GAASIPÕLETITE JA GAASISEADMETE OHUTUS- JA JUHTSEADMED. OSA 2: RÕHUREGULAATORID SISENDRÕHULE 50 KPA KUNI 500 KPA (K.A)

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 88-2:2022 sisaldab Euroopa standardi EN 88-2:2022 ingliskeelset teksti.	This Estonian standard EVS-EN 88-2:2022 consists of the English text of the European standard EN 88-2:2022.
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.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 23.060.40

EUROPEAN STANDARD

NORME EUROPÉENNE

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EN 88-2

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Supersedes EN 88-2:2007

English Version

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

Dispositifs de sécurité et de contrôle pour les brûleurs à gaz et appareils utilisant des combustibles gazeux - Partie 2 : Régulateurs de pression pour pressions amont comprises entre 50 kPa et 500 kPa

Sicherheits- und Regeleinrichtungen für Gasbrenner und Gasgeräte - Teil 2: Druckregler für Eingangsdrücke über 50 kPa bis einschließlich 500 kPa

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

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

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

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European foreword

This document (EN 88-2:2022) 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 88-2:2007.

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

a) scope extended to “Pressure regulators incorporating safety devices”;

b) title changed to be aligned with the title of CEN/TC 58;

c) requirements from EU Directive 2014/68/EU were not adopted;

d) alignment with EN 13611:2019;

e) terms and definitions are aligned with EN 13611:2019;

f) reference to EN 437 removed;

g) requirements and tests added for pressure regulators which use auxiliary energy;

h) classifications according to accuracy, lock-up pressure, and over-pressure shut-off added;

i) Clause 6 extended to “Design and construction”;

j) 6.2.104 “Integral safety shut-off device” added;

k) 6.2.105 “Resistance to pressure” added;

l) 6.2.107 “Creep relief device” added;

m) 6.5.1 “Electronic parts of the control – General” is applicable;

n) 7.2.2 “Test for leak-tightness”, new value for test pressure;

o) design of all figures adapted to design of figures in EN 13611:2019;

p) information on life time for safe function (designed lifetime) added to instructions;

q) Annex BB “Overview of requirement and test conditions” added;

r) Annex CC “Creep relief device” added;

s) Annex DD “Comparison between EN 334:2019 and EN 88-2:2022” added;

t) EN 88-1, EN 88-2 and EN 88-3 aligned.

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).

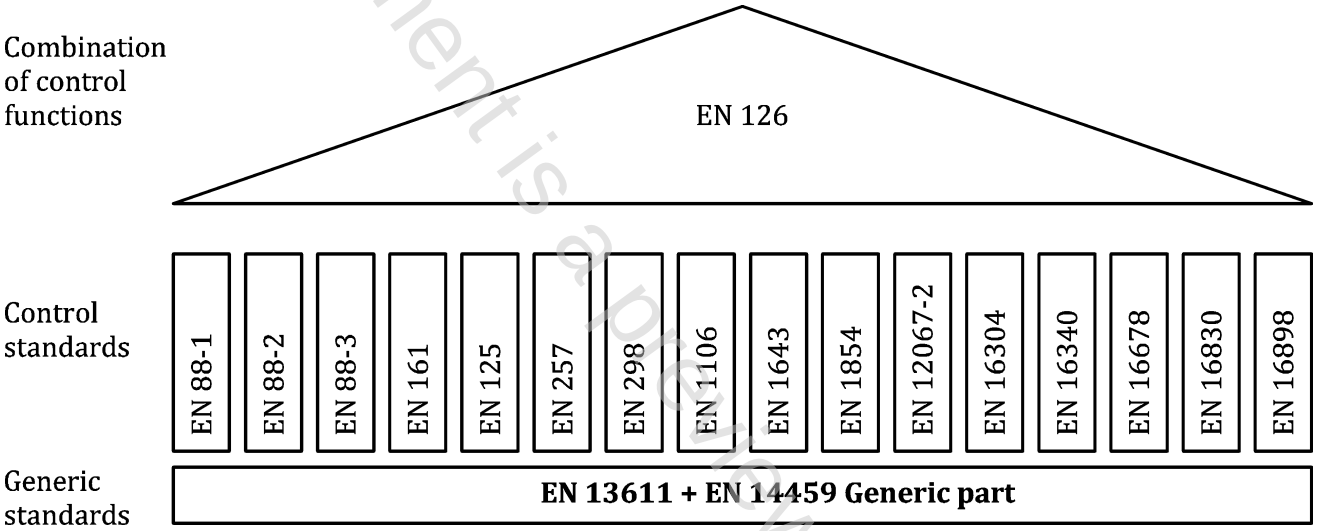

Figure 1 — Interrelation of control standards

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, BB, CC, etc. 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 pneumatic pressure regulators and safety devices 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 above 50 kPa up to and including 500 kPa and of nominal connection sizes up to and including DN 250.

Addition:

This document is applicable to:

— pressure regulators incorporating safety devices;

— pressure regulators and safety devices which use auxiliary energy;

— stand-alone pressure regulators or pressure regulators equipped with a control device for maximum or minimum gas 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.

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 valve for gas burners and gas appliances*

EN 549:2019, *Rubber materials for seals and diaphragms for gas appliances and gas equipment*

EN 682:2002[2], *Elastomeric seals — Materials requirements for seals used in pipes and fittings carrying gas and hydrocarbon fluids*

EN 13611:2019[3], *Safety and control devices for burners and appliances burning gaseous and/or liquid fuels — General requirements*

[2] As impacted by EN 682:2002/A1:2005.

[3] As impacted by EN 13611:2019/AC:2021.

EN 60534-2-3:2016, *Industrial-process control valves — Part 2-3: Flow capacity — Test procedures (IEC 60534-2-3:2015)*

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:

— IEC Electropedia: available at https://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

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

[SOURCE: EN 88-1:2022, 3.101]

3.102
control member
movable part of the pressure regulator which varies flow rate and/or outlet pressure directly

[SOURCE: EN 88-1:2022, 3.107]

3.103
safety shut-off device
SSD
device having the function of staying in the open position under normal operating conditions and to shut off the gas flow automatically and completely when the monitored pressure deviates above or below the pre-set value

3.104
housing
part of the pressure regulator and/or *SSD* that is the main pressure containing envelope

3.105
controller
device which normally includes a setting element, normally a spring, to obtain a set value of the outlet pressure, and a pressure detector element, normally a diaphragm for the outlet pressure

3.106
actuator
device or mechanism which changes the signal from the controller into a corresponding movement controlling the position of the control member