PD IEC/TS 62257-9-4:2016

BSI Standards Publication

Recommendations for renewable energy and hybrid systems for rural electrification

Part 9–4: Integrated systems — User installation

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National foreword

This Published Document is the UK implementation of IEC/TS 62257-9-4:2016. It supersedes DD IEC/TS 62257-9-4:2006 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GEL/82, Photovoltaic Energy Systems.

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

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Recommendations for renewable energy and hybrid systems for rural electrification –
Part 9-4: Integrated systems – User installation

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CONTENTS

FOREWORD....4
INTRODUCTION....6
1 Scope....7
2 Normative reference....7
3 Terms and definitions....8
4 General considerations....9
4.1 General....9
4.2 Installation limits....9
4.3 User interface....9
5 Protection against electric shock....9
5.1 Requirements for d.c. parts of installation....9
5.2 Requirements for a.c. parts of installation....9
5.2.1 General....9
5.2.2 Neutral earthing system....9
6 Protection against overcurrent....11
7 Protection against effect of lightning....11
7.1 Installation supplied from a microgrid....11
7.2 Standalone installation....11
8 Selection and erection of electrical equipment....12
8.1 Wiring system....12
8.1.1 General....12
8.1.2 Voltage drops....12
8.1.3 Cross-sectional area of conductors....12
8.1.4 Connections....13
8.1.5 Installation method....14
8.1.6 Selection and erection of wiring systems in relation to external influences....15
8.1.7 Specific rules to wiring systems buried in earth....17
8.1.8 Circuits identification....18
8.2 Isolation and switching....18
8.2.1 Overcurrent protective devices....18
8.2.2 Residual current devices....18
8.3 Surge protective devices....18
8.4 Earthing arrangement, protective conductors and protective bonding....18
8.5 User interface....18
9 Verification....19
9.1 Pre-commissioning checks....19
9.1.1 General information....19
9.1.2 Verification by inspection....19
9.1.3 Verification by tests....20
10 Operation and maintenance....20
Annex A (informative) Maximum possible length of circuits with different cables and conductors to handle maximum voltage drops (ambient temperature 30 °C)....21

Figure 1 – Installation limits....9

AVA Documents
Document Sharing Hub
Full document details: PD IEC/TS 62257-9-4:2016

Figure 2 – Protection of persons in an installation supplied from a microgrid according to a TN-C-S system 10
Figure 3 – Protection of persons in a combined d.c. and a.c. system 11
Figure A.1 – Maximum possible length of circuit as a function of current for a voltage drop of 3 % in a.c. system in a cable HO5VVF 22
Figure A.2 – Maximum possible length of circuit as a function of current for a voltage drop of 15 % in d.c. system in a cable 1000RO2V 23

Table 1 – Maximum design current of circuits depending on voltages 11
Table 2 – Maximum acceptable voltage drop values in installations 12
Table 3 – Cross-sectional area for copper conductors in fixed installations 13
Table 4 – Selection of wiring systems 14
Table 5 – Installation of wiring systems 14
Table 6 – Fuses/circuit breakers rating and selection for overcurrent protection 18

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Document Sharing Hub
Full document details: PD IEC/TS 62257-9-4:2016

INTERNATIONAL ELECTROTECHNICAL COMMISSION

RECOMMENDATIONS FOR RENEWABLE ENERGY AND HYBRID SYSTEMS FOR RURAL ELECTRIFICATION –

Part 9-4: Integrated systems – User installation

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 62257-9-4, which is a technical specification, has been prepared by IEC technical committee 82: Solar photovoltaic energy systems.

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This second edition cancels and replaces the first edition issued in 2006. It constitutes a technical revision.

The main technical changes with regard to the previous edition are as follows:

- Changing the voltage range covered by the technical specification to a.c. nominal voltage below 1 000 V and d.c. nominal voltage below 1 500 V (introduction).
- Including 240 V and 220 V 1-Ø in the voltage levels (scope).
- Introduced requirement that conductor used for lightning protection must be minimum 16 mm^2 (7.2).

This part of IEC 62257 is to be used in conjunction with the IEC 62257 series.

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

Enquiry draft	Report on voting
82/1031/DTS	82/1090/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 document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62257 series, published under the general title *Recommendations for renewable energy and hybrid systems for rural electrification*, can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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.

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INTRODUCTION

The IEC 62257 series 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. nominal voltage below 1 000 V, and d.c. nominal voltage below 1 500 V.

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 should 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 mechanisms developments 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.

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RECOMMENDATIONS FOR RENEWABLE ENERGY AND HYBRID SYSTEMS FOR RURAL ELECTRIFICATION –

Part 9-4: Integrated systems – User installation

1 Scope

This part of IEC 62257, which is a technical specification, specifies the general requirements for the design and the implementation of a user's installation.

This part of IEC 62257 applies to single phase user's electrical installations with maximum power of 500 VA, in Decentralized Rural Electrification Systems (DRES).

NOTE For installations above 500 VA in decentralized electrification systems, IEC TS 62257-5 applies.

This part of IEC 62257 is applicable to installations supplied by an a.c microgrid (120 V or 220 V or 230 V or 240 V) and to installations encompassing their own single-unit a.c. micropower plant (120 V or 220 V or 230 V or 240 V) or d.c micropower plant (12 V or 24 V).

The part of IEC 62257 applies neither to the electric power production and distribution installations described in the clauses concerning micropower plants and microgrids, nor to user electrical equipment. It details the rules governing the design and construction of consumer’s electrical installations for the purpose of ensuring the safety of persons and property, and satisfactory operation in accordance with the purpose for which the installations are designed.

It applies to new installations and modifications of existing installations.

2 Normative reference

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.

IEC 60269 (all parts), *Low-voltage fuses*

IEC 60364-5-52, *Electrical installations of buildings – Part 5-52: Selection and erection of electrical equipment – Wiring systems*

IEC 62257 (all parts), *Recommendations for renewable energy and hybrid systems for rural electrification*

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

IEC TS 62257-7 (all parts), *Recommendations for renewable energy and hybrid systems for rural electrification – Part 7: Generators*

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

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