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Irish Standard
I.S. EN 61643-11:2012&A11:2018

Low-voltage surge protective devices - Part 11: Surge protective devices connected to low-voltage power systems - Requirements and test methods

I.S. EN 61643-11:2012&A11:2018

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EN 61643-11:2012/A11:2018

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National Foreword

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EUROPEAN STANDARD
NORME EUROPÉENNE
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EN 61643-11:2012/A11

March 2018

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English Version

**Low-voltage surge protective devices - Part 11: Surge protective
devices connected to low-voltage power systems -
Requirements and test methods**

Parafoudres basse tension - Partie 11: Parafoudres
connectés aux systèmes basse tension - Exigences et
méthodes d'essai

Überspannungsschutzgeräte für Niederspannung - Teil 11:
Überspannungsschutzgeräte für den Einsatz in
Niederspannungsanlagen - Anforderungen und Prüfungen

This amendment A11 modifies the European Standard EN 61643-11:2012; it was approved by CENELEC on 2017-07-17. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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

EN 61643-11:2012/A11:2018 (E)

European foreword

This document (EN 61643-11:2012/A11:2018) has been prepared by CLC/TC 37A "Low voltage surge protective devices".

The following dates are fixed:

- latest date by which this document has to be (dop) 2018-09-23
implemented at national level by publication of an
identical national standard or by endorsement
- latest date by which the national standards conflicting (dow) 2021-03-23
with this document have to be withdrawn

Annex ZC applies to portable SPDs classified as pluggable equipment type A according to EN 62368-1.

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For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 61643-11

October 2012

ICS 29.240; 29.240.10

Supersedes EN 61643-11:2002 + A11:2007

English version

**Low-voltage surge protective devices -
Part 11: Surge protective devices connected to low-voltage power
systems -
Requirements and test methods
(IEC 61643-11:2011, modified)**

Parafoudres basse tension -
Partie 11: Parafoudres connectés aux
systèmes basse tension -
Exigences et méthodes d'essai
(CEI 61643-11:2011, modifiée)

Überspannungsschutzgeräte für
Niederspannung -
Teil 11: Überspannungsschutzgeräte für
den Einsatz in Niederspannungsanlagen -
Anforderungen und Prüfungen
(IEC 61643-11:2011, modifiziert)

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

This document (EN 61643-11:2012) consists of the text of IEC 61643-11:2011 prepared by IEC/SC 37A "Low-voltage surge protective devices", together with the common modifications prepared by CLC/TC 37A "Low voltage surge protective devices".

The following dates are fixed:

- latest date by which this document has to be implemented (dop) 2013-08-27
at national level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2015-08-27

This document supersedes EN 61643-11:2002 + A11:2007.

The main changes with respect of EN 61643-11:2002 + A11:2007 are the complete restructuring and improvement of the test procedures and test sequences.

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 61643-11:2011 are prefixed "Z".

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This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC)

Endorsement notice

The text of the International Standard IEC 61643-11:2011 was approved by CENELEC as a European Standard with agreed common modifications.

COMMON MODIFICATIONS

Scope *Modify the Scope as follows:*

This part of EN 61643 is applicable to devices for surge protection against indirect and direct effects of lightning or other transient overvoltages. These devices are called Surge Protective Devices (SPD). These devices are designed to be connected to 50 Hz a.c. power circuits, and equipment rated up to 1 000 V r.m.s. Performance characteristics, safety requirements, standard methods for testing and ratings are established. These devices contain at least one nonlinear component and are intended to limit surge voltages and divert surge currents.

3.1.14 *Modify the note as follows:*

- the measured limiting voltage, determined for front-of-wave sparkover (if applicable) and the measured limiting voltage, determined from the residual voltage measurements up to I_n and/or I_{imp} respectively for test classes II and/or I
- the measured limiting voltage determined for the combination wave measurements up to U_{oc} for test class III.

3.1.28 *Modify the definition as follows:*

SPD disconnecter (disconnecter)

device for disconnecting an SPD, or part of an SPD, from the power system in the event of SPD failure

NOTE This disconnecting device is not required to have isolating capability for safety purposes. It is to prevent a persistent fault on the system and is used to give an indication of an SPD's failure. Disconnectors can be either internal (built in) or external (required by the manufacturer) or both. There may be more than one disconnector function, for example an over-current protection function and a thermal protection function. These functions may be in separate units.

