

Safety of household and similar electrical appliances —

Part 2-86: Particular requirements for electric fishing machines

The European Standard EN 60335-2-86:2000 has the status of a British Standard

ICS 65.150

National foreword

This British Standard is the official English language version of EN 60335-2-86:2000. It was derived by CENELEC from IEC 60335-2-86:1998.

The CENELEC common modifications have been implemented at the appropriate places in the text and are indicated by a side line in the margin.

The UK participation in its preparation was entrusted to Technical Committee CPL/61/8, Farm Equipment, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
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Attention is drawn to the fact that CEN and CENELEC Standards normally include an annex which lists normative references to international publications with their corresponding European publications. The British Standards which implement these international or European publications may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 20, an inside back cover and a back cover.

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Part 2-86: Particular requirements for electric fishing machines
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et analogues
Partie 2-86: Règles particulières pour les
équipements électriques de pêche
(CEI 60335-2-86:1998, modifiée)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke
Teil 2-86: Besondere Anforderungen für
elektrische Fischereigeräte
(IEC 60335-2-86:1998, modifiziert)

This European Standard was approved by CENELEC on 2000-08-01. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 61H/122/FDIS, future first edition of IEC 60335-2-86 prepared by SC 61H of the IEC Technical Committee 61, was submitted to the IEC-CENELEC parallel vote in March 1998. The comments were discussed during the Naples meeting of CENELEC TC 61 in November 1998, when it was decided to submit a new draft for EN 60335-2-86 to the formal vote.

This draft was circulated in November 1999 and was approved by CENELEC as EN 60335-2-86 on 2000-08-01.

The following dates are applicable:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop(2001-08-01
- date on which national standards conflicting with the EN have to be withdrawn (dow(2007-08-01

This standard has to be used in conjunction with EN 60335-1, Safety of household and similar electrical appliances - Part 1: General requirements. It was established on the basis of the 1994 edition of that standard. Amendments and revisions of part 1 have also to be taken into account and the dates when such changes become applicable will be stated in the relevant amendment or revision of part 1.

This part 2 supplements or modifies the corresponding clauses of EN 60335-1, so as to convert it into the European Standard: Safety requirements for electric fishing machines.

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 of part 1 is to be adapted accordingly.

Subclauses, tables and figures which are additional to those in part 1 are numbered starting with 101.

There are no special national conditions causing a deviation from this European Standard, other than those listed in annex ZA to EN 60335-1.

National deviations from this European Standard are listed in annex ZB and are in addition to those in EN 60335-1.

NOTE 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 2. When a definition of part 1 concerns an adjective, the adjective and the associated noun are also in bold.

Introduction

An investigation by CENELEC TC 61 has concluded that all risks from products within the scope of this standard are fully covered by the Low Voltage Directive, 73/23/EEC. If the product has mechanical moving parts, a risk assessment in accordance with the Machinery Directive, 89/392/EEC, has shown that the risks are mainly of electrical origin and consequently this directive is not applicable. However, the relevant essential safety requirements of the Machinery Directive are covered by this standard together with the principal objectives of the Low Voltage Directive.

Endorsement notice

The text of the International Standard IEC 60335-2-86:1998 was approved by CENELEC as a European Standard with agreed modifications.

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SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –

Part 2-86: Particular requirements for electric fishing machines

1 Scope

This clause of part 1 is replaced by the following.

This standard deals with the safety of **electric fishing machines** by means of which water may be electrified for the purpose of catching fish or for providing barriers to all animals living in water.

The **rated voltage** of **portable electric fishing machines** is not more than 250 V and the **rated voltage** of **fixed electric fishing machines** for permanent connection to fixed wiring is not more than 1 000 V.

NOTE 1 – Examples of **electric fishing machines** coming within the scope of this standard are:

- **mains-operated electric fishing machines** which include those supplied from portable or stationary generator sets;
- **battery-operated electric fishing machines**.

NOTE 2 – Attention is drawn to the fact that

- for appliances intended to be used on board ships or boats, additional requirements may be necessary;
- for appliances intended to be used in tropical countries, special 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 some countries the use of **portable electric fishing machines** for catching fish is only allowed for research purposes.

NOTE 3 – This standard does not apply to

- electric fence energizers (IEC 60335-2-76);
- electric animal stunning equipment (IEC 60335-2-87).

2 Definitions

This clause of part 1 is applicable except as follows.

2.2.9 Replacement:

normal operation

operation of the appliance under the following conditions:

the **electric fishing machine** is operated as in normal use when connected to the supply with an adjustable non-inductive resistor connected between its output terminals. The resistor is adjusted so as to give an **output current** just sufficient not to cause any **protective device** to operate.

2.9.3 Addition:

The definition also includes terminals for the connection of the battery and other metal parts in a battery compartment which become accessible when batteries are replaced, even with the aid of a **tool**.

2.9.4 Replacement:

live part

conductive part which may cause an electric shock

2.101

electric fishing machine

appliance, comprising **electrodes** and an energizer, which is designed or used for the control, taking, killing of any species of fish or invertebrate living in water or for the production of electronarcosis, by means of electric current

NOTE 1 – An **electric fishing machine** may be used to provide a barrier effective for all animals living in water.

NOTE 2 – A given **electric fishing machine** may only perform some of the functions specified.

2.102

mains-operated electric fishing machine

electric fishing machine designed for direct connection to a supply other than a battery supply at a voltage greater than **safety extra-low voltage**. It may also be supplied from a generator set.

2.103

electrode

that part of an **electric fishing machine** which transfers the electric power into the water. The catching **electrode** is the **electrode** used by the fisherman, the return **electrode** is the **electrode** trailed in the water.

NOTE – The catching **electrode** is usually the anode and the return **electrode** is usually the cathode.

2.104

output circuit

all conductive parts or components within an **electric fishing machine**, which are connected or intended to be connected galvanically to the **electrode** terminals

2.105

output voltage

voltage between the **electrodes**

2.106

output current

current in the **output circuit** that the **electric fishing machine** is designed to supply

2.107

impulse

that part of the **pulsed voltage** output which exceeds 12 V

2.108

pulsed voltage

voltage **impulse** of any form and any duration

2.109**battery-operated electric fishing machine**

electric fishing machine deriving its energy solely from non-rechargeable batteries, rechargeable batteries or other sources of energy, with a voltage meeting the requirements for **safety extra-low voltage**

3 General requirement

This clause of part 1 is applicable.

4 General conditions for the tests

This clause of part 1 is applicable except as follows.

4.8.1 Addition:

*For **battery-operated electric fishing machines** where the supply terminals for the connection of the battery have no indication for polarity, the more unfavourable polarity is applied.*

4.101 *If there is no indication as to which of the output terminals is to be connected to the catching **electrode**, the terminal which gives the most unfavourable result is connected to the return **electrode**.*

4.102 *Unless otherwise specified, **electric fishing machines** are tested as **motor-operated appliances**.*

5 Void**6 Classification**

This clause of part 1 is applicable except as follows.

6.1 Replacement:

Electric fishing machines which are intended to be permanently connected to fixed wiring shall be **class I** or **class II** with respect to protection against electric shock. Other **electric fishing machines** shall be **class II** or **class III**.

Accessories intended to be supplied with **portable electric fishing machines** shall be **class III**.

Compliance is checked by inspection and by the relevant tests.

6.2 Replacement:

Electric fishing machines intended for permanent connection to fixed wiring shall be at least IPX4. Other **electric fishing machines** shall be at least IPX5.

Compliance is checked by inspection and by the relevant tests.