

GAASIARVESTID. TURBIINGAASIARVESTID

Gas meters - Turbine gas meters

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 12261:2018 sisaldab Euroopa standardi EN 12261:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 12261:2018 consists of the English text of the European standard EN 12261:2018.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 28.03.2018.	Date of Availability of the European standard is 28.03.2018.
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ICS 91.140.40

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English Version

Gas meters - Turbine gas meters

Compteurs de gaz - Compteurs de gaz à turbine

Gaszähler - Turbinenradgaszähler

This European Standard was approved by CEN on 9 November 2017.

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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword.....	5
1 Scope.....	6
2 Normative references.....	6
3 Terms, definitions and symbols.....	7
3.1 Terms and definitions.....	7
3.2 Symbols.....	10
4 Meter classification.....	11
4.1 Flange pressure ratings.....	11
4.2 Gas meter sizes, rangeability and connection diameter sizes.....	12
4.3 Connections and dimensions.....	13
4.4 Temperature ranges.....	13
4.5 Climatic environment.....	13
5 Metrological performance requirements.....	13
5.1 General.....	13
5.2 Type testing.....	14
5.2.1 Error of indication.....	14
5.2.2 Metrological stability.....	15
5.2.3 Linearity.....	16
5.2.4 Endurance.....	16
5.2.5 Meter position.....	17
5.2.6 Temporary overload.....	17
5.2.7 Temperature range.....	17
5.2.8 Installation conditions.....	19
5.2.9 Maximum permissible pressure loss.....	19
5.2.10 Output shaft (where fitted).....	20
6 Design and material requirements.....	20
6.1 General.....	20
6.2 Robustness.....	21
6.2.1 General.....	21
6.2.2 Meter casing.....	21
6.2.3 Resistance to internal pressure.....	21
6.2.4 External leak tightness.....	22
6.2.5 Bending and torsional moment.....	23
6.2.6 Resistance to impact.....	24
6.2.7 Transportation and storage.....	24
6.3 Resistance to environmental conditions.....	25
6.3.1 General.....	25
6.3.2 Resistance to ultra-violet radiation.....	25
6.3.3 Resistance to external corrosion.....	25
6.4 Removable meter mechanisms.....	28
6.4.1 Integrity.....	28
6.4.2 Performance.....	29
6.5 Indicating devices and accessories.....	29

6.5.1	General.....	29
6.5.2	Magnetic drive units.....	30
6.6	Pressure and temperature tappings.....	30
6.6.1	Pressure tappings.....	30
6.6.2	Temperature tappings.....	31
6.7	Lubrication.....	31
6.7.1	Requirements.....	31
6.7.2	Type test.....	31
7	Meter output.....	32
7.1	General.....	32
7.2	Indicating device.....	32
7.2.1	General.....	32
7.2.2	Capacity.....	32
7.2.3	Unit of indication.....	32
7.2.4	Readability.....	32
7.2.5	Adjustment.....	33
7.3	Pulse generator.....	33
7.3.1	General.....	33
7.3.2	Electrical specifications for pulse generators.....	33
7.3.3	Electrical connections.....	34
7.4	Output shaft.....	34
7.5	Test element.....	35
7.5.1	General provisions.....	35
7.5.2	Test element in case of mechanical indicating device.....	35
7.5.3	Pulse generator used as test element.....	35
8	Marking.....	36
8.1	General.....	36
8.2	Data plate.....	36
8.3	Direction of flow.....	36
8.4	Working position.....	36
8.5	Other connections.....	37
8.5.1	General.....	37
8.5.2	Pressure tappings.....	37
8.5.3	Pulse generators.....	37
8.5.4	Output shafts.....	37
9	Documentation.....	37
9.1	General.....	37
9.2	Declaration of conformity.....	37
9.3	Instruction manual.....	38
Annex A	(normative) Test facility specifications.....	39
A.1	Test medium.....	39
A.2	Leakage.....	39
A.3	Installation conditions.....	39
A.4	Reference standards.....	39
Annex B	(normative) Perturbation testing.....	40
B.1	General.....	40
B.2	Terms and definitions.....	40

