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Water meters for cold potable water and hot water —

Part 2: Test methods

Compteurs d'eau potable froide et d'eau chaude —

Partie 2: Méthodes d'essai

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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 document 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).

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This document was prepared by 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*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 92, *Test methods and equipment for cold water meters,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fifth edition of ISO 4064-1 cancels and replaces the fourth edition (ISO 4064-1:2014), which has been technically revised.

The main changes are as follows:

— a few editorial and technical changes were done throughout the document.

This edition of ISO 4064-1 is identical to the corresponding edition of OIML R 49-1, which has been issued concurrently. OIML R 49-1 was approved for final publication by the International Committee of Legal Metrology at ~~XXX~~its 59th meeting in ~~XXX~~October 2024. It will be submitted to the International Conference on Legal Metrology in XXX for formal sanction.

A list of all parts in the ISO 4064 series can be found on the ISO website.

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Water meters for cold potable water and hot water —

Part 2:
Test methods

1 Scope

This document is applicable to the type evaluation and initial verification testing of water meters for cold potable water and hot water as defined in ISO 4064-1:2024 | OIML R 49-1:2024. OIML Certificates of conformity can be issued for water meters under the scope of the OIML Certificate System, provided that this document, ISO 4064-1:2024 | OIML R 49-1:2024 and ISO 4064-3:2024 | OIML R 49-3:2024 are used in accordance with the rules of the system.

This document 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 document 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 are referred to in the text in such a way that some or all of their content constitutes requirements 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.

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

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

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

<std>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</std>

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

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ISO 4064-1:2014, Water meters for cold potable water and hot water — Part 1: Metrological and technical requirements

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ISO 4064-1:2014, Water meters for cold potable water and hot water — Part 1: Metrological and technical requirements

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

~~<std>~~IEC ~~60068-3-4, *Environmental testing — Part 3-4: Supporting documentation and guidance — Damp heat tests*</std>~~

~~<std>~~IEC ~~60654-2, *Operating conditions for industrial process measurement and control equipment — Part 2: Power*</std>~~

~~<std>~~IEC ~~61000-~~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~~</std>~~

~~<std>~~IEC ~~61000-~~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~~</std>~~

~~<std>~~IEC 61000-4-1, Electromagnetic compatibility (EMC) — Part 4-1: Testing and measurement techniques — Overview of IEC 61000-4 series~~</std>~~

~~<std>~~IEC ~~61000-~~IEC 61000-4-2, Electromagnetic compatibility (EMC) — Part 4-2: Testing and measurement techniques — Electrostatic discharge immunity test~~</std>~~

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

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

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

~~<std>~~IEC ~~61000-~~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~~</std>~~

~~<std>~~IEC ~~61000-~~IEC 61000-4-8, Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test~~</std>~~

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

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