

SLOVENSKI STANDARD
SIST EN 60670-24:2013/oprAA:2021
01-november-2021

Omarice in ohišja za električno opremo za gospodinjstvo in podobne nepremične električne inštalacije - 24. del: Posebne zahteve za ohišja stanovanjskih zaščitnih naprav in druge električne opreme, ki porablja energijo

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

Dosen und Gehäuse für elektrische Installationsgeräte für Haushalt und ähnliche ortsfeste elektrische Installationen - Teil 24: Besondere Anforderungen für Gehäuse zur Aufnahme von Schutzgeräten und ähnlichen energieverbrauchenden Geräten

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

Ta slovenski standard je istoveten z: EN 60670-24:2013/prAA

ICS:

29.120.99 Druga električna dodatna oprema Other electrical accessories

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
EN 60670-24:2013

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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

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

Dosen und Gehäuse für elektrische Installationsgeräte für Haushalt und ähnliche ortsfeste elektrische Installationen - Teil 24: Besondere Anforderungen für Gehäuse zur Aufnahme von Schutzgeräten und ähnlichen energieverbrauchenden Geräten

This draft amendment prAA, if approved, will modify the European Standard EN 60670-24:2013, if it is submitted to CENELEC members for enquiry.

Deadline for CENELEC: 2021-11-05.

It has been drawn up by CLC/TC 23BX.

If this draft becomes an amendment, CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

This draft amendment was established by CENELEC 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN 60670-24:2013/prAA:2021 (E)**European Foreword**

This document (EN 60670-24:2013/prAA:2021) has been prepared by CLC/TC 23BX "Switches, boxes and enclosures for household and similar purposes, plugs and socket outlet for D.C."

This document is currently submitted to the Enquiry.

The following dates are proposed:

- latest date by which the existence of this document has to be announced at national level (doa) dor + 6 months
- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) dor + 12 months
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) dor + 36 months (to be confirmed or modified when voting)

This document has been prepared under a Standardization Request given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

For relationship with EU Directive(s) / Regulation(s), see informative Annex ZZ, which is an integral part of this document.

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EN 60670-24:2013/prAA:2021 (E)**1 Modification to Clause 1, “Scope”**

Add the following paragraph before NOTE 1:

“This standard 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 EN 60670-1 only.”

2 Modification to Clause 7, “Classification”

Replace the 3rd line with:

“Classification criteria 7.2.2.2, 7.2.2.3, 7.6, 7.8.1 and 7.9 do not apply.”

3 Modifications to Clause 8, “Marking”

In 8.1, item i), replace “IEC 60670-24” with “EN 60670-24”.

In 8.1, replace the sentence before item g) with:

“The following information shall be marked on the boxes and enclosures or provided by the manufacturer on the smallest package unit or in the manufacturer’s instructions which need not be provided with the product.”

4 Modifications to Clause 10, “Protection against electric shock”

Delete the sentence “Deletion of the 2nd paragraph.”

In 10.101, replace item a) with:

“a) covers live parts of the installed equipment with insulation material, and”

In 10.101, replace “IEC 61032” with “EN 61032”.

In 10.101, replace the paragraph after “Tests shall be carried out on parts which are accessible after installation.” with:

“In addition, all enclosures according to 7.1.1, 7.1.3 and 7.1.4 with parts of thermoplastic or elastomeric material shall be subjected for 1 min to a force applied through the tip of test probe C of EN 61032 but at an ambient temperature of (35 ± 2) °C, the enclosure being at this temperature.”

5 Modifications to Clause 12, “Construction”

Replace the title numbering and the title of 12.11 with:

“12.12 Fixing of flush type and semi-flush type enclosures classified according to 7.2.2.1”

In 12.12, replace the paragraph below “Replacement:” with:

“Enclosures for hollow walls classified according to 7.2.2.1 shall provide suitable means for fixing the enclosure to hollow walls.”

At the end of 12.12, add:

“12.13 Boxes and enclosures classified according to 7.2.2.2 and 7.2.2.3

Replacement:

void.”

EN 60670-24:2013/prAA:2021 (E)**6 Modification to Clause 15, “Mechanical strength”**

In 15.101, add at the end:

“After the test, the specimens shall show no damage leading to non-compliance with the standard.

Damage to the finish, small dents and small chips which do not adversely affect the protection against electric shock or harmful ingress of water are disregarded.

Cracks passing through the material not visible with normal or corrected vision without magnification, surface cracks in fibre-reinforced mouldings and small indentations are disregarded.”

