



# TECHNICAL SPECIFICATION

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**High-voltage switchgear and controlgear –  
Part 316: Direct current by-pass switches and paralleling switches**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## CONTENTS

FOREWORD.....	5
1 Scope.....	7
2 Normative references .....	7
3 Terms and definitions .....	8
3.1 General terms and definitions .....	8
3.2 Assemblies of switchgear and controlgear .....	9
3.3 Parts of assemblies .....	9
3.4 Switching devices .....	9
3.5 Parts of switchgear and controlgear .....	11
3.6 Operational characteristics of switchgear and controlgear.....	13
3.7 Characteristic quantities .....	15
3.8 Index of definitions.....	20
4 Normal and special service conditions .....	22
5 Ratings.....	22
5.1 General.....	22
5.2 Rated direct voltage ( $U_{rd}$ ).....	23
5.3 Rated insulation level ( $U_{dd}$ , $U_p$ , $U_s$ ) .....	24
5.4 Rated continuous current ( $I_{rd}$ ) .....	24
5.5 Rated values of short-time withstand current.....	24
5.6 Rated supply voltage of auxiliary and control circuits ( $U_a$ ) .....	24
5.7 Rated supply frequency of auxiliary and control circuits .....	24
5.8 Rated pressure of compressed gas supply for controlled pressure systems .....	24
5.101 Rated commutation current .....	25
5.102 Rated operating sequence .....	25
6 Design and construction .....	25
6.1 Requirements for liquids in switchgear and controlgear.....	25
6.2 Requirements for gases in switchgear and controlgear .....	25
6.3 Earthing of switchgear and controlgear .....	25
6.4 Auxiliary and control equipment and circuits .....	25
6.5 Dependent power operation .....	26
6.6 Stored energy operation.....	26
6.7 Independent unlatched operation (independent manual or power operation) .....	26
6.8 Manually operated actuators .....	26
6.9 Operation of releases.....	26
6.10 Pressure/level indication .....	26
6.11 Nameplates.....	26
6.12 Locking devices .....	28
6.13 Position indication.....	28
6.14 Degrees of protection provided by enclosures.....	28
6.15 Creepage distances for outdoor insulators .....	28
6.16 Gas and vacuum tightness .....	28
6.17 Tightness for liquid systems.....	28
6.18 Fire hazard (flammability) .....	28
6.19 Electromagnetic compatibility (EMC).....	28
6.20 X-ray emission .....	28
6.21 Corrosion .....	28

6.22	Filling levels for insulation, switching and/or operation .....	28
6.101	Design of BPSs and PSs .....	29
6.102	General requirement for operation .....	29
6.103	Pressure limits of fluids for operation .....	30
6.104	Time quantities .....	30
6.105	Static mechanical loads .....	30
7	Type tests .....	31
7.1	General .....	31
7.2	Dielectric tests .....	32
7.3	Resistance measurement .....	35
7.4	Continuous current tests .....	35
7.5	Short-time withstand current and peak withstand current tests .....	36
7.6	Verification of the protection .....	36
7.7	Tightness tests .....	36
7.8	Electromagnetic compatibility tests (EMC) .....	36
7.9	Additional tests on auxiliary and control circuits .....	37
7.10	X-radiation test procedure for vacuum interrupters .....	38
7.101	Mechanical and environmental tests .....	38
7.102	Current commutation test .....	47
8	Routine tests .....	47
8.1	General .....	47
8.2	Dielectric test on the main circuit .....	47
8.3	Tests on auxiliary and control circuits .....	48
8.4	Measurement of the resistance of the main circuit .....	48
8.5	Tightness test .....	48
8.6	Design and visual checks .....	48
8.101	Mechanical operating tests .....	48
9	Guide to the selection of switchgear and controlgear (informative) .....	50
9.1	General .....	50
9.2	Selection of rated values .....	50
9.3	Cable-interface connections .....	52
9.4	Continuous or temporary overload due to changed service conditions .....	52
9.5	Environmental aspects .....	53
10	Information to be given with enquiries, tenders and orders (informative) .....	53
10.1	General .....	53
10.2	Information with enquiries and orders .....	53
10.3	Information to be given with tenders .....	54
11	Transport, storage, installation, operation instructions and maintenance .....	55
11.1	General .....	55
11.2	Conditions during transport, storage and installation .....	55
11.3	Installation .....	55
11.4	Operating instructions .....	61
11.5	Maintenance .....	61
11.101	Resistors and capacitors .....	61
12	Safety .....	61
13	Influence of the product on the environment .....	61
Annex A (normative)	Tolerances on test quantities during type tests .....	62
Annex B (normative)	Records and reports of type tests .....	65

