

Specification for

High-voltage switches

**Part 1: High-voltage switches for rated
voltages above 1 kV and less than 52 kV**

(Implementation of CENELEC HD 355.1 S2)

Interrupteurs à haute tension
Première partie: Interrupteurs à haute tension
pour tensions assignées supérieures à 1 kV et
inférieures à 52 kV

Hochspannungs-Lastschalter
Teil 1: Hochspannungs-Lastschalter für
Nennspannungen über 1 kV und unter 52 kV

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Power Electrical Engineering Standards Policy Committee (PEL/-) to Technical Committee PEL/92, upon which the following bodies were represented:

- ASTA Certification Services
- Association of Manufacturers Allied to the Electrical and Electronic Industry (BEAMA Ltd.)
- British Railways Board
- Copper Development Association
- Department of the Environment (Property Services Agency)
- ERA Technology Ltd.
- Electricity Supply Industry in England and Wales
- GAMBICA (BEAMA Ltd.)
- Health and Safety Executive
- Transmission and Distribution Association (BEAMA Ltd.)

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

- Association of Consulting Engineers
- Association of Supervisory and Executive Engineers
- Electrical Installation Equipment Manufacturers' Association (BEAMA Ltd.)
- Engineering Equipment and Materials Users' Association

This British Standard, having been prepared under the direction of the Power Electrical Engineering Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 31 October 1991

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The following BSI references relate to the work on this standard:
Committee reference PEL/92
Draft for comment 85/21817 DC

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Amendments issued since publication

Amd. No.	Date	Text affected

Amendment No. 1
published and effective from 15 December 1995
to BS 5463 : Part 1 : 1991

Specification for high-voltage switches
Part 1. High-voltage switches for rated voltages above 1 kV and
less than 52.kV

Revised text

Front cover

Under the title, delete 'HD 335.1 S2' and substitute 'HD 355.1 S3'.

AMD 8964/December 1995

Foreword

In paragraph 2, line 4, after '(August 1984)' insert 'and Amendment No. 2 (July 1994)'.

In paragraph 2, line 5, delete 'HD 355.1 S2' and substitute 'HD 355.1 S3'.

In the last paragraph, line 2, delete 'BS 5463 : Part 2 : 1991' and substitute 'BS EN 60265-2 : 1994'.

At the end of the list of cross-references insert the following new entry:

HD 448 S3 : 1995

(IEC 694 : 1980 + A1 : 1985 + A2 : 1993)

BS 6581 : 1995²⁾ Common clauses for high-voltage switchgear and
controlgear standards
(Identical)

At the bottom of the page insert the associated footnote:

²⁾ In preparation.

AMD 8964/December 1995

New HD title page and foreword

Immediately after the foreword, insert the attached new HD title page and foreword page.

AMD 8964/December 1995

Text of British Standard

Amend the text of BS 5463 : Part 1 in accordance with the details given on the attached pages.

AMD 8964/December 1995

Annex ZA (informative)

Delete the existing annex ZA and substitute the attached new annex ZA.

AMD 8964/December 1995

Annex ZB (normative)

Delete the existing annex ZB and substitute the attached new annex ZB.

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Annex ZC (normative)

Insert the attached new annex ZC immediately after annex ZB.

AMD 8964/December 1995

Descriptors: Switches, high-voltage, tests, characteristics

English version

High-voltage switches

Part 1: High-voltage switches for rated voltages above 1 kV and less than 52 kV

(IEC 265-1 : 1983 + A1 : 1984 + A2 : 1994)

Interrupteurs à haute tension
Partie 1: Interrupteurs à haute tension pour tensions assignées supérieures à 1 kV et inférieures à 52 kV
(CEI 265-1 : 1983 + A1 : 1984 + A2 : 1994)

Hochspannungs-Lastschalter
Teil 1: Hochspannungs-Lastschalter für Nennspannungen über 1 kV und unter 52 kV
(IEC 265-1 : 1983 + A1 : 1984 + A2 : 1994)

This Harmonization Document was approved by CENELEC on 1995-07-04. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document on a national level.

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

This Harmonization Document exists in three official versions (English, French, German).

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B-1050 Brussels

Foreword

The text of the International Standard IEC 265-1 : 1983 with its amendments 1 : 1984 and 2 : 1994, prepared by SC 17A, High-voltage switchgear and controlgear, of IEC TC 17, Switchgear and controlgear, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as HD 355.1 S3 on 1995-07-04 without any modification.

