

**VÄIKELAEVAD. ROOLI, KÄIGUVAHETUSE JA SEGUKLAPI
ELEKTRILISED/ELEKTROONILISED JUHTIMISSÜSTEEMID**

**Small craft - Electrical/electronic control systems for
steering, shift and throttle (ISO 25197:2020 +
ISO 25197:2020/Amd 1:2022)**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 25197:2020+A1+A11:2023 sisaldab Euroopa standardi EN ISO 25197:2020 ja selle muudatuste A1:2022 ja A11:2023, ingliskeelset teksti.	This Estonian standard EVS-EN ISO 25197:2020+A1+A11:2023 consists of the English text of the European standard EN ISO 25197:2020 and its amendments A1:2022 and A11:2023.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas. Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 22.04.2020, muudatused A1 02.11.2022 ja A11 19.04.2023.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation. Date of Availability of the European standard is 22.04.2020, for A1 02.11.2022 and A11 19.04.2023.
Muudatusega A1 lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega $\boxed{A1}$ $\triangleleft A1$. Muudatusega A11 lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega $\boxed{A11}$ $\triangleleft A11$. Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.	The start and finish of text introduced or altered by amendment A1 is indicated in the text by tags $\boxed{A1}$ $\triangleleft A1$. The start and finish of text introduced or altered by amendment A11 is indicated in the text by tags $\boxed{A11}$ $\triangleleft A11$. The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 47.080

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English Version

Small craft - Electrical/electronic control systems for
steering, shift and throttle (ISO 25197:2020 + ISO
25197:2020/Amd 1:2022)

Petits navires - Systèmes électriques/électroniques
pour le contrôle de la direction, de l'inverseur et des
gaz (ISO 25197:2020 + ISO 25197:2020/Amd 1:2022)

Kleine Wasserfahrzeuge - Elektrische/elektronische
Regelungssysteme für Steuerung, Schaltung und
Antrieb (ISO 25197:2020 + ISO 25197:2020/Amd
1:2022)

This European Standard was approved by CEN on 7 March 2020. Amendment A1 was approved by CEN on 2 August 2022. Amendment A11 was approved by CEN on 15 February 2023.

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This European Standard and its Amendments A1 and A11 exist 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (EN ISO 25197:2020) has been prepared by Technical Committee ISO/TC 188 "Small craft" in collaboration with CCMC.

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 October 2020, and conflicting national standards shall be withdrawn at the latest by October 2020.

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

This document supersedes EN ISO 25197:2018.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

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Endorsement notice

The text of ISO 25197:2020 has been approved by CEN as EN ISO 25197:2020 without any modification.

A1 Amendment A1 European foreword

This document (EN ISO 25197:2020/A1:2022) has been prepared by Technical Committee ISO/TC 188 "Small craft" in collaboration with Technical Committee CEN/TC 464 "Small Craft" the secretariat of which is held by SIS.

This Amendment to the European Standard EN ISO 25197:2020 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2023, and conflicting national standards shall be withdrawn at the latest by May 2023.

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Endorsement notice

The text of ISO 25197:2020/Amd 1:2022 has been approved by CEN as EN ISO 25197:2020/A1:2022 without any modification. **A1**

A11 Amendment A11 European foreword

This document (EN ISO 25197:2020/A11:2023) has been prepared by Technical Committee CEN/TC 464 “Small Craft” the secretariat of which is held by SIS.

This Amendment to the European Standard EN ISO 25197:2020 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2023, and conflicting national standards shall be withdrawn at the latest by October 2023.

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 188, *Small craft*.

This second edition cancels and replaces the first edition (ISO 25197:2012), which has been technically revised.

The main changes compared to the previous edition are as follows:

- the terms and definitions have been revised to give coherency with other standard definitions; new terms, such as input device and output device, have been introduced;
- the figures have been revised to clarify the concepts illustrated;
- 7.2, on portable helms, has been revised to make it coherent when an electric propulsion motor is used;
- 9.1 has been revised to include the fail-safe mode and the alarm policy;
- the main change is in 10.1: the request to use three different samples for all tests (except for EMC test) has been deleted because it would have involved a great expense without having significant improvement; only one sample is used for all tests described on the subsequent subclauses;
- the durability test on joystick described in 10.4 has been made an operational test;
- Table 1 in 10.5.1 has been updated introducing the column “immersion” to handle test on immersed components;
- in 10.5.2, all ways to conduct the salt mist test, based on different standards, have been homogenized;

