

INTERNATIONAL STANDARD

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Particular requirements for load-shedding equipment (LSE)

Exigences spécifiques pour les délesteurs (LSE)

[IEC 62962:2019](#)

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**PARTICULAR REQUIREMENTS FOR
LOAD-SHEDDING EQUIPMENT (LSE)**
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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.

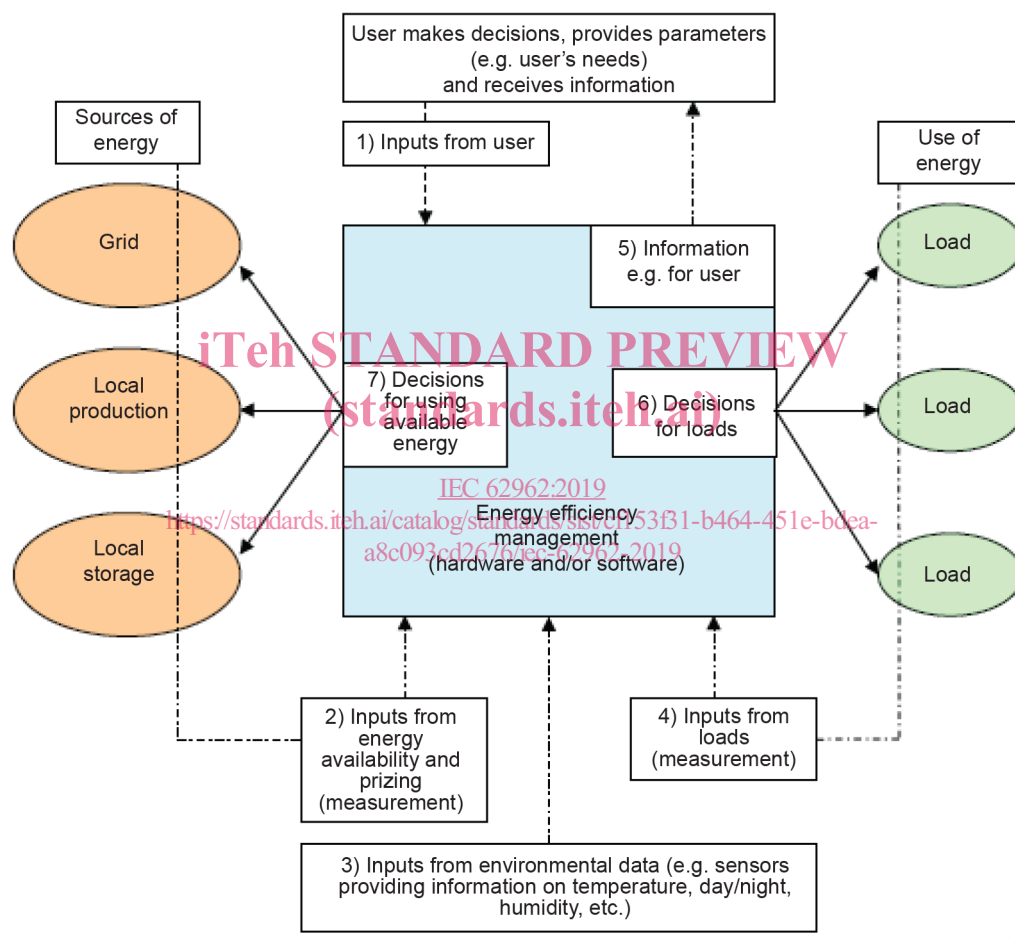


Figure 1 – Energy efficiency management system

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 circuits¹.

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 to 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

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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.