

# INTERNATIONAL STANDARD

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**High-voltage switchgear and controlgear -  
Part 201: AC solid-insulation enclosed switchgear and controlgear for rated  
voltages above 1 kV and up to and including 52 kV**

## CONTENTS

|                                                                                           |    |
|-------------------------------------------------------------------------------------------|----|
| FOREWORD .....                                                                            | 8  |
| INTRODUCTION .....                                                                        | 11 |
| 1 Scope .....                                                                             | 12 |
| 2 Normative references .....                                                              | 12 |
| 3 Terms and definitions .....                                                             | 13 |
| 3.1 General terms and definitions .....                                                   | 13 |
| 3.2 Assemblies of switchgear and controlgear .....                                        | 15 |
| 3.3 Parts of assemblies .....                                                             | 15 |
| 3.4 Switching devices .....                                                               | 15 |
| 3.5 Parts of switchgear and controlgear .....                                             | 15 |
| 3.6 Operational characteristics of switchgear and controlgear .....                       | 19 |
| 3.7 Characteristic quantities .....                                                       | 21 |
| 3.8 Index of definitions .....                                                            | 22 |
| 4 Normal and special service conditions .....                                             | 23 |
| 5 Ratings .....                                                                           | 24 |
| 5.1 General .....                                                                         | 24 |
| 5.2 Rated voltage ( $U_r$ ) .....                                                         | 24 |
| 5.3 Rated insulation level ( $U_d$ , $U_p$ , $U_s$ ) .....                                | 24 |
| 5.4 Rated frequency ( $f_r$ ) .....                                                       | 24 |
| 5.5 Rated continuous current ( $I_r$ ) .....                                              | 24 |
| 5.6 Rated short-time withstand current ( $I_k$ , $I_{ke}$ ) .....                         | 25 |
| 5.6.101 Rated short-time withstand current ( $I_k$ ) .....                                | 25 |
| 5.6.102 Rated short-time phase to earth withstand current ( $I_{ke}$ ) .....              | 25 |
| 5.7 Rated peak withstand current ( $I_p$ , $I_{pe}$ ) .....                               | 25 |
| 5.7.101 Rated peak withstand current ( $I_p$ ) .....                                      | 25 |
| 5.7.102 Rated peak phase-to-earth withstand current ( $I_{pe}$ ) .....                    | 25 |
| 5.8 Rated durations of short-circuit ( $t_k$ , $t_{ke}$ ) .....                           | 26 |
| 5.8.101 Rated duration of short-circuit ( $t_k$ ) .....                                   | 26 |
| 5.8.102 Rated duration of phase-to-earth short-circuit ( $t_{ke}$ ) .....                 | 26 |
| 5.9 Rated supply voltage of auxiliary and control circuits ( $U_a$ ) .....                | 26 |
| 5.10 Rated supply frequency of auxiliary circuits .....                                   | 26 |
| 5.11 Rated pressure of compressed gas supply for controlled pressure systems .....        | 26 |
| 5.101 Classification of earthing function through main switching device .....             | 26 |
| 5.102 Rated cable test voltages ( $U_{ct}$ (AC), $U_{ct}$ (DC)) .....                     | 26 |
| 5.102.1 General .....                                                                     | 26 |
| 5.102.2 Rated power-frequency cable test voltage $U_{ct}$ (AC) .....                      | 27 |
| 5.102.3 Rated DC cable test voltage $U_{ct}$ (DC) with rated duration $t_{ct}$ (DC) ..... | 27 |
| 5.103 Ratings of the internal arc classification (IAC) .....                              | 27 |
| 5.103.1 General .....                                                                     | 27 |
| 5.103.2 Types of accessibility .....                                                      | 27 |
| 5.103.3 Classified sides .....                                                            | 27 |
| 5.103.4 Rated arc fault currents ( $I_A$ , $I_{Ae}$ ) .....                               | 28 |

