

SLOVENSKI STANDARD SIST EN IEC 61800-1:2021

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Električni pogonski sistemi z nastavljivo hitrostjo - 1. del: Splošne zahteve - Ocena specifikacij za nizkonapetostne enosmerne pogonske sisteme z nastavljivo hitrostjo (IEC 61800-1:2021)

Adjustable speed electrical power drive systems - Part 1: General requirements - Rating specifications for low voltage adjustable speed DC power drive systems (IEC 61800-1:2021)

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Drehzahlveränderbare elektrische Antriebe - Teil 1: Allgemeine Anforderungen - Festlegungen für die Bemessung von Niederspannungs-Gleichstrom-Antriebssystemen (IEC 61800-1:2021)

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Entraînements électriques de puissance à vitesse variable - Partie 1: Exigences générales - Spécifications de dimensionnement pour systèmes d'entraînement de puissance à vitesse variable en courant continu et basse tension (IEC 61800-1:2021)

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ICS:

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Usmerniki. Pretvorniki.
Stabilizirano električno
napajanje

Rectifiers. Convertors.
Stabilized power supply

SIST EN IEC 61800-1:2021

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EUROPEAN STANDARD

EN IEC 61800-1

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February 2021

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Supersedes EN 61800-1:1998 and all of its amendments
and corrigenda (if any)

English Version

**Adjustable speed electrical power drive systems - Part 1:
General requirements - Rating specifications for low voltage
adjustable speed DC power drive systems
(IEC 61800-1:2021)**

Entraînements électriques de puissance à vitesse variable -
Partie 1: Exigences générales - Spécifications de
dimensionnement pour systèmes d'entraînement de
puissance à vitesse variable en courant continu et basse
tension
(IEC 61800-1:2021)

Drehzahlveränderbare elektrische Antriebe - Teil 1:
Allgemeine Anforderungen - Festlegungen für die
Bemessung von Niederspannungs-Gleichstrom-
Antriebssystemen
(IEC 61800-1:2021)

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Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN IEC 61800-1:2021 (E)**European foreword**

The text of document 22G/430(F)/FDIS, future edition 2 of IEC 61800-1, prepared by SC 22G "Adjustable speed electric power drive systems (PDS)" of IEC/TC 22 "Power electronic systems and equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61800-1:2021.

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- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-02-23

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

IEC 60027-3	NOTE Harmonized as EN 60027-3
IEC 60034-6	NOTE Harmonized as EN 60034-6
IEC 60204-1	NOTE Harmonized as EN 60204-1
IEC 60364-1	NOTE Harmonized as HD 60364-1
IEC 61131-2	NOTE Harmonized as EN 61131-2
IEC 61439-1	NOTE Harmonized as EN 61439-1
IEC 61800-9 series	NOTE Harmonized as EN 61800-9 series
IEC 61800-9-1	NOTE Harmonized as EN 61800-9-1
IEC 61800-9-2	NOTE Harmonized as EN 61800-9-2

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60034-1	2017	Rotating electrical machines - Part 1:- Rating and performance		-
IEC 60034	series	Rotating electrical machines	-	-
IEC 60034-9	-	Rotating electrical machines - Part 9: Noise Limits	EN 60034-9	-
IEC/TS 60034-25	-	Rotating electrical machines – Part 25: AC- electrical machines used in power drive systems – Application guide		-
IEC 60038	-	IEC standard voltages	EN 60038	-
IEC 60068	series	Environmental testing	EN 60068	series
IEC 60068-2-27	2008	Environmental testing - Part 2-27: Tests Test Ea and guidance: Shock	EN 60068-2-27	2009
IEC 60076-1	-	Power transformers - Part 1: General	EN 60076-1	-
IEC 60076-6	-	Power transformers - Part 6: Reactors	EN 60076-6	-
IEC 60076	series	Power transformers	EN 60076	series
IEC 60079	series	Explosive atmospheres	EN 60079	series
IEC/TS 60079-42	-	Explosive atmospheres - Part 42: Electrical- safety devices for the control of potential ignition sources for Ex-Equipment		-
IEC 60146-1-1	2009	Semiconductor converters - General requirements and line commutated converters - Part 1-1: Specification of basic requirements	EN 60146-1-1	2010
IEC 60364	series	Low-voltage electrical installations	HD 60364	series
IEC 60664-1	-	Insulation coordination for equipment within low-voltage supply systems - Part 1: Principles, requirements and tests	EN IEC 60664-1	-
IEC 60721-2-6	-	Classification of environmental conditions. Part 2: Environmental conditions appearing in nature. Earthquake vibration and shock	HD 478.2.6 S1	-
IEC 60721-3-1	1997	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities -- Section 1: Storage	EN 60721-3-1	1997
IEC 60721-3-2	1997	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities -- Section 2: Transportation	EN 60721-3-2	1997

