

INTERNATIONAL STANDARD

NORME INTERNATIONALE



Particular requirements for load-shedding equipment (LSE)

Exigences spécifiques pour les délesteurs (LSE)



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ELECTROTECHNICAL
COMMISSION

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CONTENTS

| | |
|--|----|
| FOREWORD..... | 9 |
| INTRODUCTION..... | 11 |
| 1 Scope..... | 12 |
| 2 Normative references | 13 |
| 3 Terms and definitions | 14 |
| 4 General requirements | 22 |
| 4.1 General..... | 22 |
| 4.2 Architecture | 23 |
| 4.3 Standard conditions for operation in service..... | 24 |
| 5 General remarks on tests | 25 |
| 5.1 Environmental conditions | 25 |
| 5.1.1 General | 25 |
| 5.1.2 Ambient temperature range in normal use..... | 25 |
| 5.1.3 Relative humidity | 25 |
| 5.1.4 Altitude | 25 |
| 5.2 General testing procedure and samples | 26 |
| 6 Ratings..... | 27 |
| 6.1 Rated values..... | 27 |
| 6.1.1 Rated operational voltages | 27 |
| 6.1.2 Rated insulation voltage | 27 |
| 6.1.3 Rated impulse voltage | 27 |
| 6.1.4 Maximum value of rated current..... | 27 |
| 6.1.5 Preferred rated current values (I_n)..... | 27 |
| 6.1.6 Minimum value of rated making and breaking capacity (I_{RMS}) | 28 |
| 6.1.7 Rated frequency | 28 |
| 6.1.8 Rated conditional short-circuit current..... | 28 |
| 6.1.9 Preferred rated load-shedding current (power) values (I_nL_S, P_nL_S)..... | 28 |
| 6.2 Time-current characteristic for LSEs monitoring the current | 28 |
| 6.2.1 LSE operating principle..... | 28 |
| 6.2.2 Current limits (I_nL_S)..... | 30 |
| 6.2.3 Minimum switch OFF-time | 30 |
| 6.2.4 Reclosing conditions..... | 31 |
| 6.3 Time-power characteristic | 32 |
| 6.4 LSE shedding sequence | 32 |
| 7 Classification..... | 33 |
| 7.1 General..... | 33 |
| 7.2 According to the LSE functional category | 33 |
| 7.3 According to the switching means | 34 |
| 7.4 According to the possibility of adjusting the rated load-shedding current(s) (or power) | 34 |
| 7.5 According to the shedding sequence..... | 34 |
| 7.6 According to the design | 34 |
| 7.6.1 Stand-alone LSE with internal or external sensors or measuring units | 34 |
| 7.6.2 LSE with external sensor | 34 |
| 7.6.3 Combined LSE (or assembled LSE)..... | 34 |
| 7.7 According to the method of mounting | 34 |

| | | |
|---------|--|----|
| 7.8 | According to the type of terminals | 34 |
| 7.9 | According to the contact openings | 34 |
| 7.10 | According to the protection against external influences | 35 |
| 7.11 | According to the number of poles | 35 |
| 7.12 | According to the type of monitored parameters | 35 |
| 8 | Markings and information | 35 |
| 8.1 | General..... | 35 |
| 8.2 | Test of markings | 36 |
| 9 | Protection against electric shock | 36 |
| 9.1 | General..... | 36 |
| 9.2 | Test for protection against electric shock | 37 |
| 10 | Terminals for external copper conductors | 40 |
| 10.1 | General..... | 40 |
| 10.2 | Terminals with screw clamping for external copper conductors | 40 |
| 10.2.1 | General | 40 |
| 10.2.2 | Conductor fitting | 46 |
| 10.2.3 | Mechanical strength of terminals | 46 |
| 10.2.4 | Resistance to corrosion of terminals | 46 |
| 10.2.5 | Clamping effects on conductors | 46 |
| 10.2.6 | Clamping reliability of terminals | 47 |
| 10.2.7 | Clamping length of terminals | 48 |
| 10.2.8 | Reliability of terminals | 49 |
| 10.2.9 | Accidental loosening of earthing terminals | 49 |
| 10.2.10 | Resistance to corrosion of earthing terminals | 49 |
| 10.2.11 | Additional requirements for the design of pillar terminals | 50 |
| 10.2.12 | Additional requirements for the design of lug terminals | 50 |
| 10.2.13 | Additional requirements for terminals for the connection of external conductors..... | 50 |
| 10.3 | Screwless terminals for external copper conductors | 50 |
| 10.3.1 | General | 50 |
| 10.3.2 | Conductor fittings | 50 |
| 10.3.3 | Connection of conductors | 51 |
| 10.3.4 | Type of material..... | 51 |
| 10.3.5 | Conductors clamping | 51 |
| 10.3.6 | Operation of terminals | 51 |
| 10.3.7 | Multi conductor terminals..... | 52 |
| 10.3.8 | Introduction of conductors | 52 |
| 10.3.9 | Fixing of terminals | 52 |
| 10.3.10 | Mechanical strength..... | 52 |
| 10.3.11 | Electrical and thermal stress resistance..... | 54 |
| 10.3.12 | Mechanical reliability | 56 |
| 11 | Constructional requirements | 59 |
| 11.1 | General..... | 59 |
| 11.2 | Mechanical requirements for insulating means | 59 |
| 11.3 | Installation requirements | 59 |
| 11.4 | Fixing of covers, cover plates and actuating members | 62 |
| 11.4.1 | General | 62 |
| 11.4.2 | Fixings based on screws or rivets | 63 |

