

**SLOVENSKI
STANDARD**

SIST EN 60352-5:2002

prva izdaja
september 2002

Solderless connections - Part 5: Press-in connections - General requirements, test methods and practical guidance (IEC 60352-5:1999)

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EUROPEAN STANDARD

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EUROPÄISCHE NORM

April 2001

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English version

Solderless connections
Part 5: Press-in connections -
General requirements, test methods and practical guidance
(IEC 60352-5:2001)

Connexions sans soudure
Partie 5: Connexions insérées à force -
Règles générales, méthodes d'essai et
guide pratique
(CEI 60352-5:2001)

Lötfreie Verbindungen
Teil 5: Einpressverbindungen -
Allgemeine Anforderungen, Prüfverfahren
und Anwendungshinweise
(IEC 60352-5:2001)

This European Standard was approved by CENELEC on 2001-04-01. 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.

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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 48B/978/FDIS, future edition 2 of IEC 60352-5, 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 60352-5 on 2001-04-01.

This European Standard supersedes EN 60352-5:1995.

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) 2002-01-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2004-04-01

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 60352-5:2001 was approved by CENELEC as a European Standard without any modification.

In the official version, the following note has to be added for the standard indicated:

IEC 60249-2-1 NOTE: Harmonized with A1:1989 as HD 313.2.1 S2:1990 (not modified).

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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 60050-581	1978	International Electrotechnical Vocabulary (IEV) - Chapter 581: Electromechanical components for electronic equipment	-	-
A1	1998		-	-
IEC 60068-1 + corr. October + A1	1988 1992 1992	Environmental testing Part 1: General and guidance	EN 60068-1	1994
IEC 60249-2-4	1987	Base materials for printed circuits Part 2: Specifications -- Specification No. 4: Epoxide woven glass fabric copper-clad laminated sheet, general purpose grade	EN 60249-2-4 + corr. March	1994 1994
A3	1993		A3 + corr. March	1994 1994
IEC 60249-2-5	1987	Part 2: Specifications -- Specification No. 5: Epoxide woven glass fabric copper-clad laminated sheet of defined flammability (vertical burning test)	EN 60249-2-5 + corr. March	1994 1994
A3	1993		A3 + corr. March	1994 1994
A4	1994		A4	1995
IEC 60249-2-11	1987	Part 2: Specifications -- Specification No. 11: Thin epoxide woven glass fabric copper-clad laminated sheet, general purpose grade, for use in the fabrication of multilayer printed boards	EN 60249-2-11	1994
A2	1993		A2	1994
A3	1994		A3	1995
IEC 60249-2-12	1987	Part 2-12: Specifications: thin epoxide woven glass fabric copper-clad laminated sheet of defined flammability, for use in the fabrication of multilayer printed boards	EN 60249-2-12	1994
A2	1993		A2	1994
A3	1994		A3	1995

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60326-2	1990	Printed boards Part 2: Test methods	-	-
A1	1992		-	-
IEC 60326-3	1991	Part 3: Design and use of printed boards	-	-
IEC 60326-5	1980	Part 5: Specification for single and double sided printed boards with plated-through holes	-	-
A1	1989		-	-
IEC 60352-1	1997	Solderless connections Part 1: Wrapped connections - General requirements, test methods and practical guidance	EN 60352-1	1997
IEC 60512-1	1994	Electromechanical components for electronic equipment - Basic testing procedures and measuring methods Part 1: General	EN 60512-1	1994
IEC 60512-2	1985	Part 2: General examination, electrical continuity and contact resistance tests, insulation tests and voltage stress tests	-	-
A1	1994		-	-
IEC 60512-4	1976	Part 4: Dynamic stress tests	-	-
IEC 60512-6	1984	Part 6: Climatic tests and soldering tests	-	-
IEC 60512-11-1	1995	Part 11: Climatic tests Section 1: Test 11a - Climatic sequence	EN 60512-11-1	1999
IEC 60512-11-7	1996	Part 11: Climatic tests Section 7: Test 11g: Flowing mixed gas corrosion test	EN 60512-11-7	1996
IEC 62326-4	1996	Printed boards Part 4: Rigid multilayer printed boards with interlayer connections - Sectional specification	EN 62326-4	1997

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CEI
IEC

60352-5

Deuxième édition
Second edition
2001-03

Connexions sans soudure –

**Partie 5:
Connexions insérées à force –
Règles générales, méthodes d'essai
et guide pratique**

Solderless connections –

**Part 5:
Press-in connections –
General requirements, test methods
and practical guidance**

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SOLDERLESS CONNECTIONS –**Part 5: Press-in 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 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 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 Standards 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 this 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 patent rights.

