

**MAJAPIDAMIS- JA MUUD TAOLISED ELEKTRISEADMED.  
OHUTUS. OSA 2-103: ERINÕUDED VÄRAVATE, USTE JA  
AKENDE AJAMITELE**

**Household and similar electrical appliances - Safety -  
Part 2-103: Particular requirements for drives for gates,  
doors and windows (IEC 60335-2-103:2015 +  
IEC 60335-2-103:2015/A1:2017 +  
IEC 60335-2-103:2015/A2:2019)**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 60335-2-103:2023+A1+A2+A11:2023 sisaldab Euroopa standardi EN IEC 60335-2-103:2023 ja selle muudatuste A1:2023, A2:2023 ja A11:2023 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 60335-2-103:2023+A1+A2+A11:2023 consists of the English text of the European standard EN IEC 60335-2-103:2023 and its amendments A1:2023, A2:2023 and A11:2023.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.  Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 12.05.2023, muudatused A1 12.05.2023, A2 12.05.2023 ja A11 12.05.2023.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.  Date of Availability of the European standard is 12.05.2023, for A1 12.05.2023, A2 12.05.2023 and A11 12.05.2023.
Muudatusega A1 lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega <b>A1</b> <b>A1</b> .  Muudatusega A2 lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega <b>A2</b> <b>A2</b> .  Muudatusega A11 lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega <b>A11</b> <b>A11</b> .  Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.	The start and finish of text introduced or altered by amendment A1 is indicated in the text by tags <b>A1</b> <b>A1</b> .  The start and finish of text introduced or altered by amendment A2 is indicated in the text by tags <b>A2</b> <b>A2</b> .  The start and finish of text introduced or altered by amendment A11 is indicated in the text by tags <b>A11</b> <b>A11</b> .  The standard is available from the Estonian Centre for Standardisation and Accreditation.

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ICS 13.120; 91.060.50

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English Version

**Household and similar electrical appliances - Safety - Part 2-103:  
Particular requirements for drives for gates, doors and windows  
(IEC 60335-2-103:2015 + IEC 60335-2-103:2015/A1:2017 + IEC  
60335-2-103:2015/A2:2019)**

Appareils électrodomestiques et analogues - Sécurité -  
Partie 2-103: Exigences particulières pour les motorisations  
de portails, portes et fenêtres  
(IEC 60335-2-103:2015 + IEC 60335-2-103:2015/A1:2017 +  
IEC 60335-2-103:2015/A2:2019)

Sicherheit elektrischer Geräte für den Hausgebrauch und  
ähnliche Zwecke - Teil 2-103: Besondere Anforderungen für  
Antriebe für Tore, Türen und Fenster  
(IEC 60335-2-103:2015 + IEC 60335-2-103:2015/A1:2017 +  
IEC 60335-2-103:2015/A2:2019)

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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**

## European foreword

This document (EN IEC 60335-2-103:2023) consists of the text of IEC 60335-2-103:2015 prepared by IEC/TC 61 "Safety of household and similar electrical appliances".

The following dates are fixed:

- latest date by which this document has to be (dop) 2023-11-12  
implemented at national level by publication of an  
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This document is read in conjunction with EN IEC 60335-2-103:2023/A1:2023, EN IEC 60335-2-103:2023/A2:2023 and EN IEC 60335-2-103:2023/A11:2023.

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The text of the International Standard IEC 60335-2-103:2015 was approved by CENELEC as a European Standard without any modification.

## **A1** Amendment A1 European foreword

This document (EN IEC 60335-2-103:2023/A1:2023) consists of the text of IEC 60335-2-103:2015/A1:2017 prepared by IEC/TC 61 "Safety of household and similar electrical appliances".

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- latest date by which this document has to be (dop) 2023-11-12 implemented at national level by publication of an identical national standard or by endorsement
- latest date by which the national standards (dow) 2026-05-12 conflicting with this document have to be withdrawn

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This document is read in conjunction with EN IEC 60335-2-103:2023, EN IEC 60335-2-103:2023/A2:2023 and EN IEC 60335-2-103:2023/A11:2023.

This document has been prepared under a Standardization Request given to CENELEC by the European Commission and the European Free Trade Association.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

### **Endorsement notice**

The text of the International Standard IEC 60335-2-103:2015/A1:2017 was approved by CENELEC as a European Standard without any modification. **A1**

## **A<sub>2</sub>** Amendment A2 European foreword

This document (EN IEC 60335-2-103:2023/A2:2023) consists of the text of IEC 60335-2-103:2015/A2:2019 prepared by IEC/TC 61 "Safety of household and similar electrical appliances".

The following dates are fixed:

- latest date by which this document has to be (dop) 2023-11-12 implemented at national level by publication of an identical national standard or by endorsement
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This document is read in conjunction with EN IEC 60335-2-103:2023, EN IEC 60335-2-103:2023/A1:2023 and EN IEC 60335-2-103:2023/A11:2023.

