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## **Elektriska hushållsapparater och liknande bruksföremål – Säkerhet –**

### **Del 2-87: Särskilda fordringar på elektriska djurbedövningsutrustningar**

*Household and similar electrical appliances —*

*Safety –*

*Part 2-87: Particular requirements for electrical animal stunning equipment*

Som svensk standard gäller europastandarden EN IEC 60335-2-87:2020. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 60335-2-87:2020.

#### **Nationellt förord**

Europastandarden EN IEC 60335-2-87:2020

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 60335-2-87, Third edition, 2016 - Household and similar electrical appliances - Safety - Part 2-87: Particular requirements for electrical animal stunning equipment**

utarbetad inom International Electrotechnical Commission, IEC.

Standarden ska användas tillsammans med SS-EN 60335-1, utgåva 5, 2012 och dess separat utgivna tillägg.

Tidigare fastställd svensk standard SS-EN 60335-2-87, utgåva 2, 2003, SS-EN 60335-2-87/A1, utgåva 1, 2008 och SS-EN 60335-2-87/A2, utgåva 1, 2019, gäller ej fr o m 2022-12-16.

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### **SEK Svensk Elstandard**

Box 1284  
164 29 Kista  
Tel 08-444 14 00  
[www.elstandard.se](http://www.elstandard.se)

English Version

**Household and similar electrical appliances - Safety - Part 2-87:  
Particular requirements for electrical animal-stunning equipment  
(IEC 60335-2-87:2016)**

Appareils électrodomestiques et analogues - Sécurité -  
Partie 2-87: Exigences particulières pour les appareils  
électriques d'insensibilisation des animaux  
(IEC 60335-2-87:2016 , modifiée)

Sicherheit elektrischer Geräte für den Hausgebrauch und  
ähnliche Zwecke - Teil 2-87: Besondere Anforderungen für  
elektrische Tierbetäubungsgeräte  
(IEC 60335-2-87:2016 , modifiziert)

This European Standard was approved by CENELEC on 2019-12-16. 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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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**

## **European foreword**

The text of document 61H/321/FDIS, future edition 3 of IEC 60335-2-87, prepared by SC 61H "Safety of electrically-operated farm appliances" of IEC/TC 61 "Safety of household and similar electrical appliances" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60335-2-87:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2020-09-16
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-12-16

This document supersedes EN 60335-2-87:2002 and all of its amendments and corrigenda (if any).

This standard is not linked to European legislation.

This standard shall be read in conjunction with IEC 60335-1:2010+A1:2013+A2:2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

## **Endorsement notice**

The text of the International Standard IEC 60335-2-87:2016 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

|                 |      |                              |
|-----------------|------|------------------------------|
| IEC 60335-2-76  | NOTE | Harmonized as EN 60335-2-76  |
| IEC 60335-2-86  | NOTE | Harmonized as EN 60335-2-86  |
| IEC 60364-7-705 | NOTE | Harmonized as HD 60364-7-705 |

## Annex ZC

(normative)

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

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

*The Annex ZA of Part 1 is applicable, with the following additions:*

| <u>Publication</u> | <u>Year</u> | <u>Title</u>                                                                                                                                                                                                                                     | <u>EN/HD</u>  | <u>Year</u> |
|--------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|
| IEC 60068-2-52     | 1996        | Environmental testing -- Part 2-52: Tests -<br>Test Kb: Salt mist, cyclic (sodium chloride solution)                                                                                                                                             | EN 60068-2-52 | 1996        |
| IEC 61558-2-4      | -           | Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V - Part 2-4: Particular requirements and tests for isolating transformers and power supply units incorporating isolating transformers | EN 61558-2-4  | -           |
| ISO 7010           | 2011        | Graphical symbols - Safety colours and safety signs - Registered safety signs                                                                                                                                                                    | EN ISO 7010   | 2012        |

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –  
SAFETY –****Part 2-87: Particular requirements  
for electrical animal stunning 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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- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

This part of International Standard IEC 60335 has been prepared by sub-committee 61H: Safety of electrically-operated farm appliances, of IEC technical committee 61: Safety of household and similar electrical appliances.

This third edition cancels and replaces the second edition published in 2002 including its Amendment 1 (2007) and its Amendment 2 (2012). This edition constitutes a technical revision.

The principal changes in this edition as compared with the second edition of IEC 60335-2-87 are as follows (minor changes are not listed):

- Warning sign ISO 7010-W012 has been introduced (7.1, 7.6, 7.12, 7.14).
- Reference to IEC 60068-2-32 has been replaced by reference to IEC 60068-2-31 (21.1).

- Additional requirements for battery operated stunning have been transferred to Annex S (5.8.1, 7.1, 7.8, 7.12, 11.5, 16, 22.102, 25.5, 25.7, 25.20, 25.23, 25.101, 26.5).

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

|              |                  |
|--------------|------------------|
| FDIS         | Report on voting |
| 61H/321/FDIS | 61H/322/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 part 2 is to be used in conjunction with the latest edition of IEC 60335-1 and its amendments. It was established on the basis of the fifth edition (2010) of that standard.

