
Stationary lead-acid batteries - Part 11: Vented types - General requirements and methods of tests

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EUROPEAN STANDARD

EN 60896-11

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English version

Stationary lead-acid batteries
Part 11: Vented types -
General requirements and methods of tests
(IEC 60896-11:2002)

Batteries stationnaires au plomb
Partie 11: Batteries au plomb
du type ouvert -
Prescriptions générales
et méthodes d'essai
(CEI 60896-11:2002)

Ortsfeste Blei-Akkumulatoren
Teil 11: Geschlossene Batterien -
Allgemeine Anforderungen und
Prüfverfahren
(IEC 60896-11:2002)

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This European Standard was approved by CENELEC on 2002-12-01. 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 21/572/FDIS, future edition 1 of IEC 60896-11, prepared by IEC TC 21, Secondary cells and batteries, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60896-11 on 2002-12-01.

This European Standard supersedes EN 60896-1:1991 + A2:1992.

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) 2003-09-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2005-12-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annex ZA is normative and annex A is informative.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60896-11:2002 was approved by CENELEC as a European Standard without any modification.

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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 60050-151	- ¹⁾	International Electrotechnical Vocabulary (IEV) Part 151: Electrical and magnetic devices	-	-
IEC 60051	Series	Direct acting indicating analogue electrical measuring instruments and their accessories	EN 60051	Series
IEC 60359	- ¹⁾	Electrical and electronic measurement equipment - Expression of performance	EN 60359	2002 ²⁾
IEC 60417	Series	Graphical symbols for use on equipment	EN 60417	Series
IEC 60485	- ¹⁾	Digital electronic d.c. voltmeters and d.c. electronic analogue-to-digital converters	-	-

¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

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First edition
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Batteries stationnaires au plomb –

Partie 11:

Batteries au plomb du type ouvert –

Prescriptions générales et méthodes d'essai

iTeh STANDARD PREVIEW

Stationary lead-acid batteries –

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Vented types –

General requirements and methods of tests

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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For price, see current catalogue*

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

STATIONARY LEAD-ACID BATTERIES –

Part 11: Vented types –
General requirements and methods of tests

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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 the 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 National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60896-11 has been prepared by IEC technical committee 21: Secondary cells and batteries.

This first edition of IEC 60896-11 cancels and replaces IEC 60896-1 (first edition) published in 1987 and its amendments 1 (1988) and 2 (1990), and constitutes a technical revision.

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

FDIS	Report on voting
21/572/FDIS	21/579/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 3.

Annex A is for information only.

This standard constitutes part 11 of the IEC 60896 series, published under the general title *Stationary lead acid batteries*. At the time of the publication of this part, the following parts had already been published or were in the process of being published:

- Part 11: *Vented types – General requirements and methods of tests* (this part)
- Part 21: *Valve regulated types – Functional characteristics and methods of test* ¹.

The committee has decided that this publication remains valid until 2008. At this date, in accordance with the committee's decision, the publication will be

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

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¹ To be published. This standard will replace IEC 60896-2:1995, *Stationary lead-acid batteries – General requirements and methods of test – Part 2: Valve regulated types*.

STATIONARY LEAD-ACID BATTERIES –

Part 11: Vented types –

General requirements and methods of tests

1 Scope and object

This part of IEC 60896 is applicable to lead-acid cells and batteries which are designed for service in fixed locations (i.e. not habitually to be moved from place to place) and which are permanently connected to the load and to the d.c. power supply. Batteries operating in such applications are called “stationary batteries”.

Any type or construction of lead-acid battery may be used for stationary battery applications. This part 11 of the standard is applicable to vented types only.

The object of this standard is to specify general requirements and the main characteristics, together with corresponding test methods associated with all types and construction modes of lead-acid stationary batteries, excluding valve-regulated types.

Recommendations on the use of tests for stationary battery application are given in Table A.1.

Recommendations relating the type of cell or monobloc to the use of tests are given in Table A.2.

Statements and claims of basic performance data by the manufacturer shall correspond to those tests.

The tests may also be used for type qualification.

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 60050(151), *International Electrotechnical Vocabulary (IEV) – Part 151: Electrical and magnetic devices*

IEC 60051 (all parts), *Direct acting indicating analogue electrical measuring instruments and their accessories*

IEC 60359, *Electrical and electronic measurement equipment – Expression of performance*

IEC 60417 (all parts), *Graphical symbols for use on equipment*

IEC 60485, *Digital electronic d.c. voltmeters and d.c. electronic analogue-to-digital converters*