

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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

**Parafoudres basse tension –  
Partie 11: Parafoudres connectés aux réseaux basse tension en courant  
alternatif – Exigences et méthodes d'essai**



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## CONTENTS

FOREWORD.....	5
INTRODUCTION .....	8
1 Scope.....	9
2 Normative references.....	9
3 Terms, definitions and abbreviated terms.....	10
3.1 Terms and definitions.....	10
4 Classification .....	10
4.13 End-of-life mode of the SPDA .....	10
4.100 Power system.....	10
4.100.1 AC between 47 Hz and 63 Hz .....	10
4.100.2 AC other than the range of 47 Hz to 63 Hz .....	10
5 Void .....	10
6 Marking and other product information .....	10
6.2 List of items .....	10
6.2.100 Markings which are required on the body, or permanently attached to the body, of the SPD .....	11
6.2.100.1 Markings which shall be visible after installation.....	11
6.2.100.2 Markings which are not required to be visible after installation.....	11
6.2.101 Information to be provided by the manufacturer .....	11
6.2.102 Information which shall be provided by the manufacturer for type testing, as applicable .....	11
7 Service conditions .....	11
7.100 Frequency.....	11
8 Requirements.....	11
8.3 Electrical requirements.....	11
8.3.6.4 Dedicated overstress behaviour .....	11
8.3.9 Behaviour under temporary overvoltages .....	12
8.3.9.100 TOVs caused by faults or disturbances in the low voltage system .....	12
8.3.9.101 TOVs caused by faults in the high (medium) voltage system .....	12
8.5 Environmental and material requirements.....	12
8.5.5 Ageing behaviour under damp heat .....	12
8.6.100 Portable SPDs defined as pluggable equipment type A.....	12
9 Tests.....	12
9.1 Type testing procedures .....	12
9.1.1 General.....	12
9.3 Electrical tests.....	17
9.3.3 Protective conductor current $I_{PE}$ .....	17
9.3.3.1 Test procedure .....	17
9.3.5 Operating duty test .....	17
9.3.5.2 Power source characteristics for the operating duty test .....	17
9.3.5.2.1 General .....	17
9.3.5.2.3 SPD's modes of protection with follow current according to Annex B of IEC 61643-01 .....	17
9.3.6 Safety performance of overstressed SPDs .....	17
9.3.6.2 Thermal protection test .....	17
9.3.6.2.2 Test settings .....	17

9.3.6.3 Short-circuit current behaviour test.....	18
9.3.6.3.3 Test at the declared short-circuit current rating .....	18
9.3.6.3.4 Test at low short-circuit current .....	18
9.3.6.4 Dedicated overstress test .....	19
9.3.6.4.100 Sample preparation .....	19
9.3.6.4.101 Test procedure .....	19
9.3.6.4.102 Pass criteria .....	21
9.3.9 Behaviour under temporary overvoltages (TOVs) .....	21
9.3.9.100 TOVs caused by faults in the low voltage system .....	21
9.3.9.100.1 General.....	21
9.3.9.100.2 Test procedure .....	21
9.3.9.100.3 Pass criteria .....	23
9.3.9.101 TOVs caused by faults in the high (medium) voltage system .....	23
9.3.9.101.1 General.....	23
9.3.9.101.2 Test procedure .....	23
9.3.9.101.3 Pass criteria .....	25
9.5 Environmental and material tests.....	25
9.5.5 Life test under damp heat.....	25
Annex AA (normative) Application of annexes from IEC 61643-01 .....	26
Annex BB (normative) Test voltages for SPDs – $U_{test}$ .....	27
Annex CC (normative) TOV Ratings .....	33
CC.1 Overview .....	33
CC.2 TOV ratings based on IEC 60364-4-44:2024, Clause 442.....	33
CC.3 Other TOV ratings for specific distribution systems or countries.....	34
CC.3.1 General.....	34
CC.3.2 North American systems.....	34
CC.3.3 Japanese systems .....	35
Annex DD (normative) Reduced test procedures.....	36
Annex EE (normative) Portable SPDs defined as pluggable equipment type A .....	38
EE.1 General .....	38
EE.2 Additional requirements.....	38
EE.3 Modified test requirements.....	39
EE.3.1 Test at low short-circuit current .....	39
EE.3.2 Dedicated overstress test .....	39
EE.3.3 Behaviour under temporary overvoltages (TOVs) .....	39
Bibliography.....	41
Figure 100 – Test circuit for the dedicated overstress test .....	20
Figure 101 – Timing diagram for the dedicated overstress test.....	20
Figure 102 – Example of a test circuit to perform the test under TOVs caused by faults in the low voltage system .....	22
Figure 103 – Timing diagram for the test under TOVs caused by faults in the low voltage system .....	23
Figure 104 – Example of a test setup for testing SPDs for use in TT systems under TOVs caused by faults in high (medium) voltage systems.....	24
Figure 105 – Timing diagram for use in testing SPDs under TOVs caused by faults in the high (medium) voltage system using the circuit of Figure 104 .....	25
Table 100 – Type test requirements for SPDs.....	14

