

Contents

Page

European foreword.....	5
Introduction	6
1 Scope	8
2 Normative references	8
3 Terms and definitions.....	9
4 Classification	15
4.1 Classes of control.....	15
4.2 Groups of control.....	15
4.3 Classes of control functions	15
4.4 Types of DC supplied controls	15
5 Units of measurement and test conditions	15
6 Design and Construction.....	15
6.1 General.....	15
6.2 Mechanical parts of the control.....	15
6.2.1 Appearance.....	15
6.2.2 Holes.....	15
6.2.3 Breather holes.....	15
6.2.4 Screwed fastenings	15
6.2.5 Jointing.....	15
6.2.6 Moving parts.....	16
6.2.7 Sealing caps	16
6.2.8 Dismantling and reassembly.....	16
6.2.9 Auxiliary canals and orifices	16
6.2.10 Presetting device	16
6.2.10.1 Operating parts of taps.....	16
6.3 Materials.....	16
6.3.1 General material requirements	16
6.3.2 Housing	16
6.3.3 Zinc alloys.....	16
6.3.4 Springs.....	16
6.3.5 Resistance to corrosion and surface protection.....	16
6.3.6 Impregnation	17
6.3.7 Seals for glands for moving parts	17
6.3.10.1 Tap closure member	17
6.4 Gas connections.....	17
6.5 Electrical parts of the control.....	17
6.6 Protection against internal faults for the purpose of functional safety	17
6.101 Component parts	17
6.101.1 General.....	17
6.101.2 Turning angles.....	17
6.101.3 Lubrication	18
6.101.4 Stops.....	18
6.101.5 Safety lock	18
6.101.6 Bearing seal.....	19
6.101.7 Taper angle.....	19

6.101.8	Open and closed position of a tap	19
6.101.9	Compensation means for taps	19
6.101.10	Spring effect in taps.....	19
7	Performance	19
7.1	General.....	19
7.2	Leak-tightness.....	19
7.3	Torsion and bending.....	19
7.4	Rated flow rate.....	19
7.4.1	Requirements.....	19
7.4.2	Test.....	19
7.4.3	Conversion of air flow rate	19
7.5	Durability.....	20
7.6	Performance tests for electronic controls	20
7.7	Long-term performance for electronic controls.....	20
7.8	Data exchange	20
7.101	Operating torque and force.....	20
7.101.1	Requirements for operating torque.....	20
7.101.2	Test for operating torque.....	20
7.101.3	Requirements for operating force	20
7.101.4	Test for operating force	21
7.101.5	Requirements for operating torque for safety lock.....	21
7.101.6	Test for operating torque for safety lock	21
7.102	Endurance.....	21
7.102.1	Requirement.....	21
7.102.2	Endurance test	21
8	Electrical requirements.....	22
9	Electromagnetic compatibility (EMC).....	22
10	Marking, instructions	22
10.1	Marking.....	22
10.2	Instructions.....	23
10.3	Warning notice.....	23
Annex A (informative)	Abbreviations and symbols	24
Annex B (informative)	Leak-tightness test for gas controls – volumetric method	25
Annex C (informative)	Leak-tightness test for gas controls – pressure loss method.....	26
Annex D (normative)	Calculation of pressure loss into leakage rate	27
Annex E (normative)	Electrical/electronic component fault modes	28
Annex F (normative)	Additional requirements for safety accessories and pressure accessories as defined in EU Directive 2014/68/EU.....	29
Annex G (normative)	Materials for pressurized parts	30
Annex H (normative)	Additional materials for pressurized parts	31
Annex I (normative)	Requirements for controls used in <i>DC</i> supplied burners and appliances burning gaseous or liquid fuels.....	32
Annex J (normative)	Method for the determination of a Safety Integrity Level (SIL).....	33
Annex K (normative)	Method for the determination of a Performance Level (PL)	34

Annex L (informative) Relationship between Safety Integrity Level (SIL) and Performance Level (PL)..... 35

Annex M (normative) Reset functions 36

Annex N (informative) Guidance document on Environmental Aspects..... 37

Annex O (normative) Seals of elastomer, cork and synthetic fibre mixtures..... 38

Annex ZA (informative) Relationship between this European Standard and the essential requirements of Regulation (EU) 2016/426 aimed to be covered..... 39

Bibliography 42

European foreword

This document (EN 1106:2022+A1:2023) 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 June 2024, 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 A1 EN 1106:2022 A1.

