IEC 62208

Edition 3.0 2023-06
COMMENTED VERSION

INTERNATIONAL STANDARD

colour inside

Empty enclosures for low-voltage switchgear and controlgear assemblies – General requirements



IEC 62208:2023-06 CMV(en)



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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EMPTY ENCLOSURES FOR LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR ASSEMBLIES – GENERAL REQUIREMENTS

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This commented version (CMV) of the official standard IEC 62208:2023 edition 3.0 allows the user to identify the changes made to the previous IEC 62208:2011 edition 2.0. Furthermore, comments from IEC SC 121B experts are provided to explain the reasons of the most relevant changes, or to clarify any part of the content.

A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text. Experts' comments are identified by a blue-background number. Mouse over a number to display a pop-up note with the comment.

This publication contains the CMV and the official standard. The full list of comments is available at the end of the CMV.

IEC 62208 has been prepared by subcommittee 121B: Low-voltage switchgear and controlgear assemblies, of IEC technical committee 121: Switchgear and controlgear and their assemblies for low voltage. It is an International Standard.

This third edition cancels and replaces the second edition published in 2011. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) consideration of the modifications introduced in IEC 61439-1:2020;

b) alignment of test procedures with the newest relevant standards.

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

Draft	Report on voting
121B/180/FDIS	121B/180/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 reader's attention is drawn to the fact that Annex A lists all of the "in-some-country" clauses on differing practices of a less permanent nature relating to the subject of this document.

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,
- replaced by a revised edition, or
- amended.

IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

The purpose of this document is to harmonize as far as practicable all rules and requirements of a general nature applicable to empty enclosures for low-voltage switchgear and controlgear assemblies, in order to obtain uniformity of requirements and verification for empty enclosures and to avoid the need for verification in other standards.

EMPTY ENCLOSURES FOR LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR ASSEMBLIES – GENERAL REQUIREMENTS

1 Scope

This document applies to empty enclosures, as provided by the enclosure manufacturer, prior to the incorporation of switchgear and controlgear components by ~~the user, as supplied by the enclosure~~ the assembly manufacturer. 1

This document specifies general definitions, classifications, characteristics and test requirements of enclosures to be used as part of switchgear and controlgear assemblies (e.g. in accordance with the product standard in the IEC 61439 series), the rated voltage of which does not exceed 1 000 V AC or 1 500 V DC, and suitable for general use for either indoor or outdoor applications.

NOTE 1 Additional requirements ~~may~~ could apply for specific applications.

~~NOTE 2 The United States of America (USA) uses enclosure "Type" designations according to NEMA 250. The NEMA Enclosure Type designations specify additional environmental requirements for conditions such as corrosion, rust, icing, oil, and coolants. For this reason, the IEC Enclosure Classification Designations IP are used with an enclosure Type designation number appropriate for these markets.~~ 2

NOTE 2 Empty enclosures according to this document are suitable for mounting of electrical components.

This document does not apply to enclosures which are covered by other specific products standards (e.g. ~~IEC 60670 series~~ IEC 60670-24).

Compliance with the safety requirements of the applicable product standard for the final product produced using an empty enclosure is the responsibility of the assembly manufacturer. 3

NOTE 3 This document ~~may~~ could serve as a basis for other technical committees.

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 60068-2-2:2007, *Environmental testing – Part 2-2: Tests – Test B: Dry heat*

IEC 60068-2-11:~~1981~~2021, ~~*Basic*~~ *Environmental testing* ~~*procedures*~~ *– Part 2-11: Tests – Test Ka: Salt mist*

IEC 60068-2-30:2005, *Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12 h + 12 h cycle)*

IEC 60085:2007, *Electrical insulation – Thermal evaluation and designation*

IEC 60364 (all parts), *Low-voltage electrical installations*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*[1]
IEC 60529:1989/AMD1:1999
IEC 60529:1989/AMD2:2013

IEC 60695-2-10:2000~~2000~~2021, *Fire hazard testing – Part 2-10: Glowing/hot-wire based test methods – Glow-wire apparatus and common test procedure*

IEC 60695-2-11:2000~~2000~~2021, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test methods for end-products (GWEPT)*

IEC 60695-10-2:2014, *Fire hazard testing − Part 10-2: Abnormal heat − Ball pressure test method*

IEC 60695-11-5:2016; *Fire hazard testing – Part 11-5: Test flames – Needle-flame test method – Apparatus, confirmatory test arrangement and guidance*

IEC TR 60890:2014, *A method of temperature-rise verification of low-voltage switchgear and controlgear assemblies by calculation*

~~IEC 61439-1:2011, *low-voltage switchgear and controlgear assemblies – Part 1: General rules*[2]~~

IEC 62262:2002, *Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)*
IEC 62262:2002/AMD1:2021

ISO 178:2001~~2001~~2019, *Plastics – Determination of flexural properties*

~~ISO 179 (all parts), *Plastics – Determination of Charpy impact properties*~~

ISO 179-1:2010, *Plastics – Determination of Charpy impact properties – Part 1: Non-instrumented impact test*

ISO 179-2:2020, *Plastics – Determination of Charpy impact properties – Part 2: Instrumented impact test*

ISO 2409:2007~~2007~~2020, *Paints and varnishes – Cross-cut test*

ISO 4628-3:2003~~2003~~2016, *Paints and varnishes – Evaluation of degradation of coatings – Designation of quantity and size of defects, and of intensity of uniform changes in appearance – Part 3: Assessment of degree of rusting*

ISO 4892-2:2006~~2006~~2013, *Plastics – Methods of exposure to laboratory light sources – Part 2: Xenon-arc ~~sources~~ lamps*
~~Amendment 1 (2009)~~

ISO 11469:2000~~2000~~2016, *Plastics – Generic identification and marking of plastic products*

3 Terms and definitions

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

~~[1] There is a consolidated edition 2.1 (2001) that includes IEC 60529 (1989) and its Amendment 1 (1999).~~

~~[2] To be published.~~

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
empty enclosure
enclosure intended for support and installation of electrical equipment, whose internal space provides suitable protection against external influences as well as a specified degree of protection against approach to or contact with live parts and against contact with moving parts

Note 1 to entry: Throughout this document, the word enclosure is used for empty enclosure.

Note 2 to entry: For the purposes of this document, the terms boxes, cubicles, desks or cabinets are alternative terms for enclosures.

3.2
protected space
~~internal space or portion of the internal space of the enclosure as specified by the manufacturer intended for the mounting of switchgear and controlgear for which the specified protection is provided by the enclosure~~

internal space or portion of an enclosure as specified by the enclosure manufacturer intended to enclose electrical components, and which provides defined protection against external influences and contact with live parts **4**

3.3
cover
external part of the enclosure

3.4
door
hinged or sliding cover

3.5
mounting plate
separate internal accessory of the enclosure intended for the mounting of electrical components

3.6
cable gland plate
removable accessory of the enclosure, intended for securing and sealing of cables, conductors and conduits at their point of entry

3.7
removable cover
cover which is designed for closing an opening in the external enclosure and which can be removed for carrying out certain operations and maintenance work

Note 1 to entry: A lid is considered as a removable cover.

~~**3.8**~~
~~**enclosure manufacturer**~~
~~manufacturer of an enclosure or the vendor who resells under his own responsibility~~ **5**

3.8
inspection **6**
action comprising careful scrutiny, including visual scrutiny where conditions are obvious, of an item carried out either without dismantling, or with the addition of partial dismantling as required,