
Connectors for electronic equipment - Tests and measurements - Part 11-4:
Climatic tests - Test 11d: Rapid change of temperature (IEC 60512-11-4:2002)

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EUROPEAN STANDARD

EN 60512-11-4

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2002

ICS 31.220.10

English version

**Connectors for electronic equipment -
Tests and measurements
Part 11-4: Climatic tests -
Test 11d: Rapid change of temperature
(IEC 60512-11-4:2002)**

Connecteurs pour équipements
électroniques -
Essais et mesures
Partie 11-4: Essais climatiques -
Essai 11d: Variations rapides
de température
(CEI 60512-11-4:2002)

Steckverbinder für elektronische
Einrichtungen -
Mess- und Prüfverfahren
Teil 11-4: Klimatische Prüfungen -
Prüfung 11d: Rascher Temperaturwechsel
(Zweikammerverfahren)
(IEC 60512-11-4:2002)

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This European Standard was approved by CENELEC on 2002-04-01. 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, 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 48B/1145/FDIS, future edition 1 of IEC 60512-11-4, 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 60512-11-4 on 2002-04-01.

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) 2003-01-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2005-04-01

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 60512-11-4:2002 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 60068-2-14	1984	Environmental testing Part 2: Tests - Test N: Change of temperature	EN 60068-2-14 ¹⁾	1999
IEC 60512-1-1	- ²⁾	Connectors for electronic equipment - Tests and measurements Part 1-1: General examination - Test 1a: Visual examination	EN 60512-1-1	2002 ³⁾
IEC 60512-3-1	- ²⁾	Part 3-1: Insulation tests - Test 3a: Insulation resistance	EN 60512-3-1	2002 ³⁾
IEC 60512-4-1	- ⁴⁾	Part 4-1: Voltage stress tests - Test 4a: Voltage proof	-	-

1) EN 60068-2-14 includes A1:1986 to IEC 60068-2-14.

2) Undated reference.

3) Valid edition at date of issue.

4) In preparation.

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**Connecteurs pour équipements électroniques –
Essais et mesures –**

**Partie 11-4:
Essais climatiques –
Essai 11d: Variations rapides de température**

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**Connectors for electronic equipment –
Tests and measurements –**

**Part 11-4:
Climatic tests –
Test 11d: Rapid change of temperature**

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**CONNECTORS FOR ELECTRONIC EQUIPMENT –
TESTS AND MEASUREMENTS –****Part 11-4: Climatic tests –
Test 11d: Rapid change of temperature**

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.
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- 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 60512-11-4 has been prepared by subcommittee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

This standard cancels and replaces Test 11d of IEC 60512-6, issued in 1984, and constitutes a technical revision.

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

FDIS	Report on voting
48B/1145/FDIS	48B/1195/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 3.

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.

CONNECTORS FOR ELECTRONIC EQUIPMENT – TESTS AND MEASUREMENTS –

Part 11-4: Climatic tests – Test 11d: Rapid change of temperature

1 General

1.1 Scope and object

This part of IEC 60512, when required by the detail specification, is used for testing electromechanical components within the scope of IEC technical committee 48. This test may also be used for similar devices when specified in a detail specification.

The object of this test is to define a standard test method to assess the ability of components to withstand rapid change of temperature in air such as might occur during storage, transportation and use.

1.2 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 60068-2-14:1984, *Environmental testing – Part 2: Tests – Test N: Change of temperature*
[https://standards.iteh.ai/catalog/standards/sist/15723d26-d10c-421d-a325-](https://standards.iteh.ai/catalog/standards/sist/15723d26-d10c-421d-a325-0d185665304d/sist-en-60512-11-4-2003)

IEC 60512-1-1, *Connectors for electronic equipment – Tests and measurements – Part 1-1: General examination – Test 1a: Visual examination*

IEC 60512-3-1, *Connectors for electronic equipment – Tests and measurements – Part 3-1: Insulation tests – Test 3a: Insulation resistance*

IEC 60512-4-1, *Connectors for electronic equipment – Tests and measurements – Part 4-1: Voltage stress tests – Test 4a: Voltage proof*

2 Preparation

2.1 Preparation of the specimen

Specimens shall be equipped with their normal accessories, mounted as specified in the detail specification.

When required by the detail specification, the specimen shall be mated and unmated as many times as specified prior to testing.

For each test carried out, the detail specification shall specify the condition of the component, for example mated or unmated.