SLOVENSKI STANDARD
SIST EN 62751-1:2014/A1:2018

01-december-2018

Izgube moči v napetostnih pretvorniških ventilih za visokonapetostne enosmerne sisteme - 1. del: Splošne zahteve (IEC 62751-1:2014/A1:2018)

Power losses in voltage sourced converter (VSC) valves for high-voltage direct current (HVDC) systems - Part 1: General requirements (IEC 62751-1:2014/A1:2018)

Bestimmung der Leistungsverluste in Spannungszwischenkreis-Stromrichtern (VSC) für Hochspannungsgleichstrom(HGÜ)-Systeme - Teil 1: Allgemeine Anforderungen (IEC 62751-1:2014/A1:2018)

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 (IEC 62751-1:2014/A1:2018)

Ta slovenski standard je istoveten z: **EN 62751-1:2014/A1:2018**

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/A1:2018 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62751-1:2014/A1

June 2018

ICS 29.200; 29.240

English Version

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This amendment A1 modifies the European Standard EN 62751-1:2014; it was approved by CENELEC on 2018-05-25. 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN 62751-1:2014/A1:2018 E

European foreword

The text of document 22F/439A/CDV, future edition 1 of IEC 62751-1:2014/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 62751-1:2014/A1:2018.

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)	2019-02-25
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2021-05-25

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 62751-1:2014/A1:2018 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61803:1999	NOTE	Harmonized as EN 61803:1999 (not modified).
IEC 61803:1999/A1:2010	NOTE	Harmonized as EN 61803:1999/A1:2010 (not modified).
IEC 61803:1999/A2:2016	NOTE	Harmonized as EN 61803:1999/A2:2016 (not modified).

Replace Annex ZA of EN 62751-1:2014 by the following one:

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. 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
ISO/IEC Guide 98-3	-	Uncertainty of measurement - Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)		-

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

AMENDMENT 1
AMENDEMENT 1

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

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

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 29.200; 29.240.99

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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/439A/CDV	22F/458A/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 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.

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.

2 Normative references

Add the following new normative reference:

ISO/IEC Guide 98-3, *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*

4.1 General

Add, after the first existing paragraph, the following new paragraph:

The overall uncertainty of the value of losses is an important parameter for a converter and for a converter station since the value of losses is used to compare investment cost to capitalized cost over the life-time of the converter station. To ensure that estimates are undisputed, adherence to the provisions of this standard and the provisions of ISO/IEC Guide 98-3 is indispensable. All measurements shall furthermore be traceable to national and/or international standards of measurement.

Add, before the last existing paragraph, the following new paragraph:

Thus, for most cases, the losses are estimated from component characteristics, using suitable mathematical models of the converters. It is however important that all such estimates have a base in actual measurements having sufficiently low uncertainty. Care should also be taken to show the propagation of uncertainties from measurements and how they interact with the model. Estimates of the uncertainty contributions from imperfections in the models themselves should also be considered.

5.1 General

Delete, in the second paragraph, the words "to a lesser extent".

8.2 IGBT switching losses

Delete, in the first sentence of the sixth paragraph, the words "to a lesser extent".

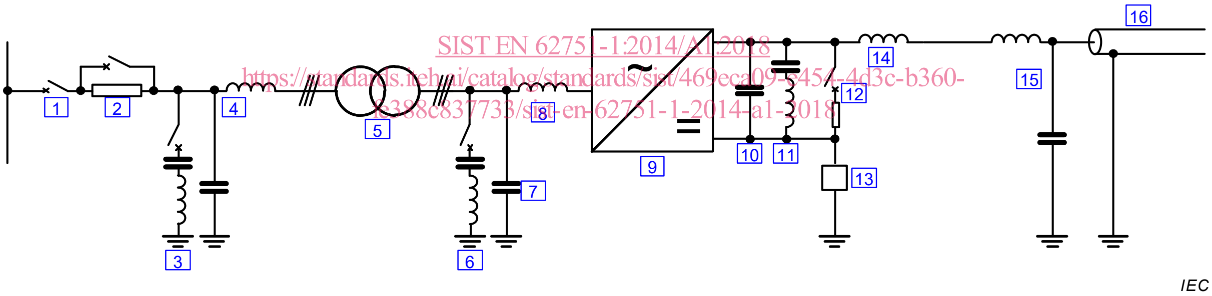
A.2 Guidance for calculating losses in each equipment

A.2.2 Pre-insertion resistor

Add, in the first sentence of the existing paragraph, the words "or disconnector" *after* "circuit breaker".

Figure A.1 – Major components that may be found in a VSC substation

Replace the existing Figure A.1 by the following new figure:



Delete, in the key to Figure A.1, item "15 common mode blocking reactor" and re-number subsequent items.

A.2.3 Line side harmonic filter

Replace, in the existing paragraph, the reference "IEC 61803:1999/AMD1:2010" *by* "IEC 61803:1999 and IEC 61803:1999/AMD1:2010".

A.2.4 Line side high frequency filter

Replace, in the existing paragraph, the reference "IEC 61803:1999/AMD1:2010" *by* "IEC 61803:1999 and IEC 61803:1999/AMD1:2010".

A.2.5 Interface transformer

Replace, in the second existing paragraph, the reference "IEC 61803:1999/AMD1:2010" *by* "IEC 61803:1999, IEC 61803:1999/AMD1:2010 and IEC 61803:1999/AMD2:2016".