Table 101 – Prospective short-circuit current and power factor.....	18
Table AA.1 – Application of annexes from IEC 61643-01 .....	26
Table BB.1 – Test voltage values .....	28
Table BB.2 – Test voltage values for Japanese systems.....	32
Table CC.1 – TOV test values for systems complying with IEC 60364 series .....	34
Table CC.2 – TOV test parameters for North American systems.....	35
Table CC.3 – TOV test parameters for Japanese systems .....	35
Table DD.1 – Reduced test procedure for SPDs complying with IEC 61643-11:2011 .....	36
Table EE.1 – TOV test values for systems complying with IEC 60364 series for portable SPDs.....	40
Table EE.2 – TOV test parameters for Japanese systems.....	40

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**LOW-VOLTAGE SURGE PROTECTIVE DEVICES –****Part 11: Surge protective devices connected to AC low-voltage power systems – Requirements and test methods**

## FOREWORD

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

This second edition cancels and replaces the first edition published in 2011. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) Specific requirements for SPDs for AC applications are now contained in this document, whereas the common requirements for all SPDs are now contained in IEC 61643-01;
- b) Clarification on test application either to a complete SPD, to a "mode of protection", or to a complete "SPD assembly";

- c) Additional measurement of voltage protection level on "combined modes of protection" between live conductors and PE;
- d) Additional duty test for T1 and T2 SPDs with follow current to check variation of the follow current value at lower impulse currents;
- e) Modified and amended short circuit current test requirements to better cover up to date internal SPD disconnecter technologies;
- f) Improved dielectric test requirements for the SPD's main circuits and added dielectric test requirements for "electrically separated circuits";
- g) Additional clearance requirements for "electrically separated circuits".

The requirements of this document supplement, modify or replace certain of the general requirements contained in IEC 61643-01 and shall be read and applied together with the latest edition of IEC 61643-01, as indicated by the undated normative reference in Clause 2 of this document.

Numbering of clauses follows the numbering of IEC 61643-01, but, dependent on the application of clauses from IEC 61643-01, does not necessarily follow sequentially.

If a clause in IEC 61643-01 is not explicitly called up or referred to in this document, then this clause does not apply to SPDs covered by this document. Any instructions in this document calling up clauses from IEC 61643-01 are written in *Italic type*.

NOTE In other words, if e.g. Clause 4 is called up in this document all subclauses of Clause 4 of IEC 61643-01 are applied without modification. But, if e.g. some modifications are required on subclauses of Clause 9 of IEC 61643-01, then the relevant second level subclauses of IEC 61643-01 (e.g. 9.3, 9.5 etc.) are called up separately and it is indicated how they are applied.

The numbering of additional subclauses to IEC 61643-01 in this document starts with the number 100 in the last section of the subclause added (see e.g. 4.100). The numbering of additional tables and figures to IEC 61643-01 in this document starts with the number 100.

The text of this International Standard is based on the following documents:

Draft	Report on voting
37A/427/FDIS	37A/431/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

A list of all parts in the IEC 61643 series, published under the general title *Low-voltage surge protective devices*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

## INTRODUCTION

It has been assumed in the drafting of this International Standard that the execution of its provisions is entrusted to appropriately qualified and experienced persons.

This document recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of SPDs when operated as in normal use taking into account the manufacturer's instructions. It also covers abnormal situations that can be expected in practice.

This document takes into account the requirements of IEC 60364 as far as possible so that there is compatibility with the wiring rules when the SPD is connected to the supply mains. However, national wiring rules might differ.

If the intended applications of an SPD are covered by different parts of the IEC 61643-X1 series, all relevant parts are applied, as far as is reasonable.

This document addresses safety and performance tests for surge protective devices (SPDs) for AC applications in conjunction with IEC 61643-01.

This document addresses T1 SPD, T2 SPD and T3 SPD according to IEC 61643-01.

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