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IEC 60721-3-3	1994	Classification of environmental conditions -EN 60721-3-3 Part 3: Classification of groups of environmental parameters and their severities - Section 3: Stationary use at weatherprotected locations	1995
+ A1	1995	-	-
+ A2	1996	+ A2	1997
IEC 60721-3-4	1995	Classification of environmental conditions -EN 60721-3-4 Part 3: Classification of groups of environmental parameters and their severities - Section 4: Stationary use at non-weatherprotected locations	1995
+ A1	1996	+ A1	1997
IEC 61158	series	Industrial communication networks -EN IEC 61158 Fieldbus specifications	series
IEC 61378	series	Converter transformers	EN 61378 series
IEC 61800-2	-	Adjustable speed electrical power driveEN 61800-2 systems - Part 2: General requirements - Rating specifications for low voltage adjustable speed a.c. power drive systems	-
IEC 61800-3	-	Adjustable speed electrical power driveEN IEC 61800-3 systems - Part 3: EMC requirements and specific test methods	-
IEC 61800-5-1	-	Adjustable speed electrical power driveEN 61800-5-1 systems - Part 5-1: Safety requirements - Electrical, thermal and energy	-
IEC 61800-5-2	-	Adjustable speed electrical power driveEN 61800-5-2 systems - Part 5-2: Safety requirements - Functional	-
IEC/TR 61800-6	-	Adjustable speed electrical power driveCLC/TR 61800-6 systems - Part 6: Guide for determination of types of load duty and corresponding current ratings	-
IEC 61800-7	series	Adjustable speed electrical power driveEN 61800-7 systems - Part 7-1: Generic interface and use of profiles for power drive systems - Interface definition	series
IEC/TS 61800-8	-	Adjustable speed electrical power drive- systems - Part 8: Specification of voltage on the power interface	-
IEC/TS 62578	-	Power electronics systems and equipment- - Operation conditions and characteristics of active infeed converter (AIC) applications including design recommendations for their emission values below 150 kHz	-



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NORME INTERNATIONALE



**Adjustable speed electrical power drive systems –
Part 1: General requirements – Rating specifications for low voltage adjustable
speed DC power drive systems**

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Partie 1: Exigences générales – Spécifications de dimensionnement pour
systèmes d'entraînement de puissance à vitesse variable en courant continu
et basse tension**

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CONTENTS

FOREWORD.....	8
INTRODUCTION.....	10
0.1 General.....	10
0.2 Consistency of requirement.....	10
0.3 Tool for agreement between <i>customer</i> and <i>manufacturer</i>	10
1 Scope.....	12
2 Normative references.....	12
3 Terms and definitions.....	14
3.1 System elements.....	14
3.2 Converters and circuit elements (see Table 2).....	19
3.3 Drive system operating characteristics (see Table 3).....	20
3.4 Input ratings of <i>BDM/CDM/PDS</i> (see Table 4).....	23
3.5 Output ratings of <i>BDM/CDM</i> (see Table 5).....	27
3.6 <i>Motor</i> ratings (see Table 6).....	29
3.7 Control systems (see Table 7).....	32
3.8 Tests (see Table 8).....	33
4 Ratings and specifications for the act of installing, commissioning and operation.....	34
4.1 General.....	34
4.2 <i>BDM/CDM/PDS</i> characteristics and topology.....	34
4.2.1 General.....	34
4.2.2 <i>BDM/CDM/PDS</i> characteristics.....	35
4.2.3 Basic topology for <i>BDM/CDM/PDS</i> 's.....	35
4.3 Ratings.....	39
4.3.1 General.....	39
4.3.2 Input ratings.....	40
4.3.3 Output ratings.....	41
4.3.4 Operating quadrants.....	44
4.3.5 Ratings, properties and functionalities of the <i>BDM/CDM/PDS</i>	44
4.3.6 Special ratings related to <i>BDM/CDM/PDS</i> or <i>motor</i>	45
4.4 Performance.....	45
4.4.1 Operational.....	45
4.4.2 Fault supervision and protection.....	55
4.4.3 Minimum status indication required.....	56
4.4.4 I/O devices.....	57
4.5 General safety.....	59
4.6 Functional safety.....	59
4.7 EMC.....	59
4.8 Ecodesign.....	60
4.8.1 General.....	60
4.8.2 Energy <i>efficiency</i> and power losses.....	60
4.8.3 Environmental impact.....	60
4.9 Environmental condition for service, transport and storage.....	60
4.9.1 General.....	60
4.9.2 Operation.....	60
4.9.3 Storage and transport of equipment.....	65
4.9.4 Mechanical conditions.....	66