|         |                                                                                                                                                    |    |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 5.103.5 | Rated arc fault duration ( $t_A$ , $t_{Ae}$ ) .....                                                                                                | 28 |
| 6       | Design and construction .....                                                                                                                      | 28 |
| 6.1     | Requirements for liquids in switchgear and controlgear .....                                                                                       | 28 |
| 6.2     | Requirements for gases in switchgear and controlgear .....                                                                                         | 28 |
| 6.3     | Earthing of switchgear and controlgear .....                                                                                                       | 28 |
| 6.3.101 | Earthing of the high-voltage conductive parts .....                                                                                                | 28 |
| 6.3.102 | Earthing of enclosure(s) .....                                                                                                                     | 29 |
| 6.3.103 | Earthing of withdrawable and removable parts .....                                                                                                 | 29 |
| 6.3.104 | Earthing circuit .....                                                                                                                             | 29 |
| 6.4     | Auxiliary and control equipment .....                                                                                                              | 30 |
| 6.5     | Dependent power operation .....                                                                                                                    | 30 |
| 6.6     | Stored energy operation .....                                                                                                                      | 30 |
| 6.7     | Independent unlatched operation (independent manual or power operation) .....                                                                      | 30 |
| 6.8     | Manually operated actuators .....                                                                                                                  | 30 |
| 6.9     | Operation of releases .....                                                                                                                        | 30 |
| 6.10    | Pressure/level indication .....                                                                                                                    | 30 |
| 6.11    | Nameplates .....                                                                                                                                   | 31 |
| 6.12    | Locking devices .....                                                                                                                              | 33 |
| 6.13    | Position indication .....                                                                                                                          | 34 |
| 6.14    | Degrees of protection provided by enclosures .....                                                                                                 | 34 |
| 6.14.1  | General .....                                                                                                                                      | 34 |
| 6.14.2  | Protection of persons against access to hazardous parts and protection of the equipment against ingress of solid foreign objects (IP coding) ..... | 34 |
| 6.14.3  | Protection against ingress of water (IP coding) .....                                                                                              | 34 |
| 6.14.4  | Protection of equipment against mechanical impact under normal service conditions (IK coding) .....                                                | 34 |
| 6.15    | Creepage distances for outdoor insulators .....                                                                                                    | 34 |
| 6.16    | Gas and vacuum tightness .....                                                                                                                     | 34 |
| 6.17    | Tightness for liquid systems .....                                                                                                                 | 34 |
| 6.18    | Fire hazard (flammability) .....                                                                                                                   | 34 |
| 6.19    | Electromagnetic compatibility (EMC) .....                                                                                                          | 34 |
| 6.20    | X-ray emission .....                                                                                                                               | 34 |
| 6.21    | Corrosion .....                                                                                                                                    | 35 |
| 6.22    | Filling levels for insulation, switching and/or operation .....                                                                                    | 35 |
| 6.101   | General requirements for assemblies .....                                                                                                          | 35 |
| 6.102   | Solid insulating enclosure .....                                                                                                                   | 36 |
| 6.102.1 | General .....                                                                                                                                      | 36 |
| 6.102.2 | Covers and doors .....                                                                                                                             | 36 |
| 6.102.3 | Partition or shutter being part of the enclosure .....                                                                                             | 37 |
| 6.102.4 | Inspection windows .....                                                                                                                           | 37 |
| 6.102.5 | Ventilating openings, vent outlets .....                                                                                                           | 37 |
| 6.102.6 | Protection category of the solid insulating enclosure against electric shock .....                                                                 | 38 |
| 6.102.7 | Requirements for protection categories .....                                                                                                       | 38 |
| 6.103   | High-voltage compartments .....                                                                                                                    | 39 |
| 6.103.1 | General .....                                                                                                                                      | 39 |
| 6.103.2 | Fluid-filled compartments (gas or liquid) .....                                                                                                    | 40 |
| 6.103.3 | Partitions and shutters .....                                                                                                                      | 41 |
| 6.104   | Removable parts .....                                                                                                                              | 42 |

