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~~Low-voltage switchgear and controlgear~~ Switchgear, controlgear and their assemblies for low-voltage - Product data and properties for information exchange -
Part 1: Catalogue data

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FOREWORD

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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 62683-1:2017. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 62683-1 has been prepared by committee 121: Switchgear and controlgear and their assemblies for low voltage. It is an International Standard.

This second edition cancels and replaces the first edition published in 2017. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition for reflecting the content of the IEC CDD 62683DB which has been updated with the change requests C00073, C00074, C00081, C00087, C00089, C00098, C00100, C00107, C00111, C00116, C00119, C00122, C00146, C00148, C00159, C00167, C00174 and C00135:

a) New device class descriptions: ACC304, ACC305, ACC413, ACC417, ACC503, ACC504, ACC505, ACC512, ACC516, ACC536, ACC537, ACC538, ACC540, ACC541, ACC542, ACC543, ACC544, ACC545, ACC546, ACC547, ACC548.

b) New associated properties.

c) New assembly class structure: ACC101, ACC102, ACC103, ACC104, ACC106, ACC110, ACC111, ACC112, ACC113, ACC114, ACC115, ACC116, ACC117, ACC118, ACC119, ACC120, ACC121, ACC123, ACC124, ACC125, ACC126, ACC127, ACC131, ACC132, ACC133, ACC135, ACC141, ACC142, ACC143, ACC144, ACC145, ACC146, ACC147, ACC148, ACC150, ACC151, ACC152, ACC153, ACC154, ACC155, ACC156, ACC157, ACC158, ACC159, ACC160, ACC161, ACC162, ACC163, ACC164, ACC165, ACC166, ACC167, ACC170, ACC171, ACC172, ACC173, ACC174, ACC175.

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

Draft	Report on voting
121/237/FDIS	121/241/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.

A list of all parts in the IEC 62683 series, published under the general title *Switchgear, controlgear and their assemblies for low-voltage - Product data and properties for information exchange*, can be found on the IEC website.

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

Mainly large customers and wholesalers are requesting standardized product descriptions and product properties to product manufacturers. However, all stakeholders ~~will~~ can benefit from this standardised presentation and data exchange.

Multiple associations or groups of actors launched different initiatives to try to respond to this demand but, due to the lack of standardisation of classes and properties, the situation remains unsatisfactory for both customers and manufacturers.

In order to keep the lead of product description, IEC proposes a consistent solution within its product standards.

The purpose of this document is to:

– define device classes and properties for low-voltage switchgear and controlgear and their assemblies in a dedicated standard,

– provide a basis ~~for introduction~~ of classes of the low-voltage switchgear and controlgear ~~classes~~ and their assemblies, and properties introduced into the IEC 61360 database maintained by IEC/SC3D (see http://std.iec.ch/iec61360).

This document is not intended to establish a hierarchy of product classes called classification.

The intended benefits of this document are to:

– reduce the costs, time and efforts of 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 material declaration;

– contribute to the fast growth of the 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, between businesses themselves.

The output of this document consists of:

– reference dictionary of low-voltage switchgear and controlgear and their assemblies using existing terms from IEC documents. However, terminology used in e-business ~~may~~ can be relevant for the purpose of naming classes in this document to get a high level of acceptance;

– properties for e-commerce purposes, conformity of properties with product standards being the main goal of this document.

NOTE The classes "under consideration" are for information only and are intended to be completed during the next maintenance cycle.

~~For this project, the introduction~~The description of low-voltage switchgear and controlgear and their assemblies within the IEC 61360 database ~~needs to address~~ addresses the following technical aspects:

– IEC 61360 requires mandatory attributes. ~~The complete set of mandatory attributes with additional relevant attributes for low-voltage switchgear and controlgear will be available within the IEC 61360 database. At the development stage, the CDD 62683 database is available at the following address: https://cdd.iec.ch/cdd/iec62683/iec62683.nsf.~~ The complete sets of attributes for low-voltage switchgear and controlgear and their assemblies are available in the IEC 62683DB domain at https://cdd.iec.ch/cdd/iec62683/iec62683.nsf/TreeFrameset?OpenFrameSet. Within the present document, only the most useful attributes are presented.

