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JUHTSEADMED. OSA 1: RÕHUREGULAATORID
SISENDRÕHULE KUNI 50 KPA (K.A)

Safety and control devices for gas burners and gas
burning appliances - Part 1: Pressure regulators for
inlet pressures up to and including 50 kPa

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 88-1:2022 sisaldab Euroopa standardi EN 88-1:2022 ingliskeelset teksti.	This Estonian standard EVS-EN 88-1:2022 consists of the English text of the European standard EN 88-1:2022.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 12.10.2022.	Date of Availability of the European standard is 12.10.2022.
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English Version

Safety and control devices for gas burners and gas burning appliances - Part 1: Pressure regulators for inlet pressures up to and including 50 kPa

Dispositifs de sécurité et de contrôle pour les brûleurs à gaz et appareils utilisant des combustibles gazeux -
Partie 1 : Régulateurs de pression pour pression amont inférieure ou égale à 50 kPa

Sicherheits- und Regeleinrichtungen für Gasbrenner und Gasgeräte - Teil 1: Druckregler für Eingangsdrücke bis einschließlich 50 kPa

This European Standard was approved by CEN on 8 August 2022.

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

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents

Page

European foreword.....	4
Introduction	6
1 Scope	8
2 Normative references	9
3 Terms and definitions.....	9
4 Classification	13
4.1 Classes of control	13
4.2 Groups of control	13
4.3 Classes of control functions	14
4.4 Types of <i>DC</i> supplied controls.....	14
5 Test conditions and uncertainty of measurements	14
6 Design and construction	14
6.1 General	14
6.2 Mechanical parts of the control.....	14
6.3 Materials.....	16
6.4 Gas connections.....	16
6.5 Electrical parts of the control.....	16
6.6 Protection against internal faults for the purpose of functional safety.....	16
7 Performance.....	17
7.1 General	17
7.2 Leak-tightness	17
7.3 Torsion and bending	17
7.4 Rated flow rate	17
7.5 Durability	18
7.6 Performance tests for electronic controls.....	18
7.7 Long-term performance for electronic controls	18
7.8 Data exchange.....	18
7.101 Pressure regulator performance	18
7.102 Pneumatic gas/air ratio pressure regulator performance	25
8 Electrical requirements	29
8.1 General	29
8.2 Protection by enclosure	29
8.101 Plug connections.....	29
9 Electromagnetic compatibility (EMC)	29
9.1 Protection against environmental influences.....	29
9.2 Supply voltage variations below 85 % of rated voltage	29
9.3 Voltage dips and interruptions.....	29
9.4 Supply frequency variations.....	29
9.5 Surge immunity tests	30
9.6 Electrical fast transient/burst	30
9.7 Immunity to conducted disturbances induced by radio frequency fields.....	30
9.8 Immunity to radiated disturbances induced by radio frequency fields.....	30
9.9 Electrostatic discharge tests.....	30
9.10 Power frequency magnetic field immunity tests	30

9.11	Harmonics and interharmonics including mains signalling at a. c. power port, low frequency immunity tests	30
10	Marking, instructions	30
10.1	Marking.....	30
10.2	Instructions.....	31
10.3	Warning notice.....	32
	Annex A (informative) Abbreviations and Symbols	33
	Annex B (informative) Leak-tightness test for gas controls – volumetric method	34
	Annex C (informative) Leak-tightness test for gas controls – pressure loss method.....	35
	Annex D (normative) Calculation of pressure loss into leakage rate	36
	Annex E (normative) Electrical/electronic component fault modes	37
	Annex F (normative) Additional requirements for safety accessories and pressure accessories as defined in EU Directive 2014/68/EU	38
	Annex G (normative) Materials for pressurized parts	39
	Annex H (normative) Additional materials for pressurized parts	40
	Annex I (normative) Requirements for controls used in <i>DC</i> supplied burners and appliances burning gaseous or liquid fuels	41
	Annex J (normative) Method for the determination of a Safety Integrity Level (SIL).....	42
	Annex K (normative) Method for the determination of a Performance Level (PL)	43
	Annex L (informative) Relationship between Safety Integrity Level (SIL) and Performance Level (PL)	44
	Annex M (normative) Reset functions.....	45
	Annex N (informative) Guidance document on Environmental Aspects	46
	Annex O (normative) Seals of elastomer, cork and synthetic fibre mixtures	47
	Annex AA (informative) Typical pressure regulators and pressure regulator parts	48
	Annex BB (informative) Overview of requirements and test conditions (as given in 7.101), and examples of performance curves for pressure regulators.....	49
	Annex ZA (informative) Relationship between this European Standard and the essential requirements of Regulation (EU) 2016/426 aimed to be covered	56
	Bibliography	59

European foreword

This document (EN 88-1:2022) 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 April 2023, and conflicting national standards shall be withdrawn at the latest by October 2025.

