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**Konektorji za elektronsko opremo – Preskusi in meritve – 9-3. del: Preskusi  
vzdržljivosti – Preskus 9c: Mehansko (stikanje/raztikanje) z električno  
bremenitvijo (IEC 60512-9-3:2006)**

Connectors for electronic equipment - Tests and measurements - Part 9-3:  
Endurance tests – Test 9c: Mechanical operation (engaging/separating) with  
electrical load (IEC 60512-9-3:2006)

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**Connectors for electronic equipment -  
Tests and measurements  
Part 9-3: Endurance tests -  
Test 9c: Mechanical operation (engaging/separating)  
with electrical load  
(IEC 60512-9-3:2006)**

Connecteurs pour équipements  
électroniques -  
Essais et mesures  
Partie 9-3: Essais d'endurance -  
Essai 9c: Manoeuvres mécaniques  
(d'accouplement et de désaccouplement)  
avec charge électrique  
(CEI 60512-9-3:2006)

Steckverbinder für elektronische  
Einrichtungen -  
Mess- und Prüfverfahren  
Teil 9-3: Dauerprüfungen -  
Prüfung 9c: Mechanische Lebensdauer  
(Stecken/Ziehen)  
mit elektrischer Belastung  
(IEC 60512-9-3:2006)

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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/1576/FDIS, future edition 1 of IEC 60512-9-3, 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 60512-9-3 on 2006-03-01.

This standard is to be read in conjunction with EN 60512-1 and EN 60512-1-100 which explains the structure of the EN 60512 series.

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) 2006-12-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2009-03-01

This European Standard makes reference to International Standards. Where the International Standard referred to has been endorsed as a European Standard or a home-grown European Standard exists, this European Standard shall be applied instead. Pertinent information can be found on the CENELEC web site.

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NORME  
INTERNATIONALE  
INTERNATIONAL  
STANDARD

CEI  
IEC

60512-9-3

Première édition  
First edition  
2006-02

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**Connecteurs pour équipements électroniques –  
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**Connectors for electronic equipment –  
Tests and measurements –**

**Part 9-3:  
Endurance tests –  
Test 9c: Mechanical operation  
(engaging/separating) with electrical load**

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Международная Электротехническая Комиссия

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## CONTENTS

FOREWORD.....	5
1 Scope and object.....	9
2 Normative references .....	9
3 Preparations.....	11
3.1 Preparation of specimen.....	11
3.2 Mounting .....	11
4 Method .....	11
4.1 General .....	11
4.2 Measurements and requirements.....	11
4.3 Resistive load, a.c. or d.c. voltage.....	13
4.4 Lamp load, a.c. or d.c. voltage .....	13
4.5 Inductive load.....	13
4.6 Capacitive load .....	15
4.7 RLC load – d.c. ....	15
5 Details to be specified .....	15
Annex A (informative) RLC Load circuit diagram.....	17
Figure A.1 – RLC load circuit diagram.....	17

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**CONNECTORS FOR ELECTRONIC EQUIPMENT –  
TESTS AND MEASUREMENTS –****Part 9-3: Endurance tests –  
Test 9c: Mechanical operation  
(engaging/separating) with electrical load**

## FOREWORD

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International Standard IEC 60512-9-3 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 9c of IEC 60512-5, issued in 1992, and constitutes a technical revision. 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/1576/FDIS	48B/1609/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.

IEC 60512-9 consists of the following parts, under the general title *Connectors for electronic equipment – Tests and measurements*:

- Part 9-1: Endurance tests – Test 9a: Mechanical operation<sup>1</sup>
- Part 9-2: Endurance tests – Test 9b: Electrical load and temperature<sup>1</sup>
- Part 9-3: Endurance tests – Test 9c: Mechanical operation (engaging/separating) with electrical load
- Part 9-4: Endurance tests – Test 9d: Durability of contact retention system and seals<sup>1</sup>
- Part 9-5: Endurance tests – Test 9e: Current loading, cyclic<sup>1</sup>

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

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

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<sup>1</sup> Under consideration.



## CONNECTORS FOR ELECTRONIC EQUIPMENT – TESTS AND MEASUREMENTS –

### Part 9-3: Endurance tests – Test 9c: Mechanical operation (engaging/separating) with electrical load

#### 1 Scope and object

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

The object of this test is to detail a standard test method to assess the mechanical and electrical operational endurance of electromechanical components in the normal operating mode with a specified electrical load.

This test method is applicable for connectors used in the Safe Extra Low Voltage (SELV) range only as defined in IEC 61140 (3.26). Connectors that are used outside the SELV range are considered in IEC 61984.

#### 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 60068-2-13, *Environmental testing – Part 2: Tests. Test M: Low air pressure*

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

IEC 60512-2-1, *Connectors for electronic equipment – Tests and measurements – Part 2-1: Electrical continuity and contact resistance tests – Test 2a: Contact resistance – Millivolt level method*

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*

IEC 60512-7, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 7: Mechanical operating tests and sealing tests*

IEC 61140, *Protection against electric shock – Common aspects for installation and equipment*