SLOVENSKI STANDARD

SIST EN 60998-1:2005

februar 2005

Povezovalne naprave v nizkonapetostnih tokokrogih za uporabo v gospodinjstvu in za podobne namene - 1. del: Splošne zahteve (IEC 60998-1:2002, spremenjen)

Connecting devices for low-voltage circuits for household and similar purposes - Part 1: General requirements (IEC 60998-1:2002, modified)

ICS 29.120.20

Referenčna številka
SIST EN 60998-1:2005(en)

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60998-1

April 2004

ICS 29.120.20

Supersedes EN 60998-1:1993 + A1:2001

English version

Connecting devices for low-voltage circuits for household and similar purposes Part 1: General requirements

(IEC 60998-1:2002, modified)

Dispositifs de connexion pour circuits basse tension pour usage domestique et analogue Partie 1: Règles générales (CEI 60998-1:2002, modifiée)

Verbindungsmaterial für Niederspannungs-Stromkreise für Haushalt und ähnliche Zwecke Teil 1: Allgemeine Anforderungen (IEC 60998-1:2002, modifiziert)

This European Standard was approved by CENELEC on 2004-03-01. 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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, 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

Ref. No. EN 60998-1:2004 E

Foreword

The text of the International Standard IEC 60998-1:2002, prepared by SC 23F, Connecting devices, of IEC TC 23, Electrical accessories, together with common modifications prepared by the CENELEC Reporting Secretariat SR 23F, was submitted to the formal vote and was approved by CENELEC as EN 60998-1 on 2004-03-01.

This European Standard supersedes EN 60998-1:1993 + A1:2001.

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) 2005-03-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2007-03-01

In this standard, the following print types are used:

- requirements proper: in roman type;
- *test specifications: in italic type;*
- explanatory matter: in smaller roman type.

Annexes ZA and ZB have been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60998-1:2002 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

1 In the first paragraph, **delete** ", and equivalent AWG conductors".

6.2 **Delete** NOTE 1.

8.3 **Delete** the NOTE.

11.6 **Delete** ", or equivalent AWG conductors".

15.4 **Delete** the NOTE.

Annex B **Delete** the whole annex.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

Publication	Year	Title	EN/HD	Year
IEC 60068-2-32	1975	Basic environmental testing procedures Part 2: Tests - Test Ed: Free fall (Procedure 1)	EN 60068-2-32 [1]	1993
IEC 60068-2-75	1997	Part 2-75: Tests - Test Eh: Hammer tests	EN 60068-2-75	1997
IEC 60112	1979	Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions	HD 214 S2 [2]	1980
IEC 60228 (mod)	1978	Conductors of insulated cables - First supplement: Guide to the dimensional limits of circular conductors	HD 383 S2 [3]	1986
IEC 60344	1980	Guide to the calculation of resistance of plain and coated copper conductors of low-frequency cables and wires	-	-
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 1993
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 60695-10-2	1995 [4]	Part 10-2: Guidance and test methods for the minimization of the effects of abnormal heat on electrotechnical products involved in fires - Method for testing products made from non-metallic materials for resistance to heat using the ball pressure test	-	-

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[1] EN 60068-2-32:1993 includes A2:1990 to IEC 60068-2-32:1975.

[2] HD 214 S2:1980 is superseded by EN 60112:2003, which is based on IEC 60112:2003.

[3] HD 383 S2:1986 is based on IEC 60228:1978 + supplement A:1982, modified.

[4] IEC 60695-10-2 is superseded by IEC 60695-10-2:2003, which is harmonized as EN 60695-10-2:2003.

Publication	Year	Title	EN/HD	Year
IEC 61032	1997	Protection of persons and equipment by enclosures - Probes for verification	EN 61032	1998
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.

NOTE If it affects harmonization, it forms part of the European Standard.

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

Clause	Special national condition
6.2	**United Kingdom**

Replace the entire subclause by:

6.2 The standard rated connecting capacities are 0,2 mm^2, 0,34 mm^2, 0,5 mm^2, 0,75 mm^2, 1 mm^2, 1,25 mm^2, 1,5 mm^2, 2,5 mm^2, 4 mm^2, 6 mm^2, 10 mm^2, 16 mm^2, 25 mm^2 and 35 mm^2.

