SLOVENSKI STANDARD
SIST EN IEC 62984-3:2020

01-november-2020

Visokotemperaturne sekundarne baterije - 3. del: Natrijeve baterije - Zahtevane lastnosti in preskusi

High Temperature secondary Batteries - Part 3: Sodium-based Batteries - Performance requirements and tests

Batteries d'accumulateur à haute temperature - Partie 3: Prescriptions de performance et essais

Ta slovenski standard je istoveten z: EN IEC 62984-3:2020

ICS:

29.220.20	Kislinski sekundarni členi in baterije	Acid secondary cells and batteries

SIST EN IEC 62984-3:2020 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62984-3

May 2020

ICS 29.220.20

English Version

High-temperature secondary batteries - Part 3: Sodium-based batteries - Performance requirements and tests (IEC 62984-3:2020)

Batteries d'accumulateurs à haute température - Partie 3: Batteries au sodium - Exigences et essais relatifs aux qualités de fonctionnement (IEC 62984-3:2020)

Hochtemperatur-Sekundärbatterien - Teil 3: Natrium-basierte Batterien - Leistungsanforderungen und Prüfungen (IEC 62984-3:2020)

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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CENELEC

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN IEC 62984-3:2020 E

European foreword

The text of document 21/1040/FDIS, future edition 1 of IEC 62984-3, prepared by IEC/TC 21 "Secondary cells and batteries" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62984-3:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-02-21
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-05-21

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Endorsement notice

The text of the International Standard IEC 62984-3:2020 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 60952 (series)	NOTE	Harmonized as EN 60952 (series)
IEC 61982 (series)	NOTE	Harmonized as EN 61982 (series)
IEC 62485-2	NOTE	Harmonized as EN IEC 62485-2

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 62902	-	Secondary cells and batteries - Marking symbols for identification of their chemistry	EN IEC 62902	-
IEC 62984-1	2020	High-temperature secondary batteries - Part 1: General requirements	EN IEC 62984-1	2020
IEC 62984-2	2020	High-temperature secondary batteries - Part 2: Safety requirements and tests	EN IEC 62984-2	2020

IEC 62984-3

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

High-temperature secondary batteries –
Part 3: Sodium-based batteries – Performance requirements and tests

Batteries d'accumulateurs à haute température –
Partie 3: Batteries au sodium – Exigences et essais relatifs aux qualités de fonctionnement

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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 62984-3 has been prepared by IEC technical committee 21: Secondary cells and batteries.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
21/1040/FDIS	21/1048/RVD

Full information on the voting for the approval of this International Standard 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 document is to be read in conjunction with IEC 62984-1:2020.

A list of all parts in the IEC 62984 series, published under the general title *High-temperature secondary batteries*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC web site 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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

HIGH-TEMPERATURE SECONDARY BATTERIES –

Part 3: Sodium-based batteries – Performance requirements and tests

1 Scope

This part of IEC 62984 specifies performance requirements and test procedures for high-temperature batteries based on sodium for mobile and/or stationary use and whose rated voltage does not exceed 1 500 V.

Sodium based batteries include sodium-sulphur batteries and sodium-nickel chloride batteries; both are high-temperature batteries and use a solid, sodium conducting electrolyte. Additional information on sodium-based batteries technology, their chemistries and construction are given in Annex B.

This document does not cover aircraft batteries, covered by IEC 60952 (all parts), and batteries for the propulsion of electric road vehicles, covered by IEC 61982 (all parts).

NOTE High-temperature batteries are electrochemical systems whose cells' internal minimum operating temperature is above 100 °C.

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 62902, *Secondary cells and batteries – Marking symbols for identification of their chemistry*

IEC 62984-1:2020, *High-temperature secondary batteries – Part 1: General requirements*

IEC 62984-2:2020, *High-temperature secondary batteries – Part 2: Safety requirements and tests*

3 Terms, definitions, symbols and abbreviated terms

For the purposes of this document, the terms and definitions given in IEC 62984-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1 Battery construction

Refer to IEC 62984-1:2020, 3.1.

3.2 Battery functionality

The definitions of IEC 62984-1:2020, 3.2 and the following apply:

3.2.16
residual capacity
capacity remaining in a cell or battery following a discharge, operation or storage under specific test conditions

[SOURCE: IEC 60050-482:2004, 482-03-16]

3.2.17
discharge voltage
U_d
closed circuit voltage
DEPRECATED: on load voltage
<related to cells or batteries> voltage between the terminals of a cell or battery when being discharged

[SOURCE: IEC 60050-482:2004, 482-03-28, modified – Added symbol, "closed circuit voltage" changed to an admitted term, and term entry updated editorially.]

3.2.18
end-of-discharge voltage
final voltage
cut-off voltage
end-point voltage
specified voltage of a battery at which the battery discharge is terminated

[SOURCE: IEC 60050-482:2004, 482-03-30, modified – Synonyms given as admitted terms, and term entry updated editorially.]

3.2.19
open-circuit voltage
<related to cells or batteries> voltage of a cell or battery when the discharge current is zero

[SOURCE: IEC 60050-482:2004, 482-03-32, modified – Updated editorially.]

3.2.20
battery endurance
numerically defined performance of a battery during a given test simulating specified conditions of service

[SOURCE: IEC 60050-482:2004, 482-03-44]

3.2.21
cycling
<of a cell or battery> set of operations that is carried out on a secondary cell or battery and is repeated regularly in the same sequence

Note 1 to entry: In a secondary battery these operations may consist of a sequence of a discharge followed by a charge or a charge followed by a discharge under specified conditions. This sequence may include rest periods.

[SOURCE: IEC 60050-482:2004, 482-05-28, modified – Updated editorially.]