B.1	Information and results to be recorded .....	65
B.2	Information to be included in type test reports .....	65
Annex C (informative)	Voltages associated with BPSs in different configurations .....	67
C.1	General.....	67
C.2	Case 1: BPS consisting of a single switching unit.....	67
C.3	Case 2: BPS consisting of two series connected switching units .....	69
Annex D (normative)	Use of mechanical characteristics and related requirements .....	71
Bibliography	.....	75
Figure 1	– Example of the location of BPSs in an HVDC transmission system.....	10
Figure 2	– Example of the location of a CPS in an HVDC transmission system .....	11
Figure 3	– Example of the location of a LPS in an HVDC transmission system.....	11
Figure 4	– BPS and PS – Opening and closing operations .....	15
Figure 5	– BPS and PS – Close-open cycle .....	16
Figure 6	– BPS and PS – Open-close cycle .....	17
Figure 7	– Example of two series connected BPSs.....	29
Figure 8	– Test sequence for low temperature test.....	42
Figure 9	– Test sequence for high temperature test .....	44
Figure 10	– Humidity test .....	46
Figure C.1	– HVDC system with 3 series connected converter units per pole .....	67
Figure C.2	– Different ways to connect a BPS to the grid .....	68
Figure C.3	– HVDC system with 2 series connected converter units per pole .....	70
Figure D.1	– Example of reference mechanical characteristics (idealised curve).....	72
Figure D.2	– Reference mechanical characteristics of Figure D.1 with the envelopes centred over the reference curve (+5 %, –5 %) .....	72
Figure D.3	– Reference mechanical characteristics of Figure D.1 with the envelope fully displaced upward from the reference curve (+10 %, –0 %) .....	73
Figure D.4	– Reference mechanical characteristics of Figure D.1 with the envelope fully displaced downward from the reference curve (+0 %, –10 %) .....	74
Table 1	– Nameplate information .....	27
Table 2	– Examples of static horizontal and vertical forces for static terminal load .....	30
Table 3	– Mandatory type tests .....	31
Table 4	– Test conditions in general case for BPSs according to Alternative 1 .....	33
Table 5	– Test conditions in general case for BPSs according to Alternative 2 .....	34
Table 6	– Test conditions in general case for PSs.....	34
Table 7	– Number of operating sequences .....	40
Table A.1	– Tolerances on test quantities for type tests .....	63
Table C.1	– Voltage across the post insulator .....	69

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –****Part 316: Direct current by-pass switches and paralleling switches**

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IEC TS 62271-316 has been prepared by subcommittee 17A: Switching devices, 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
17A/1407/DTS	17A/1414/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](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).

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

A list of all parts in the IEC 62271 series, published under the general title *High-voltage switchgear and controlgear*, 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.

## HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

### Part 316: Direct current by-pass switches and paralleling switches

#### 1 Scope

This part of IEC 62271, which is a Technical Specification, is applicable to direct current (DC) by-pass switches (BPS) and paralleling switches (PS) designed for indoor or outdoor installation and for operation on HVDC transmission systems having direct voltages of 100 kV and above.

Switches other than mechanical switching devices used for the same applications specified here are not covered by this document.

#### 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 60050-151, *International Electrotechnical Vocabulary (IEV) – Part 151: Electrical and magnetic devices*, (available at [www.electropedia.org](http://www.electropedia.org))

IEC 60050-441, *International Electrotechnical Vocabulary (IEV) – Part 441: Switchgear, controlgear and fuses*, (available at [www.electropedia.org](http://www.electropedia.org))

IEC 60050-442, *International Electrotechnical Vocabulary (IEV) – Part 442: Electrical accessories*, (available at [www.electropedia.org](http://www.electropedia.org))

IEC 60050-461, *International Electrotechnical Vocabulary (IEV) – Part 461: Electric cables*, (available at [www.electropedia.org](http://www.electropedia.org))

IEC 60050-601, *International Electrotechnical Vocabulary (IEV) – Part 601: Generation, transmission and distribution of electricity – General*, (available at [www.electropedia.org](http://www.electropedia.org))

IEC 60050-614, *International Electrotechnical Vocabulary – Part 614: Generation, transmission and distribution of electricity – Operation*, (available at [www.electropedia.org](http://www.electropedia.org))

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

IEC 60071-11:2022, *Insulation coordination – Part 11: Definitions, principles and rules for HVDC system*

IEC 60071-12:2022, *Insulation coordination – Part 12: Application guidelines for LCC HVDC converter stations*

IEC 60296, *Fluids for electrotechnical applications – Mineral insulating oils for electrical equipment*

IEC 60376, *Specification of technical grade sulphur hexafluoride (SF<sub>6</sub>) and complementary gases to be used in its mixtures for use in electrical equipment*

IEC 60480, *Specifications for the re-use of sulphur hexafluoride (SF<sub>6</sub>) and its mixtures in electrical equipment*

IEC 60633:2019, *High-voltage direct current (HVDC) transmission – Vocabulary*

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

IEC 62271-102:2018, *High-voltage switchgear and controlgear – Part 102: Alternating current disconnectors and earthing switches*

IEC 62271-102:2018/AMD1:2022

IEC TS 62271-315:2024, *High-voltage switchgear and controlgear – Part 315: Direct current (DC) transfer switches*