SLOVENSKI STANDARD
SIST EN 60352-7:2003

01-oktober-2003

Solderless connections - Part 7: Spring clamp connections - General requirements, test methods and practical guidance (IEC 60352-7:2002)

Solderless connections -- Part 7: Spring clamp connections - General requirements, test methods and practical guidance

Lötfreie Verbindungen -- Teil 7: Federklemmverbindungen - Allgemeine Anforderungen, Prüfverfahren und Anwendungshinweise

Connexions sans soudure -- Partie 7: Connexions à ressort - Règles générales, méthodes d'essai et guide pratique

Ta slovenski standard je istoveten z: **EN 60352-7:2002**

ICS:

29.120.20	Spojni elementi	Connecting devices

SIST EN 60352-7:2003 **en**

EUROPEAN STANDARD **EN 60352-7**

NORME EUROPÉENNE

EUROPÄISCHE NORM October 2002

ICS 31.220.10

English version

Solderless connections
Part 7: Spring clamp connections - General requirements, test methods and practical guidance
(IEC 60352-7:2002)

Connexions sans soudure
Partie 7: Connexions à ressort - Règles générales, méthodes d'essai et guide pratique
(CEI 60352-7:2002)

Lötfreie Verbindungen
Teil 7: Federklemmverbindungen - Allgemeine Anforderungen, Prüfverfahren und Anwendungshinweise
(IEC 60352-7:2002)

This European Standard was approved by CENELEC on 2002-10-01. 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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, 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 60352-7:2002 E

Foreword

The text of document 48B/1228/FDIS, future edition 1 of IEC 60352-7, prepared by SC 48B, Connectors, of IEC TC 48, Electromechanical components and mechanical structures for electronic equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60352-7 on 2002-10-01.

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)	2003-07-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2005-10-01

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

Endorsement notice

The text of the International Standard IEC 60352-7:2002 was approved by CENELEC as a European Standard without any modification.

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.

Publication	Year	Title	EN/HD	Year
IEC 60050-581 A1	1978 1998	International Electrotechnical Vocabulary (IEV) Chapter 581: Electromechanical components for electronic equipment	-	-
IEC 60068-1 + corr. October + A1	1988 1988 1992	Environmental testing Part 1: General and guidance	EN 60068-1	1994
IEC 60189-3	1988	Low-frequency cables and wires with PVC insulation and PVC sheath Part 3: Equipment wires with solid or stranded conductor, PVC insulated, in singles, pairs and triples	-	-
IEC 60228 (mod) A1	1978 1993	Conductors of insulated cables - First supplement: Guide to the dimensional limits of circular conductors	HD 383 S2 [1)]	1986
IEC 60512	Series	Connectors for electronic equipment - Tests and measurements	EN 60512	Series
IEC 60512-1-100	- [2)]	Connectors for electronic equipment - Tests and measurements Part 1-100: General - Applicable publications	EN 60512-1-100	2001 [3)]
IEC 60884-1	1994	Plugs and socket-outlets for household and similar purposes Part 1: General requirements	-	-

[1)] HD 383 S2 is based on IEC 60228:1978 + IEC 60228A:1982.

[2)] Undated reference.

[3)] Valid edition at date of issue.

NORME INTERNATIONALE

INTERNATIONAL STANDARD

CEI
IEC
60352-7

Première édition
First edition
2002-08

Connexions sans soudure –

Partie 7:
Connexions à ressort –
Règles générales, méthodes d'essai et guide pratique

Solderless connections –

Part 7:
Spring clamp connections –
General requirements, test methods and practical guidance

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE U

Pour prix, voir catalogue en vigueur
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SOLDERLESS CONNECTIONS –

Part 7: Spring clamp connections – General requirements, test methods and practical guidance

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 60352-7 has been prepared by subcommittee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

This bilingual version (2003-01) replaces the English version.

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

FDIS	Report on voting
48B/1228/FDIS	48B/1243/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.

The French version of this standard has not been voted upon.

