SVENSK STANDARD SS-EN IEC 62485-2

Fastställd	Utgåva	Sida	Ansvarig kommitté
2019-06-12	1	1 (33+40)	SEK TK 21

Laddningsbara batterier och batterianläggningar – Säkerhet – Del 2: Stationära batterier

Safety requirements for secondary batteries and battery installations – Part 2: Stationary batteries

Som svensk standard gäller europastandarden EN IEC 62845-2:2018. Den svenska standarden innehåller de officiella svenska och engelska språkversionerna av EN IEC 62485-2:2018.

Nationellt förord

Europastandarden EN IEC 62485-2:2018

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 62485-2, First edition, 2010 - Safety requirements for secondary batteries and battery installations - Part 2: Stationary batteries**

utarbetad inom International Electrotechnical Commission, IEC.

Vid skillnader i tolkning har den engelskspråkiga versionen företräde.

Tidigare fastställd svensk standard SS-EN 50272-2, utgåva 1, 2001, gäller ej fr o m 2019-06-12.

ICS 29.220.20; 29.220.30

Denna standard är fastställd av, SEK Svensk Elstandard,
som också kan lämna upplysningar om **sakinnehållet** i standarden.
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Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

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Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

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Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

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EUROPASTANDARD **EN IEC 62485-2**
EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM **Maj 2018**

ICS 29.220.20; 29.220.30 Ersätter EN 50272-2:2001

Svensk språkversion

Laddningsbara batterier och batterianläggningar – Säkerhet – Del 2: Stationära batterier

(IEC 62485-2:2010)

Exigences de sécurité pour les batteries d'accumulateurs et les installations de batteries – Partie 2: Batteries stationnaires (IEC 62485-2:2010)

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

Sicherheitsanforderungen an Sekundär-Batterien und Batterieanlagen – Teil 2: Stationäre Batterien (IEC 62485-2:2010)

Denna svenska standard utgör den svenska språkversionen av europastandarden EN IEC 62485-2:2018. Den har översatts av SEK Svensk Elstandard. Europastandarden antogs av CENELEC 2018-04-09. CENELEC-medlemmarna är förpliktigade att följa fordringarna i CEN/CENELECs Internal Regulations som anger på vilka villkor europastandarden i oförändrat skick ska ges status som nationell standard.

Aktuella förteckningar och bibliografiska referenser som upplyser om nationella standarder kan på begäran erhållas från CENELECs centralsekretariat eller från någon av CENELECs medlemmar.

Europastandarden finns i tre officiella versioner (engelsk, fransk och tysk). En version på något annat språk, översatt under ansvar av en CENELEC-medlem till sitt eget språk och anmäld till CENELECs centralsekretariat, har samma status som de officiella språkversionerna.

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CENELEC

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

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

Ref. Nr. EN IEC 62485-2:2018 Sv

Förord

Detta dokument (EN IEC 62485-2:2018) består av texten i IEC 62485-2:2010 framtagen av IEC TC 21, Secondary cells and batteries.

Följande datum har fastställts:

– senaste datum för överföring av EN till nationell nivå genom utgivning av en motsvarande standard eller genom ikraftsättning	(dop)	2019-04-09
– senaste datum för upphävande av motstridig nationell standard	(dow)	2021-04-09

Detta dokument ersätter EN 50272-2:2001.

Lägg märke till att vissa delar av detta dokument kan omfattas av patenträttigheter. CEN och CENELEC kan inte ansvara för att sådana patenträttigheter identifieras.

Ikraftsättningsmeddelande

Texten i den internationella standarden IEC 62485-2:2010 har av CENELEC fastställts som europastandard utan någon avvikelse.

I bibliografin ska följande anmärkningar läggas till för de angivna standarderna:

IEC 60065	ANM – Harmoniserad som EN 60065.
IEC 60079-10-1:2008	ANM – Harmoniserad som EN 60079-10-1:2009 (ingen ändring).
IEC 60364-1	ANM – Harmoniserad som HD 60364-1.
IEC 60364-4-42	ANM – Harmoniserad som HD 60364-4-42.
IEC 60364-5-54	ANM – Harmoniserad som HD 60364-5-54.
IEC 60364-7-706	ANM – Harmoniserad som HD 60364-7-706.
IEC 60950-1	ANM – Harmoniserad som EN 60950-1.
IEC 60990	ANM – Harmoniserad som EN 60990.

