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INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 1

AMENDEMENT 1

Household and similar electrical appliances – Safety – Part 2-29: Particular requirements for battery chargers

Appareils électrodomestiques et analogues – Sécurité – Partie 2-29: Exigences particulières pour les chargeurs de batterie

IEC 60335-2-29:2016-06/AMD1:2019-03(en-fr)

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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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
61/5760/FDIS	61/5799/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- withdrawn,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.

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1 Scope

In the second paragraph, replace 120 V by 250 V.

2 Normative references

Add the following new reference:

IEC 61558-2-4:2009, *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*

3 Terms and definitions

Replace the terms and definitions by the following:

3.1 Definitions relating to physical characteristics

3.1.1 *Addition:*

Note 1 to entry: The **rated voltage** is the rated input voltage.

3.1.6 *Addition:*

Note 2 to entry: The **rated current** is the rated input current.

3.1.9 *Replacement:*

normal operation
operation of the appliance under the following conditions:

Battery chargers for charging lead-acid batteries, and other battery chargers having a **rated DC output current** not exceeding 20 A, are connected to the circuit of Figure 101. The variable resistor is adjusted so that the current in the circuit is the **rated DC output current** when the battery charger is supplied at **rated voltage**.

When the charging current is controlled by the state of charge of the battery, the variable resistor and the capacitor are replaced by a discharged battery of the type and having the largest capacity specified in the instructions.

Other battery chargers are connected to a discharged battery of the type and having the largest capacity specified in the instructions.

3.1.101
rated DC output voltage
output voltage assigned to the battery charger by the manufacturer

3.1.102
rated DC output current
output current assigned to the battery charger by the manufacturer

3.2 Definitions relating to means of connection

3.2.2 *Addition:*

Output flexible cords are not considered to be interconnection cords.

3.4.3 *Replacement:*

safety isolating transformer
transformer, the input winding of which is electrically separated from the output winding by an insulation at least equivalent to **double insulation** or **reinforced insulation**, that is intended to supply a battery charging circuit having an output voltage not exceeding 120 V ripple-free direct current

Note 1 to entry: Ripple-free means an r.m.s. ripple voltage not exceeding 10 % of the DC component.

3.5 Definitions relating to types of appliances

3.5.101
DC distribution board
panel having circuits for distributing DC power to socket-outlets or terminals

3.5.102
type 1 battery charger
battery charger the output circuit of which is supplied through a **safety isolating transformer**

3.5.103
type 2 battery charger
battery charger the output circuit of which is supplied through an **isolating transformer**

3.6 Definitions relating to parts of an appliance

3.6.101
isolating transformer
transformer, the input winding of which is electrically separated from the output winding by an insulation at least equivalent to **double insulation** or **reinforced insulation**, that is intended to supply a battery charging circuit having an output voltage not exceeding 250 V ripple-free DC

Note 1 to entry: Ripple-free means an RMS ripple voltage not exceeding 10 % of the DC component.

7 Marking and instructions

7.1 *Replace the sixth dashed item by the following:*

– “Before charging, read the instructions” or symbol ISO 7000-0790 (2004-01); (not required if the battery charger output is less than 20 VA);

– “For indoor use” or symbol IEC 60417-5957 (2004-12) or “Do not expose to rain” or symbol IEC 60417-6062 (2011-05); (not required if the battery charger output is less than 20 VA or the battery charger has a degree of protection against harmful ingress of water of at least IPX4);

7.6 *Add the following symbols to the addition:*

	[symbol IEC 60417-5957 (2004-12)]	for indoor use only
	[symbol IEC 60417-6062 (2011-05)]	do not expose to moisture

7.12 *Replace the first paragraph of the addition by the following*:

The instructions shall

– state that during charging, the battery must be placed in a well-ventilated area (for chargers for batteries that release gases into the atmosphere during normal charging);

– state that the battery charger must only be plugged into an earthed socket-outlet (for **portable class I battery chargers** for outdoor use);

– explain the automatic function, stating any limitation (for automatic battery chargers).

