SLOVENSKI STANDARD
SIST EN 126:2012

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Nadomešča:
SIST EN 126:2004

Večnamenske naprave za nadzor plinskih aparatov

Multifunctional controls for gas burning appliances

Mehrfachstellgeräte für Gasgeräte

iTeh STANDARD PREVIEW

Equipements multifonctionnels pour les appareils à gaz

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Ta slovenski standard je istoveten z: EN 126:2012

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ICS:

23.060.99	Drugi ventili	Other valves
27.060.20	Plinski gorilniki	Gas fuel burners

SIST EN 126:2012 **en,fr,de**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD

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English Version

Multifunctional controls for gas burning appliances

Equipements multifonctionnels pour les appareils à gaz

Mehrfachstellgeräte für Gasgeräte

This European Standard was approved by CEN on 30 December 2011.

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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-CENELEC Management Centre has the same status as the official versions.

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 126:2012) has been prepared by Technical Committee CEN/TC 58 “Safety and control devices for burners and appliances burning gaseous or liquid fuels”, 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of an identical text or by endorsement, at the latest by September 2012, and conflicting national standards shall be withdrawn at the latest by September 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 126:2004.

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 refers to clauses of EN 13611:2007+A2:2011 or adapts it by stating "with the following modification", "with the following addition", "is replaced by the following" or "is not applicable" in the corresponding clause. This Document adds clauses or sub-clauses to the structure of EN 13611:2007+A2:2011 which are particular to this standard, i.e. sub-clauses or annexes which are additional to those in EN 13611:2007+A2:2011 are numbered starting from 101 or are designated as Annex AA, BB, CC etc. It should be noted that these clauses and sub-clauses are not indicated as an addition.

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It should be noted that the following significant technical changes have been made to the document since the previous edition:

a) alignment with EN 13611:2007+A2:2011;

b) the maximum inlet pressure is increased to 50 kPa (500 mbar);

c) it is no longer necessary for at least one of the control functions to be a shut-off function but combinations of electronic controls only are excluded;

d) introduction of Application Control Function in the scope (see 3.103, 6.103);

e) referencing the control standards as shown in Figure 1 in total, instead of referencing these standards clause by clause.

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, Croatia, 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, Turkey and the United Kingdom.

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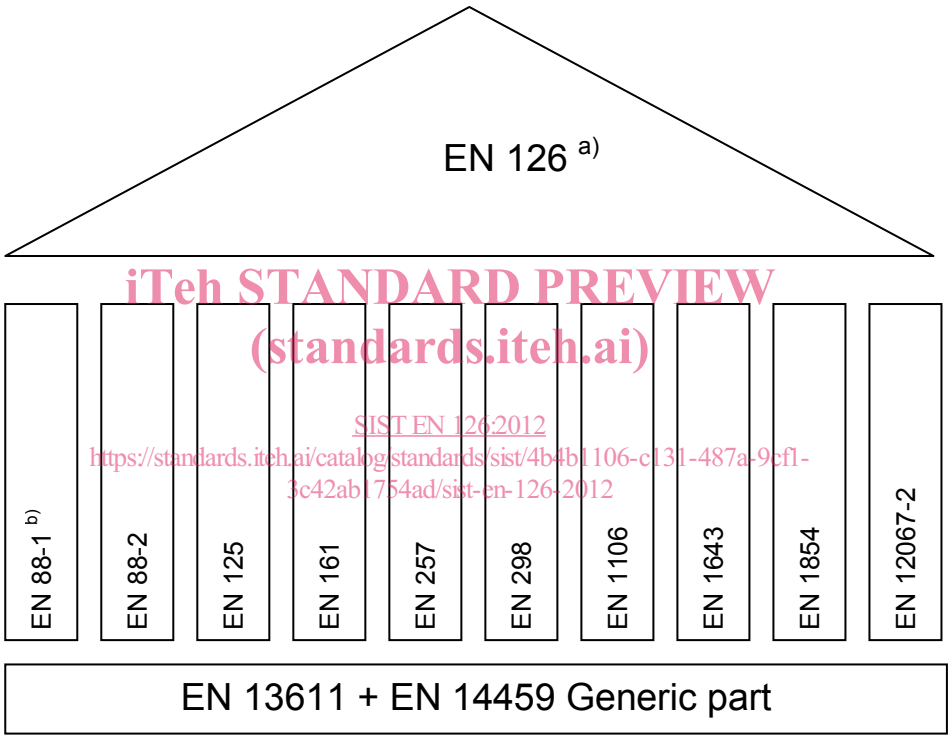
Introduction