4.9.5	Specific storage hazards	67
4.9.6	Environmental service tests (type test)	67
4.10	Types of load duty profiles	68
4.11	Generic interface and use of profiles for <i>PDS</i>	68
4.12	Voltage on <i>power interface</i>	70
4.13	Explosive environment	70
5	Test	71
5.1	General	71
5.2	Performance of tests	71
5.2.1	General conditions	71
5.2.2	Supply system earthing conditions	71
5.3	Standard tests for <i>BDM/CDM/PDS</i>	71
5.3.1	General	71
5.3.2	Test for mass produced products	73
5.3.3	Test for one-off products	73
5.4	Test specifications	73
5.4.1	Visual inspections (<i>type test, sample test and routine test</i>)	73
5.4.2	Performance and rating test	74
5.4.3	General safety	82
5.4.4	Functional safety	82
5.4.5	EMC	82
5.4.6	Energy <i>efficiency</i> and power losses determination	82
5.4.7	Environmental condition tests	82
5.4.8	Communication profiles	84
5.4.9	Explosive atmosphere environment	85
6	Information and marking requirements	85
6.1	General	85
6.2	Marking on product	86
6.3	Information to be supplied with the PDS or BDM/CDM	87
6.4	Information to be supplied or made available	87
6.5	Safety and warning information	87
6.5.1	Warning labels	87
6.5.2	Additional safety considerations of a PDS	87
Annex A	(informative) <i>Motor</i> considerations	89
A.1	General	89
A.2	Cooling considerations	89
A.3	Waveform <i>ripple</i> considerations	90
A.3.1	General	90
A.3.2	<i>Converter</i> topologies	90
A.3.3	Potentials to earth	90
A.4	Torsional considerations	91
A.4.1	General	91
A.4.2	Torsional analysis	91
A.4.3	Remedies to torsional problems (rare with DC drives)	91
A.4.4	Torque pulsation	91
A.5	Operational modes	91
A.5.1	General	91
A.5.2	Torque/speed characteristics	92
A.5.3	Considerations of drive regeneration	93

A.6	Acoustic noise	93
A.7	Service life of the <i>motor</i> insulation system	93
A.8	Shaft voltages	94
A.9	New drive systems	94
Annex B	(informative) Line-side considerations	95
B.1	General	95
B.2	AC power source earthing	95
B.3	Introduction to harmonics and inter-harmonics	96
B.4	Results for typical <i>converters</i> phase control	98
B.4.1	General	98
B.4.2	Square wave line current	99
B.4.3	Trapezoidal line current	99
B.4.4	Current harmonic with <i>DC current ripple</i>	99
B.4.5	Diode <i>rectifiers</i>	101
B.4.6	Diode <i>rectifiers</i> without <i>DC link</i> inductance	102
B.4.7	General	104
B.5	Example of assessment of harmonic effect of a <i>PDS</i>	104
B.6	Attenuation of emission of harmonics	105
B.7	Commutation notches	106
B.8	Protection against voltage dips and short interruptions	108
Annex C	(informative) Auxiliary equipment	110
C.1	General	110
C.2	Transformers	110
C.2.1	General	110
C.2.2	Voltage	110
C.2.3	Codes	110
C.2.4	Provide continuity of service for installations prone to nuisance grounding	110
C.2.5	Line voltage unbalance	111
C.2.6	Reduction of <i>converter</i> input harmonic currents	111
C.2.7	Reduction of prospective short-circuit current at <i>converter</i> input	111
C.2.8	Pulse number	111
C.3	Reactors	111
C.4	Switchgear	112
Annex D	(informative) Control strategies	113
D.1	General	113
D.2	Control configurations	113
D.2.1	General	113
D.2.2	Basic structure	114
D.2.3	Optional facilities	114
D.2.4	Digital and analog control	116
D.3	Control modes	117
D.3.1	Operating modes	117
D.3.2	Loop control	117
D.3.3	Accuracy and performance	117
D.4	Steady state and transient performance	118
D.4.1	Time response	118
D.4.2	Response time	118
D.4.3	Performances of particular functions	118

