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High-voltage switchgear and controlgear - Part 318: DC gas-insulated metal-enclosed switchgear for rated voltages including and above 100 kV

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 03/26

Obsahuje: CLC IEC/TS 62271-318:2025, IEC TS 62271-318:2024

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High-voltage switchgear and controlgear - Part 318: DC gas-insulated metal-enclosed switchgear for rated voltages including and above 100 kV
(IEC/TS 62271-318:2024)

Appareillage haute tension - Partie 318: Appareillage à courant continu sous enveloppe métallique à isolation gazeuse de tension assignée supérieure ou égale à 100 kV
(IEC/TS 62271-318:2024)

Hochspannungs-Schaltgeräte und -Schaltanlagen - Teil 318: Metallgekapselte gasisolierte Gleichstrom-Schaltanlagen für Bemessungsspannungen größer oder gleich 100 kV
(IEC/TS 62271-318:2024)

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CLC IEC/TS 62271-318:2025 (E)**European foreword**

This document (CLC IEC/TS 62271-318:2025) consists of the text of IEC/TS 62271-318:2024 prepared by IEC/TC 17 "High-voltage switchgear and controlgear".

This document is read in conjunction with CLC IEC/TS 62271-5:2025.

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In the official version, for Bibliography, the following notes have to be added for the standard indicated:

IEC 60071-12:2022	NOTE	Approved as EN IEC 60071-12:2022 (not modified)
IEC 61672-1:2013	NOTE	Approved as EN 61672-1:2013 (not modified)
IEC 61672-2:2013	NOTE	Approved as EN 61672-2:2013 (not modified)
IEC 62271-203:2022	NOTE	Approved as EN IEC 62271-203:2022 (not modified)
IEC 62271-207:2023	NOTE	Approved as EN IEC 62271-207:2023 (not modified)
IEC 63360	NOTE	Approved as EN IEC 63360
IEC 60071-11	NOTE	Approved as EN IEC 60071-11

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 60060-1	2010	High-voltage test techniques - Part 1: General definitions and test requirements	EN 60060-1	2010
IEC 60085	2007	Electrical insulation - Thermal evaluation and designation	EN 60085	2008
IEC 60068-2-11	2021	Environmental testing - Part 2-11: Tests - Test Ka: Salt mist	EN IEC 60068-2-11	2021
IEC 60068-2-17	2023	Environmental testing - Part 2-17: Tests - Test Q: Sealing	EN IEC 60068-2-17	2023
IEC/IEEE 60076-57-129	2017	Power transformers - Part 57-129: Transformers for HVDC applications	-	-
IEC 60099-4	2014	Surge arresters - Part 4: Metal-oxide surge arresters without gaps for a.c. systems	EN 60099-4	2014
IEC 60099-9	2014	Surge arresters - Part 9: Metal-oxide surge arresters without gaps for HVDC converter stations	EN 60099-9	2014
IEC 60137	2017	Insulated bushings for alternating voltages above 1000 V	EN 60137	2017
IEC 60270	2000	High-voltage test techniques - Partial discharge measurements	EN 60270	2001
+ A1	2015		+ A1	2016
IEC 60376	2018	Specification of technical grade sulphur hexafluoride (SF ₆) and complementary gases to be used in its mixtures for use in electrical equipment	EN IEC 60376	2018
IEC 60480	2019	Specifications for the re-use of sulphur hexafluoride (SF ₆) and its mixtures in electrical equipment	EN IEC 60480	2019
IEC/TS 60815-1	2008	Selection and dimensioning of high-voltage insulators intended for use in polluted conditions - Part 1: Definitions, information and general principles	-	-

