Irish Standard
I.S. EN IEC 62932-2-1:2020

Flow battery energy systems for stationary applications - Part 2-1: Performance general requirements and test methods

I.S. EN IEC 62932-2-1:2020

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

I.S. EN IEC 62932-2-1:2020 is the adopted Irish version of the European Document EN IEC 62932-2-1:2020, Flow battery energy systems for stationary applications - Part 2-1: Performance general requirements and test methods

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EUROPEAN STANDARD

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EN IEC 62932-2-1

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English Version

Flow battery energy systems for stationary applications - Part 2-1: Performance general requirements and test methods (IEC 62932-2-1:2020)

Systèmes de production d'énergie de batteries d'accumulateurs à circulation d'électrolyte pour applications stationnaires - Partie 2-1: Exigences générales de performances et méthodes d'essai (IEC 62932-2-1:2020)

Flussbatterie-Systeme für stationäre Anwendungen - Teil 2-1 : Allgemeine Leistungsanforderungen und Prüfverfahren (IEC 62932-2-1:2020)

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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 21/1028/FDIS, future edition 1 of IEC 62932-2-1, prepared by IEC/TC 21 "Secondary cells and batteries" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62932-2-1:2020.

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• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2023-03-24

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

Endorsement notice

The text of the International Standard IEC 62932-2-1:2020 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 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 61427-2	-	Secondary cells and batteries for renewable energy storage - General requirements and methods of test - Part 2: On-grid applications	EN 61427-2	-
IEC 62932-1	-	Flow battery energy systems for stationary applications - Part 1: Terminology and general aspects	-	-
IEC 62932-2-2	-	Flow battery energy systems for stationary applications - Part 2-2 Safety requirements	-	-

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INTERNATIONAL STANDARD

Flow battery energy systems for stationary applications – Part 2-1: Performance general requirements and test methods

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FLOW BATTERY ENERGY SYSTEMS FOR STATIONARY APPLICATIONS –

Part 2-1: Performance general requirements and test methods

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 62932-2-1 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
21/1028/FDIS	21/1036/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 as a main part of 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 or output via a point of connection (POC).

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

– direct connection to the external power source;
– the internal power source of the FBES or FBS itself.

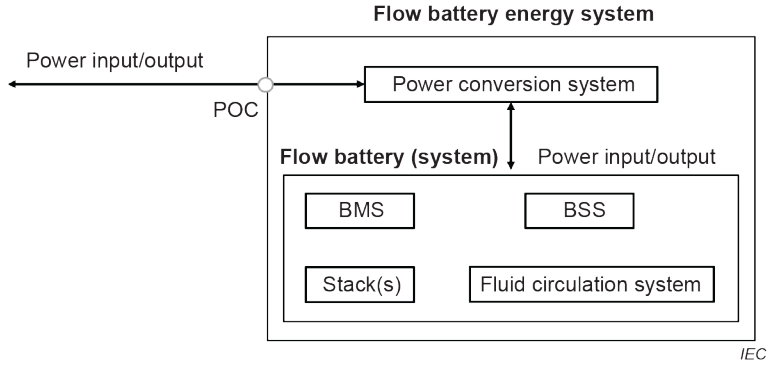

Figure 1 – Flow battery energy system

FLOW BATTERY ENERGY SYSTEMS FOR STATIONARY APPLICATIONS –

Part 2-1: Performance general requirements and test methods

1 Scope

This part of IEC 62932 specifies methods of test and requirements for the flow battery system (FBS) and the flow battery energy system (FBES) for the verification of their performances.

This document is applicable to FBES or FBS which are designed and used for service in stationary locations (i.e. not generally to be moved from place to place).

This document does not cover testing of the system for electromagnetic compatibility (EMC).

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

IEC 62932-2-2, *Flow battery energy systems for stationary applications – Part 2-2: Safety requirements*

IEC 61427-2, *Secondary cells and batteries for renewable energy storage – General requirements and methods of test – Part 2: On-grid applications*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document the terms and definitions given in IEC 62932-1 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.

3.2 Abbreviated terms

BMS battery management system

BSS battery support system

FBES flow battery energy system

FBS flow battery system

PCS power conversion system

POC point of connection

POM point of measurement

TOU test object unit