BS EN 61094-2:2009+A1:2022

BSI Standards Publication

Electroacoustics — Measurement microphones

Part 2: Primary method for pressure calibration of laboratory standard microphones by the reciprocity technique

bsi.

National foreword

This British Standard is the UK implementation of EN 61094-2:2009+A1:2022. It is identical to IEC 61094-2:2009, incorporating amendment 1:2022. It supersedes BS EN 61094-2:2009, will be withdrawn on 11 March 2025.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment 1 is indicated by ▌A1〉 〈A1▐.

The UK participation in its preparation was entrusted to Technical Committee EPL/29, Electroacoustics.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Amendments/corrigenda issued since publication

Date	Text affected
31 July 2022	Implementation of IEC amendment 1:2022 with CENELEC endorsement A1:2022

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61094-2+A1

March 2022

ICS 17.140.50

Supersedes EN 61094-2:1993

English version

Electroacoustics - Measurement microphones - Part 2: Primary method for pressure calibration of laboratory standard microphones by the reciprocity technique

(IEC 61094-2:2009)

Electroacoustique - Microphones de mesure - Partie 2: Méthode primaire pour l'étalonnage en pression des microphones étalons de laboratoire par la méthode de réciprocité (CEI 61094-2:2009)

Elektroakustik - Messmikrofone - Teil 2: Primärverfahren zur Druckkammer-Kalibrierung von Laboratoriums-Normalmikrofonen nach der Reziprozitätsmethode (IEC 61094-2:2009)

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CENELEC

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

Central Secretariat: avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 61094-2:2009 E

Foreword

The text of document 29/671/FDIS, future edition 2 of IEC 61094-2, prepared by IEC TC 29, Electroacoustics, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61094-2 on 2009-03-01.

This European Standard supersedes EN 61094-2:1993.

EN 61094-2:2009 includes the following significant technical changes with respect to EN 61094-2:1993:

– an update of Clause 6 to fulfil the requirements of ISO/IEC Guide 98-3;

– an improvement of the heat conduction theory in Annex A;

– a revision of Annex F: Physical properties of humid air.

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)	2009-12-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2012-03-01

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 61094-2:2009 was approved by CENELEC as a European Standard without any modification.

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European foreword to A1

The text of document 29/1108/FDIS, future IEC 61094-2/AMD1, prepared by IEC/TC 29 "Electroacoustics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61094-2:2009/A1:2022.

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- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2025-03-11

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ELECTROACOUSTICS ± MEASUREMENT MICROPHONES ±

Part 2: Primary method for pressure calibration of laboratory standard microphones by the reciprocity technique

1 Scope

This part of International Standard IEC 61094

- is applicable to laboratory standard microphones meeting the requirements of IEC 61094-1 and other types of condenser microphone having the same mechanical dimensions;
- specifies a primary method of determining the complex pressure sensitivity so as to establish a reproducible and accurate basis for the measurement of sound pressure.

All quantities are expressed in SI units.

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 61094-1:2000, *Measurement microphones ± Part 1: Specifications for laboratory standard microphones*

ISO/IEC Guide 98-3, *Uncertainty of measurement ± Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*[1]

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61094-1 and ISO/IEC Guide 98-3 as well as the following apply.

3.1
reciprocal microphone
linear passive microphone for which the open circuit reverse and forward transfer impedances are equal in magnitude

3.2
phase angle of pressure sensitivity of a microphone
for a given frequency, the phase angle between the open-circuit voltage and a uniform sound pressure acting on the diaphragm

NOTE Phase angle is expressed in degrees or radians (° or rad).

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1 ISO/IEC Guide 98-3:2008 is published as a reissue of the Guide to the expression of uncertainty in measurement (GUM), 1995.