SLOVENSKI STANDARD
SIST EN 61800-5-1:2008

01-januar-2008

Nadomeġļ a:

SIST EN 61800-5-1:2004

Elektriļ ni pogonski sistemi z nastavljivo hitrostjo - 5-1. del: Varnostne zahteve - Elektriļ ne, toplotne in energijske (IEC 61800-5-1:2007)

Adjustable speed electrical power drive systems -- Part 5-1: Safety requirements - Electrical, thermal and energy

Elektrische Leistungsantriebssysteme mit einstellbarer Drehzahl -- Teil 5-1: Anforderungen an die Sicherheit - Elektrische, thermische und energetische Anforderungen

Entraînements électriques de puissance à vitesse variable -- Partie 5-1: Exigences de sécurité - Electrique, thermique et énergétique

Ta slovenski standard je istoveten z: **EN 61800-5-1:2007**

ICS:

29.160.30	Motorji	Motors
29.200	Usmerniki. Pretvorniki. Stabilizirano elektriļ no napajanje	Rectifiers. Convertors. Stabilized power supply

SIST EN 61800-5-1:2008 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61800-5-1

September 2007

ICS 29.130

Supersedes EN 61800-5-1:2003

English version

Adjustable speed electrical power drive systems - Part 5-1: Safety requirements - Electrical, thermal and energy

(IEC 61800-5-1:2007)

Entraînements électriques de puissance à vitesse variable - Partie 5-1: Exigences de sécurité - Electrique, thermique et énergétique (CEI 61800-5-1:2007)

Elektrische Leistungsantriebssysteme mit einstellbarer Drehzahl - Teil 5-1: Anforderungen an die Sicherheit - Elektrische, thermische und energetische Anforderungen (IEC 61800-5-1:2007)

This European Standard was approved by CENELEC on 2007-08-01. 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.

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CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, 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

Ref. No. EN 61800-5-1:2007 E

Foreword

The text of document 22G/178/FDIS, future edition 2 of IEC 61800-5-1, 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 61800-5-1 on 2007-08-01.

This European Standard supersedes EN 61800-5-1:2003.

The major areas of change in EN 61800-5-1:2007 are the following:

– addition of alphabetical Table 1 in Clause 3;

– addition of Table 2 in 4.1 for relevance to PDS/CDM/BDM;

– addition of Table 4 summary of decisive voltage class requirements;

– expansion of subclause on protective bonding (4.3.5.3);

– clarification of distinction between touch current and protective conductor current;

– revision of section on insulation (now 4.3.6) to include solid insulation;

– addition of overvoltage categories I and II to HV insulation voltage;

– revision of section on Solid insulation (now 4.3.6.8);

– addition of high-frequency insulation requirements (4.3.6.9, Annex E);

– addition of requirements for liquid-cooled PDS (4.4.5);

– addition of climatic and vibration tests (5.2.6);

– clarification of voltage test procedure to avoid over-stress of basic insulation (5.2.3.2.3);

– revision of short-circuit test requirement for large, high-voltage and one-off PDS (now 5.2.3.6);

– addition of informative Annex B for overvoltage category reduction.

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)	2008-05-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2010-08-01

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 61800-5-1:2007 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 60034-9	NOTE	Harmonized as EN 60034-9:2005 (modified).
IEC 60071	NOTE	Harmonized in EN 60071 series (not modified).
IEC 60071-1	NOTE	Harmonized as EN 60071-1:2006 (not modified).
IEC 60071-2	NOTE	Harmonized as EN 60071-2:1997 (not modified).
IEC 60146-1-1	NOTE	Harmonized as EN 60146-1-1:1993 (not modified).
IEC 60309-1	NOTE	Harmonized as EN 60309-1:1999 (not modified).
IEC 60364-4-44	NOTE	Amendment 1:2003 to IEC 60364-4-44:2001 is harmonized as HD 60364-4-443:2006 (modified)
IEC 60664	NOTE	Harmonized in EN 60664 series (not modified).
IEC 60695-2-11	NOTE	Harmonized as EN 60695-2-11:2001 (not modified).
IEC 60695-2-12	NOTE	Harmonized as EN 60695-2-12:2001 (not modified).
IEC 60721	NOTE	Harmonized in EN 60721 series (not modified).
IEC 61082	NOTE	Harmonized in EN 61082 series (not modified).
IEC 61140	NOTE	Harmonized as EN 61140:2002 (not modified).
IEC 61180-1	NOTE	Harmonized as EN 61180-1:1994 (not modified).
IEC 61189-2	NOTE	Harmonized as EN 61189-2:2006 (not modified).
IEC 61643-12	NOTE	Harmonized as CLC/TS 61643-12:2006 (modified).
IEC 61800-3	NOTE	Harmonized as EN 61800-3:2004 (not modified).
IEC 62079	NOTE	Harmonized as EN 62079:2001 (not modified).

