
Sestavni deli za nizkonapetostne naprave za zaščito pred prenapetostnimi udari - 332. del: Izbira in načini uporabe za kovinsko-oksidne varistorje (MOV)

Components for low-voltage surge protection - Part 332: Selection and application principles for metal oxide varistors (MOV)

Bauelemente für den Überspannungsschutz bei Niederspannungen - Teil 332: Auswahl- und Anwendungsgrundsätze für Metalloxidvaristoren (MOV)

Composants de protection contre les surtensions basse tension - Partie 332 : Principes de sélection et d'application pour les varistances à oxyde métallique (MOV)

Ta slovenski standard je istoveten z: EN IEC 61643-332:2024

[SIST EN IEC 61643-332:2024](https://standards.slovenski-institut.si/standards/sist/2024/iec-61643-332-2024)

<https://standards.slovenski-institut.si/standards/sist/2024/iec-61643-332-2024>

ICS:

29.120.50	Varovalke in druga nadtokovna zaščita	Fuses and other overcurrent protection devices
31.040.20	Potenciometri, spremenljivi upori	Potentiometers, variable resistors

SIST EN IEC 61643-332:2024**en**

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Components for low-voltage surge protection - Part 332:
Selection and application principles for metal oxide varistors
(MOV)
(IEC 61643-332:2024)

Composants pour parafoudres basse tension - Partie 332:
Choix et principes d'application des varistances à oxyde
métallique (MOV)
(IEC 61643-332:2024)

Bauelemente für den Überspannungsschutz bei
Niederspannungen - Teil 332: Auswahl- und
Anwendungsgrundsätze für Metalloxidvaristoren (MOV)
(IEC 61643-332:2024)

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

EN IEC 61643-332:2024 (E)**European foreword**

The text of document 37B/243/FDIS, future edition 1 of IEC 61643-332, prepared by SC 37B "Components for low-voltage surge protection" of IEC/TC 37 "Surge arresters" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61643-332:2024.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2025-02-22 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2027-05-22 document have to be withdrawn

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Endorsement notice

The text of the International Standard IEC 61643-332:2024 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 standard indicated:

IEC 60364-5-51:2005	NOTE	Approved as HD 60364-5-51:2009 +A11:2013 +A12:2017
IEC 61000-4-2:2008	NOTE	Approved as EN 61000-4-2:2009 (not modified)
IEC 60068-1:2013	NOTE	Approved as EN 60068-1:2014 (not modified)
IEC 60068-2-20:2021	NOTE	Approved as EN IEC 60068-2-20:2021 (not modified)
IEC 60068-2-21:2021	NOTE	Approved as EN IEC 60068-2-21:2021 (not modified)
IEC 60068-2-78:2012	NOTE	Approved as EN 60068-2-78:2013 (not modified)
IEC 60721-3-3:2019	NOTE	Approved as EN IEC 60721-3-3:2019 (not modified)
IEC 61643-21:2000	NOTE	Approved as EN 61643-21:2001 (not modified)
IEC 61643-21:2000/A1:2008	NOTE	Approved as EN 61643-21:2001/A1:2009
IEC 61643-21:2000/A2:2012	NOTE	Approved as EN 61643-21:2001/A2:2013 (not modified)

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cencenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60664-1	2020	Insulation coordination for equipment within low-voltage supply systems - Part 1: Principles, requirements and tests	EN IEC 60664-1	2020
IEC 61051-1	2018	Varistors for use in electronic equipment - Part 1: Generic specification	EN IEC 61051-1	2018
IEC 61051-2	2021	Varistors for use in electronic equipment - Part 2: Sectional specification for surge suppression varistors	EN IEC 61051-2	2021
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
-	-		+ A11	2018
IEC 61643-331	2020	Components for low-voltage surge protection - Part 331: Performance requirements and test methods for metal oxide varistors (MOV)	EN IEC 61643-331	2020
IEC 62368-1	2023	Audio/video, information and communication technology equipment - Part 1: Safety requirements	EN IEC 62368-1	2024



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INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Components for low-voltage surge protection –
Part 332: Selection and application principles for metal oxide varistors (MOV)**

**Composants pour parafoudres basse tension –
Partie 332: Choix et principes d'application des varistances à oxyde métallique
(MOV)**

