

INTERNATIONAL STANDARD

IEC 60335-2-95

2002

AMENDMENT 1
2004-11

Amendment 1

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

**Part 2-95:
Particular requirements for drives for vertically
moving garage doors for residential use**

© IEC 2004 Droits de reproduction réservés — Copyright - all rights reserved

International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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
61/2745/FDIS	61/2790/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 maintenance result 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- withdrawn,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.

INTRODUCTION

Replace the second sentence of the second paragraph by the following:

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.

1 Scope

Add the following note:

NOTE 106 This standard also covers **automatic drives**.

3 Definitions

3.101 *Delete the word "inherent" in the note.*

3.102 *Replace the existing text by the following:*

entrapment protection system

part of the **drive** that protects against trapping which could result in the human body being squeezed or crushed by the door

NOTE 1 Trapping in the garage is covered by the manual release of 20.109.

NOTE 2 An **entrapment protection system** may be incorporated in the motor assembly or may be installed separately. It may consist of one or more devices, such as pressure sensitive edges, passive infrared, active light sensing devices or a **biased-off switch**.

3.103 *Replace the existing text by the following:*

automatic drive

drive that operates the door in at least one direction without intentional activation by the user

5 General conditions for the tests

5.2 *Add the following sentence after the first sentence of the addition:*

An artificial load may be used to simulate the door for some of the tests.

Add the following subclause:

5.5 *Addition:*

Wicket doors are kept closed during the tests.

6 Classification

6.2 *Replace the text of the addition by the following:*

Drives intended to be exposed to outdoor conditions shall be at least IPX4.

6.101 *Delete this subclause.*

7 Marking and instructions

7.1 *Replace the text of the addition by the following:*

Modification:

Drives shall be marked with the **rated power input**.

Addition:

Drives supplied without a door shall be marked with the **rated load** in N or in Nm.

7.12 *Replace the second dashed item of the addition by the following:*

- watch the moving door and keep people away until the door is completely opened or closed (not necessary for **automatic drives**);

Replace the last dashed item of the addition by the following two dashed items:

- information concerning the adjustment of the door and drive (when applicable);
- disconnect the supply when cleaning or carrying out other maintenance.

Add the following paragraph:

Instructions for **automatic drives** shall state the substance of the following:

WARNING: Automatic door – The door may operate unexpectedly, therefore do not allow anything to stay in the path of the door.

7.12.1 *Replace the second paragraph of the addition by the following two paragraphs:*

The installation instructions shall include details for the installation of the **drive** and its associated components.

For **drives** supplied without a door, the installation instructions shall indicate the type, size and mass of doors for which the **drive** is intended to be used.

Add the following dashed items:

- necessary information for the safe handling of a drive weighing more than 20 kg. This information shall describe how to use the handling means, such as hooks and ropes;
- the drive must not be used with a door incorporating a wicket door (unless the **drive** cannot be operated with the wicket door open);
- after installation, ensure that parts of the door do not extend over public footpaths or roads.

7.101 *Replace the existing text by the following:*

Drives shall be supplied with a label suitable for permanent fixing. For **automatic drives**, the label shall state the substance of the following:

WARNING: Automatic drive – Keep away from the area of the door since it may operate unexpectedly.

For other **drives**, the label shall include a warning sign having a height of at least 60 mm. The label shall also include the substance of the following:

WARNING: Keep children away when the door is moving.

NOTE An example of a suitable warning sign is shown in Figure 102.

Compliance is checked by inspection and measurement.

7.102 *Replace the existing text by the following:*

Drives that use contact sensing as an **entrapment protection system** shall be supplied with a label that states the substance of the following:

WARNING: Risk of entrapment – Regularly check and, if necessary, adjust to ensure that, when the door contacts a 40 mm high object placed on the floor, the door reverses or the object can be freed.

Compliance is checked by inspection.

Add the following new subclause:

7.104 If the **drive** is intended to be installed by the user, the packaging shall indicate the type of door, including its size and mass, that the **drive** is intended to operate and, if applicable, that the **drive**

- is intended to be installed at least 2,5 m above the floor or other access level;
- can be used with doors having openings greater than 50 mm in diameter;
- is intended for automatic operation.

Compliance is checked by inspection.

11 Heating

11.7 Replace the text of the replacement by the following:

Drives for continuous operation are operated for consecutive cycles until steady conditions are established.

Automatic drives are operated without rest periods for 3 cycles or 4 min, whichever is longer.

NOTE A cycle is based on the maximum size of door the **drive** is intended to operate.

Other **drives** are operated as follows:

- **drives** supplied without a door are operated without rest periods for a minimum of 2 min unless the rated operating time is longer;
- **drives** supplied with a door are operated without rest periods for 3 cycles.

15 Moisture resistance

Replace the existing text by the following:

This clause of Part 1 is applicable except as follows.

15.1.1 Addition:

Parts of **drives** intended to be exposed to outdoor conditions are subjected to the tests specified for IPX4 appliances.

15.1.2 Addition:

IPX4 tubular **drives** are installed in a tube that is open at both ends and has the largest diameter specified in the instructions. The tube has a length twice that of the motor and is mounted on a support as in normal use. The support is rotated at a speed of 1 r/min.

19 Abnormal operation

Add the following subclause:

19.1 Addition:

Drives are also subjected to the test of 19.101.

19.10 Replace the existing text by the following:

Addition:

For **drives** having a manual release, the test is repeated with the **drive** released.

The test is carried out for one cycle of operation if this is longer than 1 min.

19.13 Replace the text of the addition by the following:

For each fault condition in 19.11.2, if the appliance is still operating, it shall comply with 20.102 to 20.106.

Add the following subclause:

19.101 Drives, other than those for continuous operation, are supplied at **rated voltage** and operated continuously under **normal operation**.

20 Stability and mechanical hazards

20.2 Replace the text of the addition by the following:

NOTE 101 Moving parts of **drives** intended to be installed at a height of at least 2,5 m above the ground are considered to be positioned so that adequate protection is provided.

NOTE 102 Chains moving at less than 0,2 m/s are not considered to be dangerous moving parts.

20.101 Replace the requirement by the following:

Drives shall prevent doors from closing unexpectedly during normal use.

Add the following sentence to the second paragraph of the test specification.

Automatic operation of **automatic drives** is rendered inoperative.

Replace the existing text of subclauses 20.102 to 20.108 by the following:

20.102 Drives controlled by a **biased-off switch** shall stop when the actuating member of the switch is released.

Compliance is checked by the following test.

The **drive** is installed with a door and supplied at the most unfavourable voltage between 0,94 times and 1,06 times the **rated voltage**. It is operated to close the door. When the actuating member of the switch is released,

- if the closing force exerted by the door does not exceeds 150 N, as measured in 20.104.1, the bottom edge of the door shall stop;
- if the closing force exerted by the door exceeds 150 N, as measured in 20.104.1, the bottom edge of the door shall stop before it has travelled more than 50 mm vertically;

The test is repeated during the opening movement of the door.

20.103 Drives incorporating an **entrapment protection system** with sensing devices which prevent the door coming into contact with an obstacle shall not cause injury resulting from a moving door.

Compliance is checked by the following test.

The **drive** is installed with a door, the force exerted by the **drive** is set at the maximum value according to the instructions and the **drive** is supplied at the most unfavourable voltage between 0,94 times and 1,06 times the **rated voltage**.