SVENSK STANDARD SS-EN IEC 62962

Fastställd	Utgåva	Sida	Ansvarig kommitté
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Kopplingsapparater för högst 1000 V – Utrustning för lastbalansering (LSE)

Particular requirements for load-shedding equipment (LSE)

Som svensk standard gäller europastandarden EN IEC 62962:2019. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 62962:2019.

Nationellt förord

Europastandarden EN IEC 62962:2019

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 62962, First edition, 2019 - Particular requirements for load-shedding equipment (LSE)**

utarbetad inom International Electrotechnical Commission, IEC.

ICS 27.015; 29.020.00

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62962

November 2019

ICS 27.015; 29.020

English Version

Particular requirements for load-shedding equipment (LSE) (IEC 62962:2019)

Exigences spécifiques pour les délesteurs (LSE)
(IEC 62962:2019)

Besondere Anforderungen für Lastabwurfeinrichtungen (LSE)
(IEC 62962:2019)

This European Standard was approved by CENELEC on 2019-10-18. 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.

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

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Ref. No. EN IEC 62962:2019 E

SEK Svensk Elstandard SS-EN IEC 62962, utg 1:2020

European foreword

The text of document 23K/47/FDIS, future edition 1 of IEC 62962, prepared by SC 23K "Electrical Energy Efficiency products" of IEC/TC 23 "Electrical accessories" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62962:2019.

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)	2020-07-18
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2022-10-18

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 62962:2019 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 60038	NOTE	Harmonized as EN 60038
IEC 60112	NOTE	Harmonized as EN 60112
IEC 60364-4-41	NOTE	Harmonized as HD 60364-4-41
IEC 60364-5-51:2005	NOTE	Harmonized as HD 60364-5-51:2009
IEC 60364-8-1:2019	NOTE	Harmonized as HD 60364-8-1:2019 (not modified)
IEC 60529	NOTE	Harmonized as EN 60529
IEC 60669-1:2017	NOTE	Harmonized as EN 60669-1:2018
IEC 60721-3-3	NOTE	Harmonized as EN IEC 60721-3-3
IEC 60947-1:2007	NOTE	Harmonized as EN 60947-1:2007 (not modified)
IEC 60998-2-2:2002	NOTE	Harmonized as EN 60998-2-2:2004
IEC 61000-3-2	NOTE	Harmonized as EN IEC 61000-3-2
IEC 61008-1:2010	NOTE	Harmonized as EN 61008-1:2012
IEC 61008-1:2010/A1:2012	NOTE	Harmonized as EN 61008-1:2012/A1:2014
IEC 61008-1:2010/A2:2013	NOTE	Harmonized as EN 61008-1:2012/A2:2014
IEC 61009-1:2010	NOTE	Harmonized as EN 61009-1:2012
IEC 61009-1:2010/A1:2012	NOTE	Harmonized as EN 61009-1:2012/A1:2014
IEC 61009-1:2010/A2:2013	NOTE	Harmonized as EN 61009-1:2012/A2:2014
IEC 61140	NOTE	Harmonized as EN 61140
ISO 2039-2:1987	NOTE	Harmonized as EN ISO 2039-2:1999 (not modified)

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 60065	2001	Audio, video and similar electronic apparatus - Safety requirements	-	-
IEC 60085	-	Electrical insulation - Thermal evaluation and designation	EN 60085	-
IEC 60127	series	Miniature fuses	EN 60127	series
IEC 60212	-	Standard conditions for use prior to and during the testing of solid electrical insulating materials	EN 60212	-
IEC 60317-0-1	1997	Specifications for particular types of winding wires -- Part 0-1: General requirements - Enamelled round copper wire	-	-
IEC 60364	series	Low-voltage electrical installations	HD 60364	series
IEC 60384-14	1993	Fixed capacitors for use in electronic equipment -- Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains	-	-
IEC 60417	-	Graphical symbols for use on equipment. Index, survey and compilation of the single sheets.	-	-
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 60695-2-10	2000	Fire hazard testing -- Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure	-	-
IEC 60695-2-11	2000	Fire hazard testing -- Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products	-	-

Publication	Year	Title	EN/HD	Year
IEC 60730	series	Automatic electrical controls	EN 60730	series
IEC 61000-2-2	-	Electromagnetic compatibility (EMC) - Part 2-2: Environment - Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems	EN 61000-2-2	-
IEC 61000-4-2	-	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	-
IEC 61000-4-3	-	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	-	-
IEC 61000-4-4	-	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	-
IEC 61000-4-5	-	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	-
IEC 61000-4-6	-	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	-
IEC 61000-4-8	-	Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test	EN 61000-4-8	-
IEC 61000-4-11	-	Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	-
IEC 61032	1997	Protection of persons and equipment by enclosures - Probes for verification	EN 61032	1998
IEC 61558-2-6	-	Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V - Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers	EN 61558-2-6	-
ISO 306	-	Plastics - Thermoplastic materials - Determination of Vicat softening temperature (VST)	EN ISO 306	-
CISPR 15	-	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment	EN IEC 55015	-

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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PARTICULAR REQUIREMENTS FOR LOAD-SHEDDING EQUIPMENT (LSE)

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 62962 has been prepared by subcommittee 23K: Electrical energy efficiency products, of IEC technical committee 23: Electrical accessories.