| | | |
|--------|---|----|
| 11.4.3 | Fixings which may be removed by applying a force perpendicular to the surfaces | 63 |
| 11.4.4 | Fixings which may be removed using a tool | 63 |
| 11.5 | Attachment of knobs | 64 |
| 11.6 | Mounting means | 64 |
| 11.7 | Accessories | 64 |
| 12 | Mechanism and operating means | 64 |
| 12.1 | General..... | 64 |
| 12.2 | Indication of the position | 65 |
| 12.3 | Rest position..... | 65 |
| 12.4 | Making and breaking..... | 65 |
| 12.5 | Action of the mechanism without cover or cover plate | 65 |
| 12.6 | Fixings and removal of operating means | 65 |
| 12.7 | Locking | 66 |
| 12.8 | Status indicators | 66 |
| 13 | Resistance to ageing and humidity | 66 |
| 13.1 | Resistance to ageing | 66 |
| 13.2 | Resistance to humidity..... | 67 |
| 14 | Insulation resistance and dielectric strength | 67 |
| 14.1 | General..... | 67 |
| 14.2 | Insulation resistance of the main circuit | 67 |
| 14.3 | Dielectric strength of main circuits | 68 |
| 14.4 | Insulation resistance and dielectric strength of other circuits..... | 70 |
| 14.5 | Verification of impulse withstand voltages (across clearances and through solid insulations)..... | 71 |
| 14.5.1 | General testing procedure | 71 |
| 14.5.2 | Verification of clearances with the impulse withstand voltage tests | 72 |
| 15 | Temperature rise | 72 |
| 15.1 | General..... | 72 |
| 15.2 | Test setup..... | 73 |
| 15.3 | Test procedure..... | 74 |
| 16 | Making and breaking capacity..... | 76 |
| 17 | Normal operation | 76 |
| 17.1 | Functional tests: disconnection and reclosing | 76 |
| 17.1.1 | General | 76 |
| 17.1.2 | Disconnection tests | 77 |
| 17.1.3 | Reclosing tests | 78 |
| 17.1.4 | Load-shedding sequence(s) tests | 79 |
| 17.1.5 | Remotely controlled LSE and LSE with connection to other external equipment..... | 79 |
| 17.2 | Endurance test..... | 79 |
| 18 | Mechanical strength | 80 |
| 18.1 | General..... | 80 |
| 18.2 | Pendulum hammer test | 81 |
| 18.3 | Covers, cover plates or actuating members – Accessibility to live parts | 89 |
| 18.3.1 | General | 89 |
| 18.3.2 | Verification of the non-removal of covers, cover plates or actuating members | 89 |
| 18.3.3 | Verification of the removal of covers, cover plates or actuating members..... | 89 |

