Irish Standard
I.S. EN 61643-311:2013

Components for low-voltage surge protective devices -- Part 311: Performance requirements and test circuits for gas discharge tubes (GDT) (IEC 61643-311:2013 (EQV))

I.S. EN 61643-311:2013

Incorporating amendments/corrigenda issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

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S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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English version

Components for low-voltage surge protective devices - Part 311: Performance requirements and test circuits for gas discharge tubes (GDT)

(IEC 61643-311:2013)

Composants pour parafoudres basse tension -
Partie 311: Exigences de performance et circuits d'essai pour tubes à décharge de gaz (TDG)
(CEI 61643-311:2013)

Bauelemente für Überspannungsschutzgeräte für Niederspannung -
Teil 311: Leistungsanforderungen sowie Prüfschaltungen und -verfahren für Gasentladungsableiter (ÜsAG)
(IEC 61643-311:2013)

This European Standard was approved by CENELEC on 2013-05-16. 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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CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 37B/113/FDIS, future edition 2 of IEC 61643-311, prepared by SC 37B, "Specific components for surge arresters and surge protective devices", of IEC TC 37, "Surge arresters" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61643-311:2013.

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)	2014-02-16
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2016-05-16

This document partially supersedes EN 61643-311:2001.

EN 61643-311:2013 includes the following significant technical changes with respect to EN 61643-311:2001:

- addition of performance values.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 61643-311:2013 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 60364-5-51:2005	NOTE	Harmonised as HD 60364-5-51:2009 (modified).
IEC 61180-1:1992	NOTE	Harmonised as EN 61180-1:1994 (not modified).
IEC 61643-312	NOTE	Harmonised as EN 61643-312.
IEC 61643-11:2011	NOTE	Harmonised as EN 61643-11:2012 (modified).
IEC 61643-21:2000 + A1:2008	NOTE	Harmonised as EN 61643-21:2001 (not modified) + A1:2009 (modified)

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60068-2-1	2007	Environmental testing - Part 2-1: Tests - Test A: Cold	EN 60068-2-1	2007
IEC 60068-2-20	2008	Environmental testing - Part 2-20: Tests - Test T: Test methods for solderability and resistance to soldering heat of devices with leads	EN 60068-2-20	2008
IEC 60068-2-21 + corr. January	2006 2012	Environmental testing - Part 2-21: Tests - Test U: Robustness of terminations and integral mounting devices	EN 60068-2-21	2006
IEC 61000-4-5 + corr. October	2005 2009	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	2006
ITU-T Recommendation K.20	2011	Resistibility of telecommunication equipment installed in a telecommunications centre to overvoltages and overcurrents	-	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMPONENTS FOR LOW-VOLTAGE SURGE PROTECTIVE DEVICES –

Part 311: Performance requirements and test circuits for gas discharge tubes (GDT)

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 61643-311 has been prepared by subcommittee 37B: Specific components for surge arresters and surge protective devices, of IEC technical committee 37: Surge arresters.

This second edition of IEC 61643-311 cancels and replaces the first edition published in 2001. It constitutes a technical revision.

Specific changes with respect to the previous edition are:

– Addition of performance values.

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

FDIS	Report on voting
37B/113/FDIS	37B/118/RVD

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 IEC 61643 series, under the general title *Components for low-voltage surge protective devices* can be found 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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

COMPONENTS FOR LOW-VOLTAGE SURGE PROTECTIVE DEVICES –

Part 311: Performance requirements and test circuits for gas discharge tubes (GDT)

1 Scope

This part of IEC 61643 is applicable to gas discharge tubes (GDT) used for overvoltage protection in telecommunications, signalling and low-voltage power distribution networks with nominal system voltages up to 1 000 V (r.m.s.) a.c. and 1 500 V d.c..They are defined as a gap, or several gaps with two or three metal electrodes hermetically sealed so that gas mixture and pressure are under control. They are designed to protect apparatus or personnel, or both, from high transient voltages. This standard contains a series of test criteria, test methods and test circuits for determining the electrical characteristics of GDTs having two or three electrodes. This standard does not specify requirements applicable to complete surge protective devices, nor does it specify total requirements for GDTs employed within electronic devices, where precise coordination between GDT performance and surge protective device withstand capability is highly critical.

This part of IEC 61643

– does not deal with mountings and their effect on GDT characteristics. Characteristics given apply solely to GDTs mounted in the ways described for the tests;

– does not deal with mechanical dimensions;

– does not deal with quality assurance requirements;

– may not be sufficient for GDTs used on high-frequency (>30 MHz);

– does not deal with electrostatic voltages;

– does not deal with hybrid overvoltage protection components or composite GDT devices.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-2-1:2007, *Environmental testing – Part 2: Tests. Tests A: Cold*

IEC 60068-2-20:2008, *Environmental testing – Part 2: Tests. Test T: Test methods for solderability and resistance to soldering heat of devices with leads*

IEC 60068-2-21:2006, *Environmental testing – Part 2-21: Tests – Test U: Robustness of terminations and integral mounting devices*

IEC 61000-4-5:2005, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 5: Surge immunity test*

ITU-T Recommendation K.20:2011, *Resistibility of telecommunication equipment installed in a telecommunications centre to overvoltages and overcurrents*