

ICS 29.200; 29.240
CCS K 46



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 34118-2017

**Terminology for voltage-sourced converters (VSC) for high
voltage direct current (HVDC) systems**

高压直流系统用电压源换流器术语

(English Translation)

Issued on: July 31, 2017

Implemented on: February 1, 2018

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China, Standardization
Administration of the People's Republic of China**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the translation method identical with IEC 62747:2014 "high voltage DC system voltage source converter terminology." the documents of our country that are consistent with the corresponding international documents that are normative references in this standard are as follows.

--- GB/T 4728 (all parts) Electrical diagrams with graphical symbols [IEC 60617 (all parts)].

For ease of use, this standard made the following editorial changes and errata.

--- Removed the first paragraph of 3.1, due to the statement does not match the content of Chapter 3;

Errata "NGB S" to "NBGS" (see 3.3);

--- Corrigendum "CTL" to "CTLC" (see 3.3, 6.5 and Figure 4);

--- Figure 2 will be changed to Table 1, followed by the figure number change in turn;

--- Correct the "See Figure 3" in 7.10 note as "See Figure 4" and "See Figure 4"
Corrigendum "See Figure 3". And, for the sake of easy expression, that's it

Note the first sentence and the second sentence of the position of exchange;

--- The formula (1) " $M = 2 \cdot U_{cl} \cdot U_{dc}$ " Corrigendum to " $M = 2 \times U_{cl} \times U_{dc}$ " (See 8.11).

This standard proposed by the China Electrical Equipment Industry Association.

This standard by the National Standardization Technical Committee power electronic

systems and equipment (SAC/TC60) centralized.

This standard was drafted unit. Xi'an West Power System Co., Ltd., Xi'an Institute of High Voltage Electric Co., Ltd., State Grid Beijing economy Technology Research Institute, China Southern Power Grid Research Institute Co., Ltd., State Grid Smart Grid Research Institute, Beijing West Power Huaqing Technology Co., Ltd., South Power Grid EHV Transmission and Maintenance Company test center.

1 Scope

This standard defines the terms related to self-commutating voltage source converters for High Voltage Direct Current (HVDC) transmission.

This standard applies mainly to voltage source converter (VSC) based on IGB T (Insulated Gate Bipolar Transistor), based on the open Voltage source converters (VSC) for other types of semiconductor devices on and off can also be used for reference.

This standard does not apply to high-voltage direct current (HVDC) transmission system used in commutation converter and current source converter.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

IEC 60027 (all parts) Letters used in electrotechnical symbols
(Lettersymbolstobeusedinelectricaltechnology) IEC 60617 (all parts) electrical diagrams with graphical symbols (Graphicalsymbolsfordiagrams)

3.1 Symbol

This list covers only the most commonly used symbols (see Figure 1). A more complete symbol table for stationary converters is given in IEC 60027, Chapter and references listed in the standard.

Ud DC voltage

Udc converter DC voltage Udpe extremely - DC voltage Udpp pole - very direct voltage UdppN rated pole - very DC voltage UdpeN rated pole - the DC voltage UL connection transformer network side line voltage, RMS, including harmonics ULe phase voltage transformer network side, root mean square, including harmonics ULN connection transformer network side line voltage rating Uv connection Transformer valve side line voltage, RMS, including harmonics Uve Transformer valve side phase voltage, root mean square, including harmonics Uc converter wire - Line voltage, rms value, including harmonics

Note : U_c is equal to U_v minus the voltage drop across the phase reactor and the valve reactor. However, U_c is of practical significance only under balanced conditions (steady state).

U_c Converter phase voltage, rms value, including harmonics Voltage across the U_{valve} valve (can be any defined value) I_d DC current (can be any defined value) I_{dN} Rated DC current I_L connection transformer network side current, square rooted, including harmonics I_{LN} Connection transformer network side current rating