3.1.36 *Modify the heading definition as follows:*

sparkover voltage or trigger voltage of a voltage switching SPD

3.1.39 *Add a note to the definition:*

NOTE According to installation standard HD 60364-5-534, I_n shall be equal to I_{sccr} .

4.1 *Modify the subclause as follows:*

Frequency range is from 47 Hz to 53 Hz a.c.



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INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Low-voltage surge protective devices –
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Requirements and test methods**

**Parafoudres basse tension –
Partie 11: Parafoudres connectés aux systèmes basse tension – Exigences et
méthodes d'essai**



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INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Low-voltage surge protective devices –
Part 11: Surge protective devices connected to low-voltage power systems –
Requirements and test methods**

**Parafoudres basse tension –
Partie 11: Parafoudres connectés aux systèmes basse tension – Exigences et
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CONTENTS

FOREWORD.....	7
INTRODUCTION.....	9
1 Scope.....	10
2 Normative references	10
3 Terms, definitions and abbreviations	10
3.1 Terms and definitions	11
3.2 Abbreviations	16
4 Service conditions	18
4.1 Frequency	18
4.2 Voltage.....	18
4.3 Air pressure and altitude	18
4.4 Temperatures	18
4.5 Humidity	18
5 Classification.....	18
5.1 Number of ports	18
5.1.1 One	18
5.1.2 Two	18
5.2 SPD design	18
5.2.1 Voltage switching	18
5.2.2 Voltage limiting.....	18
5.2.3 Combination	18
5.3 Class I, II and III tests	18
5.4 Location	19
5.4.1 Indoor.....	19
5.4.2 Outdoor	19
5.5 Accessibility	19
5.5.1 Accessible	19
5.5.2 Inaccessible	19
5.6 Mounting method.....	19
5.6.1 Fixed	19
5.6.2 Portable.....	19
5.7 Disconnectors (including overcurrent protection)	19
5.7.1 Location	19
5.7.2 Protection functions.....	19
5.8 Degree of protection provided by enclosures	19
5.9 Temperature and humidity range	20
5.9.1 Normal	20
5.9.2 Extended	20
5.10 Power system.....	20
5.10.1 AC between 47 Hz and 63 Hz	20
5.10.2 AC other than the range of 47 Hz to 63 Hz	20
5.11 Multipole SPD	20
5.12 SPD failure behaviour	20
5.12.1 open circuit (standard type SPD)	20
5.12.2 short-circuit (short-circuiting type SPD)	20

6	Preferred values for SPD	20
6.1	Preferred values of impulse discharge current I_{imp} for class I tests	20
6.2	Preferred values of nominal discharge current for class II tests I_n	20
6.3	Preferred values of open-circuit voltage for class III tests U_{oc}	20
6.4	Preferred values of voltage protection level U_p	20
6.5	Preferred values of r.m.s. maximum continuous operating voltage U_c	20
7	Requirements	21
7.1	General requirements	21
7.1.1	Identification	21
7.1.2	Marking	22
7.2	Electrical requirements	22
7.2.1	Protection against direct contact	22
7.2.2	Residual current I_{PE}	23
7.2.3	Voltage protection level U_p	23
7.2.4	Operating duty	23
7.2.5	Disconnectors and status indicators	23
7.2.6	Insulation resistance	24
7.2.7	Dielectric withstand	24
7.2.8	Behaviour under Temporary Overvoltages	24
7.3	Mechanical requirements	25
7.3.1	Mounting	25
7.3.2	Screws, current carrying parts and connections	25
7.3.3	External connections	25
7.3.4	Air clearances and creepage distances	27
7.3.5	Mechanical strength	27
7.4	Environmental and material requirements	27
7.4.1	Protection provided by enclosure (IP code)	27
7.4.2	Heat resistance	27
7.4.3	Fire resistance	27
7.4.4	Tracking resistance	27
7.4.5	Electromagnetic compatibility	28
7.5	Additional requirements for specific SPD designs	28
7.5.1	Two port SPDs and one port SPDs with separate input/output terminals	28
7.5.2	Environmental tests for outdoor SPDs	28
7.5.3	SPDs with separate isolated circuits	28
7.5.4	Short-circuiting type SPDs	29
7.6	Additional requirements as may be declared by the manufacturer	29
7.6.1	One-port and two-port SPDs	29
7.6.2	Two port SPDs only	29
8	Type tests	29
8.1	General testing procedures	30
8.1.1	Impulse discharge current used for class I additional duty test	36
8.1.2	Current impulse used for class I and class II residual voltage and operating duty tests	36
8.1.3	Voltage impulse used for class I and II sparkover tests	37
8.1.4	Combination wave used for class III tests	37
8.2	Indelibility of markings	40
8.3	Electrical tests	40