|         |                                                                                                     |    |
|---------|-----------------------------------------------------------------------------------------------------|----|
| 6.105   | Provisions for dielectric tests on cables .....                                                     | 43 |
| 6.106   | Internal arc fault.....                                                                             | 43 |
| 7       | Type tests .....                                                                                    | 43 |
| 7.1     | General.....                                                                                        | 43 |
| 7.1.1   | Basics .....                                                                                        | 43 |
| 7.1.2   | Information for identification of specimens .....                                                   | 44 |
| 7.1.3   | Information to be included in type-test reports .....                                               | 44 |
| 7.2     | Dielectric tests .....                                                                              | 44 |
| 7.2.1   | General .....                                                                                       | 44 |
| 7.2.2   | Ambient air conditions during tests .....                                                           | 45 |
| 7.2.3   | Wet test procedure .....                                                                            | 45 |
| 7.2.4   | Conditions of switchgear and controlgear during dielectric tests .....                              | 45 |
| 7.2.5   | Criteria to pass the test .....                                                                     | 45 |
| 7.2.6   | Application of the test voltage and test conditions.....                                            | 45 |
| 7.2.7   | Tests of switchgear and controlgear of $U_r \leq 245$ kV .....                                      | 46 |
| 7.2.8   | Tests of switchgear and controlgear of $U_r > 245$ kV .....                                         | 47 |
| 7.2.9   | Artificial pollution tests for outdoor insulators.....                                              | 48 |
| 7.2.10  | Partial discharge tests .....                                                                       | 48 |
| 7.2.11  | Dielectric tests on auxiliary and control circuits.....                                             | 48 |
| 7.2.12  | Voltage test as condition check .....                                                               | 48 |
| 7.2.101 | Dielectric tests on cable testing circuits .....                                                    | 49 |
| 7.3     | Radio interference voltage (RIV) test .....                                                         | 49 |
| 7.4     | Resistance measurement.....                                                                         | 49 |
| 7.4.1   | Measurement of the resistance of auxiliary contacts class 1 and class 2 .....                       | 49 |
| 7.4.2   | Measurement of the resistance of auxiliary contacts class 3 .....                                   | 49 |
| 7.4.3   | Electrical continuity of earthed metallic parts test .....                                          | 49 |
| 7.4.4   | Resistance measurement of contacts and connections in the main<br>circuit as a condition check..... | 49 |
| 7.4.101 | Requirement for protection category PB2.....                                                        | 49 |
| 7.5     | Continuous current tests .....                                                                      | 50 |
| 7.5.1   | Condition of the test object .....                                                                  | 50 |
| 7.5.2   | Arrangement of the equipment.....                                                                   | 50 |
| 7.5.3   | Test current and duration.....                                                                      | 50 |
| 7.5.4   | Temperature measurement during test .....                                                           | 50 |
| 7.5.5   | Resistance of the main circuit.....                                                                 | 51 |
| 7.5.6   | Criteria to pass the test .....                                                                     | 51 |
| 7.5.101 | Test report.....                                                                                    | 51 |
| 7.6     | Short-time withstand current and peak withstand current tests .....                                 | 51 |
| 7.6.1   | General .....                                                                                       | 51 |
| 7.6.2   | Arrangement of the equipment and of the test circuit .....                                          | 52 |
| 7.6.3   | Test current and duration.....                                                                      | 53 |
| 7.6.4   | Condition of test object after test .....                                                           | 53 |
| 7.7     | Verification of the protection .....                                                                | 54 |
| 7.7.1   | Verification of the IP coding.....                                                                  | 54 |
| 7.7.2   | Verification of the IK coding.....                                                                  | 54 |
| 7.8     | Tightness tests .....                                                                               | 54 |
| 7.9     | Electromagnetic compatibility tests (EMC) .....                                                     | 54 |
| 7.10    | Additional tests on auxiliary and control circuits .....                                            | 54 |
| 7.10.1  | General .....                                                                                       | 54 |