B.3	Requirements	40
B.3.1	Low level perturbation.....	40
B.3.2	High level perturbation.....	41
B.4	Tests	41
B.4.1	Low level perturbations.....	41
B.4.2	High level perturbations.....	43
B.5	Similarity	44
B.6	Flow conditioner.....	44
Annex C	(informative) Recommendations for use	46
C.1	Pressure loss	46
C.2	Spin test	46
C.3	Locations of temperature measuring devices.....	46
Annex D	(normative) Individual factory testing	47
D.1	General	47
D.2	Meter report.....	47
Annex E	(normative) Metrological requirements and tests for each meter prior to dispatch (Individual meter testing)	48
E.1	Information required from the purchaser (user)	48
E.2	Determination of number of tests.....	48
E.2.1	Criteria	48
E.3	Error of indication	49
E.3.1	Requirements	49
E.3.2	Test.....	50
E.4	Linearity	50
E.4.1	Requirements	50
E.4.2	Test.....	50
E.5	Weighted mean error (WME).....	50
E.5.1	Requirement	50
E.5.2	Test.....	50
E.5.3	Adjustment	51
E.6	Data plate specification.....	51
E.7	Test certificate.....	51
Annex ZA	(informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2014/32/EU Measuring Instruments Directive aimed to be covered	53
Bibliography		60

European foreword

This document (EN 12261:2018) 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 September 2018, and conflicting national standards shall be withdrawn at the latest by September 2018.

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 12261:2002.

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.

In the preparation of this European Standard, the content of ISO 9951, the content of OIML Publication, "International Recommendation 6" and "International Recommendation 32" and the content of member bodies national standards on turbine meters have been taken into account.

The metrological aspects of this European Standard may be subject to amendments to bring it into line with the proposed Measuring Instruments Directive (MID).

Electronic Indexes are not specifically covered by this standard, however, work to produce a standard covering these devices is in progress under CEN/TC 237.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This document specifies the measuring conditions, requirements and tests for the construction, performance and safety of class 1,0 axial and radial turbine gas meters with mechanical indicating devices, herein after referred to as a meter(s), having in-line pipe connections for gas flow measurement.

This document applies to turbine gas meters used to measure the volume of fuel gases of the 1st and 2nd gas families, the composition of which is specified in EN 437, at maximum working pressures up to 420 bar, actual flow rates up to 25 000 m³/h over a gas temperature range of at least 40 K and for a climatic environmental temperature range of at least 50 K.

This document applies to meters 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 specified in this document:

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

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.

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

EN 22768-1:1993, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications (ISO 2768-1:1989)*

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

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

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

EN 60947-5-6, *Low-voltage switchgear and controlgear — Part 5-6: Control circuit devices and switching elements — DC interface for proximity sensors and switching amplifiers (NAMUR) (IEC 60947-5-6)*

EN 62246-1, *Reed switches — Part 1: Generic specification (IEC 62246-1)*

EN ISO 5167-1:2003, *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full - Part 1: General principles and requirements (ISO 5167-1:2003)*

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

3 Terms, definitions and symbols

3.1 Terms and definitions

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

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

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

3.1.1

turbine gas meter

measuring device in which the dynamic forces of the flowing gas cause a turbine wheel to rotate with a speed as a function of the volume flow rate. The number of revolutions of the turbine wheel is the basis for the indication of the volume passed through the meter

It is designed to measure, memorize and display the volume of a fuel gas that has passed through it

3.1.2

measured quantity

volume in cubic metres, at metering conditions

3.1.3

volume flow rate

volume at metering conditions divided by time

3.1.4

rangeability

ratio between $Q_{\min}$ and $Q_{\max}$, i.e. the minimum and maximum flow rate respectively for which the meter performs within the maximum permissible errors

3.1.5

average velocity

volume flow rate divided by the cross-sectional area of the meter connections

3.1.6

casing

pressure containing structure of the meter