SLOVENSKI STANDARD

SIST EN 12480:2004/A1:2006

01-september-2006

Plinomeri – Plinomeri z rotacijskimi bati – Dopolnilo A1

Gas meters - Rotary displacement gas meters

Gaszähler - Drehkolbengaszähler

Compteurs a gaz - Compteurs a gaz a pistons rotatifs

Ta slovenski standard je istoveten z: **EN 12480:2002/A1:2006**

ICS:

91.140.40 Sistemi za oskrbo s plinom Gas supply systems

SIST EN 12480:2004/A1:2006 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12480:2002/A1

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ICS 91.140.40

English Version

Gas meters - Rotary displacement gas meters

Compteurs à gaz - Compteurs à gaz à pistons rotatifs

Gaszähler - Drehkolbengaszähler

This amendment A1 modifies the European Standard EN 12480:2002; 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.

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

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Contents

Page

Foreword

This document (EN 12480:2002/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 12480:2002 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of an identical text or by endorsement, at the latest by November 2006, and conflicting national standards shall be withdrawn at the latest by November 2006.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.

Original fourth and fifth paragraphs:

Delete.

1 Clause 1 Scope

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 and definitions

3.1.1 rotary displacement meter (RD 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"

3.1.3 flowrate range

Delete definition and replace with the following:

"**3.1.3 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 %"

3.1.12 operational temperature range

Delete the title and replace with the following:

"**operating temperature range**"

3.1.14 transitional flowrate (Q_t)

Delete definition.

Add the following as definitions:

"**3.1.17 Q_{min}**

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

"**3.1.18 Q_{max}**

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

"**3.1.19 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.

"**3.1.20 Q_r**

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

3 Clause 4 Working range

4.1 General

Insert the following as a new first sentence:

"Gas meters shall be classified according class 1,0."

4.2 Flowrate range

Table 2

Delete the column "1:10".

4.4 Temperature range

Delete current text and replace with the following:

"All meters shall be capable of meeting the requirements for a minimum ambient temperature range of -10 °C to +40 °C and a minimum gas temperature range of 40 K and minimum storage temperature range of -20 °C to +60 °C (see 6.3.4). The gas temperature range shall be within the ambient temperature range.

"The manufacturer shall declare the gas temperature range and the ambient temperature range.

"The manufacturer may declare a wider ambient temperature range using a minimum temperature of –10 °C -25 °C or -40 °C and a maximum temperature of 40 °C, 55 °C or 70 °C) and/or a wider storage temperature range. The meter shall be capable of meeting the requirements over this declared wider range."

Renumber tables, and references to Tables, accordingly, e.g. Table 4 becomes Table 3 etc…. .

4 Clause 5 Metrological performances

5.1.1 Requirements

Table 5 (*new Table 4)*

In the first column, entitled ***"Flowrate range****", delete the sign* "≤".

Insert the following as new third paragraph, directly proceeding the new Table 4:

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

5.1.2 Test

In indent a) 1) make the following change:

Change the reference to "1:10" to read "1:20".

5 Clause 6 Construction and material

Delete the title of clause and replace with the following:

"**6 Design and manufacturing**"

6.1 General

Insert the following as a new second paragraph:

"A sealing drawing is part of the documentation for type approval. It shall include the metrological sealing as well as the sealing of all metrological relevant removable accessories. "

New clause 6.3.7 Transportation and storage

Insert the following as a new clause "6.3.7 Transportation and storage":

"**6.3.7 Transportation and storage**

"**6.3.7.1 Requirements**

"**6.3.7.1.1** The meter connections shall be fitted with suitable covers to prevent the entry of foreign matter during transportation and storage, when tested in accordance with 6.3.7.2.1.

"**6.3.7.1.2** When tested in accordance with 6.3.7.2.2, the meter shall be prepared in such a way as to minimize the possibility of damage to the meter during transportation. For meters with DN 100 connections and above, provisions shall be made to secure the meter in a stable position during transportation.

"**6.3.7.1.3** When tested in accordance with 6.3.7.2.2, the meter shall withstand the handling required during its transport and installation. After the test it shall still comply with the following requirements:

a) error shall be within the metrological repeatability limits (see 5.3.1);

b) external leak tightness shall be in accordance with 6.3.3.

"**6.3.7.2 Tests**

"**6.3.7.2.1** By visual inspection.

"**6.3.7.2.2** The meter, in its normal packaging, shall be dropped vertically, from rest, on to a flat, hard, horizontal floor from a height of 0,2 m. The dropping positions are selected to prevent damage to external accessories of the meter."

New clause 6.6 Resistance to high temperature (optional)

Insert the following as a new clause, "6.6 Resistance to high temperature (optional)":

"If the manufacturer declares that the meter is resistant to high temperatures, the meter shall comply with Annex C."

6 Clause 7 Meter output

7.1.1 General

Delete first paragraph and replace with the following:

"The meters, covered by this standard, shall include an integral, non-resetable and non-volatile means (index) of recording the volume of gas measured."

Delete the sixth paragraph and replace by the following:

"The number of digits in the counter shall be such that it can show, to within one unit of the last digit, a volume of not less than 8000 h at Q_{max}."

7.4.1 General

Insert the following as new tenth and eleventh paragraphs:

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

"All pulse generators shall be provided with the means of plugging and sealing against unauthorized interference."

7.4.3 Specification for high frequency pulse generator

Final paragraph:

Delete.

7.4.4 Electrical Connections

Insert the following as the final sentence:

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

7 Clause 9 Marking

9.1 General

Delete items e) and f) and replace with the following:

"e) accuracy class;

"f) maximum flow rate: Q_{max}=…m³/h and the minimum flow rate: Q_{min}=…m³/h;"

8 New Clause 10 Documentation

New clause 10 Documentation

Insert the following as a new clause, "10 Documentation":