

High-voltage switchgear and controlgear —

**Part 205: Compact switchgear
assemblies for rated voltages
above 52 kV**

ICS 29.130.10; 29.130.99

National foreword

This British Standard is the UK implementation of EN 62271-205:2008. It is identical to IEC 62271-205:2008.

The UK participation in its preparation was entrusted by Technical Committee PEL/17, Switchgear, controlgear, and HV-LV co-ordination, to Subcommittee PEL/17/1, High-voltage switchgear and controlgear.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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**High-voltage switchgear and controlgear -
Part 205: Compact switchgear assemblies
for rated voltages above 52 kV
(IEC 62271-205:2008)**

Appareillage à haute tension -
Partie 205: Ensembles d'appareillages
compacts de tensions assignées
supérieures à 52 kV
(CEI 62271-205:2008)

Hochspannungs-Schaltgeräte
und -Schaltanlagen -
Teil 205: Kompakte
Schaltanlagenanordnungen für
Bemessungsspannungen über 52 kV
(IEC 62271-205:2008)

This European Standard was approved by CENELEC on 2008-03-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

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CENELEC

European Committee for Electrotechnical Standardization
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Foreword

The text of document 17C/418/FDIS, future edition 1 of IEC 62271-205, prepared by SC 17C, High-voltage switchgear and controlgear assemblies, of IEC TC 17, Switchgear and controlgear, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62271-205 on 2008-03-01.

This standard is to be used in conjunction with EN 62271-1:2007, 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 EN 62271-1. Amendments to these clauses and subclauses are given under the same numbering, whilst additional subclauses are numbered from 101.

The following dates were fixed:

- | | | |
|--|-------|------------|
| – latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | 2008-12-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2011-03-01 |

Annexes ZA and ZB have been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62271-205:2008 was approved by CENELEC as a European Standard without any modification.

CONTENTS

1	General	5
1.1	Scope.....	5
1.2	Normative references	6
2	Normal and special service conditions	7
3	Terms and definitions	7
3.1	General terms	7
3.2	Compact switchgear assembly	8
4	Rating	8
4.1	Rated voltage (U_r)	8
4.2	Rated insulation level	9
4.3	Rated frequency (f_r).....	9
4.4	Rated normal current (I_r) and temperature rise	9
4.5	Rated short-time withstand current (I_k)	9
4.6	Rated peak withstand current (I_p)	9
4.7	Rated duration of short circuit (t_k).....	9
4.8	Rated supply voltage of closing and opening devices and of auxiliary and control circuits (U_a).....	9
4.9	Rated supply frequency of closing and opening devices and of auxiliary circuits	9
5	Design and construction	10
5.3	Earthing of switchgear and controlgear	10
5.101	Earthing of compact switchgear assemblies and their controlgear	10
5.102	Pressure relief devices	10
5.10	Nameplates	10
5.12	Position indication	10
5.103	Locking devices for maintenance operation	10
5.104	Movement of pressurized devices	11
5.105	Isolating distance for maintenance.....	11
6	Type tests	11
6.1	General	11
6.2	Dielectric tests	12
6.3	Radio interference voltage (r.i.v.) test	12
6.4	Measurement of the resistance of circuits	13
6.5	Temperature-rise tests.....	13
6.6	Short-time withstand current and peak withstand current tests	13
6.101	Mechanical and environmental tests	14
7	Routine tests	16
7.1	Dielectric test on the main circuit	16
7.2	Tests on auxiliary and control circuits	16
7.3	Measurement of the resistance of the main circuit	16
7.101	Functional tests on auxiliary and control circuits	16
8	Guide to the selection of switchgear and controlgear	16
8.101	Guide to the selection of compact switchgear assemblies	16
9	Information to be given with enquiries, tenders and orders	17

10	Transport, storage, installation, operation and maintenance	17
10.1	Conditions during transport, storage and installation	17
10.2	Installation	17
10.3	Operation	17
10.4	Maintenance.....	17
11	Safety.....	17
Annex AA (informative) Explanations of compact switchgear assemblies		18
Annex ZA (normative) Normative references to international publications with their corresponding European publications.....		23
Annex ZB (informative) A-deviations.....		25
Bibliography.....		22
Figure AA.1 – Example for type 1		20
Figure AA.2 – Example for type 2		20
Figure AA.3 – Example for type 3		21
Figure AA.4 – Example for type 3		21
Table 101 – Type tests on the compact switchgear assembly		11

HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 205: Compact switchgear assemblies for rated voltages above 52 kV

1 General

1.1 Scope

This part of IEC 62271 applies to compact switchgear assemblies consisting of at least one switching device directly connected to, or sharing components with, one or more other devices such that there is an interaction between the functions of the individual devices. Such assemblies are made up of devices defined in 1.101 and are designed, tested and supplied for use as a single unit. The interaction between devices may be due to proximity, sharing of components or a combination of both. The assemblies may contain components of air insulated switchgear (AIS) only or a combination of AIS and gas insulated switchgear (GIS), so called mixed technology switchgear (MTS) and may be delivered entirely prefabricated or partially assembled.

