



**SLOVENSKI STANDARD**  
**oSIST prEN 14236:2017**  
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**Ultrazvočni plinomeri za gospodinjstva**

Ultrasonic domestic gas meters

Ultraschall-Haushaltsgaszähler

Compteurs à gaz domestiques à ultrasons

**Ta slovenski standard je istoveten z: prEN 14236**

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## Ultrasonic domestic gas meters

Compteurs à gaz domestiques à ultrasons

Ultraschall-Haushaltsgaszähler

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 237.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## European foreword

This document (prEN 14236:2017) has been prepared by Technical Committee CEN/TC 237 “Gas meters”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 14236:2007.

Changes from previous editions include:

- conformity with the MID 2014/32/EU regarding declared errors of the same sign

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 2014/32/EU.

For relationship with EU Directive 2014/32/EU, see informative Annex ZA, which is an integral part of this document.

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**prEN 14236:2017 (E)****1 Scope**

This European Standard specifies requirements and tests for the construction, performance and safety of class 1,0 and class 1,5 battery powered ultrasonic gas meters (hereinafter referred to as meters), having co-axial single pipe, or two pipe connections, used to measure volumes of distributed fuel gases of the second and/or third family, as given in EN 437, at maximum working pressures not exceeding 0,5 bar<sup>1)</sup> and maximum actual flow rates of up to 10 m<sup>3</sup>/h over a minimum ambient temperature range of -10 °C to +40 °C, and minimum gas temperature span of 40 K, for domestic applications. This European Standard applies to meters where the measuring element and the register(s) are enclosed in the same case.

This European Standard applies to meters with and without built-in temperature conversion, that are installed in locations with vibration and shocks of low significance and in

- closed locations (indoor or outdoor with protection as specified by the manufacturer) with condensing or with non-condensing humidity

or, if specified by the manufacturer,

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

and in locations with electromagnetic disturbances.

Unless otherwise stated, all pressures given in this European Standard are gauge pressures.

When more than one meter type is submitted for testing, then each meter type is required to be tested against this European Standard.

Clauses 1 to 15 and Annex C are for design and type testing only.

NOTE See Annex A for production requirements.

**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.

EN 55032, *Electromagnetic compatibility of multimedia equipment — Emission Requirements (CISPR 32)*

EN 60068-2-5, *Environmental testing — Part 2: Tests — Test Sa: Simulated solar radiation at ground level (IEC 60068-2-5)*

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

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

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<sup>1)</sup> 1 bar = 1 000 mbar = 10<sup>5</sup> Pa.

EN 60079-10 (all parts), *Explosive atmospheres — Part 10: Classification of areas (IEC 60079-10, all parts)*

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

EN 60079-15, *Explosive atmospheres — Part 15: Equipment protection by type of protection "n" (IEC 60079-15)*

EN 60086-1, *Primary batteries — Part 1: General (IEC 60086-1)*

EN 60086-4, *Primary batteries — Part 4: Safety standard for lithium batteries (IEC 60086-4)*

EN 60529, *Degrees of protection provided by enclosures (IP Code) (IEC 60529)*

EN 60695-11-5, *Fire hazard testing — Part 11-5: Test flames — Needle-flame test method — Apparatus, confirmatory test arrangement and guidance (IEC 60695-11-5)*

EN 60695-11-10, *Fire hazard testing — Part 11-10: Test flames — 50 W horizontal and vertical flame test methods (IEC 60695-11-10)*

EN 60730-1:2000, *Automatic electrical controls for household and similar use — Part 1: General requirements (IEC 60730-1:1999)*

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

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

EN 61000-4-8, *Electromagnetic compatibility (EMC) — Part 4-8: Testing and measurement techniques — Power frequency magnetic field immunity test (IEC 61000-4-8)*

EN 61000-4-9, *Electromagnetic compatibility (EMC) — Part 4: Testing and measurement techniques — Section 9: Pulse magnetic field immunity test — Basic EMC publication (IEC 61000-4-9)*

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

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

EN 62056-21:2002, *Electricity metering — Data exchange for meter reading, tariff and load control — Part 21: Direct local data exchange (IEC 62056-21:2002)*

EN ISO 1518 (all parts), *Paints and varnishes — Determination of scratch resistance*

