

STN	Usmerňovače konvertorov napájaných napätím (VSC) na prenos energie jednosmerným prúdom vysokého napätia (HVDC). Elektrické skúšky. Zmena A1	STN EN 62501/A1
		35 1540

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. 03/15

STN EN 62501 z decembra 2009 sa bez zmeny A1 môže používať do 16. 09. 2017.

Obsahuje: EN 62501:2009/A1:2014, IEC 62501:2009/A1:2014

120405

Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, odbor SÚTN, 2015
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.

EUROPEAN STANDARD

EN 62501:2009/A1

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2014

ICS 29.200; 29.240

English Version

**Voltage sourced converter (VSC) valves for high-voltage direct current (HVDC) power transmission - Electrical testing
(IEC 62501:2009/A1:2014)**

Valves à convertisseur de source de tension (VSC) pour le transport d'énergie en courant continu à haute tension (CCHT) - Essais électriques (CEI 62501:2009/A1:2014)

Amendment 1: Ventile von Spannungszwischenkreis-Stromrichtern (VSC) für die Hochspannungsgleichstromübertragung (HGÜ) - Elektrische Prüfung (IEC 62501:2009/A1:2014)

This amendment A1 modifies the European Standard EN 62501:2009; it was approved by CENELEC on 2014-09-16. 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.

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

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

Foreword

The text of document 22F/299/CDV, future IEC 62501:2009/A1, 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 62501:2009/A1:2014.

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) 2015-06-16
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-09-16

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

Annex ZA of EN 62501:2009 applies except as follows:

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
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*In the Annex ZA of EN 62501:2009 **delete** from the existing list the following references:*

IEC 60060-1	1989	High-voltage test techniques - Part 1: General definitions and test requirements	HD 588.1 S1	1991
IEC 60071-1	2006	Insulation co-ordination - Part 1: Definitions, principles and rules	EN 60071-1	2006

*In the Annex ZA of EN 62501:2009 **Add** to the existing list the following references:*

IEC 60071	Series	Insulation co-ordination	EN 60071	Series
IEC 60270	2000	High-voltage test techniques - Partial discharge measurements	EN 60270	2001



IEC 62501

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INTERNATIONAL STANDARD

NORME INTERNATIONALE



AMENDMENT 1
AMENDEMENT 1

Voltage sourced converter (VSC) valves for high-voltage direct current (HVDC) power transmission – Electrical testing

Valves à convertisseur de source de tension (VSC) pour le transport d'énergie en courant continu à haute tension (CCHT) – Essais électriques



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INTERNATIONAL STANDARD

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Valves à convertisseur de source de tension (VSC) pour le transport d'énergie en courant continu à haute tension (CCHT) – Essais électriques

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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 electronic systems and equipment.

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

CDV	Report on voting
22F/299/CDV	22F/316A/RVC

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 this amendment and the base publication will remain unchanged until the stability date indicated on the IEC web site 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.

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CONTENTS

3.3 Operating states

Replace the subclause title as follows:

3.3 Operating states of converter

4.1.3 Sequence of test

Delete the subclause title.

Add the titles of new Subclause 4.1.8 and new Clause 15 as follows:

4.1.8 Conditions to be considered in determination of type test parameters

15 Tests for dynamic braking valves

Annex A (informative) Overview of VSC topology

Replace the annex title as follows:

Annex A (informative) Overview of VSC converters in HVDC power transmission

Add the titles of new Subclauses A.5.1 to A.5.4 and new Clause A.7 as follows:

A.5.1 General

A.5.2 Modular multi-level converter (MMC)

A.5.3 Cascaded two level converter (CTL)

A.5.4 Terminology for valves of the controllable voltage source type

A.7 Hybrid VSC valves

Annex B (informative) Fault tolerance capability

Replace the annex title as follows:

Annex B (informative) Valve component fault tolerance

Figure A.9 – One possible implementation of a multi-level “voltage source” VSC valve

Replace the figure title as follows:

Figure A.9 - The half-bridge MMC circuit

Add, in the list of figures, the titles of new Figures A.10 to A.13 as follows:

Figure A.10 – The full-bridge MMC circuit

Figure A.11 – The half-bridge CTL circuit

Figure A.12 – Construction terms in MMC valves

Figure A.13 – Construction terms in CTL valves

1 Scope

Add, after the first paragraph, the following two paragraphs:

The scope of this standard includes the electrical type and production tests of dynamic braking valves which may be used in some HVDC schemes for d.c. overvoltage limitation.

This standard can be used as a guide for testing of STATCOM valves.

Add, at the end of the last sentence of the last paragraph, the words “between the purchaser and the supplier” so that the last sentence reads as follows:

For other types of valves, the test requirements and acceptance criteria should be agreed between the purchaser and the supplier.

2 Normative references

Delete from the existing list, the following references:

IEC 60060-1:1989, *High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 60071-1:2006, *Insulation co-ordination – Part 1: Definitions, principles and rules*

Add to the list, the following references:

IEC 60071 (all parts), *Insulation co-ordination*

IEC 60270:2000, *High-voltage test techniques – Partial discharge measurements*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN