SLOVENSKI STANDARD
SIST EN 12405-1:2005/A1:2007

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Plinomeri - Korektorji - 1. del: Volumska konverzija - Dopolnilo A1

Gas meters - Conversion devices - Part 1: Volume conversion

Gaszähler - Umwerter - Teil 1 : Volumenumwerter

Compteurs a gaz - Dispositifs de conversion - Partie 1 : Conversion de volume

Ta slovenski standard je istoveten z: **EN 12405-1:2005/A1:2006**

ICS:

91.140.40 Sistemi za oskrbo s plinom Gas supply systems

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English Version

Gas meters - Conversion devices - Part 1: Volume conversion

Compteurs à gaz - Dispositifs de conversion - Partie 1 : Conversion de volume

Gaszähler - Umwerter - Teil 1 : Volumenumwertung

This amendment A1 modifies the European Standard EN 12405-1:2005; it was approved by CEN on 6 July 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.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

Replace the first three paragraphs by the following ones:

This document (EN 12405-1:2005/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 12405-1:2005 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2007, and conflicting national standards shall be withdrawn at the latest by February 2007.

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 2004/22, 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.

Delete the next to the last paragraph:

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

1 Scope

After third paragraph insert:

This document is not relevant to temperature conversion integrated into gas meters which only indicate the converted volume.

2 Normative references

Add the following reference:

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

3 Terms and definitions

Replace the definitions for the terms 3.1.2 and 3.1.27 by the following:

3.1.2
base conditions
specified conditions to which the measured quantity of gas is converted

3.1.27
rated operating conditions
values for the measurand and influence quantities making up the normal working conditions of an instrument

Delete NOTE attached to Definition 3.1.27

Add the following definitions:

3.1.35
measurand
particular quantity subject to measurement

3.1.36
critical change value
value at which the change in the measurement result is considered undesirable

Add

3.3 Classification

3.3.1 Mechanical classes

M1 This class applies to instruments used in locations with vibration and shocks of low significance, e.g. for instruments fastened to light supporting structures subject to negligible vibrations and shocks transmitted from local blasting or pile-driving activities, slamming doors, etc.

M2 This class applies to instruments used in locations with significant or high levels of vibration and shock, e.g. transmitted from machines and passing vehicles in the vicinity or adjacent to heavy machines, conveyor belts, etc.

3.3.2 Electromagnetic Environmental classes

E1 This class applies to instruments used in locations with electromagnetic disturbances corresponding to those likely to be found in residential, commercial and light industrial buildings.

E2 This class applies to instruments used in locations with electromagnetic disturbances corresponding to those likely to be found in other industrial buildings.

5.1.3 Gas characteristics

Add:

The manufacturer shall indicate:

— gas family or group;

— maximum operating pressure.

Add new sub-clause:

5.1.4 Base conditions

The manufacturer shall specify the base conditions, or range of base conditions for converted quantities.

Replace title of 5.2 by the following:

5.2 Environmental conditions

5.2.1 Ambient temperature range

Replace text of subclause by the following paragraph:

The manufacturer shall specify the ambient temperature range of the gas-volume conversion device with a minimum temperature range of 50 °C for the climatic environment, and the minimum temperature limit being either -40 °C, -25 °C, -10 °C or 5 °C, and the maximum temperature limit being either 30 °C, 40 °C, 55 °C or 70 °C.

5.2.2 Humidity range

Add:

The manufacturer shall indicate whether the instrument is designed for condensing or non-condensing humidity as well as the intended location for the instrument.

If designed for non-condensing humidity, the device shall meet the requirements of Test A.4.

If designed for condensing humidity, the device shall meet the requirements of Test A.5.

Add the following clauses:

5.2.3 Mechanical environment

The manufacturer shall specify the mechanical class for which the device is intended (M1 or M2) (See 3.3.1).

5.2.4 Electromagnetic environment

The device shall be able to operate under electromagnetic environmental class E2 (See 3.3.2)

5.3 Power supply

Replace text of sub-clause by the following:

The manufacturer shall specify the nominal value of the AC supply and/or the limits of DC supply.

The limits of DC supply shall be compatible with customers' requirements and/or the electricity supply of country of destination.

6 Construction requirements

6.1.1 *Replace in the last sentence of the first paragraph:*

"in 8.5 and 8.6" by "in 8.5".

6.1.3 *Replace in the first indent of the list*:

"that can be altered, or using a specific device" by "that can be updated or by using a specific device".

6.3.1.2 *Add the following item as first indent of the list:*

— the base conditions in the form :

  — T_b = …. K;

  — p_b = …. bar;

Add as last indent of the list:

— the software version.

6.5 Battery powered conversion device

6.5.1 *Replace in the first paragraph:*

" for a minimum of three years" by " for a minimum of five years"

At the end of the NOTE, replace:

"from any output ports" by " from any output and communication ports".

6.6 Security devices and alarms

Add:

6.6.5 Operation of alarms shall be tested accordance to A.16.

7.1 General

Add at the end of 4th paragraph:

In addition it shall be verified that the display (converted and unconverted readings) shall have at least a sufficient number of numerals to ensure that the volume passed during 8 000 hours at the meter's flow rate of Q_{max} (and at the maximum likely conversion factor) does not return all of the numerals to their original position.

8.3.1 General

8.3.1.1 Conversion devices type 1

In the 1st paragraph, replace:

"are as specified" by "shall be as specified".

Replace Table 2 by the following:

Table 2 — Maximum permissible errors (%) for conversion device type 1

Indication or element	Reference Conditions	Rated operating Conditions
Main indication for PT and PTZ conversion	0,5	1
Main indication for T conversion	0,5	0,7

8.3.1.2 Conversion devices type 2

In the 1st paragraph, replace:

"are given" by "shall be as specified".

In Table 3, replace:

"Main indication for T conversion" by "Main indication for T conversion only".

8.3.3 Specific errors for a gas-volume conversion device, type 2

Delete the beginning of second paragraph:

"The manufacturer shall indicate each error (e_f,e_p,e_t) and"

Add:

8.8 Repeatability

The application of the same measurand under the same conditions of measurement shall result in the close agreement of 6 successive measurements (See A.17).

The test shall be carried out with one gas during the accuracy test, at p_{min} and T (See Table A.1).

The difference between the measurement results shall meet the requirement given in Table 4.

Add:

8.9 Reliability

A measuring instrument shall be designed to reduce as far as possible the effect of a defect that would lead to an inaccurate measurement result, unless the presence of such a defect is obvious.