

# INTERNATIONAL STANDARD

**IEC**  
**60335-2-97**

Second edition  
2002-11

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## **Household and similar electrical appliances – Safety –**

### **Part 2-97: Particular requirements for drives for rolling shutters, awnings, blinds and similar equipment**

*Appareils électrodomestiques et analogues –  
Sécurité –*

*Partie 2-97:  
Règles particulières pour les motorisations de volets, stores,  
rideaux et équipements enroulables analogues*



Reference number  
IEC 60335-2-97:2002(E)

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Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

PRICE CODE

Q

For price, see current catalogue

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –  
SAFETY –****Part 2-97: Particular requirements for drives for rolling shutters,  
awnings, blinds and similar equipment**

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The 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 IEC technical committee 61: Safety of household and similar electrical appliances.

This second edition cancels and replaces the first edition published in 1998. It constitutes a technical revision.

The text of this part of IEC 60335 is based on the following documents:

FDIS	Report on voting
61/2230/FDIS	61/2305/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 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 fourth edition (2001) 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 rolling shutters, awnings, blinds and similar 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:

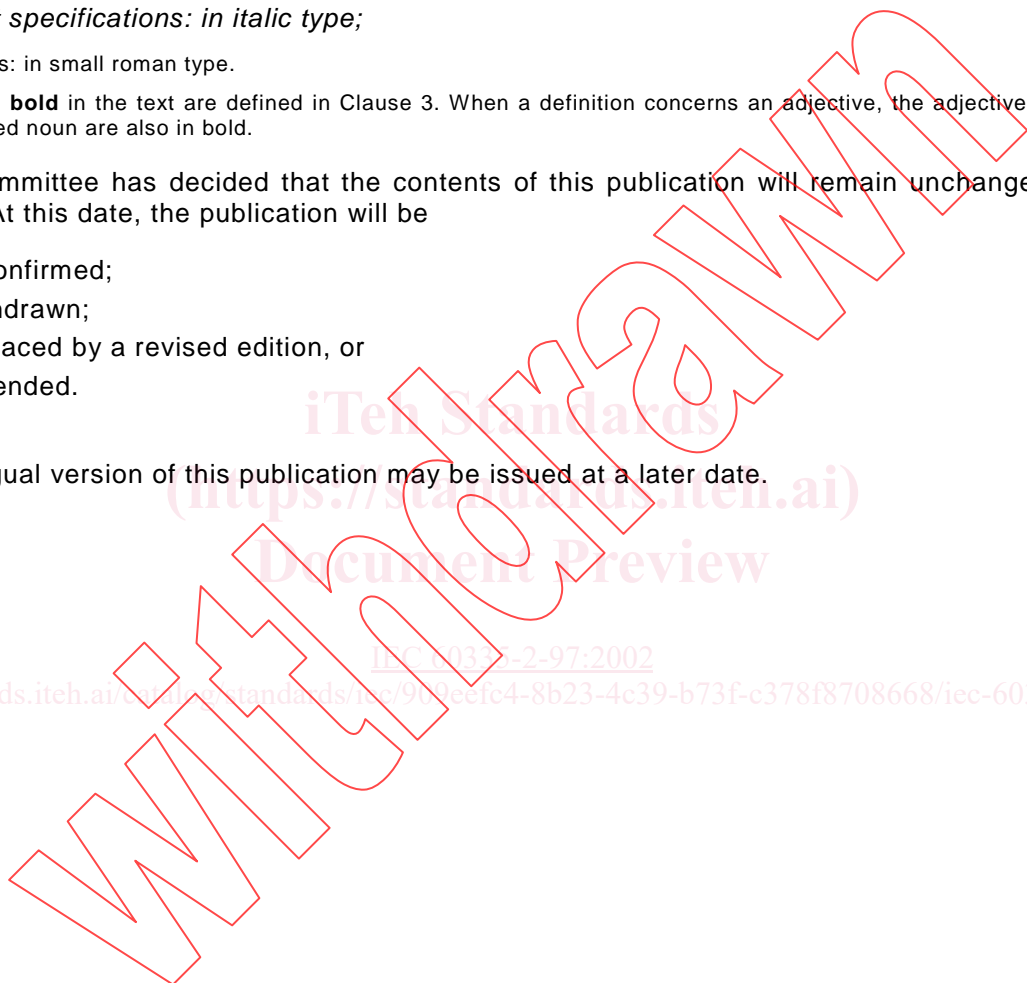
- requirements: in roman type;
- *test specifications: in italic type;*
- notes: in small roman type.

