NSAI Standards

Irish Standard
I.S. EN 61148:2012

# Terminal markings for valve device stacks and assemblies and for power conversion equipment (IEC 61148:2011 (EQV))

# I.S. EN 61148:2012

*Incorporating amendments/corrigenda issued since publication:*

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN 61148

January 2012

ICS 29.200

English version

# Terminal markings for valve device stacks and assemblies and for power conversion equipment
(IEC 61148:2011)

Marquage des bornes de blocs et d'ensembles d'éléments de valve et d'équipement de conversion de puissance (CEI 61148:2011)

Kennzeichnung der Anschlüsse von Ventilbauelement-Baugruppen und -sätzen sowie von Stromrichtergeräten (IEC 61148:2011)

This European Standard was approved by CENELEC on 2011-11-24. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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CENELEC

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

**Management Centre: Avenue Marnix 17, B - 1000 Brussels**



Ref. No. EN 61148:2012 E

## Foreword

The text of document 22/185/FDIS, future edition 2 of IEC 61148, prepared by IEC/TC 22 "Power electronic systems and equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61148:2012.

The following dates are fixed:

| | | |
|---|---|---|
| • latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | 2012-08-24 |
| • latest date by which the national standards conflicting with the document have to be withdrawn | (dow) | 2014-11-24 |

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

## Endorsement notice

The text of the International Standard IEC 61148:2011 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60445 NOTE Harmonized as EN 60445.

# 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 60050-551 | - | International Electrotechnical Vocabulary (IEV) - Part 551: Power electronics | - | - |
| IEC 60146-1-1 | - | Semiconductor converters - General requirements and line commutated converters - Part 1-1: Specification of basic requirements | EN 60146-1-1 | - |

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

# TERMINAL MARKINGS FOR VALVE DEVICE STACKS AND ASSEMBLIES AND FOR POWER CONVERSION EQUIPMENT

## 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 61148 has been prepared by IEC technical committee 22: Power electronic systems and equipment.

This second edition cancels and replaces the first edition published in 1992. This second edition constitutes a technical revision.

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

– the whole document has been rewritten according to the current Directives;
– the identification codes were deleted according to the withdrawal of IEC 60971;
– examples of terminal marking were added, especially for self-commutated converters.

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

| FDIS | Report on voting |
|---|---|
| 22/185/FDIS | 22/188/RVD |

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

# TERMINAL MARKINGS FOR VALVE DEVICE STACKS AND ASSEMBLIES AND FOR POWER CONVERSION EQUIPMENT

## 1 Scope

This International Standard is applicable to the terminal markings for the main circuits of valve device stacks and assemblies, and of integrated conversion equipment. The terminal markings refer to stacks, assemblies and equipment comprising semiconductor valve devices.

NOTE 1 Terminal markings for auxiliary circuits, including gate terminals and non-integrated conversion equipment with separate manufacturing of its components and their interconnection only after installation on site, are not considered in this standard.

For such equipment the relevant standards, if any, for the individual components apply.

Gate terminal markings are given in 6.3.

Terminal markings for other circuits such as protective conductor are not considered in this standard.

The object of this standard is to specify a logical alphanumeric marking system for the identification of the external main terminals of the main power circuits in a stack, valve device assembly or integrated conversion equipment, which is applicable for the purpose of reference in circuit diagrams, catalogues, descriptions, and information exchange and storage.

In the case of stacks and assemblies, alphanumeric terminal marking systems are indicated for those converter connections which are the most important and most commonly used ones.

Terminal marking systems making use of graphic symbols or identifying colours are not considered in this standard.

NOTE 2 The terminals of auxiliary circuits should be marked such that they may be clearly identified.

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

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

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-551, IEC 60146-1-1 and the following apply.

**3.1**
**external main terminals**
terminals of the main power circuit of the stack, assembly or equipment to which the external power supply or the load are connected

NOTE 1 In the following clauses this term is abbreviated to "terminals”.