SLOVENSKI STANDARD

SIST EN 12261:2004/A1:2006

01-september-2006

Plinomeri – Turbinski plinomeri – Dopolnilo A1

Gas meters - Turbine gas meters

Gaszähler - Turbinenradgaszähler

Compteurs a gaz - Compteurs de gaz a turbine

Ta slovenski standard je istoveten z: EN 12261:2002/A1:2006

ICS:

17.120.10	Pretok v zaprtih vodih	Flow in closed conduits
91.140.40	Sistemi za oskrbo s plinom	Gas supply systems

SIST EN 12261:2004/A1:2006 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12261:2002/A1

May 2006

ICS 17.120.10

English Version

Gas meters - Turbine gas meters

Compteurs à gaz - Compteurs à gaz à turbine

Gaszähler - Turbinenradgaszähler

This amendment A1 modifies the European Standard EN 12261:2002; it was approved by CEN on 20 March 2006.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant 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.

This amendment exists 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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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Foreword

This document (EN 12261:2002/A1:2006) has been prepared by Technical Committee CEN/TC 237 “Gas meters”, the secretariat of which is held by BSI.

This Amendment to the European Standard EN 12261:2002 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2006, and conflicting national standards shall be withdrawn at the latest by November 2006.

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 2004/22, Measuring Instruments Directive (MID).

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

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

Final paragraph:

Delete.

1 Clause 1 Scope

Delete the first paragraph and replace with the following:

"This European Standard 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."

Delete second paragraph and replace with the following:

"This European Standard 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 m^3/h over a gas temperature range of at least 40 K and for a climatic environmental temperature range of at least 50 K."

Delete third paragraph and replace with the following:

"This standard 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."

Insert the following as a new fourth paragraph:

"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."

2 Clause 3 Terms, definitions and symbols

3.1.1 turbine gas meter

Include the following as the final sentence:

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

3.1.7.4 working temperature range

Delete title and replace with the following:

"**operating temperature range**"

Add the following as definitions:

"**3.1.15 class 1,0 meter**

"meter which has an error of indication between –2% an + 2% for flow rates Q where $Q_{min} \leq Q < Q_t$, -1 % and +1 % for flow rates Q where $Q_t \leq Q \leq Q_{max}$ and when the errors between Q_t and Q_{max} all have the same sign, they do all not exceed 0,5 %

"**3.1.16 Q_{min}**

"lowest flowrate at which the gas meter provides indications that satisfy the requirements regarding maximum permissible error (MPE)

"**3.1.17 Q_{max}**

"highest flowrate at which the gas meter provides indications that satisfy the requirements regarding MPE

"**3.1.18 Q_t**

"transitional flowrate, the flowrate occurring between the maximum and minimum flowrates at which the flowrate range is divided into two zones, the ‘upper zone’ and the ‘lower zone’. Each zone has a characteristic MPE.

"**3.1.19 Q_r**

"overload flowrate, the highest flowrate at which the meter operates for a short period of time without deteriorating"

3 Clause 4 Meter classification

4.2 Gas meter sizes, rangeability and connection diameter sizes

Delete first sentence and replace with the following:

"Gas meters shall be classified as class 1,0 with the maximum and minimum flow rates and nominal diameters as shown in table 3."

Table 3 – Authorized values of maximum flow rates, corresponding minimum flow rates and nominal diameters

Delete the second column entitled "1:10".

Add the following as a new clause:

"**4.5 Climatic environment**

"The climatic environment ranges for which the meter is designed to perform within the standard performance specification shall be stated."

4 Clause 5 Metrological performance requirements

5.2.1.1 Requirements

Table 5 – Transitional flow rate Q_t

Delete the row for Rangeability "1:10".

Insert the following as a new second paragraph, directly proceeding Table 5:

"When the errors between Q_t and Q_{max} all have the same sign, they shall all not exceed 0,5 %."

5.2.1.2 Test

Table 6 – Test flow rates in % Q_{max}

Delete the first column entitled "1:10".

5.2.2 Stability

Delete title of clause and replace with the following:

"**5.2.2 Metrological Stability** "

5.2.4.1 Requirements

Insert the following as a new final paragraph:

"After the test, the error of indication shall not exceed the maximum permissible error given in Table 4."

5.2.7.1 Requirements

Delete the first and second paragraphs and replace with the following:

"The gas and the environmental (climatic) temperature ranges over which the meter is designed to perform within the standard performance specification shall be stated by the manufacturer. These shall be a minimum temperature range of 40 K for the gas temperature and 50 K for the environmental temperature.

"The upper temperatures (gas and climatic) shall be either 40 °C, 55 °C or 70 °C. The lower temperatures (gas and climatic) shall be either –10 °C, -25 °C or –40 °C."

5 Clause 6 Design and material requirements

6.1 General

Insert the following as new second paragraph:

"A drawing showing the method of metrological sealing, including a method of sealing of all metrological relevant removable accessories shall be part of the documentation for type approval."

6 Clause 7 Meter output

7.2.2 Unit of indication

Delete the first sentence and replace with the following:

"The unit of indication shall be clearly and unambiguously stated on the indicating device (i.e. m^3)."

7.2.3 Readability

Insert the following as a new first paragraph:

"The indicating device shall be easily readable without the use of tools."

7.3.1 General

Insert the following as new second and third paragraphs:

"All impulse generators shall be provided with the means of sealing against unauthorized interference.

"Pulse generators shall be in accordance with EN 60947-5-6 to fulfil the electromagnetic compatibility requirement for the level indicated by the manufacturer."

7 Clause 8 Marking

8.2 Data Plate

Delete indent g) and replace by the following:

"g) operating temperature range *t* …=…°C;"

Insert the following as a new indent, j):

"j) accuracy class."

8 New Clause 9 Documentation

Insert the following text as a new clause, 9:

"**9 Documentation**

"**9.1 General**

"The following information shall be provided with each meter or group of meters used in the same location.

"**9.2 Declaration of conformity**

"The manufacturer shall provide a declaration of conformity to this harmonized Standard and all relevant Directives.

"**9.3 Instruction manual**

"The operating instructions shall be available in written form or electronic format and shall identify the name and address of the manufacturer and the date of issue.

"Each meter, or group of meters, shall be delivered with installation, operation and maintenance manuals, in a language acceptable by the user and easily understandable, giving appropriate information on:

- safe use;
- gas family;
- rated operating conditions;
- possible installation positions;
- mechanical and electromagnetic environment classes;
- safety requirements concerning commissioning and de-commissioning procedures;
- safety requirements on filling/discharge of gas of/from the meter;
- statement if a maintenance is possible and a relevant instruction;