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

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

IEC 60500:2017-04(en-fr)

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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- withdrawn,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.

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*

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.