IEC 60364-7-712

Edition 2.0 2017-04

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Low voltage electrical installations –
Part 7-712: Requirements for special installations or locations – Solar photovoltaic (PV) power supply systems

Installations électriques basse tension –
Partie 7-712: Exigences applicables aux installations ou emplacements spéciaux – Installations d'énergie solaire photovoltaïque (PV)

IEC 60364-7-712:2017-04(en-fr)

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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.

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International Standard IEC 60364-7-712 has been prepared by IEC technical committee 64: Electrical installations and protection against electric shock.

This second edition cancels and replaces the first edition, published in 2002. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) The technical content has been extensively revised and expanded, taking into account experience gained in the construction and operation of PV installations, and developments made in technology, since the first edition of this standard was published.

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

FDIS	Report on voting
64/2154/FDIS	64/2163/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.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

Attention is drawn to the co-existence of IEC 60364-7-712 and IEC 62548 standards. Both standards have been developed in close coordination by different technical committees.

A list of all parts in the IEC 60364 series, published under the general title *Low voltage electrical installations*, can be found on the IEC website.

The reader's attention is drawn to the fact that Annex F lists all of the “in-some-country” clauses on differing practices of a less permanent nature relating to the subject of this standard.

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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INTRODUCTION

For the purpose of this part of IEC 60364 (IEC 60364-7-712), the requirements of the general parts 1 to 6 of IEC 60364 apply.

The IEC 60364-7-7XX parts of IEC 60364 contain particular requirements for special installations or locations which are based on the requirements of the general parts of IEC 60364 (IEC 60364-1 to IEC 60364-6). These IEC 60364-7-7XX parts are considered in conjunction with the requirements of the general parts.

The particular requirements of this part of IEC 60364 supplement, modify or replace certain of the requirements of the general parts of IEC 60364 being valid at the time of publication of this part. The absence of reference to the exclusion of a part or a clause of a general part means that the corresponding clauses of the general part are applicable (undated reference).

Requirements of other 7XX parts being relevant for installations covered by this part also apply. This part may therefore also supplement, modify or replace certain of these requirements valid at the time of publication of this part.

The clause numbering of this part follows the pattern and corresponding references of IEC 60364. The numbers following the particular number of this part are those of the corresponding parts, or clauses of the other parts of the IEC 60364 series, valid at the time of publication of this part, as indicated in the normative references of this document (dated reference). If requirements or explanations additional to those of the other parts of the IEC 60364 series are needed, the numbering of such items appears as 712.101, 712.102, 712.103, etc.

Numbering of figures and tables takes the number of this part followed by a sequential number. For annexes, the numbering of figures and tables takes the letter of the annex, the number of the part and a sequential number.

In the case where new or amended general parts with modified numbering were published after this part was issued, the clause numbers referring to a general part in this 712 part may no longer align with the latest edition of the general part. Dated references should be observed.

LOW VOLTAGE ELECTRICAL INSTALLATIONS –

Part 7-712: Requirements for special installations or locations – Solar photovoltaic (PV) power supply systems

712 Solar photovoltaic (PV) power supply installations

NOTE The abbreviation “PV” is used for “Photovoltaic”. Photovoltaic installations are, hereafter, known as PV installations.

712.1 Scope

This part of IEC 60364 applies to the electrical installation of PV systems intended to supply all or part of an installation.

The equipment of a PV installation, like any other item of equipment, is dealt with only so far as its selection and application in the installation is concerned.

A PV installation starts from a PV module or a set of PV modules connected in series with their cables, provided by the PV module manufacturer, up to the user installation or the utility supply point (point of common coupling).

Requirements of this document apply to

- PV installations not connected to a system for distribution of electricity to the public,
- PV installations in parallel with a system for distribution of electricity to the public,
- PV installations as an alternative to a system for distribution of electricity to the public,
- appropriate combinations of the above.

This document does not cover the specific installation requirements for batteries or other energy storage methods.

NOTE 1 Additional requirements for PV installations with battery storage capabilities on the DC side are under consideration.

NOTE 2 This document does cover the protection requirements of PV arrays which develop as a result of the use of batteries in PV installations.

For systems using DC-DC converters, additional requirements regarding voltage and current rating, switching, and protective devices can apply. These requirements are under consideration.

The object of this document is to address the design safety requirements arising from the particular characteristics of PV installations. DC systems, and PV arrays in particular, pose some hazards in addition to those derived from conventional AC power installations, including the ability to produce and sustain electrical arcs with currents that are not greater than normal operating currents.

In grid connected PV installations the safety requirements of this document are, however, critically dependent on the PCE associated with PV arrays complying with the requirements of IEC 62109-1 and IEC 62109-2.