

INTERNATIONAL STANDARD

IEC 61400-1

Second edition
1999-02

Wind turbine generator systems –

Part 1: Safety requirements

Aérogénérateurs –

*Partie 1:
Spécifications de sécurité*

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

PRICE CODE

XA

For price, see current catalogue

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

WIND TURBINE GENERATOR SYSTEMS –

Part 1: Safety requirements

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
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- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61400-1 has been prepared by IEC technical committee 88: Wind turbine systems.

This second edition of IEC 61400-1 cancels and replaces the first edition published in 1994.

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

FDIS	Report on voting
88/98/FDIS	88/103/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.

Annexes A, B and C form an integral part of this standard.

Annex D is for information only.

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

INTRODUCTION

This International Standard outlines minimum safety requirements for wind turbine generator systems and is not intended for use as a complete design specification or instruction manual.

Any of the requirements of this standard may be waived if it can be suitably demonstrated that the safety of the system is not compromised. Nevertheless this waiver does not apply to clause 6.

Compliance with this standard does not relieve any person, organization, or corporation from the responsibility of observing other applicable regulations.

Withdrawn

WIND TURBINE GENERATOR SYSTEMS –

Part 1: Safety requirements

1 Scope and object

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

This standard is concerned with all subsystems of WTGS such as control and protection mechanisms, internal electrical systems, mechanical systems, support structures and the electrical interconnection equipment.

This standard applies to WTGS with a swept area equal to or larger than 40 m².

This standard should be used together with the appropriate IEC/ISO standards identified in clause 2.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61400. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 61400 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60204-1:1997, *Safety of machinery – Electrical equipment of machines – Part 1: General requirements*

IEC 60364 (all parts), *Electrical installations of buildings*

IEC 60721-2-1:1982, *Classification of environmental conditions – Part 2: Environmental conditions appearing in nature – Temperature and humidity*

IEC 61000-3-2:1998, *Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤16 A per phase)*

IEC 61000-3-3:1994, *Electromagnetic compatibility (EMC) – Part 3-3: Limits – Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current ≤16 A*

IEC 61000-4-2:1995, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test. Basic EMC publication*

IEC 61000-4-3:1995, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-4-4:1995, *Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test. Basic EMC publication*

IEC 61000-4-5:1995, *Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test*

IEC 61024-1:1990, *Protection of structures against lightning – Part 1: General principles*

IEC 61312-1:1995, *Protection against lightning electromagnetic impulse – Part 1: General principles*

ISO 2394:1986, *General principles on reliability for structures*

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