



# SLOVENSKI STANDARD

## SIST EN 60896-22:2004

01-maj-2004

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### Stationary lead-acid batteries - Part 22: Valve regulated types - Requirements

Stationary lead-acid batteries -- Part 22: Valve regulated types - Requirements

Ortsfeste Blei-Akkumulatoren -- Teil 22: Verschlussene Bauarten - Anforderungen

Batteries stationnaires au plomb -- Part 22: Types étanches à soupapes - Exigences

Ta slovenski standard je istoveten z: **EN 60896-22:2004**

[SIST EN 60896-22:2004](https://standards.iteh.ai/catalog/standards/sist/58244609-077e-428d-ad71-9ef593a491f5/sist-en-60896-22-2004)

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#### **ICS:**

29.220.20	Kislinski sekundarni člani in baterije	Acid secondary cells and batteries
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**SIST EN 60896-22:2004**

**en**

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EUROPEAN STANDARD

**EN 60896-22**

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2004

ICS 29.220.20

English version

**Stationary lead-acid batteries**  
**Part 22: Valve regulated types –**  
**Requirements**  
(IEC 60896-22:2004)

Batteries stationnaires au plomb  
Part 22: Types étanches à soupapes -  
Exigences  
(CEI 60896-22:2004)

Ortsfeste Blei-Akkumulatoren  
Teil 22: Verschlussene Bauarten -  
Anforderungen  
(IEC 60896-22:2004)

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This European Standard was approved by CENELEC on 2004-03-01. 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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, 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 21/595/FDIS, future edition 1 of IEC 60896-22, prepared by IEC TC 21, Secondary cells and batteries, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60896-22 on 2004-03-01.

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) 2004-12-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2007-03-01

Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 60896-22:2004 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60050-826	NOTE	Harmonized as HD 384.2 S1:1986 (not modified).
IEC 60068-2-32	NOTE	Harmonized as EN 60068-2-32:1993 (not modified).
IEC 60095	NOTE	Harmonized in EN 60095 series (partly modified).
IEC 60359	NOTE	Harmonized as EN 60359:2002 (not modified).
IEC 60695-11-10	NOTE	Harmonized as EN 60695-11-10:1999 (not modified).
IEC 60707	NOTE	Harmonized as EN 60707:1999 (not modified).
IEC 60950-1	NOTE	Harmonized as EN 60950-1:2001 (modified).
IEC 61056	NOTE	Harmonized in EN 61056 series (not modified).
IEC 61427	NOTE	Harmonized as EN 61427:2001 (not modified).
ISO 9000	NOTE	Harmonized as EN ISO 9000:2000 (not modified).
ISO 9001	NOTE	Harmonized as EN ISO 9001:1994 (not modified).
ISO 9001	NOTE	Harmonized as EN ISO 9001:2000 (not modified).

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## 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 60896-21	2004	Stationary lead-acid batteries Part 21: Valve regulated types - Methods of test	EN 60896-21	2004
ISO 1043-1	2001	Plastics - Symbols and abbreviated terms Part 1: Basic polymers and their special characteristics	EN ISO 1043-1	2001

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# INTERNATIONAL STANDARD

**IEC**  
**60896-22**

First edition  
2004-02

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## Stationary lead-acid batteries –

### Part 22: Valve regulated types – Requirements

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Международная Электротехническая Комиссия

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**STATIONARY LEAD-ACID BATTERIES –****Part 22: Valve regulated types –  
Requirements**

## 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 60896-22 has been prepared by IEC technical committee 21: Secondary cells and batteries

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

FDIS	Report on voting
21/595/FDIS	21/601/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.

This standard constitutes Part 22 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:

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

Part 21: Valve regulated types – Methods of test

Part 22: Valve regulated types – Requirements

The committee has decided that the contents of this publication will remain unchanged until 2009. At this date, the publication will be

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

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## STATIONARY LEAD-ACID BATTERIES –

### Part 22: Valve regulated types – Requirements

#### 1 Scope

This part of IEC 60896 applies to all stationary lead-acid cells and monobloc batteries of the valve regulated type for float charge applications, (i.e. permanently connected to a load and to a d.c. power supply), in a static location (i.e. not generally intended to be moved from place to place) and incorporated into stationary equipment or installed in battery rooms for use in telecom, uninterruptible power supply (UPS), utility switching, emergency power or similar applications.

The objective of this part of IEC 60896 is to assist the specifier in the understanding of the purpose of each test contained within IEC 60896-21 and provide guidance on a suitable requirement that will result in the battery meeting the needs of a particular industry application and operational condition. This standard is used in conjunction with the common test methods described in IEC 60896-21 and is associated with all types and construction of valve regulated stationary lead-acid cells and monoblocs used in standby power applications.

This part of IEC 60896 does not apply to lead-acid cells and batteries used for vehicle engine starting applications (IEC 60095 series), solar photovoltaic applications (IEC 61427), or general purpose applications (IEC 61056 series).

#### 2 Normative references

[SIST EN 60896-22:2004](https://standards.iteh.ai/catalog/standards/sist/58244609-077e-428d-ad71-9ef593a491f5/sist-en-60896-22-2004)

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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 60896-21:2004, *Stationary lead-acid batteries – Part 21: Valve regulated types – Methods of test*)

ISO 1043-1, *Plastics – Symbols and abbreviated terms – Part 1: Basic polymers and their special characteristics*

#### 3 Terms and definitions

For the purposes of this document, the following definitions apply.

##### 3.1

##### **accuracy (of a measuring instrument)**

quality which characterizes the ability of a measuring instrument to provide an indicated value close to a true value of the measurand

[IEV 311-06-08]

NOTE Accuracy is all the better when the indicated value is closer to the corresponding true value.

**3.2****accuracy class**

category of measuring instruments, all of which are intended to comply with a set of specifications regarding uncertainty

[IEV 311-06-09]

**3.3****ambient temperature**

temperature of the medium in the immediate vicinity of a cell or battery

[IEV 486-03-12]

**3.4****ampere-hour**

quantity of electricity or a capacity of a battery obtained by integrating the discharge current in ampere with respect to time in hours

NOTE One ampere-hour equals 3 600 coulombs.

**3.5****secondary battery**

two or more secondary cells connected together and used as a source of electrical energy

[IEV 486-01-03]

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**3.6****monobloc battery**

secondary battery in which the plate packs are fitted in a multi-compartment container

[IEV 486-01-17]

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**3.7****floating battery**

secondary battery whose terminals are permanently connected to a source of constant voltage sufficient to maintain the battery approximately fully charged, intended to supply a circuit, if the normal supply is temporarily interrupted

[IEV 486-04-10]

**3.8****battery capacity**

quantity of electricity or electrical charge which a fully charged battery can deliver under specified conditions

NOTE The SI unit for electric charge is the coulomb (1 C = 1 A·s) but in practice, battery capacity is expressed in ampere-hours (Ah).

[IEV 486-03-01]

**3.9****charge**

operation during which a secondary battery receives from an external circuit electrical energy, which is converted into chemical energy

[IEV 486-01-11]

NOTE A charge is defined by its maximum voltage, current and duration.