

TECHNICAL REPORT

AMENDMENT 1

High-voltage direct current (HVDC) systems – Application of active filters

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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:

DTR	Report on voting
22F/377/DTR	22F/381A/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- withdrawn,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.

A bilingual version of this publication may be issued at a later date.

3 Terms and definitions

Replace the Note with the following new Note:

NOTE Only terms which are specific to active filters for HVDC are defined in this clause. Those terms that are either identical to or obvious extensions of IEC 60633, IEC 62001 and IEC 62747 terminology have not been defined.

3.3 Power semiconductor terms

Delete the Note.

3.3.1

insulated gate bipolar transistor IGBT

Replace the definition with the following new definition:

turn-off semiconductor device with a gate terminal (G) and two load terminals emitter (E) and collector (C)

Add, after definition 3.3.3, the following new term and definition:

3.3.4

turn-off semiconductor device

controllable semiconductor device which may be turned on and off by a control signal

EXAMPLE Insulated gate bipolar transistor (IGBT).

NOTE There are several types of turn-off semiconductor devices which can be used in active filters for HVDC. Currently, the IGBT is the major device used in such converters. The term IGBT is used throughout this Technical Report to refer to the turn-off semiconductor device. However, this Technical Report is equally applicable to other types of devices with turn-off capability in most of the parts.

3.4.2

two-level converter

Replace the definition with the following new definition:

converter in which the voltage between the a.c. terminals of the voltage sourced converter (VSC) unit and the VSC unit midpoint is switched between two discrete d.c. levels

3.4.3

three-level converter

Replace the definition with the following new definition:

converter in which the voltage between the a.c. terminals of the voltage sourced converter (VSC) unit and the VSC unit midpoint is switched between three discrete d.c. levels

Figure 4 – Simple current source converter

Replace Figure 4 with the following new figure:

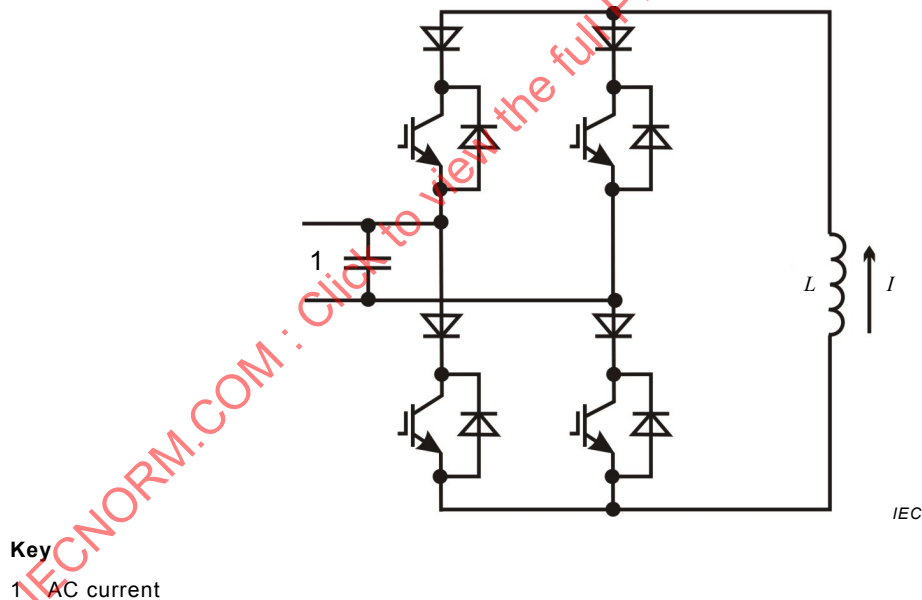


Figure 4 – Simple current source converter

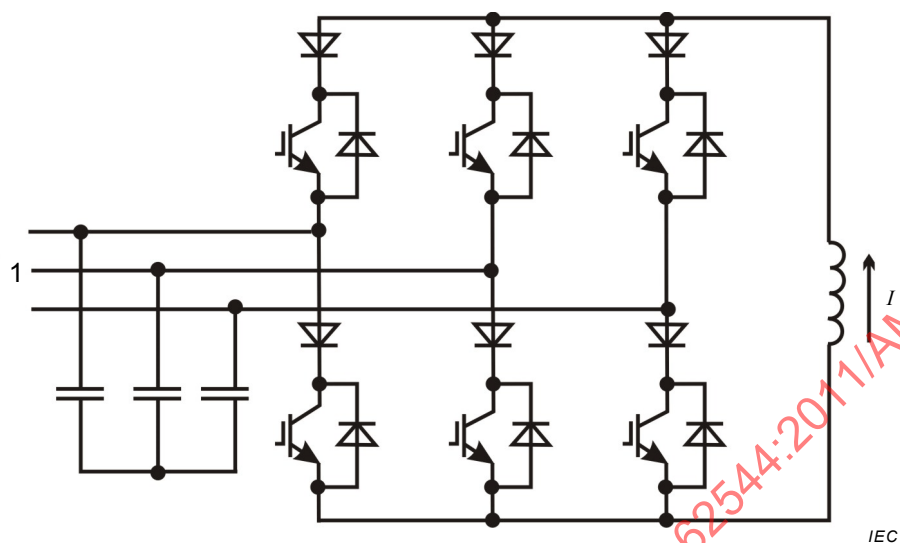
6.1 General

Replace the last sentence of the last paragraph with the following new sentence:

The power requirements for HV AC side can be considerably higher than for the HV DC side.

Figure 17 – Three phase current source converter

Replace Figure 17 with the following new figure:



Key

1 AC grid

Figure 17 – Three phase current-source converter

Bibliography

Add to the bibliography the following new reference:

- [20] IEC 62747, Terminology for voltage-sourced converters (VSC) for high-voltage direct current (HVDC) systems