SLOVENSKI STANDARD
SIST EN ISO 4064-2:2014

01-julij-2014

Nadomešča:
SIST EN 14154-1:2005+A2:2011
SIST EN 14154-2:2005+A2:2011
SIST EN 14154-3:2005+A2:2011

Vodomeri za merjenje hladne pitne vode in vroče vode - 2. del: Preskusne metode (ISO 4064-2:2014)

Water meters for cold potable water and hot water - Part 2: Test methods (ISO 4064-2:2014)

Wasserzähler zum Messen von kaltem Trinkwasser und heißem Wasser - Teil 2: Prüfverfahren (ISO 4064-2:2014)

Compteurs d'eau potable froide et d'eau chaude - Partie 2: Méthodes d'essai (ISO 4064-2:2014)

Ta slovenski standard je istoveten z: **EN ISO 4064-2:2014**

ICS:

17.120.10	Pretok v zaprtih vodih	Flow in closed conduits
91.140.60	Sistemi za oskrbo z vodo	Water supply systems

SIST EN ISO 4064-2:2014 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 4064-2

June 2014

ICS 91.140.60

Supersedes EN 14154-1:2005+A2:2011, EN 14154-2:2005+A2:2011, EN 14154-3:2005+A2:2011

English Version

Water meters for cold potable water and hot water - Part 2: Test methods (ISO 4064-2:2014)

Compteurs d'eau potable froide et chaude - Partie 2: Méthodes d'essai (ISO 4064-2:2014)

Wasserzähler zum Messen von kaltem Trinkwasser und heißem Wasser - Teil 2: Prüfverfahren (ISO 4064-2:2014)

This European Standard was approved by CEN on 21 September 2013.

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This European Standard exists 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: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN ISO 4064-2:2014) has been prepared by Technical Committee ISO/TC 30 “Measurement of fluid flow in closed conduits” in collaboration with Technical Committee CEN/TC 92 “Water meters” the secretariat of which is held by SNV.

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of an identical text or by endorsement, at the latest by December 2014, and conflicting national standards shall be withdrawn at the latest by December 2014.

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

This document supersedes EN 14154-1:2005+A2:2011, EN 14154-2:2005+A2:2011, EN 14154-3:2005+A2:2011.

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).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 4064-2:2014 has been approved by CEN as EN ISO 4064-2:2014 without any modification.

Annex ZA
(informative)
Relationship between this European Standard and the Essential Requirements of EU Directive 2004/22/EC

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide one means of conforming to Essential Requirements of the New Approach Directive 2004/22/EC, *Measuring instruments directive.*

Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements of that Directive and associated EFTA regulations.

WARNING: Other requirements and other EU Directives may be applicable to the products falling within the scope of this standard.

INTERNATIONAL STANDARD

ISO 4064-2

Fourth edition
2014-06-01

Water meters for cold potable water and hot water —

Part 2: Test methods

Compteurs d'eau potable froide et chaude —

Partie 2: Méthodes d'essai

Reference number
ISO 4064-2:2014(E)

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Published in Switzerland

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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, 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, 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.

The committees responsible for this document are Technical Committee ISO/TC 30, *Measurement of fluid flow in closed conduits*, Subcommittee SC 7, *Volume methods including water meters* and OIML Technical Subcommittee TC 8/SC 5 *Water meters*.

This fourth edition of ISO 4064-2 cancels and replaces the third edition (ISO 4064-2:2005), which has been technically revised. Provisions of the third edition are addressed in ISO 4064-5:2014.

ISO 4064 consists of the following parts, under the general title *Water meters for cold potable water and hot water*:

— *Part 1: Metrological and technical requirements*

— *Part 2: Test methods*

— *Part 3: Test report format*

— *Part 4: Non-metrological requirements not covered i*n ISO 4064-1

— *Part 5: Installation requirements*

This edition of ISO 4064-2 is identical with the corresponding edition of OIML R 49-2, which has been issued concurrently. OIML R 49-2 was approved for final publication by the International Committee of Legal Metrology at its 48th meeting in Ho Chi Minh City, Vietnam in October 2013 and will be submitted to the International Conference on Legal Metrology in 2016 for formal sanction.

Water meters for cold potable water and hot water —

Part 2:
Test methods

1 Scope

This part of ISO 4064|OIML R 49 is applicable to the type evaluation and initial verification testing of water meters for cold potable water and hot water as defined in ISO 4064-1:2014|OIML R 49-1:2013. OIML Certificates of Conformity can be issued for water meters under the scope of the OIML Certificate System, provided that this part of ISO 4064|OIML R 49, ISO 4064-1:2014|OIML R 49-1:2013 and ISO 4064-3:2014|OIML R 49-3:2013 are used in accordance with the rules of the System.

This part of ISO 4064|OIML R 49 sets out details of the test programme, principles, equipment and procedures to be used for the type evaluation, and initial verification of a meter type.

The provisions of this part of ISO 4064|OIML R 49 also apply to ancillary devices, if required by national regulations.

