SLOVENSKI STANDARD
SIST EN ISO 9875:2004

01-september-2004

Ladje in pomorska tehnologija – Globinomer/Oprema za merjenje globine (ISO 9875:2000)

Ships and marine technology - Marine echo-sounding equipment (ISO 9875:2000)

Schiffe und Meerestechnik - Echolote für die Schifffahrt (ISO 9875:2000)

Navires et technologie maritime - Appareils de sondage par écho (ISO 9875:2000)

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47.020.70	Navigacijska in krmilna oprema	Navigation and control equipment

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EUROPEAN STANDARD

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Ships and marine technology - Marine echo-sounding equipment (ISO 9875:2000)

Navires et technologie maritime - Appareils de sondage par écho (ISO 9875:2000)

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This European Standard was approved by CEN on 12 November 2001.

CEN 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 Management Centre or to any CEN 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 CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

The text of the International Standard from Technical Committee ISO/TC 8 "Ships and marine technology" of the International Organization for Standardization (ISO) has been taken over as a European Standard by Technical Committee CEN/TC 300 "Sea-going vessels and marine technology", the secretariat of which is held by DIN.

This document supersedes EN ISO 9875:1997.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2002, and conflicting national standards shall be withdrawn at the latest by June 2002.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 9875:2000 has been approved by CEN as a European Standard without any modifications.

INTERNATIONAL STANDARD

ISO 9875

Third edition
2000-11-01

Ships and marine technology — Marine echo-sounding equipment

Navires et technologie maritime — Appareils de sondage par écho

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Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

International Standard ISO 9875 was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 6, *Navigation*.

This third edition cancels and replaces the second edition (ISO 9875:1996), which has been technically revised.

Annex A forms a normative part of ISO 9875. Annex B is for information only.

Ships and marine technology — Marine echo-sounding equipment

1 Scope

This International Standard specifies the minimum operational and performance requirements, methods of testing and test results of marine echo-sounding equipment required to comply with the performance standards adopted by the IMO Resolution A.224(VII). In addition, it takes account of IMO Resolution A.694(17) and is associated with IEC 60945.

When a requirement in this International Standard is different from IEC 60945, the requirement in this International Standard takes precedence.

The purpose of echo-sounding equipment is to provide reliable information on the depth of water under a ship to aid navigation in particular in shallow water.

This International Standard is *applicable for ship speeds from 0 kn to 30 kn.*

Any text in this International Standard with wording identical to that in the IMO Resolution A.224(VII) and IMO Res. A.694(17) is printed in italics.

NOTE Resolution A.224(VII) represents Resolution A.224(VII) as amended by Resolution MSC.74(69), annex 4.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

IEC 60945:1996, *Maritime navigation and radiocommunication equipment and systems — General requirements, methods of testing and required test results.*

IEC 61162, *Maritime navigation and radiocommunication equipment and systems — Digital interfaces*.

IMO Resolution A.224(VII), *Performance standards for echo-sounding equipment*.

IMO Resolution A.694(17), *General requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids*.

International Convention of Safety of Life at Sea (SOLAS) Chapter V, Regulation 12, Shipborne navigational equipment.

3 Terms and definitions

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

3.1
source level
S
maximum root mean square (r.m.s) sound pressure level at a point on the principal axis of the transducer, as measured in the far field but referred to the distance of 1 m

NOTE This value is expressed in decibels.

3.2
receiving directivity index
D
ratio of the acoustic power density at a distant point on the principal axis of the transducer, when used as a transmitter, to that of an omnidirectional transducer, with the same total radiated acoustic power

NOTE This value is expressed in decibels.

3.3
receiving bandwidth
B
bandwidth at which the response of the overall system, measured through water, is 3 dB below the maximum response of the system

$B = 10 \lg(f_1 - f_2)$

where f_1 and f_2 are respectively the upper and lower frequencies expressed in hertz

NOTE This value is expressed in decibels.

3.4
minimum detectable signal-to-noise ratio
E

ratio of the signal level, expressed in decibels, to the background noise level, expressed in decibels, in the bandwidth of the receiver required to give a minimum detectable signal on the display

3.5
speed of sound in water
1 500 m/s in the context of this International Standard

3.6
transducer
substance or device, such as a piezoelectric element, that converts an input electrical energy into an acoustic energy and vice versa, installed on the ship's hull and exposed to the sea water

3.7
performance test
test to confirm full compliance with the requirements of the equipment standard

3.8
performance check
short test to confirm compliance with the essential requirements specified in the equipment standards

NOTE In this International Standard, a performance check means non-quantitative visual check that the system is still operative for the purpose of IEC 60945.

3.9
inspection
visual check of the equipment or documentation

3.10
pre-conditioning
treatment of a specimen with the objective of removing or partly counteracting the effects of its previous history

4 Abbreviated terms

For the purposes of this International Standard, the following abbreviated terms apply.

DPT depth

ECDIS electronic chart display and information system

EMC electromagnetic compatibility

EUT equipment under test

VDR voyage data recorder

5 Performance requirements

5.1 General

Echo-sounding equipment shall comply with the following performance requirements and with the general requirements of IEC 60945, where applicable.

5.2 Functionality

5.2.1 Range performance

Under normal propagation and sea bed reflectibility conditions, the equipment shall *be capable of measuring any clearance under the transducer between 2 m and 200 m.*

5.2.2 Range scales

5.2.2.1 *The equipment* shall *provide a minimum of two range scales one of which, the shallow range,* shall *cover a range of 20 m, and the other, the deep range, shall cover a range of 200 m.*

5.2.2.2 Where an automatic range is provided, a device to select these ranges manually shall be available to override the automatic range.

5.2.2.3 Where phased ranges, not starting from zero, are available, an indication shall be provided to show that such a range is in use.

5.2.2.4 Positive indication of the range in use shall be provided in all cases.

5.2.2.5 Where depth measurement relative to the sea surface is provided, in addition to measurement of the depth of water under the ship, there shall be a positive indication of an offset (draught) value.

5.2.3 Main display

5.2.3.1 *The primary presentation* shall *be a suitable graphical display which provides the immediate depth and a visible record of soundings*.

5.2.3.2 *The displayed record* shall *show at least 15 minutes of soundings* on the deep range scale.