
Irish Standard
I.S. EN 60670-24:2013

# 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 (IEC 60670-24:2011 (MOD))

# I.S. EN 60670-24:2013

| *Incorporating amendments/corrigenda issued since publication:* |
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I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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**I.S. EN 60670-24:2013**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN 60670-24

April 2013

ICS 29.120.10

English version

# 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

(IEC 60670-24:2011, modified)

Boîtes et enveloppes pour appareillage électrique pour installations électriques fixes pour usages domestiques et analogues -
Partie 24: Exigences particulières pour enveloppes pour appareillages de protection et autres appareillages électriques ayant une puissance dissipée
(CEI 60670-24:2011, modifiée)

Dosen und Gehäuse für Installationsgeräte für Haushalt und ähnliche ortsfeste elektrische Installationen -
Teil 24: Besondere Anforderungen für Gehäuse zur Aufnahme von Schutzgeräten und ähnlichen energieverbrauchenden Geräten
(IEC 60670-24:2011, modifiziert)

This European Standard was approved by CENELEC on 2013-03-04. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

**Management Centre: Avenue Marnix 17, B - 1000 Brussels**



Ref. No. EN 60670-24:2013 E

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# Foreword

This document (EN 60670-24:2013) consists of the text of IEC 60670-24:2011 prepared by IEC/SC 23B "Plugs, socket-outlets and switches" of IEC/TC 23 "Electrical accessories", together with the common modifications prepared by CLC/TC 23BX "Switches, boxes and enclosures for household and similar purposes, plugs and socket outlets for d.c. and for the charging of electrical vehicles including their connectors".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2014-03-04
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2018-03-04

This Part 24 is to be used in conjunction with EN 60670-1:2005. 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 Part 24 states "addition“, "modification“ or "replacement“, the relevant requirement, test specifications or explanatory matter in Part 1 shall be adapted accordingly.

Clauses and subclauses, notes, figures or tables which are additional to those in Part 1 are numbered starting from 101.

Additional annexes to Part 1 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.

Clauses, subclauses, notes, tables and figures which are additional to those in IEC 60670-24:2011 are prefixed “Z”.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

## Endorsement notice

The text of the International Standard IEC 60670-24:2011 was approved by CENELEC as a European Standard with agreed common modifications.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60439-3:1991 NOTE Harmonised as EN 60439-3:1991 (modified).

COMMON MODIFICATIONS

## 1 Scope

***Delete*** *NOTES 2 and 3.*

## 2 Normative references

***Replace*** *by the following:*

See Annex ZA.

## 3 Definitions

*In 3.101,* ***delete*** *'BE'.*

## 7 Classification

*Delete the notes at the end of the addition to Table 1.*

## 8 Marking

*In 8.101, bullet 3,* ***delete*** *from the dashed texts twice the words* "accompanying the enclosure".

## 12 Construction

***Replace*** *the title of 12.11 by the following:*

### 12.11 Enclosures classified according to 7.2.1.3

***Replace*** *the first paragraph by the following:*

"Enclosures for hollow walls classified according to 7.2.1.3 shall provide suitable means for fixing the enclosure to hollow walls."

In **12.101,** ***delete*** *the NOTE.*

## 13 Resistance to ageing, protection against ingress of solid foreign objects and against harmful ingress of water

In **13.2,** ***delete*** *the NOTE.*

## 17 Creepage distances, clearances and distances through sealing compound

***Replace*** *the first paragraph after Table 101 by:*

"Compliance is checked by inspection and in case of doubt by measurement between the following parts:"

## 101 Verification of the maximum capability to dissipate power ($P_{de}$)

***Delete*** *NOTE 103.*

## Annexes

***Add*** *the following annexes.*

# Annex ZA
(normative)

## Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

***Addition*** *to the Annex ZA of EN 60670-1:2005:*

| Publication | Year | Title | EN/HD | Year |
|---|---|---|---|---|
| IEC 60417 | - | Graphical symbols for use on equipment | - | - |
| IEC 60898-1 | - | Electrical accessories - Circuit breakers for overcurrent protection for household and similar installations<br>Part 1: Circuit-breakers for a.c. operation | EN 60898-1 | - |
| IEC 61008-2-1 | - | Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCB's)<br>Part 2-1: Applicability of the general rules to RCCB's functionally independent of line voltage | EN 61008-2-1 | - |
| IEC 61009-2-1 | - | Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBO's)<br>Part 2-1: Applicability of the general rules to RCBO's functionally independent of line voltage | EN 61009-2-1 | - |
| IEC 62262 | - | Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code) | EN 62262 | - |

# Annex ZB
(normative)

# Special national conditions

**Special national condition**: National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions.

NOTE If it affects harmonization, it forms part of the European Standard.