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.

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be

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

A bilingual version of this publication may be issued at a later date.



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## 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.

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.

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.

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.

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## HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

### Part 2-97: Particular requirements for drives for rolling shutters, awnings, blinds and similar equipment

#### 1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electric **drives** for rolling equipment such as shutters, blinds and awnings, intended for household and similar purposes, their **rated voltage** being not more than 250 V for single-phase appliances and 480 V for other appliances.

**Drives** for equipment with a spring-controlled **driven part**, such as a folding arm awning, are also within the scope of this standard.

NOTE 101 Examples of rolling equipment that can be driven are

- awnings;
- blinds;
- grilles;
- projection screens;
- shutters for doors and windows.

Examples are shown in Figure 101.

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

Appliances not intended for normal household use but that nevertheless may be a source of danger to the public, such as appliances intended to be used by laymen in shops, in light industry, on farms and on industrial premises, are within the scope of this standard.

As far as is practicable, this standard deals with the common hazards presented by appliances that are encountered by all persons in and around the home. However, in general, it does not take into account playing with the appliance by young children but recognizes that children may be in the vicinity.

NOTE 103 Attention is drawn to the fact that

- for appliances intended to be used in vehicles or on board ships or aircraft, 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 and similar authorities.

NOTE 104 This standard does not apply to

- **drives** for vertically moving garage doors for residential use (IEC 60335-2-95);
- **drives** for rolling doors (IEC 60335-2-103);
- **drives** used in premises such as hangars or in heavy industry;
- **drives** for theatre curtains;
- sliding and trolley jack **drives**.



## 2 Normative references

This clause of Part 1 is applicable except as follows.

*Addition:*

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

## 3 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 at **rated torque**.

**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 Examples of components are gears, controls and brakes.

**3.102**

**driven part**

movable part, such as a rolling shutter, awning or blind, that is operated by the **drive**

**3.103**

**rated torque**

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

**3.104**

**rated operating time**

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

NOTE During continuous operation, the **drive** may reverse its direction.

**3.105**

**rated number of operating cycles**

number of uninterrupted cycles assigned to the **drive** by the manufacturer

**3.106**

**biased-off switch**

switch that automatically returns to the **off position** when its actuating member is released

## 4 General requirement

This clause of Part 1 is applicable.

## 5 General conditions for the tests

This clause of Part 1 is applicable except as follows.

**5.101 Drives** incorporating a tubular motor that are supplied without a **driven part** are tested using the apparatus described in Figure 102.

NOTE This apparatus is considered to be the **driven part** for the tests of 20.101, 20.102 and 20.103.

## 6 Classification

This clause of Part 1 is applicable except as follows.

### 6.2 Addition:

Parts of the **drive** for installation outdoors shall be at least IPX4.

## 7 Marking and instructions

This clause of Part 1 is applicable except as follows.

### 7.1 Addition:

**Drives** supplied without a **driven part** shall be marked with

- the **rated torque**, in newton-metres;
- the **rated operating time**, in minutes, unless the appliance is intended for continuous operation.

**Drives** supplied with a **driven part** shall be marked with the **rated number of operating cycles**, unless the appliance is intended for continuous operation.

### 7.12 Addition:

The instructions for **drives** supplied with a **driven part** shall state that the **rated number of operating cycles** is not to be exceeded.

The instructions shall state the substance of the following:

**WARNING:** Important safety instructions. It is important for the safety of persons to follow these instructions. Save these instructions.

The instructions shall include the substance of the following:

- do not allow children to play with fixed controls. Keep remote controls away from children;
- frequently examine the installation for imbalance and signs of wear or damage to cables and springs. Do not use if repair or adjustment is necessary;
- details on how to use the manual release.

The instructions for shutters shall also include the substance of the following:

- watch the moving shutter and keep people away until the shutter is completely closed;
- care should be taken when operating the manual release since an open shutter may fall rapidly due to weak or broken springs.