The following dates were fixed:

- latest date by which the existence of the HD has to be announced at national level (doa) 1996-01-01
- latest date by which the HD has to be implemented at national level by publication of a harmonized national standard or by endorsement (dop) 1996-07-01
- latest date by which the national standards conflicting with the HD have to be withdrawn (dow) 1996-07-01

For products which have complied with HD 355.1 S2 : 1991 before 1996-07-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2001-07-01.

Appendices and annexes designated 'normative' are part of the body of the standard. Annexes designated 'informative' are given for information only. In this standard, appendix AA and annexes ZB and ZC are normative and annex ZA is informative. Annexes ZA, ZB and ZC have been added by CENELEC.

6.101.15 Condition of switch after breaking tests

Replace the existing text of the first three paragraphs by the following new text:

After performing the specified test duties 1 to 4, the mechanical function and the insulators of the switch shall be in practically the same condition as before the tests. The switch shall be capable of carrying its rated normal current without its temperature rise exceeding the values specified, and its short-circuit making performance shall meet the requirements specified.

The isolating properties of a switch-disconnector in the open position shall not be reduced below what corresponds to normal wear and ageing.

Visual inspection and no-load operation of the switch after tests are usually sufficient for checking these requirements.

If the insulating properties across open contacts of a switch or the isolating properties of a switch-disconnector are doubted, a condition checking test according to 6.1.11 of IEC 694 is deemed sufficient to verify these properties. For switches with sealed-for-life interrupters, the condition checking test is mandatory.

6.101.16 Condition of switch after short-circuit making tests

Replace the existing text of the first three paragraphs by the following new text:

After performing the specified short-circuit making tests (test duty 5), the mechanical function and the insulators of the switch shall be in practically the same condition as before the tests. The switch shall be capable of making, carrying and breaking its rated normal current.

The isolating properties of a switch-disconnector in the open position shall not be reduced below what corresponds to normal wear and ageing.

Visual inspection and no-load operation of the switch after tests are usually sufficient for checking these requirements.

If the insulating properties across open contacts of a switch or the isolating properties of a switch-disconnector are doubted, a condition checking test according to 6.1.11 of IEC 694 is deemed sufficient to verify the properties. For switches with sealed-for-life interrupters, the condition checking test is mandatory.

Annex ZA (informative)

B-deviations

B-deviation: National deviation from an HD due to particular technical requirements, permitted for a specified transitional period.

Clause	Deviation	Date of withdrawal
2	United Kingdom <i>An additional minimum ambient air temperature class of -10 °C for oil-filled switches applies in the UK.</i>	2000-09-11

Annex ZB (normative)

Special national conditions

Special national condition: National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions. If it affects harmonization, it forms part of the European Standard or Harmonization Document.

For the countries in which the relevant special national conditions apply these provisions are normative, for other countries they are informative.

Special national condition

Belgium

Rated voltages

To take account of a special national condition where there are appreciable discrepancies between actual network voltages and the next high test IEC rated voltages, two additional rated voltages are permitted, those being 41,5 kV and 82,5 kV.

The rated lightning impulse withstand voltage and the rated one minute power-frequency withstand voltage related to these values are given in HD 448 S3.

Annex ZC (normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE. When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 50(441)	1974	<i>International electrotechnical vocabulary</i> <i>Chapter 441: Switchgear, controlgear and fuses</i>	—	—
IEC 56-2	1971 ¹⁾	<i>High-voltage alternating-current circuit-breakers</i> <i>Part 2: Rating</i>	—	—
IEC 56-4	1976 ¹⁾	<i>Part 4: Type tests and routine tests</i>	—	—
IEC 71-1	1976 ²⁾	<i>Insulation co-ordination</i> <i>Part 1: Terms, definitions, principles and rules</i>	—	—
IEC 129	1975 ³⁾	<i>Alternating current disconnectors (isolators) and earthing switches</i>	—	—
IEC 470	1974	<i>High-voltage alternating current contactors</i>	—	—
IEC 694	1980	<i>Common clauses for high-voltage switchgear and controlgear standards</i>	HD 448 S3 ⁴⁾	1995

¹⁾ IEC 56-1 to IEC 56-6 are replaced by IEC 56 : 1987. IEC 56 : 1987 + A1 : 1992 + A2 : 1995, mod., are harmonized as HD 348 S6 : 1995.

²⁾ IEC 71-1 : 1993 is harmonized as EN 60071-1 : 1995.

³⁾ IEC 129 : 1984, mod., is harmonized as HD 408 S2 : 1990.

⁴⁾ HD 448 S3 includes A1 : 1985 + A2 : 1993 to IEC 694