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Determination of power losses in high-voltage direct current (HVDC) converter stations with line-commutated converters

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

EN IEC 61803

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Supersedes EN 61803:1999 and all of its amendments  
and corrigenda (if any)

English Version

Determination of power losses in high-voltage direct current  
(HVDC) converter stations with line-commutated converters  
(IEC 61803:2020)

Détermination des pertes en puissance dans les postes de  
conversion en courant continu à haute tension (CCHT)  
munis de convertisseurs commutés par la ligne  
(IEC 61803:2020)

Bestimmung der Leistungsverluste in  
Hochspannungsgleichstrom- (HGÜ-)Stromrichterstationen  
mit netzgeführten Stromrichtern  
(IEC 61803:2020)

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Comité Européen de Normalisation Electrotechnique  
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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

## European foreword

The text of document 22F/563/CDV, future edition 2 of IEC 61803, 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 IEC 61803:2020.

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) 2021-08-23
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-11-23

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## Annex ZA (normative)

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NOTE 1 Where 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](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60076-1	-	Power transformers - Part 1: General	EN 60076-1	-
IEC 60076-6	-	Power transformers - Part 6: Reactors	EN 60076-6	-
IEC 60633	-	High-voltage direct current (HVDC) transmission - Vocabulary	EN IEC 60633	-
IEC 60700-1	2015	Thyristor valves for high voltage direct current (HVDC) power transmission - Part 1: Electrical testing	EN 60700-1	2015
IEC 60871-1	-	Shunt capacitors for a.c. power systems having a rated voltage above 1 000 V - Part 1: General	EN 60871-1	-

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Determination of power losses in high-voltage direct current (HVDC) converter stations with line-commutated converters**

**Détermination des pertes en puissance dans les postes de conversion en courant continu à haute tension (CCHT) munis de convertisseurs commutés par la ligne**





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Edition 2.0 2020-10

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

**Determination of power losses in high-voltage direct current (HVDC) converter stations with line-commutated converters**

**Détermination des pertes en puissance dans les postes de conversion en courant continu à haute tension (CCHT) munis de convertisseurs commutés par la ligne**

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**INTERNATIONAL ELECTROTECHNICAL COMMISSION****DETERMINATION OF POWER LOSSES IN HIGH-VOLTAGE  
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This second edition cancels and replaces the first edition published in 1999, Amendment 1:2010 and Amendment 2:2016. This edition constitutes a technical revision.

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

- a) to facilitate the application of this document and to ensure its quality remains consistent, 5.1.8 and 5.8 have been reviewed, taking into consideration that the present thyristor production technology provides considerably less thyristor parameters dispersion comparing with the situation in 1999 when the first edition of IEC 61803 was developed, and therefore the production records of thyristors can be used for the power losses calculation;

- b) the calculation of the total station load losses (cases D1 and D2 in Annex C) has been corrected.

The text of this International Standard is based on the following documents:

CDV	Report on voting
22F/563/CDV	22F/580A/RVC

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

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

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