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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Conventions concerning electric circuits

Conventions concernant les circuits électriques

IEC 60375:2018-05(en-fr)

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FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60375 has been prepared by IEC technical committee 25: Quantities and units, and their letter symbols.

This third edition cancels and replaces the second edition issued in 2003. This edition constitutes a technical revision.

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

a) the clause on conventions concerning magnetic circuits has been removed; accordingly the title of the document has been abbreviated to read "Conventions concerning electric circuits";
b) text and figures have been revised and homogenised;
c) Clause 3 has been structured into subclauses;
d) Clause 4 – Orientation of geometrical objects – has been inserted, and thus the clause numbering has been altered.

The text of this standard is based on the following documents:

FDIS	Report on voting
25/620/FDIS	25/622/RVD

Full information on the voting for the approval of this standard 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.

The committee has decided that the contents of this 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.

CONVENTIONS CONCERNING ELECTRIC CIRCUITS

1 Scope

This International Standard specifies the rules for signs and reference directions and reference polarities for electric currents and voltages in electric networks.

In Clauses 3 to 10, the time dependence is arbitrary. It is assumed that the wavelength of the highest frequency involved is larger than the largest distance between two points of the network; processes are considered to be quasi-static. Clause 11 specifies the rules and recommendations for complex notation.

2 Normative references

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.

IEC 60617, *Graphical symbols for diagrams* [1]

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
orientation
<of a curve> property of a curve described by the position vector $\boldsymbol{r}(u)$ which is associated with increasing or decreasing values of the parameter u

[SOURCE: IEC 60050-102:2007, 102-04-19]

3.2
orientation
<of a surface> for a surface having a tangent plane at any point, property determined by the choice, continuously from point to point, of one of the two normal unit vectors at each point

[SOURCE: IEC 60050-102:2007, 102-04-36, modified – Note 1 to entry omitted.]

3.3
electric charge
additive scalar quantity, associated with elementary particles and with macroscopic matter that characterizes their electromagnetic interactions

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[1] IEC 60617 is a database containing symbols referenced in the form (IEC 60617-Sxxxxx) where Sxxxxx is the identity number of the symbol.