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

Publication	Year	Title	EN/HD	Year
IEC 60034	Series	Rotating electrical machines	EN 60034	Series
IEC 60034-1	-[1)]	Rotating electrical machines - Part 1: Rating and performance	EN 60034-1	2004[2)]
IEC 60034-5	-[1)]	Rotating electrical machines - Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) - Classification	EN 60034-5	2001[2)]
IEC 60050-111	-[1)]	International Electrotechnical Vocabulary (IEV) - Chapter 111: Physics and chemistry	-	-
IEC 60050-151	-[1)]	International Electrotechnical Vocabulary (IEV) - Part 151: Electrical and magnetic devices	-	-
IEC 60050-161	-[1)]	International Electrotechnical Vocabulary (IEV) - Chapter 161: Electromagnetic compatibility	-	-
IEC 60050-191	-[1)]	International Electrotechnical Vocabulary (IEV) - Chapter 191: Dependability and quality of service	-	-
IEC 60050-441	-[1)]	International Electrotechnical Vocabulary (IEV) - Chapter 441: Switchgear, controlgear and fuses	-	-
IEC 60050-442	-[1)]	International Electrotechnical Vocabulary (IEV) - Part 442: Electrical accessories	-	-
IEC 60050-551	-[1)]	International Electrotechnical Vocabulary (IEV) - Part 551: Power electronics	-	-
IEC 60050-601	-[1)]	International Electrotechnical Vocabulary (IEV) - Chapter 601: Generation, transmission and distribution of electricity - General	-	-

[1)] Undated reference.

[2)] Valid edition at date of issue.

Publication	Year	Title	EN/HD	Year
IEC 60060-1	1989	High-voltage test techniques - Part 1: General definitions and test requirements	HD 588.1 S1	1991
IEC 60068-2-2	1974	Environmental testing - Part 2: Tests - Tests B: Dry heat	EN 60068-2-2[3]	1993
IEC 60068-2-6	-[1]	Environmental testing - Part 2: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	1995[2]
IEC 60068-2-78	-[1]	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	2001[2]
IEC 60112	2003	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	EN 60112	2003
IEC 60204-11	-[1]	Safety of machinery - Electrical equipment of machines - Part 11: Requirements for HV equipment for voltages above 1 000 V a.c. or 1 500 V d.c. and not exceeding 36 kV	EN 60204-11	2000
IEC 60309 (mod)	Series	Plugs, socket-outlets and couplers for industrial purposes	EN 60309	Series
IEC 60364-1 (mod)	-[1]	Low-voltage electrical installations - Part 1: Fundamental principles, assessment of general characteristics, definitions	-[4]	-
IEC 60364-5-54 (mod)	2002	Electrical installations of buildings - Part 5-54: Selection and erection of electrical equipment - Earthing arrangements, protective conductors and protective bonding conductors	HD 60364-5-54	2007
IEC 60417	Data-base	Graphical symbols for use on equipment	-	-
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 1993
IEC 60617	Data-base	Graphical symbols for diagrams	-	-
IEC 60664-1 + A1 + A2	1992 2000 2002	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1[5]	2003
IEC 60664-3	2003	Insulation coordination for equipment within low-voltage systems - Part 3: Use of coating, potting or moulding for protection against pollution	EN 60664-3	2003

[3] EN 60068-2-2 includes supplement A:1976 to IEC 60068-2-2.

