
Appliance couplers for household and similar general purposes - Part 1: General requirements (IEC 60320-1:2001)

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EUROPEAN STANDARD

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NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2001

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English version

Appliance couplers for household and similar general purposes
Part 1: General requirements
(IEC 60320-1:2001)

Connecteurs pour usages domestiques
et usages généraux analogues
Partie 1: Prescriptions générales
(CEI 60320-1:2001)

Gerätesteckvorrichtungen für den
Hausgebrauch und ähnliche
allgemeine Zwecke
Teil 1: Allgemeine Anforderungen
(IEC 60320-1:2001)

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This European Standard was approved by CENELEC on 2001-07-01. 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 23G/215/FDIS, future edition 2 of IEC 60320-1, prepared by SC 23G, Appliance couplers, of IEC TC 23, Electrical accessories, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60320-1 on 2001-07-01.

This European Standard supersedes EN 60320-1:1996 + A1:1996 + A2:1998.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2002-04-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2004-07-01

Annexes designated "normative" are part of the body of the standard. In this standard, annexes A and ZA are normative. Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60320-1:2001 was approved by CENELEC as a European Standard without any modification.

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-151	1978	International Electrotechnical Vocabulary (IEV) Chapter 151: Electrical and magnetic devices	-	-
IEC 60068-2-32	1975	Basic environmental testing procedures Part 2: Tests - Test Ed: Free fall	EN 60068-2-32 ¹⁾	1993
IEC 60083	1997	Plugs and socket-outlets for domestic and similar general use standardized in member countries of IEC	-	-
IEC 60112	1979	Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions	HD 214 S2	1980
IEC 60227 ²⁾	Series	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V	-	-
IEC 60245 ³⁾	Series	Rubber insulated cables of rated voltages up to and including 450/750 V	-	-
IEC 60695-2-10	2000	Fire hazard testing Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure	EN 60695-2-10	2001
IEC 60695-2-11	2000	Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products	EN 60695-2-11	2001

¹⁾ EN 60068-2-32 includes amendment 2:1990 to IEC 60068-2-32.

²⁾ The HD 21 series, which is related to, but not directly equivalent with the IEC 60227 series, applies instead.

³⁾ The HD 22 series, which is related to, but not directly equivalent with the IEC 60245 series, applies instead.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60695-2-12	2000	Part 2-12: Glowing/hot-wire based test methods - Glow-wire flammability test method for materials	EN 60695-2-12	2001
IEC 60695-2-13	2000	Part 2-13: Glowing/hot-wire based test methods - Glow-wire ignitability test method for materials	EN 60695-2-13	2001
IEC 60730 (mod)	Series	Automatic electrical controls for household and similar use	EN 60730	Series
IEC 61058	Series	Switches for appliances	EN 61058	Series
IEC 61140	1997	Protection against electric shock - Common aspects for installation and equipment	EN 61140	2001
ISO 286-1	1988	ISO system of limits and fits Part 1: Bases of tolerances, deviations and fit	EN 20286-1	1993
ISO 1101	1983	Technical drawings - Geometrical tolerancing - Tolerancing of form, orientation, location and run-out - Generalities, definitions, symbols, indications on drawings	-	-
ISO 1456	1988	Metallic coatings - Electrodeposited coatings of nickel plus chromium and of copper plus nickel plus chromium	-	-
ISO 2081	1986	Metallic coatings - Electroplated coatings of zinc on iron or steel	-	-
ISO 2093	1986	Electroplated coatings of tin - Specification and test methods	-	-

**NORME
INTERNATIONALE
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**Connecteurs pour usages domestiques
et usages généraux analogues –**

**Partie 1:
Prescriptions générales**

**Appliance couplers for household
and similar general purposes –**

**Part 1:
General requirements**

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**APPLIANCE COUPLERS FOR HOUSEHOLD
AND SIMILAR GENERAL PURPOSES –**
Part 1: General requirements

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.

International Standard IEC 60320-1 has been prepared by subcommittee 23G: Appliance couplers, of IEC technical committee 23: Electrical accessories.

This second edition cancels and replaces the first edition published in 1994 and its amendments 1 (1995) and 2 (1996). This second edition constitutes a technical revision.

The text of this standard is based on the first edition, amendments 1 and 2, and the following documents:

FDIS	SIST EN 60320-1:2003	Report on voting
23G/215/FDIS	23G/215/FDIS	23G/218/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.

Annex A forms an integral part of this standard.

IEC 60320 consists of the following parts, under the general title: *Appliance couplers for household and similar general purposes*:

- Part 2-1: Sewing machine couplers
- Part 2-2: Interconnection couplers for household and similar equipment
- Part 2-3: Appliance couplers with a degree of protection higher than IPX0

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

The committee has decided that the contents of this publication will remain unchanged until 2003. At this date, the publication will be

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

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APPLIANCE COUPLERS FOR HOUSEHOLD AND SIMILAR GENERAL PURPOSES –

Part 1: General requirements

1 Scope

This part of IEC 60320 is applicable to two-pole appliance couplers for a.c. only, with or without earthing contact, with a rated voltage not exceeding 250 V and a rated current not exceeding 16 A, for household and similar general purposes and intended for the connection of a supply cord to electrical appliances or other electrical equipment for 50 Hz or 60 Hz supply.

