



SLOVENSKI STANDARD
SIST EN 60320-1:1999

01-julij-1999

Appliance couplers for household and similar general purposes -- Part 1: General requirements (IEC 60320-1:1994)

Appliance couplers for household and similar general purposes -- Part 1: General requirements

Gerätesteckvorrichtungen für den Hausgebrauch und ähnliche allgemeine Zwecke -- Teil 1: Allgemeine Anforderungen

Connecteurs pour usages domestiques et usages généraux analogues -- Partie 1: Prescriptions générales

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Ta slovenski standard je istoveten z: EN 60320-1:1996

ICS:

29.120.30	Vtiči, vtičnice, spojke	Plugs, socket-outlets, couplers
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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60320-1

April 1996

ICS 29.120.30

Supersedes EN 60320-1:1987 and its amendments

Descriptors: Appliance couplers for electric household appliances, connectors, appliance inlets, dimensions, requirements, testing, definitions, electrical safety

English version

**Appliance couplers for household and similar general purposes
Part 1: General requirements
(IEC 320-1:1994, modified)**

Connecteurs pour usages domestiques
et usages généraux analogues
Partie 1: Prescriptions générales
(CEI 320-1:1994, modifiée)

Gerätesteckvorrichtungen für den
Hausgebrauch und ähnliche
allgemeine Zwecke
Teil 1: Allgemeine Anforderungen
(IEC 320-1:1994, modifiziert)

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This European Standard was approved by CENELEC on 1996-03-05. 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, 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 the International Standard IEC 320-1:1994, prepared by SC 23G, Appliance couplers, of IEC TC 23, Electrical accessories, together with common modifications prepared by Reporting Secretariat SR 23G, was submitted to the formal vote and was approved by CENELEC as EN 60320-1 on 1996-03-05.

This European Standard supersedes EN 60320-1:1987 and its amendments A1:1989 and A11:1994.

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) 1997-03-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1997-03-01

For products which have complied with EN 60320:1987 and its amendments A1:1989 and A11:1994 before 1997-03-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2002-03-01.

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

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Endorsement notice

The text of the International Standard IEC 320-1:1994 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS**1 Scope**

Replace "IEC 320" by "EN 60320".

2 Normative references

Replace the text of clause 2, Normative references, by:

NOTE: Normative references to international publications are listed in annex ZA (normative).

15 Insulation resistance and electric strength

- 15.2 Replace in the table "227 IEC 53" by "H05VV-F"
"245 IEC 53" by "H05RR-F".

22 Cords and their connection

- 22.1 Replace "IEC 227" by "HD 21" and "IEC 245" by "HD 22".

Replace in the second column of the table:

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227 IEC 41	by	H03VH-Y
227 IEC 52	by	H03VV-F
227 IEC 52	by	H03VV-F or H03VVH2-F
227 IEC 52	by	H03VV-F or H03VVH2-F
227 IEC 53 or 245 IEC 53	by	H05VVH2-F ⁴⁾ H05VV-F or H05RR-F
245 IEC 51 or 245 IEC 53	by	H03RT-F or H05RR-F
245 IEC 51 or 245 IEC 53	by	H03RT-F or H05RR-F
227 IEC 53 or 245 IEC 53	by	H05VV-F or H05RR-F
245 IEC 51 or 245 IEC 53	by	H03RT-F or H05RR-F

Add the following note:

⁴⁾ Only for connectors for Class II equipment.

22.3 Replace in the table "227 IEC 53" by "H05VV-F"
"245 IEC 53" by "H05RR-F"

22.4 Replace in the table "227 IEC 53" by "H05VV-F"
"245 IEC 53" by "H05RR-F"

27 Resistance of insulating material to heat, fire and tracking

- 27.1.3 Replace "IEC 695-2-1" by "HD 444.2.1".
 27.1.4 Replace "IEC 695-2-1" by "HD 444.2.1".
 27.1.5 Replace "IEC 695-2-1" by "HD 444.2.1".
 27.1.6 Replace "IEC 695-2-1" by "HD 444.2.1".
 27.1.7 Replace "IEC 695-2-1" by "HD 444.2.1".
 27.1.8 Replace "IEC 695-2-1" by "HD 444.2.1".
 27.1.9 Replace "IEC 695-2-1" by "HD 444.2.1".
 27.1.10 Replace "IEC 695-2-1" by "HD 444.2.1".
 27.2.1 Replace "IEC 112" by "HD 214".
 27.2.2 Replace "IEC 112" by "HD 214".
 27.2.3 Replace "IEC 112" by "HD 214".
 27.2.4 Replace "IEC 112" by "HD 214".