ANM – (sv anm) Ovan nämnda delar av HD 60364 motsvaras i Sverige av Elinstallationsreglerna, SS 436 40 00.

Bilaga ZA
(normativ)

Hänvisning till internationella publikationer med angivna europeiska motsvarigheter

Följande publikationer är nödvändiga vid tillämpningen av denna standard. Beträffande hänvisningar till publikationer gäller den utgåva som anges nedan. Vid odaterade hänvisningar gäller den senaste utgåvan av publikationen (inklusive eventuella ändringar och tillägg).

ANM 1 – När de internationella publikationerna har ändrats genom gemensamma europeiska avvikelser (CENELEC common modifications) angivna med (ändrad), gäller motsvarande EN eller HD.

ANM 2 – Aktuell information om de senaste utgåvorna av de europeiska standarder som listas i denna bilaga finns på: www.cenelec.eu

ANM 3 – (sv anm) Nedan nämnda delar av HD 60364 motsvaras i Sverige av Elinstallationsreglerna, SS 436 40 00.

Publikation	År	Titel	EN/HD	År
IEC 60364-4-41	-	Low-voltage electrical installations – Part 4-41: Protection for safety – Protection against electric shock	HD 60364-4-1	-
IEC 60364-4-43	-	Low voltage electrical installations – Part 4-43: Protection for safety – Protection against overcurrent	HD 60364-4-43	-
IEC 60364-5-53	-	Electrical installations of buildings – Part 5-53: Selection and erection of electrical equipment – Isolation, switching and control	-	-
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
-	-		+ corrigendum May	1993
IEC 60622	2002	Secondary cells and batteries containing alkaline or other non-acid electrolytes – Sealed nickel-cadmium prismatic rechargeable single cells	EN 60622	2003
IEC 60623	2001	Secondary cells and batteries containing alkaline or other non-acid electrolytes – Vented nickel-cadmium prismatic rechargeable single cells	EN 60623	2001
IEC 60664-1	-	Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests	EN 60664-1	-
IEC 60896-11	2002	Stationary lead-acid batteries – Part 11: Vented types - General requirements and methods of tests	EN 60896-11	2003
IEC 60896-21	2004	Stationary lead-acid batteries – Part 21: Valve regulated types - Methods of test	EN 60896-21	2004
IEC 60896-22	2004	Stationary lead-acid batteries – Part 22: Valve regulated types – Requirements	EN 60896-22	2004
IEC 60900	-	Live working – Hand tools for use up to 1 000 V a.c. and 1 500 V d.c.	EN 60900	-
IEC 61140	-	Protection against electric shock – Common aspects for installation and equipment	EN 61140	-

IEC 61340-4-1	-	Electrostatics – Part 4-1: Standard test methods for specific applications – Electrical resistance of floor coverings and installed floors	EN 61340-4-1	-
IEC 61660-1	-	Short-circuit currents in d.c. auxiliary installations in power plants and substations – Part 1: Calculation of short-circuit currents	EN 61660-1	-
IEC 61660-2	-	Short-circuit currents in d.c. auxiliary installations in power plants and substations – Part 2: Calculation of effects	EN 61660-2	-
IEC 62259	2003	Secondary cells and batteries containing alkaline or other non-acid electrolytes – Nickel-cadmium prismatic secondary single cells with partial gas recombination	EN 62259	2004
ISO 3864	Serie	Graphical symbols – Safety colours and safety signs	-	-
IEC/TR 60755	-	General requirements for residual current operated protective devices	-	-

Innehåll

Inledning

De beskrivna säkerhetsfordringarna omfattar åtgärderna till skydd mot risker som härrör från elektricitet, elektrolyt och från explosiva gaser när laddningsbara batterier används. Därutöver beskrivs åtgärder för att upprätthålla den funktionella säkerheten hos batterier och batteriinstallationer.

För elsäkerhet (skydd mot elchock) i avsnitt 4, hänvisar denna standard till IEC 60364-4-41. Den vägledande funktionen hos denna standard följs helt och hållet genom hänvisning till aktuella avsnitt där, men tolkningar har gjorts när det krävts anpassning till förhållanden vid likström (DC).

