SLOVENSKI STANDARD
SIST EN 62428:2009

01-januar-2009

Elektroenergetsko inženirstvo - Modalne komponente v trifaznih izmeničnih sistemih - Veličine in transformacije (IEC 62428:2008)

Electric power engineering - Modal components in three-phase a.c. systems - Quantities and transformations (IEC 62428:2008)

Elektrische Energietechnik - Modale Komponenten in Drehstromsystemen - Größen und Transformationen (IEC 62428:2008)

Energie électrique - Composantes modales dans les systèmes a.c. triphasés - Grandeurs et transformations (CEI 62428:2008)

Ta slovenski standard je istoveten z: **EN 62428:2008**

ICS:

01.060	Veličine in enote	Quantities and units
29.020	Elektrotehnika na splošno	Electrical engineering in general

SIST EN 62428:2009 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62428

September 2008

ICS 01.060; 29.020

English version

Electric power engineering - Modal components in three-phase a.c. systems - Quantities and transformations
(IEC 62428:2008)

Energie électrique - Composantes modales dans les systèmes a.c. triphasés - Grandeurs et transformations (CEI 62428:2008)

Elektrische Energietechnik - Modale Komponenten in Drehstromsystemen - Größen und Transformationen (IEC 62428:2008)

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CENELEC
European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. EN 62428:2008 E

Foreword

The text of document 25/382/FDIS, future edition 1 of IEC 62428, prepared by IEC TC 25, Quantities and units, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62428 on 2008-08-01.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2009-05-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2011-08-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62428:2008 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60909-0	NOTE Harmonized as EN 60909-0:2001 (not modified).
IEC 61660	NOTE Harmonized in EN 61660 series (not modified).

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60050-141	-[1)]	International Electrotechnical Vocabulary (IEV) - Part 141: Polyphase systems and circuits	-	-

[1)] Undated reference.

IEC 62428

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Electric power engineering – Modal components in three-phase a.c. systems – Quantities and transformations

Energie électrique – Composantes modales dans les systèmes a.c. triphasés – Grandeurs et transformations

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRIC POWER ENGINEERING – MODAL COMPONENTS IN THREE-PHASE AC SYSTEMS – QUANTITIES AND TRANSFORMATIONS

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 62428 has been prepared by IEC technical committee 25: Quantities and units.

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

FDIS	Report on voting
25/382/FDIS	25/390/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 maintenance result 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.

ELECTRIC POWER ENGINEERING – MODAL COMPONENTS IN THREE-PHASE AC SYSTEMS – QUANTITIES AND TRANSFORMATIONS

1 Scope

This International Standard deals with transformations from original quantities into modal quantities for the widely used three-phase a.c. systems in the field of electric power engineering.

The examination of operating conditions and transient phenomena in three-phase a.c. systems becomes more difficult by the resistive, inductive or capacitive coupling between the phase elements and line conductors. Calculation and description of these phenomena in three-phase a.c. systems are easier if the quantities of the coupled phase elements and line conductors are transformed into modal quantities. The calculation becomes very easy if the transformation leads to decoupled modal systems. The original impedance and admittance matrices are transformed to modal impedance and admittance matrices. In the case of decoupling of the modal quantities, the modal impedance and admittance matrices become diagonal matrices.

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 60050-141, *International Electrotechnical Vocabulary (IEV) – Part 141: Polyphase systems and circuits*

3 Terms, definitions, quantities and concepts

3.1 General

Quantities in this standard are usually time-dependent. These quantities are for instance electric currents, voltages, linked fluxes, current linkages, electric and magnetic fluxes.

For quantities the general letter symbol g in case of real instantaneous values, $\underline{g}$ in case of complex instantaneous values and $\underline{G}$ in case of phasors (complex r.m.s. values) are used.

NOTE Complex quantities in this standard are underlined. Conjugated complex quantities are indicated by an additional asterisk (*). Matrices and column vectors are printed in bold face type, italic.

3.2 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-141 and the following apply.

3.2.1
original quantities
quantities g or $\underline{G}$ of a three-phase a.c. system

NOTE Subscripts 1, 2, 3 are generally used in this standard; additional letters may be put, for instance L1, L2, L3 as established in IEC 60909, IEC 60865 and IEC 61660.