8.3.1	Protection against direct contact.....	40
8.3.2	Residual current I_{PE}	40
8.3.3	Measured limiting voltage.....	41
8.3.4	Operating duty test.....	44
8.3.5	Disconnectors and safety performance of overstressed SPDs.....	48
8.3.6	Insulation resistance.....	54
8.3.7	Dielectric withstand.....	55
8.3.8	Behaviour under Temporary Overvoltages (TOVs).....	56
8.4	Mechanical tests.....	60
8.4.1	Reliability of screws, current-carrying parts and connections.....	60
8.4.2	Terminals for external conductors.....	61
8.4.3	Verification of air clearances and creepage distances.....	65
8.4.4	Mechanical strength.....	68
8.5	Environmental and material tests.....	72
8.5.1	Resistance to ingress of solid objects and to harmful ingress of water.....	72
8.5.2	Heat resistance.....	72
8.5.3	Ball pressure test.....	73
8.5.4	Resistance to abnormal heat and fire.....	74
8.5.5	Tracking resistance.....	75
8.6	Additional tests for specific SPD designs.....	75
8.6.1	Test for two-port SPDs and one-port SPDs with separate input/output terminals.....	75
8.6.2	Environmental tests for outdoor SPDs.....	78
8.6.3	SPDs with separate isolated circuits.....	78
8.6.4	Short-circuiting type SPDs.....	78
8.7	Additional tests for specific performance if declared by the manufacturer.....	78
8.7.1	Total discharge current test for multipole SPDs.....	78
8.7.2	Test to determine the voltage drop.....	79
8.7.3	Load-side surge withstand capability.....	79
8.7.4	Measurement of voltage rate of rise du/dt	80
9	Routine and acceptance tests.....	80
9.1	Routine tests.....	80
9.2	Acceptance tests.....	80
Annex A (normative)	Reference test voltages for SPDs U_{REF}	81
Annex B (normative)	TOV Ratings.....	86
Annex C (normative)	Tests to determine the presence of a switching component and the magnitude of the follow current.....	89
Annex D (normative)	Reduced test procedures.....	91
Annex E (informative)	Alternative circuits for testing SPDs under TOVs caused by faults in the high (medium) voltage system.....	93
Annex F (informative)	Environmental tests for outdoor SPDs.....	94
Annex G (normative)	Temperature rise limits.....	96
Bibliography.....		97
Figure 1 – Metallic screen test set-up.....		31
Figure 2 – Example of a decoupling network for single-phase power.....		39
Figure 3 – Example of a decoupling network for three-phase power.....		39
Figure 4 – Alternate test for the measured limiting voltage.....		39