Denna säkerhetsstandard börjar gälla vid publiceringsdatum och den omfattar alla nya batterier och batteriinstallationer. Äldre installationer är tänkta att uppfylla de nationella standarder som gällde vid tiden för installationen. Vid omkonstruktion av gamla installationer gäller denna standard.

Ventilreglerade blybatterier som används i stationära batteriinstallationer är tänkta att uppfylla säkerhetsfordringarna i enlighet med IEC 60896-21 och IEC 60896-22.

1 Omfattning

Denna del av IEC 62485 gäller för stationära laddningsbara batterier och batterianläggningar med en högsta nominell spänning av 1500 V likström och beskriver de viktigaste åtgärderna till skydd mot risker härrörande från:

– elektricitet
– gasavgivning
– elektrolyt.

Standarden innehåller fordringar avseende säkerhetsaspekter i samband med uppförande, användning, inspektion, underhåll och utrangering.

Den omfattar blybatterier, nickel-kadmiumbatterier och nickel-metallhydridbatterier.

Exempel på viktiga användningsområden är:

– telekommunikation
– kraftverksdrift
– centrala nödbelysnings- och larmanläggningar
– anläggningar för avbrottsfri elförsörjning (UPS)
– start av stationära motorer
– samdrift med solceller.

2 Normativa hänvisningar

Följande standarder är nödvändiga vid tillämpning av denna standard. Beträffande daterade hänvisningar till publikationer gäller den utgåva av som anges nedan. Vid odaterade hänvisningar gäller den senaste utgåvan av publikationen.

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 60364-5-53, *Electrical installations of buildings – Part 5-53: Selection and erection of electrical equipment – Isolation, switching and control*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*

IEC 60622:2002, *Secondary cells and batteries containing alkaline or other non-acid electrolytes –Sealed nickel cadmium prismatic rechargeable single cells*

IEC 60623:2001, *Secondary cells and batteries containing alkaline or other non-acid electrolytes –Vented nickel-cadmium prismatic rechargeable single cells*

IEC 60664-1, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC/TR 60755, *General requirements for residual current operated protective devices*

IEC 60896-11:2002, *Stationary lead-acid batteries – Part 11: Vented types – General requirements and methods of tests*

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

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

IEC 60900, *Live working – Hand tools for use up to 1 000 V a.c. and 1 500 V d.c.*

IEC 61140, *Protection against electric shock – Common aspects for installation and equipment*

IEC 61340-4-1, *Electrostatics – Part 4-1: Standard test methods for specific applications – Electrical resistance of floor coverings and installed floors*

IEC 61660-1, *Short-circuit currents in d.c. auxiliary installations in power plants and substations – Part 1: Calculation of short-circuit currents*

IEC 61660-2, *Short-circuit currents in d.c. auxiliary installations in power plants and substations – Part 2: Calculation of effects*

IEC 62259:2003, *Secondary cells and batteries containing alkaline and other non-acid electrolytes – Nickel cadmium prismatic secondary single cells with partial gas recombination*

ISO 3864 (alla delar), *Graphical symbols – Safety colours and safety signs*

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62485-2

May 2018

ICS 29.220.20; 29.220.30

Supersedes EN 50272-2:2001

English Version

Safety requirements for secondary batteries and battery installations - Part 2: Stationary batteries (IEC 62485-2:2010)

Exigences de sécurité pour les batteries d'accumulateurs et les installations de batteries - Partie 2: Batteries stationnaires
(IEC 62485-2:2010)

Sicherheitsanforderungen an Sekundär-Batterien und Batterieanlagen - Teil 2: Stationäre Batterien
(IEC 62485-2:2010)

This European Standard was approved by CENELEC on 2018-04-09. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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 62485-2:2018 E

SEK Svensk Elstandard

SS-EN IEC 62485-2, utg 1:2019

European foreword

This document (EN IEC 62485-2:2018) consists of the text of IEC 62485-2:2010 prepared by IEC/TC 21 "Secondary cells and batteries".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2019-04-09
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2021-04-09

This document supersedes EN 50272-2:2001.

