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# TECHNICAL REPORT

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## Semiconductor converters – General requirements and line commutated converters –
## Part 1-2: Application guide

INTERNATIONAL
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# SEMICONDUCTOR CONVERTERS – GENERAL REQUIREMENTS AND LINE COMMUTATED CONVERTERS –

## Part 1-2: Application guide

## FOREWORD

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IEC/TR 60146-1-2, which is a technical report, has been prepared by IEC technical committee 22: *Power electronic systems and equipment*.

This fourth edition cancels and replaces the third edition published in 1991. This fourth edition constitutes a technical revision.

This fourth edition includes the following main changes with respect to the previous edition:

a) re-edition of the whole document according to the current Directives;
b) correction of some errors.

The text of this technical report is based on the following documents:

| Enquiry draft | Report on voting |
|---|---|
| 22/170/DTR | 22/173/RVC |

Full information on the voting for the approval of this technical report 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 of the IEC 60146 series, under the general title: *Semiconductor converters – General requirements and line commutated converters*, 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- withdrawn,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.

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

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# SEMICONDUCTOR CONVERTERS –
# GENERAL REQUIREMENTS AND LINE COMMUTATED CONVERTERS –

## Part 1-2: Application guide

## 1 Scope

This part of IEC 60146 gives guidance on variations to the specifications given in IEC 60146-1-1:2009 to enable the specification to be extended in a controlled form for special cases. Background information is also given on technical points which should facilitate the use of IEC 60146-1-1:2009.

This technical report primarily covers line commutated converters and is not in itself a specification, except as regards certain auxiliary components, in so far as existing standards may not provide the necessary data.

## 2 Normative references

The following referenced documents are indispensable for the application 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.

IEC 60050-521:2002, *International Electrotechnical Vocabulary – Part 521: Semiconductor devices and integrated circuits*

IEC 60050-551:1998, *International Electrotechnical Vocabulary – Part 551: Power electronics*

IEC 60050-551-20:2001, *International Electrotechnical Vocabulary – Part 551-20: Power electronics – Harmonic analysis*

IEC 60146-1-1:2009, *Semiconductor converters – General requirements and line commutated converters Part 1-1: Specification of basic requirements*

IEC 60146-1-3:1991, *Semiconductor converters – General requirements and line commutated converters Part 1-3: Transformers and reactors*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 60664-1, *Insulation coordination for equipment within low-voltage systems- Part 1: Principles, requirements and tests*

IEC 61378-1, *Convertor transformers – Part 1: Transformers for industrial applications*

IEC 61148, *Terminal markings for valve device stacks and assemblies and for power converter equipment*

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