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<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC/TS 60815-4	2016	Selection and dimensioning of high-voltage insulators intended for use in polluted conditions - Part 4: Insulators for d.c. systems	-	-
IEC 61869-14	2018	Instrument transformers - Part 14: Additional requirements for current transformers for DC applications	EN IEC 61869-14	2019
IEC 61869-15	2018	Instrument transformers - Part 15: Additional requirements for voltage transformers for DC applications	EN IEC 61869-15	2019
IEC 62271-1	2017	High-voltage switchgear and controlgear - Part 1: Common specifications for alternating current switchgear and controlgear	EN 62271-1	2017
IEC 62271-4	-	High-voltage switchgear and controlgear - Part 4: Handling procedures for gases for insulation and/or switching	EN IEC 62271-4	-
IEC/TS 62271-5	2024	High-voltage switchgear and controlgear - Part 5: Common specifications for direct current switchgear and controlgear	CLC IEC/TS 62271-5	2025
IEC 62271-209	2019	High-voltage switchgear and controlgear - Part 209: Cable connections for gas-insulated metal-enclosed switchgear for rated voltages above 52 kV - Fluid-filled and extruded insulation cables - Fluid-filled and dry-type cable-terminations	EN IEC 62271-209	2019
+ AMD1	2022		+ A1	2022
IEC 62271-211	2014	High-voltage switchgear and controlgear - Part 211: Direct connection between power transformers and gas-insulated metal-enclosed switchgear for rated voltages above 52 kV	EN 62271-211	2014
IEC/TR 62271-306	2012	High-voltage switchgear and controlgear - Part 306: Guide to IEC 62271-100, IEC 62271-1 and other IEC standards related to alternating current circuit-breakers	-	-
+ A1	2018		-	-
IEC/TS 62271-313	-	High-voltage switchgear and controlgear - Part 313: Direct current circuit-breakers	-	-
IEC/TS 62271-314	2024	High-voltage switchgear and controlgear - Part 314: Direct current disconnectors and earthing switches	CLC IEC/TS 62271-314	2025
IEC/TS 62271-315	2025	High-voltage switchgear and controlgear - Part 315: Direct current (DC) transfer switches	-	-
IEC 62895	2017	High voltage direct current (HVDC) power transmission - Cables with extruded insulation and their accessories for rated voltages up to 320 kV for land applications - Test methods and requirements	-	-

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<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 22479	2019	Corrosion of metals and alloys - Sulfur dioxide test in a humid atmosphere (fixed gas method)	EN ISO 22479	2022
IEC/IEEE 65700-19-03	2014	Bushings for DC application	EN IEC/IEEE 65700-19-03	2018
-	-		+ AC	2019-03



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –**Part 318: DC gas-insulated metal-enclosed switchgear
for rated voltages including and above 100 kV**

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IEC TS 62271-318 has been prepared by subcommittee 17C: Assemblies, of IEC technical committee 17: High-voltage switchgear and controlgear. It is a Technical Specification.

The text of this Technical Specification is based on the following documents:

Draft	Report on voting
17C/930/DTS	17C/937/RVDTS

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 Technical Specification 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/standardsdev/publications.

The list of all parts of the IEC 62271 series under the general title, *High-voltage switchgear and controlgear*, may be found on the IEC website.

This document should be read in conjunction with IEC TS 62271-5:2024, to which it refers and which is applicable unless otherwise specified. In order to simplify the indication of corresponding requirements, the same numbering of clauses and subclauses is used as in IEC TS 62271-5:2024. Amendments to these clauses and subclauses are given under the same numbering, whilst additional subclauses, are numbered from 101.

The reader's attention is drawn to the fact that Annex E lists all of the "in-some-country" clauses on differing practices of a less permanent nature relating to the subject of this document.

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.

IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 318: DC gas-insulated metal-enclosed switchgear for rated voltages including and above 100 kV

1 Scope

This part of IEC 62271 specifies requirements for gas-insulated metal-enclosed switchgear in which the insulation is obtained, at least partly, by an insulating gas or gas mixture other than air at atmospheric pressure, for direct current of rated voltages including and above 100 kV, for indoor and outdoor installation. This document includes rules for service conditions, ratings, design, and construction requirements. Test requirements and criteria for proof for passing type and routine tests are defined in this document for development and manufacturing of DC switchgear.

For the purpose of this document, the terms "DC GIS" and "DC switchgear" are used for "DC gas-insulated metal-enclosed switchgear".