|         |                                                                                                                                |    |
|---------|--------------------------------------------------------------------------------------------------------------------------------|----|
| 7.10.2  | Functional tests .....                                                                                                         | 55 |
| 7.10.3  | Verification of the operational characteristics of auxiliary contacts .....                                                    | 55 |
| 7.10.4  | Environmental tests .....                                                                                                      | 55 |
| 7.10.5  | Dielectric test .....                                                                                                          | 55 |
| 7.11    | X-radiation test procedures for vacuum interrupters .....                                                                      | 55 |
| 7.101   | Verification of making and breaking capacities .....                                                                           | 55 |
| 7.101.1 | General .....                                                                                                                  | 55 |
| 7.101.2 | Test requirements for main switching devices .....                                                                             | 56 |
| 7.101.3 | Test requirements for earthing function .....                                                                                  | 56 |
| 7.102   | Mechanical operation tests .....                                                                                               | 56 |
| 7.102.1 | Switching devices and removable parts .....                                                                                    | 56 |
| 7.102.2 | Mechanical and electromechanical interlocks and locking devices .....                                                          | 57 |
| 7.103   | Pressure withstand test for gas-filled compartments .....                                                                      | 59 |
| 7.103.1 | Pressure withstand test for gas-filled compartments with pressure relief devices .....                                         | 59 |
| 7.103.2 | Pressure withstand test for gas-filled compartments without pressure relief devices .....                                      | 60 |
| 7.104   | Tests to verify the protection of persons against dangerous electrical effects .....                                           | 60 |
| 7.104.1 | General .....                                                                                                                  | 60 |
| 7.104.2 | Dielectric tests .....                                                                                                         | 60 |
| 7.104.3 | Measurements of leakage currents .....                                                                                         | 61 |
| 7.105   | Internal arc test .....                                                                                                        | 61 |
| 7.105.1 | General .....                                                                                                                  | 61 |
| 7.105.2 | Test conditions .....                                                                                                          | 62 |
| 7.105.3 | Arrangement of the equipment .....                                                                                             | 63 |
| 7.105.4 | Test procedure .....                                                                                                           | 63 |
| 7.105.5 | Criteria to pass the test .....                                                                                                | 63 |
| 7.105.6 | Test report .....                                                                                                              | 64 |
| 7.105.7 | Extension of validity of test results .....                                                                                    | 65 |
| 7.106   | Thermal stability test .....                                                                                                   | 65 |
| 7.107   | Humidity test .....                                                                                                            | 66 |
| 8       | Routine tests .....                                                                                                            | 66 |
| 8.1     | General .....                                                                                                                  | 66 |
| 8.2     | Dielectric test on the main circuit .....                                                                                      | 66 |
| 8.3     | Tests on auxiliary and control circuits .....                                                                                  | 66 |
| 8.3.1   | Inspection of auxiliary and control circuits, and verification of conformity to the circuit diagrams and wiring diagrams ..... | 66 |
| 8.3.2   | Functional tests .....                                                                                                         | 67 |
| 8.3.3   | Verification of protection against electrical shock .....                                                                      | 67 |
| 8.3.4   | Dielectric tests .....                                                                                                         | 67 |
| 8.4     | Measurement of the resistance of the main circuit .....                                                                        | 67 |
| 8.5     | Tightness test .....                                                                                                           | 67 |
| 8.6     | Design and visual checks .....                                                                                                 | 67 |
| 8.101   | Partial discharge measurement .....                                                                                            | 67 |
| 8.102   | Mechanical operation tests .....                                                                                               | 68 |
| 8.103   | Pressure tests of gas-filled compartments .....                                                                                | 68 |
| 8.104   | Tests after erection on site .....                                                                                             | 68 |
| 8.105   | Measurement of fluid condition after filling on site .....                                                                     | 69 |
| 9       | Guide to the selection of switchgear and controlgear (informative) .....                                                       | 69 |

