IEC 60670-24

Edition 3.0 2024-12

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Boxes and enclosures for electrical accessories for household and similar fixed electrical installations –
Part 24: Particular requirements for enclosures for housing protective devices and other power dissipating electrical equipment

Boîtes et enveloppes pour appareillage électrique pour installations électriques fixes pour usages domestiques et analogues –
Partie 24: Exigences particulières pour les enveloppes pour dispositifs de protection et autres matériels électriques ayant une puissance dissipée

IEC 60670-24:2024-12(en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 29.120.10

ISBN 978-2-8327-0052-5

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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BOXES AND ENCLOSURES FOR ELECTRICAL ACCESSORIES FOR HOUSEHOLD AND SIMILAR FIXED ELECTRICAL INSTALLATIONS –

Part 24: Particular requirements for enclosures for housing protective devices and other power dissipating electrical equipment

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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IEC 60670-24 has been prepared by subcommittee 23B: Plugs, socket-outlets and switches, of IEC technical committee 23: Electrical accessories. 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) revision of requirements for protection against electric shock in Clause 10;
b) addition of requirements for functional earthing in 11.101;
c) revision of the requirements for fixing of flush type and semi-flush type enclosures in 12.12;

d) revision of the requirements for resistance of insulating material to abnormal heat and to fire in Clause 18;

e) addition of calculations to take into account the power loss of electronic devices in Clause AA.6;

f) addition of tests and requirements for enclosures exposed to direct sunlight with the related Annex CC;

g) addition of tests and requirements for enclosures with separate area to accommodate multimedia-equipment with the related Annex DD;

h) addition of tests and requirements for enclosures used with connected devices or equipment with the related Annex EE.

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

Draft	Report on voting
23B/1536/FDIS	23B/1554/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 60670 series, published under the general title *Boxes and enclosures for electrical accessories for household and similar fixed installations*, can be found on the IEC website.

This document is to be used in conjunction with IEC 60670-1:2024. It lists the changes necessary to convert that standard into a specific standard for housing protective devices and other power dissipating electrical equipment.

Where this document states "addition", "modification" or "replacement", the relevant requirement, test specifications or explanatory matter in IEC 60670-1:2024 shall be adapted accordingly.

Clauses and subclauses, notes, figures or tables which are additional to those in IEC 60670-1:2024 are numbered starting from 101.

Additional annexes to IEC 60670-1:2024 are numbered AA, BB, etc.

In this publication the following print types are used:

- requirements proper: in roman type.
- *test specifications: in italic type.*
- notes: in smaller roman type.

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.

BOXES AND ENCLOSURES FOR ELECTRICAL ACCESSORIES FOR HOUSEHOLD AND SIMILAR FIXED ELECTRICAL INSTALLATIONS –

Part 24: Particular requirements for enclosures for housing protective devices and other power dissipating electrical equipment

1 Scope

Replacement:

This part of IEC 60670 applies to enclosures and parts of them for housing protective devices and other power dissipating electrical equipment intended to be used with a rated voltage not exceeding 400 V and a total incoming load current not exceeding 125 A for household and similar fixed electrical installations.

These enclosures are intended to be installed in locations where unskilled persons have access. They are intended to be equipped with electrical equipment by skilled persons (installers).

These enclosures are intended to be installed where the prospective short circuit current does not exceed 10 kA unless they are protected by current limiting protective devices with a cut-off current not exceeding 17 kA.

Enclosures complying with this document are suitable for use at ambient temperature not normally exceeding 40 °C, but their average temperature over a period of 24 h does not exceed 35 °C, with a lower limit of the ambient air temperature of −5 °C.

An enclosure which is an integral part of an electrical accessory and provides protection against external influences (e.g. mechanical impacts, ingress of solid objects or of water), is covered by the relevant standard for such an accessory.

This document does not apply to a low-voltage switchgear and controlgear assembly as defined in the IEC 60439 series or IEC 61439 series nor to a main entrance panel which can be part of the distribution board.

This document does not apply to surface type boxes, flush and semi-flush type boxes suitable for the housing of accessories for household and similar use such as switches, electronic switches, socket-outlets, which are covered by IEC 60670-1 only.

NOTE 1 Enclosures according to this document are mainly used for distribution board for housing protective devices and other power dissipating electrical equipment and are installed at the beginning of the electrical circuit whereas boxes according to IEC 60670-1 are installed at the end of it.

NOTE 2 A main entrance panel is a set composed of a panel or an enclosure equipped with a meter and/or the main incoming device. Main entrance panels comply with their appropriate standards or the requirements of the local supplier, if any.

NOTE 3 In the following country this document cannot be used in installations with a 230 V single-phase supply rated up to 100 A that is under the control of ordinary persons. Integration of mechanical and electrical devices into an enclosure must be verified by compliance with IEC 61439-3 [British standard EN 61439-3]: UK.

NOTE 4 In the following country this document can only be used for GP enclosures with the instructions according to Annex A. For the other types of enclosures the integration of mechanical and electrical devices into an enclosure is verified by compliance with DS EN 61439-3: DK.

2 Normative references

Addition:

IEC 60364-4-41:2005, *Low-voltage electrical installations – Part 4-41: Protection for safety – Protection against electric shock*
IEC 60364-4-41:2005/AMD1:2017

IEC 60364-5-54:2011, *Low-voltage electrical installations – Part 5-54: Selection and erection of electrical equipment – Earthing arrangements and protective conductors*
IEC 60364-5-54:2011/AMD1:2021

IEC 60664-1, *Insulation coordination for equipment within low-voltage supply systems – Part 1: Principles, requirements and tests*

IEC 60898-1, *Electrical accessories – Circuit-breakers for overcurrent protection for household and similar installations – Part 1: Circuit-breakers for a.c. operation*

IEC 61008-2-1, *Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCB's) – Part 2-1: Applicability of the general rules to RCCB's functionally independent of line voltage*

IEC 61009-2-1, *Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBO's) – Part 2-1: Applicability of the general rules to RCBO's functionally independent of line voltage*

ISO/IEC 11801-1:2017, *Information technology – Generic cabling for customer premises – Part 1: General requirements*

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

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

ISO 4892-2:2013, *Plastics – Methods of exposure to laboratory light sources – Part 2: Xenon-arc lamps*
ISO 4892-2:2013/AMD1:2021

3 Terms and definitions

Additions:

3.101
general purpose enclosure
GP enclosure
enclosure where integration of mechanical and electrical devices has been verified by tests carried out by the manufacturer according to this document and where the installer has to verify the installed equipment according to the instructions given in Annex AA

3.102
enclosure for pre-determined equipment
PD enclosure
enclosure where the capability to integrate pre-determined mechanical and electrical equipment has been verified according to design rules and tests according to this document carried out by the manufacturer where the installer has to verify the installed equipment following the manufacturer's instructions according to Annex BB