BS EN 61400-2:2014

BSI Standards Publication

Wind turbines

Part 2: Small wind turbines

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National foreword

This British Standard is the UK implementation of EN 61400-2:2014. It is identical to IEC 61400-2:2013. It supersedes BS EN 61400-2:2006 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PEL/88, Wind turbines.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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English Version

Wind turbines - Part 2: Small wind turbines (IEC 61400-2:2013)

Eoliennes-- Partie 2: Petits aérogénérateurs (CEI 61400-2:2013)

Windenergieanlagen - Teil 2: Anforderungen für kleine Windenergieanlagen (IEC 61400-2:2013)

This European Standard was approved by CENELEC on 2014-01-16. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

The text of document 88/465/FDIS, future edition 3 of IEC 61400-2, prepared by IEC/TC 88 "Wind turbines" and ISO/TC 60 "Gears" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61400-2:2014.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2015-04-10
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2017-01-16

This document supersedes EN 61400-2:2006

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 61400-2:2013 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 (Series)	NOTE	Harmonized as EN 60034 (Series).
IEC 60364 (Series)	NOTE	Harmonized as HD 60364 (Series).
IEC 60529:1989	NOTE	Harmonized as EN 60529:1991.
IEC 61400-1:2005	NOTE	Harmonized as EN 61400-1:2005.
IEC 61400-4	NOTE	Harmonized as EN 61400-4.
IEC 61400-21:2008	NOTE	Harmonized as EN 61400-21:2008.
IEC 61400-22:2010	NOTE	Harmonized as EN 61400-22:2011.
IEC 61400-24	NOTE	Harmonized as EN 61400-24.
ISO/IEC 17020:2012	NOTE	Harmonized as EN ISO/IEC 17020:2012.
ISO 9000 (Series)	NOTE	Harmonized as EN ISO 9000 (Series).
ISO 9001:2008	NOTE	Harmonized as EN ISO 9001:2008.

Annex ZA
(normative)
Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When 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

Publication	Year	Title	EN/HD	Year
IEC 60038 (mod)	2009	IEC standard voltages	EN 60038	2011
IEC 60204-1 (mod)	2005	Safety of machinery - Electrical equipment of machines -- Part 1: General requirements	EN 60204-1	2006
			+prA11	
			+EN 60204-1:2006/corrigendum Feb. 2010	2010
IEC 60364-5-54	-	Low-voltage electrical installations -- Part 5-54: Selection and erection of electrical equipment - Earthing arrangements and protective conductors	HD 60364-5-54	-
			+FprAA	2011
IEC 60721-2-1	-	Classification of environmental conditions -- Part 2-1: Environmental conditions appearing in nature - Temperature and humidity	EN 60721-2-1	-
IEC 61400-1	2005	Wind turbines -- Part 1: Design requirements	EN 61400-1	2005
			+prA	
IEC 61400-11	-	Wind turbines -- Part 11: Acoustic noise measurement techniques	EN 61400-11	-
IEC 61400-12-1	2005	Wind turbines -- Part 12-1: Power performance measurements of electricity producing wind turbines	EN 61400-12-1	2006
IEC 61643-11 (mod)	2011	Low-voltage surge protective devices -- Part 11: Surge protective devices connected to low-voltage power systems - Requirements and test methods	EN 61643-11	2012
ISO 2394	1998	General principles on reliability for structures	-	-
IEC/TS 61400-13	-	Wind turbine generator systems - Part 13: Measurement of mechanical loads	-	-
IEC/TS 61400-23	2001	Wind turbine generator systems -- Part 23: Full-scale structural testing of rotor blades	-	-
ISO/IEC 17025	-	General requirements for the competence of testing and calibration laboratories	EN ISO/IEC 17025	-

CONTENTS

WIND TURBINES –

Part 2: Small wind turbines

1 Scope

This part of IEC 61400 deals with safety philosophy, quality assurance, and engineering integrity and specifies requirements for the safety of small wind turbines (SWTs) including design, installation, maintenance and operation under specified external conditions. Its purpose is to provide the appropriate level of protection against damage from hazards from these systems during their planned lifetime.

This standard is concerned with all subsystems of SWTs such as protection mechanisms, internal electrical systems, mechanical systems, support structures, foundations and the electrical interconnection with the load. A small wind turbine system includes the wind turbine itself including support structures, the turbine controller, the charge controller / inverter (if required), wiring and disconnects, the installation and operation manual(s) and other documentation.

While this standard is similar to IEC 61400-1, it does simplify and make significant changes in order to be applicable to small wind turbines. Any of the requirements of this standard may be altered if it can be suitably demonstrated that the safety of the turbine system is not compromised. This provision, however, does not apply to the classification and the associated definitions of external conditions in Clause 6. Compliance with this standard does not relieve any person, organisation, or corporation from the responsibility of observing other applicable regulations.

This standard applies to wind turbines with a rotor swept area smaller than or equal to 200 m^2, generating electricity at a voltage below 1 000 V a.c. or 1 500 V d.c. for both on-grid and off-grid applications.

This standard should be used together with the appropriate IEC and ISO standards (see Clause 2).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60038:2009, *IEC standard voltages*

IEC 60204-1:2005, *Safety of machinery – Electrical equipment of machines – Part 1: General requirements*

IEC 60364-5-54, *Low-voltage electrical installations – Part 5-54: Selection and erection of electrical equipment – Earthing arrangements and protective conductors*

IEC 60721-2-1, *Classification of environmental conditions – Part 2-1: Environmental conditions appearing in nature – Temperature and humidity*

IEC 61400-11, *Wind turbines – Part 11: Acoustic noise measurement techniques*