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Standard data element types with associated classification scheme for electric components - Part 1: Definitions - Principles and methods (IEC 61360-1:2002)

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EUROPEAN STANDARD

**EN 61360-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2002

ICS 31.020

Supersedes EN 61360-1:1995

English version

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

Types normalisés d'éléments  
de données avec plan de classification  
pour composants électriques  
Partie 1: Définitions –  
Principes et méthodes  
(CEI 61360-1:2002)

Genormte Datenelementtypen  
mit Klassifikationsschema für  
elektrische Bauteile  
Teil 1: Definitionen –  
Regeln und Methoden  
(IEC 61360-1:2002)

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This European Standard was approved by CENELEC on 2002-03-01. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, 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/93/FDIS, future edition 2 of IEC 61360-1, prepared by SC 3D, Data sets for libraries, of IEC TC 3, Documentation and graphical symbols, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61360-1 on 2002-03-01.

This European Standard supersedes EN 61360-1:1995.

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) 2002-12-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2005-03-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annexes A, B, C and ZA are normative and annex D is informative.

Annex ZA has been added by CENELEC.

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## iTeh STANDARD PREVIEW

### Endorsement notice (standards.iteh.ai)

The text of the International Standard IEC 61360-1:2002 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

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE When 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 60027	Series	Letter symbols to be used in electrical technology	HD 245	Series
IEC 60747	Series	Semiconductor devices - Discrete devices	EN 60747	Series
IEC 60748	Series	Semiconductors devices - Integrated circuits	-	-
IEC 61360-2	2002	Standard data element types with associated classification scheme for electric components 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/IEC 646	1991	Information technology - ISO 7-bit coded character set for information interchange	-	-
ISO/IEC 6429	1992	Information technology - Control functions for coded character sets	-	-
ISO/IEC 10646-1	2000	Information technology - Universal Multiple-Octet Coded Character Set (UCS) Part 1: Architecture and Basic Multilingual Plane	-	-
ISO/IEC 11179-3	1994	Information technology - Specification and standardization of data elements Part 3: Basic attributes of data elements	-	-
ISO 31	Series	Quantities and units	-	-
ISO 843	1997	Information and documentation - Conversion of Greek characters into Latin characters	-	-

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 2382	Series	Information technology - Vocabulary	-	-
ISO 6093	1985	Information processing - Representation of numerical values in character strings for information interchange	-	-
ISO 9735	1988	Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules	-	-
ISO 10303-21	1994	Industrial automation systems and integration - Product data representation and exchange Part 21: Implementation methods: Clear text encoding of the exchange structure	ENV ISO 10303-21	1995
ISO 13584-24	- 1)	Industrial automation systems and integration - Parts library Part 24: Logical resources: Logical model of supplier library	-	-
ISO 13584-42	1998	Part 42: Description methodology: Methodology for structuring part families	-	-

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1) To be published.

# INTERNATIONAL STANDARD

# IEC 61360-1

First edition  
2002-02

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

### Part 1: Definitions – Principles and methods

## iTeh STANDARD PREVIEW

*Types normalisés d'éléments de données avec plan  
de classification pour composants électriques –*

*SIST EN 61360-1:2003*

*Partie 1: [https://standards.ch.ai/catalog/standards/sist/1461c0da-a662-4026-9a71-](https://standards.ch.ai/catalog/standards/sist/1461c0da-a662-4026-9a71-b3de24f89036/sist-en-61360-1-2003)*

*Définitions – Principes et méthodes*

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 1: Definitions – Principles and methods

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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 the 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 National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61360-1 has been prepared by subcommittee 3D: Data sets for libraries, of IEC technical committee 3: Information structures, documentation and graphical symbols.

This second edition cancels and replaces the first edition published in 1995 and constitutes a technical revision.

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

FDIS	Report on voting
3D/93/FDIS	3D/96/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 3.

Annexes A, B and C form an integral part of this standard.

Annex D is for information only.

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 <sup>1)</sup>

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be:

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

A bilingual version of this publication may be issued at a later date.

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<sup>1)</sup> To be published.

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

## Part 1: Definitions – Principles and methods

### 1 General

#### 1.1 Scope and object

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.

In addition, the standard provides for establishing a classification hierarchy and the allocation of applicable and relevant properties to each of the classes so established in order to describe fully the characteristics of objects belonging to that class. Provision is also made for definition of the terms used in classification.

Use of this standard facilitates the exchange of data describing electrotechnical systems through a defined structure for the information to be exchanged in a computer-sensible form. Each property to be exchanged will have an unambiguously defined meaning and consistent naming, where relevant a defined value list, a prescribed format and defined units of measure for all quantitative values. There is also provision for

- control of changes to definitions of the properties through version and revision numbers;
- inclusion of notes and remarks to clarify and help in the application of the definitions;
- indication of the sources of definitions and value lists;
- associated figures and formulae.

