

STN	Tyristorové spínače na prenos energie jednosmerným prúdom vysokého napätia (HVDC). Časť 1: Elektrické skúšanie.	STN EN 60700-1 35 1610
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Thyristor valves for high voltage direct current (HVDC) power transmission - Part 1: Electrical testing

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 02/16

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Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

English Version

Thyristor valves for high voltage direct current (HVDC) power transmission - Part 1: Electrical testing (IEC 60700-1:2015)

Valves à thyristors pour le transport d'énergie en courant continu à haute tension (CCHT) - Partie 1: Essais électriques
(IEC 60700-1:2015)

Thyristorventile für Hochspannungsgleichstrom-Energieübertragung (HGÜ) - Teil 1: Elektrische Prüfung
(IEC 60700-1:2015)

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

EN 60700-1:2015**European foreword**

The text of document 22F/341/CDV, future edition 2 of IEC 60700-1, 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 approved by CENELEC as EN 60700-1:2015.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2016-06-01
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-09-01

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60060	Series	High-voltage test techniques	EN 60060	Series
IEC 60060-1	-	High-voltage test techniques - Part 1: General definitions and test requirements	EN 60060-1	-
IEC 60071-1	-	Insulation co-ordination - Part 1: Definitions, principles and rules	EN 60071-1	-
IEC 60099	Series	Surge arresters	EN 60099	Series
IEC 60270	-	High-voltage test techniques - Partial discharge measurements	EN 60270	-
IEC 61803 +A1	1999 2010	Determination of power losses in high- voltage direct current (HVDC) converter stations	EN 61803 +A1	1999 2010
ISO/IEC Guide 25 ¹⁾ -		General requirements for the competence - of calibration and testing laboratories		-

¹⁾ Withdrawn publication.



INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Thyristor valves for high voltage direct current (HVDC) power transmission –
Part 1: Electrical testing**

**Valves à thyristors pour le transport d'énergie en courant continu à haute
tension (CCHT) –
Partie 1: Essais électriques**





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INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Thyristor valves for high voltage direct current (HVDC) power transmission –
Part 1: Electrical testing**

**Valves à thyristors pour le transport d'énergie en courant continu à haute
tension (CCHT) –
Partie 1: Essais électriques**

INTERNATIONAL
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**THYRISTOR VALVES FOR HIGH VOLTAGE DIRECT
CURRENT (HVDC) POWER TRANSMISSION –****Part 1: Electrical testing**

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International Standard IEC 60700-1 has been prepared by subcommittee 22F: Power electronics for electrical transmission and distribution systems, of IEC technical committee 22: Power electronic systems and equipment.

This second edition cancels and replaces the first edition published in 1998, its Amendment 1:2003 and its Amendment 2: 2008. This edition constitutes a technical revision.

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

- a) Definitions of terms "redundant thyristor levels", "thyristor level", "valve section" have been changed for clarification.
- b) The notes were added to test requirements of dielectric d.c. voltage tests for valve support, MVU, valve, specifying that before repeating the test with opposite polarity, the tested

object may be short-circuited and earthed for several hours. The same procedure may be followed at the end of the d.c. voltage test.

- c) Table 1 on thyristor level faults permitted during type tests was supplemented.
- d) The alternative MVU dielectric test method was added.
- e) It was specified that production tests may include routine tests as well as sample tests.
- f) It was added into test requirements for periodic firing and extinction tests that a scaling factor for tests shall be applied when testing with valve sections.

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

CDV	Report on voting
22F/341/CDV	22F/351A/RVC

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 60700 series, published under the general title *Thyristor valves for high voltage direct current (HVDC) power transmission*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

THYRISTOR VALVES FOR HIGH VOLTAGE DIRECT CURRENT (HVDC) POWER TRANSMISSION –

Part 1: Electrical testing

1 Scope

This part of IEC 60700 applies to thyristor valves with metal oxide surge arresters directly connected between the valve terminals, for use in a line commutated converter for high voltage d.c. power transmission or as part of a back-to-back link. It is restricted to electrical type and production tests.

The tests specified in this standard are based on air insulated valves. For other types of valves, the test requirements and acceptance criteria can be agreed.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60060, *High-voltage test techniques*

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

IEC 60071-1, *Insulation co-ordination – Part 1: Definitions, principles and rules*

IEC 60099 (all parts), *Surge arresters*

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

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

IEC 61803:1999/AMD 1:2010¹

ISO/IEC Guide 25, *General requirements for the technical competence of testing laboratories*²

koniec náhľadu – text ďalej pokračuje v platenej verzii STN

¹ There exists a consolidated edition 1.1 (2011) that comprises IEC 61803:1999 and its Amendment 1:2010.

² Withdrawn.