SLOVENSKI STANDARD

SIST HD 145 S1:2004

julij 2004

Numbering of electrodes and designation of units in electronic tubes and valves

ICS 31.100

Referenčna številka
SIST HD 145 S1:2004(en)

C E N E L E C

DATE OF ISSUE OF THE COVER SHEET : 1977-05-15

EUROPEAN COMMITTEE FOR ELECTROTECHNICAL STANDARDIZATION

CENELEC HARMONIZATION DOCUMENT

HD 145

IEC 135 (1961 - 1st edition)

Numbering of electrodes and designation of units in electronic tubes and valves

This Harmonization Document was adopted by CENELEC on 1974-05-07.

The National Electrotechnical Committees, members of CENELEC, in

A : Austria
B : Belgium
CH : Switzerland
D : Germany
DK : Denmark
F : France
I : Italy
IRL : Ireland
N : Norway
NL : Netherlands
P : Portugal
S : Sweden
SF : Finland
UK : United Kingdom

References of the relevant National Harmonized Standards overleaf

are obliged, in accordance with the CENELEC Internal Regulations, to implement this Harmonization Document in their respective country by

- Issuing harmonized national standard(s) and/or
- Withdrawing conflicting national standard(s)

Latest date of implementation : 1976-01-01

Clas. No 95.0

NORME INTERNATIONALE

INTERNATIONAL STANDARD

CEI
IEC
60135

Première édition
First edition
1961-01

Numérotation des électrodes et désignation des sections des tubes électroniques

Numbering of electrodes and designation of units in electronic tubes and valves

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE E

Pour prix, voir catalogue en vigueur
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

NUMBERING OF ELECTRODES AND DESIGNATION OF UNITS IN ELECTRONIC TUBES AND VALVES

FOREWORD

1) The formal decisions or agreements of the I.E.C. on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.

2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.

3) In order to promote this international unification, the I.E.C. expresses the wish that all National Committees having as yet no national rules, when preparing such rules, should use the I.E.C. recommendations as the fundamental basis for these rules in so far as national conditions will permit.

4) The desirability is recognized of extending international agreement on these matters through an endeavour to harmonize national standardization rules with these recommendations in so far as national conditions will permit. The National Committees pledge their influence towards that end.

PREFACE

This recommendation has been prepared by Technical Committee No. 39. Electronic tubes and valves.

Following a discussion of documents on the subject of the numbering of the electrodes and the designation of the units in electronic tubes and valves at a meeting held in Madrid in July 1959. a draft was submitted to the National Committees for approval under the Six Months' Rule in May 1960.

The following countries voted explicitly in favour of publication:

Austria	Netherlands
Belgium	Portugal
Canada	Romania
Czechoslovakia	Sweden
Denmark	Switzerland
France	Union of Socialist Soviet Republics
Germany	United Kingdom
Israel	United States of America
Italy	

NUMBERING OF ELECTRODES AND DESIGNATION OF UNITS IN ELECTRONIC TUBES AND VALVES

1. Scope and object

This recommendation applies to multi-electrodes tubes and valves, with the exception of cathode-ray tubes.

It describes the system used for numbering the electrodes of the same type in multi-electrode tubes and valves and for assigning designations to the units of multiple-unit tubes and valves.

For tubes and valves made with two or more similar units, the numbering of the units is given as derived from the basing arrangement.

This recommendation shall not be used to determine the basing arrangement of any type.

The designations determined from this recommendation shall also apply to other tube or valve elements, such as heaters, shields, etc.

2. Numbering of electrodes in single-unit tubes and valves

In single-unit tubes and valves having more than one electrode of the same type, such as in multi-grid tubes and valves, such multiple electrodes shall be numbered consecutively, starting with the one nearer the cathode. Thus, in the case of multi-grid tubes and valves, the grid nearer the cathode shall be designated grid 1, the next outward from the cathode, grid 2, etc. Electrodes of the same type, when located at the same distance from a common cathode and acting on the same electron stream, shall be designated by the appropriate number suffixed by A, B, etc. Thus, in the case of two independent co-planar grids No. 1, one shall be designated as grid 1A and the other as grid 1B.

3. Numbering of electrodes in multiple-unit tubes and valves

In multiple-unit tubes and valves, where the units are similar and each has more than one electrode of the same type, as in twin pentodes, such similar electrodes in each unit shall be numbered according to the method for numbering electrodes of the same type in single-unit tubes and valves.

4. Designation of units in multiple-unit tubes and valves

4.1 In multiple-unit tubes and valves, where the units are different, each unit shall be referenced by the name that would be assigned if the unit were a single-unit tube or valve, such as diode, triode, pentode, etc.

4.2 In numbering two or more similar units in multiple-unit tubes and valves, such as twin diodes, the highest number shall be assigned to that unit having an electrode connected to the lowest-numbered base pin, and successively lower numbers shall be assigned to additional units according to the sequence in which the connections of the same electrode in all units are made to successively higher-numbered base pins. When similar units have one or more electrodes in common, the assignment of unit designations shall be determined by whichever independent electrode of these units is connected to the lowest-numbered base pin. Once established, the unit number shall apply to all independent electrodes of that unit.

4.3 The unit designation may be associated with the designation of an electrode of the unit by words or by symbols in any convenient manner.