

SLOVENSKI STANDARD
SIST EN 61643-21:2002/A2:2014
01-januar-2014

Nizkonapetostne naprave za zaščito pred prenapetostnimi udari - 21. del: Naprave, priključene na telekomunikacijska in signalna omrežja - Zahtevane lastnosti in preskusne metode - Dopolnilo A2

Low voltage surge protective devices – Part 21: Surge protective devices connected to telecommunications and signalling networks – Performance requirements and testing methods

Überspannungsschutzgeräte für Niederspannung - Teil 21: Überspannungsschutzgeräte für den Einsatz in Telekommunikations- und signalverarbeitenden Netzwerken - Leistungsanforderungen und Prüfverfahren

Parafoudres basse-tension - Partie 21: Parafoudres connectés aux réseaux de signaux et de télécommunications - Prescriptions de fonctionnement et méthodes d'essais

Ta slovenski standard je istoveten z: EN 61643-21:2001/A2:2013

ICS:

29.120.50	Varovalke in druga medtokovna zaščita	Fuses and other overcurrent protection devices
29.240.10	Transformatorske postaje. Prenapetostni odvodniki	Substations. Surge arresters

SIST EN 61643-21:2002/A2:2014 **en**

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[SIST EN 61643-21:2002/A2:2014](https://standards.iteh.ai/catalog/standards/sist/e766e618-df12-4bb1-b034-48d590b0c1dd/sist-en-61643-21-2002-a2-2014)

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 61643-21/A2

January 2013

ICS 29.240; 29.240.10

English version

**Low voltage surge protective devices -
Part 21: Surge protective devices connected to telecommunications
and signalling networks -
Performance requirements and testing methods
(IEC 61643-21:2000/A2:2012)**

Parafoudres basse-tension -
Partie 21: Parafoudres connectés
aux réseaux de signaux
et de télécommunications -
Prescriptions de fonctionnement
et méthodes d'essais
(CEI 61643-21:2000/A2:2012)

Überspannungsschutzgeräte
für Niederspannung -
Teil 21: Überspannungsschutzgeräte für
den Einsatz in Telekommunikations- und
signalverarbeitenden Netzwerken -
Leistungsanforderungen
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This amendment A2 modifies the European Standard EN 61643-21:2001; it was approved by CENELEC on 2012-08-31. 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.

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 amendment 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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 37A/236/FDIS, future amendment 2 to edition 1 of IEC 61643-21, prepared by IEC/SC 37A "Low-voltage surge protective devices" of IEC/TC 37 "Surge arresters" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61643-21:2001/A2:2013.

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) 2013-07-25
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2015-08-31

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.

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 61643-21:2000/A2:2012 was approved by CENELEC as a European Standard without any modification.

In the Bibliography of EN 61643-21:2001, the following note has to be **added** for the standard indicated:

IEC 60664-1 **NOTE** Harmonised as EN 60664-1
<https://standards.iteh.ai/catalog/standards/sist/e766e618-df12-4bb1-b034-48d590b0c1dd/sist-en-61643-21-2002-a2-2014>
 SIST EN 61643-21:2002/A2:2014

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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
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*In Annex ZA of EN 61643-21:2001, **replace** IEC 60999-1:1999 by IEC 60999-1:*

IEC 60999-1	-	Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units - Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm ² up to 35 mm ² (included)	EN 60999-1	-
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*In Annex ZA of EN 61643-21:2001, **replace** ITU-T Recommendation K.30:1993 by ITU-T Recommendation K.82:*

ITU-T Recommendation K.82	-	Characteristics and ratings of solid-state, self-restoring overcurrent protectors for the protection of telecommunication installations	-	-
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Add to Annex ZA of EN 61643-21:2001 the following new references:

IEC 61643-11 (mod)	2011	Low-voltage surge protective devices - Part 11: Surge protective devices connected to low-voltage power systems - Requirements and test methods	EN 61643-11	2012
ITU-T Recommendation K.44	2011	Resistibility tests for telecommunication equipment exposed to overvoltages and overcurrents - Basic Recommendation	-	-

*In Annex ZA of EN 61643-21:2001/A1:2009, **delete** ITU-T Recommendation K.65*

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IEC 61643-21

Edition 1.0 2012-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 2
AMENDEMENT 2

**Low voltage surge protective devices –
Part 21: Surge protective devices connected to telecommunications and
signalling networks – Performance requirements and testing methods**

**Parafoudres basse tension –
Partie 21: Parafoudres connectés aux réseaux de signaux et de
télécommunications – Prescriptions de fonctionnement et méthodes d'essais**

INTERNATIONAL
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FOREWORD

This amendment has been prepared by subcommittee 37A: Low-voltage surge protective devices, of IEC technical committee 37: Surge arresters.

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

FDIS	Report on voting
37A/236/FDIS	37A/237/RVD

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

The committee has decided that the contents of this amendment and the base 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.

