



SLOVENSKI STANDARD

SIST EN 88-1:2008

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Pressure governors and associated safety devices for gas appliances - Part 1: Pressure governors for inlet pressures up to 500 mbar

Druckregler und zugehörige Sicherheitseinrichtungen für Gasgeräte - Teil 1: Druckregler für Eingangsdrücke bis einschließlich 500 mbar

Régulateurs de pression et dispositifs de sécurité associés pour appareils a gaz - Partie 1: Régulateurs de pression pour pression amont inférieure a 500 mbar

Ta slovenski standard je istoveten z: EN 88-1:2007

ICS:

23.060.40 V|æ } á^*~ |æf !lä Pressure regulators

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English Version

Pressure regulators and associated safety devices for gas
appliances - Part 1: Pressure regulators for inlet pressures up to
and including 500 mbar

Régulateurs de pression et dispositifs de sécurité associés
pour appareils à gaz - Partie 1: Régulateurs de pression
pour pression amont inférieure ou égale à 500 mbar

Druckregler und zugehörige Sicherheitseinrichtungen für
Gasgeräte - Teil 1: Druckregler für Eingangsdrücke bis
einschließlich 500 mbar

This European Standard was approved by CEN on 4 February 2007.

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 CEN Management Centre or to any CEN member.

This European Standard 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 CEN Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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

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Foreword

This document (EN 88-1:2007) has been prepared by Technical Committee CEN/TC 58 "Safety and control devices for gas burners and gas burning appliances", 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 May 2008, and conflicting national standards shall be withdrawn at the latest by May 2008.

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.

This document supersedes EN 88:1991.

EN 88 consists of the following parts:

Part 1: Pressure regulators for inlet pressures up to and including 500 mbar;

Part 2: Pressure regulators for inlet pressures above 500 mbar up to and including 5 bar.

This European Standard was revised to make reference to EN 13611 and to increase the pressure range to 500 mbar and connection up to and including DN 250, but not because of any "shortcoming".

This European Standard is intended to be used in conjunction with EN 13611.

SIL classification according to EN 61508 cannot automatically be claimed based upon compliance with this European Standard. Valves with SIL classification do not automatically meet the requirements of this European Standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, 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.

Introduction

This European Standard is a particular standard for pressure regulators for gas burners and gas-burning appliances which cites EN 13611 wherever possible. This European Standard supplements or modifies the corresponding clauses of EN 13611. The construction and performance requirements are as far as applicable in total conformity with EN 13611.

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1 Scope

This European Standard specifies the safety, construction and performance requirements for pressure regulators, (hereafter referred to as regulators), intended for use with gas burners and gas burning appliances using fuel gases of the 1st, 2nd and 3rd families. This European Standard covers type testing only. It also gives information necessary for the purchaser and user.

This European Standard is applicable to regulators, which may be tested independently of these appliances, having a connection size up to and including DN 250 and a declared maximum working pressure up to and including 500 mbar.

The methods of test given in this European Standard are intended for product type testing only. Tests intended for production testing are not specifically included.

Regulators intended to be used on installations for the 3rd family gases are also covered by EN 13785 and EN 13786.

This European Standard does not cover:

- a) pressure regulators connected directly to mains pipework or to a container that maintains a standard distribution pressure;
- b) pressure regulators intended for gas appliances to be installed out-of-doors and exposed to the environment;
- c) pressure regulators which use electrical auxiliary energy.

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2 Normative references

The following referenced documents are indispensable for the application 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 13611:2007, *Safety and control devices for gas burners and gas burning appliances — General requirements*

EN ISO 228-1:2003, *Pipe threads where pressure tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation (ISO 228-1:2000)*

ISO 7-1:1994, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 7005-2:1988, *Metallic flanges — Part 2: Cast iron flanges*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 13611:2007 and the following apply.

3.1 Pressure regulators

3.1.1

pressure regulator

device which maintains the outlet pressure constant independent of the variations in inlet pressure and/or flow rate within defined limits

NOTE See Annex A.

