
Električni pogonski sistemi z nastavljivo hitrostjo - 3. del: Zahteve za elektromagnetno združljivost in posebne preskusne metode (IEC 61800-3:2004)

Adjustable speed electrical power drive systems - Part 3: EMC requirements and specific test methods (IEC 61800-3:2004)

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EUROPEAN STANDARD

EN 61800-3

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2004

ICS 29.200 ; 33.100

Supersedes EN 61800-3:1996 + A11:2000

English version

**Adjustable speed electrical power drive systems
Part 3: EMC requirements and specific test methods
(IEC 61800-3:2004)**

Entraînements électriques de puissance
à vitesse variable
Partie 3: Exigences de CEM et méthodes
d'essais spécifiques
(CEI 61800-3:2004)

Drehzahlveränderbare elektrische
Antriebe
Teil 3: EMV-Anforderungen einschließlich
spezieller Prüfverfahren
(IEC 61800-3:2004)

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This European Standard was approved by CENELEC on 2004-10-01. 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, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, 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 22G/127/FDIS, future edition 2 of IEC 61800-3, prepared by SC 22G, Adjustable speed electric drive systems incorporating semiconductor power converters, of IEC TC 22, Power electronic systems and equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61800-3 on 2004-10-01.

This European Standard supersedes EN 61800-3:1996 + A11:2000 + corrigendum May 2001.

This European Standard introduces three main changes:

- a) the classes of distribution (unrestricted and restricted) of the PDS have been replaced by categories of PDS (C1 to C4) with definitions related to the product itself and its intended use;
- b) better coverage of emission limits;
- c) an EMC plan is generalized for category C4.

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) 2005-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2007-10-01

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of Directive 89/336/EEC. See Annex ZZ.

Annexes ZA and ZZ have been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61800-3:2004 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60038	NOTE	Harmonized as HD 472 S1:1989 (modified).
IEC 60146-1-3	NOTE	Harmonized as EN 60146-1-3:1993 (not modified).
IEC 60146-2	NOTE	Harmonized as EN 60146-2:2000 (not modified).
IEC 61000-2-12	NOTE	Harmonized as EN 61000-2-12:2003 (not modified).
IEC 61000-4-1	NOTE	Harmonized as EN 61000-4-1:2000 (not modified).
IEC 61000-4-7	NOTE	Harmonized as EN 61000-4-7:2000 (not modified).
IEC 61000-4-9	NOTE	Harmonized as EN 61000-4-9:1993 (not modified).
IEC 61000-4-10	NOTE	Harmonized as EN 61000-4-10:1993 (not modified).
IEC 61000-6-1	NOTE	Harmonized as EN 61000-6-1:2001 (modified).
IEC 61000-6-2	NOTE	Harmonized as EN 61000-6-2:1999 (not modified).
IEC 61000-6-4	NOTE	Harmonized as EN 61000-6-4:2001 (modified).
IEC 61800-5-1	NOTE	Harmonized as EN 61800-5-1:2003 (not modified).

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE Where 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 60050-131	2002	International Electrotechnical Vocabulary Part 131: Circuit theory	-	-
IEC 60050-151	2001	Part 151: Electrical and magnetic devices	-	-
IEC 60050-161	1990	Chapter 161: Electromagnetic compatibility	-	-
IEC 60146-1-1	1991	Semiconductor convertors - General requirements and line commutated convertors Part 1-1: Specifications of basic requirements	EN 60146-1-1	1993
IEC 60364-1	2001	Electrical installations of buildings Part 1: Fundamental principles, assessment of general characteristics, definitions	-	-
IEC 60664-1	1992	Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests	EN 60664-1 ¹⁾	2003
IEC/TR 61000-1-1 – ²⁾		Electromagnetic compatibility (EMC) Part 1: General - Section 1: Application and interpretation of fundamental definitions and terms	-	-
IEC/TR 61000-2-1	1990	Part 2: Environment - Section 1: Description of the environment - Electromagnetic environment for low-frequency conducted disturbances and signalling in public power supply systems	-	-

¹⁾ EN 60664-1 includes A1:2000 + A2:2002 to IEC 60664-1.