Figure 1 Survey of appliance couplers

Replace in the sixth column

227 IEC 41	by	H03VH-Y
227 IEC 52	by	H03VV-F
227 IEC 52		H03VV-F or H03VVH2-F
227 IEC 52	by	H03VV-F or H03VVH2-F
227 IEC 53 or 245 IEC 53	by	H05VV-F or H05RR-F
245 IEC 53 or 245 IEC 51		H05RR-F or H03RT-F
245 IEC 53 or 245 IEC 51		H05RR-F or H03RT-F
227 IEC 53 or 245 IEC 53		H05VV-F, H05VVH2-F or H05RR-F
227 IEC 53 or 245 IEC 53	by	H05VV-F or H05RR-F
245 IEC 53 or 245 IEC 51		H05RR-F or H03RT-F
227 IEC 53 or 245 IEC 53		H05VV-F or H05RR-F

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 83	1975	Plugs and socket-outlets for domestic and	-	-
A1	1979	similar general use - Standards	-	-
IEC 112	1979	Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions	HD 214 S2	1980
IEC 227	series	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V	HD 21	series
IEC 245	series	Rubber insulated cables of rated voltages up to and including 450/750 V	HD 22	series
IEC 536	1976	Classification of electrical and electronic equipment with regard to protection against electric shock	HD 366 S1	1977
IEC 695-2-1	1991 ¹⁾	Fire hazard testing Part 2: Test methods Section 1: Glow-wire test and guidance	-	-
IEC 730 (mod)	series	Automatic electrical controls for household and similar use	EN 60730	series
IEC 1058	series	Switches for appliances	EN 61058	series
ISO 286-1	1988	ISO System of limits and fits Part 1: Bases of tolerances, deviations and fits	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	-	-

1) IEC 695-2-1:1991 is superseded by IEC 695-2-1/0 to 1/3:1994, which are being harmonized by CENELEC.

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<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
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	-	-

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Annex ZB (normative)**Special national conditions**

Special national condition: National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions. If it affects harmonization, it forms part of the European Standard or Harmonization Document.

For the countries in which the relevant special national conditions apply these provisions are normative, for other countries they are informative.

<u>Clause</u>	<u>Special national condition</u>
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	Denmark
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9.3	<p>Replace the second and third paragraph by: Appliance inlets shall not allow improper connections with portable socket-outlets complying with Section 107-2-D1.</p> <p>Connectors shall not allow improper connection with plugs complying with Section 107-2-D1.</p> <p>(Section 107-2-D1 of the Heavy Current Regulations) (DK).</p>
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Figure 1	<p>Groups A and B shall not be used in Denmark. Apart from group C special Danish types are allowed according to the particular requirements of Section 107-2-D1 of the Heavy Current Regulations.</p> <p>(Section 107-2-D1 of the Heavy Current Regulations) (DK).</p>
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NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC
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Première édition
First edition
1994-06

Connecteurs pour usages domestiques et
usages généraux analogues –

Partie 1:
Prescriptions générales

iTeh STANDARD PREVIEW

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Appliance couplers for household and
similar general purposes –

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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 cooperation 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, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 3) They have the form of recommendations for international use published in the form of standards, 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.

International Standard IEC 320-1 has been prepared by sub-committee 23G: Appliance couplers, of IEC technical committee 23: Electrical accessories.

This edition cancels and replaces the second edition published in 1981 and its amendments 1, 2 and 3. This edition constitutes a technical revision.

It forms part 1 of a series, the other parts being:

IEC 320-2-1: 1984, *Part 2-1: Sewing machine couplers*

IEC 320-2-2: 1990, *Part 2-2: Interconnection couplers for household and similar equipment*

The text of this standard is based on the second edition and the following documents:

DIS	Reports on voting	Amendment to DIS	Reports on voting
23G(CO)65	23G(CO)68	23G(CO)70	23G(CO)71
23G(CO)67	23G(CO)73		
23G(CO)74	23G(CO)81		
23G(CO)75	23G(CO)82		
23G(CO)76	23G(CO)83		
23G(CO)77	23G(CO)84		
23G(CO)79	23G(CO)86		
23G(CO)87	23G(CO)89		

Full information on the voting for the approval of this standard can be found in the reports on voting indicated in the above table.

APPLIANCE COUPLERS FOR HOUSEHOLD AND SIMILAR GENERAL PURPOSES –

Part 1: General requirements

1 Scope

This part of IEC 320 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.

NOTES

- 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.
- 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.
- 3 Appliance couplers complying with this standard are suitable for use at ambient temperatures not normally exceeding 25 °C, but occasionally reaching 35 °C.
- 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.
- 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 320. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 320 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 83: 1975, *Plugs and socket-outlets for domestic and similar general use – Standards Amendment 1* (1979)

IEC 112: 1979, *Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions*

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IEC 227: *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V*

IEC 245: *Rubber insulated cables of rated voltages up to and including 450/750 V*

IEC 536: 1976, *Classification of electrical and electronic equipment with regard to protection against electric shock*

IEC 695-2-1: 1991, *Fire hazard testing – Part 2: Test methods – Section 1: Glow-wire test and guidance*

IEC 730: *Automatic electrical controls for household and similar use*

IEC 1058: *Switches for appliances*

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 – Tolerances 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).

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.

3.3 appliance inlet: Part of the appliance coupler integrated or incorporated in the appliance or equipment or intended to be fixed to it.

NOTES

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.

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 a cord fitted with a non-rewirable plug and a non-rewirable connector, intended for the connections 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.

3.9 rated voltage: Voltage assigned to the accessory by the manufacturer.

3.10 rated current: Current assigned to the accessory by the manufacturer.

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.

3.13 screw-type terminal: Terminal for the connection and subsequent disconnection of a conductor, the connection being made, directly or indirectly by, means of screws or nuts of any kind.

3.14 pillar terminal: Screw-type terminal in which the conductor is inserted into a hole or cavity, where it is clamped under the shank of a screw. The clamping pressure may be applied directly by the shank of the screw or through an intermediate clamping plate to which pressure is applied by the shank of the screw.