International Standard IEC 60352-5 has been prepared by subcommittee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

This second edition cancels and replaces the first edition published in 1995, of which it constitutes a technical revision.

IEC STANDARD PREVIEW

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

FDIS	Report on voting
48B/978/FDIS	48B/1003/RVD

<https://standards.itec.ai/catalog/standards/sist/en-60352-5-2002>
0e2f162edaad/sist-en-60352-5-2002

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 3.

Annex A forms an integral part of this standard.

The committee has decided that the contents of this publication will remain unchanged until 2002. At this date, the publication will be

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

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INTRODUCTION

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

Two test schedules are provided.

- a) The qualification test schedule applies to individual press-in connections (press-in zone).
They are tested to the specification provided by the manufacturer of the press-in zone (see 4.6) taking into account the requirements of clause 4.
The qualification is independent of the application of the press-in zone in a component.
- b) The application test schedule applies to press-in connections which are part of a component and are already qualified to the qualification test schedule.
Test sequences focus on the performance of the press-in connection which is affected by the implementation in a component.

As the manufacturer of the press-in zone has to provide the main part of the information needed for qualification, the use of the words "the manufacturer" is implemented throughout this standard for simplicity.

IEC Guide 109 advocates the need to minimise 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 the standard.

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SOLDERLESS CONNECTIONS –

Part 5: Press-in connections – General requirements, test methods and practical guidance

1 Scope and object

This part of IEC 60352 is applicable to solderless press-in connections for use in telecommunication equipment and in electronic devices employing similar techniques.

The press-in connection consists of a termination having a suitable press-in zone which is inserted into a plated-through hole of a double-sided or multilayer printed board.

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 press-in connections under specified mechanical, electrical and atmospheric conditions.

Only compliant press-in zones can be qualified according to this specification.

Solid press-in zones are in use. Information about these is given in annex A.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 60352. 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 60352 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(581):1978, *International Electrotechnical Vocabulary (IEV) – Chapter 581: Electromechanical components for electronic equipment*
Amendment 1 (1998)

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

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IEC 60249-2-4:1987, *Base materials for printed circuits – Part 2: Specifications – Specification No. 4: Epoxide woven glass fabric copper-clad laminated sheet, general purpose grade*
Amendment 3 (1993)

IEC 60249-2-5:1987, *Base materials for printed circuits – Part 2: Specifications – Specification No. 5: Epoxide woven glass fabric copper-clad laminated sheet of defined flammability (vertical burning test)*
Amendment 3 (1993)
Amendment 4 (1994)

IEC 60249-2-11:1987, *Base materials for printed circuits – Part 2: Specifications – Specification No. 11: Thin epoxide woven glass fabric copper-clad laminated sheet, general purpose grade for use in the fabrication of multilayer printed boards*
Amendment 2 (1993)
Amendment 3 (1994)

IEC 60249-2-12:1987, *Base materials for printed circuits – Part 2: Specifications – Specification No. 12: Thin epoxide woven glass fabric copper-clad laminated sheet of defined flammability, for use in the fabrication of multilayer printed boards*
Amendment 2 (1993)
Amendment 3 (1994)

IEC 60326-2:1990, *Printed boards – Part 2: Test methods*
Amendment 1 (1992)

IEC 60326-3:1991, *Printed boards – Part 3: Design and use of printed boards*

IEC 60326-5:1980, *Printed boards – Part 5: Specification for single and double sided printed boards with plated-through holes*
Amendment 1 (1989)

IEC 60352-1:1997, *Solderless connections – Part 1: Wrapped connections – General requirements, test methods and practical guidance*

IEC 60512-1:1994, *Electromechanical components for electronic equipment – Basic testing procedures and measuring methods – Part 1: General*

IEC 60512-2:1985, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 2: General examination, electrical continuity and contact resistance tests, insulation tests and voltage stress tests*
Amendment 1 (1994)

IEC 60512-4:1976, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 4: Dynamic stress tests*

IEC 60512-6:1984, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 6: Climatic tests and soldering tests*

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