NOTE 1 When "Part 1" is mentioned in this standard, it refers to IEC 60335-1.

This part 2 supplements or modifies the corresponding clauses in IEC 60335-1, so as to convert that publication into the IEC standard: Safety requirements for electrical animal stunning equipment.

When a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. When this standard states "addition", "modification" or "replacement", the relevant text in Part 1 is to be adapted accordingly.

NOTE 2 The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;
- unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;
- additional annexes are lettered AA, BB, etc.

NOTE 3 The following print types are used:

- requirements: in roman type;
- *test specifications: in italic type*;
- notes: in small roman type.

Words in **bold** in the text are defined in Clause 3. When a definition concerns an adjective, the adjective and the associated noun are also in bold.

A list of all parts of the IEC 60335 series, under the general title: *Household and similar electrical appliances – Safety*, 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.

NOTE 4 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.



It is the recommendation of the committee that the content of the standard be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication.

**IMPORTANT – The 'colour inside' logo on the cover page of this publication 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

It has been assumed in the drafting of this International Standard that the execution of its provisions is entrusted to appropriately qualified and experienced persons.

This standard recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of appliances when operated as in normal use taking into account the manufacturer's instructions. It also covers abnormal situations that can be expected in practice and takes into account the way in which electromagnetic phenomena can affect the safe operation of appliances.

This standard takes into account the requirements of IEC 60364 as far as possible so that there is compatibility with the wiring rules when the appliance is connected to the supply mains. However, national wiring rules may differ.

If an appliance within the scope of this standard also incorporates functions that are covered by another part 2 of IEC 60335, the relevant part 2 is applied to each function separately, as far as is reasonable. If applicable, the influence of one function on the other is taken into account.

When a part 2 standard does not include additional requirements to cover hazards dealt with in Part 1, Part 1 applies.

NOTE 1 This means that the technical committees responsible for the part 2 standards have determined that it is not necessary to specify particular requirements for the appliance in question over and above the general requirements.

This standard is a product family standard dealing with the safety of appliances and takes precedence over horizontal and generic standards covering the same subject.

NOTE 2 Horizontal and generic standards covering a hazard are not applicable since they have been taken into consideration when developing the general and particular requirements for the IEC 60335 series of standards. For example, in the case of temperature requirements for surfaces on many appliances, generic standards, such as ISO 13732-1 for hot surfaces, are not applicable in addition to Part 1 or part 2 standards.

An appliance that complies with the text of this standard will not necessarily be considered to comply with the safety principles of the standard if, when examined and tested, it is found to have other features that impair the level of safety covered by these requirements.

An appliance employing materials or having forms of construction differing from those detailed in the requirements of this standard may be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be considered to comply with the standard.

## HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

### Part 2-87: Particular requirements for electrical animal stunning equipment

#### 1 Scope

This clause of Part 1 is replaced by the following.

This part of IEC 60335 deals with the safety of **electric animal-stunning equipment** the **rated voltage** of which is not more than 250 V for single-phase appliances and 480 V for other appliances.

NOTE 101 Battery-operated appliances and other d.c. supplied appliances are within the scope of this standard. Dual supply appliances, either mains-supplied or battery-operated, are regarded as **battery-operated appliances** when operated in the battery mode.

This standard is applicable to **electric animal-stunning equipment** for industrial or commercial use, for use on farms or for use in areas where they may be a source of danger to the public.

So far as is practical, this standard deals with the common hazards presented by these types of appliances.

NOTE 102 Examples of **electric animal-stunning equipment** within the scope of this standard are those used to stun:

- bovines such as cattle, calves, cows, heifers and bulls;
- ovines such as sheep and lambs;
- caprines such as goats;
- cervids such as deer;
- solipeds such as horses, donkeys and mules;
- birds such as chickens, turkeys and guinea fowl;
- porcines such as pigs;
- fur animals such as foxes, chinchilla, rabbits and possums;
- mustelids such as mink and polecats;
- other ruminants such as camels.

NOTE 103 The following types of **electric animal-stunning equipment** are covered by this standard:

- manual, semi-automatic and automatic.

NOTE 104 Attention is drawn to the fact that:

- for **electric animal-stunning equipment** intended to be used on board ships, additional requirements may be necessary;
- in many countries, additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour, the national water supply authorities and similar authorities;
- in many countries, additional requirements are specified concerning the humane slaughter of animals.

NOTE 105 This standard does not apply to:

- appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas);
- electric fence energizers (see IEC 60335-2-76);
- electric fishing machines (see IEC 60335-2-86);
- meat tenderizers, carcass immobilizers, carcass stiffeners, spinal discharge equipment or similar equipment.

## 2 Normative references

This clause of Part 1 is applicable except as follows.

*Addition:*

IEC 60068-2-52:1996, *Environmental testing – Part 2: Tests – Test Kb: Salt mist, cyclic (sodium chloride solution)*

IEC 61558-2-4, *Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V – Part 2-4: Particular requirements and tests for isolating transformers and power supply units incorporating isolating transformers*

ISO 7010:2011, *Graphical symbols – Safety colours and safety signs – Registered safety signs*