SLOVENSKI STANDARD

SIST EN 60512-2-2:2004

november 2004

Konektorji za elektronsko opremo - Preskusi in meritve - 2-2. del: Preskusi električne prevodnosti in kontaktne upornosti – Preskus 2b: Kontaktna upornost - Metoda z določenim preskuševalnim tokom (IEC 60512-2-2:2003)

Connectors for electronic equipment - Tests and measurements - Part 2-2: Electrical continuity and contact resistance tests - Test 2b: Contact resistance - Specified test current method (IEC 60512-2-2:2003)

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English version

Connectors for electronic equipment - Tests and measurements Part 2-2: Electrical continuity and contact resistance tests - Test 2b: Contact resistance - Specified test current method

(IEC 60512-2-2:2003)

Connecteurs pour équipements électroniques - Essais et mesures Partie 2-2: Essais de continuité électrique et de résistance de contact - Essai 2b: Résistance de contact - Méthode du courant d'essai spécifié (CEI 60512-2-2:2003)

Steckverbinder für elektronische Einrichtungen - Mess- und Prüfverfahren Teil 2-2: Prüfungen des elektrischen Durchgangs und Durchgangswiderstands - Prüfung 2b: Durchgangswiderstand - Mit vorgeschriebenem Strom (IEC 60512-2-2:2003)

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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

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Foreword

The text of document 48B/1321/FDIS, future edition 1 of IEC 60512-2-2, 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 60512-2-2 on 2003-07-01.

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) 2004-04-01

– latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2006-07-01

Endorsement notice

The text of the International Standard IEC 60512-2-2:2003 was approved by CENELEC as a European Standard without any modification.

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Connecteurs pour équipements électroniques – Essais et mesures –

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Connectors for electronic equipment – Tests and measurements –

Part 2-2: Electrical continuity and contact resistance tests – Test 2b: Contact resistance – Specified test current method

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

CONNECTORS FOR ELECTRONIC EQUIPMENT – TESTS AND MEASUREMENTS –

Part 2-2: Electrical continuity and contact resistance tests – Test 2b: Contact resistance – Specified test current method

FOREWORD

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International Standard IEC 60512-2-2 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 2b of IEC 60512-2, published in 1985, and constitutes a technical revision.

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

FDIS	Report on voting
48B/1321/FDIS	48B/1346/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.

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 2-2: Electrical continuity and contact resistance tests – Test 2b: Contact resistance – Specified test current method

1 Scope and object

This part of IEC 60512, when required by the detail specification, is used for testing connectors for electronic equipment 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 measure the electrical resistance across a pair of mated contacts or a contact with a measuring gauge.

2 General measuring requirements

Measurements may be carried out with direct current or alternating current. For a.c. measurements, the frequency shall not exceed 2 kHz. In the case of dispute, the d.c. measurements shall govern.

The uncertainly of the measuring apparatus shall not exceed 1 %.

3 Method of measurement

3.1 Measurement details

The contact resistance shall be derived normally from the voltage drop measured between the zones intended for connection of the wiring to the contacts at the points specified in the detail specification.

The contact shall not be operated while the measuring voltage is applied.

Care must be taken during the measurement to avoid exerting abnormal pressure on the contacts under test and to avoid movement of the test cables.

Where the measuring points specified in the detail specification are not directly accessible, the resistance of the cable or wire used shall be subtracted from the measured value. The corrected value shall be recorded.

The contacts to be measured shall be chosen in accordance with the detail specification.

3.2 Test current and voltage

The contact resistance shall be measured with the alternating current or direct current as specified in the detail specification. The test voltage shall be at least 1 V d.c. or a.c. peak.

Measurements shall be made on individual contacts within the minute following application of the test current.

4 Measuring cycles

4.1 Measurement with direct current

One measuring cycle consists of

a) application of the voltage;
b) measurement with current flowing in one direction;
c) measurement with current flowing in the opposite direction;
d) disconnection of the voltage source.

4.2 Measurement with alternating current

One measuring cycle consists of

a) application of the voltage;
b) making the measurement;
c) disconnection of the voltage source.

NOTE Unless otherwise specified, the made contact(s) should not be disturbed between the end of the preceding test and the application of the voltage in this test.

5 Requirements

The value of the contact resistance shall not exceed, for any measurement, the value specified in the detail specification.

The contact resistance measurement with d.c. shall be the average of the two readings obtained with forward and reverse current.

Use of the following equation will ensure that the calculated resistance is always correct:

$$R = \frac{|V_{mf} - V_{mr}|}{|I_f| + |I_r|}$$

where

R is the resistance;
V_{mf} is the measured forward voltage;
V_{mr} is the measured reverse voltage;
I_f is the forward current;
I_r is the reverse current.

NOTE 1 In the equation the sign of the voltage measurements must be included.

NOTE 2 Any deviation from the standard test procedure should be clearly indicated in the test report.