7 Modification to Clause 16, “Resistance to heat”

Replace the text of Clause 16 with:

“This clause of Part 1 is applicable with following modification:

Deletion of 16.3 “Boxes and enclosures of insulation materials classified according to 7.2.2 or 7.2.2.3” ”

8 Modification to Clause 18, “Resistance of insulating material to abnormal heat and to fire”

Replace the text of Clause 18 with:

“This clause of Part 1 is applicable with the following modifications:

Replacement of the bullet points by the following:

- *By test made at 960 °C*
 - *for parts of insulating material necessary to retain current-carrying parts in position.*
- *By the test made at 850 °C*
 - *for parts of insulating material, necessary to retain parts of the earthing circuit in position (with the exception of parts of insulating material needed to retain the earth terminal in position in an enclosure), and*
 - *for parts of insulating material of boxes and enclosures classified according to 7.2.2.1, with the exception of parts protruding from the wall and additional and/or removable internal parts of enclosure (eg. separator) not necessary to retain current carrying parts in position.*
- *By the test made at 650 °C*
 - *for parts of insulating material not necessary to retain current-carrying parts in position (even though they are in contact with them), and*
 - *for parts of insulating material retaining earthing terminal in position.*
 - *for parts of insulating material of boxes and enclosures classified according to 7.2.2.1, protruding from the wall and additional and/or removable internal parts of enclosure (eg. separator) not necessary to retain current carrying parts in position.*

NOTE Accessories complying with other standards, e.g. connecting devices incorporated but not integrated into the enclosure, are not considered as part of the enclosures.”

EN 60670-24:2013/prAA:2021 (E)**9 Modifications to Clause 101, “Verification of the maximum capability to dissipate power (P_{de})”**

Replace the 10th, 11th and 12th sentence with:

“For enclosures according to 7.2.1.1 and 7.2.2.1 the test is carried out with the specimen mounted as declared by the manufacturer.

For enclosures according to 7.2.3 the specimen is mounted on a minimum 19 mm thick plywood painted black.

For enclosures according to 7.2.1.2 and 7.2.1.3 the test is carried out with the specimen cast in a concrete wall of thickness not less than 100 mm on each surface; it is allowed to cast the specimen in walls of different material, with equivalent thermal conductivity.”

10 Modifications to Clause 102, “Verification of temperature rise”

Replace the 7th, 8th and 9th sentence with:

“For enclosures according to 7.2.1.1 and 7.2.2.1 the test is carried out with the specimen mounted as declared by the manufacturer.

For enclosures according to 7.2.3.1 the test is carried out with the specimen cast in a concrete wall of thickness not less than 100 mm on each surface; it is allowed to cast the specimen in walls of different material, with equivalent thermal conductivity.

For enclosures according to 7.2.3 the specimen is mounted on a minimum 19 mm thick plywood painted black.”

In the Keys to Figures 103 and 104, add the following additional line:

“= the resistor is placed at equal distance from both sides with a tolerance on the difference of ± 5 mm.”

11 Addition of Clause Z1, “Electromagnetic fields (EMF) requirements”

Add the following clause Z1:

“Z1 Electromagnetic fields (EMF) requirements

This clause of Part 1 is applicable.”

12 Modifications to Annex AA, “Instructions to be given by the manufacturer of the GP enclosure to the installer how to integrate accessories, and example of calculation”

In AA.1, replace the second equation with:

$$P_{tot} = P_{dp} + 0,2 P_{dp} + P_{au} + P_{el} + 0,2 P_{el}$$

and in the term definition for this equation, add:

“

P_{el} is the power loss of electronic accessories, in watt, taking into account the utilization factor (K_e) for multi way devices

$0,2 P_{el}$ is the increase of P_{el} to consider power lost by connections of the power circuit of electronic devices”

Replace the title of AA.3 as follows:

“**AA.3 Example of calculation without electronic devices**”

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Add the following subclause AA.5:

“

AA.5 Example of calculation to take into account the power loss of electronic devices

AA.5.1 General

The calculation is based on the following steps:

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AA.5.2 Diagram of the equipped GP enclosure

