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BSI Standards Publication

Renewable energy and hybrid systems for rural electrification

Part 9-7: Recommendations for selection of inverters

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National foreword

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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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CONTENTS

FOREWORD 4
1 Scope 6
2 Normative references 6
3 Terms and definitions 7
4 Overview 7
5 System architecture and inverter selection 8
6 General considerations 8
6.1 Overview 8
6.2 IP rating 8
6.3 Ambient temperature 8
6.4 Altitude 9
6.5 Direct sunlight 9
6.6 Efficiency 9
6.7 No-load and stand-by power requirements 9
6.8 Ventilation requirements 9
6.9 Earthing arrangements 9
6.10 Waveform quality 9
6.11 Compatibility with loads that produce significant harmonics 9
6.12 Electromagnetic interference 10
6.13 Load growth 10
6.14 Protection 10
7 Variable speed drives and T1l-c systems – REN systems operating with no storage, DC source to AC application 10
7.1 General 10
7.2 Characteristics of the inverter 11
7.2.1 Frequency control 11
7.2.2 MPPT 11
7.3 Sizing of the inverter 11
7.3.1 General 11
7.3.2 AC voltage 12
7.3.3 AC current 12
7.3.4 DC voltage 12
7.3.5 DC current 12
7.4 VFD standards 12
7.5 Variations on the architecture 12
8 Uni-directional grid creating inverters that work with batteries – Type T2l systems – REN production with energy storage 12
8.1 General 12
8.2 Characteristics of the inverter 13
8.2.1 Grid creation 13
8.3 Sizing of the inverter 14
8.3.1 Input DC voltage 14
8.3.2 Input DC current 14
8.3.3 AC current and power 14
8.3.4 AC voltage 14
8.3.5 Power factor handling range 14
8.4 Variations on the architecture 14

Documents
Document Sharing Hub
Full document details: PD IEC TS 62257-9-7:2019

9 Uni-directional inverters that synchronize to the grid – Type T3I systems – REN and diesel production without energy storage 15
9.1 General 15
9.2 Characteristics of the inverter 16
9.2.1 General 16
9.2.2 Grid synchronizing 16
9.2.3 MPPT tracking 16
9.2.4 Active power control 16
9.2.5 Grid support 16
9.3 Sizing of the inverter 16
9.3.1 Input DC voltage 16
9.3.2 Input DC current 17
9.3.3 Output AC current and power 17
9.4 Variations on the architecture 17
10 Bi-directional grid creating inverters that work with batteries – Type T4I systems, RE and diesel with energy storage 17
10.1 General 17
10.2 Characteristics of the inverter 18
10.2.1 Grid creation 18
10.2.2 Battery management 18
10.2.3 Frequency modulation 18
10.2.4 Master-slave 19
10.2.5 Reactive power control 19
10.3 Sizing the inverter 19
10.3.1 General 19
10.3.2 Input DC voltage 19
10.3.3 Input DC current 19
10.3.4 Output AC voltage 19
10.3.5 Output AC current 19
10.4 Variations on the architecture 20

Figure 1 – Type T1I-c system – DC to AC with no batteries 11
Figure 2 – Type T2I system – DC to AC with batteries 13
Figure 3 – Type T3I system – DC to AC with diesel but no batteries 15
Figure 4 – Type T4I system – DC to AC with diesel and batteries 18

Table 1 – Types of inverter and system architecture it is applicable to 8

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RENEWABLE ENERGY AND HYBRID SYSTEMS FOR RURAL ELECTRIFICATION –

Part 9-7: Recommendations for selection of inverters

FOREWORD

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- 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 TS 62257-9-7, which is a Technical Specification, has been prepared by IEC technical committee 82: Solar photovoltaic energy systems.

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The text of this Technical Specification is based on the following documents:

Enquiry draft	Report on voting
82/1473/DTS	82/1546A/RVDTS

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.

This part of IEC 62257 is to be used in conjunction with IEC 62257 (all parts).

A list of all parts in the IEC 62257 series, published under the general title *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 document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- 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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RENEWABLE ENERGY AND HYBRID SYSTEMS FOR RURAL ELECTRIFICATION –

Part 9–7: Recommendations for selection of inverters

1 Scope

This part of IEC 62257, which is a technical specification, specifies the criteria for selecting and sizing inverters suitable for different off-grid applications integrating solar as an energy source.

As well as off-grid system, this document can also apply to inverters where a utility grid connection is available as a backup for charging batteries, but it is not intended to cover applications in which inverters synchronize and inject energy back into a utility grid, even though this capability may incidentally be a part of the functionality of the inverters.

Single and multi-phase applications are included.

2 Normative references

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 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 61683, *Photovoltaic systems – Power conditioners – Procedure for measuring efficiency*

IEC 61800, *(all parts), Adjustable speed electrical power drive systems*

IEC 61800-3, *Adjustable speed electrical power drive systems – Part 3: EMC requirements and specific test methods*

IEC 61800-5-1, *Adjustable speed electrical power drive systems – Part 5-1: Safety requirements – Electrical, thermal and energy*

IEC TS 61836, *Solar photovoltaic energy systems – Terms, definitions and symbols*

IEC 62109, (*all parts), Safety of power converters for use in photovoltaic power systems*

IEC 62109-1, *Safety of power converters for use in photovoltaic power systems – Part 1: General requirements*

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

IEC TS 62257-7-1:2010, *Recommendations for small renewable energy and hybrid systems for rural electrification – Part 7-1: Generators – Photovoltaic generators*

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