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Elektromagnetisk kompatibilitet (EMC) – Del 4-25: Mät- och provningsmetoder – Provning av immunitet mot nukleär elektromagnetisk puls (HEMP)

*Electromagnetic compatibility (EMC) –
Part 4-25: Testing and measurement techniques –
HEMP immunity test methods for equipment and systems*

Som svensk standard gäller europastandarden EN 61000-4-25:2002. Den svenska standarden innehåller den officiella engelska språkversionen av EN 61000-4-25:2002.

Nationellt förord

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Denna standard är fastställd av Svenska Elektriska Kommissionen, SEK, som också kan lämna upplysningar om **sakinnehållet** i standarden.
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EUROPEAN STANDARD

EN 61000-4-25

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English version

**Electromagnetic compatibility (EMC)
Part 4-25: Testing and measurement techniques –
HEMP immunity test methods for equipment and systems
(IEC 61000-4-25:2001)**

Compatibilité électromagnétique (CEM)
Partie 4-25: Techniques d'essai
et de mesure –
Méthodes d'essai d'immunité
à l'EMN-HA des appareils et
des systèmes
(CEI 61000-4-25:2001)

Elektromagnetische Verträglichkeit (EMV)
Teil 4-25: Prüf- und Messverfahren -
Prüfung der Störfestigkeit von
Einrichtungen und Systemen
gegen HEMP-Störgrößen
(IEC 61000-4-25:2001)

This European Standard was approved by CENELEC on 2002-03-05. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, 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

Foreword

The text of document 77C/113/FDIS, future edition 1 of IEC 61000-4-25, prepared by SC 77C, High power transient phenomena, of IEC TC 77, Electromagnetic compatibility, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61000-4-25 on 2002-03-05.

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) 2002-12-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2005-03-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annexes D and ZA are normative and annexes A, B and C are informative.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61000-4-25:2001 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-161	- ¹⁾	International Electrotechnical Vocabulary (IEV) Chapter 161: Electromagnetic compatibility	-	-
IEC 60038 (mod)	- ¹⁾	IEC standard voltages ²⁾	HD 472 S1	1989 ³⁾
IEC 60068-1	1988	Environmental testing Part 1: General and guidance	EN 60068-1 ⁴⁾	1994
IEC 61000-2-5	- ¹⁾	Electromagnetic compatibility (EMC) Part 2-5: Environment - Classification of electromagnetic environments - Basic EMC publication	-	-
IEC 61000-2-9	- ¹⁾	Part 2: Environment - Section 9: Description of HEMP environment - Radiated disturbance	EN 61000-2-9	1996 ³⁾
IEC 61000-2-10	- ¹⁾	Part 2-10: Environment - Description of HEMP environment - Conducted disturbance	EN 61000-2-10	1999 ³⁾
IEC 61000-2-11	- ¹⁾	Part 2-11: Environment - Classification of HEMP environments	-	-
IEC 61000-4-4	- ¹⁾	Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	1995 ³⁾
IEC 61000-4-5	- ¹⁾	Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	1995 ³⁾

1) Undated reference.

2) The title of HD 472 S1 is: Nominal voltages for low-voltage public electricity supply systems.

3) Valid edition at date of issue.

4) EN 60068-1 includes corrigendum October 1988 + A1:1992 to IEC 60068-1.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61000-4-11	- ¹⁾	Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	1994 ³⁾
IEC 61000-4-12	- ¹⁾	Part 4-12: Testing and measurement techniques - Oscillatory waves immunity test	EN 61000-4-12	1995 ³⁾
IEC 61000-4-13	- ⁵⁾	Part 4-13: Testing and measurement techniques - Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests - Basic EMC publication	EN 61000-4-13	- ⁵⁾
IEC 61000-4-20	- ⁵⁾	Part 4-20: Testing and measurement techniques – Emission and immunity testing in transverse electromagnetic (TEM) waveguides	-	-
IEC 61000-5-3	- ¹⁾	Part 5: Installation and mitigation guidelines - Section 3: HEMP protection concepts	-	-
IEC/TR 61000-5-4	- ¹⁾	Part 5: Installation and mitigation guidelines - Section 4: Immunity to HEMP - Specifications for protective devices against HEMP radiated disturbance	-	-
IEC 61024-1 (mod)	- ¹⁾	Protection of structures against lightning Part 1: General principles	-	-
ISO 7137	- ¹⁾	Aircraft - Environmental conditions and test procedures for airborne equipment	-	-

⁵⁾ To be published.

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ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 4-25: Testing and measurement techniques – HEMP immunity test methods for equipment and systems

1 Scope

This part of IEC 61000 describes the immunity test levels and related test methods for electrical and electronic equipment and systems exposed to high-altitude electromagnetic pulse (HEMP) environments. It defines ranges of immunity test levels and establishes test procedures. Specifications for test equipment and instrumentation test set-up, test procedures, pass/fail criteria, and test documentation requirements are also defined by this standard. These tests are intended to demonstrate the immunity of electrical and electronic equipment when subjected to HEMP radiated and conducted electromagnetic disturbances. For radiated disturbance immunity tests, specifications are defined in this standard both for small test facilities and large HEMP simulators.

This part of IEC 61000 defines specifications for laboratory immunity tests. On-site tests performed on equipment in the final installation to verify immunity are also specified. These verification tests use the same specifications as laboratory tests, except for the climatic environmental specifications.

The objective of this part of IEC 61000 is to establish a common and reproducible basis for evaluating the performance of electrical and electronic equipment, when subjected to HEMP radiated environments and the associated conducted transients on power, antenna, and input/output (I/O) signal and control lines.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61000. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 61000 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60050(161), *International Electrotechnical Vocabulary – Chapter 161: Electromagnetic compatibility*

IEC 60038, *IEC standard voltages*

IEC 60068-1:1988, *Environmental testing – Part 1: General and guidance*

IEC 61000-2-5, *Electromagnetic compatibility (EMC) – Part 2: Environment – Section 5: Classification of electromagnetic environments*. Basic EMC publication