



NSAI
Standards

Irish Standard
I.S. EN IEC 60152:2021

Designation of phase differences by hour numbers in three-phase AC systems

I.S. EN IEC 60152:2021

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National Foreword

I.S. EN IEC 60152:2021 is the adopted Irish version of the European Document EN IEC 60152:2021, Designation of phase differences by hour numbers in three-phase AC systems

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EUROPEAN STANDARD

EN IEC 60152

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2021

ICS 29.020

English Version

**Designation of phase differences by hour numbers in three-phase AC systems
(IEC 60152:2021)**

Désignation des déphasages par indices horaires des réseaux en courant alternatif triphasés
(IEC 60152:2021)

Kennzeichnung der Phasenleiter in einem elektrischen Dreiphasensystem durch Uhrziffern
(IEC 60152:2021)

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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EN IEC 60152:2021 (E)

European foreword

The text of document 3/1490/FDIS, future edition 2 of IEC 60152, prepared by IEC/TC 3 “Documentation, graphical symbols and representations of technical information” was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60152:2021.

The following dates are fixed:

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IEC 60152

Edition 2.0 2021-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

HORIZONTAL PUBLICATION
PUBLICATION HORIZONTALE

Designation of phase differences by hour numbers in three-phase AC systems

Désignation des déphasages par indices horaires des réseaux en courant alternatif triphasés





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IEC 60152

Edition 2.0 2021-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

HORIZONTAL PUBLICATION
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Designation of phase differences by hour numbers in three-phase AC systems

Désignation des déphasages par indices horaires des réseaux en courant alternatif triphasés

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

DESIGNATION OF PHASE DIFFERENCES BY HOUR NUMBERS IN THREE-PHASE AC SYSTEMS

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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IEC 60152 has been prepared by IEC technical committee 3: Documentation, graphical symbols and representations of technical information. It is an International Standard.

This second edition cancels and replaces the first edition published in 1963. This edition constitutes a technical revision.

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

- a) the title has been updated to reflect the content of the document;
- b) the concept of identifying conductors with hour number has been removed as the concept is considered out of date and other means for identifying conductors exists;
- c) definition of hour number (clock number) and phase difference introduced.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
3/1490/FDIS	3/1516/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

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- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

DESIGNATION OF PHASE DIFFERENCES BY HOUR NUMBERS IN THREE-PHASE AC SYSTEMS

1 Scope

This document specifies methods and rules for the designation of phase difference between two items in a three-phase AC system. The designations are intended to be applied in the technical documentation of industrial installations, equipment, and products, and also on markings of equipment and products.

2 Normative references

There are no normative references in this document.

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

hour number

clock number

designation of a phase difference between the same quantity of two items in an AC system

3.2

phase difference

φ

for two sinusoidal quantities of the same frequency in a given order, difference between their initial phases with possible addition of a multiple of 2π so that the difference is greater than $-\pi$ and not greater than π

Note 1 to entry: For the quantities $a'(t) = \widehat{A}' \cos(\omega t + \vartheta'_0)$ and $a''(t) = \widehat{A}'' \cos(\omega t + \vartheta''_0)$ the phase difference is $\varphi = \vartheta''_0 - \vartheta'_0 + 2\pi n$ where n is an integer, chosen so that $-\pi < \varphi \leq \pi$.

[SOURCE: IEC 60050-103:2009, 103-07-06]

4 Hour numbers

For the designation of a phase difference in a three-phase AC system, the following hour numbers may be used:

0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 11.

Each hour number shall represent the corresponding multiple of a phase difference of 30° .

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