NORME INTERNATIONALE

INTERNATIONAL STANDARD

CEI
IEC
60998-1

Deuxième édition
Second edition
2002-12

PUBLICATION GROUPÉE DE SÉCURITÉ
GROUP SAFETY PUBLICATION

Dispositifs de connexion pour circuits basse tension pour usage domestique et analogue –

Partie 1: Règles générales

Connecting devices for low-voltage circuits for household and similar purposes –

Part 1: General requirements

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

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For price, see current catalogue

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

CONNECTING DEVICES FOR LOW-VOLTAGE CIRCUITS FOR HOUSEHOLD AND SIMILAR 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 60998-1 has been prepared by subcommittee 23F: Connecting devices, of IEC technical committee 23: Electrical accessories.

This second edition cancels and replaces the first edition published in 1990 and constitutes a technical revision.

It has the status of a group safety publication in accordance with IEC Guide 104.

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

FDIS	Report on voting
23F/141/FDIS	23F/147/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.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This standard constitutes Part 1 of the IEC 60998 series, published under the general title *Connecting devices for low-voltage circuits for household and similar purposes.* This series consists of this Part 1, devoted to general requirements, and various Parts 2, devoted to particular requirements.

At the moment of the publication of this part, the following parts had already been published:

Part 1: General requirements

Part 2-1: Particular requirements for connecting devices as separate entities with screw-type clamping units

Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units

Part 2-3: Particular requirements for connecting devices as separate entities with insulation piercing clamping units

Part 2-4: Particular requirements for twist-on connecting devices

Part 2-5: Particular requirements for connecting boxes (junction and/or tapping) for terminals or connecting devices.

In this publication, the following print types are used:

– requirements proper: in roman type;
– *test specifications: in italic type;*
– explanatory matter: in smaller roman type.

The committee has decided that the contents of this publication will remain unchanged until 2010. At this date, the publication will be

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

CONNECTING DEVICES FOR LOW-VOLTAGE CIRCUITS FOR HOUSEHOLD AND SIMILAR PURPOSES –

Part 1: General requirements

1 Scope

This part of IEC 60998 applies to connecting devices as separate entities for the connection of two or more electrical copper conductors (complying with IEC 60228 or IEC 60344) rigid (solid or stranded) or flexible, having a cross-sectional area of 0,2 mm^2 up to and including 35 mm^2 and equivalent AWG conductors with a rated voltage not exceeding 1 000 V a.c. up to and including 1 000 Hz and 1 500 V d.c. where electrical energy is used for household and similar purposes.

NOTE Rated connecting capacities lower than 0,5 mm^2 are referred to IEC 60344 and rated connecting capacities equal to, or higher than, 0,5 mm^2 are referred to IEC 60228.

Connecting devices that require the use of special tools other than for twist-on connecting devices and insulation piercing connecting devices do not comply with this standard.

This standard contains the general requirements to be used together with the relevant Part 2, containing detailed particular requirements for

- devices with screw-type clamping units (IEC 60998-2-1);
- devices with screwless-type clamping units (IEC 60998-2-2);
- devices with insulation piercing clamping units (IEC 60998-2-3);
- devices with twist-on connecting devices (IEC 60998-2-4);
- devices with connecting boxes (junction and/or tapping) (IEC 60998-2-5).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

IEC 60068-2-75:1997, *Environmental testing – Part 2: Tests – Test Eh: Hammer tests*

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

IEC 60228:1978, *Conductors of insulated cables*
Amendment 1 (1993)

IEC 60344:1980, *Guide to the calculation of resistance of plain and coated copper conductors of low-frequency cables and wires*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*

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 60695-10-2:1995, *Fire hazard testing – Part 10: Guidance and test methods for the minimization of the effects of abnormal heat on electrotechnical products involved in fires – Section 2: Method for testing products made from non-metallic materials for resistance to heat using the ball pressure test – Basic safety publication*

IEC 61032:1997, *Protection of persons and equipment by enclosures – Probes for verification*

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 Terms and definitions

For the purpose of this standard, the following definitions apply.

3.1
connection
electrical connection between two or more conductors or between a conducting part and one or more conductors

3.2
junction
connection between two or more conductor ends

3.3
tapping
connection of a conductor end (called "tapped conductor") on any point of another conductor (called "main conductor")

3.4
connecting device
device for the electrical connection of two or more conductors comprising one or more terminals and, if necessary, insulation and/or ancillary parts (see Annex A)

3.5
terminal
conductive part of one pole composed of one or more clamping unit(s) and insulation if necessary (see Annex A)

3.6
clamping unit
part(s) of a terminal necessary for the mechanical clamping and the electrical connection of the conductor(s), including the parts which are necessary to ensure correct contact pressure (see Annex A)