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# INTERNATIONAL STANDARD

**CDD database - Circuit-breakers and similar equipment for household use**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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# CDD database - Circuit-breakers and similar equipment for household use

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IEC 63508 has been prepared by subcommittee 23E: Circuit-breakers and similar equipment for household use, of IEC technical committee 23: Electrical accessories. It is an International Standard.

The text of this International Standard is based on the following documents:

| Draft | Report on voting |
|---|---|
| 23E/1414/FDIS | 23E/1418/RVD |

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/publications.

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– withdrawn, or
– revised.

# INTRODUCTION

The growing use of protection devices (e.g. miniature circuit-breakers as defined in IEC 60898-1), and the need to move toward more digital tools and processes rely on the description of such devices being made available in the most adequate digital format.

To serve as a reference in this effort of standardisation, the IEC provides a support for gathering all contributions for device descriptions under the IEC Common Data Dictionary (IEC CDD).

Such work at IEC level aims to provide unambiguous semantics for the protection devices, which is consistent with its product standard, and made available for use on the market by the various stakeholders.

The intended benefits of this document are to:

– reduce the costs and efforts in mapping data for each customer request;
– optimize the workflow of B2B exchanges;
– minimize duplication of articles in customer inventories and in databases;
– minimize losses and misinterpretation of data during exchanges;
– facilitate the selection of a product, especially regarding reliability and safety;
– give access to product data everywhere regardless of country, language and culture;
– provide product data related to environmental aspects such as environmental declaration;
– contribute to the fast growth of e-business by simplifying the development of:
  - e-catalogue allowing the differentiation of products performances, certificates, etc.;
  - e-commerce: use of electronic networks to exchange information, products, services and payments for commercial and communication purposes between individuals (consumers) and businesses, and between businesses themselves;
– enable new e-business models



The output of this document is a reference dictionary for protection devices for use in e-commerce, in software, and in any application for product selection.

## 1 Scope

The purpose of this document is to describe product classes and properties, representing the miniature circuit-breaker (MCB), to become a part of the IEC 61360-4: IEC Common Data Dictionary (IEC CDD). It includes data required for product selection as well as data required for engineering.

This document intends, as a contribution to the IEC Common Data Dictionary, to be used by catalogue consortia, other database standards and software as a data reference for circuit-breakers and similar equipment for household use.

NOTE In the future, it is intended to extend the IEC 63508 DB to other types of products e.g. arc fault detection devices (AFDDs), residual current circuit breakers (RCCBs), residual circuit breaker with overcurrent protection (RCBOs).

## 2 Normative references

There are no normative references in this document.

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:



– IEC Electropedia: available at https://www.electropedia.org/
– ISO Online browsing platform: available at https://www.iso.org/obp



**3.1**
**attribute**
data element for the computer-sensible description of a property, a relation or a class

EXAMPLE The name of a property, the code of a class, the measure unit in which values of a property are provided.

Note 1 to entry: An attribute describes only one single detail of a property, of a class or of a relation.

[SOURCE: IEC 61360-1:2017, 3.1.2]

**3.2**
**block of properties**
**block**
collection of properties describing one common aspect of the device class

Note 1 to entry: A block is a feature class in the sense of IEC 61360-1 and ISO 13584-42.

EXAMPLE Diagnostic functions, control circuit.

[SOURCE: IEC 62683-1:2017, 3.2]

**3.3**
**class**
abstraction of a set of similar products

Note 1 to entry: A product that complies with the abstraction defined by a class is called a class member.

Note 2 to entry: A class is an intentional concept that can take different extensional meanings in different contexts.

Note 3 to entry: Classes are structured by class inclusion relationships.

[SOURCE: IEC 61360-1:2017, 3.1.6, modified – The example as well as Notes 4 and 5 to entry have been deleted.]

**3.4**
**enumeration**
list of named constants called enumerators, each enumerator name in the enumeration being unambiguous

[SOURCE: IEC 61360-1:2017, 3.1.13]

**3.5**
**property**
defined parameter suitable for the description and differentiation of a specific characteristic describing an aspect of device class

Note 1 to entry: A property can have attributes such as code, version, and revision.

Note 2 to entry: The specification of a property can include predefined choices of values.

[SOURCE: IEC 62683-1:2017, 3.7, modified - Notes 1 and 2 to entry have been added.]



## 4 Description of data formats



The IEC 61360 series comprises the reference documents describing the different formats that are intended to be used for a product's description.

The IEC Common Data Dictionary (IEC CDD) is an International Standard (IEC 61360-4 DB) and serves as a common product data dictionary for all industrial and technical domains (electrotechnical and non-electrotechnical, e.g. industry, building, energy, healthcare) based on the methodology and the information model of IEC 61360 series, and provides:

– unambiguous identification of classes and properties, and their relations;
– commonly accepted terminology and definitions based on accepted sources such as IEC International Standards, other International Standards, industry standards, or public authorities;
– hierarchies of concepts enabling users to appropriately characterize their products and services;
– relevant conditions and constraints, if necessary, on possible values of characteristics;
– technical representation of concepts, including units and data types and their identification.

To assist readers of this document, a selection of useful definitions for data formats and concepts (taken from IEC 61360-1) is available in Annex A.

## 5 Overview of the structure of this domain (IEC 63508)

This document aims to initiate a domain to become a contribution to the IEC CDD. This domain is a collection of properties and blocks of properties to describe the products identified in this first approach focused on miniature circuit-breakers.

This domain will be completed in a further stage by properties necessary to describe other products e.g. AFDDs, RCCBs, RCBOs.

It is noted that another domain named "Low voltage switchgear and controlgear" is published in IEC CDD as IEC 62683-1.

To avoid duplicated properties, it is intended to re-use existing properties and blocks from the domain "Low voltage switchgear and controlgear" (see IEC 62683-1) in the new domain for miniature circuit-breakers, wherever applicable. Such re-used blocks or properties have identifiers (ID) starting with ACC or ACE.

## 6 Device classes

### 6.1 Device class attributes

The attributes of the device class have been prepared in compliance with IEC 61360-1.

The following attributes of a device class are considered in this document: identifier, preferred name, definition, synonymous name and source document.



NOTE The synonymous names are limited to those necessary to avoid confusion when selecting a device class.

### 6.2 Classification of circuit-breakers and similar equipment for household use



Table 1 gives the classification of circuit-breakers and similar equipment for household use domain, based on the corresponding product standards. The class name column is structured into four levels of hierarchy using indent alignments.