3.1.2

adjustable pressure regulator

pressure regulator provided with means for changing the outlet pressure setting

3.2 Pressures

3.2.1 General

3.2.1.1

test pressure

pressure to be applied during a test

3.2.1.2

pressure drop

pressure difference with valve open to its fullest extent

3.2.2 Pressure regulator pressures

3.2.2.1

maximum inlet pressure

$p_{1 \max}$

highest inlet pressure declared by the manufacturer at which the regulator may be operated

3.2.2.2

minimum inlet pressure

$p_{1 \min}$

lowest inlet pressure declared by the manufacturer at which the regulator may be operated

3.2.2.3

inlet pressure range

range of inlet pressure between the maximum and minimum values

3.2.2.4

maximum outlet pressure

$p_{2 \max}$

maximum outlet pressure declared by the manufacturer

3.2.2.5

minimum outlet pressure

$p_{2 \min}$

minimum outlet pressure declared by the manufacturer

3.2.2.6

outlet pressure range

range of outlet pressure between the maximum and minimum values

3.2.2.7

setting point

inlet and outlet pressures declared by the manufacturer at which the pressure regulator is initially adjusted for test purposes at a declared flow rate

3.2.2.8

inlet setting pressure

inlet pressure at which the regulator is set for test purposes

3.2.2.9

outlet setting pressure

outlet pressure to which the regulator is set for test purposes

3.3 Pressure regulator flow rates

3.3.1

setting flow rate

flow rate declared by the manufacturer, at which the pressure regulator is set for test purposes at declared inlet and outlet pressures

3.3.2

flow rate

volume flowing through the pressure regulator in unit time

NOTE The nominal connection size of a pressure regulator does not necessarily determine its flow rate range.

3.3.3

maximum flow rate

q_{\max}

maximum rate, as a function of inlet and outlet pressures, declared by the manufacturer and expressed in m³/h of air at standard conditions

NOTE For a non-adjustable pressure regulator there is only one maximum flow rate.

3.3.4

minimum flow rate

q_{\min}

minimum rate, as a function of inlet and outlet pressures, declared by the manufacturer and expressed in m³/h of air at standard conditions

NOTE For a non-adjustable pressure regulator there is only one minimum flow rate.

3.3.5

flow rate range

range of flow rate between the maximum and minimum values

3.4 Component parts

3.4.1

diaphragm

flexible member which, under the influence of the forces arising from loading and pressure, operates the valve

3.4.2

diaphragm plate

stiffening plate fitted to the diaphragm

3.4.3

valve

device which varies the gas flow directly

3.5 Performance

3.5.1

lock-up pressure

outlet pressure at which a pressure regulator closes when the outlet of the pressure regulator is sealed

NOTE The increase in outlet pressure is expressed either in mbar or as a percentage

3.5.2

put out of action

annul the operation of the regulator by fixing the valve in the full open position

4 Classification

4.1 Classes of pressure regulator

A pressure regulator is classified as class A, class B or class C according to the appropriate outlet pressure and flow rate limits given in 7.7.1.

4.2 Groups of pressure regulator

Pressure regulators shall be classified by group in accordance with EN 13611:2007, 4.2.

4.3 Designation

A pressure regulator is designated by class and group, for example as 'A2' for a pressure regulator of class A, group 2.

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5 Units of measurement and test conditions

5.1 Units of measurement

Units of measurement shall be as given in EN 13611:2007, 5.1, 5.2 and 5.3.

5.2 Test conditions

Test conditions shall be in accordance with EN 13611, with the following additional requirement.

When carrying out performance tests at any particular setting, the minimum inlet pressure used shall be at least 2 mbar in excess of the set outlet pressure.

6 Construction requirements

6.1 General

General requirements shall be in accordance with EN 13611:2007, 6.1.

6.2 Construction

6.2.1 General

Construction shall be in accordance with EN 13611:2007, 6.2, with the additional requirements given in 6.2.2 and 6.2.3.

6.2.2 Outlet pressure adjustment

The outlet pressure adjustment shall be readily accessible to authorised persons, but there shall be provision for sealing after adjustment. Means shall be provided to discourage interference by unauthorised persons. If it is claimed by the manufacturer that a regulator can be put out of action, appropriate means shall be provided to put the pressure regulator out of action.

6.2.3 Resistance to pressure

Parts of the regulator that are subjected to inlet pressure under normal operating conditions, or could be subjected to inlet pressure in the event of a failure, shall withstand a pressure equal to the maximum inlet pressure.

6.3 Materials

Materials shall be in accordance with EN 13611:2007, 6.3.

6.4 Gas connections

Gas connections shall be in accordance with EN 13611:2007, 6.4, with the exception of 6.4.2 and 6.4.8.

Equivalent connection sizes shall be as given in Table 1.

NOTE Requirements for strainers are not applicable to pressure regulators.