

Hydrometry - Measurement of discharge by the ultrasonic (acoustic) method

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 6416:2005 sisaldab Euroopa standardi EN ISO 6416:2005 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 29.09.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 6416:2005 consists of the English text of the European standard EN ISO 6416:2005.</p> <p>This document is endorsed on 29.09.2005 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This International Standard describes the establishment and operation of an ultrasonic (transit-time) gauging station for the continuous measurement of discharge in a river, an open channel or a closed conduit.</p>	<p>Scope:</p> <p>This International Standard describes the establishment and operation of an ultrasonic (transit-time) gauging station for the continuous measurement of discharge in a river, an open channel or a closed conduit.</p>
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Võtmesõnad:

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English Version

**Hydrometry - Measurement of discharge by the ultrasonic
(acoustic) method (ISO 6416:2004)**

Hydrométrie - Mesure du débit à l'aide de la méthode
ultrasonique (acoustique) (ISO 6416:2004)

Hydrometrie - Messung des Abflusses mit dem
Ultraschallverfahren (akustisches Verfahren) (ISO
6416:2004)

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Foreword

The text of ISO 6416:2004 has been prepared by Technical Committee ISO/TC 113 "Hydrometric determinations" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 6416:2005 by Technical Committee CEN/TC 318 "Hydrometry", the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by February 2006, and conflicting national standards shall be withdrawn at the latest by February 2006.

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Endorsement notice

The text of ISO 6416:2004 has been approved by CEN as EN ISO 6416:2005 without any modifications.

**Hydrometry — Measurement of discharge
by the ultrasonic (acoustic) method**

*Hydrométrie — Mesure du débit à l'aide de la méthode ultrasonique
(acoustique)*



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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.

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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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 6416 was prepared by Technical Committee ISO/TC 113, *Hydrometry*, Subcommittee SC 1, *Velocity area methods*.

This third edition cancels and replaces the second edition (ISO 6416:1992), which has been technically revised.

Hydrometry — Measurement of discharge by the ultrasonic (acoustic) method

1 Scope

This International Standard describes the establishment and operation of an ultrasonic (transit-time) gauging station for the continuous measurement of discharge in a river, an open channel or a closed conduit. It also describes the basic principles on which the method is based, the operation and performance of associated instrumentation and procedures for commissioning.

It is limited to the “transit time of ultrasonic pulses” technique, and is not applicable to systems that make use of the “Doppler shift” or “correlation” or “level-to-flow” techniques.

This International Standard is not applicable to measurement in rivers with ice.

2 Normative references

The following referenced documents are indispensable for the application 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 772:1996, *Hydrometric determinations — Vocabulary and symbols*

ISO 4373:1995, *Measurement of liquid flow in open channels — Water-level measuring devices*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 772 apply.

4 Applications

4.1 Open channels

4.1.1 The method is suitable for use in river flow measurement, a significant advantage being additional freedom from siting constraints in comparison with other available techniques. In particular, the method does not demand the presence of a natural control or the creation of a man-made control at the proposed gauge location, as it does not rely upon the establishment of a unique relation between water level and discharge.

4.1.2 Gauges using the method are capable of providing highly accurate flow determinations over a range of flows contained within a defined gauge cross-section. They are tolerant of the backwater effects created by tides, downstream tributary discharges, downstream weed growth, reservoir or head-pond water level manipulation, and periodic channel obstruction.

NOTE For locations subjected to significant bed level or profile instability, it may not be possible to use gauges.