SLOVENSKI STANDARD
SIST EN 62751-1:2014

01-december-2014

Ugotavljanje izgub moči v napetostnih pretvorniških ventilih za visokonapetostne enosmerne sisteme - 1. del: Splošne zahteve (IEC 62751-1:2014)

Determination of power losses in voltage sourced converter (VSC) valves for high-voltage direct current (HVDC) systems - Part 1: General requirements

Bestimmung der Leistungsverluste in Spannungszwischenkreis-Stromrichtern (VSC) für Hochspannungsgleichstrom(HGÜ)-Systeme -- Teil 1: Allgemeine Anforderungen

Détermination des pertes de puissance dans les valves à convertisseur de source de tension (VSC) des systèmes de transport d'énergie en courant continu à haute tension (CCHT) -- Partie 1: Exigences générales

Ta slovenski standard je istoveten z: **EN 62751-1:2014**

ICS:

29.200	Usmerniki. Pretvorniki. Stabilizirano električno napajanje	Rectifiers. Convertors. Stabilized power supply
29.240.01	Omrežja za prenos in distribucijo električne energije na splošno	Power transmission and distribution networks in general

SIST EN 62751-1:2014 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62751-1

October 2014

ICS 29.200; 29.240

English Version

Power losses in voltage sourced converter (VSC) valves for high-voltage direct current (HVDC) systems - Part 1: General requirements (IEC 62751-1:2014)

Pertes de puissance dans les valves à convertisseur de source de tension (VSC) des systèmes en courant continu à haute tension (CCHT) - Partie 1: Exigences générales (CEI 62751-1:2014)

Bestimmung der Leistungsverluste in Spannungszwischenkreis-Stromrichtern (VSC) für Hochspannungsgleichstrom(HGÜ)-Systeme - Teil 1: Allgemeine Anforderungen (IEC 62751-1:2014)

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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/302/CDV, future edition 1 of IEC 62751-1, 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 62751-1:2014.

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)	2015-07-01
–	latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2017-10-01

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The text of the International Standard IEC 62751-1:2014 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 61803:1999	NOTE	Harmonised as EN 61803:1999.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

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.

Publication	Year	Title	EN/HD	Year
IEC 60633	-	Terminology for high-voltage direct current (HVDC) transmission	EN 60633	-
IEC 60747-2	-	Semiconductor devices - Discrete devices and integrated circuits -- Part 2: Rectifier diodes	-	-
IEC 60747-9	2007	Semiconductor devices - Discrete devices - Part 9: Insulated-gate bipolar transistors (IGBTs)	-	-
IEC 62747	2014	Terminology for voltage-sourced converters (VSC) for high-voltage direct current (HVDC) systems	EN 62747	2014

IEC 62751-1

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

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Pertes de puissance dans les valves à convertisseur de source de tension (VSC) des systèmes en courant continu à haute tension (CCHT) – Partie 1: Exigences générales

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POWER LOSSES IN VOLTAGE SOURCED CONVERTER (VSC) VALVES FOR HIGH-VOLTAGE DIRECT CURRENT (HVDC) SYSTEMS –

Part 1: General requirements

FOREWORD

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International Standard IEC 62751-1 has been prepared by subcommittee 22F: Power electronics for electrical transmission and distribution systems, of IEC technical committee 22: Power electronic systems and equipment.

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

CDV	Report on voting
22F/302/CDV	22F/321A/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 62751series, published under the general title *Power losses in voltage sourced converter (VSC) valves for high-voltage direct current (HVDC) systems*, 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 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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

POWER LOSSES IN VOLTAGE SOURCED CONVERTER (VSC) VALVES FOR HIGH-VOLTAGE DIRECT CURRENT (HVDC) SYSTEMS –

Part 1: General requirements

1 Scope

This part of IEC 62751 sets out the general principles for calculating the power losses in the converter valves of a voltage sourced converter (VSC) for high-voltage direct current (HVDC) applications, independent of the converter topology. Clauses 6 and 8 and subclauses 9.1, 9.2 and A.2.12 of the standard can also be used for calculating the power losses in the dynamic braking valves (where used) and as guidance for calculating the power losses of the valves for a STATCOM installation.

Power losses in other items of equipment in the HVDC substation, apart from the converter valves, are excluded from the scope of this standard. Power losses in most equipment in a VSC substation can be calculated using similar procedures to those prescribed for HVDC systems with line-commutated converters (LCC) in IEC 61803. Annex A presents the main differences between LCC and VSC HVDC substations in so far as they influence the method for determining power losses of other equipment.

This standard does not apply to converter valves for line-commutated converter HVDC systems.

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 60633, *Terminology for high-voltage direct current (HVDC) transmission*

IEC 60747-2, *Semiconductor devices – Discrete devices and integrated circuits – Part 2: Rectifier diodes*

IEC 60747-9:2007, *Semiconductor devices – Discrete devices – Part 9: Insulated-gate bipolar transistors (IGBTs)*

IEC 62747:2014, *Terminology for voltage-sourced converters (VSC) for high-voltage direct current (HVDC) systems*