SLOVENSKI STANDARD
SIST EN 1854:2006

01-september-2006

Nadomeġļa:
SIST EN 1854:1997
SIST EN 1854:1997/A1:1999

Tlaļna zaznavala za plinske gorilnike in plinske aparate

Pressure sensing devices for gas burners and gas burning appliances

Druckwächter für Gasbrenner und Gasgeräte

Dispositifs de surveillance de pression pour bruleurs a gaz et appareils a gaz

Ta slovenski standard je istoveten z: EN 1854:2006

ICS:

23.060.40	Tlaļni regulatorji	Pressure regulators
27.060.20	Plinski gorilniki	Gas fuel burners

SIST EN 1854:2006 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1854

April 2006

ICS 23.060.40

Supersedes EN 1854:1997

English Version

Pressure sensing devices for gas burners and gas burning appliances

Dispositifs de surveillance de pression pour brûleurs à gaz et appareils à gaz

Druckwächter für Gasbrenner und Gasgeräte

This European Standard was approved by CEN on 27 February 2006.

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.

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 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

Ref. No. EN 1854:2006: E

Contents

Page

Foreword

This European Standard (EN 1854:2006) 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 October 2006, and conflicting national standards shall be withdrawn at the latest by October 2006.

This European Standard supersedes EN 1854:1997.

This European Standard 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 European Standard.

The following changes from the superseded version have been included:

— operating pressure was increased from 4 bar to 5 bar;

— editorial changes due to the application of EN 13611: General requirements;

— technical changes due to the updating of the normative references, in particular the requirement for elastomers in contact with gas to conform to EN 549.

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.

Introduction

This European Standard is a particular standard for specific controls for gas burners and gas burning appliances which cites EN 13611 "Safety and control devices for gas burners and gas-burning appliances – General requirements" 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.

1 Scope

This European Standard specifies requirements and test methods for pressure sensing devices (PSDs) for the control of pressures of combustible gases of the first, second and third families, air, combustion products and mixtures thereof for operating pressures up to 5 bar. It covers all types of PSD including electronic, differential and inferential types.

The requirements for 'S' class PSD are intended to meet the need for increased reliability for steam boilers. The methods of test given in this European Standard are intended for product type testing. Tests intended for production testing are not specifically included.

This European Standard covers type testing only.

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 298:2003, *Automatic gas burner control systems for gas burners and gas burning appliances with or without fans*

EN 549, *Rubber materials for seals and diaphragms for gas appliances and gas equipment*

EN 13611:2000, *Safety and control devices for gas burners and gas-burning appliances — General requirements*

ENV 14459, *Method of risk analysis and recommendations for the use of electronics in systems for the control of gas burners and gas burning appliances*

EN 60529:1991, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)*

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

EN 60730-2-6:1995, *Automatic electrical controls for household and similar use — Part 2-6: Particular requirements for automatic electrical pressure sensing controls including mechanical requirements (IEC 60730-2-6:1991, modified)*

EN 61058-1, *Switches for appliances — Part 1: General requirements (IEC 61058-1:2000 + A1:2001, modified)*

EN ISO 75 (all parts), *Plastics — Determination of temperature of deflection under load*

ISO 4400, *Fluid power systems and components — Three-pin electrical plug connectors with earth contact — Characteristics and requirements*

ISO 6952, *Fluid power systems and components — Two-pin electrical plug connectors with earth contact — Characteristics and requirements*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 13611:2000 and the following apply.

3.1
pressure sensing device (PSD)
device which senses pressure and provides a signal

3.2
maximum working pressure (p_{max})
maximum pressure, positive or negative, the PSD can sustain without damage as declared by the manufacturer

3.3
operating pressure
pressure at which the PSD operates or switches

3.4
highest set point
highest declared pressure to which the PSD can be adjusted

3.5
lowest set point
lowest declared pressure to which the PSD can be adjusted

3.6
operating pressure range (set point range)
range of adjustment of the PSD between the highest and lowest set points

3.7
upper operating pressure
pressure at which the PSD operates or switches during an increase in pressure

3.8
lower operating pressure
pressure at which the PSD operates or switches during a decrease in pressure

3.9
operating differential
difference between the upper and lower operating pressures

3.10
deviation
difference between the declared or indicated operating pressure and the actual pressure measured before the endurance test expressed as a percentage of the declared or indicated operating pressure

3.11
drift
difference between the measured values of the operating pressure before and after the endurance test expressed as a percentage of the operating pressure before the endurance test

4 Classification

The PSD shall conform to one of two classes:

— standard class;

— class S

Class S PSDs shall have a higher level of performance and mechanical stability as specified in 6.1.12 and 7.4.6.

NOTE Class of electrical protection and similar are covered by Clause 8 of EN 13611:2000.

5 Units of measurement and test conditions

5.1 Units of measurement

Units of measurement shall be as given in EN 13611:2000, 5.1, 5.2 and 5.3, with the exception that there are no bending moment requirements applicable to PSDs.

5.2 Test conditions

Test conditions shall be in accordance with EN 13611:2000, 5.4.

All measured values shall be corrected to the standard conditions:

15 ºC, 1 013 mbar, dry.

6 Construction

6.1 General

6.1.1 Design, manufacture and assembly

The PSD shall be designed, manufactured and assembled in accordance with EN 13611:2000, 6.1 and 6.2.1.

6.1.2 Appearance

In terms of appearance, the PSD shall conform to EN 13611:2000, 6.2.1.

6.1.3 Access to internal parts

The PSD shall be designed such that access to internal parts requires the use of tools.

6.1.4 Dismantling and reassembly

Parts that require dismantling (e.g. for servicing) shall conform to EN 13611:2000, 6.2.9.

6.1.5 Moving parts

The function of moving parts (e.g. diaphragms, bellows) shall conform to EN 13611:2000, 6.2.7.

6.1.6 Sealing caps

Sealing caps of adjusters, if used, shall conform to EN 13611:2000, 6.2.8.

6.1.7 Breather holes

Breather holes shall conform to EN 13611:2000, 6.2.3.

6.1.8 Internal diameter of apertures of pressure transmission compartments

Apertures of all compartments used for pressure transmission shall have a minimum internal diameter of 0,7 mm, except in cases where a smaller aperture is protected against fouling and clogging by suitable measures, e.g. external filters (see 8.2).

6.1.9 PSDs with manual reset

PSDs with manual reset shall function by an action that is independent of manipulation or position of the reset member. Reset shall be manual.

NOTE Manual reset may require the use of a tool.

6.1.10 PSDs for combustible gas

6.1.10.1 General

PSDs for combustible gas shall, in addition to the requirements for PSDs for air, combustion products and mixtures thereof, conform to 6.1.10.2 to 6.1.10.6.

6.1.10.2 Holes

Holes for screws, pins etc., shall conform to EN 13611:2000, 6.2.2.

6.1.10.3 Closure parts

Closure parts shall conform to EN 13611:2000, 6.2.9 (second paragraph).

6.1.10.4 Screwed fastenings

Screwed fastenings shall conform to EN 13611:2000, 6.2.5.

6.1.10.5 Jointing

The use of jointing compounds, soldering or other processes shall be performed in accordance with EN 13611:2000, 6.2.6.

6.1.10.6 Pressure test nipples

Pressure test nipples, where fitted, shall conform to EN 13611, 6.4.7.

6.1.11 Sensed medium

The manufacturer shall declare the nature of the sensed medium for which the PSD is designed.

6.1.12 S Class PSD

The construction requirements for S class PSDs shall be as follows:

a) switching parts shall have the characteristics of a snap-acting contact as defined in EN 60730-1 and EN 61058-1;