It is not possible to define all potential arrangements of compact switchgear assemblies however four examples are shown for information in Annex A.

These compact switchgear assemblies are for indoor and/or outdoor installations in systems having rated voltages above 52 kV and service frequencies of 50 Hz and 60 Hz.

This standard covers the influence on performance of the interactions between devices within compact switchgear assemblies and defines ratings and test procedures for these assemblies.

IEC 62271-1 is applicable if not stated otherwise.

This standard does not apply to switchgear assemblies consisting solely of GIS which are covered by 62271-203.

1.101 Objective

The objective of this standard is to respond to the increasing use of compact switchgear assemblies that perform the functions of a number of separate devices and their controlgear. Numerous arrangements are possible and this standard provides guidance on basic types of assemblies which might be envisaged.

As there are potential interactions between devices within such assemblies, it is necessary to consider the standardization requirements for the assembly in its entirety.

The devices, defined by IEC standards, which may form part of a compact switchgear assembly are listed below:

Switching devices:

- Circuit-breakers IEC 62271-100
- Disconnectors/Earthing switches IEC 62271-102
- Switches IEC 60265-2
- Disconnecting circuit-breakers IEC 62271-108

Devices:

- Instrument transformers
 - Current transformers IEC 60044-1, IEC 60044-8
 - Voltage transformers IEC 60044-2, IEC 60044-5, IEC 60044-7
 - Combined transformers IEC 60044-3
- Surge arresters IEC 60099-4
- Bushings IEC 60137
- Insulators IEC 61462, IEC 62155
- Cable connections IEC 62271-209
- Transformer connections IEC 61639

Each switching device, device and their controlgear forming part of a compact switchgear assembly shall comply with the relevant individual standard. If part of the compact switchgear assembly is formed by metal enclosed switchgear devices the requirements of IEC 62271-203 apply.

Compact switchgear assemblies, as defined in this standard, are considered to be a single product with a single serial number and one set of documentation.

1.2 Normative references

The following referenced documents are indispensable for the application 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 60044-1, *Instrument transformers – Part 1: Current transformers*

IEC 60044-2, *Instrument transformers – Part 2: Inductive voltage transformers*

IEC 60044-3, *Instrument transformers – Part 3: Combined transformers*

IEC 60044-5, *Instrument transformers – Part 5: Capacitor voltage transformers*

IEC 60044-7, *Instrument transformers – Part 7: Electronic voltage transformers*

IEC 60044-8, *Instrument transformers – Part 8: Electronic current transformers*

IEC 60050-441, *International Electrotechnical Vocabulary – Chapter 441: Switchgear, controlgear and fuses*

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

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

IEC 60265-2, *High-voltage switches – Part 2: High-voltage switches for rated voltages of 52 kV and above*

IEC 62271-209, *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 61462, *Composite hollow insulators – Pressurized and unpressurized insulators for use in electrical equipment with rated voltage greater than 1 000 V – Definitions, test methods, acceptance criteria and design recommendations*

IEC/TR 61639, *Direct connection between power transformers and gas-insulated metal-enclosed switchgear for rated voltages of 72,5 kV and above*

IEC 61936-1, *Power installations exceeding 1 kV a.c. – Part 1: Common rules*

IEC 62155, *Hollow pressurized and unpressurized ceramic and glass insulators for use in electrical equipment with rated voltages greater than 1 000 V*

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

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

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

IEC 62271-108, *High-voltage switchgear and controlgear – Part 108: High-voltage alternating current disconnecting circuit-breakers for rated voltages of 72,5 kV and above*

IEC 62271-203, *High-voltage switchgear and controlgear – Part 203: Gas-insulated metal-enclosed switchgear for rated voltages above 52 kV*

2 Normal and special service conditions

Clause 2 of IEC 62271-1 is applicable.

3 Terms and definitions

For the purposes of this document, the terms and definitions of IEC 60050 (441), IEC 62271-1 and the publications mentioned in 1.2 apply.

3.1 General terms

3.1.101 connected position (of a removable part)

position of a removable part in which it is fully connected for its intended function

[IEV 441-16-25]