D.4.4	Speed ratio control	118
D.5	List of relevant control parameters	120
D.5.1	<i>BDM/CDM</i> control parameters	120
D.5.2	<i>Motor</i> parameters	121
D.5.3	Mechanical parameters	121
D.5.4	Supply parameters	121
D.6	Structures	121
D.6.1	Functional structures	121
D.6.2	Hardware structures	123
D.6.3	Important drive performances issues	123
D.6.4	Effect of torsional elasticity	123
D.6.5	Effects of the backlash	125
Annex E (informative)	Protection	126
E.1	General	126
E.2	Equipment availability	126
E.2.1	General	126
E.2.2	Equipment protection circuits	126
E.2.3	Types of equipment alarms and faults	126
E.2.4	Alarm and fault listing	127
E.3	System protection (features and devices)	128
E.4	Protection of the drive system	128
E.4.1	Protection included in the <i>BDM/CDM</i>	128
E.4.2	Specific <i>motor</i> protection	129
E.4.3	Specific transformer protection	129
Annex F (informative)	Monitoring features	130
F.1	General	130
F.2	Technology	130
Bibliography	131
Figure 1	– <i>PDS</i> hardware configuration within an <i>installation</i>	15
Figure 2	– Example of function diagram of a <i>DC power drive system</i>	16
Figure 3	– <i>BDM/CDM/PDS manufacturer/customer</i> relationship	18
Figure 4	– Operating quadrants	22
Figure 5	– Main configurations for line-commutated <i>converters</i>	36
Figure 6	– Basic configurations of self-commutated <i>converters</i> (choppers)	37
Figure 7	– Overview of input and output ratings of the <i>BDM/CDM/PDS</i>	40
Figure 8	– Example of operating region of a <i>PDS</i>	42
Figure 9	– Overload cycle example	44
Figure 10	– Deviation band	47
Figure 11	– Time response following a step change of reference input, no change in operating variables	50
Figure 12	– Time response following a change in an operating variable – No reference change	51
Figure 13	– Time response following a reference change at specified rate	52
Figure 14	– Frequency response of the control – Reference value as <i>stimulus</i>	53
Figure 15	– Example of relationship of IEC 61800-7 (all parts) to control system software and the <i>BDM/CDM/PDS</i>	70

