IEC 61360-5

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

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

Types normalisés d'éléments de données avec plan de classification pour composants électriques –
Partie 5: Extensions au schéma du dictionnaire EXPRESS

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland
Email: inmail@iec.ch
Web: www.iec.ch

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Email: csc@iec.ch
Tél.: +41 22 919 02 11
Fax: +41 22 919 03 00

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

Part 5: Extensions to the EXPRESS dictionary schema

FOREWORD

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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.

This bilingual version, published in 2011-04, corresponds to the English version.

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.

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.

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 the stability 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- withdrawn,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

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

and facilitates a harmonization of both.

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

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.

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[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]

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, defintion 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]