

Gas meters - Diaphragm gas meters

Gas meters - Diaphragm gas meters

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1359:2001 sisaldab Euroopa standardi EN 1359:1998 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.06.2001 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 1359:2001 consists of the English text of the European standard EN 1359:1998.</p> <p>This document is endorsed on 18.06.2001 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
--	---

<p>Käsitlusala:</p> <p>This standard specifies the requirements and tests for the construction, performance and safety of diaphragm gas meters, having co-axial single pipe, or two pipe connections, used to measure volumes of fuel gases of the 1st, 2nd and 3rd families, according to EN 437:1993, at maximum working pressures of up to 1 bar and maximum actual flow rates of up to 160 m³/h over a minimum ambient and gas temperature range of -5 degrees C to +35 degrees C.</p>	<p>Scope:</p> <p>This standard specifies the requirements and tests for the construction, performance and safety of diaphragm gas meters, having co-axial single pipe, or two pipe connections, used to measure volumes of fuel gases of the 1st, 2nd and 3rd families, according to EN 437:1993, at maximum working pressures of up to 1 bar and maximum actual flow rates of up to 160 m³/h over a minimum ambient and gas temperature range of -5 degrees C to +35 degrees C.</p>
--	--

ICS 91.140.40

Võtmesõnad: classifications, definitions, design, equipment specifications, gas supply meters, marking, measuring instruments, mechanical properties, metrological inspection, metrology, performance evaluation, safety, specifications, tests, volume measurements

ICS 91.140.40

English version

Gas meters

Diaphragm gas meters

Compteurs de gaz – Compteurs de
volume de gaz à parois déformables

Gaszähler – Balgengaszähler

This European Standard was approved by CEN on 1998-11-28.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Contents

	Page
Foreword	3
1 Scope	4
2 Normative references	4
3 Terminology	6
3.1 Definitions	6
3.2 Symbols	7
4 Working conditions	8
4.1 Flow range	8
4.2 Maximum working pressure	8
4.3 Temperature range	8
5 Metrological performance	9
5.1 Errors of indication	9
5.2 Pressure absorption	10
5.3 Starting flow rate	11
5.4 Metrological stability	12
6 Construction and materials	12
6.1 General	12
6.2 Robustness	12
6.3 Corrosion protection	24
6.4 Resistance to storage temperature range	31
6.5 Optional features	31
7 Mechanical performance	36
7.1 Meter assembly	36
7.2 Index	41
7.3 Diaphragms and other components in the gas path	42
8 Marking	48
8.1 All meters	48
8.2 Two-pipe meters	48
8.3 Durability and legibility of marking	49
9 Meters supplied for testing	49
Annex A (normative) Production requirements for gas meters	53
Annex B (normative) Diaphragm gas meters provided with a built-in mechanical gas temperature conversion device	55
Annex C (normative) Integral battery powered electronic indexes for diaphragm gas meters	61
Annex D (informative) Bibliography	72

Foreword

This European Standard 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 June 1999, and conflicting national standards shall be withdrawn at the latest by June 1999.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

In the preparation of this European Standard, the content of the Marcogaz/Facogaz/AEGPL liaison committee CL5 document, the content of OIML Publications 'International Recommendation R 6 and 'International Recommendation R 31 and the content of member countries' National Standards for diaphragm gas meters, have been taken into account.

The metrological aspects of this European Standard can be subject to final modification to bring them into line with the proposed Measuring Instruments Directive.

1 Scope

This European Standard specifies the requirements and tests for the construction, performance and safety of diaphragm gas meters (hereinafter referred to as meters) having co-axial single pipe, or two pipe connections, used to measure volumes of fuel gases of the 1st, 2nd and 3rd families according to EN 437:1993, at maximum working pressures of up to 1 bar and maximum actual flow rates of up to 160 m³/h over a minimum ambient and gas temperature range of -5 °C to + 35 °C.

Unless otherwise stated, all pressures given in this document are gauge pressure.

Clauses 1 to 9 and annexes B and C are for design and type testing only.

NOTE: See annex A for production requirements.

2 Normative references

This European Standard incorporates by dated or undated references provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references subsequent amendments to or revisions of any of these publications apply to this European standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 437 : 1993	Test gases - Test pressures - Appliance categories
EN 50020 : 1994	Electrical apparatus for potentially explosive atmospheres - Intrinsic safety "i"
EN 55022 : 1994	Limits and methods of measurement of radio disturbance characteristics of information technology equipment (CISPR 60022:1993)
EN 60529 : 1991	Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)
EN 60730-1 : 1995	Automatic electrical controls for household and similar use - Part 1: General requirements (IEC 60730-1:1993, modified)
EN 60801-2: 1993	Electromagnetic compatibility for industrial -process measurement and control equipment - Part 2: Electrostatic discharge requirements (IEC 60801-2:1991)
EN ISO 9001 : 1994	Quality systems - Model for quality assurance in design/development, production, installation and servicing (ISO 9001:1994)

- EN ISO 9002 : 1994 Quality systems - Model for quality assurance in production, installation and servicing (ISO 9002:1994)
- ISO 228-1 : 1994 Pipe threads where pressure-tight joints are not made on the threads - Part 1 : Dimensions, tolerances and designation.
- ISO 834 : 1975 Fire resistance tests - Elements of building construction.
- ISO 1518 : 1992 Paints and varnishes - Scratch test
- ISO 2409 : 1992 Paints and varnishes - Cross-cut test
- ISO 2812-1 : 1993 Paints and varnishes - Determination of resistance to liquids : Part 1 : General methods
- ISO 4628-2 : 1982 Paints and varnishes - Evaluation of degradation of paint coatings- Designation of intensity, quantity and size of common types of defect; Part 2: Designation of degree of blistering.
- ISO 4628-3 : 1982 Paints and varnishes; Evaluation of degradation of paint coatings- Designation of intensity, quantity and size of common types of defect - Part 3 : Designation of degree of rusting.
- ISO 6270 : 1980 Paints and varnishes - Determination of resistance to humidity (continuous condensation)
- ISO 6272 : 1993 Paints and varnishes - Falling weight test
- ISO 7005-1 : 1992 Metallic flanges - Part 1: Steel flanges.
- ISO 7253 : 1984 Paints and varnishes -Determination of resistance to neutral salt spray.
- IEC 61000-4-3:1996 Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques - Section 3: Radiated, radio-frequency, electromagnetic field immunity test