Figure 5 – Flow chart of testing to check the voltage protection level U_p	42
Figure 6 – Flow chart of the operating duty test	45
Figure 7 – Test set-up for operating duty test.....	46
Figure 8 – Operating duty test timing diagram for test classes I and II	47
Figure 9 – Additional duty test timing diagram for test class I.....	48
Figure 10 – Operating duty test timing diagram for test class III	48
Figure 11 – Test circuit for SPD with I_{fi} lower than the declared short-circuit rating.....	52
Figure 12 – Test circuit for SPD's failure mode simulation	53
Figure 13 – Timing diagram for SPD's failure mode simulation.....	53
Figure 14 – Example of a test circuit to perform the test under TOVs caused by faults in the low voltage system.....	57
Figure 15 – Timing diagram for the test under TOVs caused by faults in the low voltage system.....	57
Figure 16 – Example of circuit for testing SPDs for use in TT systems under TOVs caused by faults in high (medium) voltage system	59
Figure 17 – Timing diagram for use in testing SPDs under TOVs caused by faults in the high (medium) voltage system using circuit of Figure 16	60
Figure 18 – Test apparatus for impact test.....	69
Figure 19 – Striking element of the pendulum hammer.....	70
Figure 20 – Ball thrust tester.....	73
Figure 21 – Loading rod for ball thrust tester.....	73
Figure 22 – Examples for appropriate test circuits of the load side short-circuit test(s).....	77
Figure E.1 – Examples of a three-phase and single-phase circuit for use in testing SPDs under TOVs caused by faults in the high (medium) voltage system	93
Table 1 – List of Abbreviations.....	17
Table 2 – Class I, II and III tests	19
Table 3 – Type test requirements for SPDs.....	32
Table 4 – Common pass criteria for type tests	34
Table 5 – Cross reference for pass criteria versus type tests	35
Table 6 – Preferred parameters for class I test	36
Table 7 – Tests to be performed to determine the measured limiting voltage	43
Table 8 – Prospective short-circuit current and power factor	50
Table 9 – Dielectric withstand	55
Table 10 – Screw thread diameters and applied torques	61
Table 11 – Cross-sections of copper conductors for screw-type or screwless terminals	62
Table 12 – Pulling forces (screw terminals).....	63
Table 13 – Conductor dimensions	63
Table 14 – Pulling forces (screwless terminals)	64
Table 15 – Air clearances for SPDs	66
Table 16 – Creepage distances for SPDs.....	67
Table 17 – Relationship between material groups and classifications.....	68
Table 18 – Fall distances for impact requirements	71
Table 19 – Test conductors for rated load current test	75

Table 20 – Current factor k for overload behaviour	76
Table 21 – Tolerances for proportional surge currents	79
Table A.1 – Reference test voltage values	82
Table B.1 – TOV test values for systems complying with IEC 60364 series	86
Table B.2 – TOV test parameters for North American systems	87
Table B.3 – TOV test parameters for Japanese systems	88
Table D.1 – Reduced test procedure for SPDs complying with IEC 61643-1:2005	92
Table G.1 – Temperature-rise limits	96

INTERNATIONAL ELECTROTECHNICAL COMMISSION

LOW-VOLTAGE SURGE PROTECTIVE DEVICES –

Part 11: Surge protective devices connected to low-voltage power systems – Requirements and test methods

FOREWORD

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International Standard IEC 61643-11 has been prepared by subcommittee 37A: Low-voltage surge protective devices, of IEC technical committee 37: Surge arresters.

This first edition of IEC 61643-11 cancels and replaces the second edition of IEC 61643-1 published in 2005. This edition constitutes a technical revision.

The main changes with respect of the second edition of IEC 61643-1 are the complete restructuring and improvement of the test procedures and test sequences.

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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 61643 series can be found, under the general title *Low-voltage surge protective devices*, 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

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- replaced by a revised edition, or
- amended.

NOTE The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for national implementation not earlier than 12 months from the date of publication.

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 publication using a colour printer.

INTRODUCTION

This part of IEC 61643 addresses safety and performance tests for surge protective devices (SPDs).

There are three classes of tests:

The Class I test is intended to simulate partial conducted lightning current impulses. SPDs subjected to Class I test methods are generally recommended for locations at points of high exposure, e.g., line entrances to buildings protected by lightning protection systems.

SPDs tested to Class II or III test methods are subjected to impulses of shorter duration.

SPDs are tested on a “black box” basis as far as possible.

IEC 61643-12 addresses the selection and application principles of SPDs in practical situations.

LOW-VOLTAGE SURGE PROTECTIVE DEVICES –

Part 11: Surge protective devices connected to low-voltage power systems – Requirements and test methods

1 Scope

This part of IEC 61643 is applicable to devices for surge protection against indirect and direct effects of lightning or other transient overvoltages. These devices are packaged to be connected to 50/60 Hz a.c. power circuits, and equipment rated up to 1 000 V r.m.s. Performance characteristics, standard methods for testing and ratings are established. These devices contain at least one nonlinear component and are intended to limit surge voltages and divert surge currents.

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 60060-1:1989, *High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 60112, *Method for the determination of the proof and the comparative tracking indices of solid insulating materials*

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

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

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*

IEC 61000 (all parts), *Electromagnetic compatibility (EMC)*

IEC 61180-1, *High-voltage test techniques for low voltage equipment – Part 1: Definitions, test and procedure requirements*

3 Terms, definitions and abbreviations

For the purposes of this document, the following terms, definitions and abbreviations apply.

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