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

FDIS	Report on voting
23K/47/FDIS	23K/48/RVD

Full information on the voting for the approval of this document 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.

In this document, the following print types are used:

– *conformity statements: in italic type.*

The committee has decided that the contents of this document 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 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 optimization of electrical energy usage can be facilitated by appropriate design and installation considerations. An electrical installation can provide the required level of service and safety for the lowest electrical consumption.

This is considered by designers as a general requirement of their design procedures to establish the best use of electrical energy.

The optimization of the use of electricity is based on energy efficiency management which is based on the price of electricity, electrical consumption and real-time adaptation, as described in Figure 1 according to IEC 60364-8-1:2019.

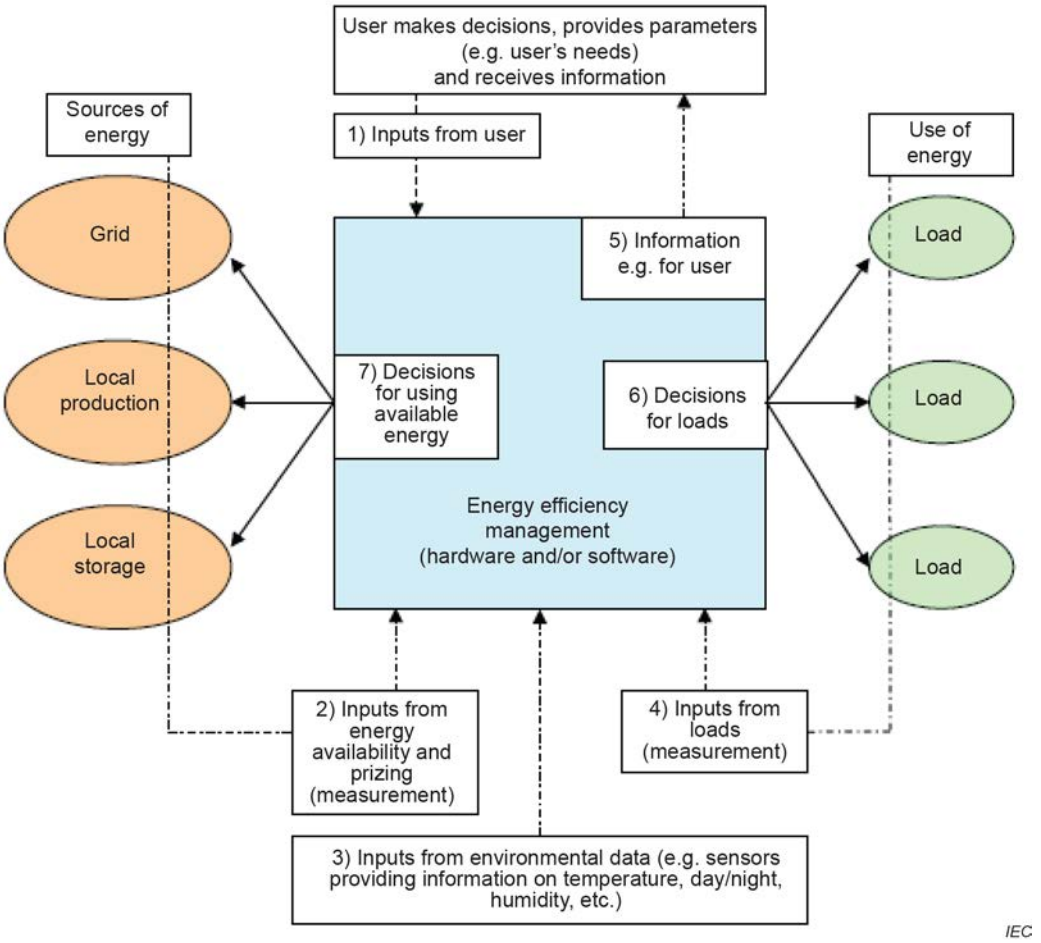

Figure 1 – Energy efficiency management system

This document applies to load-shedding equipment (LSE), for household and similar uses.

The LSE is an equipment able to respond to the monitored current or power, or alternative monitored parameters to switch ON and OFF selected loads when certain conditions are met.

The load-shedding function is used in energy management systems to optimize the overall use of electrical energy including production and storage, and can be used for example for energy efficiency purposes as per IEC 60364-8-1:2019.

