

This document is a preview generated by EVS

Meters for irrigation water

Compteurs pour l'eau d'irrigation



This document is a preview generated by EMS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2014

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested 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
Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Metrological characteristics	5
4.1 Maximum permissible error (MPE).....	5
4.2 Metrological characteristics.....	5
5 Technical characteristics	6
5.1 General specifications.....	6
5.2 Rated operating conditions.....	7
5.3 Materials.....	7
5.4 Indicating device.....	7
5.5 Reverse flow.....	8
5.6 Sealing and security.....	8
5.7 Other devices.....	9
6 Metrological requirements	9
6.1 Indicating error.....	9
6.2 Internal pressure.....	9
6.3 Flow profile sensitivity classes.....	9
6.4 Pressure loss.....	10
7 Performance tests	11
7.1 General conditions for the tests.....	11
7.2 Static pressure test.....	12
7.3 Determination of errors.....	12
7.4 Pressure loss test.....	14
7.5 Flow disturbance tests.....	14
7.6 Reverse flow test.....	17
7.7 Endurance tests.....	18
8 Tests related to the influence quantities and perturbations	24
9 Marking	24
Annex A (informative) Pulse input solutions	26
Annex B (normative) Flow disturbers	33
Bibliography	47

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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 18, *Irrigation and drainage equipment and systems*.

Meters for irrigation water

1 Scope

This International Standard applies to water meters intended for irrigation use (herein after referred to as water meters), regardless of the water quality used for this purpose, and specifies the requirements and certification procedures for water meters, irrespective of the design technologies used to meter the actual volume of cold water or heated water flowing through a fully charged closed conduit. These water meters incorporate devices which indicate the integrated volume.

This International Standard also applies to water meters based on electrical or electronic principles and to water meters based on mechanical principles, incorporating electronic devices used to meter the actual volume flow of cold water. It provides metrological requirements for electronic ancillary devices when they are subject to metrological control. As a rule, the ancillary devices are optional. However national or international regulations make some ancillary devices mandatory in relation to the utilization of the water meter.

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.

ISO 4064-1:2005, *Measurement of water flow in fully charged closed conduits — Meters for cold potable water and hot water — Part 1: Specifications*

ISO 4064-2:2005, *Measurement of water flow in fully charged closed conduits — Meters for cold potable water and hot water — Part 2: Installation requirements*

ISO 9644, *Agricultural irrigation equipment — Pressure losses in irrigation valves — Test method*

ISO 286-2, *Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes — Part 2: Tables of standard tolerance classes and limit deviations for holes and shafts*

ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation*

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

3 Terms and definitions

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

3.1

water meter

instrument intended to measure continuously, store, and display the volume of water passing through the measurement transducer at metering conditions

Note 1 to entry: A water meter includes at least a measurement transducer, a calculator (including adjustment or correction devices, if present), and an indicating device. These three devices may be in different housings.

[SOURCE: OIML R49-1:2006, 2.1.1, modified — The second note is not included here.]