| | | |
|--------|--|-----|
| 18.4 | Covers, cover plates or actuating members – Accessibility to non-earthed metal parts separated from live parts | 90 |
| 18.5 | Covers, cover plates or actuating members – Accessibility to insulating parts, earthed metal parts, the live parts of SELV \leq 25 V AC or metal parts separated from live parts | 90 |
| 18.6 | Covers, cover plates or actuating members – Application of gauges | 90 |
| 18.7 | Grooves, holes and reverse tapers | 92 |
| 18.8 | Rail mounted LSEs | 93 |
| 19 | Resistance to heat..... | 94 |
| 19.1 | General..... | 94 |
| 19.2 | Basic heating test | 94 |
| 19.3 | Ball-pressure test on parts of insulating material necessary to retain current-carrying parts and parts of the earthing circuit in position..... | 95 |
| 19.4 | Ball-pressure test on parts of insulating material not necessary to retain current-carrying parts and parts of the earthing circuit in position..... | 95 |
| 20 | Screws, current carrying capacity and connections | 95 |
| 20.1 | General..... | 95 |
| 20.2 | Correct insertion of screws | 96 |
| 20.3 | Contact pressure of electrical connections | 97 |
| 20.4 | Screws and rivets used both as electrical and mechanical connections..... | 97 |
| 20.5 | Material of current-carrying parts | 97 |
| 20.6 | Thread-forming and thread-cutting screws | 98 |
| 21 | Creepage distances, clearances and distances through sealing compound..... | 98 |
| 21.1 | General..... | 98 |
| 21.2 | Measurements | 98 |
| 21.3 | Insulating compound..... | 99 |
| 22 | Resistance of insulating material to abnormal heat and fire | 101 |
| 22.1 | General..... | 101 |
| 22.2 | Glow-wire test..... | 101 |
| 23 | Resistance to rusting | 103 |
| 24 | EMC requirements | 104 |
| 24.1 | General..... | 104 |
| 24.2 | Immunity | 104 |
| 24.2.1 | General | 104 |
| 24.2.2 | Voltage dips and short interruptions..... | 105 |
| 24.2.3 | Surge immunity test for 1,2/50 wave impulses | 105 |
| 24.2.4 | Electrical fast transient/burst test..... | 106 |
| 24.2.5 | Electrostatic discharge test..... | 106 |
| 24.2.6 | Radiated electromagnetic field test | 107 |
| 24.2.7 | Radio-frequency voltage test | 107 |
| 24.2.8 | Power-frequency magnetic field test | 108 |
| 24.3 | Emission | 108 |
| 24.3.1 | General | 108 |
| 24.3.2 | Low-frequency emission | 108 |
| 24.3.3 | Radio-frequency emission | 108 |
| 25 | Coordination with short-circuit devices..... | 108 |
| 25.1 | General requirements for coordination | 108 |
| 25.2 | Testing conditions..... | 108 |
| 25.2.1 | Test circuit..... | 108 |

| | | |
|-----------------------|--|-----|
| 25.2.2 | Tolerances on test quantities | 112 |
| 25.2.3 | Power factor of the test circuit | 112 |
| 25.2.4 | Power frequency recovery voltage | 113 |
| 25.2.5 | Calibration of the test circuit | 113 |
| 25.2.6 | Sequence of operations | 113 |
| 25.3 | Tests of coordination between the LSE and the SCPD | 113 |
| 25.3.1 | General | 113 |
| 25.3.2 | Verification of the coordination at the rated conditional short-circuit current (I_{nc}) | 114 |
| 25.3.3 | Verification at the instantaneous tripping of the SCPD | 114 |
| 25.3.4 | Condition of the LSE during and after tests | 114 |
| 26 | Tests under abnormal conditions | 114 |
| 26.1 | General | 114 |
| 26.2 | Tests under fault conditions | 115 |
| 26.3 | Overload tests | 116 |
| 27 | Components | 116 |
| 27.1 | Fuses | 117 |
| 27.2 | Capacitors | 117 |
| 27.3 | Resistors | 118 |
| 27.4 | Automatic protective devices (other than fuses) | 118 |
| 27.4.1 | General | 118 |
| 27.4.2 | Cut-outs | 118 |
| 27.4.3 | Automatic protective devices | 120 |
| 27.5 | Transformers | 120 |
| Annex A (normative) | Test sequences and number of specimens | 121 |
| Annex B (informative) | Correspondence between ISO and AWG copper conductors | 123 |
| Annex C (normative) | Determination of clearances and creepage distances | 124 |
| C.1 | General | 124 |
| C.2 | Orientation and location of a creepage distance | 124 |
| C.3 | Creepage distances where more than one material is used | 124 |
| C.4 | Creepage distances split by floating conductive part | 124 |
| C.5 | Measurement of creepage distances and clearances | 124 |
| Annex D (normative) | Arrangement for the detection of the emission of ionized gases during short-circuit tests | 128 |
| Bibliography | | 131 |
| Figure 1 | – Energy efficiency management system | 11 |
| Figure 2 | – LSE general architecture | 24 |
| Figure 3 | – Time-current characteristic of a Class A LSE | 29 |
| Figure 4 | – Joined test finger (test probe B according to IEC 61032:1997) | 38 |
| Figure 5 | – Test pin for checking the protection against electric shock | 40 |
| Figure 6 | – Terminals with stirrup | 41 |
| Figure 7 | – Pillar terminals | 41 |
| Figure 8 | – Screw terminals and stud terminals | 43 |
| Figure 9 | – Saddle terminals | 44 |
| Figure 10 | – Lug terminals | 45 |
| Figure 11 | – Test apparatus for checking damage to conductors | 54 |