– The switchgear and controlgear and their assemblies data models are implemented in ~~an appropriate~~ the IEC 62683DB domain of the IEC Component Data Dictionary (CDD), ~~IEC 61360,~~ by creating dictionaries of blocks, classes and properties.

1 Scope

This part of IEC 62683 establishes the reference dictionary of the general description of classes of low-voltage switchgear and controlgear ~~classes~~ and their assemblies based on defined properties.

This dictionary is used to facilitate the exchange in electronic format of data describing low-voltage switchgear and controlgear, their accessories and their assemblies.

This document provides clear and unambiguous definitions of a limited number of properties and classes which are mainly used for presentation, selection and identification of products particularly in electronic catalogues.

Each property has an unambiguously defined meaning and ~~naming~~ name, and where relevant, a defined value list, a defined format, and a defined unit.

~~The intention is not to cover manufacturer-specific features.~~

Manufacturer specific features are not covered.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60947-1:~~2007~~2020, *Low-voltage switchgear and controlgear - Part 1: General rules*
~~IEC 60947-1:2007/AMD1:2010~~
~~IEC 60947-1:2007/AMD2:2014~~

IEC 61360-1, *Standard data element types with associated classification scheme ~~for electric items~~ - Part 1: Definitions - Principles and methods*

IEC 61439-1:2020, *Low-voltage switchgear and controlgear assemblies - Part 1: General rules*

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IEC 60050-311:2001, *International Electrotechnical Vocabulary (IEV) - Part 311: Electrical and electronic measurements ~~and measuring instruments~~ - General terms relating to measurements*

IEC 60050-351:2013, *International Electrotechnical Vocabulary (IEV) - Part 351: Control technology*

IEC 60050-411, *International Electrotechnical Vocabulary (IEV) - Part 411: Rotating machinery*

IEC 60050-441, *International Electrotechnical Vocabulary (IEV) - Chapter 441*: Switchgear, controlgear and fuses

IEC 60050-426, *International Electrotechnical Vocabulary (IEV) - Part 426: Explosive atmospheres*

~~IEC 60050-442:1998, *International Electrotechnical Vocabulary – Part 442: Electrical accessories*~~

~~IEC 60050-445:2010, *International Electrotechnical Vocabulary – Part 445: Time relays*~~

~~IEC 60050-581:2008, *International Electrotechnical Vocabulary – Part 581: Electromechanical components for electronic equipment*~~

IEC 60050-603, *International Electrotechnical Vocabulary (IEV) - Chapter 603: Generation, transmission and distribution of electricity - Power system planning and management*

IEC 60050-716-1, *International Electrotechnical Vocabulary (IEV) - Chapter 716-1: Integrated services digital network (ISDN) - Part 1: General aspects*

~~IEC 60050-845:1987, *International Electrotechnical Vocabulary – Chapter 845: Lighting*~~

~~IEC 60127-1, *Miniature fuses – Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links*~~

~~IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*~~
~~IEC 60529:1989/AMD1:1999~~
~~IEC 60529:1989/AMD2:2013~~

~~IEC 62262:2002, *Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)*~~

IEC 60715, *Dimensions of low-voltage switchgear and controlgear - Standardized mounting on rails for mechanical support of ~~electrical devices in~~ switchgear ~~and~~, controlgear ~~installations~~ and accessories*

~~IEC 60825-1, *Safety of laser products – Part 1: Equipment classification and requirements*~~

~~IEC 60947-2:2016, *Low-voltage switchgear and controlgear – Part 2: Circuit-breakers*~~

IEC 60947-3, *Low-voltage switchgear and controlgear - Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units*

~~IEC 60947-4 (all parts), *Low-voltage switchgear and controlgear – Part 4: Contactors and motor-starters*~~

~~IEC 60947-4-1:2009, *Low-voltage switchgear and controlgear – Part 4-1: Contactors and motor-starters – Electromechanical contactors and motor-starters*~~
~~IEC 60947-4-1:2009/AMD1:2012~~