The instructions for **type 1 battery chargers** shall also

– specify the types, the number of batteries and the rated capacity of the batteries that can be charged;

– include a warning against recharging non-rechargeable batteries.

The instructions for **type 2 battery chargers** shall also

– specify the batteries intended to be charged, such as by a catalogue number, series identification or the equivalent;

– specify the ambient temperature range for the charger during charging.

Add the following text as a new last paragraph to the addition:

If symbol IEC 60417-5957 (2004-12) or symbol IEC 60417-6062 (2011-05) is used, its meaning shall be explained.

8 Protection against access to live parts

Add the following new subclause:

8.1.4 *Addition:*

*For **type 2 battery chargers**, voltages and currents are also measured between relevant accessible parts of opposite polarity.*

10 Power input and current

10.101 *Replace the existing text by the following:*

The DC output voltage of **type 1 battery chargers** shall not exceed 120 V. The DC output voltage of **type 2 battery chargers** shall not exceed 250 V.

*Compliance is checked by supplying the battery charger at **rated voltage** and measuring the DC output voltage.*

10.102 *Replace the existing text by the following:*

For **type 1 battery chargers**, the arithmetic mean value of the output current shall not deviate from the **rated DC output current** by more than 10 %.

For **type 2 battery chargers**, the arithmetic mean value of the output current shall not exceed the **rated DC output current** by more than 10 %.

*Compliance is checked by connecting the battery charger to the circuit of Figure 101. The battery charger is supplied at **rated voltage** and the variable resistor is adjusted to obtain the **rated DC output voltage**. The output current is then measured. A battery of the largest voltage and a battery with the largest capacity (if different) for each battery chemistry may be used instead of the circuit of Figure 101.*

11 Heating

11.5 *Delete the modification.*

22 Construction

22.26 *Replace the requirement by the following:*

The output circuit of a **type 1 battery charger** shall be supplied through a **safety isolating transformer** and shall not be connected to **accessible metal parts** or an earthing terminal. The insulation between parts operating at **safety extra-low voltage** and **live parts** shall comply with the requirements for **double insulation** or **reinforced insulation**.

The output circuit of a **type 2 battery charger** shall be supplied through an **isolating transformer** and shall not be connected to **accessible metal parts** or an earthing terminal. The insulation between parts operating at **safety extra-low voltage** and **live parts** shall comply with the requirements for **double insulation** or **reinforced insulation**.

24 Components

Add the following new subclause:

24.1.2 *Addition:*

*The relevant standard for **isolating transformers** is IEC 61558-2-4. If they have to be tested, they are tested in accordance with Annex BB.*

Annexes

Add the following new Annex BB:

Annex BB
(normative)

Isolating transformers

The following modifications to this standard are applicable for **isolating transformers**.

7 Marking and instructions

7.1 Isolating transformers for specific use shall be marked with:

– name, trademark or identification mark of the manufacturer or responsible vendor;
– model or type reference.

17 Overload protection of transformers and associated circuits

Fail-safe transformers shall comply with Subclause 15.5 of IEC 61558-1.

This test is carried out on three transformers.

22 Construction

Subclauses 19.1 and 19.1.2 of IEC 61558-2-4:2009 are applicable.

29 Clearances, creepage distances and solid insulation

29.1, 29.2 and 29.3 The distances specified in items 2a, 2c and 3 in Table 13 of IEC 61558-1 apply.

For insulated winding wires complying with Subclause 19.12.3 of IEC 61558-1, there are no requirements for **clearances** or **creepage distances**. In addition, for windings providing **reinforced insulation**, the distance specified in item 2c of Table 13 of IEC 61558-1 is not assessed.

For **isolating transformers** subjected to periodic voltages with a frequency exceeding 30 kHz, the **clearances**, **creepage distances** and **solid insulation** values specified in IEC 60664-4 are applicable, if these values are greater than the values specified in items 2a, 2c and 3 in Table 13 of IEC 61558-1.

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