



SLOVENSKI STANDARD

SIST EN 60500:2017

01-oktober-2017

Podvodna akustika - Hidrofoni - Lastnosti hidrofonov v frekvenčnem območju od 1 Hz do 500 kHz (IEC 60500:2017)

Underwater acoustics - Hydrophones - Properties of hydrophones in the frequency range 1 Hz to 500 kHz (IEC 60500:2017)

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Ta slovenski standard je istoveten z: ^{SIST EN 60500:2017} **EN 60500:2017**
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ICS:

17.140.99	Drugi standardi v zvezi z akustiko	Other standards related to acoustics
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EUROPEAN STANDARD

EN 60500

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2017

ICS 17.140.50

English Version

Underwater acoustics - Hydrophones -
Properties of hydrophones in the frequency range
1 Hz to 500 kHz
(IEC 60500:2017)

Acoustique sous-marine - Hydrophones -
Propriétés des hydrophones dans la bande de fréquences
de 1 Hz à 500 kHz
(IEC 60500:2017)

Unterwasserakustik - Hydrophone -
Eigenschaften von Hydrophonen im Frequenzbereich
von 1 Hz bis 500 kHz
(IEC 60500:2017)

This European Standard was approved by CENELEC on 2017-05-15. 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.

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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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

EN 60500:2017**European foreword**

The text of document 87/644/FDIS, future edition 2 of IEC 60500, prepared by IEC/TC 87 "Ultrasonics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60500:2017.

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) 2018-02-15
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-05-15

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Endorsement notice

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The text of the International Standard IEC 60500:2017 was approved by CENELEC as a European Standard without any modification.

[SIST EN 60500:2017](#)

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60565:2006	NOTE	Harmonized as EN 60565:2007 (not modified).
IEC 62127-3:2007 + A1:2013	NOTE	Harmonized as EN 62127-3:2007 (not modified) + A1:2013 (not modified).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 266	1997	Acoustics - Preferred frequencies	EN ISO 266	1997

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IEC 60500

Edition 2.0 2017-04

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Underwater acoustics – Hydrophones – Properties of hydrophones in the
frequency range 1 Hz to 500 kHz
(standards.iteh.ai)

Acoustique sous-marine – Hydrophones – Propriétés des hydrophones dans la
bande de fréquences de 1 Hz à 500 kHz

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 17.140.50

ISBN 978-2-8322-4049-6

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**UNDERWATER ACOUSTICS – HYDROPHONES – PROPERTIES OF
HYDROPHONES IN THE FREQUENCY RANGE 1 Hz TO 500 kHz**

FOREWORD

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International Standard IEC 60500 has been prepared by IEC technical committee 87: Ultrasonics.

This second edition cancels and replaces the first edition published in 1974. This edition constitutes a technical revision.

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

- a) The format and scope of IEC 60500 have been changed to be compatible with IEC 62127-3:2007 in accordance with ISO/IEC Directives, and has a good conformity with IEC 60565:2006, making the suite of available standards for underwater sound a more coordinated and coherent system.
- b) The upper limit of the frequency range of hydrophones has been expanded from 100 kHz to 500 kHz.
- c) Technical requirements of hydrophone selecting are provided in Annex A, and the depth range of the static pressure range of hydrophones has been expanded from 10 m to 100 m.

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

FDIS	Report on voting
87/644/FDIS	87/649/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 document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

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

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[SIST EN 60500:2017](#)

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UNDERWATER ACOUSTICS – HYDROPHONES – PROPERTIES OF HYDROPHONES IN THE FREQUENCY RANGE 1 Hz TO 500 kHz

1 Scope

This document specifies the relevant characteristics and properties of hydrophones in the frequency range 1 Hz to 500 kHz, and specifies how to report these characteristics. It does not cover performance requirements for specific hydrophone types, or for specific hydrophone applications. However, guidance on the choice of a hydrophone with appropriate performance for a specific application is given in an informative annex.

This document is applicable to:

- hydrophones employing piezoelectric sensor elements, designed to respond to sound pressure in water and measure underwater acoustical signals;
- hydrophones with or without an integral pre-amplifier.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 266:1997, *Acoustics – Preferred frequencies*
<https://standards.itih.ai/catalog/standards/sist/0d787bc3-ae12-43ea-bcfc-c1fc1f80e1aa/sist-en-60500-2017>

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

angular co-ordinate system

system used to designate the directional response pattern of the hydrophone

Note 1 to entry: The terms “horizontal directional response” and “vertical directional response” are often used for representation of directional response in the xy -plane, and xz - (or yz -) planes respectively.

Note 2 to entry: “+ z ” is coincident with an axis of the hydrophone, and “- z ” is in the direction of the hydrophone cable.