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Table 1 – General SPD requirements

Replace existing Table 1 with the following new table:

Test series ^d	Requirement – Test	Sub-clause	Type of SPD					
			SPD with only voltage-limiting function	SPD with both voltage-limiting and current-limiting functions	SPD with voltage-limiting function and linear component between its terminals	SPD having both voltage-limiting and current-limiting functions with enhanced transmission capabilities	SPD having only voltage-limiting function but intended for use in extended range environment	SPD having both voltage-limiting and current-limiting functions but intended for use in extended range environment
1	General test	6.1						
	Identification and documentation	6.1.1	A	A	A	A	A	A
	Marking	6.1.2	A	A	A	A	A	A
	Transmission tests	6.2.3						
	Capacitance	6.2.3.1	A	O	O	O	A	O
	Insertion loss	6.2.3.2	O	A	A	A	O	A
	Return loss	6.2.3.3	O	O	O	A	O	O
	Longitudinal balance	6.2.3.4	O	O	O	A	O	O
	Bit Error Ratio (BER)	6.2.3.5	O	O	O	O	O	O
	Near-end crosstalk (NEXT)	6.2.3.6	O	O	O	A	O	O
	Mechanical tests	6.3						
	Terminals and connectors	6.3.1	A	A	A	A	A	A
	General testing procedure	6.3.1.1	A	A	A	A	A	A
	Terminals with screws	6.3.1.2	A	A	A	A	A	A
	Screwless terminals	6.3.1.3	A	A	A	A	A	A
	Insulating pierced connections	6.3.1.4	A	A	A	A	A	A
	Pull-out-test on SPD terminals designed for single-core conductors	6.3.1.4.1	A	A	A	A	A	A
	Pull-out-test on SPD terminals designed for multi-core cables and cords	6.3.1.4.2	A	A	A	A	A	A
	Mechanical strength (mounting)	6.3.2	A	A	A	A	A	A

Table 1 (continued)

Test series ^d	Requirement – Test	Sub-clause	Type of SPD					
			SPD with only voltage-limiting function	SPD with both voltage-limiting and current-limiting functions	SPD with voltage-limiting function and linear component between its terminals	SPD having both voltage-limiting and current-limiting functions with enhanced transmission capabilities	SPD having only voltage-limiting function but intended for use in extended range environment	SPD having both voltage-limiting and current-limiting functions but intended for use in extended range environment
	Resistance to ingress of solid objects and to harmful ingress of water	6.3.3	A	A	A	A	A	A
	Protection against direct contact	6.3.4	A	A	A	A	A	A
	Fire resistance	6.3.5	A	A	A	A	A	A
	Environmental tests	6.4						
	High temperature and humidity endurance	6.4.1	O	O	O	O	A	A
	Environmental cycling with impulse surges	6.4.2	O	O	O	O	A	A
	Environmental cycling with AC surges	6.4.3	O	O	O	O	A	A
2	Voltage limiting tests	6.2.1						
	Maximum continuous operating voltage (U _c)	6.2.1.1	A	A	A	A	A	A
	Insulation resistance	6.2.1.2	A	A	A	A	A	A
	Impulse durability for voltage limiting function ^a	6.2.1.6	A	A	A	A	A	A
	Impulse-limiting voltage ^b	6.2.1.3	A	A	A	A	A	A
	Impulse reset switching types	6.2.1.4	A	A	A	A	A	A
	AC durability for voltage limiting function ^a	6.2.1.5	O	O	O	O	O	O
	Blind spot test multi stage SPD	6.2.1.8	A	A	A	A	A	A
	Overstressed fault mode	6.2.1.7	O	O	O	O	O	O
3	Current limiting tests	6.2.2						
	Rated current	6.2.2.1	A ^e	A	A	A	A ^e	A
	Series resistance	6.2.2.2	N.A.	A	A	A	N.A.	A
	Current response time	6.2.2.3	N.A.	A	N.A.	A ^c	N.A.	A ^c
	Current reset time	6.2.2.4	N.A.	A	N.A.	A ^c	N.A.	A ^c
	Maximum interrupting voltage	6.2.2.5	N.A.	A	N.A.	A ^c	N.A.	A ^c
	Operating duty test	6.2.2.6	N.A.	A	N.A.	A ^c	N.A.	A ^c
	AC durability for current limiting function ^a	6.2.2.7	N.A.	A	N.A.	A ^c	N.A.	A ^c
	Impulse durability for current limiting function ^a	6.2.2.8	N.A.	A	N.A.	A ^c	N.A.	A ^c
4	Acceptance tests	6.5	O	O	O	O	O	O

Table 1 (continued)

A	Applicable.
N.A.	Not applicable.
O	Optional.
^a	For each category of test impulse a new set of samples can be used.
^b	It is admissible to measure the impulse-limiting voltage 6.2.1.3 while testing impulse durability 6.2.1.6.
^c	Test not applicable if there is a linear component between its terminals.
^d	Each test series is carried out on three samples.
^e	Applicable only for 4/5 terminal SPD (see fig. 1d and 1e)

2 Normative references

Replace the existing reference to IEC 60999-1:1999 with the following:

IEC 60999-1, *Connecting devices – Electrical copper conductors – Safety requirements for screw-type and screwless-type clamping units – Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm² up to 35 mm² (included)*

Replace the existing reference to ITU-T Recommendation K.30:1993 with the following:

ITU-T Recommendation K.82, *Characteristics and ratings of solid-state, self-restoring overcurrent protectors for the protection of telecommunications installations*

Add the following new references:

IEC 61643-11:2011, *Surge protective devices connected to low-voltage power distribution systems – Part 1: Performance requirements and testing methods*

ITU-T Recommendation K.44: 2011, *Resistibility tests for telecommunication equipment exposed to overvoltages and overcurrents – Basic Recommendation*

Delete the reference to ITU-T Recommendation K.65

3 Definitions

Replace the existing definition 3.11 with the following:

3.11

total discharge current I_{Total}

current which flows through the earthing terminal (common terminal C) of a multi-terminal SPD during the total discharge current test.

NOTE This may also be called “Total surge current”.

Add the following new definitions:

3.33

nominal discharge current I_n

crest value of the current through the SPD having a current waveshape of 8/20