



BSI Standards Publication

Safety requirements for secondary batteries and battery installations

Part 5: Safe operation of stationary lithium ion batteries

National foreword

This British Standard is the UK implementation of EN IEC 62485-5:2021. It is identical to IEC 62485-5:2020.

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 committee manager.

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English Version

Safety requirements for secondary batteries and battery
installations - Part 5: Safe operation of stationary lithium ion
batteries
(IEC 62485-5:2020)

Exigences de sécurité pour les batteries d'accumulateurs et
les installations de batteries - Partie 5: Fonctionnement en
toute sécurité des batteries ions-lithium stationnaires
(IEC 62485-5:2020)

Sicherheitsanforderungen an sekundäre Batterien und
Batterieanlagen - Teil 5: Sicherer Betrieb von stationären
Lithium-Ionen-Batterien
(IEC 62485-5:2020)

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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

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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) 2021-09-30
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-12-30

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Endorsement notice

The text of the International Standard IEC 62485-5:2020 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 60065	NOTE	Harmonized as EN 60065
IEC 60079-10-1	NOTE	Harmonized as EN 60079-10-1
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IEC 60364-5-54	NOTE	Harmonized as HD 60364-5-54
IEC 60364-7-706	NOTE	Harmonized as HD 60364-7-706
IEC 60695-11-20	NOTE	Harmonized as EN 60695-11-20
IEC 60695-11-10	NOTE	Harmonized as EN 60695-11-10
IEC 60900	NOTE	Harmonized as EN IEC 60900
IEC 60950-1	NOTE	Harmonized as EN 60950-1
IEC 60990	NOTE	Harmonized as EN 60990
IEC 61000-4-2	NOTE	Harmonized as EN 61000-4-2
IEC 61000-6-5	NOTE	Harmonized as EN 61000-6-5
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SAFETY REQUIREMENTS FOR SECONDARY
BATTERIES AND BATTERY INSTALLATIONS –**
Part 5: Safe operation of stationary lithium ion batteries

FOREWORD

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International Standard IEC 62485-5 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
21/1069/FDIS	21/1076/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 62485 series, published under the general title *Safety requirements for secondary batteries and battery installations*, 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.

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.

INTRODUCTION

The described safety requirements comprise the protective measures to protect from hazards generated by electricity and chemical substances when using secondary batteries. In addition measures are described to maintain the functional safety of batteries and battery installations.

For electrical safety (protection against electric shock) under Clause 4, this document refers to IEC 60364-4-41. The pilot function of this document is fully observed by indication of cross-reference numbers of the relevant clauses, but interpretation is given where adoption to direct current (DC) circuits is required.

This document comes into force with the date of publication and applies to all new batteries and battery installations. Previous installations are intended to conform to the existing national standards at the time of installation. In the case of the redesign of old installations, this document applies.

Lithium ion cells/batteries used in stationary industrial applications are intended to fulfil safety requirements in accordance with IEC 62619.

SAFETY REQUIREMENTS FOR SECONDARY BATTERIES AND BATTERY INSTALLATIONS –

Part 5: Safe operation of stationary lithium ion batteries

1 Scope

This part of IEC 62485 applies to the installation of one or more stationary secondary batteries having a maximum aggregate DC voltage of 1 500 V to any DC part of the power network, and describes the principal measures for protections during normal operation or under expected fault conditions against hazards generated from:

- electricity,
- short-circuits,
- electrolyte,
- gas emission,
- fire,
- explosion.

This document provides requirements on safety aspects associated with the installation, use, inspection, and maintenance and disposal of lithium ion batteries used in stationary applications.

This document covers stationary batteries for industrial applications that are installed in separate closed buildings or housings as well as stationary batteries that are installed in public buildings, offices and private residences. This document also covers the maintenance and disposal of lithium ion batteries used in stationary applications.

Batteries containing lithium metal are not covered by this document.

Examples of the main applications are:

- telecommunications,
- power station operation,
- central emergency lighting and alarm systems,
- uninterruptible power supplies (UPS),
- stationary engine starting,
- photovoltaic systems.

In general, the safety requirements for secondary batteries and battery installations – General safety information and definitions are specified for lead-acid, nickel-cadmium and nickel-metal hybrid batteries in accordance with IEC 62485-1.

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.