The provisions include requirements for testing the complete water meter and for testing the measurement transducer (including the flow or volume sensor) and the calculator (including the indicating device) of a water meter as separate units.

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 4064-1:2014|OIML R 49-1:2013, *Water meters for cold potable water and hot water — Part 1: Metrological and technical requirements*

ISO 4064-3:2014|OIML R 49-3:2013, *Water meters for cold potable water and hot water — Part 3: Test report format*

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

IEC 60068-2-1, *Environmental testing — Part 2-1: Tests — Test A: Cold*

IEC 60068-2-2, *Environmental testing — Part 2-2: Tests — Test B: Dry heat*

IEC 60068-2-30, *Environmental testing — Part 2-30: Tests — Test Db: Damp heat, cyclic (12 h + 12 h cycle)*

IEC 60068-2-31, *Environmental testing — Part 2-31: Tests — Test Ec: Rough handling shocks, primarily for equipment-type specimens*

IEC 60068-2-47, *Environmental testing — Part 2-47: Tests — Mounting of specimens for vibration, impact and similar dynamic tests*

IEC 60068-2-64, *Environmental testing — Part 2-64: Tests — Test Fh: Vibration, broadband random and guidance*

IEC 60068-3-4, *Environmental testing — Part 3-4: Supporting documentation and guidance — Damp heat tests*

IEC 60654-2, *Operating conditions for industrial process measurement and control equipment — Part 2: Power*

IEC 61000-2-1, *Electromagnetic compatibility (EMC) — Part 2: Environment — Section 1: Description of the environment — Electromagnetic environment for low-frequency conducted disturbances and signaling in public power supply systems*

IEC 61000-2-2, *Electromagnetic compatibility (EMC) — Part 2-2: Environment — Compatibility levels for low-frequency conducted disturbances and signaling in public low-voltage power supply systems*

IEC 61000-4-1, *Electromagnetic compatibility (EMC) — Part 4-1: Testing and measurement techniques — Overview of IEC 61000-4 series*

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

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

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

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

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

IEC 61000-4-11, *Electromagnetic compatibility (EMC) — Part 4-11: Testing and measurement techniques — Voltage dips, short interruptions and voltage variations immunity tests*

IEC 61000-6-1, *Electromagnetic compatibility (EMC) — Part 6-1: Generic standards — Immunity for residential, commercial and light-industrial environments*

IEC 61000-6-2, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity for industrial environments*

OIML D 11:2004, *General requirements for electronic measuring instruments*

OIML G 13, *Planning of metrology and testing laboratories*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4064-1:2014|OIML R 49-1:2013 apply.

4 Reference conditions

All applicable influence quantities, except for the influence quantity being tested, shall be held at the following values during type evaluation tests on a water meter. However, for influence factors and

disturbances for electronic water meters, it is permissible to use the reference conditions defined in the applicable IEC standard:

Flow rate:	$0,7 \times (Q_2 + Q_3) \pm 0,03 \times (Q_2 + Q_3)$
Water temperature:	T30, T50 is 20 °C ± 5 °C
	T70 to T180 is 20 °C ± 5 °C and 50 °C ± 5 °C
	T30/70 to T30/180 is 50 °C ± 5 °C
Water pressure:	Within rated operating conditions (see ISO 4064-1:2014|OIML R 49-1:2013, 6.4)
Ambient temperature range:	15 °C to 25 °C
Ambient relative humidity range:	45 % to 75 %
Ambient atmospheric pressure range:	86 kPa to 106 kPa [0,86 bar to 1,06 bar]
Power supply voltage (mains AC):	Nominal voltage, U_{nom} ± 5 %
Power supply frequency:	Nominal frequency, f_{nom} ± 2 %
Power supply voltage (battery):	A voltage V in the range $U_{bmin} \leq V \leq U_{bmax}$

During each test, the temperature and relative humidity shall not vary by more than 5 °C or 10 %, respectively, within the reference range. The reference conditions are permitted to deviate from the defined tolerance values during the performance tests if evidence can be given to the body responsible for type approval that the type of meter under consideration is not affected by the deviation of the condition in question. The actual values of the deviating condition, however, shall be measured and documented as part of the performance test documentation.

5 Symbols, units and equations

Equations, symbols and their units, concerning the calculation of the error (of indication) of a water meter used in this part of ISO 4064|OIML R 49, are given in Annex B.

6 External examination

6.1 General

During the external examination, all relevant values, dimensions, and observations shall be recorded.

NOTE 1 For presentation of the results of type examinations, see Clause 11.

NOTE 2 The relevant subclauses of ISO 4064-1:2014|OIML R 49-1:2013 are shown in parentheses in the following.

6.2 Object of the examination

To verify that a water meter meets the requirements of ISO 4064-1:2014|OIML R 49-1:2013 with respect to the design of the indicating device, the marking of the meter and the application of protection devices.

6.3 Preparation

Linear measurements that have to be taken of a meter shall be made using traceable, calibrated measuring devices.