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

The committee has decided that the contents of this publication will remain unchanged until 2007. At this date, the publication will be

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

INTRODUCTION

This part of IEC 60352 includes requirements, tests and practical guidance information.

Two test schedules are provided.

a) The basic test schedule applies to spring-clamp connections which conform to all requirements of clause 4. These requirements are derived from experience with successful applications of such spring-clamp connections.

b) The full test schedule applies to spring-clamp connections which do not fully conform to all requirements of clause 4, for example which are manufactured using materials or finishes not included in clause 4. This approach permits cost and time effective performance verification using a limited basic test schedule for established spring-clamp connections and an expanded full test schedule for spring-clamp connections requiring more extensive performance validation.

The values given in this specification are minimum values, which are harmonized with other IEC documents. Other standards may specify other values.

SOLDERLESS CONNECTIONS –

Part 7: Spring clamp connections – General requirements, test methods and practical guidance

1 Scope and object

This part of IEC 60352 is applicable to spring-clamp connections made with stripped wire without further preparation:

– solid conductors of 0,32 mm to 3,7 mm nominal diameter (0,08 mm^2 to 10 mm^2 cross-section), or

– stranded conductors of 0,08 mm^2 to 10 mm^2 cross-section, or

– flexible conductors of 0,08 mm^2 to 10 mm^2 cross-section

according to IEC 60228 or IEC 60189-3 for use in telecommunication equipment and in electronic devices employing similar techniques.

Information on materials and data from industrial experience is included in addition to the test procedures to provide electrically stable connections under prescribed environmental conditions.

The object of this part of IEC 60352 is to determine the suitability of spring-clamp connections under specified mechanical, electrical and atmospheric conditions.

NOTE IEC Guide 109 advocates the need to minimize the impact of a product on the natural environment throughout the product life cycle. It is understood that some of the materials permitted in this standard may have a negative environmental impact. As technological advances lead to acceptable alternatives for these materials, they will be eliminated from this standard.

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 60050(581):1978, *International Electrotechnical Vocabulary (IEV) – Chapter 581: Electro-mechanical components for electronic equipment*
Amendment 1 (1998)

IEC 60068-1:1988, *Environmental testing – Part 1: General and guidance*
Amendment 1 (1992)

IEC 60189-3:1988, *Low frequency cables and wires with PVC insulation and PVC sheath – Part 3: Equipment wires with solid or stranded conductor, PVC insulated, in singles, pairs and triples*

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

IEC 60512 (all parts), *Connectors for electronic equipment – Tests and measurements*

IEC 60512-1-100, *Connectors for electronic equipment – Tests and measurements – Part 1-100: General – Applicable publications*

IEC 60884-1:1994, *Plug and socket-outlets for household and similar purposes – Part 1: General requirements*

3 Definitions

For the purpose of this part of IEC 60352, the terms and definitions of IEC 60050(581) and IEC 60512-1 and the following additional terms and definitions apply:

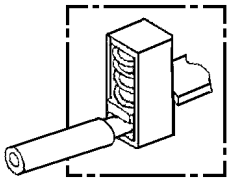
3.1
spring-clamp termination
part of the contact or terminal to which one single conductor only is connected by means of a spring

3.1.1
universal spring-clamp termination
spring-clamp termination intended to accept solid, stranded and flexible unprepared conductors

3.1.2
non-universal spring-clamp termination
spring-clamp termination intended to accept conductors of one class only, for example solid conductors only, or conductors of two classes only, for example solid and stranded but not flexible

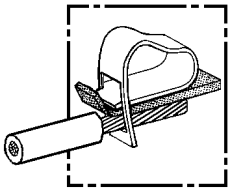
3.1.3
push-in spring-clamp termination
non-universal spring-clamp termination in which the connection is made by pushing in a solid or stranded conductor

3.2
spring-clamp connection
solderless connection achieved by clamping a conductor with a spring-clamp termination, see figure 1



IEC 1988/02

Figure 1a – Spring-clamp connection, operated without a tool



IEC 1989/02

Figure 1b – Spring-clamp connection, operated with a tool