- in 10.7, the shock test has been revised;
- in 10.8, the free fall test has become the drop test with the addition of the UV test;
- the UV test, described in 10.9, has been clarified;
- in 10.10, there are many changes due to the revision of IEC 60533 and the forthcoming release of IEC 62742; to avoid any direct link to those standards, all tests previously required by IEC 60533 have been embedded and all standards cited have been added to the normative reference list.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

A1 Amendment A1 foreword

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This document was prepared by Technical Committee ISO/TC 188, *Small craft*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 464, *Small Craft*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html. ^{A1}

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Small craft — Electrical/electronic control systems for steering, shift and throttle

1 Scope

This document establishes the requirements for the design, construction and testing of electrical/electronic steering, shift and throttle systems and dynamic positioning control systems, or combinations thereof, on small craft of up to 24 m length of hull.

This document does not apply to electric trolling motors and autopilot systems on sailing craft.

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 4892-1:2016, *Plastics — Methods of exposure to laboratory light sources — Part 1: General guidance*

ISO 4892-2:2013, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps*

ISO 4892-3:2016, *Plastics — Methods of exposure to laboratory light sources — Part 3: Fluorescent UV lamps*

ISO 4892-4:2013, *Plastics — Methods of exposure to laboratory light sources — Part 4: Open-flame carbon-arc lamps*

ISO 8846:1990, *Small craft — Electrical devices — Protection against ignition of surrounding flammable gases*

Ⓐ1 deleted text Ⓐ1

Ⓐ1 ISO 8848:2022, *Small craft — Remote mechanical steering systems*

ISO 10592:2022, *Small craft — Remote hydraulic steering systems*

ISO 13297:2020, *Small craft — Electrical systems — Alternating and direct current installations*

ISO 13297:2020/Amd 1:2022, *Small craft — Electrical systems — Alternating and direct current installations — Amendment 1* Ⓐ1

ISO 16750-2:2012, *Road vehicles — Environmental conditions and testing for electrical and electronic equipment — Part 2: Electrical loads*

ISO 16750-3:2012, *Road vehicles — Environmental conditions and testing for electrical and electronic equipment — Part 3: Mechanical loads*

ISO 16750-4:2010, *Road vehicles — Environmental conditions and testing for electrical and electronic equipment — Part 4: Climatic loads*

ASTM B117:2016, *Practice for operating salt spray (fog) apparatus*

IEC 60068-2-27:2008, *Environmental testing — Part 2-27: Tests — Test Ea and guidance: Shock*

IEC 60068-2-52:2017, *Environmental testing — Part 2-52: Tests — Test Kb: Salt mist, cyclic (sodium chloride solution)*

deleted text

IEC 60945:2002, *Maritime navigation and radiocommunication equipment and systems — General requirements — Methods of testing and required test results*

IEC 61000-4-2:2008, *Electromagnetic compatibility (EMC) — Part 4: Testing and measurement techniques — Section 2: Electrostatic discharge immunity test — Basic EMC publication*

deleted text

IEC 61000-4-3:2020, *Electromagnetic compatibility (EMC) — Part 4-3: Testing and measurement techniques — Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-4-4:2012, *Electromagnetic compatibility (EMC) — Part 4: Testing and measurement techniques — Section 4: Electrical fast transient/burst immunity test — Basic EMC publication*

IEC 61000-4-5:2014+Amd1:2017, *Electromagnetic compatibility (EMC) — Part 4: Testing and measurement techniques — Section 5: Surge immunity test*

IEC 61000-4-6:2013, *Electromagnetic compatibility (EMC) — Part 4: Testing and measurement techniques — Section 6: Immunity to conducted disturbances, induced by radio-frequency fields*

deleted text

IEC 61000-4-11:2020, *Electromagnetic compatibility (EMC) — Part 4-11: Testing and measurement techniques — Voltage dips, short interruptions and voltage variations immunity tests for equipment with input current up to 16 A per phase*

IEC 61000-4-16:2015, *Electromagnetic compatibility (EMC) — Part 4: Testing and measurement techniques — Section 16: Test for immunity to conducted, common mode disturbance in the frequency range 0 Hz to 150 KHz*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

electrical steering system

electronic steering system

all components, including CPU (central processing unit) and cable harnesses, from the manual steering *input device* (3.11) up to and including the device [*actuator* (3.22) or electrical motor] regulating the rudder or propulsion unit steering angle

Note 1 to entry: It includes the *joystick* (3.15) and components, i.e. GPS antennas for dynamic positioning, if installed.