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

This document supersedes EN 88-1:2011+A1:2016.

The following significant changes compared to the previous edition have been incorporated in this document:

- a) title changed to be aligned with the title of CEN/TC 58;
- b) alignment with EN 13611:2019;
- c) requirements from EU Directive 2014/68/EU were not adopted;
- d) terms and definitions are aligned with EN 13611:2019;
- e) reference to EN 437 in the scope removed;
- f) EN 88-1, EN 88-2 and EN 88-3 aligned;
- g) 6.5.1 “Electronic parts of the control – General” is applicable;
- h) 7.2.101 and 7.2.102 “External leak-tightness for signal carrying compartment” separation between air and gas signal;
- i) information on life time for safe function (designed lifetime) added to instructions.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

For relationship with EU Directive(s) / Regulation(s), see informative Annex ZA, which is an integral part of this document.

The EN 88 series consists of the following parts:

- EN 88-1, *Safety and control devices for gas burners and gas burning appliances — Part 1: Pressure regulators for inlet pressures up to and including 50 kPa*;
- EN 88-2, *Safety and control devices for gas burners and gas burning appliances — Part 2: Pressure regulators for inlet pressures above 50 kPa up to and including 500 kPa*;
- EN 88-3, *Safety and control devices for gas burners and gas burning appliances — Part 3: Pressure and/or flow rate regulators for inlet pressures up to and including 500 kPa, electronic types*.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Introduction

This document is intended to be used in conjunction with EN 13611:2019.

EN 13611:2019 recognizes the safety level specified by CEN/TC 58 and is regarded as a horizontal standard dealing with the safety, construction, performance and testing of controls for burners and appliances burning gaseous and/or liquid fuels.

The general requirements for controls are given in EN 13611:2019, and methods for classification and assessment for new controls and control functions are given in EN 14459:2021 (see Figure 1). EN 126:2012 (see Figure 1) specifies multifunctional controls combining two or more controls and Application Control Functions, one of which is a mechanical control function. The requirements for controls and Application Control Functions are given in the specific control standard (see Figure 1, control functions).

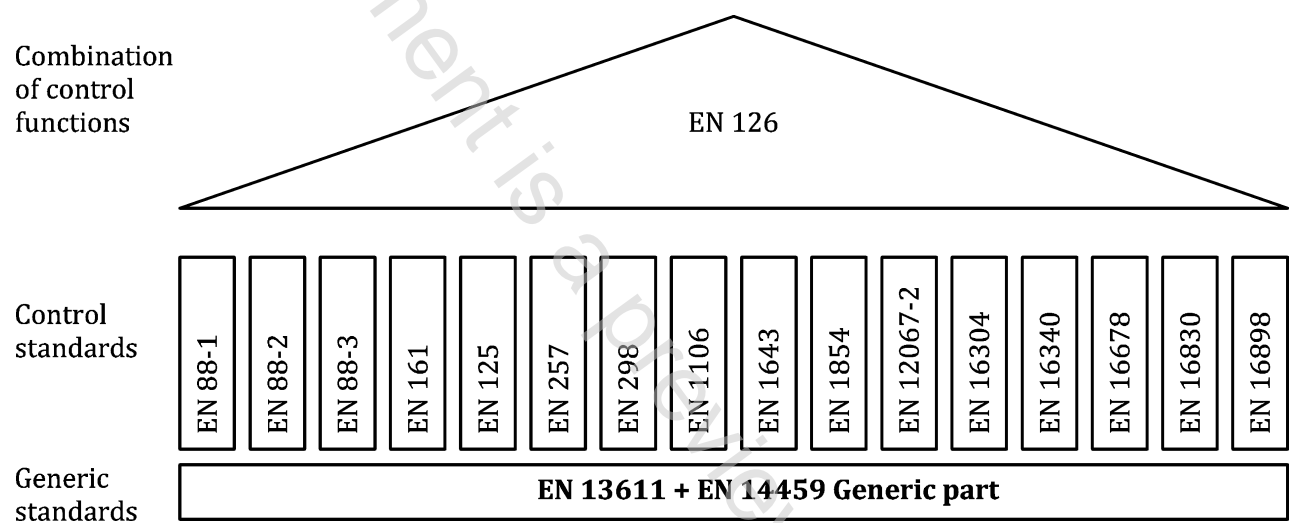


Figure 1 — Interrelation of control standards

EN 13611:2019 should be used in conjunction with the specific standard for a specific type of control (e.g. EN 88-1:2022, EN 88-2:2022, EN 88-3:2022, EN 125:2022, EN 126:2012, EN 161:2022, EN 257:2022, EN 298:2022, EN 1106:2022, EN 1643:2022, EN 1854:—¹, EN 12067-2:2022, EN 16304:2022, EN 16340:2014, EN 16678:2022 and EN 16898:2022), or for controls for specific applications.

EN 13611:2019 can also be applied, so far as reasonable, to controls not mentioned in a specific standard and to controls designed on new principles, in which case additional requirements can be necessary. EN 14459:2021 provides methods for classification and assessment of new control principles.

Primarily in industrial applications it is common practice to rate the safety of a plant based on values describing the likelihood of a dangerous failure. These values are being used to determine Safety Integrity Levels or Performance Levels when the system is being assessed in its entirety.

CEN/TC 58 standards for safety relevant controls do go beyond this approach, because for a certain life time for which the product is specified, designed and tested a dangerous failure is not allowed at all. Failure modes are described and assessed in greater detail.

¹ Under preparation. Stage at the time of publication: FprEN 1854:2022.

Measures to prevent from dangerous situations are defined. Field experience over many decades is reflected in the CEN/TC 58 standards. Requirements of EN 13611:2019 can be considered as proven in practice.

This document refers to clauses of EN 13611:2019 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 document adds clauses or subclauses to the structure of EN 13611:2019 which are particular to this document. Subclauses which are additional to those in EN 13611:2019 are numbered starting from 101. Additional Annexes are designated as Annex AA and Annex BB. It should be noted that these clauses, subclauses and Annexes are not indicated as an addition.

If by reference to EN 13611:2019 the term “control” is given, this term should be read as “pressure regulator”.

1 Scope

EN 13611:2019, Clause 1 applies with the following modification and addition:

Modification:

The 1st paragraph of EN 13611:2019, Clause 1 is replaced by:

This document specifies the safety, design, construction, and performance requirements and testing for pressure regulators and pneumatic gas/air ratio pressure regulators (zero pressure regulators are included as a special type of pneumatic gas/air ratio pressure regulators) for burners and appliances burning one or more gaseous fuels, hereafter referred to as “pressure regulators”.

This document is applicable to pressure regulators with declared maximum inlet pressures up to and including 50 kPa and of nominal connection sizes up to and including DN 250.

Addition:

This document is applicable to:

- pressure regulators which use auxiliary energy;
- pneumatic gas/air ratio pressure regulators, which function by controlling a gas outlet pressure in response to an air signal pressure, air signal differential pressure, and/or to a furnace pressure signal (zero pressure regulators are included as a special type of pneumatic gas/air ratio pressure regulators);
- pneumatic gas/air ratio pressure regulators, which change an air outlet pressure in response to a gas signal pressure or a gas signal differential pressure.

This document is not applicable to:

- pressure regulators connected directly to a gas distribution network or to a container that maintains a standard distribution pressure;
- pressure regulators intended for gas appliances to be installed in the open air and exposed to the environment;
- mechanically linked gas/air ratio controls;
- electronic gas/air ratio controls (EN 12067-2:2022).

The 4th paragraph of EN 13611:2019, Clause 1 is removed.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 161:2022, *Automatic shut-off valves for gas burners and gas appliances*

EN 437:2021, *Test gases — Test pressures — Appliance categories*

EN 13611:2019², *Safety and control devices for burners and appliances burning gaseous and/or liquid fuels — General requirements*

EN 175301-803:2006, *Detail Specification: Rectangular connectors — Flat contacts, 0,8 mm thickness, locking screw not detachable*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13611:2019 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.101

pressure regulator

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

Note 1 to entry: Examples of typical pressure regulators are given in Annex AA.

3.102

direct regulator

pressure regulator where the spring or pressure signal acts directly on the working diaphragm

3.103

indirect regulator

pressure regulator where the spring or pressure signal acts directly on a regulator diaphragm that controls the working diaphragm or the control member with pneumatic, hydraulic or electric means

3.104

adjustable pressure regulator

pressure regulator provided with means for changing the outlet pressure setting

3.105

pneumatic gas/air ratio pressure regulator

pressure regulator, which supplies gas at specified pressure at its outlet in response to control pressure

² As impacted by EN 13611:2019/AC:2021.