EESTI STANDARD EVS-EN IEC 62840-2:2019

ELEKTRISÕIDUKITE AKUDE VAHETUSSÜSTEEM. OSA 2: OHUTUSNÕUDED

Electric vehicle battery swap system - Part 2: Safety requirements

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EESTI STANDARDI EESSÕNA	NATIONAL FOREWORD
See Eesti standard EVS-EN IEC 62840-2:2019 sisaldab Euroopa standardi EN IEC 62840-2:2019 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 62840-2:2019 consists of the English text of the European standard EN IEC 62840-2:2019.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 01.02.2019.	Date of Availability of the European standard is 01.02.2019.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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ICS 43.120

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62840-2

February 2019

ICS 43.120

English Version

Electric vehicle battery swap system - Part 2: Safety requirements (IEC 62840-2:2016)

Système d'échange de batterie de véhicule électrique - Partie 2: Exigences de sécurité (IEC 62840-2:2016)

Batteriewechselsysteme für Elektrofahrzeuge - Teil 2: Sicherheitsanforderungen (IEC 62840-2:2016)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
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European foreword

The text of document 69/420/FDIS, future edition 1 of IEC 62840-2, prepared by IEC/TC 69 "Electric road vehicles and electric industrial trucks" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62840-2:2019.

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) 2019-08-01
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-02-01

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 62840-2:2016 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 60947-5-1	NOTE	Harmonized as EN 60947-5-1.
IEC 61000 series	NOTE	Harmonized in EN 61000 series.
IEC 61851-1	NOTE	Harmonized as EN 61851-1.
IEC 61851-21-2	NOTE	Harmonized as EN 61851-21-2 [1].
IEC 61851-3 series	NOTE	Harmonized in CLC/TS 61851-3 series [1].
ISO 4413	NOTE	Harmonized as EN ISO 4413
ISO 4414	NOTE	Harmonized as EN ISO 4414

[1] Under preparation. Stage at time of publication: CLC/prTS 61851 series.

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Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When 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 60038	-	IEC standard voltages	EN 60038	-
IEC 60112	-	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	EN 60112	-
IEC 60204-1	-	Safety of machinery - Electrical equipment of machines - Part 1: General requirements	EN 60204-1	-
IEC 60364	series	Low-voltage electrical installations	HD 384 / HD 60364	series
IEC 60364-4-41 (mod) -	2005 -	Low-voltage electrical installations - Part 4-41: Protection for safety - Protection against electric shock	HD 60364-4-41 + A11	2007 2017
IEC 60364-5-54	-	Low-voltage electrical installations - Part 5-54: Selection and erection of electrical equipment - Earthing arrangements and protective conductors	HD 60364-5-54	-
IEC 60364-7-722	-	Low-voltage electrical installations - Part 7-722: Requirements for special installations or locations - Supplies for electric vehicles	HD 60364-7-722	-
IEC/TS(TR) 60479	series	Effects of current on human beings and livestock	-	-
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	EN 60529	-
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007

Publication	Year	Title	EN/HD	Year
IEC 60695-2-11	-	Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products (GWEPT)	EN 60695-2-11	-
IEC 60695-10-2	-	Fire hazard testing - Part 10-2: Abnormal heat - Ball pressure test method	EN 60695-10-2	-
IEC/TR 60755	-	General requirements for residual current operated protective devices	-	-
IEC 60898-1	-	Electrical accessories - Circuit-breakers for overcurrent protection for household and similar installations - Part 1: Circuit-breakers for a.c. operation	EN 60898-1	-
IEC 60947-2	-	Low voltage switchgear and controlgear - Part 2: Circuit-breakers	EN 60947-2	-
IEC 60947-3	-	Low-voltage switchgear and controlgear - Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units	EN 60947-3	-
IEC 60947-4-1	-	Low-voltage switchgear and controlgear - Part 4-1: Contactors and motor-starters - Electromechanical contactors and motor-starters	EN 60947-4-1	-
IEC 60950-1 (mod) - + A1 (mod) - - + A2 (mod)	2005 - 2009 - - 2013	Information technology equipment - Safety - Part 1: General requirements	EN 60950-1 + A11 + A1 + A12 + AC + A2	2006 2009 2010 2011 2011 2013
IEC 61000-6-7	-	Electromagnetic compatibility (EMC) - Part 6-7: Generic standards - Immunity requirements for equipment intended to perform functions in a safety-related system (functional safety) in industrial locations	EN 61000-6-7	-
IEC 61008	series	Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCB's)	EN 61008	series
IEC 61008-1	-	Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCB's) - Part 1: General rules	EN 61008-1	-