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CONTENTS

FOREWORD.....	5
1 Scope.....	7
2 Normative references	7
3 Terms, definitions, symbols and abbreviated terms.....	7
3.1 Terms and definitions.....	8
3.1.1 Ratings.....	8
3.1.2 Characteristics.....	9
3.2 Symbols and abbreviated terms	12
3.2.1 Symbols	12
3.2.2 Abbreviated terms	13
4 General	13
5 Construction	13
6 Function	14
6.1 Theory of operation.....	14
6.2 Thermal protection of MOVs	15
6.3 Failure modes	16
6.3.1 General	16
6.3.2 Short-circuit failure mode.....	16
6.3.3 Degradation failure mode.....	16
6.3.4 Open-circuit and high clamping voltage failure mode	17
7 Application	17
7.1 MOVs basic application.....	17
7.1.1 Application circuit	17
7.1.2 Operational compatibility	18
7.1.3 Voltage limiting.....	18
7.1.4 Selection of MOVs	18
7.1.5 Mitigating the consequences of failure	27
7.1.6 Operations to failure	30
7.1.7 Earthing and bonding.....	30
7.1.8 Location of MOVs	31
7.1.9 Applications for MOVs	31
7.1.10 Parallel connections	32
7.1.11 Series connections	33
7.2 Thermally protected metal oxide varistor.....	33
7.2.1 Introduction	33
7.2.2 Selection of thermally protected MOV	34
7.2.3 Time to open characteristics	34
7.3 ESD.....	34
7.3.1 Background	34
7.3.2 Standards.....	35
7.3.3 Application example 1.....	35
7.3.4 Application example 2.....	35
7.4 Consideration for TOV	35
7.4.1 Failure of the low-voltage power supply circuit.....	35
7.4.2 Failure of high voltage or medium voltage power supply circuit.....	36
8 Safety and hazard information for MOVs.....	36

8.1	Overview.....	36
8.1.1	General	36
8.1.2	Confirmation of rated performance.....	36
8.2	Fire risks.....	36
8.2.1	General	36
8.2.2	Use between lines	36
8.2.3	Use between line and earth	37
8.2.4	Shatter-proof	37
8.2.5	Prevention of burning	37
8.2.6	Environmental condition	37
8.3	Electrical shock risks	37
8.4	Typical precaution statement for the use of MOVs	37
8.4.1	Information related to degradation and failures of MOVs.....	37
8.4.2	Information related to scattering of MOVs	38
8.4.3	Information related to equipment damage or malfunction	38
8.4.4	Information related to accidents caused by unexpected phenomena	38
Annex A	(informative) Terms and explanations	39
A.1	Single-impulse peak current I_{TM}	39
A.2	Maximum continuous voltage V_M	39
A.3	Standby current I_D	39
A.3.1	AC Standby current	39
A.3.2	DC Standby current I_{DC}	40
A.4	varistor voltage V_V	42
A.5	Clamping voltage V_C	42
A.6	Capacitance C_V	44
Annex B	(informative) MOV durability evaluation under DC bias condition	45
B.1	Introduction.....	45
B.2	Durability test.....	45
B.3	Typical performances in MOV durability evaluation	46
B.3.1	Ambient temperature: 85 °C.....	46
B.3.2	Ambient temperature: 105 °C.....	47
B.4	Conclusion.....	47
Annex C	(informative) Typical application circuits of thermally protected MOVs	48
Annex D	(informative) MOV application for wind turbine systems	50
Annex E	(informative) 5G powering surge protection.....	51
E.1	AC power protection	51
E.2	DC power protection	51
Annex F	(informative) Comparison of MOV terms with other standards	53
Annex G	(informative) How to select MOV/thermally protected MOV for equipment.....	55
Annex H	(informative) How to select an MOV/thermally protected MOV for an SPD	57
Bibliography	59
Figure 1	– V - I characteristic of an MOV	10
Figure 2	– Symbol for an MOV	12
Figure 3	– Symbol for a thermally protected MOV	12
Figure 4	– Schematic depiction of microstructure of MOV	13

