INTERNATIONAL STANDARD

ISO 22090-1

First edition
2002-09-01

Ships and marine technology — Transmitting heading devices (THDs) —

Part 1: Gyro-compasses

Navires et technologie maritime — Dispositifs de pilotage à transmission de données —

Partie 1: Compas gyroscopiques

Reference number
ISO 22090-1:2002(E)

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Printed in Switzerland

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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.

The main task of technical committees is to prepare International Standards. 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 part of ISO 22090 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 22090-1 was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 6, *Navigation*.

ISO 22090 consists of the following parts, under the general title *Ships and marine technology — Transmitting heading devices (THDs)*:

— *Part 1: Gyro-compasses*

— *Part 2: Geo-magnetic principles*

— *Part 3: GNSS principles*

Annex A of this part of ISO 22090 is for information only.

Ships and marine technology — Transmitting heading devices (THDs) —

Part 1: Gyro-compasses

1 Scope

This part of ISO 22090 specifies the construction, performance and testing of gyro-compasses as transmitting heading devices required by chapter V, SOLAS 1974 (as amended).

A Transmitting heading device (THD) is an electronic device that provides information about the ship's true heading.

In addition to the general requirements contained in IMO Resolution A.694 (17) to which IEC 60945 is associated and the relevant standard for the sensing part used, the THD equipment should comply with the following minimum requirements.

Where the IMO performance standards that apply to the sensing part do not specify a geographical operating area that the THD should operate;

a) at maximum rate of turn 20°/s;

b) from 70° latitude south to 70° latitude north as minimum.

The THDs complying with the requirements contained in this part of ISO 22090 can be used for heading information as contained in chapter V of the SOLAS Convention.

However, ships within a speed range of 30 knots to 70 knots should comply with the requirements of IMO Resolution A.821(19)

In addition, such THDs should meet the dynamic requirements contained in the HSC Code, chapter 13 for the carriage of a suitable device providing heading information.

NOTE 1 Several technologies can be used to detect and transmit heading information. It is illogical to standardize the detection of the heading separately from the transmission of the heading. Therefore, separate parts of this part of ISO 22090 refer to different technologies. The requirements of this part of ISO 22090 only apply to gyroscopic technology. Other technologies are covered in other parts of ISO 22090.

NOTE 2 All requirements that are extracted from the recommendations of IMO Resolution MSC. 116 (73) on performance standards for transmitting heading devices are printed in italics.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 22090. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 22090 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.

ISO 694, *Ships and marine technology — Positioning of magnetic compasses in ships*

IEC 61162-1, *Maritime navigation and radiocommunication equipment and systems — Digital interfaces — Part 1: Single talker and multiple listeners*

IEC 61162-2, *Maritime navigation and radiocommunication equipment and systems — Digital interfaces — Part 2: Single talker and multiple listeners, high-speed transmission*

IMO Resolution A. 424(XI), *Performance standards for gyro-compasses*

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*

IMO Resolution A.813(19), *General requirements for electromagnetic compatibility (EMC) for all electrical and electronic ship's equipment*

IMO Resolution A.821(19), *Performance standards for gyro-compasses for high-speed craft*

3 Terms and definitions

For the purposes of this part of ISO 22090, the following terms and definitions apply.

3.1
gyro-compass
complete equipment including all essential elements of the complete design including both the gyro-compass as heading sensor and the associated heading transmission system

3.2
heading
any ship's heading to be input to the THD function

NOTE It is defined by the direction of the vertical projection of the fore-and-aft line of the ship onto the horizontal plane. When measured relative to the true north, magnetic north or compass north, it is respectively defined as true heading, magnetic heading or compass heading, and is usually expressed in degrees as a three-figure group, starting from north, in a clockwise direction around the compass card.

3.3
sensing part
sensing function of detecting any heading information connected to the transmitting part

3.4
transmitting part
device which receives heading information from the sensing part and converts this to the required accurate signal

3.5
true heading
horizontal angle between the vertical plane passing through the true meridian and the vertical plane passing through the craft's fore and aft datum line, measured from true north (000°) clockwise through 360°