|                                                                                                      |                                                                                |    |
|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|----|
| 9.1                                                                                                  | General.....                                                                   | 69 |
| 9.2                                                                                                  | Selection of rated values.....                                                 | 69 |
| 9.3                                                                                                  | Cable-interface considerations.....                                            | 70 |
| 9.4                                                                                                  | Continuous or temporary overload due to changed service conditions.....        | 70 |
| 9.5                                                                                                  | Environmental aspects.....                                                     | 70 |
| 9.101                                                                                                | Selection of design and construction.....                                      | 70 |
| 9.101.1                                                                                              | General .....                                                                  | 70 |
| 9.101.2                                                                                              | Architecture and accessibility to high-voltage compartments.....               | 71 |
| 9.101.3                                                                                              | Service continuity of the switchgear and controlgear .....                     | 72 |
| 9.102                                                                                                | Ratings related to earthing circuits.....                                      | 74 |
| 9.103                                                                                                | Internal arc fault.....                                                        | 74 |
| 9.103.1                                                                                              | General .....                                                                  | 74 |
| 9.103.2                                                                                              | Causes and preventive measures .....                                           | 75 |
| 9.103.3                                                                                              | Supplementary protective measures .....                                        | 75 |
| 9.103.4                                                                                              | Considerations for the selection and installation .....                        | 76 |
| 9.103.5                                                                                              | Internal arc test .....                                                        | 77 |
| 9.103.6                                                                                              | IAC classification .....                                                       | 78 |
| 9.104                                                                                                | Summary of technical requirements, ratings and optional tests .....            | 79 |
| 10                                                                                                   | Information to be given with enquiries, tenders and orders (informative).....  | 81 |
| 10.1                                                                                                 | General.....                                                                   | 81 |
| 10.2                                                                                                 | Information with enquiries and orders .....                                    | 81 |
| 10.3                                                                                                 | Information with tenders.....                                                  | 82 |
| 11                                                                                                   | Transport, storage, installation, operating instructions and maintenance ..... | 83 |
| 11.1                                                                                                 | General.....                                                                   | 83 |
| 11.2                                                                                                 | Conditions during transport, storage and installation .....                    | 83 |
| 11.3                                                                                                 | Installation .....                                                             | 83 |
| 11.4                                                                                                 | Operating instructions .....                                                   | 83 |
| 11.5                                                                                                 | Maintenance .....                                                              | 84 |
| 12                                                                                                   | Safety.....                                                                    | 84 |
| 12.101                                                                                               | Procedures .....                                                               | 84 |
| 12.102                                                                                               | Internal arc aspects .....                                                     | 84 |
| 13                                                                                                   | Influence of the product on the environment .....                              | 84 |
| Annex A (normative) Internal arc fault – Method to verify the internal arc classification (IAC)..... |                                                                                | 85 |
| A.1                                                                                                  | Room simulation .....                                                          | 85 |
| A.2                                                                                                  | Indicators (for assessing the thermal effects of the gases).....               | 87 |
| A.2.1                                                                                                | General .....                                                                  | 87 |
| A.2.2                                                                                                | Arrangement of indicators.....                                                 | 87 |
| A.3                                                                                                  | Tolerances for geometrical dimensions of test arrangements .....               | 88 |
| A.4                                                                                                  | Test parameters.....                                                           | 88 |
| A.4.1                                                                                                | General .....                                                                  | 88 |
| A.4.2                                                                                                | Voltage.....                                                                   | 88 |
| A.4.3                                                                                                | Current.....                                                                   | 88 |
| A.4.4                                                                                                | Frequency .....                                                                | 89 |
| A.5                                                                                                  | Test procedure.....                                                            | 89 |
| A.5.1                                                                                                | Supply circuit.....                                                            | 89 |
| A.5.2                                                                                                | Arc initiation .....                                                           | 90 |
| Annex B (normative) Partial discharge measurement .....                                              |                                                                                | 99 |

|                                                                                                                                                              |                                               |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----|
| B.1                                                                                                                                                          | General.....                                  | 99  |
| B.2                                                                                                                                                          | Application.....                              | 99  |
| B.3                                                                                                                                                          | Test circuits and measuring instruments ..... | 100 |
| B.4                                                                                                                                                          | Test procedure.....                           | 100 |
| Annex C (informative) Regional deviations.....                                                                                                               |                                               | 105 |
| Annex D (normative) Humidity test.....                                                                                                                       |                                               | 106 |
| D.1                                                                                                                                                          | General.....                                  | 106 |
| D.2                                                                                                                                                          | Test procedure and test conditions .....      | 106 |
| D.2.1                                                                                                                                                        | Test cycle and its duration .....             | 106 |
| D.2.2                                                                                                                                                        | Generation of fog.....                        | 107 |
| D.2.3                                                                                                                                                        | High air temperature period .....             | 107 |
| D.2.4                                                                                                                                                        | Test chamber .....                            | 107 |
| D.2.5                                                                                                                                                        | Test object.....                              | 107 |
| D.2.6                                                                                                                                                        | Test voltage and voltage supply.....          | 108 |
| D.2.7                                                                                                                                                        | Total test duration.....                      | 108 |
| D.3                                                                                                                                                          | Test criteria and evaluation.....             | 108 |
| D.3.1                                                                                                                                                        | Criterion during the test .....               | 108 |
| D.3.2                                                                                                                                                        | Criterion after the test.....                 | 108 |
| D.3.3                                                                                                                                                        | Evaluation of the test.....                   | 108 |
| Annex E (informative) Protection categories .....                                                                                                            |                                               | 110 |
| E.1                                                                                                                                                          | Protection category PA .....                  | 110 |
| E.2                                                                                                                                                          | Protection categories PB.....                 | 111 |
| Annex F (informative) List of symbols and abbreviations used in IEC 62271-201 .....                                                                          |                                               | 112 |
| Annex G (normative) Flowchart categorisation procedure LSC for a given functional unit FU1 with connection compartment .....                                 |                                               | 113 |
| Annex H (informative) Pressure coordination chart for gas-filled compartments .....                                                                          |                                               | 114 |
| Bibliography.....                                                                                                                                            |                                               | 115 |
| Figure 1 – LSC1.....                                                                                                                                         |                                               | 73  |
| Figure 2 – LSC2.....                                                                                                                                         |                                               | 73  |
| Figure 3 – LSC2.....                                                                                                                                         |                                               | 73  |
| Figure 4 – LSC2.....                                                                                                                                         |                                               | 74  |
| Figure 5 – LSC2A .....                                                                                                                                       |                                               | 74  |
| Figure 6 – LSC2B .....                                                                                                                                       |                                               | 74  |
| Figure 7 – LSC2B .....                                                                                                                                       |                                               | 74  |
| Figure 8 – No LSC assigned .....                                                                                                                             |                                               | 74  |
| Figure 9 – No LSC assigned .....                                                                                                                             |                                               | 74  |
| Figure A.1 – Mounting frame for vertical indicators .....                                                                                                    |                                               | 92  |
| Figure A.2 – Horizontal indicator.....                                                                                                                       |                                               | 92  |
| Figure A.3 – Position of the indicators.....                                                                                                                 |                                               | 93  |
| Figure A.4 – Room simulation and indicator positioning for accessibility A, classified rear side, ceiling above 2 000 mm, functional unit of any height..... |                                               | 94  |
| Figure A.5 – Ceiling height stated from the floor or false floor level where the switchgear is actually placed .....                                         |                                               | 96  |
| Figure A.6 – Indicator positioning in case of protrusion at < 2 000 mm height, at classified side .....                                                      |                                               | 97  |