#### 1.2 ISO/IEC EXPRESS information model

Closely associated with this part of IEC 61360 is IEC 61360-2. This part contains the information model, using the EXPRESS modelling language. In this model, the definition and structure of IEC 61360-1 is formalized and presented in a computer-sensible form. Use of this information model allows dictionary information to be exchanged between different systems using the STEP Physical File Format as defined in ISO 10303-21.

This information model has also been accepted as the common information model and is reproduced as ISO 13584-42. Use may be made of other standards in the ISO 13584 series of standards for extension of the concepts defined in this standard. In particular ISO 13584-24 contains provisions which allow

- extensions of the class structure to include feature and functional model classes;
- tabulation of properties;
- functional relationships among properties;
- references to graphical information;
- structuring of parts libraries.

### 1.3 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 60027 (all parts), *Letter symbols to be used in electrical technology*

IEC 60747 (all parts), *Semiconductor devices – Discrete devices*

IEC 60748 (all parts), *Semiconductor devices – Integrated circuits*

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/IEC 646:1991, *Information technology – ISO 7-bit coded character set for information interchange*

ISO/IEC 6429:1992, *Information technology – Control functions for coded character sets*

ISO/IEC 10646-1:2000, *Information technology – Universal Multiple-Octet Coded Character Set (UCS) – Part 1: Architecture and Basic Multilingual Plane*

ISO/IEC 11179-3:1994, *Information technology – Specification and standardization of data elements – Part 3: Basic attributes of data elements*

ISO 31 (all parts), *Quantities and units*

ISO 843:1997, *Information and documentation – Conversion of Greek characters into Latin characters*

ISO 2382 (all parts), *Information technology – Vocabulary*

ISO 6093:1985, *Information processing – Representation of numerical values in character strings for information interchange*

ISO 9735:1988, *Electronic data interchange for administration, commerce and transport (EDIFACT) – Application level syntax rules*

ISO 10303-21:1994, *Industrial automation systems and integration – Product data representation and exchange – Part 21: Implementation methods: Clear text encoding of the exchange structure*

ISO 13584-24, *Industrial automation systems and integration – Parts library – Part 24: Logical resources: Logical model of supplier library<sup>2)</sup>*

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

<sup>2)</sup> To be published.

## 2 Definitions

For the purpose of this part of IEC 61360, the following definitions apply.

### 2.1

#### **entity**

any concrete or abstract object of interest, including relations among things

### 2.2

#### **relation**

observed connection between entities

### 2.3

#### **data element type**

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

### 2.4

#### **data element type class**

class of data element types with the same type of representation, or description or value representation

### 2.5

#### **quantitative data element type**

data element type with a numerical value representing a measurable physical quantity, a quantity of information or a count of objects

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### 2.6

#### **non-quantitative data element type**

data element type which identifies or describes an object by means of codes, abbreviations, names, references or descriptions

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### 2.7

#### **condition data element type**

kind of data element type whose value affects the value of another data element type

NOTE 1 A condition data element type has only a meaning when it is used in combination with another data element type.

NOTE 2 A condition data element type does not form part of the classification tree and can be used on every level of the classification.

### 2.8

#### **classifying data element type**

data element type applicable for a particular component class, addressing a single elementary attribute of that component and having a homogeneous complementary value list, whose values define the component subclasses

### 2.9

#### **classification**

systematic division of a set of items into subsets according to their difference in some predetermined characteristics

### 2.10

#### **attribute**

any one of the properties to describe an entity, possibly involving one or more other entities

**2.11****product**

result of labour or of a natural or industrial process

**2.12****component**

industrial product which serves a specific function or functions, which is not decomposable or physically divisible and which is intended for use in a higher order assembled product

**2.13****electric component**

component with conductive terminals through which voltages or currents may be applied or delivered

NOTE Electric components and electric transducers are included in this definition.

**2.14****component class**

set of components of which each component can be described by the same group of data element types

**2.15****term**

designation of a defined concept in a special language by a linguistic expression

NOTE A term may consist of one or more words (i.e. simple term or complex term) or even contain symbols.

**2.16****material**

basic matter (such as metal, wood, plastic, fibre) from which the greater part of something physical is made

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**2.17****feature**

generalized property described by a group of related properties

**2.18****geometry**

a surface shape (as of a mechanical part or a crystal)

**2.19****computer-sensible information**

information which can be exchanged and manipulated with the interactive use of computer systems, programs and procedures

**2.20****applicable data element type**

data element type that is defined for a component class and which applies to all components belonging to that class

**2.21****visible data element type**

data element type that is defined for a component class but which may or may not apply to any component belonging to that class

NOTE 1 The code of the class where a data element type is defined as visible is part of the identification of this data element type.

NOTE 2 Within the IEC, all data element types are defined as visible at the level of the root class, that is the superclass of the component class, material class and geometry class.