SLOVENSKI STANDARD
SIST EN 50116:2007

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Nadomešča:
SIST EN 50116:1999

Oprema za informacijsko tehnologijo – Medproizvodno rutinsko preskušanje električne varnosti

Information technology equipment - Routine electrical safety testing in production

Einrichtungen der Informationstechnik - Stückprüfungen für die Fertigung in Bezug auf elektrische Sicherheit

Matériel de traitement de l'information - Essais individuels de série, en production, pour la vérification de la sécurité électrique

Ta slovenski standard je istoveten z: **EN 50116:2006**

ICS:

19.080	Električno in elektronsko preskušanje	Electrical and electronic testing
35.020	Informacijska tehnika in tehnologija na splošno	Information technology (IT) in general

SIST EN 50116:2007 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50116

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ICS 35.020; 35.260.10

Supersedes EN 50116:1996

English version

Information technology equipment - Routine electrical safety testing in production

Matériel de traitement de l'information - Essais individuels de série, en production, pour la vérification de la sécurité électrique

Einrichtungen der Informationstechnik - Stückprüfungen für die Fertigung in Bezug auf elektrische Sicherheit

This European Standard was approved by CENELEC on 2006-10-01. 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, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the 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

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Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 108, Safety of electronic equipment within the fields of audio/video, information technology and communication technology.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50116 on 2006-10-01.

This European Standard supersedes EN 50116:1996. A list of the significant changes is given in Annex A.

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)	2007-10-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2009-10-01

This European Standard applies to equipment that complies with EN 60950 or EN 60950-1. Most of the tests specified in those standards are TYPE TESTS. For ROUTINE TESTS, to be carried out during or after manufacture, TYPE TESTS may not be suitable. Nevertheless it is recognized that some tests are necessary in order to guarantee an acceptable level of safety.

This European Standard defines ROUTINE TESTS to measure the resistance of the earthing path and to check the insulation between the PRIMARY CIRCUIT and accessible conductive parts. In addition, this European Standard defines the documentation to be maintained by the manufacturer in respect of these tests.

This standard is complementary to the product safety standards (EN 60950 or EN 60950-1) and is to be considered only as a tool for voluntary application by manufacturers.

This European Standard can be used in association with Permanent Document CIG 021, *Factory inspection procedures - Harmonised requirements,* of the European Electrical Products Certification Association.

Permanent Document CIG 021 can be obtained from signatory bodies (certification bodies).

In this European Standard, the following print types are used:

- normative text: roman type;
- *test specifications: italic type;*
- terms which are defined in EN 60950 or EN 60950-1: SMALL CAPITALS.

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1 Scope

This European Standard defines routine test procedures for use during or after manufacturing of complete equipments, sub-assemblies or components, certified or declared as complying with EN 60950 or EN 60950-1 and powered by an a.c. or d.c. mains supply.

The application of the tests detailed in this European Standard is design dependent and needs to be defined by the manufacturer.

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.

Publication	Year	Title
EN 60950	2000	*Safety of information technology equipment* (IEC 60950:1999 + corrigendum Jan. 2000, mod.)
EN 60950-1	2001	*Information technology equipment - Safety Part 1: General requirements* (IEC 60950-1:2001, mod.)
EN 60950-1	2006	*Information technology equipment - Safety Part 1: General requirements* (IEC 60950-1:2005, mod.)

3 Definitions

For the purposes of this document, the definitions of EN 60950 or EN 60950-1 apply.

In addition, for purpose of this standard, the following definition applies:

3.1
routine electrical safety test
a test to which each individual device is subjected during or at the end of manufacture, to detect manufacturing failures and unacceptable tolerances in manufacturing and materials

4 Conformance

In order to conform to this European Standard, an equipment shall pass the tests of Clause 5 where applicable and the results of these tests shall be recorded according to Clause 6.

5 Routine tests

5.1 Resistance of protective earthing paths

ROUTINE TESTS shall be carried out by passing a test current through each PROTECTIVE BONDING CONDUCTOR that connects an accessible part to the main protective earthing terminal or earthing contact.

The test current is 150 % of the rating of the overcurrent device protecting the PROTECTIVE BONDING CONDUCTOR, but not more than 25 A (a.c. or d.c.) and is applied for any duration between 1 s and 4 s.

The resistance, calculated from the voltage drop, shall not exceed 0,1 Ω.

It is permitted to include the power cord (if any) in the resistance measurement and, if the result exceeds 0,1 Ω, to subtract the resistance of the PROTECTIVE EARTHING CONDUCTOR of the power cord.

5.2 Electric strength

ROUTINE TESTS for electric strength shall be carried out between the PRIMARY CIRCUIT and accessible conductive parts. For accessible SECONDARY CIRCUITS, it is permitted to test separately, before final assembly, subassemblies and components, such as transformers, if the relevant insulation cannot be tested in the complete equipment, provided that the complete equipment complies with EN 60950 or EN 60950-1 as appropriate.

The test procedure of Subclause 5.2.2 of EN 60950-1 is used, with the following exceptions:

- the test voltage is 1 500 V (for basic insulation) or 3 000 V (for reinforced insulation) a.c., 50 Hz or 60 Hz, or a d.c. voltage equal to the peak value of the prescribed a.c. test voltage;

- the test voltage is maintained for any duration between 1 s and 4 s.

6 Records of tests

All test results shall be kept available. The format for reports is not specified.

For each test on every piece of equipment, the following data shall be filled in:

- date of test;

- model or type reference of the equipment;

- serial number of the equipment or another unambiguous identifier;

- location of the point tested;

- value of earthing circuit resistance with the corresponding current value (*);

- value of voltage applied during the electric strength test (*);

- quick-reference information that the whole set of tests has or has not been successful.

As an alternative to the values marked with an asterisk (*) above, a record of the result of each test (pass or fail) is permitted.

Annex A
(informative)

Significant changes compared to EN 50116:1996

Applies to EN 60950-1 as well as to EN 60950.

CCA 201 has been superseded by CIG 021.

Mentions CIG 021 only in informative text.

Clarifies that the test can be applied to subassemblies and components, but only if tests on the complete equipment are impractical.

Aligns the test procedures with those in EN 60950-1

- to remove unnecessary differences in detail,
- to ensure that equipment which passes the TYPE TESTS does not fail the ROUTINE TESTS, and
- to clarify the removal of components during tests.

Aligns the test durations (between 1 s and 4 s) with EN 50333, the corresponding standard for consumer electronic equipment.

Specifies the electric strength test voltages as required values, not minimum values.

Clarifies that record-keeping is mandatory.

Clarifies the detail of requirements for record-keeping.