BS EN 125:2022+A1:2024

BSI Standards Publication

Flame supervision devices for gas burning appliances — Thermoelectric flame supervision devices

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National foreword

This British Standard is the UK implementation of EN 125:2022+A1:2024. It supersedes BS EN 125:2022, which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to CEN text carry the number of the CEN amendment. For example, text altered by CEN amendment A1 is indicated by [A1⟩ ⟨A1].

The UK participation in its preparation was entrusted to Technical Committee GSE/22, Safety and control devices for gas and oil burners and gas burning appliances.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 125:2022+A1

November 2024

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English Version

Flame supervision devices for gas burning appliances - Thermoelectric flame supervision devices

Dispositifs de surveillance de flamme pour appareils à gaz - Dispositifs thermoélectriques de surveillance de flamme

Flammenüberwachungseinrichtungen für Gasgeräte - Thermo-elektrische Zündsicherungen

This European Standard was approved by CEN on 8 August 2022 and includes Amendment 1 approved by CEN on 3 July 2024.

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Full document details: BS EN 125:2022+A1:2024

Contents

Page

European foreword ... 5
Introduction ... 6
1 Scope ... 8
2 Normative references ... 8
3 Terms and definitions ... 8
4 Classification ... 9
4.1 Classes of control ... 9
4.2 Groups of control ... 9
4.3 Classes of control functions ... 9
4.4 Types of DC supplied controls ... 9
5 Test conditions and uncertainty of measurements ... 9
6 Design and construction ... 10
6.1 General ... 10
6.2 Mechanical parts of the control ... 10
6.2.1 Appearance ... 10
6.2.2 Holes ... 10
6.2.3 Breather holes ... 10
6.2.4 Screwed fastenings ... 10
6.2.5 Jointing ... 10
6.2.6 Moving parts ... 10
6.2.7 Sealing caps ... 10
6.2.8 Dismantling and reassembly ... 10
6.2.9 Auxiliary canals and orifices ... 10
6.2.10 Presetting device ... 10
6.3 Materials ... 10
6.3.1 General material requirements ... 10
6.3.2 Housing ... 11
6.3.3 Zinc alloys ... 11
6.3.4 Springs ... 11
6.3.5 Resistance to corrosion and surface protection ... 11
6.3.6 Impregnation ... 11
6.3.7 Seals for glands for moving parts ... 11
6.4 Gas connections ... 11
6.4.1 Making connections ... 11
6.4.2 Connection sizes ... 11
6.4.3 Threads ... 11
6.4.4 Union joints ... 11
6.4.5 Flanges ... 11
6.4.6 Compression fittings ... 11
6.4.7 Nipples for pressure test ... 11
6.4.8 Strainers ... 11
6.5 Electronic parts of the control ... 11
6.6 Protection against internal faults for the purpose of functional safety ... 12
7 Performance ... 12
7.1 General ... 12

Documents
Document Sharing Hub
Full document details: BS EN 125:2022+A1:2024

7.2 Leak-tightness ... 12
7.2.1 Requirements ... 12
7.2.2 Test ... 13
7.3 Torsion and bending ... 13
7.4 Rated flow rate ... 13
7.4.1 Requirement ... 13
7.4.2 Test ... 14
7.4.3 Conversion of air flow rate ... 14
7.5 Durability ... 14
7.6 Performance tests for electronic controls ... 14
7.7 Long-term performance for electronic controls ... 14
7.8 Data exchange ... 14
7.101 Operating torque and force ... 14
7.101.1 Requirement ... 14
7.101.2 Test for operating torque and force ... 15
7.102 Interlocks ... 15
7.102.1 Requirement ... 15
7.102.2 Test for interlocks ... 15
7.103 Closing current ... 15
7.103.1 Requirement ... 15
7.103.2 Test for closing current ... 15
7.104 Sealing force ... 16
7.104.1 Requirement ... 16
7.104.2 Test for sealing force ... 16
7.105 Endurance ... 17
7.105.1 Requirement ... 17
7.105.2 Endurance test ... 17