| | |
|---|-----|
| Figure 12 – Information for deflection test..... | 57 |
| Figure 13 – Determination of the direction of the forces to be applied | 61 |
| Figure 14 – Direction for the conductor pull of 30 N for 1 min..... | 62 |
| Figure 15 – Pendulum impact test apparatus | 82 |
| Figure 16 – Pendulum impact test apparatus (striking element) | 83 |
| Figure 17 – Mounting support of specimens..... | 84 |
| Figure 18 – Mounting block for a flush type LSE | 85 |
| Figure 19 – Example of mounting support of a panel board type LSE..... | 86 |
| Figure 20 – Example of mounting support for a rear fixed LSE | 87 |
| Figure 21 – Gauge (thickness: about 2 mm) for the verification of the outline of covers, cover-plates or actuating members | 90 |
| Figure 22 – Example of application of the gauge of Figure 21 on covers fixed without screws on a mounting surface or supporting surface..... | 91 |
| Figure 23 – Examples of applications of the gauge of Figure 21..... | 92 |
| Figure 24 – Gauge for verification of grooves, holes and reverse tapers | 93 |
| Figure 25 – Sketch showing the direction of application of the gauge of Figure 24 | 93 |
| Figure 26 – Application of forces on a rail-mounted LSE | 94 |
| Figure 27 – Ball-pressure test apparatus..... | 95 |
| Figure 28 – Thread-cutting screw..... | 96 |
| Figure 29 – Thread-forming screw | 96 |
| Figure 30 – Diagrammatic representation..... | 102 |
| Figure 31 – Typical diagram for all coordination tests | 110 |
| Figure 32 – Detail of impedances Z and Z_1 | 110 |
| Figure C.1 – Example 1 | 125 |
| Figure C.2 – Example 2 | 125 |
| Figure C.3 – Example 3 | 125 |
| Figure C.4 – Example 4 | 126 |
| Figure C.5 – Example 5 | 126 |
| Figure C.6 – Example 6 | 126 |
| Figure C.7 – Example 7 | 127 |
| Figure D.1 – Test arrangement | 129 |
| Figure D.2 – Grid | 130 |
| Figure D.3 – Grid circuit..... | 130 |
| | |
| Table 1 – Cross-sectional areas (S) of test copper conductors corresponding to the rated currents | 26 |
| Table 2 – Rated impulse voltage as a function of the nominal voltage of the installation | 27 |
| Table 3 – Load-shedding classes..... | 30 |
| Table 4 – Disconnecting time | 31 |
| Table 5 – Load-shedding classes..... | 32 |
| Table 6 – Disconnecting time | 32 |
| Table 7 – Load-shedding functional categories | 33 |
| Table 8 – Marking and position of marking..... | 35 |