PARTICULAR REQUIREMENTS FOR LOAD-SHEDDING EQUIPMENT (LSE)

1 Scope

The purpose of this document is to provide requirements for equipment to be used in energy efficiency systems. This document covers load-shedding equipment (LSE).

Guidelines relating to safety for LSE as given in IEC Guide 110 have been followed.

This document applies to load-shedding equipment for household and similar uses. The load-shedding function is used in energy management systems to optimize the overall use of electrical energy including production and storage. Load-shedding can be used for example for energy efficiency purposes as per IEC 60364-8-1:2019.

This document applies to LSE for operation under normal conditions:

– AC circuits with a rated frequency of 50 Hz, 60 Hz or both, with a rated voltage not exceeding 440 V (between phases), a rated current not exceeding 125 A and a rated short-circuit capacity not exceeding 25 000 A; or

– DC circuits[1].

LSEs are intended to control the energy supplied to one or more load, circuit or mesh when:

– defined conditions of time and current are reached;

– a command or information from an external system is received.

An LSE is intended to serve as:

– a single equipment having all the necessary means able to control the loads (e.g. the electrical energy management function is embedded in such an equipment); or

– a unit integrated into a more complex equipment or an independent equipment being part of an electrical energy management system (EEMS); or

– an assembly of independent equipment forming an LSE (e.g. an LSE with external current sensors); or

– as a combination of the above points.

LSE can have a wireless interface.

LSE is part of the fixed installation.

NOTE 1 This document covers load shedding equipment in the fixed installations including portable appliances connected thereto.

LSE are intended for use in circuits with protection against electrical shock and over-current according to IEC 60364 (all parts).

NOTE 2 For example, fault protection (indirect contact protection) can be covered as follows:

– in TT systems, by an upstream RCBOs or RCCBs according to IEC 61008-1 and IEC 61009-1;

[1] LSE for DC circuits are under consideration.

– in a TN system, by an upstream over-current protective device.

LSEs do not, by their nature, provide an isolation function nor the over-current protection.

LSEs are normally installed by instructed persons (IEC 60050-195:1998, 195-04-02) or skilled persons (IEC 60050-195:1998, 195-04-01) and normally used by ordinary persons (IEC 60005-195:1998, 195-04-03).

This document contains all requirements necessary to ensure compliance with the operational characteristics required by type tests for LSEs based on single equipment or based on an assembly of independent equipment.

These requirements apply for standard conditions of temperature and environment as given in 5.1. They are applicable to LSEs with a degree of protection of IP 20 intended for use in an environment with pollution degree 2. For LSE having a degree of protection higher than IP 20 according to IEC 60529, for use in locations where arduous environmental conditions prevail (e.g. excessive humidity, heat or cold or deposition of dust) and in hazardous locations (e.g. where explosions are liable of occur), special construction can be required.

If other functions are included in LSE, these functions are covered by the relevant standards.

This document does not address communication aspects such as protocols, interoperability, data security and any other related aspects.

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 60065:2001, *Audio, video and similar electronic apparatus – Safety requirements*[2]

IEC 60085, *Electrical insulation – Thermal evaluation and designation*

IEC 60127 (all parts), *Miniature fuses*

IEC 60212, *Standard conditions for use prior to and during the testing of solid electrical insulating materials*

IEC 60317-0-1:1997, *Specifications for particular types of winding wires – Part 0: General requirements – Section 1: Enamelled round copper wire*[2]

IEC 60364 (all parts), *Low-voltage electrical installations*

IEC 60384-14:1993, *Fixed capacitors for use in electronic equipment – Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains*[2]

IEC 60417, *Graphical symbols for use on equipment* (available at http://www.graphical-symbols.info/equipment)

[2] A more recent edition exists for this standard.

IEC 60664-1:2007, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60695-2-10:2000, *Fire hazard testing – Part 2-10: Glowing/hot-wire based test methods – Glow-wire apparatus and common test procedure*[2]

IEC 60695-2-11:2000, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products* [2]

IEC 60730 (all parts), *Automatic electrical controls*

IEC 61000-2-2, *Electromagnetic compatibility (EMC) – Part 2-2: Environment – Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems*

IEC 61000-4-2, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test*

IEC 61000-4-3, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-4-4, *Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test*

IEC 61000-4-5, *Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test*

IEC 61000-4-6, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

IEC 61000-4-8, *Electromagnetic compatibility (EMC) – Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test*

IEC 61000-4-11, *Electromagnetic compatibility (EMC) – Part 4-11: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests*

IEC 61032:1997, *Protection of persons and equipment by enclosures – Probes for verification*

IEC 61558-2-6, *Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V – Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers*

CISPR 15, *Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment*

ISO 306, *Plastics – Thermoplastic materials – Determination of Vicat softening temperature (VST)*