IEC 60512-16-8

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Connectors for electronic equipment – Tests and measurements – Part 16-8: Mechanical tests on connections and terminations – Test 16h: Insulating grip effectiveness (crimped connections)

Connecteurs pour équipements électroniques – Essais et mesures – Partie 16-8: Essais mécaniques des contacts et des sorties – Essai 16h: Efficacité du manchon isolant (connexions serties)

IEC 60512-16-8:2008

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CONNECTORS FOR ELECTRONIC EQUIPMENT – TESTS AND MEASUREMENTS –

Part 16-8: Mechanical tests on connections and terminations – Test 16h: Insulating grip effectiveness (crimped connections)

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International Standard IEC 60512-16-8 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 16h of IEC 60512-8, issued in 1993. This standard is to be read in conjunction with IEC 60512-1 and IEC 60512-1-100 which explains the structure of the IEC 60512 series.

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

FDIS	Report on voting
48B/1871/FDIS	48B/1903/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.

A list of all parts of the IEC 60512 series, under the general title *Connectors for electronic equipment – Tests and measurements*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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- replaced by a revised edition; or
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CONNECTORS FOR ELECTRONIC EQUIPMENT – TESTS AND MEASUREMENTS –

Part 16-8: Mechanical tests on connections and terminations – Test 16h: Insulating grip effectiveness (crimped connections)

1 Scope and object

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

The object of this part of IEC 60512 is to detail a standard test method to assess the effectiveness of an insulation grip to hold the insulation of a cable/wire under specified conditions.

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

3 Preparations

3.1 Preparation of specimen

The specimens shall consist of even quantities of cable with the largest insulation specified for the grip, and the smallest.

The specimens shall consist of a crimp contact or terminal end and the specified cable(s); these shall be prepared (crimped) in the manner given in the relevant detail specification or if none are given, the manufacturers instructions. The crimp contact/terminal end shall be crimped in the manner previously stated, but the cable/wire shall be held by the insulation grip only.

NOTE Either crimping a separate piece of wire or cutting the conductor after crimping may achieve this.

The un-stripped cable/wire shall be at least 100 mm in length. If lubricant is required by the component detail specification, this shall be applied in the manner so specified. Similarly, if the manufacturers crimping or other assembly devices specify a lubricant, this shall be applied.

3.2 Equipment

A mandrel having a diameter equal to that as specified for the flexibility test of the relevant wire/cable shall be provided.

3.3 Pre-conditioning

Any pre-conditioning of the samples required by the applicable detail specification shall be applied.

4 Test method

4.1 Temperature

It is recognized that temperature has a significant effect on the flexibility of cable insulation. These tests shall be carried out under normal laboratory conditions unless otherwise stated in the relevant detail specification.

4.2 Procedure

The crimp(ed) contact/terminal shall be held tangential to the mandrel. The wire shall be wound around the mandrel for at least one complete turn and shall be in contact with the mandrel where it enters the insulation grip. Sufficient tension, as specified in the relevant detail specification, shall be applied to the wire to keep it in contact with the mandrel. A test made by first winding the wire in one direction then in the opposite direction shall be considered one cycle. This cycle shall be done at least ten times.

The rotational position of the specimen relative to the direction of bending shall be varied during each cycle such that forces are applied in at least four directions mutually at right angles to each other relative to the grip.

NOTE It is recognized that grip devices have a 'best' and 'worst' direction of support. The above requirement is intended to test in both the 'best' and 'worst' directions.

4.3 Measurements and requirements

4.3.1 Before testing

Visual examination according to IEC 60512-1-1 shall be carried out. There shall be no defects which would impair the validity of the test.

4.3.2 During testing

None.

4.3.3 After testing

The conductor shall be withdrawn from the cable/wire and examined for damage (caused by either the grip crimping process or the testing). This may be done by stripping the insulation from the far end of the cable/wire and applying a tensile load between the bared conductor and the crimp terminal.

Visual examination according to IEC 60512-1-1 shall be done. There shall be no defects, other than those found under 4.3.1, which would impair the normal functioning of the component.

5 Details to be specified

When this test is required by the detail specification, the following details shall be specified:

a) whether preconditioning is required;

b) cable/wire/insulation size(s) to be used;

c) number of specimens to be tested for each grip size;

d) details of assembly tooling;
e) whether lubricant, including that for application tooling, is to be used;
f) whether special mounting of the specimen is required;
g) tension to be applied;
h) number of cycles (if other than 10);
i) any deviation in from the standard test method.

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