EN ISO 2409, *Paints and varnishes — Cross-cut test (ISO 2409)*

EN ISO 2812-1:2007, *Paints and varnishes — Determination of resistance to liquids — Part 1: Immersion in liquids other than water (ISO 2812-1:2007)*

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EN ISO 4628-2:2016, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 2: Assessment of degree of blistering (ISO 4628-2:2016)*

EN ISO 4628-3:2016, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 3: Assessment of degree of rusting (ISO 4628-3:2016)*

EN ISO 4892-3, *Plastics — Methods of exposure to laboratory light sources — Part 3: Fluorescent UV lamps (ISO 4892-3)*

EN ISO 6270-1, *Paints and varnishes — Determination of resistance to humidity — Part 1: Continuous condensation (ISO 6270-1)*

EN ISO 6272-1, *Paints and varnishes — Rapid-deformation (impact resistance) tests — Part 1: Falling-weight test, large-area indenter (ISO 6272-1)*

EN ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests (ISO 9227)*

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

ISO 7724-3, *Paints and varnishes — Colorimetry — Part 3: Calculation of colour differences*

ASTM D471, *Standard Test Method for Rubber Property — Effect of Liquids*

ASTM D1003, *Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics*

### **3 Terms, definitions and symbols**

#### **3.1 Terms and definitions**

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

##### **3.1.1**

##### **actual flow rate**

flow rate at the gas pressure and gas temperature conditions prevailing in the gas distribution line in which the meter is fitted, at the meter inlet

##### **3.1.2**

##### **base conditions**

fixed conditions to which a volume of gas is converted (i.e. base gas temperature 15 °C, base gas pressure 1 013,25 mbar)

##### **3.1.3**

##### **contaminants**

gas borne dust, vapour and other substances that could affect the operation of the meter

##### **3.1.4**

##### **communications port**

galvanic or optical serial data port

**3.1.5****display**

device (e.g. liquid crystal display) which shows the contents of a memory (e.g. registered volume or flags)

**3.1.6****distributed gas**

gas locally available

**3.1.7****error of indication ( $\epsilon$ )**

value which shows the relationship in percentage terms of the difference between the volume indicated by the meter and the volume which has actually flowed through the meter, to the latter volume:

$$\epsilon = \frac{V_i - V_c}{V_c} \cdot 100$$

where

$V_i$  is the indicated volume in cubic metres ( $\text{m}^3$ );

$V_c$  is the volume in cubic metres ( $\text{m}^3$ ) that has actually flowed through the meter

**3.1.8****external leak tightness**

leak tightness of the gas carrying components of the gas meter with respect to the atmosphere

**3.1.9****flag**

single alphabetic character on the index giving a visual signal of significant events and/or change(s) in the operation of the meter

**3.1.10****galvanic connection/interface**

hard wired serial connection or pulse output from the meter

**3.1.11****index**

all that which is viewed through the index window, including the display

**3.1.12****index window(s)**

area(s) of transparent material through which the index can be read

**3.1.13****maximum error shift**

maximum mean error shift at any of the tested flow rates

**3.1.14****maximum working pressure**

upper limit of the working pressure for which the meter has been designed, as declared by the manufacturer and marked on the index or the data plate

**prEN 14236:2017 (E)****3.1.15****mean error**

arithmetic mean of consecutive errors of indication at a flow rate

**3.1.16****measuring element**

part of the meter which produces an electrical signal proportional to the gas flow rate

**3.1.17****memory**

element which stores digital information

**3.1.18****meter case**

complete meter, not casing only

**3.1.19****meter class**

class to which a meter belongs, according to the metrological requirements of this European Standard, i.e. class 1,5 or class 1,0.

**3.1.20****meter cover**

rigid enclosure on the front of the meter made either wholly of transparent material, or of opaque material provided with index window(s)

**3.1.21****normal conditions of operation**

conditions referring to the meter operating:

- at a pressure up to the maximum working pressure (with or without a flow of gas);
- within the range of flow rates;
- within the ambient temperature range;
- within the gas temperature range;
- with the distributed gas

**3.1.22****operating mode**

method (sample frequency and timing) of obtaining volume flow measurements

**3.1.23****optical port**

serial data port using an infra-red transmitter and receiver

**3.1.24****pressure absorption**

difference between the pressure measured at the inlet and outlet connections of the meter whilst the meter is operating