8 EMC/Electrical requirements ... 18

9 Electromagnetic compatibility (EMC) ... 18

10 Marking, instructions ... 18
10.1 Marking ... 18
10.2 Instructions ... 18
10.3 Warning notice ... 19

Annex A (informative) Abbreviations and Symbols ... 20

Annex B (informative) Leak-tightness test for gas controls – volumetric method ... 21

Annex C (informative) Leak-tightness test – pressure loss method ... 22

Annex D (normative) Calculation of pressure loss into leakage rate ... 23

Annex E (normative) Electrical/electronic component fault modes ... 24

Annex F (normative) Additional requirements for safety accessories and pressure accessories as defined in EU Directive 2014/68/EU ... 25

Annex G (normative) Materials for pressurized parts ... 26

Annex H (normative) Additional materials for pressurized parts ... 27

Annex I (normative) Requirements for controls used in *DC* supplied burners and burning gaseous or liquid fuels appliances ... 28

Annex J (normative) Method for the determination of the Safety Integrity Level (SIL) ... 29

Annex K (normative) Method for the determination of a Performance Level (PL) ... 30

Documents
Document Sharing Hub

Full document details: BS EN 125:2022+A1:2024

Annex L (informative) Relationship between Safety Integrity Level (SIL) and Performance Level (PL) 31

Annex M (normative) Reset functions 32

Annex N (informative) Guidance document on Environmental Aspects 33

Annex O (normative) Seals of elastomers, cork and synthetic fibre mixtures 34

Annex AA (informative) Types of flame supervision devices 35

Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of Regulation (EU) 2016/426 aimed to be covered 37

Bibliography 40

Documents
Document Sharing Hub

Full document details: BS EN 125:2022+A1:2024

European foreword

This document (EN 125:2022+A1:2024) 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 May 2025, and conflicting national standards shall be withdrawn at the latest by November 2027.

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 includes Amendment 1 approved by CEN on 3 July 2024.

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

This document supersedes ▌A1⟩ EN 125:2022.

This document differs from EN 125:2022 as follows:

a) Annex ZA has been brought in line with Mandate M/595 and the normative references are updated. ⟨A1▌

▌A1⟩ *Deleted text* ⟨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) / Regulation(s).

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

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.

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Documents
Document Sharing Hub
Full document details: BS EN 125:2022+A1:2024

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).

