SLOVENSKI STANDARD
SIST EN 61329:1999

01-april-1999

Sound system equipment - Methods of measuring and specifying the performance of sounders (electroacoustic transducers for tone production) (IEC 61329:1995)

Sound system equipment - Methods of measuring and specifying the performance of sounders (electroacoustic transducers for tone production)

Geräte für Tonsysteme - Verfahren zur Messung und Angabe der Leistungskennwerte von Schallgebern (Elektroakustische Wandler zur Tonerzeugung)

Equipements pour systèmes électroacoustiques - Méthodes de mesure et de spécification de la qualité de fonctionnement des sondeurs (transducteurs électroacoustiques de production de sons)

Ta slovenski standard je istoveten z: **EN 61329:1996**

ICS:

17.140.50	Elektroakustika	Electroacoustics
33.160.50	Pribor	Accessories

SIST EN 61329:1999 **en**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 61329

January 1996

ICS 17.140.50

Descriptors: Electroacoustics, electroacoustic transducers, acoustic signals, definitions, characteristics, performance evaluation, quality, classification, measurement methods

English version

Sound system equipment
Methods of measuring and specifying the performance of sounders (electroacoustic transducers for tone production)
(IEC 1329:1995)

Equipements pour systèmes électroacoustiques
Méthodes de mesure et de spécification de la qualité de fonctionnement des sondeurs (transducteurs électroacoustiques de production de sons)
(CEI 1329:1995)

Geräte für Tonsysteme
Verfahren zur Messung und Angabe der Leistungskennwerte von Schallgebern (Elektroakustische Wandler zur Tonerzeugung)
(IEC 1329:1995)

This European Standard was approved by CENELEC on 1995-11-28. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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 61329:1996 E

Foreword

The text of document 84/407+407A/DIS, future edition 1 of IEC 1329, prepared by IEC TC 84, Equipment and systems in the field of audio, video and audiovisual engineering, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61329 on 1995-11-28.

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) 1996-09-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1996-09-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annex ZA is normative and annex A is informative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 1329:1995 was approved by CENELEC as a European Standard without any modification.

NOTE: The following editorial change applies to the text of IEC 1329:1995:

In figure 4 and figure 5, replace "(see 5.6.1)" by "(see 5.5.1)".

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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 268-1	1985	Sound system equipment - Part 1: General	HD 483.1 S2[1)]	1989
IEC 268-2	1987	Part 2: Explanation of general terms and calculation methods	HD 483.2 S2[2)]	1993
IEC 651	1979	Sound level meters	EN 60651	1994
IEC 1094-1	1992	Measurement microphones Part 1: Specifications for laboratory standard microphones	EN 61094-1[3)]	1994
IEC 1094-4	1995	Part 4: Specifications for working standard microphones	EN 61094-4	1995

1) HD 483.1 S2 includes A1:1988 to IEC 268-1.

2) HD 483.2 S2 includes A1:1991 to IEC 268-2.

3) EN 61094-1 includes corrigendum February 1993 to IEC 1094-1.

NORME INTERNATIONALE
INTERNATIONAL STANDARD

CEI
IEC
1329

Première édition
First edition
1995-11

Equipements pour systèmes électroacoustiques –

Méthodes de mesure et de spécification de la qualité de fonctionnement des sondeurs (transducteurs électroacoustiques de production de sons)

Sound system equipment –

Methods of measuring and specifying the performance of sounders (electroacoustic transducers for tone production)

Bureau Central de la Commission Electrotechnique Internationale 3, rue de Varembé Genève, Suisse

Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE R

Pour prix, voir catalogue en vigueur
For price, see current catalogue

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SOUND SYSTEM EQUIPMENT –

Methods of measuring and specifying the performance of sounders (electroacoustic transducers for tone production)

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

2) The formal decisions or agreements of the IEC on technical matters, express as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.

3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.

4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.

6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 1329 has been prepared by IEC technical committee 84: Equipment and systems in the field of audio, video and audiovisual engineering.

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

DIS	Report on voting
84/407+407A/DIS	84/446/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.

Annex A is for information only.

SOUND SYSTEM EQUIPMENT –

Methods of measuring and specifying the performance of sounders (electroacoustic transducers for tone production)

1 Scope and object

This International Standard is applicable to sounders, which are treated as entirely passive electroacoustic transducer elements. Piezoelectric diaphragms, which are the principal components of piezoelectric sounders, are also included. Buzzers which are sound sources with built-in electric circuits are excluded.

The object of this standard is to standardize the definitions relating to these electroacoustic transducers, and to list characteristics to be specified and the relevant methods of measurement.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this International Standards are encouraged to investigate the possibility of applying the most recent editions of the normative documents listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 268-1: 1985, *Sound system equipment – Part 1: General*

IEC 268-2: 1987, *Sound system equipment – Part 2: Explanation of general terms and calculation methods*

IEC 651: 1979, *Sound level meters*

IEC 1094-1: 1992, *Measurement microphones – Part 1: Specifications for laboratory standard microphones*

IEC 1094-4: 1995, *Measurement microphones – Part 4: Specifications for working standard microphones*

3 Definitions and symbols

For the purpose of this International Standard, the following definitions and symbols apply.

3.1 *Classification, structures and components*

3.1.1 **sounder:** Electroacoustic transducer for the production of single or multiple tone signals.

3.1.2 **buzzer:** Device consisting of a sounder and an electric circuit for self-excited or externally excited oscillation.

NOTE – Buzzers are not included in this standard.

3.1.3 **electromagnetic sounder:** Sounder consisting of a diaphragm with an electro-magnetic driver (e.g. a moveable armature or a magnet driven by electromagnetic force), built in a housing.

3.1.4 **electrodynamic sounder:** Sounder consisting of a diaphragm with an electro-dynamic driver (e.g. a moveable coil or flat electric conductor pattern in a magnetic field), built in a housing.

3.1.5 **piezoelectric sounder:** Sounder consisting of a piezoelectric diaphragm built in a housing.

3.1.6 **piezoelectric diaphragm:** Diaphragm consisting of a metal plate and one or two piezoelectric ceramic plates cemented together so that radial expansion and contraction of the ceramic plate(s) is transformed to bending of the diaphragm for sound radiation.

3.1.7 **piezoelectric ceramic plate; piezoelectric ceramic disc:** Thin plate made of a piezoelectric ceramic, for example lead zirconate titanate (PZT) ceramic, of which each side is metallized. The ceramic plate is polarized so as to deform radially when a voltage is applied across it.

3.2 *Characteristics, symbols and units*

3.2.1 **input voltage (sinusoidal signal):** RMS voltage of a sinusoidal signal applied to a sounder or a piezoelectric diaphragm. Symbol: U_{rms}, unit: V.

3.2.2 **input voltage (square wave signal):** Peak-to-peak voltage of a square-wave signal applied to a sounder. Symbol: U_{pp}, unit: V.

NOTE – The sounder or piezoelectric diaphragm may require, or tolerate, a d.c. component in addition to the square wave, in which case the required or tolerated signal waveform will be specified, as illustrated in figure 1.

3.2.3 **d.c. polarity (of an electromagnetic or an electrodynamic sounder):** Direction of the d.c. component applied to an electromagnetic or electrodynamic sounder which is designed to be driven by a positively-biased or negatively-biased square-wave input voltage.