For the countries in which the relevant special national conditions apply these provisions are normative, for other countries they are informative.

| Clause | Special national condition |
|---|---|
| **1** | **Denmark**<br><br>This standard 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 enclosures are verified by compliance with DS EN 60439-3. |
| **7** | **Denmark, Italy**<br><br>Only enclosures according to 7.101.1 and 7.102.1 can be used.<br><br>**Belgium, Germany, France, Greece**<br><br>Only enclosures classified according to 7.101.2 and 7.102.2 can be used. |
| **12.101** | **United Kingdom**<br><br>The text of this clause does not apply. Cables are retained using fixing means applied during installation by the installer. |
| **13.2** | **Denmark**<br><br>In the case of an enclosure with a door or a lid which can be opened without the use of a tool during normal use, a minimum degree of IP30 shall be maintained after opening the door or the lid. |

# Annex ZC
(informative)

# A-deviations

**A-deviation:** National deviation due to regulations, the alteration of which is for the time being outside the competence of the CENELEC national member.

This European Standard falls under Directive 2006/95/EC.

NOTE (from CEN/CENELEC IR Part 2:2011, 2.17) Where standards fall under EU Directives, it is the view of the Commission of the European Communities (OJ No C 59, 1982-03-09) that the effect of the decision of the Court of Justice in case 815/79 Cremonini/Vrankovich (European Court Reports 1980, p. 3583) is that compliance with A-deviations is no longer mandatory and that the free movement of products complying with such a standard should not be restricted except under the safeguard procedure provided for in the relevant Directive.

A-deviations in an EFTA-country are valid instead of the relevant provisions of the European Standard in that country until they have been removed.

Clause Deviation

**1 United Kingdom**

{Electricity, Safety, Quality and Continuity Regulations; SI '2002 2665'}

***Add*** *after the second paragraph:*

This standard 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 BS EN 60439-3.

# CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

# 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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International Standard IEC 60670-24 has been prepared by subcommittee 23B: Plugs, socket-outlets and switches, of IEC technical committee 23: Electrical accessories.

This second edition cancels and replaces the first edition published in 2005 and constitutes a technical revision.

The following major changes from the first edition are introduced:

- new definition for basic, general purpose enclosures (GP enclosure) and enclosures for pre-determined equipment (PD enclosure);
- new classification and marking for general purpose enclosure (GP enclosure) and enclosure for pre-determined equipment (PD enclosure);
- required data for instruction sheet and/or documentation according to the type of enclosure;

- adequate space to allow mounting and connection of the accessories (fully equipped) as declared by the manufacturer;
- requirements for general purpose enclosure (GP enclosure) as in Clause 101;
- requirements for enclosure for pre-determined equipment (PD enclosure) as in Clause 102;
- instructions to be given by the manufacturer of the GP enclosure to the installer how to integrate accessories and example of calculation given in Annex AA;
- instructions to be given by the manufacturer of the PD enclosure to the installer how to integrate accessories given in Annex BB.

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

| FDIS | Report on voting |
|---|---|
| 23B/982/FDIS | 23B/992/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 2.

This standard shall be used in conjunction with IEC 60670-1. 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 Part 24 states "addition“, "modification“ or "replacement“, the relevant requirement, test specifications or explanatory matter in Part 1 shall be adapted accordingly.

Clauses and subclauses, notes, figures or tables which are additional to those in Part 1 are numbered starting from 101.

Additional annexes to Part 1 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.

A list of all the parts in the IEC 60670 series, under the general title *Boxes and enclosures for electrical accessories for household and similar fixed electrical installations*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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

# 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 where unskilled persons have access. They are intended to be integrated with electrical equipment on site by skilled persons (installers).

They 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 standard are suitable for use, after installation, at ambient temperature not normally exceeding 25 °C, but occasionally reaching 35 °C over 24 h, max. 40 °C and min. –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 standard does not apply to a low-voltage switchgear and controlgear assembly (ASSEMBLY) as defined in the IEC 60439 or IEC 61439 series of standards nor to a main entrance panel which may or may not be part of the distribution board.

NOTE 1 A main entrance panel is a set composed by 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 2 In the following country this standard 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 60439-3 [British standard EN 60439-3]: UK.

NOTE 3 In the following country this standard 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 60439-3: DK.

## 2 Normative references

*Addition:*

IEC 60417, *Graphical Symbols for Use on Equipment*

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