[4] IEC 60364-1:2005 (modified) will be submitted to formal vote for acceptance as HD 60364-1.

[5] EN 60664-1 is superseded by EN 60664-1:2007, which is based on IEC 60664-1:2007.

Publication	Year	Title	EN/HD	Year
IEC 60664-4	2005	Insulation coordination for equipment within low-voltage systems - Part 4: Consideration of high-frequency voltage stress	EN 60664-4 + corr. October	2006 2006
IEC 60695-2-10	-[1)]	Fire hazard testing - Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure	EN 60695-2-10	2001[2)]
IEC 60695-2-13	-[1)]	Fire hazard testing - Part 2-13: Glowing/hot-wire based test methods - Glow-wire ignitability test method for materials	EN 60695-2-13	2001[2)]
IEC 60695-11-10	-[1)]	Fire hazard testing - Part 11-10: Test flames - 50 W horizontal and vertical flame test methods	EN 60695-11-10	1999[2)]
IEC 60695-11-20	-[1)]	Fire hazard testing - Part 11-20: Test flames - 500 W flame test methods	EN 60695-11-20	1999[2)]
IEC/TR 60755	-[1)]	General requirements for residual current operated protective devices	-	-
IEC 60947-7-1	2002	Low-voltage switchgear and controlgear - Part 7-1: Ancillary equipment - Terminal blocks for copper conductors	EN 60947-7-1	2002
IEC 60947-7-2	2002	Low-voltage switchgear and controlgear - Part 7-2: Ancillary equipment - Protective conductor terminal blocks for copper conductors	EN 60947-7-2	2002
IEC 60990	1999	Methods of measurement of touch current and protective conductor current	EN 60990	1999
IEC 61230 (mod)	-[1)]	Live working - Portable equipment for earthing or earthing and short-circuiting	EN 61230 +A11	1995[2)] 1999
IEC 61800-1	-[1)]	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[2)]
IEC 61800-2	-[1)]	Adjustable speed electrical power drive systems - Part 2: General requirements - Rating specifications for low voltage adjustable frequency a.c. power drive systems	EN 61800-2	1998[2)]
IEC 61800-4	-[1)]	Adjustable speed electrical power drive systems - 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[2)]
IEC 62020	-[1)]	Electrical accessories - Residual current monitors for household and similar uses (RCMs)	-	-

Publication	Year	Title	EN/HD	Year
IEC 62271-102	-[1)]	High-voltage switchgear and controlgear - Part 102: Alternating current disconnectors and earthing switches	EN 62271-102 + corr. March	2002[2)] 2005
ISO 3864	Series	Graphical symbols - Safety colours and safety signs	-	-
ISO 7000	2004	Graphical symbols for use on equipment - Index and synopsis	-	-

INTERNATIONAL STANDARD

NORME INTERNATIONALE

IEC
CEI
61800-5-1

Second edition
Deuxième édition
2007-07

Adjustable speed electrical power drive systems –

Part 5-1: Safety requirements – Electrical, thermal and energy

Entraînements électriques de puissance à vitesse variable –

Partie 5-1: Exigences de sécurité – Electrique, thermique et énergétique

Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

PRICE CODE
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For price, see current catalogue
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ADJUSTABLE SPEED ELECTRICAL POWER DRIVE SYSTEMS –

Part 5-1: Safety requirements – Electrical, thermal and energy

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61800-5-1 has been prepared by subcommittee 22G: Semi-conductor power converters for adjustable speed electric drive systems, of IEC technical committee 22: Power electronic systems and equipment.

This second edition cancels and replaces the first edition published in 2003. It constitutes a technical revision.

The major areas of change in this edition are the following:

a) addition of alphabetical Table 1 in Clause 3;
b) addition of Table 2 in 4.1 for relevance to PDS/CDM/BDM;
c) addition of Table 4 summary of decisive voltage class requirements;
d) expansion of subclause on protective bonding (4.3.5.3);