This document includes Amendment 1, approved by CEN on 2023-10-11.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1

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).

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

A1 *deleted paragraphs* A1

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).

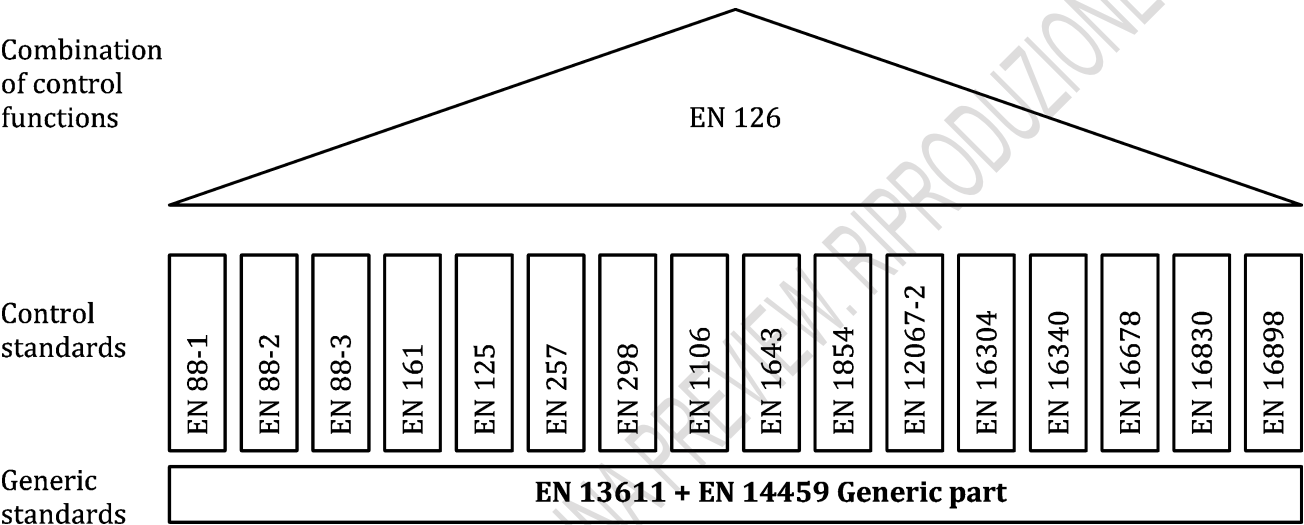


Figure 1 — Interrelation of control standards

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.

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, Annex BB, Annex 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 “tap”.

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 manually operated taps and presetting taps for burners and appliances burning one or more gaseous fuels, hereafter referred to as “taps”.

This document is applicable to taps with declared maximum inlet pressures up to and including 50 kPa and of nominal connection sizes up to and including DN 50 for use with one or more fuel gases.

Addition:

This document is not applicable to:

- a) manual operated shut-off valves conforming to EN 331:2015;
- b) controls which use auxiliary energy (e.g. electrical energy supplied externally).

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 30-1-1:2021, *Domestic cooking appliances burning gas — Part 1-1: Safety — General*

EN 331:2015, *Manually operated ball valves and closed bottom taper plug valves for gas installations for buildings*

EN 13611:2019¹, *Safety and control devices for burners and appliances burning gaseous and/or liquid fuels — General requirements*

EN 14543:2017, *Specification for dedicated liquefied petroleum gas appliances — Parasol patio heaters — Flueless radiant heaters for outdoor or amply ventilated area use*

¹ As impacted by EN 13611:2019/AC:2021.