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Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

### **Endorsement notice**

The text of the International Standard IEC 60335-2-103:2015/A2:2019 was approved by CENELEC as a European Standard without any modification. **A<sub>2</sub>**

**A11 Amendment A11 European foreword**

This document (EN IEC 60335-2-103:2023/A11:2023) has been prepared by CLC/TC 61 "Safety of household and similar electrical appliances".

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This document is read in conjunction with EN IEC 60335-2-103:2023, EN IEC 60335-2-103:2023/A1:2023 and EN IEC 60335-2-103:2023/A2:2023.

The numbering system for European clauses, subclauses, notes, tables, figures and annexes that are additional to those in the IEC standard are prefixed with the letter "Z".

This document has been prepared under a Standardization Request given to CENELEC by the European Commission and the European Free Trade Association.

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# CONSOLIDATED VERSION



**Household and similar electrical appliances – Safety –  
Part 2-103: Particular requirements for drives for gates, doors and windows**





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# CONSOLIDATED VERSION



**Household and similar electrical appliances – Safety –  
Part 2-103: Particular requirements for drives for gates, doors and windows**

INTERNATIONAL  
ELECTROTECHNICAL  
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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –  
SAFETY –****Part 2-103: Particular requirements for drives  
for gates, doors and windows**

## 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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This part of International Standard IEC 60335 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

This bilingual version (2018-11) corresponds to the monolingual English version, published in 2015-04.

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

FDIS	Report on voting
61/4877A/FDIS	61/4913/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.

The French version of this document has not been voted upon.

This third edition cancels and replaces the second edition published in 2006 and its Amendment 1 (2010). It constitutes a technical revision.

The principal changes in this edition as compared with the second edition of IEC 60335-2-103 are as follows (minor changes are not listed):

- modification of requirements in Clause 20 by introduction of new annexes.

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 electric drives for gates, doors and windows.

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 this publication be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication.

The following differences exist in the countries indicated below.

- 6.1: Class 0 and class 01 are allowed for **drives** for indoor use having a rated voltage up to 150 V (Japan).

**A1** Amendment A1 FOREWORD

This amendment has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

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

CDV	Report on voting
61/5296/CDV	61/5382A/RVC

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

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

- reconfirmed,
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NOTE 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 this publication be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication. **A1**



## **A2** Amendment A2 FOREWORD

This amendment has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

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

FDIS	Report on voting
61/5927/FDIS	61/5943/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability date indicated on the IEC website 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 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 this publication be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication. **A2**

## 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.

**A11** The relevant requirements of Annex ZE of Part 1 have been incorporated in the text of this Part 2.

The intended use of the drives covered by this document is for them to be installed together with windows and with horizontally and vertically moving gates and doors for pedestrian use as well as for vehicles and the necessary ancillary components (e.g. controls, safety devices) to create a power operated window, gate or door.

The safety of horizontally and vertically moving gates and doors is ensured by this document and EN 12453.

The safety of pedestrian doors is ensured by this document and EN 16005.

The safety of windows is ensured by this document.

This document covers the hazards generated by the drive.

Drives put on the market as machines may be installed by the final user. The requirements of this document cover drives and also the foreseeable misuse of the power operated horizontally and vertically moving gates and doors for pedestrian use as well as for vehicles, garage doors and windows.

Drives placed on the market as partly completed machines should not be installed by the final user. In case of partly completed machines, reference should be made to the specific procedures of the Machinery Directive; this document can be used as guidance.

This document does not deal with any specific requirements on noise emitted from drives for gates, doors and windows as the generated noise is not considered to be a relevant hazard.

With European Amendment A11, EN 60335-2-103:2015 is superseded.

This European Amendment A11 supplements or modifies the corresponding clauses of the standards below:

- EN 60335-1:2012+A11:2014+A13:2017+A1:2019+A14:2019+A2:2019+A15:2021 +FprA16:— (Part 1)
- EN IEC 60335-2-103:2023+A1:2023+A2:2023 (Part 2) A11

## HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

### Part 2-103: Particular requirements for drives for gates, doors and windows

#### 1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electric **drives** for horizontally and vertically moving gates, doors, garage doors and **windows** for household and similar purposes, their **rated voltage** being not more than 250 V for single-phase **drives** and  $\text{A11}$  600  $\text{A11}$  V for other **drives**.  $\text{A11}$  It also covers the hazards generated by the power transmission of the **drive** to the **driven part** of horizontally and vertically moving gates and doors, pedestrian doors and windows for household and similar purposes.

Hazards associated with the movement of the **driven part** of horizontally and vertically moving gates and doors for household and similar purposes, are covered by this document and EN 12453.