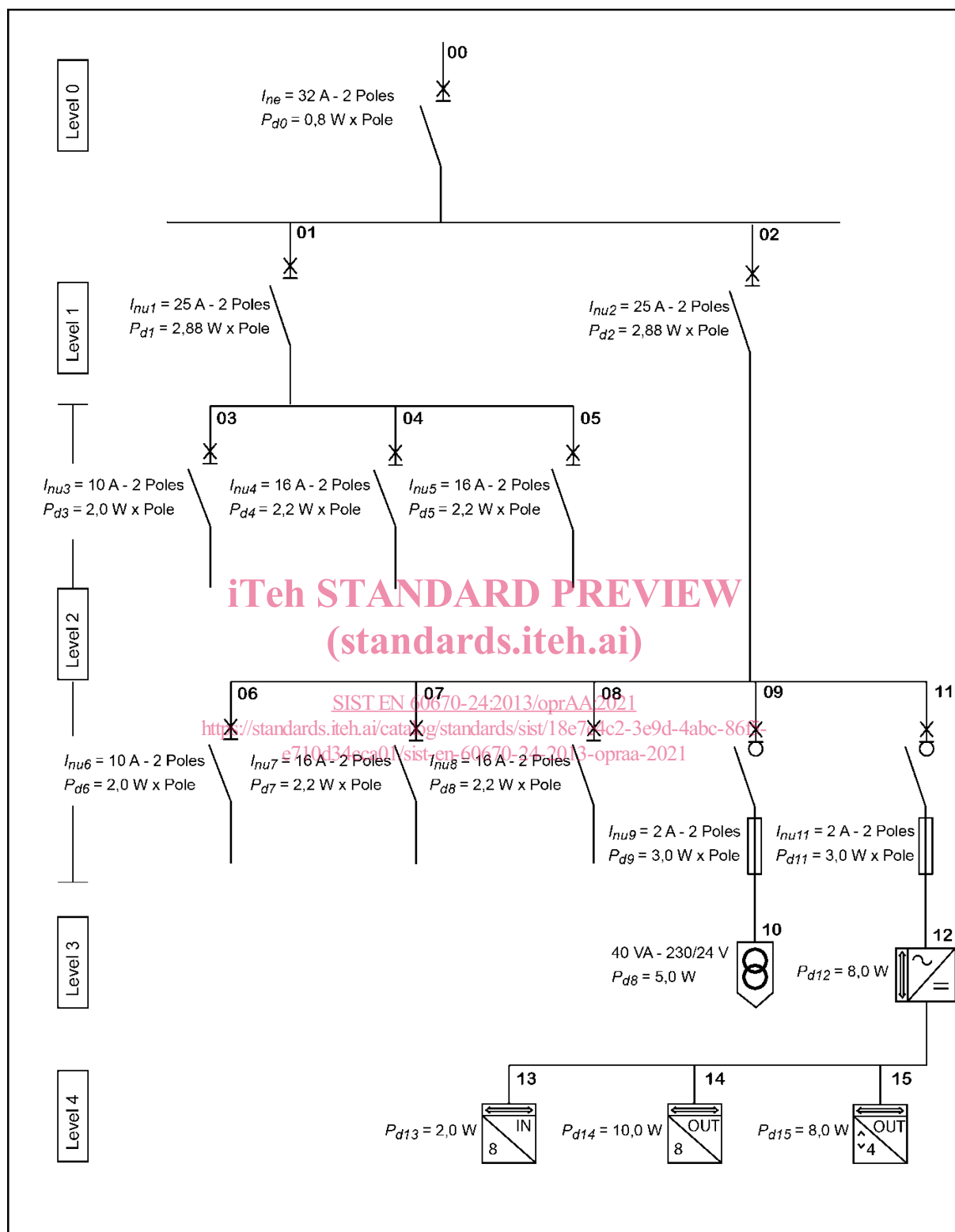


Figure AA.1 — Diagram of the equipped GP enclosure

AA.5.3 Calculation of the power loss within the equipped GP enclosure

Determination of the utilisation factor (K_e) and of the diversity factor (K)

— Level 0 incoming circuit - $K_e = 0,85$

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- Level 1 circuits - $K = I_{nq} / (I_{nu1} + I_{nu2}) = 27 / 50 = 0,54$
- Level 2 circuit 1 - $K = I_{nu1} \times 0,54 / (I_{nu3} + I_{nu4} + I_{nu5}) = 13,5 / 42 = 0,321$
- Level 2 circuit 2 - $K = I_{nu2} \times 0,54 / (I_{nu6} + I_{nu7} + I_{nu8} + I_{nu9} + I_{nu11}) = 13,5 / 46 = 0,293$

Table AA.1 — Calculation of P_{dp}

	Number of the circuit	Power loss per pole W	Number of poles	Power loss per protective and control device P_d W	Utilisation factor (K_e) for incoming circuits Diversity factor (K) for outgoing circuits	Power loss of each device W
Incoming circuits	00	0,8	2	1,6	0,85	1,16
Outgoing circuits	01	2,88	2	5,76	0,54	1,68
	02	2,88	2	5,76	0,54	1,68
	03	2,00	2	4,00	0,321	0,41
	04	2,2	2	4,4	0,321	0,45
	05	2,2	2	4,4	0,321	0,45
	06	2,00	2	4,00	0,293	0,34
	07	2,2	2	4,4	0,293	0,38
	08	2,2	2	4,4	0,293	0,38
	09	3	2	6	0,293	0,52
	11	3	2	6	0,293	0,52
					$P_{dp} =$	7,97

$$P_{dp} = 7,97 \text{ W}$$

Table AA.2 — Calculation of P_{au}

Number of the circuit	Description of the electrical accessory with a significant power loss in normal use	Power loss per accessory W	Number of accessories	Power loss W
10	Safety transformer	5	1	5
			P_{au}	5

$$P_{au} = 5 \text{ W}$$