
Hydrometry — Rotating-element current-meters

Hydrométrie — Moulinets à élément rotatif



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

This document is a preview generated by EVS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2007

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Principle of operation	1
5	Types of current-meters	2
6	Operational requirements	2
7	Characteristics of cup-type and propeller-type current-meter	3
8	Construction features	3
9	Calibration (rating)	3
10	Maintenance of current-meter	6
11	Operational and servicing manual	6
	Annex A (normative) Construction features of current-meters	7
	Annex B (normative) Maintenance of current-meter	11
	Bibliography	13

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 2.

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 2537 was prepared by Technical Committee ISO/TC 113, *Hydrometry*, Subcommittee SC 5, *Instruments, equipment and data management*.

This fourth edition cancels and replaces the third edition (ISO 2537:1988), which has been technically revised.

Hydrometry — Rotating-element current-meters

1 Scope

This International Standard specifies the operational requirements, construction, calibration, and maintenance of rotating-element devices for the measurement of flow velocities in open channels.

ISO 748 gives information on the use of these devices.

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, *Hydrometric determinations — Vocabulary and symbols*

ISO 3454, *Hydrometry — Direct depth sounding and suspension equipment*

ISO 3455, *Hydrometry — Calibration of current-meters in straight open tanks*

3 Terms and definitions

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

3.1

propeller pitch

distance the propeller current-meter relatively moves through the water during one revolution

4 Principle of operation

4.1 Proportionality

The rotating element of a current-meter is driven by the fluid at an angular velocity that is proportional to the local velocity of the fluid at the point of immersion when that velocity exceeds a critical value.

4.2 Flow velocity

In order to determine the velocity of the fluid, a current-meter is placed at a point in a stream and the number of revolutions of the rotor during a specified time interval is counted or the time required by the rotor to turn a given number of revolutions is observed. The velocity is obtained from the current-meter calibration table or calibration equation(s), established experimentally during its calibration (Clause 9). The number of current-meter revolutions (rotations) may be determined by sensing the signals emitted (such as electrical pulses) through the rotation of the rotor by using a suitable counting device. The velocity can be determined from a direct reading of the speed of rotation of the rotating element by means of equipment designed for this purpose.