The general requirements for controls are given in EN 13611:2007+A2:2011 and methods for classification and assessment for new controls and control functions are given in EN 14459:2007, Clauses 1 up to and including 7.13 (see Figure 1).

The requirements for controls are given in the specific control standard

EN 126 (see Figure 1) specifies multifunctional controls with two or more controls and Application Control Functions, e.g. the Gas Shut-off Control Function, being inherently multifunctional controls, see 6.103.



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Key

a) This European Standard specifies *'automatic water operated gas valves'* in Annex AA
b) EN 12067-1 (Gas/air ratio controls) and EN 12078 (Zero governors) were merged into the new EN 88-1(pressure regulators).

Figure 1 — Standards house

Each control integrated in the MFC shall meet the applicable requirements of the relevant control standard(s). In addition, this standard covers requirements for the safety related interactions between the different devices.

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1 Scope

This European Standard specifies the safety, construction and performance requirements for multifunctional controls intended for use with gas burners, gas appliances and similar use, hereafter referred to as ”MFC”.

This European Standard is applicable to MFC with declared maximum inlet pressures up to and including 50 kPa (500 mbar) of nominal connection sizes up to and including DN 150 for use with one or more fuel gases in accordance with EN 437.

MFC consist of two or more functions, at least one of which is a mechanical control, as specified in the relevant control standards (see Figure 1). MFC consisting only of electronics are not covered by EN 126 (an example is a combination of functions according to EN 298 and EN 1643).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 26:1997, *Gas-fired instantaneous water heaters for the production of domestic hot water, fitted with atmospheric burners*

EN 88-1, *Pressure regulators and associated safety devices for gas appliances — Part 1: Pressure regulators for inlet pressures up to and including 50 kPa*

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EN 125, *Flame supervision devices for gas burning appliances — Thermoelectric flame supervision devices*

EN 161, *Automatic shut-off valves for gas burners and gas appliances*

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EN 257, *Mechanical thermostats for gas-burning appliances*

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

EN 437, *Test gases — Test pressures — Appliance categories*

EN 1106, *Manually operated taps for gas burning appliances*

EN 1643, *Valve proving systems for automatic shut-off valves for gas burners and gas appliances*

EN 1854, *Pressure sensing devices for gas burners and gas burning appliances*

EN 12067-2, *Gas/air ratio controls for gas burners and gas burning appliances — Part 2: Electronic types*

EN 13611:2007+A2:2011, *Safety and control devices for gas burners and gas-burning appliances — General requirements*

EN 14459:2007, *Control functions in electronic systems for gas burners and gas burning appliances — Methods for classification and assessment*

ISO 262, *ISO general purpose metric screw threads -- Selected sizes for screws, bolts and nuts*

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3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13611:2007+A2:2011and the following apply.

3.101
control
device which provides functionality as described in the specific control standard

3.102
multifunctional control
MFC
combination of two or more controls and/or Application Control Function(s) whereby the functional parts cannot operate if separated

3.103
application control function
ACF
function to protect against harm(s) originating from a specific hazard by providing safe operation of gas burners and gas burning appliances

Note 1 to entry: The assembly to provide this function may consist of a combination of controls and/or multifunctional control(s) (e.g. actuators, sensors and control electronics).

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3.104
gas shut-off function
Appliance Control Function which switches the gas flow off

Note 1 to entry: The assembly to provide this Application Control Function may consist of a combination of the following parts: closure members, actuators, sensors and the control electronics.