This specification is applicable for both Line Commutated Converter (LCC) and Voltage Sourced Converter (VSC) for HVDC systems.

The DC gas-insulated metal-enclosed switchgear covered by this document consists of individual components intended to be directly connected together and able to operate only in this manner.

This document completes and amends, if applicable, the various relevant documents applying to the individual components constituting DC gas-insulated metal-enclosed switchgear.

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 60060-1:2010, *High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 60085:2007, *Electrical insulation – Thermal evaluation and designation*

IEC 60068-2-11:2021, *Environmental testing – Part 2-11: Tests – Test Ka: Salt mist*

IEC 60068-2-17:2023, *Environmental testing – Part 2-17: Tests – Test Q: Sealing*

IEC/IEEE 60076-57-129:2017, *Power transformers – Part 57-129: Transformers for HVDC applications*

IEC 60099-4:2014, *Surge arresters – Part 4: Metal-oxide surge arresters without gaps for a.c. systems*

IEC 60099-9:2014, *Surge arresters – Part 9: Metal-oxide surge arresters without gaps for HVDC converter stations*

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IEC 60137:2017, *Insulated bushings for alternating voltages above 1 000 V*

IEC 60270:2000, *High-voltage test techniques – Partial discharge measurements*
IEC 60270:2000/AMD1:2015

IEC 60376:2018, *Specification of technical grade sulphur hexafluoride (SF₆) and complementary gases to be used in its mixtures for use in electrical equipment*

IEC 60480:2019, *Specifications for the re-use of sulphur hexafluoride (SF₆) and its mixtures in electrical equipment*

IEC TS 60815-1:2008, *Selection and dimensioning of high-voltage insulators intended for use in polluted conditions – Part 1: Definitions, information and general principles*

IEC TS 60815-4:2016, *Selection and dimensioning of high-voltage insulators intended for use in polluted conditions – Part 4: Insulators for d.c. systems*

IEC 61869-14:2018, *Instrument transformers – Part 14: Additional requirements for current transformers for DC applications*

IEC 61869-15:2018, *Instrument transformers – Part 15: Additional requirements for voltage transformers for DC applications*

IEC 62271-1:2017, *High-voltage switchgear and controlgear – Part 1: Common specifications for alternating current switchgear and controlgear*

IEC 62271-4, *High-voltage switchgear and controlgear – Part 4: Handling procedures for gases for insulation and/or switching*

IEC TS 62271-5:2024, *High-voltage switchgear and controlgear – Part 5: Common specifications for direct current switchgear*

IEC 62271-209:2019, *High-voltage switchgear and controlgear – Part 209: Cable connections for gas-insulated metal-enclosed switchgear for rated voltages above 52 kV – Fluid-filled and extruded insulation cables – Fluid-filled and dry-type cable terminations*
IEC 62271-209:2019/AMD1:2022

IEC 62271-211:2014, *High-voltage switchgear and controlgear – Part 211: Direct connection between power transformers and gas-insulated metal-enclosed switchgear for rated voltages above 52 kV*

IEC TR 62271-306:2012, *High-voltage switchgear and controlgear – Part 306: Guide to IEC 62271-100, IEC 62271-1 and other IEC standards related to alternating current circuit-breakers*
IEC TR 62271-306:2012/AMD1:2018

IEC TS 62271-313, *High-voltage switchgear and controlgear – Part 313: Direct current disconnectors and earthing switches*

IEC TS 62271-314:2024, *High-voltage switchgear and controlgear – Part 314: Direct current disconnectors and earthing switches*

IEC TS 62271-315:20¹, *High voltage switchgear and controlgear – Part 315: Direct current (DC) transfer switches*

IEC 62895:2017, *High voltage direct current (HVDC) power transmission – Cables with extruded insulation and their accessories for rated voltages up to 320 kV for land applications – Test methods and requirements*

ISO 22479:2019, *Corrosion of metals and alloys – Sulfur dioxide test in a humid atmosphere (fixed gas method)*

IEC/IEEE 65700-19-03:2014, *Bushings for DC application*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN