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Multifunctional controls for gas burning appliances

Mehrfachstellgeräte für Gasgeräte

Equipements multifonctionnels pour les appareils à gaz

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ICS:

23.060.40 Tlačni regulatorji Pressure regulators

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Multifunctional controls for gas burning appliances

Equipements multifonctionnels pour les appareils à gaz

Mehrfachstellgeräte für Gasgeräte

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 58.

If this draft becomes a European Standard, 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.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

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Contents

Page

Figures

Tables

Foreword

This document (prEN 126:2010) 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 document is currently submitted to the CEN Enquiry.

This document will supersede 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 is intended to be used in conjunction with EN 13611:2007. This document refers to clauses of EN 13611:2007 or adapts clauses by stating “with the following modification”, “with the following addition”, “is replaced by the following” or "is not applicable" in the corresponding clause. This European Standard adds clauses or sub clauses to the structure of EN 13611:2007 which are particular to this standard. It should be noted that these clauses and sub clauses are not indicated as an addition.

It should be noted that the following significant technical changes compared to the previous edition have been

a) incorporated in this European Standard:

b) Alignment with EN 13611:2007;

c) Updating of Clause 2, Normative references;

Referencing the CEN/TC 58 control standards in total, instead of referencing these standards clause by clause.

The general requirements for controls are given in EN 13611 and methods for classification and assessment for new controls and control functions are given in EN 14459, clauses 1 up to and including 7.13 (see Figure 1, “foundation”).

The specific requirements for controls are given by TC 58 standards (e.g. pressure regulators, automatic shut-off valves, automatic burner controls, etc.) (see Figure 1, “columns or pillars”).

EN 126 (see Figure 1 "roof") specifies multifunctional controls with two or more controls and control functions, e. g. the gas shut-off control function, being inherently multifunctional controls, see clause 6.103.

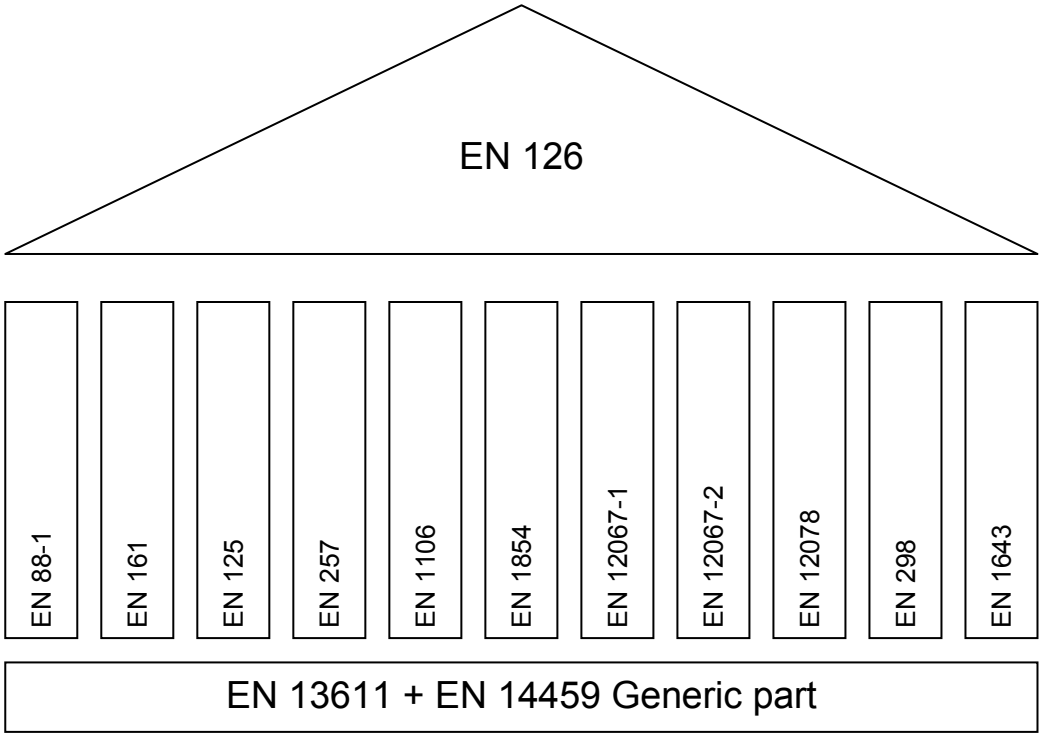

Figure 1 — Standards house

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.

1 Scope

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

This European Standard is applicable to multifunctional controls 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 only consisting of electronics are not covered by EN 126 (an example is a combination of EN 298 and EN 1643).

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 26:1997+AC:1998+A1:2000+A2:2004+A3:2006, *Gas-fired instantaneous water heaters for the production of domestic hot water, fitted with atmospheric burners*

prEN 88-1:2009, *Pressure regulators and associated safety devices for gas appliances — Part 1: Pressure regulators for inlet pressures up to and including 500 mbar*

EN 125:2010, *Flame supervision devices for gas burning appliances — Thermo-electric flame supervision devices*

EN 161:2007, *Automatic shut-off valves for gas burners and gas appliances*

EN 257:2010, *Mechanical thermostats for gas-burning appliances*

prEN 298:2010, *Automatic burner control systems for burners and appliances burning gaseous or liquid fuels*

EN 1106:2010, *Manually operated taps for gas burning appliances*

EN 1643:2000, *Valve proving systems for automatic shut-off valves for gas burners and gas appliances*

EN 1854:2010, *Pressure sensing devices for gas burners and gas burning appliances*

EN 12067-2003: *Gas/air ratio controls for gas burners and gas burning appliances — Part 2: Electronic types*

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

3 Terms and definitions

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

3.101
Control
device which provides functionality as described in the relevant CEN/TC 58 control standard

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

NOTE Multifunctional controls are based on a combination of the functionality provided by the controls as given by the relevant TC 58 control standard.

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

NOTE 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).

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

NOTE The assembly to provide this control function may consist of a combination of the following parts: closure members, actuators, sensors and the control electronics.

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

[EN 161:2010, 3.101]

4 Classification

4.1 Classes of control

Shall be according to EN 13611:2007, 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, 4.2.

4.3 Classes of control functions

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

The MFC is classified according to the control function(s) as listed in 6.103.2.

5 Units of measurement and test conditions

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

6 Construction requirements

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

6.101 General

Multifunctional controls consist of:

— a combination of controls according to 6.102

— a single control function (see definition 3.103)

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

Requirements for construction of multifunctional controls (MFC) are covered in the relevant control standards.

Where no control standard is available the requirements of EN 13611 and EN 14459 are applicable.

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

Where there are no requirements for these interactions between two or more controls, a risk assessment has to be performed as given in 6.102.2 to identify additional requirements.

6.102 MFC based on combination of controls

6.102.1 General

Multifunctional controls 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

— zero pressure regulators according to EN 12078

— 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

— pneumatic gas air ratio controls according to EN 12067-1

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

— automatic burner control system according to EN 298