SLOVENSKI STANDARD
SIST EN 61400-25-6:2011

01-april-2011

Sistemi generatorjev vetrne turbine - 25-6. del: Komunikacije za spremljanje in nadzor vetrnih elektrarn - Razredi logičnih vozlišč in razredi podatkov za nadzor pogojev (IEC 61400-25-6:2010)

Wind turbines - Part 25-6: Communications for monitoring and control of wind power plants - Logical node classes and data classes for condition monitoring (IEC 61400-25-6:2010)

Windenergieanlagen - Teil 25-6: Kommunikation für die Überwachung und Steuerung von Windenergieanlagen - Klassen logischer Knoten und Datenklassen für die Zustandsüberwachung (IEC 61400-25-6:2010)

Eoliennes - Partie 25-6: Communications pour la surveillance et la commande des centrales éoliennes - Classes de noeuds logiques et classes de données pour la surveillance d'état (CEI 61400-25-6:2010)

Ta slovenski standard je istoveten z: **EN 61400-25-6:2011**

ICS:

27.180	Sistemi turbin na veter in drugi alternativni viri energije	Wind turbine systems and other alternative sources of energy
35.240.50	Uporabniške rešitve IT v industriji	IT applications in industry

SIST EN 61400-25-6:2011 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61400-25-6

January 2011

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English version

Wind turbines - Part 25-6: Communications for monitoring and control of wind power plants - Logical node classes and data classes for condition monitoring

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Windenergieanlagen - Teil 25-6: Kommunikation für die Überwachung und Steuerung von Windenergieanlagen - Klassen logischer Knoten und Datenklassen für die Zustandsüberwachung (IEC 61400-25-6:2010)

This European Standard was approved by CENELEC on 2011-01-03. 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.

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CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 88/377A/FDIS, future edition 1 of IEC 61400-25-6, prepared by IEC TC 88, Wind turbines, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61400-25-6 on 2011-01-03.

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

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)	2011-10-03
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2014-01-03

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61400-25-6:2010 was approved by CENELEC as a European Standard without any modification.

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 61400-25-1	2006	Wind turbines - Part 25-1: Communications for monitoring and control of wind power plants - Overall description of principles and models	EN 61400-25-1	2007
IEC 61400-25-2	2006	Wind turbines - Part 25-2: Communications for monitoring and control of wind power plants - Information models	EN 61400-25-2	2007
IEC 61400-25-3	2006	Wind turbines - Part 25-3: Communications for monitoring and control of wind power plants - Information exchange models	EN 61400-25-3	2007
IEC 61400-25-4	-	Wind turbines - Part 25-4: Communications for monitoring and control of wind power plants - Mapping to communication profile	EN 61400-25-4	-
IEC 61400-25-5	-	Wind turbines - Part 25-5: Communications for monitoring and control of wind power plants - Conformance testing	EN 61400-25-5	-
IEC 61850-7-2	2003	Communication networks and systems in substations - Part 7-2: Basic communication structure for substation and feeder equipment - Abstract communication service interface (ACSI)	EN 61850-7-2[1)]	2003
IEC 61850-7-3	-	Communication networks and systems for power utility automation - Part 7-3: Basic communication structure - Common data classes	EN 61850-7-3	-
ISO 10816	Series	Mechanical vibration - Evaluation of machine vibration by measurement on non-rotating parts	-	-
ISO 13373-1	2002	Condition monitoring and diagnostics of machines - Vibration condition monitoring - Part 1: General procedures	-	-

[1)] EN 61850-7-2 is superseded by EN 61850-7-2:2010, which is based on IEC 61850-7-2:2010.

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INTERNATIONAL STANDARD

colour inside

Wind turbines –

Part 25-6: Communications for monitoring and control of wind power plants – Logical node classes and data classes for condition monitoring

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

WIND TURBINES –

Part 25-6: Communications for monitoring and control of wind power plants – Logical node classes and data classes for condition monitoring

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 61400-25-6 has been prepared by IEC technical committee 88: Wind turbines.

The text of this standard is based on the following documents:

FDIS	Report on voting
88/377A/FDIS	88/380/RVD

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

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

A list of all parts in the IEC 61400 series, published under the general title: *Wind turbines*, can be found on the IEC website.

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

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

A bilingual version of this publication may be issued at a later date.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

The IEC 61400-25 series defines information models and information exchange models for monitoring and control of wind power plants. The modelling approach (for information models and information exchange models) of IEC 61400-25-2 and IEC 61400-25-3 uses abstract definitions of classes and services such that the specifications are independent of specific communication protocol stacks, implementations, and operating systems. The mapping of these abstract definitions to specific communication profiles is defined in IEC 61400-25-4.

Conformance to IEC 61400-25-6 requires in principle conformance to IEC 61400-25-2, IEC 61400-25-3 and IEC 61400-25-4.

The definitions in parts IEC 61400-25-1 to IEC 61400-25-5 apply also for this part 6 of the standard series.

The purpose of this part of IEC 61400 is to define an information model for condition monitoring information and to define how to use the existing definitions of IEC 61400-25-2 and to define the required extensions in order to describe and exchange information related to condition monitoring of wind turbines. The models of condition monitoring information defined in this standard may represent information provided by sensors or by calculation.

In the context of this standard, condition monitoring means a process with the purpose of observing components or structures of a wind turbine or wind power plant for a period of time in order to evaluate the state of the components or structures and any changes to it, in order to detect early indications of impending failures. With the objective to be able to monitor components and structures in approximately the same conditions, this standard introduces a concept of sorting production or power levels of a wind turbine into power bins. The power bins concept is multidimensional in order to fit the purpose of sorting complex operational conditions into comparable circumstances.

Condition monitoring is most frequently used as a predictive or condition-based maintenance technique (CBM). However, there are other predictive maintenance techniques that can also be used, including the use of the human senses (look, listen, feel, smell) or machine performance monitoring techniques. These could be considered to be part of the condition monitoring.

Condition monitoring techniques

Condition monitoring techniques that generate information to be modelled include, but are not limited to, measured or processed values such as:

- vibration measurements and analysis;
- oil debris measurement and analysis;
- temperature measurement and analysis;
- strain gauge measurement and analysis;
- acoustic measurement and analysis.

Components and structures can be monitored by using automatic measurement retrieval or via a manual process.

Condition monitoring devices

The condition monitoring functions may be located in different physical devices. Some information may be exposed by a turbine controller device (TCD) while other information may be exposed by an additional condition monitoring device (CMD). Various actors may request to exchange data values located in the TCD and/or CMD. A SCADA device may request data values from a TCD and/or CMD; a CMD may request data values from a TCD. The information