| | |
|--|-----|
| Table 9 – Relationship between rated currents and connectable cross-sectional areas of copper conductors | 39 |
| Table 10 – Dimensions and tightening torque of pillar terminals | 42 |
| Table 11 – Dimensions and tightening torque for screw and stud terminals | 44 |
| Table 12 – Dimensions and tightening torque for saddle terminals | 45 |
| Table 13 – Dimensions and tightening torque for lug terminals | 45 |
| Table 14 – Tightening torque for the verification of the mechanical strength of screw-type terminals | 47 |
| Table 15 – Test values for pulling out test | 48 |
| Table 16 – Relationship between rated currents and connectable cross-sectional areas of copper conductors for screwless terminals | 51 |
| Table 17 – Test values for flexion and pull out for copper conductors | 53 |
| Table 18 – Test current for the verification of electrical and thermal stresses in normal use of screwless terminals | 55 |
| Table 19 – Cross-sectional areas of rigid copper conductors for deflection test of screwless terminals | 58 |
| Table 20 – Deflection test forces | 58 |
| Table 21 – Forces to be applied to covers, cover-plates or actuating members whose fixing is not dependent on screws | 63 |
| Table 22 – Test voltage, points of application and minimum values of insulating resistance for the verification of dielectric strength | 69 |
| Table 23 – Test voltages of auxiliary circuits | 71 |
| Table 24 – Test voltage for verification of impulse withstand voltage | 72 |
| Table 25 – Temperature-rise test currents and cross-sectional areas of copper conductors | 73 |
| Table 26 – Permissible temperature rise values (based on Table 3 of IEC 60065:2001) | 75 |
| Table 27 – Number of operations for normal operation test | 80 |
| Table 28 – Height of fall for impact test | 88 |
| Table 29 – Minimum clearances and creepage distances | 100 |
| Table 30 – Immunity tests (overview) | 104 |
| Table 31 – Voltage dip and short-interruption test values | 105 |
| Table 32 – Surge immunity test voltages | 106 |
| Table 33 – Fast transient test values | 106 |
| Table 34 – Minimum values of I^2t and I_p | 111 |
| Table 35 – Power factors for short-circuit tests | 112 |
| Table 36 – Capacitors | 118 |
| Table A.1 – Specimen for tests | 122 |
| Table B.1 – Correspondence between ISO and AWG copper conductors | 123 |

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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.

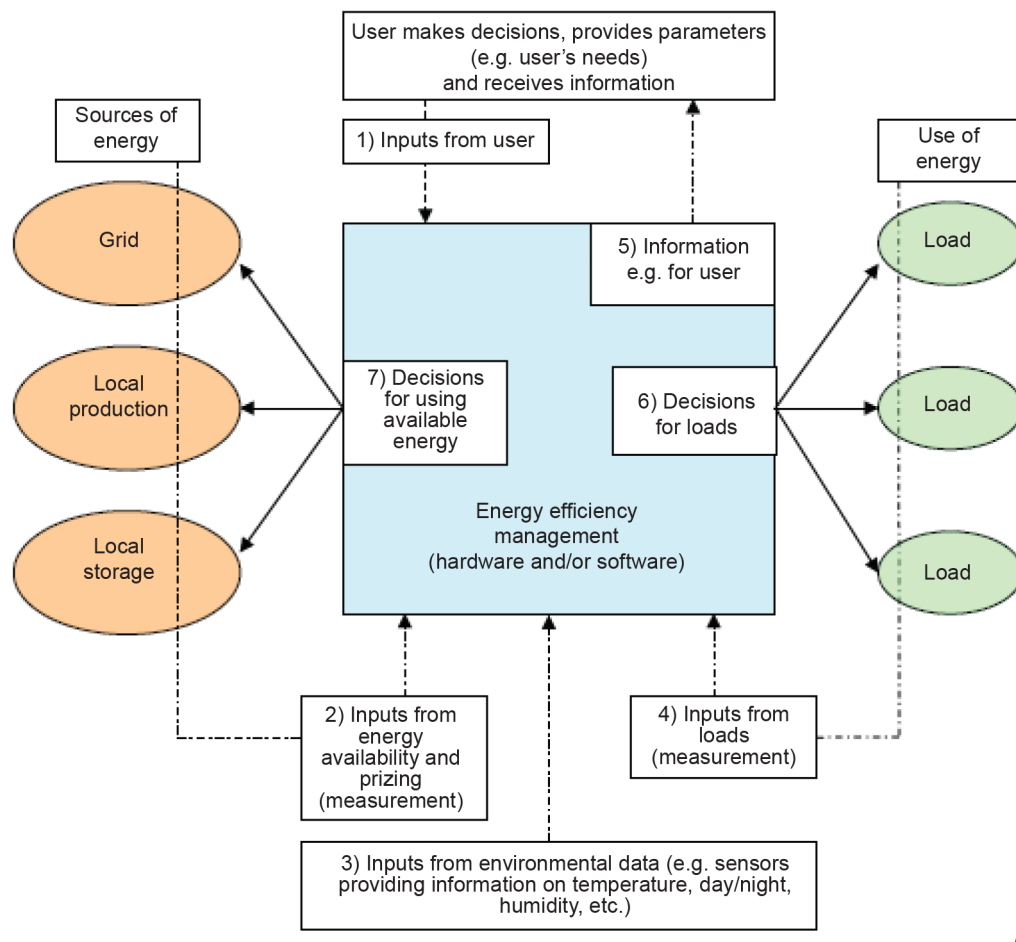


Figure 1 – Energy efficiency management system

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.