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 62485-2:2010 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 60079-10-1:2008	NOTE	Harmonized as EN 60079-10-1:2009 (not modified).
IEC 60364-1	NOTE	Harmonized as HD 60364-1.
IEC 60364-4-42	NOTE	Harmonized as HD 60364-4-42.
IEC 60364-5-54	NOTE	Harmonized as HD 60364-5-54.
IEC 60364-7-706	NOTE	Harmonized as EN 60364-7-706.
IEC 60950-1	NOTE	Harmonized as EN 60950-1.
IEC 60990	NOTE	Harmonized as EN 60990.

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 60364-4-41	-	Low-voltage electrical installations -- Part 4-41: Protection for safety - Protection against electric shock	HD 60364-4-41	-
IEC 60364-4-43	-	Low voltage electrical installations -- Part 4-43: Protection for safety - Protection against overcurrent	HD 60364-4-43	-
IEC 60364-5-53	-	Electrical installations of buildings -- Part 5-53: Selection and erection of electrical equipment - Isolation, switching and control		-
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
-	-		+ corrigendum May	1993
IEC 60622	2002	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Sealed nickel-cadmium prismatic rechargeable single cells	EN 60622	2003
IEC 60623	2001	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Vented nickel-cadmium prismatic rechargeable single cells	EN 60623	2001
IEC 60664-1	-	Insulation coordination for equipment within low-voltage systems -- Part 1: Principles, requirements and tests	EN 60664-1	-
IEC 60896-11	2002	Stationary lead-acid batteries -- Part 11: Vented types - General requirements and methods of tests	EN 60896-11	2003
IEC 60896-21	2004	Stationary lead-acid batteries -- Part 21: Valve regulated types - Methods of test	EN 60896-21	2004
IEC 60896-22	2004	Stationary lead-acid batteries -- Part 22: Valve regulated types - Requirements	EN 60896-22	2004
IEC 60900	-	Live working - Hand tools for use up to 1 000 V a.c. and 1 500 V d.c.	EN 60900	-
IEC 61140	-	Protection against electric shock - Common aspects for installation and equipment	EN 61140	-
IEC 61340-4-1	-	Electrostatics -- Part 4-1: Standard test methods for specific applications - Electrical resistance of floor coverings and installed floors	EN 61340-4-1	-

IEC 61660-1	-	Short-circuit currents in d.c. auxiliary installations in power plants and substations -- Part 1: Calculation of short-circuit currents	EN 61660-1	-
IEC 61660-2	-	Short-circuit currents in d.c. auxiliary installations in power plants and substations -- Part 2: Calculation of effects	EN 61660-2	-
IEC 62259	2003	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Nickel-cadmium prismatic secondary single cells with partial gas recombination	EN 62259	2004
ISO 3864	series	Graphical symbols - Safety colours and safety signs	-	-
IEC/TR 60755	-	General requirements for residual current operated protective devices	-	-

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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SAFETY REQUIREMENTS FOR SECONDARY BATTERIES AND BATTERY INSTALLATIONS –

Part 2: Stationary batteries

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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8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62485-2 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
21/711/FDIS	21/718/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.

A list of all parts of the IEC 62485 series can be found, under the general title *Safety requirements for secondary batteries and battery installations*, on the IEC website.

The committee has decided that the contents of this publication 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 publication. At this date, the publication 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 the electricity, the electrolyte, and the explosive gases when using secondary batteries. In addition measures are described to maintain the functional safety of batteries and battery installations.

For the electrical safety (protection against electric shock) under Clause 4, this standard refers to IEC 60364-4-41. The pilot function of this standard 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 safety standard 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 case of redesign of old installations this standard applies.

Valve-regulated lead-acid batteries used in stationary battery installations are intended to fulfil safety requirements in accordance to IEC 60896-21 and IEC 60896-22.

SAFETY REQUIREMENTS FOR SECONDARY BATTERIES AND BATTERY INSTALLATIONS –

Part 2: Stationary batteries

1 Scope

This part of the IEC 62485 applies to stationary secondary batteries and battery installations with a maximum voltage of DC 1 500 V (nominal) and describes the principal measures for protections against hazards generated from:

– electricity,
– gas emission,
– electrolyte.

This International Standard provides requirements on safety aspects associated with the erection, use, inspection, maintenance and disposal.

It covers lead-acid and NiCd / NiMH batteries.

Examples for the main applications are:

– telecommunications,
– power station operation,
– central emergency lighting and alarm systems,
– uninterruptible power supplies,
– stationary engine starting,
– photovoltaic systems.

2 Normative references

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 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*

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