Figure 16 – Measuring circuit of <i>PDS</i>	76
Figure A.1 – Torque and power output of a <i>DC motor</i>	92
Figure B.1 – Thyristor <i>rectifier</i> with a large DC inductance.....	99
Figure B.2 – Square wave line current	99
Figure B.3 – Trapezoidal line current	99
Figure B.4 – Major harmonic components of supply current considering square wave line current with idealized DC <i>ripple</i>	100
Figure B.5 – Power <i>converter</i> with a diode <i>rectifier</i> on the line-side and a DC/DC <i>converter</i>	101
Figure B.6 – Input voltage and current waveforms of the diode <i>rectifier</i>	101
Figure B.7 – Line-side voltage and current distortion factors of a diode <i>rectifier</i>	102
Figure B.8 – Diode <i>rectifier</i> without <i>DC link</i> inductance	102
Figure B.9 – Input harmonic current (AC and DC)	103
Figure B.10 – <i>Input current</i> distortion	103
Figure B.11 – Example of simple structure	105
Figure B.12 – 3-phase, 6-pulse bridge <i>converter</i>	106
Figure B.13 – Commutation notches with a 3-phase, 6-pulse bridge <i>converter</i>	107
Figure B.14 – Equivalent circuit for assessment of commutation notch mitigation.....	108
Figure D.1 – Block diagram of feedback control system containing all basic elements	113
Figure D.2 – Functional block diagram.....	115
Figure D.3 – Master/follower drive system	119
Figure D.4 – Zero current inversion time	120
Figure D.5 – Structure of a drive system.....	122
Figure D.6 – Mechanical diagram.....	124
Figure D.7 – Simple stability criterion.....	125
Figure E.1 – Protection classification	127
Table 1 – System elements.....	14
Table 2 – Converters and circuits elements	19
Table 3 – Drive system operating characteristics	20
Table 4 – Input ratings of <i>BDM/CDM/PDS</i>	23
Table 5 – Output ratings of <i>BDM/CDM</i>	27
Table 6 – <i>Motor</i> ratings	29
Table 7 – Control system and variables	32
Table 8 – Type of tests	33
Table 9 – Standard rated voltages as specified in IEC 60038.....	40
Table 10 – Example of reduced maximum continuous load as a function of an overload	43
Table 11 – Maximum deviation bands (%).....	47
Table 12 – <i>PDS</i> protection functions	55
Table 13 – Environmental service conditions	61
Table 14 – Limit of temperature of the cooling medium for indoor equipment	62
Table 15 – Definitions of pollution degree	62
Table 16 – Environmental vibration limits for fixed <i>installation</i>	63
Table 17 – Environmental shock limits for fixed <i>installation</i>	63

Table 18 – Storage and transport limits.....	65
Table 19 – Transportation vibration limits.....	66
Table 20 – Transportation limits of free fall	66
Table 21 – Environmental service tests.....	68
Table 22 – Tests overview	72
Table 23 – Classification of commutation made by visual observation.....	74
Table 24 – Shock test	84
Table 25 – Information requirements.....	86
Table B.1 – Minimum R_{SC} requirements for low voltage systems.....	97
Table B.2 – Harmonic current – 6-pulse conversion	98
Table B.3 – Harmonic results for the drive contribution	105
Table D.1 – Typical control configurations	114
Table D.2 – Composition of the typical control configurations	116
Table D.3 – Drive system control strategies	118

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ADJUSTABLE SPEED ELECTRICAL POWER DRIVE SYSTEMS –**Part 1: General requirements –
Rating specifications for low voltage
adjustable speed DC power drive systems**

FOREWORD

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International Standard IEC 61800-1 has been prepared by subcommittee 22G: Adjustable speed electric power drive systems (PDS), of IEC technical committee 22: Power electronic systems and equipment.

This second edition cancels and replaces the first edition published in 1997. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) the clause structure has been harmonized with IEC 61800-2;
- b) Clause 2 has been updated;
- c) Clause 3 has been updated including fundamental definitions to be used across IEC 61800 (all parts);
- d) Clause 4 has been updated with respect to:

- 1) description of the basic topology for *BDM/CDM/PDS* (4.2);
 - 2) ratings and performance (4.3 and 4.4);
 - 3) reference to applicable standards within the IEC 61800 series with respect to EMC (IEC 61800-3), general safety (IEC 61800-5-1), functional safety (IEC 61800-5-2), load duty aspects (IEC TR 61800-6), communication profiles (IEC 61800-7 series), *power interface* voltage (IEC TS 61800-8), and ecodesign energy efficiency standards (IEC 61800-9) to avoid conflicting requirements (4.5, 4.6, 4.7, 4.10, 4.11, 4.12);
 - 4) update of requirement for ecodesign (4.8);
 - 5) update of requirement for environmental evaluation (4.9);
 - 6) implementation of requirement for explosive atmosphere (4.13);
- e) Clause 5 has been updated with test requirement in order to provide a clear link between design requirement and test requirement;
- f) Clause 6 has been updated to harmonize the marking and documentation requirement within IEC 61800 (all parts);
- g) the Annexes have been updated.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
22G/430/FDIS	22G/433/RVD

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 61800 series, published under the general title *Adjustable speed electrical power drive systems*, can be found on the IEC website.

In this document, the terms in *italics* are defined in Clause 3.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

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

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