

**Battery charge controllers for photovoltaic systems -
Performance and functioning**

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 62509:2011 sisaldab Euroopa standardi EN 62509:2011 ingliskeelset teksti.

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**Battery charge controllers for photovoltaic systems -
Performance and functioning
(IEC 62509:2010)**

Contrôleurs de charge de batteries pour
systèmes photovoltaïques -
Performance et fonctionnement
(CEI 62509:2010)

Leistung und Funktion von Photovoltaik-
Batterieladeregeln
(IEC 62509:2010)

This European Standard was approved by CENELEC on 2011-01-20. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 82/614/FDIS, future edition 1 of IEC 62509, prepared by IEC TC 82, Solar photovoltaic energy systems, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62509 on 2011-01-20.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

This standard is to be used in conjunction with EN 62093.

The following dates were fixed:

- | | | |
|--|-------|------------|
| – latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | 2012-03-02 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2014-01-20 |

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62509:2010 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

**Normative references to international publications
with their corresponding European publications**

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61836	-	Solar photovoltaic energy systems - Terms, definitions and symbols	-	-
IEC 62093	-	Balance-of-system components for photovoltaic systems - Design qualification natural environments	EN 62093	-

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BATTERY CHARGE CONTROLLERS FOR PHOTOVOLTAIC SYSTEMS – PERFORMANCE AND FUNCTIONING

1 Scope

This International Standard establishes minimum requirements for the functioning and performance of battery charge controllers (BCC) used with lead acid batteries in terrestrial photovoltaic (PV) systems. The main aims are to ensure BCC reliability and to maximise the life of the battery. This standard shall be used in conjunction with IEC 62093, which describes test and requirements for intended installation application. In addition to the battery charge control functions, this Standard addresses the following battery charge control features:

- photovoltaic generator charging of a battery,
- load control,
- protection functions,
- interface functions.

This standard does not cover MPPT performance, but it is applicable to BCC units that have this feature.

This standard defines functional and performance requirements for battery charge controllers and provides tests to determine the functioning and performance characteristics of charge controllers. It is considered that IEC 62093 is used to determine the construction requirements for the intended installation which includes but is not limited to aspects such as the enclosure, physical connection sturdiness and safety.

This standard was written for lead acid battery applications. It is not limited in terms of the BCC capacity to which it may be applied, however, the requirements for test equipment when applied to BCC with high voltage or current, for example, greater than 120 V or 100 A, may be difficult to achieve. These approaches may be applicable to other power sources and other battery technologies like Ni-Cd batteries by using the corresponding values of cell voltages.

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

IEC 62093, *Balance-of-system components for photovoltaic systems – Design qualification natural environments*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61836 apply as well as the following.

3.1

battery charge controller (BCC)

an electronic device/s that controls the charging and discharging of the battery in a photovoltaic energy system. The charge control function may be included as a subsystem within another product.