*

ISO 13584-1:2001, *Industrial automation systems and integration – Parts library – Part 1: Overview and fundamental principles*

ISO 13584-24:2003, *Industrial automation systems and integration – Parts library – Part 24: Logical resource: Logical model of supplier library*

ISO 13584-25, *Industrial automation systems and integration – Parts library – Part 25: Logical resource: Logical model of supplier library with aggregate values and explicit content*¹

ISO 13584-42:1998, *Industrial automation systems and integration – Parts library – Part 42: Description methodology: Methodology for structuring part families*

3 Terms and definitions and abbreviations

For the purposes of this document, the terms and definitions as given in IEC 61360-1, IEC 61360-2, ISO 13584-24 as well as the following apply. Some of these definitions are repeated for convenience.

NOTE Definitions copied verbatim from other standards are followed by a reference to the source standard in brackets. Definitions that have been adapted from other standards are followed by an explanatory note.

3.1

applicable property

a property that is defined for some family of parts and that shall apply to any part that belongs to this family of parts

[ISO 13584-24:2003, definition 3.3]

EXAMPLE For a generic family of screws, the threaded diameter is an applicable property. This characteristic applies to any screw.

¹ To be published.

3.2 basic semantic unit

BSU

entity that provides an absolute and universal identification of certain objects of the application domain (for example classes, data element types)

[IEC 61360-2:2002, definition 2.1]

3.3 class extension

the set of all instances satisfying the class definition

[ISO 13584-24:2003, definition 3.13]

3.4 common dictionary schema

information model for a dictionary, using the modelling language EXPRESS

[IEC 61360-2:2002, definition 2.3]

NOTE The common dictionary schema is formally named ISO13584_IEC61360_dictionary_schema and is specified in IEC 61360-2:2002. This schema is duplicated in Annex D of ISO 13584-42:1998.

3.5 conformance class

a subset of a standard for which conformance may be claimed

[ISO 13584-24:2003, definition 3.17]

3.6 conformance requirement

a precise, text definition of a characteristic required to be present in a conforming implementation

[ISO 10303-1:1994, definition 3.2.13]

3.7 dictionary element

set of attributes that constitutes the dictionary description of certain objects of the application domain (for example classes, data element types)

[IEC 61360-2:2002, definition 2.2]

3.8 data element type

DET

unit of data for which the identification, description and value representation have been specified

[IEC 61360-1:2002, definition 2.3]

3.9 data type

set of allowed values of a data element type.

[IEC 61360-2:2002, definition 2.4]

NOTE Within IEC the **data_type** that is either a unit of measure or a value domain is defined separately for each data element type.

**3.10
family of parts**

a simple or generic family of parts

[ISO 13584-24:2003, definition 3.40]

**3.11
functional model**

the library data that represent one representation category of a part in an integrated library

[ISO 13584-1:2001,definition 3.1.3]

**3.12
functional view**

the data that represent one representation category of a part in product data

[ISO 13584-1:2001, definition 3.1.4]

NOTE The structure of a functional view does not depend on the part it represents.

**3.13
general model**

the library data that carries the definition and identity of a part in an integrated library

[ISO 13584-1:2001, definition 3.1.5]

**3.14
generic family of parts**

a grouping of simple or generic families of parts done for purposes of classification or for factoring common information

[ISO 13584-24:2003, definition 3.44]

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**3.15
library delivery file**

a population of EXPRESS entity instances conforming to a library integrated information model and represented according to one of the implementation methods specified in ISO 10303

[ISO 13584-24:2003, definition 3.68]

NOTE A library delivery file specifies the structure and the content of a supplier library. It may reference library external files.

**3.16
library part**

a part associated with a set of data that represents it in a library

[ISO 13584-1:2001, definition 3.1.13]

**3.17
library part data**

data that represent a part in a library

[ISO 13584-1:2001, definition 3.1.14]

**3.18
library exchange context**

the set of one library delivery file and zero, one or more library external files that represent together a supplier library

[ISO 13584-24:2003, definition 3.70]