Hazards associated with the movement of the **driven part** of pedestrian doors are covered by this document and EN 16005.

Hazards associated with the movement of the **driven part** of windows are covered by this document.  $\text{A11}$

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

**Drives** not intended for normal household use but which nevertheless may be a source of danger to the public, such as **drives** intended to be used by laymen in shops, offices, hotels, restaurants, hospitals, in industry and on farms, are within the scope of this standard.

$\text{A11}$  NOTE Z101 Household environment includes the dwelling and its associated buildings, the garden, etc.  $\text{A11}$

Requirements for **drives** for doors that may be used in emergency routes and exits are given in  $\text{A11}$  EN 16005  $\text{A11}$ .

$\text{A11}$  NOTE Z102 Attention is drawn to the fact that for **drives** for powered pedestrians doors used in emergency routes and exits additional requirements as given in EN 16005 are applicable.  $\text{A11}$

NOTE 101 Examples of **drives** within the scope of this standard are **drives** for

- folding doors;
- revolving doors;
- rolling doors;
- roof **windows**;
- sectional overhead doors;
- swinging and sliding gates or doors.

Examples are shown in Figure 101.

NOTE 102 **Drives** may be supplied with a **driven part**.

**A11** This document deals with the reasonably foreseeable hazards presented by **drives** that are encountered by all persons in and around the installation place. However, in general, it does not take into account:

- **children** playing with the appliance;
- the use of the appliance by **very young children**;
- the use of the appliance by **young children** without supervision.

It is recognized that **very vulnerable people** can have needs beyond the level addressed in this document. **A11**

NOTE 103 Attention is drawn to the fact that in many countries additional requirements are specified by the national authorities responsible for the protection of labour and similar authorities.

NOTE 104 This standard does not apply to **drives**

- for vertically moving garage doors for residential use (60335-2-95);
- for shutters covering doors and **windows** (including locations where the door is set back from the shutter), awnings, blinds and similar equipment (60335-2-97);
- intended exclusively to be used by trained persons in commercial and industrial premises;
- for specific purposes, such as fire doors;
- for natural smoke exhaust ventilators not used as **windows** (**A11** EN 12101-2 **A11**);
- intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas).
- **A11** for side curtains ventilation systems
- for doors on vehicles;
- lock gates and dock gates;
- doors on lifts;
- armoured doors;
- doors mainly for the retention of animals, unless they are at the site perimeter;
- theatre textile curtains;
- doors outside the reach of people (such as crane gantry fences);
- barriers;
- doors used in industrial processes;
- partition walls;
- turnstiles;
- platform doors. **A11**

NOTE 105 This standard does not apply to movement of a pedestrian door where such movement is based solely on stored energy.

**A11** NOTE Z103 Within the document the terms **drive** and appliance are interchangeable. **A11**

**A11** Products covered by this document and installed according to the manufacturer instructions do not create a noise hazard. **A11**

## 2 Normative references

This clause of Part 1 is applicable except as follows.

*Addition:*

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

IEC 60825-1:2014, *Safety of laser products – Part 1: Equipment classification and requirements*

ⓘ deleted text ⓘ

ⓘ EN 12978:2003+A1:2009, *Industrial, commercial and garage doors and gates - Safety devices for power operated doors and gates - Requirements and test methods*

EN 16005:2012<sup>1</sup>, *Power operated pedestrian doorsets - Safety in use - Requirements and test methods*

EN 12453:2017+A1:2021, *Industrial, commercial and garage doors and gates. Safety in use of power operated doors. Requirements and test methods* ⓘ

### 3 Terms and definitions

This clause of Part 1 is applicable except as follows.

#### 3.1.9 Replacement:

##### **normal operation**

operation of the **drive** under the following conditions

**Drives** supplied without a **driven part** are operated with their **rated load**.

**Drives** supplied with a **driven part** are operated with the **driven part** installed in accordance with the instructions.

#### 3.101

##### **drive**

motor and other components that control the movement of the **driven part**

Note 1 to entry: Examples of components are gears, controls, brakes, components for power transmission from the **drive** to the **driven part** and **entrapment protection systems**.

ⓘ Note Z101 to entry: Examples of components for power transmission from the **drive** to the **driven part**: trolleys, rails, levers, etc. ⓘ

#### 3.102

##### **driven part**

part of a gate, door, garage door or **window** that is intended to be moved by the **drive**

#### 3.103

##### **window**

part in a building that opens and closes in order to regulate the air and light and that is not intended for passage

#### 3.104

##### **rated load**

force or torque assigned to the **drive** by the manufacturer

#### 3.105

##### **rated operating time**

duration of continuous operation assigned to the **drive** by the manufacturer

Note 1 to entry: During continuous operation, the **drive** may reverse its direction.

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<sup>1</sup> As impacted by EN 16005:2012/AC:2015.