NOTE 1 Appliance inlets integrated or incorporated in appliances or other equipment are within the scope of this standard. The dimensional and general requirements of this standard apply to such inlets, but certain tests may not be relevant.

NOTE 2 The requirements for connectors are based on the assumption that the temperature of the pins of the corresponding appliance inlets does not exceed

70 °C for connectors for cold conditions;

120 °C for connectors for hot conditions;

155 °C for connectors for very hot conditions.

NOTE 3 Appliance couplers complying with this standard are suitable for use at ambient temperatures not normally exceeding 25 °C, but occasionally reaching 35 °C.

NOTE 4 Appliance couplers complying with the standard sheets in this standard are intended for the connection of equipment having no special protection against moisture. If appliance couplers are used with equipment which may be subject to spillage of liquid in normal use then protection against moisture is to be provided by the equipment.

NOTE 5 Special constructions may be required

- in locations where special conditions prevail, for example, as in ships, vehicles and the like;
- in hazardous locations, for example, where explosions are liable to occur.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 60320. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 60320 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60050(151):1978, *International Electrotechnical Vocabulary (IEV) – Chapter 151: Electrical and magnetic devices*

[https://standards.iteh.ai/catalog/standards/sist/79384c65-ac16-4f51-9339-](https://standards.iteh.ai/catalog/standards/sist/79384c65-ac16-4f51-9339-dd14a298208f/sist-en-60320-1-2003)

IEC 60068-2-32:1975, *Environmental testing – Part 2: Tests – Test Ed: Free fall*

IEC/TR 60083:1997, *Plugs and socket-outlets for domestic and similar general use standardized in member countries of IEC*

IEC 60112:1979, *Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions*

IEC 60227 (all parts), *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V*

IEC 60245 (all parts), *Rubber insulated cables – Rated voltages up to and including 450/750 V*

IEC 60695-2-10:2000, *Fire hazard testing – Part 2-10: Glowing/hot-wire based test methods – Glow-wire apparatus and common test procedure*

IEC 60695-2-11:2000, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products*

IEC 60695-2-12:2000, *Fire hazard testing – Part 2-12: Glowing/hot-wire based test methods – Glow-wire flammability test method for materials*

IEC 60695-2-13:2000, *Fire hazard testing – Part 2-13: Glowing/hot-wire based test methods – Glow-wire ignitability test method for materials*

IEC 60730 (all parts), *Automatic electrical controls for household and similar use*

IEC 61058 (all parts), *Switches for appliances*

IEC 61140:1997, *Protection against electric shock – Common aspects for installation and equipment*

ISO 286-1:1988, *ISO system of limits and fits – Part 1: Bases of tolerances, deviations and fits*

ISO 1101:1983, *Technical drawings – Geometrical tolerancing – Tolerancing of form, orientation, location and run-out – Generalities, definitions, symbols, indications on drawings*

ISO 1456:1988, *Metallic coatings – Electrodeposited coatings of nickel plus chromium and of copper plus nickel plus chromium*

ISO 2081:1986, *Metallic coatings – Electroplated coatings of zinc on iron or steel*

ISO 2093:1986, *Electroplated coatings of tin – Specification and test methods*

3 Definitions

Where the terms "voltage" and "current" are used, they imply the r.m.s. values, unless otherwise specified.

For the purpose of this International Standard, the following definitions apply.

The term "**accessory**" is used as a general term covering connectors and/or appliance inlets (and, in some cases, plugs as well).

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3.1

appliance coupler

means enabling the connection and disconnection at will, of a cord to an appliance or other equipment. It consists of two parts: a connector and an appliance inlet

3.2

connector

part of the appliance coupler integral with, or intended to be attached to, the cord connected to the supply

NOTE Only one cord is connected to the connector.

3.3

appliance inlet

part of the appliance coupler integrated or incorporated in the appliance or equipment or intended to be fixed to it

NOTE 1 An appliance inlet integrated in an appliance or equipment is an appliance inlet (the shroud and base of) which is formed by the housing of the appliance or equipment.

NOTE 2 An appliance inlet incorporated in an appliance or an equipment is a separate appliance inlet built in or fixed to an appliance or equipment.

3.4

rewirable accessory

accessory so constructed that the cord can be replaced

3.5

non-rewirable accessory

accessory so constructed that it forms a constructional unit with the cord which is assembled by the manufacturer of the accessory. This unit shall be such that

- the cord cannot be separated from the accessory without making this permanently useless, and
- the accessory cannot be opened by hand or by using a general purpose tool, for example a screwdriver, as intended

NOTE An accessory is considered to be permanently useless when for re-assembling the accessory, parts or materials other than the original are to be used.

3.6

cord set

assembly consisting of one cord fitted with one non-rewirable plug and one non-rewirable connector, intended for the connection of an electrical appliance or equipment to the electrical supply

3.7

base of a pin

part of the pin where it protrudes from the engagement face

3.8

retaining device

mechanical arrangement which holds a connector in proper engagement with a corresponding appliance inlet and prevents its unintentional withdrawal

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3.9

rated voltage

voltage assigned to the accessory by the manufacturer

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3.10

rated current

current assigned to the accessory by the manufacturer

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3.11

terminal

part to which a conductor is attached, providing a re-usable connection

3.12

termination

part to which a conductor is permanently attached