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Marine energy – Wave, tidal and other water current converters – Part 200: Electricity producing tidal energy converters – Power performance assessment

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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MARINE ENERGY – WAVE, TIDAL AND OTHER WATER CURRENT CONVERTERS –

Part 200: Electricity producing tidal energy converters – Power performance assessment

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Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC 62600-200, which is a technical specification, has been prepared by IEC technical committee TC 114: Marine energy – Wave, tidal and other water current converters.

The text of this technical specification is based on the following documents:

Enquiry draft	Report on voting
114/93/DTS	114/101A/RVC

Full information on the voting for the approval of this technical specification can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of IEC 62600 series, under the general title *Marine energy – Wave, tidal and other water current converters* , can be found on the IEC website.

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

- transformed into an International Standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

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MARINE ENERGY – WAVE, TIDAL AND OTHER WATER CURRENT CONVERTERS –

Part 200: Electricity producing tidal energy converters – Power performance assessment

1 Scope

This Technical Specification provides:

- a systematic methodology for evaluating the power performance of tidal current energy converters (TECs) that produce electricity for utility scale and localized grids;
- a definition of TEC rated power and rated water velocity;
- a methodology for the production of the power curves for the TECs in consideration;
- a framework for the reporting of results.

Exclusions from the scope of this Technical Specification are as follows:

- tidal energy converters (TECs) that provide forms of energy other than electrical energy unless the other form is an intermediary step that is converted into electricity by the TEC;
- resource assessment. This will be carried out in the tidal energy resource characterization and assessment Technical Specification (future IEC/TS 62600-201);
- scaling of any measured or derived results;
- power quality issues;
- any type of performance other than power and energy performance;
- the combined effect of multiple TEC arrays.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60688:2012, *Electrical measuring transducers for converting AC and DC electrical quantities to analogue or digital signals*

IEC 61400-12-1:2005, *Wind turbines – Part 12-1: Power performance measurements of electricity producing wind turbines*

IEC 61869-2:2012, *Instrument transformers – Part 2: Additional requirements for current transformers*

IEC 61869-3:2011, *Instrument transformers – Part 3: Additional requirements for inductive voltage transformers*

IEC/TS 62600-1, *Marine energy – Wave, tidal and other water current converters – Part 1: Terminology*

ISO/IEC 17025:2005, *General requirements for the competence of testing and calibration laboratories*

ISO/IEC Guide 98-3:2008, *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*

International Hydrographic Organisation: 2008, *IHO standards for hydrographic surveys, Special publication No. 44. 5th edition* (http://www.iho-ohi.net/iho_pubs/standard/S-44_5E.pdf)