IEC 60947-4-2, *Low-voltage switchgear and controlgear - Part 4-2: Contactors and motor-starters - AC semiconductor motor controllers, starters and soft-starters*

~~IEC 60947-4-3, *Low-voltage switchgear and controlgear – Part 4-3: Contactors and motor-starters – AC semiconductor controllers and contactors for non-motor loads*~~

IEC 60947-5-1~~:2016~~, *Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices*

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IEC 60947-5-5~~:1997~~, *Low-voltage switchgear and controlgear - Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function*
~~IEC 60947-5-5:1997/AMD1:2005~~
~~IEC 60947-5-5:1997/AMD2:2016~~

IEC 60947-5-7, *Low-voltage switchgear and controlgear - Part 5-7: Control circuit devices and switching elements - Proximity devices with analog output*

IEC 60947-6-1, *Low-voltage switchgear and controlgear - Part 6-1: Multiple function equipment - Transfer switching equipment*

IEC 60947-6-2, *Low-voltage switchgear and controlgear - Part 6-2: Multiple function equipment - Control and protective switching devices (or equipment) (CPS)*

~~IEC 60947-7-1:2009, *Low-voltage switchgear and controlgear – Part 7-1: Ancillary equipment – Terminal blocks for copper conductors*~~

IEC 60947-7-2~~:2009~~, *Low-voltage switchgear and controlgear - Part 7-2: Ancillary equipment - Protective conductor terminal blocks for copper conductors*

IEC 60947-7-3~~:2009~~, *Low-voltage switchgear and controlgear - Part 7-3: Ancillary equipment - Safety requirements for fuse terminal blocks*

IEC 60947-8, *Low-voltage switchgear and controlgear - Part 8: Control units for built-in thermal protection (PTC) for rotating electrical machines*

~~IEC 60999-1:1999, *Connecting devices – Electrical copper conductors – Safety requirements for screw-type and screwless-type clamping units – Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm^2 up to 35 mm^2 (included)*~~

~~IEC 61058-1:2016, *Switches for appliances – Part 1: General requirements*~~

IEC 61095, *Electromechanical contactors for household and similar purposes*

~~IEC 61140:2016, *Protection against electric shock – Common aspects for installation and equipment*~~

IEC 61439-2, *Low-voltage switchgear and controlgear assemblies - Part 2: Power switchgear and controlgear assemblies*

IEC 61439-3, *Low-voltage switchgear and controlgear assemblies - Part 3: Distribution boards intended to be operated by ordinary persons (DBO)*

IEC 61439-4, *Low-voltage switchgear and controlgear assemblies - Part 4: Particular requirements for assemblies for construction sites (ACS)*

IEC 61439-5, *Low-voltage switchgear and controlgear assemblies - Part 5: Assemblies for power distribution in public networks*

IEC 61439-6, *Low-voltage switchgear and controlgear assemblies - Part 6: Busbar trunking systems (busways)*

IEC 61439-7, *Low-voltage switchgear and controlgear assemblies - Part 7: Assemblies for specific applications such as marinas, camping sites, market squares, electric vehicle charging stations*

IEC 61439-8, *Low-voltage switchgear and controlgear assemblies - Part 8: Assemblies for use in photovoltaic installations*

~~IEC 61672-1:2013, *Electroacoustics – Sound level meters – Part 1: Specifications*~~

IEC 61987-10, *Industrial-process measurement and control - Data structures and elements in process equipment catalogues - Part 10: Lists of Properties (LOPs) for Industrial-Process Measurement and Control for Electronic Data Exchange – Fundamentals*

~~IEC TR 61931:1998, *Fibre optic – Terminology*~~

~~IEC 62271-1:2007, *High-voltage switchgear and controlgear – Part 1: Common specifications*~~

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ISO 13850~~:2015~~, *Safety of machinery - Emergency stop function - Principals for design*

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~~EN 50047, *Low-voltage switchgear and controlgear for industrial use – Control switches – Position switches 30 x 55 – Dimensions and characteristics*~~