²⁾ Undated reference.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61000-2-2	2002	Part 2-2: Environment - Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems	EN 61000-2-2	2002
IEC 61000-2-4	2002	Part 2-4: Environment - Compatibility levels in industrial plants for low-frequency conducted disturbances	EN 61000-2-4	2002
IEC 61000-2-6	1995	Part 2-6: Environment - Assessment of the emission levels in the power supply of industrial plants as regards low-frequency conducted disturbances	-	-
IEC 61000-3-2 (mod)	2000	Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)	EN 61000-3-2	2000
IEC 61000-3-3	1994	Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection	EN 61000-3-3 + corr. July	1995 1997
IEC/TS 61000-3-4	1998	Electromagnetic compatibility (EMC) Part 3-4: Limits - Limitation of emission of harmonic currents in low-voltage power supply systems for equipment with rated current greater than 16 A	-	-
IEC 61000-3-7	1996	Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen - Requirements and tests for apparatus using software and/or digital technologies	-	-
IEC 61000-3-11	2000	Part 3-11: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems - Equipment with rated current ≤ 75 A and subject to conditional connection	EN 61000-3-11	2000
IEC 61000-4-2	– ²⁾	Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	1995 ³⁾
IEC 61000-4-3	2002	Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2002

³⁾ Valid edition at date of issue.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61000-4-4	1995	Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	1995
A1	2000		A1	2001
A2	2001		A2	2001
IEC 61000-4-5	1995	Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	1995
IEC 61000-4-6	2003	Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	-	-
IEC 61000-4-8	1993	Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test	EN 61000-4-8	1993
A1	2000		A1	2001
IEC 61800-1	1997	Adjustable speed electrical power drive systems Part 1: General requirements - Rating specifications for low voltage adjustable speed d.c. power drive systems	EN 61800-1	1998
IEC 61800-2	1998	Part 2: General requirements - Rating specifications for low voltage adjustable frequency a.c. power drive systems	EN 61800-2	1998
IEC 61800-4	2002	Part 4: General requirements - Rating specifications for a.c. power drive systems above 1 000 V a.c. and not exceeding 35 kV	EN 61800-4	2003
CISPR 11	2003	Industrial scientific and medical (ISM) radio-frequency equipment - Electromagnetic disturbance characteristics - Limits and methods of measurement	-	-
CISPR 14	Series	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus	EN 55014	Series
CISPR 16-1	1999	Specification for radio disturbance and immunity measuring apparatus and methods Part 1: Radio disturbance and immunity measuring apparatus	-	-
A1	2002		-	-
CISPR 22	2003	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement	-	-

Annex ZZ
(informative)

Coverage of Essential Requirements of EC Directives

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers all relevant essential requirements as given in Article 4 of the EC Directive 89/336/EEC.

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directive[s] concerned.

WARNING: Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.

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**Entraînements électriques de puissance
à vitesse variable –**

**Partie 3:
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**Part 3:
EMC requirements and specific
test methods**

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CONTENTS

FOREWORD.....	11
1 Scope and object.....	15
2 Normative references	17
3 Terms and definitions	21
4 Common requirements.....	31
4.1 General conditions.....	31
4.2 Tests.....	33
4.3 Documentation for the user	33
5 Immunity requirements	35
5.1 General conditions.....	35
5.2 Basic immunity requirements – Low-frequency disturbances	41
5.3 Basic immunity requirements – High-frequency disturbances	51
5.4 Application of immunity requirements – statistical aspect.....	57
6 Emission	59
6.1 General emission requirements.....	59
6.2 Basic low-frequency emission limits	59
6.3 Conditions related to high-frequency emission measurement	65
6.4 Basic high-frequency emission limits.....	67
6.5 Engineering practice	73
6.6 Application of emission requirements – statistical aspects	81
Annex A (informative) EMC techniques.....	83
A.1 General overview of EMC phenomena.....	83
A.2 Load conditions regarding high-frequency phenomena	89
A.3 Some immunity aspects	91
A.4 High-frequency emission measurement techniques	93
Annex B (informative) Low-frequency phenomena	103
B.1 Commutation notches	103
B.2 Definitions related to harmonics and interharmonics	113
B.3 Application of harmonic emission standards	125
B.4 Installation rules/Assessment of harmonic compatibility	143
B.5 Voltage unbalance	153
B.6 Voltage dips – Voltage fluctuations	159
B.7 Verification of immunity to low frequency disturbances	163
Annex C (informative) Reactive power compensation – filtering.....	167
C.1 Installation	167
C.2 Reactive power and harmonics	183

