Edition 1.0 2008-04

TECHNICAL SPECIFICATION

Recommendations for small renewable energy and hybrid systems for rural electrification – Part 7: Generators

INTERNATIONAL ELECTROTECHNICAL COMMISSION

PRICE CODE M

ICS 27.160; 27.180

ISBN 2-8318-9671-1

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Part 7: Generators

FOREWORD

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- the required support cannot be obtained for the publication of an International Standard, despite repeated efforts, or
- the subject is still under technical development or where, for any other reason, there is the future but no immediate possibility of an agreement on an International Standard.

Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC 62257-7, which is a technical specification, has been prepared by IEC technical committee 82: Solar photovoltaic energy systems.

This document is based on IEC/PAS 62111; it cancels and replaces the relevant parts of IEC/PAS 62111.

This technical specification is to be used in conjunction with the future parts of this series as and when they are published.

The text of this technical specification is based on the following documents:

Enquiry draft	Report on voting
82/492/DTS	82/507/RVC

Full information on the voting for the approval of this technical specification 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 of IEC 62257 series, under the general title: *Recommendations for small renewable energy and hybrid systems for rural electrification,* can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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

- transformed into an International standard;
- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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

INTRODUCTION

The IEC 62257 series of documents intends to provide to different players involved in rural electrification projects (such as project implementers, project contractors, project supervisors, installers, etc.) documents for the setting-up of renewable energy and hybrid systems with a.c. voltage below 500 V, d.c. voltage below 750 V and power below 100 kVA.

These documents are recommendations

– to choose the right system for the right place;

– to design the system;

– to operate and maintain the system.

These documents are focused only on rural electrification, concentrating on but not specific to, developing countries. They must not be considered as all-inclusive to rural electrification. The documents try to promote the use of renewable energies in rural electrification; they do not deal with clean development mechanisms at this time (CO_2 emission, carbon credit, etc.). Further developments in this field could be introduced in future steps.

This consistent set of documents is best considered as a whole with different parts corresponding to items for safety, sustainability of systems and at the lowest life-cycle cost as possible. One of the main objectives is to provide the minimum sufficient requirements, relevant to the field of application, that is, small renewable energy and hybrid off-grid systems.

The purpose of this part of IEC 62257 is to provide project implementers with general information about generators and to highlight the main characteristics relative to the different technologies that can be used.

RECOMMENDATIONS FOR SMALL RENEWABLE ENERGY AND HYBRID SYSTEMS FOR RURAL ELECTRIFICATION –

Part 7: Generators

1 Scope

The purpose of this part of IEC 62257 is to specify the general requirements for generators (maximum power = 100 kVA) in decentralized rural electrification systems.

The aim is to point out the main items that must be considered when selecting, sizing, installing, operating and maintaining this equipment.

This technical specification is a general introduction followed by more specific documents dedicated to the generation technologies which are the most currently used in rural electrification projects.

2 Normative References

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.

IEC/TS 62257-2:2004, *Recommendations for small renewable energy and hybrid systems for rural electrification – Part 2: From requirements to a range of electrification systems*

IEC/TS 62257-4, *Recommendations for small renewable energy and hybrid systems for rural electrification – Part 4: System selection and design*

IEC/TS 62257-5, *Recommendations for small renewable energy and hybrid systems for rural electrification – Part 5: Protection against electric hazards*

IEC/TS 62257-7-1, *Recommendations for small renewable energy and hybrid systems for rural electrification – Part 7-1: Generators – Photovoltaic arrays*

IEC/TS 62257-7-3, *Recommendations for small renewable energy and hybrid systems for rural electrification – Part 7-3: Generating set – Selection of generating sets for rural electrification systems*

IEC/TS 62257-9-1[1], *Recommendations for small renewable energy and hybrid systems for rural electrification – Part 9-1: Micropower systems*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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1 To be published.