

GAASIARVESTID. ROOTORGAASIARVESTID

Gas meters - Rotary displacement gas meters

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN 12480:2025 sisaldab Euroopa standardi EN 12480:2025 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 12.11.2025.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN 12480:2025 consists of the English text of the European standard EN 12480:2025.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 12.11.2025.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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ICS 91.140.40

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English Version

Gas meters - Rotary displacement gas meters

Compteurs de gaz - Compteurs de gaz à déplacement
rotatif

Gaszähler - Drehkolbengaszähler

This European Standard was approved by CEN on 8 September 2025.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 12480:2025) has been prepared by Technical Committee CEN/TC 237 “Gas meters”, 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of an identical text or by endorsement, at the latest by May 2026, and conflicting national standards shall be withdrawn at the latest by May 2026.

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

This document supersedes EN 12480:2018.

The main goal of this revision was to be harmonized with 2014/32/EU (Measuring Instruments Directive) and 2014/68/EU Pressure Equipment Directive.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, and Annex ZB, which are integral parts of this document.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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

1 Scope

This document specifies ranges, construction, performances, output characteristics and testing of rotary displacement gas meters (hereinafter referred to as RD meters or simply meters) for gas volume measurement.

This document applies to rotary displacement gas meters used to measure the volume of fuel gases of at least the 1st, 2nd and 3rd gas families, the composition of which is specified in EN 437:2021, at a maximum working pressure up to and including 20 bar over an ambient and gas temperature range of at least -10 °C to $+40\text{ °C}$.

This document applies to meters that are installed in locations with vibration and shocks of low significance (class M1) and in

- closed locations (indoor or outdoor with protection) with condensing or with non-condensing humidity

or,

- open locations (outdoor without any covering) with condensing humidity or with non-condensing humidity,

and in locations with electromagnetic disturbances (class E1 and E2). The standard applies to mechanical meters with mechanical index, electronic devices are not covered by this standard.

Unless otherwise specified in this standard:

- all pressures used are gauge;
- all influence quantities, except the one under test, are kept relatively constant at their reference value.

This document applies to meters with a maximum allowable pressure PS and the volume V of less than $6\ 000\text{ bar} \cdot \text{L}$ or with a product of PS and DN of less than $3\ 000\text{ bar}$.

This document is to be used for both pattern approval and individual meter testing. Cross-reference tables are given in:

- Annex A for the tests that need to be undertaken for pattern approval;
- Annex B for individual meter testing.

Some parts of this standard cover meters with mechanical index only.

The risk philosophy adopted in this standard is based on the analysis of hazards including pressure. The standard applies principles to eliminate or reduce hazards. Where these hazards cannot be eliminated appropriate protection measures are specified.

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.

EN 1092-1:2018, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 1: Steel flanges*

EN 1092-2:2023, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 2: Cast iron flanges*

EN 1092-3:2003, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 3: Copper alloy flanges*

EN 1092-4:2002, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 4: Aluminium alloy flanges*

EN 1759-1:2004, *Flanges and their joint — Circular flanges for pipes, valves, fittings and accessories, Class designated — Part 1: Steel flanges, NPS 1/2 to 24*

EN 1759-3:2003, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, Class designated — Part 3: Copper alloy flanges*

EN 1759-4:2003, *Flanges and their joint — Circular flanges for pipes, valves, fittings and accessories, class designated — Part 4: Aluminium alloy flanges*

EN 10204:2004, *Metallic products — Types of inspection documents*

EN 12516-2:2014+A1:2021, *Industrial valves — Shell design strength — Part 2: Calculation method for steel valve shells*

EN 12516-3:2002, *Valves — Shell design strength — Part 3: Experimental method*

EN 12516-4:2014+A1:2018, *Industrial valves — Shell design strength — Part 4: Calculation method for valve shells manufactured in metallic materials other than steel*

EN 60529:1991,¹ *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

EN 60079-11:2012, *Explosive atmospheres — Part 11: Equipment protection by intrinsic safety "i" (IEC 60079-11:2011 + Cor.:2012)*

EN IEC 60730-1:2024, *Automatic electrical controls — Part 1: General requirements (IEC 60730-1:2022)*

EN IEC 60079-0:2018,² *Explosive atmospheres — Part 0: Equipment — General requirements (IEC 60079-0:2017)*

¹ As impacted by EN 60529:1991/A1:2000, EN 60529:1991/A2:2013, EN 60529:1991/AC:2016-12 and EN 60529:1991/A2:2013/AC:2019-02.