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Publication	Year	Title	EN/HD	Year
IEC 61009	series	Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs)	EN 61009	series
IEC 61009-1	-	Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs) - Part 1: General rules	EN 61009-1	-
IEC 61140	-	Protection against electric shock - Common aspects for installation and equipment	EN 61140	-
IEC 61439-1	2011	Low-voltage switchgear and controlgear assemblies - Part 1: General rules	EN 61439-1	2011
IEC 61508-1	-	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 1: General requirements	EN 61508-1	-
IEC 61511-1	-	Functional safety - Safety instrumented systems for the process industry sector - Part 1: Framework, definitions, system, hardware and application programming requirements	EN 61511-1	-
IEC 61784-3	-	Industrial communication networks - Profiles - Part 3: Functional safety fieldbuses - General rules and profile definitions	EN 61784-3	-
IEC 61810-1	-	Electromechanical elementary relays - Part 1: General and safety requirements	EN 61810-1	-
IEC 61851-23	2014	Electric vehicle conductive charging system - Part 23: D.C. electric vehicle charging station	EN 61851-23	2014
IEC 62052-11	-	Electricity metering equipment (AC) - General requirements, tests and test conditions - Part 11: Metering equipment	EN 62052-11	-
IEC 62262	-	Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)	EN 62262	-
IEC 62423	-	Type F and type B residual current operated circuit-breakers with and without integral overcurrent protection for household and similar uses	EN 62423	-
IEC 62840-1	2016	Electric vehicle battery swap system - Part 1: General and guidance	-	-
ISO 2972	-	Numerical control of machines; Symbols	-	-
ISO 7000	-	Graphical symbols for use on equipment - Registered symbols	-	-

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Publication	Year	Title	EN/HD	Year
ISO 10218-1	-	Robots and robotic devices - Safety requirements for industrial robots - Part 1: Robots	EN ISO 10218-1	-
ISO 10218-2	-	Robots and robotic devices - Safety requirements for industrial robots - Part 2: Robot systems and integration	EN ISO 10218-2	-
ISO 12405-1	-	Electrically propelled road vehicles - Test specification for lithium-ion traction battery packs and systems - Part 1: High-power applications	-	-
ISO 13849-1	-	Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design	EN ISO 13849-1	-
ISO 14119	-	Safety of machinery - Interlocking devices associated with guards - Principles for design and selection	EN ISO 14119	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRIC VEHICLE BATTERY SWAP SYSTEM –

Part 2: Safety requirements

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 62840-2 has been prepared by IEC technical committee 69: Electric road vehicles and electric industrial trucks.

The text of this standard is based on the following documents:

FDIS	Report on voting
69/420/FDIS	69/433/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.

This standard is to be read in conjunction with IEC 62840-1:2016.

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in this document, the following print types are used:

– requirements: in roman type;

– *test specifications: in italic type;*

– notes: in small roman type.

A list of all parts in the IEC 62840 series, published under the general title *Electric vehicle battery swap system*, can be found on the IEC website.

The following differing practices of a less permanent nature exist in the countries indicated below

– 7.6.1: RCDs of type AC may be used (Japan).

– 7.6.1: a device which measures leakage current over a range of frequencies and trips at pre-defined levels of leakage current, based upon the frequency, is required (United States).

– 10.4: three-part cautionary statements are required (United States).

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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.

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