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**Tiristorski ventili (elektronke) za visokonapetostni enosmerni prenos (HVDC) električne energije - 1. del: Električno preskušanje - Dopolnilo A1 (IEC 60700-1:1998/A1:2003)**

Thyristor valves for high voltage direct current (HVDC) power transmission - Part 1: Electrical testing - Amendment A1 (IEC 60700-1:1998/A1:2003)

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[SIST EN 60700-1:2001/A1:2004](https://standards.iteh.ai/catalog/standards/sist/11176bd4-71de-4b82-b477-8582301f571d/sist-en-60700-1-2001-a1-2004)

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EUROPEAN STANDARD

**EN 60700-1/A1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2003

ICS 29.200; 31.080.20

English version

**Thyristor valves for high voltage direct current (HVDC)  
power transmission  
Part 1: Electrical testing  
(IEC 60700-1:1998/A1:2003)**

Valves à thyristors pour le transport  
d'énergie en courant continu  
à haute tension (CCHT)  
Partie 1: Essais électriques  
(CEI 60700-1:1998/A1:2003)

Thyristorventile für  
Hochspannungsgleichstrom-  
Energieübertragung (HGÜ)  
Teil 1: Elektrische Prüfung  
(IEC 60700-1:1998/A1:2003)

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This amendment A1 modifies the European Standard EN 60700-1:1998; it was approved by CENELEC on 2003-04-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration. <https://standards.iteh.ai/catalog/standards/sist/11176bd4-71de-4b82-b477-8582301f571d/sist-en-60700-1-2001-a1-2004>

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.

This amendment exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, 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 document 22F/81/FDIS, future amendment 1 to IEC 60700-1:1998, prepared by SC 22F, Power electronics for electrical transmission and distribution systems, of IEC TC 22, Power electronic systems and equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A1 to EN 60700-1:1998 on 2003-04-01.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2004-01-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2006-04-01

Annexes designated "normative" are part of the body of the standard.  
In this standard, annex ZA is normative.  
Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of amendment 1:2003 to the International Standard IEC 60700-1:1998 was approved by CENELEC as an amendment to the European Standard without any modification.

[SIST EN 60700-1:2001/A1:2004](https://standards.iteh.ai/catalog/standards/sist/11176bd4-71de-4b82-b477-8582301f571d/sist-en-60700-1-2001-a1-2004)

<https://standards.iteh.ai/catalog/standards/sist/11176bd4-71de-4b82-b477-8582301f571d/sist-en-60700-1-2001-a1-2004>

**Annex ZA**  
(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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
<b>Replace</b> the reference to IEC 61803 by:				
IEC 61803	1999	Determination of power losses in high-voltage direct current (HVDC) converter stations	EN 61803	1999

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[SIST EN 60700-1:2001/A1:2004](https://standards.iteh.ai/catalog/standards/sist/11176bd4-71de-4b82-b477-8582301f571d/sist-en-60700-1-2001-a1-2004)

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NORME  
INTERNATIONALE  
INTERNATIONAL  
STANDARD

CEI  
IEC

60700-1

1998

AMENDEMENT 1  
AMENDMENT 1  
2003-02

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Amendement 1

**Valves à thyristors pour le transport d'énergie  
en courant continu à haute tension (CCHT) –**

**Partie 1:**  
**Essais électriques**  
**(standards.iteh.ai)**

Amendment 1

[https://standards.iteh.ai/catalog/standards/sist/11176bd4-71de-4b82-](https://standards.iteh.ai/catalog/standards/sist/11176bd4-71de-4b82-b477-8592301f5711/sist-en-60700-1-2001-a1-2004)

**Thyristor valves for high voltage direct current  
(HVDC) power transmission –**

**Part 1:**  
**Electrical testing**

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## FOREWORD

This amendment has been prepared by subcommittee 22F: Power electronics for electrical transmission and distribution systems, of IEC technical committee 22: Power electronics systems and equipment.

The text of this amendment is based on the following documents:

FDIS	Report on voting
22F/81/FDIS	22F/85/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until 2007. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

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### 2 Normative references

[SIST EN 60700-1:2001/A1:2004](https://standards.iteh.ai/catalog/standards/sist/11176bd4-71de-4b82-b477-8582301f571d/sist-en-60700-1-2001-a1-2004)

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*Change the reference to IEC 61803 as follows:*

IEC 61803:1999, *Determination of power losses in high-voltage direct current (HVDC) converter stations*

*Delete the footnote at the bottom of the page.*

### 3 Definitions

#### 3.1.1

#### **test withstand voltage**

*This correction applies to the French text only.*

#### 3.2.3

#### **redundant thyristor levels**

*Replace, on page 15, definition 3.2.3 by the following new definition:*

the maximum number of thyristor levels in a thyristor valve that may be short-circuited externally or internally during service without affecting the safe operation of the thyristor valve as demonstrated by type tests, and which if and when exceeded, would require shutdown of the valve to replace the failed thyristors or acceptance of increased risk of failures



Add, on page 15 after definition 3.2.4, the following new terms and definitions:

### 3.2.5

#### **thyristor level**

part of a thyristor valve comprising a thyristor, or thyristors connected in parallel, together with their immediate auxiliaries, and reactor, if any

### 3.2.6

#### **valve section**

electrical assembly, comprising a number of thyristors and other components, which exhibits pro-rated electrical properties of a complete valve

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## 4.3.2 Operational tests

*This correction applies to the French text only.*

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## 4.4.1 Criteria applicable to thyristor levels

At the end of item b) replace the words "and the type test continued" by the words "and this type test repeated." SIST EN 60700-1:2001/A1:2004  
http://standards.iteh.ai/catalog/standards/sist-en-60700-1-2001-a1-2004/b477-8582301f571d/sist-en-60700-1-2001-a1-2004

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## 6.3.1 Valve support d.c. voltage test

*Add, at the end of the third paragraph, new NOTE 2 as follows:*

NOTE 2 Before repeating the test with opposite polarity, the valve support may be short-circuited and earthed for several hours. The same procedure may be followed at the end of the d.c. voltage test.

*and renumber the existing NOTE as "NOTE 1".*

*This correction applies to the French text only.*