SLOVENSKI STANDARD

SIST EN 61000-4-4:1997/A2:2002

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Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 4: Electrical fast transient/burst immunity test – Basic EMC publication - Amendment 1 (IEC 61000-4-4:1995/A2:2001)

ICS 33.100.20

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English version

Electromagnetic compatibility (EMC)
Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test
(IEC 61000-4-4:1995/A2:2001)

Compatibilité électromagnétique (CEM)
Partie 4-4: Techniques d'essai et de mesure –
Essais d'immunité aux transitoires électriques rapides en salves
(CEI 61000-4-4:1995/A2:2001)

Elektromagnetische Verträglichkeit (EMV)
Teil 4-4: Prüf- und Meßverfahren - Prüfung der Störfestigkeit gegen schnelle transiente elektrische Störgrößen/Burst
(IEC 61000-4-4:1995/A2:2001)

This amendment A2 modifies the European Standard EN 61000-4-4:1995; it was approved by CENELEC on 2001-07-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and 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

Ref. No. EN 61000-4-4:1995/A2:2001 E

Foreword

The text of document 77B/314/FDIS, future amendment 2 to IEC 61000-4-4:1995, prepared by SC 77B, High-frequency phenomena, of IEC TC 77, Electromagnetic compatibility, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A2 to EN 61000-4-4:1995 on 2001-07-01.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2002-04-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2004-07-01

Endorsement notice

The text of amendment 2:2001 to the International Standard IEC 61000-4-4:1995 was approved by CENELEC as an amendment to the European Standard without any modification.

Editorial modification:

Table 2, **replace** the header of columns 3 and 4 by:

V_p (1 000 Ω) kV ≥	V_p (50 Ω) kV ≥

NORME INTERNATIONALE

INTERNATIONAL STANDARD

CEI
IEC
61000-4-4

1995

AMENDEMENT 2
AMENDMENT 2
2001-07

PUBLICATION FONDAMENTALE EN CEM
BASIC EMC PUBLICATION

Amendement 2

Compatibilité électromagnétique (CEM) –

Partie 4-4:
Techniques d'essai et de mesure –
Essai d'immunité aux transitoires électriques rapides en salves

Amendment 2

Electromagnetic compatibility (EMC) –

Part 4-4:
Testing and measurement techniques –
Electrical fast transient/burst immunity test

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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FOREWORD

This amendment has been prepared by subcommittee 77B: High-frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility.

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

FDIS	Report on voting
77B/314/FDIS	77B/320/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until 2003. At this date, the publication will be

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

INTRODUCTION

This amendment introduces additional requirements for the calibration of the fast transient/ burst generator. The intention is to improve the reproducibility of the test.

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6.1.1 Characteristics and performance of the fast transient/burst generator

Replace the existing title and text of this subclause by the following:

6.1.1 Characteristics of the fast transient/burst generator

- Output voltage range with 1 000 Ω load shall be at least 0,25 kV to 4 kV.
- Output voltage range with 50 Ω load shall be at least 0,125 kV to 2 kV

The generator shall be capable of operating under short-circuit conditions.

Characteristics

– Polarity	positive/negative
– Output type	coaxial, 50 Ω
– DC blocking capacitor	10 nF ± 20 %
– Repetition frequency	function of the selected test level (see table 2) ±20 %
– Relation to the power supply	asynchronous
– Burst duration (see subclause 6.1.2 and figure 2)	15 ms ± 20 %
– Burst period (see subclause 6.1.2 and figure 2)	300 ms ± 20 %
– Wave shape of the pulse	
– into 50 Ω load	rise time t_r = 5 ns ± 30 % duration t_d (to 50 %) = 50 ns ± 30 % peak voltage = according to table 2, ±10 %
– into 1 000 Ω load	rise time t_r = 5 ns ± 30 % duration t_d (to 50 %) = 50 ns with a tolerance of –15 ns to +100 ns peak voltage = according to table 2, +10 % /–15 % (see the note below table 2)
– Test load impedance	50 Ω ± 2 % 1 000 Ω ± 2 % // ≤ 6 pF. The resistance measurement is made at d.c and the capacitance measurement is made using a commercially available capacitance meter that operates at low frequencies.

6.1.2 Verification of the characteristics of the fast transient/burst generator

Replace the existing test of this subclause by the following new text:

The test generator characteristics shall be verified in order to establish a common reference for all generators. For this purpose the following procedure shall be undertaken:

The test generator output is connected to a 50 Ω and 1 000 Ω coaxial termination respectively and the voltage monitored with an oscilloscope. The –3 dB bandwidth of the measuring equipment and test load impedance shall be at least 400 MHz. The test load impedance at 1 000 Ω is likely to become a complex network. The rise time, impulse duration and repetition rate of the impulses within one burst shall be monitored.

The following EFT/B generator characteristics shall be measured with 50 Ω and 1 000 Ω terminations on the EFT/B generator.

NOTE Measures shall be taken to ensure that stray capacitance is kept to a minimum.