Annex D (informative) Considerations on high-frequency emission.....	191
D.1 User guidelines	191
D.2 Safety and RFI-filtering in power supply systems.....	199
Annex E (informative) EMC analysis and EMC plan	203
E.1 General – System EMC analysis applied to PDSs.....	203
E.2 Example of EMC plan for general applications.....	209
E.3 Example of supplement to EMC plan for particular application	217
Bibliography	225
Figure 1 – Definition of the installation and its content	23
Figure 2 – Internal interfaces of the PDS and examples of ports	27
Figure 3 – Power interfaces of a PDS with common d.c. BUS	29
Figure 4 – Power interfaces with common input transformer.....	29
Figure 5 – Propagation of disturbances	38
Figure 6 – Propagation of disturbances in installation with a PDS rated > 1 000 V	77
Figure A.1 – Coordination between disturbance and immunity.....	87
Figure B.1 – Typical waveform of commutation notches – Distinction from non-repetitive transient.....	103
Figure B.2 – PCC, IPC, Installation current ratio and R_{SI}	123
Figure B.3 – PCC, IPC, Installation current ratio and R_{SC}	125
Figure B.4 – Assessment of the harmonic emission of a PDS.....	131
Figure B.5 – Load conditions for the measurement of harmonic emission of a PDS	133
Figure B.6 – Test set up with mechanical load.....	135
Figure B.7 – Test set up with electrical load replacing the loaded motor.....	135
Figure B.8 – Test set up with resistive load	137
Figure B.9 – Assessment of harmonic emission where PDS are used (apparatus, systems or installations).....	145
Figure C.1 – Reactive power compensation	173
Figure C.2 – Simplified diagram of an industrial network.....	177
Figure C.3 – Impedance versus frequency of the simplified network.....	177
Figure C.4 – Example of passive filter battery.....	183
Figure C.5 – Example of inadequate solution in reactive power compensation.....	185
Figure D.1 – Conducted emission of various unfiltered PDSs	193
Figure D.2 – Expected radiated emission of PDS up to rated voltage 400 V Peak values normalised at 10 m	195
Figure D.3 – Safety and filtering	201
Figure E.1 – Interaction between systems and EM environment.....	203
Figure E.2 – Zone concept.....	205
Figure E.3 – Example of drive	207

Table 1 – Criteria to prove the acceptance of a PDS against electromagnetic disturbances	37
Table 2 – Minimum immunity requirements for harmonics and commutation notches/voltage distortion on power ports of low voltage PDSs	43
Table 3 – Minimum immunity requirements for harmonics and commutation notches/voltage distortion on main power ports of PDSs of rated voltage above 1 000 V	43
Table 4 – Minimum immunity requirements for harmonics and commutation notches/voltage distortion on auxiliary low voltage power ports of PDSs.....	45
Table 5 – Minimum immunity requirements for voltage deviations, dips and short interruptions on power ports of low voltage PDSs	45
Table 6 – Minimum immunity requirements for voltage deviations, dips and short interruptions on main power ports of rated voltage above 1 000 V of PDSs	47
Table 7 – Minimum immunity requirements for voltage deviations, dips and short interruptions on auxiliary low voltage power ports of PDSs.....	49
Table 8 – Minimum immunity requirements for voltage unbalance and frequency variations on power ports of low voltage PDSs	49
Table 9 – Minimum immunity requirements for voltage unbalance and frequency variations on main power ports of rated voltage above 1 000 V of PDSs.....	51
Table 10 – Minimum immunity requirements for voltage unbalance and frequency variations on auxiliary low voltage power ports of PDSs.....	51
Table 11–Minimum immunity requirements for PDSs intended for use in the first environment.....	53
Table 12 – Minimum immunity requirements for PDSs intended for use in the second environment.....	55
Table 13 – Summary of emission requirements.....	59
Table 14 – Limits for mains terminal disturbance voltage in the frequency band 150 kHz to 30 MHz	67
Table 15 – Limits for electromagnetic radiation disturbance in the frequency band 30 MHz to 1 000 MHz	69
Table 16 – Limits of disturbance voltage on the power interface – Option 2	71
Table 17 – Limits for mains terminal disturbance voltage in the frequency band 150 kHz to 30 MHz PDS in the second environment – PDS of category C3.....	71
Table 18 – Limits for electromagnetic radiation disturbance in the frequency band 30 MHz to 1 000 MHz PDS in the second environment – PDS of category C3.....	73
Table 19 – Limits for propagated disturbance voltage ("outside" in the first environment)	79
Table 20 –Limits for propagated disturbance voltage ("outside" in the second environment)	79
Table 21 – Limits for propagated electromagnetic disturbance above 30 MHz	79
Table 22 – Limits for electromagnetic disturbance below 30 MHz	81

Table A.1 – EMC overview	85
Table B.1 – Maximum allowable depth of commutation notches at the PC	111
Table B.2 – Harmonic current emission requirements relative to the total current of the agreed power at the PCC or IPC	149
Table B.3 – Verification plan for immunity to low frequency disturbances	165
Table E.1 – EM interaction between subsystems and environment	207
Table E.2 – Frequency analysis	221

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