|                                                                                                                                                                               |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Figure A.7 – Indicator positioning in case a bottom exhaust duct belonging to the assembly is defined as a walkable integrated part of the false floor .....                  | 97  |
| Figure A.8 – Room simulation and indicator positioning for accessibility type A, non-accessible rear side, ceiling at 2 000 mm, so functional unit $\leq$ 1 800 mm high ..... | 98  |
| Figure B.1 – Partial discharge test circuit (three-phase arrangement) .....                                                                                                   | 103 |
| Figure B.2 – Partial discharge test circuit (system without earthed neutral) .....                                                                                            | 104 |
| Figure D.1 – Test cycle .....                                                                                                                                                 | 109 |
| Figure D.2 – Test chamber .....                                                                                                                                               | 109 |
| Figure E.1 – Possible designs for protection category PA .....                                                                                                                | 110 |
| Figure E.2 – Possible designs for protection category PB .....                                                                                                                | 111 |
| Figure G.1 – Flowchart categorisation procedure LSC for a given functional unit FU1 with connection compartment.....                                                          | 113 |
| Figure H.1 – Example of pressure coordination chart .....                                                                                                                     | 114 |
| Table 1 – Nameplate information .....                                                                                                                                         | 31  |
| Table 2 – Locations, causes and examples of measures to decrease the probability of internal arc faults .....                                                                 | 76  |
| Table 3 – Single-phase-to-earth arc fault current depending on the network neutral earthing .....                                                                             | 78  |
| Table 4 – Summary of technical requirements, ratings and optional tests for assemblies .....                                                                                  | 79  |
| Table A.1 – Parameters for internal arc test according to compartment construction .....                                                                                      | 91  |
| Table B.1 – Test circuits and procedures .....                                                                                                                                | 102 |

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**High-voltage switchgear and controlgear -  
Part 201: AC solid-insulation enclosed switchgear  
and controlgear for rated voltages above 1 kV  
and up to and including 52 kV**

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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IEC 62271-201 has been prepared by subcommittee 17C: Assemblies, of IEC technical committee 17: High-voltage switchgear and controlgear. It is an International Standard.

This third edition cancels and replaces the second edition published in 2014. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) aligned with the third edition of IEC 62271-200 published in 2021 and its Amendment 1 published in 2024, for structure, definitions, classifications, ratings and testing procedures, where appropriate;
- b) clause numbering aligned with IEC 62271-1:2017, including the adoption of the subclause names of Clause 3;