² As impacted by EN IEC 60079-0:2018/AC:2020-02 and EN IEC 60079-0:2018/A11:2024.

EN IEC 61000-6-1:2019, *Electromagnetic compatibility (EMC) — Part 6-1: Generic standards — Immunity standard for residential, commercial and light-industrial environments (IEC 61000-6-1:2016)*

EN IEC 61000-6-2:2019, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity standard for industrial environments (IEC 61000-6-2:2016)*

EN IEC 61000-6-3:2021, *Electromagnetic compatibility (EMC) — Part 6-3: Generic standards — Emission standard for equipment in residential environments (IEC 61000-6-3:2020)*

EN IEC 61000-6-4:2019, *Electromagnetic compatibility (EMC) — Part 6-4: Generic standards — Emission standard for industrial environments (IEC 61000-6-4:2018)*

EN 61000-6-5:2015,³ *Electromagnetic compatibility (EMC) — Part 6-5: Generic standards — Immunity for equipment used in power station and substation environment (IEC 61000-6-5:2015)*

EN 61000-6-7:2015, *Electromagnetic compatibility (EMC) — Part 6-7: Generic standards — Immunity requirements for equipment intended to perform functions in a safety-related system (functional safety) in industrial locations (IEC 61000-6-7:2014)*

EN IEC 61000-6-8:2020, *Electromagnetic compatibility (EMC) — Part 6-8: Generic standards — Emission standard for professional equipment in commercial and light-industrial locations (IEC 61000-6-8:2020)*

EN ISO 6270-2:2025, *Paints and varnishes — Determination of resistance to humidity — Part 2: Condensation (in-cabinet exposure with heated water reservoir) (ISO 6270-2:2025)*

EN ISO 9606-1:2017, *Qualification testing of welders — Fusion welding — Part 1: Steels (ISO 9606-1:2012 including Cor 1:2012 and Cor 2:2013)*

EN ISO 9606-2:2004, *Qualification test of welders — Fusion welding — Part 2: Aluminium and aluminium alloys (ISO 9606-2:2004)*

EN ISO 9712:2022, *Non-destructive testing — Qualification and certification of NDT personnel (ISO 9712:2021)*

EN ISO 14732:2025, *Welding personnel — Qualification testing of welding operators and weld setters for mechanized and automatic welding of metallic materials (ISO 14732:2025)*

EN ISO 15607:2019, *Specification and qualification of welding procedures for metallic materials — General rules (ISO 15607:2019)*

EN ISO 15609-1:2019, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 1: Arc welding (ISO 15609-1:2019)*

EN ISO 15614-1:2017, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys (ISO 15614-1:2017, Corrected version 2017-10-01)*

EN ISO 15614-2:2025, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 2: Arc welding of aluminium and its alloys (ISO 15614-2:2025)*

³ As impacted by EN 61000-6-5:2015/AC:2018-01.

EN ISO/CIE 11664-4:2019, *Colorimetry — Part 4: CIE 1976 L*a*b* colour space (ISO/CIE 11664-4:2019)*

ISO 834-1:2025, *Fire-resistance tests — Elements of building construction — Part 1: General requirements*

ISO 7005-1:2011, *Pipe flanges — Part 1: Steel flanges for industrial and general service piping systems*

ISO 7005-2:1988, *Metallic flanges — Part 2: Cast iron flanges*

ISO 14782:2021, *Plastics — Determination of haze for transparent materials*

ISO 17663:2023, *Welding — Quality requirements for heat treatment in connection with welding and allied processes*

3 Terms, definitions, symbols and abbreviations

3.1 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1.1

accuracy class 1,0

accuracy achieved by a meter, which has an error of indication between -2% and $+2\%$ for flow rates Q , where $Q_{\min} \leq Q < Q_t$, and an error of indication between -1% and $+1\%$ for flow rates Q , where $Q_t \leq Q \leq Q_{\max}$

3.1.2

cyclic volume

V_{cyc}

volume of the gas measured by one complete revolution of the element(s)

3.1.3

density of gas

ρ

mass of gas divided by the volume

3.1.4

allowable design temperature range

TS

range of gas temperatures (minimum to maximum) for which the meter is designed as declared and marked on the meter