Figure 5 – Typical varistor $V-I$ curve plotted log-log scale.....	14
Figure 6 – MOV equivalent circuit model.....	15
Figure 7 – Possible connection of MOVs (simplified).....	17
Figure 8 – Overvoltage categories	20
Figure 9 – Test data example of impulse current vs repetitions for 14 mm MOVs	21
Figure 10 – Example of 10 mm, 14 mm and 20 mm MOV voltage current characteristics	22
Figure 11 – K value for various waveforms.....	24
Figure 12 – 5/50 exponential waveform as an example	25
Figure 13 – MOV pulse energy versus pulse width for various pulse repetitions	25
Figure 14 – Options for MOV fuse connection	28
Figure 15 – Time-current characteristic of fast acting and time delay fuse.....	29
Figure 16 – Parallel connection of MOVs	32
Figure 17 – Example of $V-I$ characteristics for two parallel MOVs.....	32
Figure 18 – Operating Time	34
Figure 19 – Example of MOV application for ESD	35
Figure 20 – Example of 4 ports application using MOVs for ESD.....	35
Figure 21 – Combination an MOV with a GDT	36
Figure A.1 – Short term effect of temperature, frequency, and voltage on standby power of a typical 20 mm MOV	40
Figure A.2 – Typical temperature coefficient of voltage versus current, 14 mm size, -55 °C to 125 °C.....	41
Figure A.3 – Typical clamping voltage response to 8/20 test current impulse	42
Figure A.4 – Illustration of static (DC) I–V characteristics on linear scale	43
Figure B.1 – Durability test result at 85 °C	46
Figure B.2 – Durability test result at 105 °C	47
Figure C.1 – AC Application Circuit.....	48
Figure C.2 – DC Photovoltaic Application circuit	49
Figure E.1 – AC power feed protection according to ITU-T K.120.....	51
Figure E.2 – DC power feed protection according to ITU-T K.97 and Diode steering	52
Figure G.1 – Flow chart of MOV/thermally protected MOV selection for equipment	56
Figure H.1 – Flow chart of MOV/thermally protected MOV selection for an SPD	58
Table D.1 – Example of characteristics of the generator alternator excitation circuit and selected SPD	50
Table F.1 – Comparison of MOV terms/symbols with other standards for MOV voltages	53
Table F.2 – Comparison of MOV terms/symbols with other standards for impulse current ratings	53
Table F.3 – Comparison of MOV terms/symbols with other standards for TOV and abnormal voltage testing	54

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMPONENTS FOR LOW-VOLTAGE SURGE PROTECTION –**Part 332: Selection and application principles
for metal oxide varistors (MOV)**

FOREWORD

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IEC 61643 has been prepared by subcommittee 37B: Components for low voltage surge protection, of IEC technical committee 37: Surge arresters. It is an International Standard.

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

Draft	Report on voting
37B/243/FDIS	37B/245/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. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 61643 series, published under the general title *Components for low-voltage surge protection*, 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 in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

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COMPONENTS FOR LOW-VOLTAGE SURGE PROTECTION –

Part 332: Selection and application principles for metal oxide varistors (MOV)

1 Scope

This part of IEC 61643 describes the theory of operation, principles for the selection and application of MOVs to be connected to power lines or telecommunication or signalling circuits, up to 1 000 V AC or 1 500 V DC. These SPCs are designed to protect apparatus or personnel, or both, from high transient voltages.

This document applies to MOVs having two electrodes and voltage dependent elements with or without disconnectors. It does not apply to assemblies that include MOVs and their influence on the MOV's characteristics.

This standard specifically discusses the zinc-oxide type of MOVs.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60664-1:2020, *Insulation coordination for equipment within low-voltage supply systems – Part 1: Principles, requirements and tests*

IEC 61051-1:2018, *Varistors for use in electronic equipment – Part 1: Generic specification*

IEC 61051-2:2021, *Varistors for use in electronic equipment – Part 2: Sectional specification for surge suppression varistors*

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

IEC 61643-331:2020, *Components for low-voltage surge protection – Part 331: Performance requirements and test methods for metal oxide varistors (MOV)*

IEC 62368-1:2023, *Audio/video, information and communication technology equipment – Part 1: Safety requirements*

3 Terms, definitions, symbols and abbreviated terms

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1 Terms and definitions

3.1.1 Ratings

3.1.1.1 rating

limiting capability or limiting condition beyond which damage to the MOV may occur

Note 1 to entry: A limiting condition may be either a maximum or a minimum.

3.1.1.2 single-impulse [transient] maximum current

I_{TM}

rated maximum value of current which may be applied for a single impulse of specified waveform

Note 1 to entry: For power distribution SPDs, IEC 61643-11, Maximum Discharge Current I_{max} is used.

[SOURCE: IEC 61643-331:2020, 3.1.1.2]

3.1.1.3 nominal discharge current

I_n

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

[SOURCE: IEC 61643-331:2020, 3.1.1.3]

3.1.1.4 maximum continuous voltage

V_M

maximum voltage that may be applied continuously at a specified temperature

Note 1 to entry: May also be called U_C or MCOV (Maximum continuous operating voltage).

Note 2 to entry: See Figure 1.

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[SOURCE: IEC 61643-331:2020, 3.1.1.7, modified (addition of "Maximum continuous operating voltage" to Note 1 to entry)]

3.1.1.5 maximum continuous AC voltage

$V_{M(AC)}$

maximum value of RMS power frequency voltage (less than 5 % total harmonic distortion) that may be applied continuously at a specified temperature

[SOURCE: IEC 61643-331:2020, 3.1.1.8]

3.1.1.6 maximum continuous DC voltage

$V_{M(DC)}$

maximum value of DC voltage that may be applied continuously at a specified temperature

[SOURCE: IEC 61643-331:2020, 3.1.1.9]