PD IEC/TS 62257-9-3:2016

BSI Standards Publication

Recommendations for renewable energy and hybrid systems for rural electrification

Part 9-3: Integrated systems — User interface

Documents
Document Sharing Hub

Full document details: PD IEC/TS 62257-9-3:2016

National foreword

This Published Document is the UK implementation of IEC/TS 62257-9-3:2016. It supersedes DD IEC/TS 62257-9-3:2006 which is withdrawn.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.

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

© The British Standards Institution 2016.
Published by BSI Standards Limited 2016

ISBN 978 0 580 91981 7
ICS 27.160; 27.180

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

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 October 2016.

Amendments/corrigenda issued since publication

Date	Text affected

Documents
Document Sharing Hub

Full document details: PD IEC/TS 62257-9-3:2016

IEC TS 62257-9-3

Edition 2.0 2016-09

TECHNICAL SPECIFICATION

colour inside

Recommendations for renewable energy and hybrid systems for rural electrification –
Part 9-3: Integrated systems – User interface

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 27.160

ISBN 978-2-8322-3587-4

Warning! Make sure that you obtained this publication from an authorized distributor.

® Registered trademark of the International Electrotechnical Commission

Documents
Document Sharing Hub

Full document details: PD IEC/TS 62257-9-3:2016

CONTENTS

FOREWORD....3
INTRODUCTION....5
1 Scope....6
2 Normative reference....6
3 Terms and definitions....7
4 Electrical characteristics....8
4.1 Equipment....8
4.2 System voltages....9
5 Functional description....9
6 Design and erection....10
6.1 System earthing....10
6.2 Implementation of interface functions....10
6.2.1 Function A: connection to electricity sources....10
6.2.2 Function B: isolation....10
6.2.3 Function C: protection against direct and indirect contact....10
6.2.4 Function D: protection against overcurrents....11
6.2.5 Function E: contract management....11
6.2.6 Function F: earthing....11
6.2.7 Function G: distribution of circuits....11
6.3 Insulation requirements....11
6.4 Selection of electrical equipment....11
6.5 Housing....11
6.6 Protection against fraudulent use....11
7 Information to be given and marking....12
8 Verification and acceptance....12
8.1 General....12
8.2 Verification by inspection....12
8.3 Commissioning tests....13

Figure 1 – General configuration of an electrification system....6
Figure 2 – Interface for user installations supplied from an a.c. or a d.c. source....9
Figure 3 – Interface for user installations supplied locally from a.c. or d.c. sources (not from a microgrid)....10

Table 1 – Functions ensured by various types of user interfaces....9

Documents
Document Sharing Hub
Full document details: PD IEC/TS 62257-9-3:2016

INTERNATIONAL ELECTROTECHNICAL COMMISSION

RECOMMENDATIONS FOR RENEWABLE ENERGY AND HYBRID SYSTEMS FOR RURAL ELECTRIFICATION –

Part 9-3: Integrated systems – User interface

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.
2) The formal decisions or agreements of 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 IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

The main task of IEC technical committees is to prepare International Standards. In exceptional circumstances, a technical committee may propose the publication of a technical specification when

- 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 62257-9-3, which is a technical specification, has been prepared by IEC technical committee 82: Solar photovoltaic energy systems.

Documents
Document Sharing Hub

Full document details: PD IEC/TS 62257-9-3:2016

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).
- Deleted below 100 kVA from upper limit.
- Including 240 V and 220 V 1-Ø in the voltage levels (scope).
- Deleted the terms microgrid and micropowerplants from terms and definitions.
- Stated the requirement for segregation between a.c. and d.c circuits in housing (6.5).
- Stated that the protection devices for overcurrent are always accessible (6.6).

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

Enquiry draft	Report on voting
82/1030/DTS	82/1089/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 part of IEC 62257-9 is to be used in conjunction with the IEC 62257 series.

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.

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.

Documents
Document Sharing Hub

Full document details: PD IEC/TS 62257-9-3:2016