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3.105
automatic shut-off valve
valve which opens when energized and closes automatically when de-energized

3.106
closing mechanism
part of the actuating mechanism that operates the closure member to the closed position guaranteeing the gas shut-off function with the required tightness

4 Classification

4.1 Classes of control

Shall be according to EN 13611:2007+A2:2011, 4.1 with the following addition:

The MFC is classified according to the classification of the standards as listed in 6.102.1.

4.2 Groups of control

Shall be according to EN 13611:2007+A2:2011, 4.2.

4.3 Classes of control functions

Shall be according to EN 13611:2007+A2:2011, 4.3 with the following addition:

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Applicable classifications for MFCs are derived from the classification of the respective controls and/or ACF's, as listed in 6.102.1 and 6.103, that are defined to be part of the MFC..

5 Units of measurement and test conditions

Shall be according to EN 13611:2007+A2:2011, Clause 5.

6 Construction requirements

EN 13611:2007, Clause 6 is replaced with the following:

6.101 General

MFC consist of:

— a combination of controls according to 6.102;

— a single ACF (see definition 3.103);

— a combination of Control(s) and/or Application Control Function(s) according to 6.103.

Requirements for construction of the controls incorporated in the MFC are covered in the relevant control standards. Where no control standard is available the requirements of EN 13611:2007+A2:2011 and EN 14459:2007 are applicable.

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In addition, this standard covers in 6.102.2 requirements for the safety related interactions between the different functions of the MFC.

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Where there are no requirements for these interactions between two or more controls, a risk assessment shall be performed as given in 6.102.2.2 to identify additional requirements.

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

Blockage of auxiliary canals and orifices shall not lead to an unsafe situation otherwise they shall be protected against blockage by suitable means.

6.102 MFC based on combination of controls

6.102.1 General

MFC are based on a combination of the functionality provided by the controls as given by the following list:

— automatic shut-off valves according to EN 161;

— pressure regulators according to EN 88-1, including previous requirements from EN 12078 – Zero pressure regulators and EN 12067-1 – Pneumatic gas/air ratio controls;

— manually operated taps according to EN 1106;

— thermo electric flame supervision devices according to EN 125;

— mechanical thermostats according to EN 257;

— pressure switches and electronic pressure sensing devices according to EN 1854;

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— electronic gas/air ratio control systems according to EN 12067-2;

— automatic burner control system according to EN 298;

— valve proving systems according to EN 1643;

— water operated gas valves according to Annex AA.

6.102.2 Interaction between Controls

6.102.2.1 Closing mechanism for closure member

Each automatic shut-off valve shall consist of a separate, independent closing mechanism controlling only one closure member. A check of internal leak-tightness shall be possible on each of the automatic shut-off valves. If two or more closure members are controlled by one closing mechanism the valve is considered as one automatic shut-off valve.

6.102.2.2 Interactions between functions

The MFC shall provide the same overall safety level as the individual functions would have provided for the complete application.

This shall be shown by a risk assessment, taking into account the failure modes of each function that interacts with other function(s).

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Any interference between functions shall be assessed with respect to both, the functional condition and any fault conditions.

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Mechanical functions shall not affect the safety level of electronic functions and vice versa.

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The interaction of an electronic control function with other electronic control functions shall be assessed for interference taking into account the amount of faults related to the safety class of that control function. These fault(s) are introduced in the interface of interacting control functions.

The result of the assessment shall provide a set of conditions under which the new combination of functions can be used.

NOTE 1 These conditions involve construction requirements, safety requirements, performance requirements and test methods, and additional information regarding marking, installation and operating instructions.

NOTE 2 For combinations that are certified, this requirement is considered to be met.

6.102.3 Alternative gas connections

Connections of controls according to EN 1106 and EN 125 can alternatively be made according to the following requirements:

- the joint can only be removed with tools;
- the complete connection including fixing part is tested and;
- the joint is inaccessible to the end user.

For flange or saddle-clamp joints, screws in accordance with ISO 262:1998 shall be used.