

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Connectors for electronic equipment – Tests and measurements –
Part 16-18: Mechanical tests on contacts and terminations – Test 16r: Deflection
of contacts, simulation**

**Connecteurs pour équipements électroniques – Essais et mesures –
Partie 16-18: Essais mécaniques des contacts et des sorties – Essai 16r:
Débattement des contacts, simulation**



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**CONNECTORS FOR ELECTRONIC EQUIPMENT –
TESTS AND MEASUREMENTS –**
**Part 16-18: Mechanical tests on contacts and terminations –
Test 16r: Deflection of contacts, simulation**

FOREWORD

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International Standard IEC 60512-16-18 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 16r 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/1875/FDIS	48B/1907/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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CONNECTORS FOR ELECTRONIC EQUIPMENT – TESTS AND MEASUREMENTS –

Part 16-18: Mechanical tests on contacts and terminations – Test 16r: Deflection of contacts, simulation

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 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 measure the deflection of a simulated contact in its cavity or housing.

Although this test method is intended for cylindrical male contacts, and is particularly applicable to those where the contacts fit into an insert, which may have some elasticity, its use for contacts with other geometries and housing details, is not excluded. In which case, the detail specification should contain sufficient detail, given under Clause 5, to enable the test to be done.

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2 Normative references (standards.iteh.ai)

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 specimen shall consist of a housing, with an insert or other contact-receiving connector body or device. Any preconditioning given in the component detail specification shall be applied. Five such specimens shall be prepared.

3.2 Equipment

A test pin (gauge pin) shall be provided, the design of which shall replicate those parts of the contact normally fitted into the cavity that have relevance to this test.

A universal testing machine suitable for the test procedure detailed in Clause 4 shall be required, equipped with all relevant test fixtures needed to hold the specimen under test.

3.3 Mounting

If mounting of the specimen is appropriate, it shall be as specified in the component detail specification.

The specimen shall not be mated to its corresponding, or other, component.

Figure 1 and Table 1 give an example of a test set up.

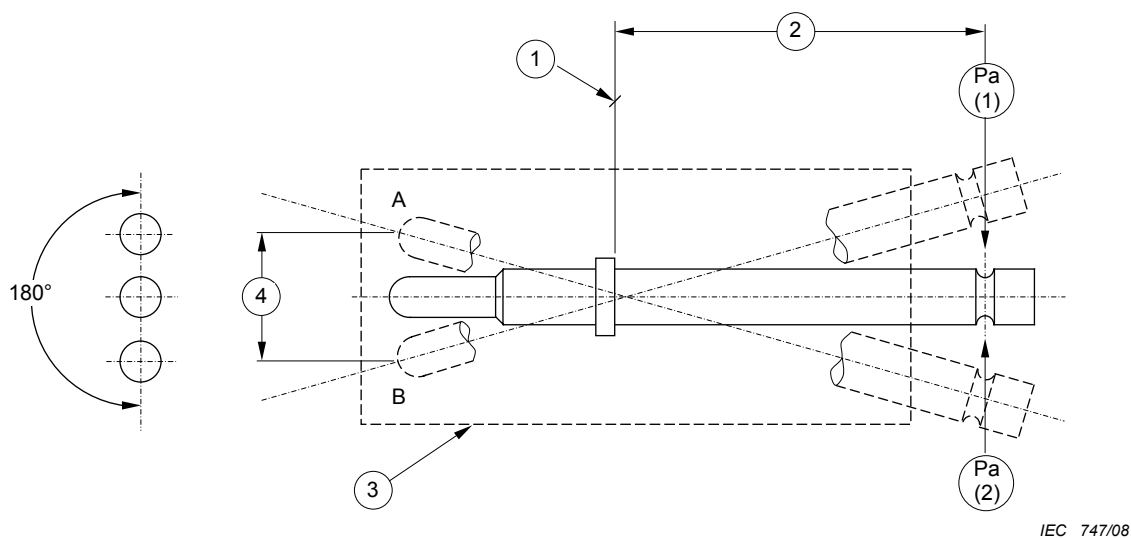


Figure 1 – Application of force (example)

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Table 1 – Relevant dimensions for Figure 1 (example)

1	Pivot point of lever arm
2	Effective length of lever arm
Pa(1)	Point of application of force, phase 1
Pa(2)	Point of application of force, phase 2
3	Fixed or free connector housing or similar device
4	Total deflection
A	Deflection, phase 1
B	Deflection, phase 2

4 Test method

4.1 Procedure

At least 10 cavities shall be selected at random from the 5 specimens provided that at least one cavity shall be near the periphery, and one, at or near, the centre of the connector insert or housing. For inserts or housings having 3 or less cavities, all shall be tested. A specified force shall be applied in a manner as, or similar to, that shown in Figure 1 (which is an example). The force shall be applied at a rate not exceeding 10 N/s and shall be maintained for 10 s.

The foregoing shall be repeated in the opposite direction. An example is shown in Figure 1.

In some cases where the geometry of the connector or insert is not symmetrical, the direction or plane of application of the forces will influence the results. In all cases, the plane of application shall be that which causes the greatest deflection.

4.2 Measurements and requirements

4.2.1 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.

4.2.2 During testing

Deflection on each direction shall be recorded. The sum of these deflections shall be regarded as the total deflection. It shall not exceed that given in the component detail specification.

Observation of the test pin shall be made during the test. The test pin shall not distort, either temporarily or permanently, during the test to a degree that would invalidate the test.

4.2.3 After testing

Visual examination according to IEC 60512-1-1 shall be carried out. There shall be no defects to the insert or housing, other than those found under 4.2.1 that would impair the normal functioning of the component, nor shall the test pin be distorted.

5 Details to be specified

When this test is required by a detail specification, the following shall be given therein:

- a) whether preconditioning is required;
- b) whether special mounting of the specimen is required;
- c) test pin dimensions;

NOTE 1 Critical dimensions should include lever arm length, pivot point and diameters of the pin.

- d) force to be applied;
- e) point of application of force;
- f) total deflection (see Figure 1);

NOTE 2 This may be different for fixed or free, male or female (housing or contacts).

- g) any deviation from the standard test method.
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