BS EN IEC 62932-2-2:2020

BSI Standards Publication

Flow battery energy systems for stationary applications

Part 2-2: Safety requirements

bsi.

National foreword

This British Standard is the UK implementation of EN IEC 62932-2-2:2020. It is identical to IEC 62932-2-2:2020.

The UK participation in its preparation was entrusted to Technical Committee PEL/21, Secondary cells and batteries.

A list of organizations represented on this committee can be obtained on request to its secretary.

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English Version

Flow battery energy systems for stationary applications - Part 2-2: Safety requirements (IEC 62932-2-2:2020)

Systèmes de production d'énergie de batteries d'accumulateurs à circulation d'électrolyte pour applications stationnaires - Partie 2-2: Exigences de sécurité (IEC 62932-2-2:2020)

Flussbatterie-Systeme für stationäre Anwendungen - Teil 2-2: Sicherheitsanforderungen (IEC 62932-2-2:2020)

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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

European foreword

The text of document 21/1029/FDIS, future edition 1 of IEC 62932-2-2, prepared by IEC/TC 21 "Secondary cells and batteries" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62932-2-2:2020.

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) 2020-12-24
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-03-24

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The text of the International Standard IEC 62932-2-2:2020 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 60529	NOTE	Harmonized as EN 60529
IEC 60664-1	NOTE	Harmonized as EN 60664-1
IEC 60721-3-2	NOTE	Harmonized as EN IEC 60721-3-2
IEC 60812	NOTE	Harmonized as EN IEC 60812
IEC 60900	NOTE	Harmonized as EN IEC 60900
IEC 61000 (series)	NOTE	Harmonized as EN 61000 (series)
IEC 61025	NOTE	Harmonized as EN 61025
IEC 61660-1	NOTE	Harmonized as EN 61660-1
IEC 61660-2	NOTE	Harmonized as EN 61660-2
IEC 61936-1	NOTE	Harmonized as EN 61936-1
IEC 62282-3-100	NOTE	Harmonized as EN 62282-3-100
IEC 62282-3-300	NOTE	Harmonized as EN 62282-3-300
IEC 62351 (series)	NOTE	Harmonized as EN 62351 (series)
IEC 62477-1	NOTE	Harmonized as EN 62477-1
IEC 62932-2-1	NOTE	Harmonized as EN IEC 62932-2-1[1]
ISO 13850	NOTE	Harmonized as EN ISO 13850

[1] To be published. Stage at the time of publication: FprEN IEC 62932-2-1:2019.

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FLOW BATTERY ENERGY SYSTEMS FOR STATIONARY APPLICATIONS –

Part 2-2: Safety requirements

FOREWORD

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International Standard IEC 62932-2-2 has been prepared by IEC technical committee 21: Secondary cells and batteries, in collaboration with IEC technical committee 105: Fuel cell technologies.

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

FDIS	Report on voting
21/1029/FDIS	21/1035/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.

A list of all parts in the IEC 62932 series, published under the general title *Flow battery energy systems for stationary applications*, 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 website 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.

INTRODUCTION

A flow battery system (FBS) can be utilized in a flow battery energy system (FBES). Such an FBES can consist of:

– a flow battery system,
– a power conversion system,
– other equipment and surroundings.

The FBES is connected to the external power input/output via a point of connection (POC).

This document covers the domain of the FBES, as shown in Figure 1. Energy to the auxiliary systems such as the battery management system (BMS), the battery support system (BSS), and the power conversion system (PCS) may be supplied by one of the following:

a) direct connection to the external power source;
b) the internal power source of the FBES or FBS itself.

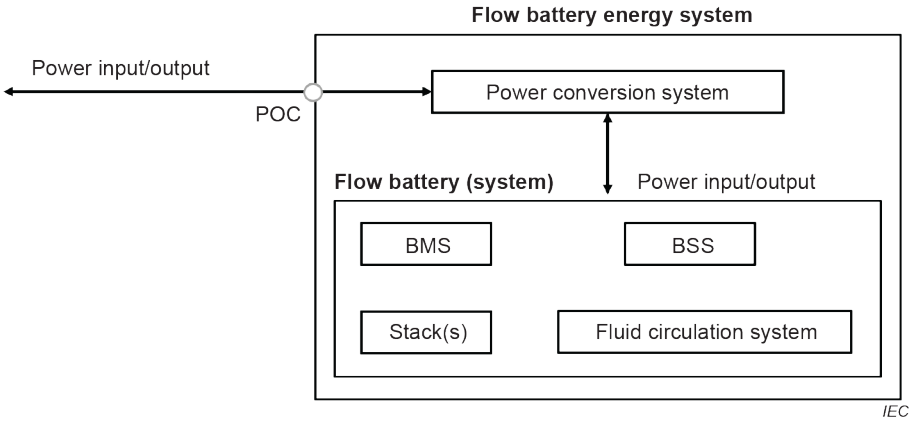

Figure 1 – Flow battery energy system

FLOW BATTERY ENERGY SYSTEMS FOR STATIONARY APPLICATIONS –

Part 2-2: Safety requirements

1 Scope

This part of IEC 62932 applies to flow battery systems for stationary applications and their installations with a maximum voltage not exceeding 1 500 V DC in compliance with IEC 62932-1.

This document defines the requirements and test methods for risk reduction and protection measures against significant hazards relevant to flow battery systems, to persons, property and the environment, or to a combination of them.

This document is applicable to stationary flow battery systems intended for indoor and outdoor commercial and industrial use in non-hazardous (unclassified) areas.

This document covers significant hazards, hazardous situations and events, with the exception of those associated with natural disaster, relevant to flow battery systems, when they are used as intended and under the conditions foreseen by the manufacturer including reasonably foreseeable misuse thereof.

The requirements described in this document are not intended to constrain innovations. When considering fluids, materials, designs or constructions not specifically dealt with in this document, these alternatives are evaluated as to their ability to yield levels of safety equivalent to those specified in this document.

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 60079-10-1, *Explosive atmospheres – Part 10-1: Classification of areas – Explosive gas atmospheres*

IEC 60364-4-41, *Low-voltage electrical installations – Part 4-41: Protection for safety – Protection against electric shock*

IEC 60364-4-43, *Low-voltage electrical installations – Part 4-43: Protection for safety – Protection against overcurrent*

IEC 60364-6, *Low voltage electrical installations – Part 6: Verification*

IEC 61936-1, *Power installations exceeding 1 kV a.c. – Part 1: Common rules*

IEC 62485-2:2010, *Safety requirements for secondary batteries and battery installations – Part 2: Stationary batteries*

IEC 62932-1, *Flow battery energy systems for stationary applications – Part 1: Terminology and general aspects*

ISO 7010, *Graphical symbols – Safety colours and safety signs – Registered safety signs*