- c) in Clause 3 specific terms and definitions are added for "in service", "normal operating condition" and "normal use";
- d) earthing circuit is more precisely described, including ratings and test requirements;
- e) number of mechanical tests on interlocks is reduced for type testing;
- f) forces to apply during type testing are better prescribed (refer to 7.102);
- g) resistance measuring on main circuit is only needed before continuous current tests (as reference for routine tests) and not anymore needed after this continuous current test. Rationale for this deletion is that this measured resistance does not mean anything; as the temperature rise test was just finished, a new temperature rise test will not give new information;
- h) IEC 62271-100:2021 has been taken into account in 7.101.2;
- i) IEC 62271-107:2019 and IEC IEEE 62271-37-013:2021 are also considered in 7.101.2;
- j) LSC category is more precisely described, including an explaining flowchart (Annex G);
- k) examples not covered by the IAC test are transferred from Clause 6 to 9.103;
- l) the term "assembly" is defined in Clause 3 and used as synonym for "solid-insulation enclosed switchgear and controlgear" in this document;
- m) "metallic" is replaced by "metal" where applicable;
- n) a 1 s rule was introduced for Criterion 4 during IAC tests regarding hot gases versus glowing particles as cause of ignition;
- o) internal arc tests for switchgear with protrusions are more precisely described in Annex A;
- p) partitions accessible in normal use are now PA, PB1 or PB2 instead of PI which has been removed (refer to 6.103.3)

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

| Draft        | Report on voting |
|--------------|------------------|
| 17C/980/FDIS | 17C/995/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](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 should be read in conjunction with IEC 62271-1:2017 and its Amendment 1:2021, 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 62271-1. 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 C lists all of the "in-some-country" clauses on differing practices of a less permanent nature relating to the subject of this document.

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.

## INTRODUCTION

High-voltage (IEC 60050-601:1985 [1],<sup>1</sup> 601-01-27) switchgear refers to rated voltages above 1 kV. However, medium-voltage is commonly used for distribution systems with rated voltages above 1 kV and generally applied up to and including 52 kV; refer to IEC 60050-601:1985 [1], 601-01-28.

Although primarily dedicated to three-phase systems, this document can also be applied to single-phase and two-phase systems.

Switchgear and controlgear assemblies having a metal enclosure are covered by IEC 62271-200 [2].

Gas-filled medium-voltage designs use to have design pressures below 500 kPa, as mentioned for example in the introduction of EN 50187 [3].

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<sup>1</sup> Numbers in square brackets refer to the Bibliography.

## 1 Scope

This part of IEC 62271 is applicable to prefabricated solid-insulation enclosed switchgear and controlgear assemblies designed for:

- alternating current;
- rated voltages above 1 kV and up to and including 52 kV;
- service frequencies up to and including 60 Hz;
- indoor installation;
- areas limited to authorized personnel.

The assembly can include either air-insulated or fluid-filled compartments, or both.

For components installed in a solid-insulation enclosed switchgear and controlgear, this document supplements or even replaces in some cases, the requirements as stated by the individual product standards.

The list of components which can be inside the solid-insulation enclosed switchgear and controlgear is not limited to the ones explicitly cited in 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*

IEC 60050-441, *International Electrotechnical Vocabulary (IEV) - Part 441: Switchgear, controlgear and fuses*

IEC 60060-1:2025, *High-voltage test techniques - Part 1: General terminology and test requirements*

IEC 60270, *High-voltage test techniques - Partial discharge measurements*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*

IEC 60529:1989/AMD 1:1999

IEC 60529:1989/AMD 2:2013

IEC 62262:2002, *Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)*

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

IEC 62271-1:2017/AMD1:2021

IEC 62271-100:2021, *High-voltage switchgear and controlgear – Part 100: Alternating-current circuit-breakers*

IEC 62271-100:2021/AMD1:2024

IEC 62271-102:2018, *High-voltage switchgear and controlgear – Part 102: Alternating current disconnectors and earthing switches*  
IEC 62271-102:2018/AMD1:2022

IEC 62271-103:2021, *High-voltage switchgear and controlgear - Part 103: Alternating current switches for rated voltages above 1 kV up to and including 52 kV*

IEC 62271-105:2021, *High-voltage switchgear and controlgear - Part 105: Alternating current switch-fuse combinations for rated voltages above 1 kV up to and including 52 kV*

IEC 62271-106:2021, *High-voltage switchgear and controlgear - Part 106: Alternating current contactors, contactor-based controllers and motor-starters*

IEC 62271-107:2019, *High-voltage switchgear and controlgear - Part 107: Alternating current fused circuit-switchers for rated voltages above 1 kV up to and including 52 kV*

IEC/IEEE 62271-37-013:2021, *High-voltage switchgear and controlgear - Part 37-013: Alternating current generator circuit-breakers*

ISO 4126-2, *Safety devices for protection against excessive pressure - Part 2: Bursting disc safety devices*