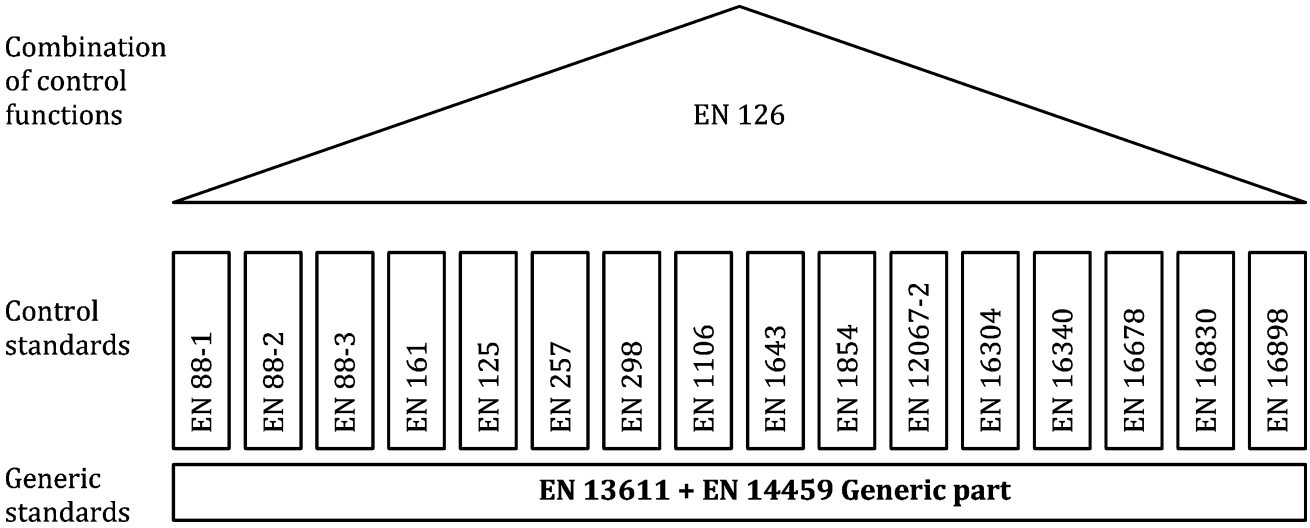

Figure 1 — Interrelation of control standards

EN 13611:2019 should be used in conjunction with the specific standard for a specific type of control (e.g. [A1⟩ EN 88-1:2022+A1:2023 ⟨A1], [A1⟩ EN 88-2:2022+A1:2024 ⟨A1], [A1⟩ EN 88-3:2022+A1:2024 ⟨A1], [A1⟩ EN 125:2022+A1:2024 ⟨A1], EN 126:2012, EN 161:2022, [A1⟩ EN 257:2022+A1:2023 ⟨A1], EN 298:2022, [A1⟩ EN 1106:2022+A1:2023 ⟨A1], EN 1643:2022, [A1⟩ EN 1854:2022+A1:2023 ⟨A1], EN 12067-2:2022, [A1⟩ EN 16304:2022+A1:2024 ⟨A1], EN 16340:2014, EN 16678:2022 and [A1⟩ EN 16898:2022+A1:2023 ⟨A1]), 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.

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Full document details: BS EN 125:2022+A1:2024

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 designed as Annex AA, BB, CC, etc. It should be noted that these clauses, subclauses and Annexes are not indicated as an addition.

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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 thermoelectric flame supervision devices, energized by a thermocouple intended for use with burners and appliances burning one or more gaseous fuels, hereafter referred to as “controls”.

This document is applicable to controls with declared maximum inlet pressures up to and including 500 kPa and of nominal connection sizes up to and including DN 50.

Addition:

This document is not applicable to:

— the thermocouple;

— 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.

A1 EN 13611:2019 A1, *Safety and control devices for burners and appliances burning gaseous and/or liquid fuels — General requirements*

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
thermocouple
thermoelectric flame sensing element that responds to the temperature of the supervised flame, and in which the flame effect produces an electromotive force (e.m.f.)

3.102
thermoelectric flame supervision device
control which, in response to the e.m.f. produced by the thermocouple, maintains the gas way to the main burner or the main burner and the pilot burner open and which shuts off the gas way to the main burner at least, after extinction of the supervised flame

Note 1 to entry: For further reference, see Figure AA.1 and Figure AA.2.

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Full document details: BS EN 125:2022+A1:2024

3.103
ignition interlock
part which prevents the igniter from operating as long as the main gas way is open

3.104
re-start interlock
mechanism which prevents the re-opening of the gas way to the main burner or to the main burner and the pilot burner until the armature plate has separated from the magnetic element

Note 1 to entry: For further information, see Figure AA.1 and Figure AA.2.

3.105
sealing force
force acting on the closure member when the closure member is in the closed position, independent of any force provided by fuel gas pressure

3.106
closed position
position of the closure member(s) in the absence of the thermoelectric energy

4 Classification

4.1 Classes of control

EN 13611:2019, 4.1 is replaced by the following:

Controls shall be classified A, B or C according to the number of operations as tested in 7.105.2.2.

4.2 Groups of control

Shall be according to EN 13611:2019, 4.2.

4.3 Classes of control functions

EN 13611:2019, 4.3 is not applicable.

4.4 Types of DC supplied controls

EN 13611:2019, 4.4 is not applicable.

5 Test conditions and uncertainty of measurements

Shall be according to EN 13611:2019, Clause 5.

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6 Design and construction

6.1 General

Shall be according to EN 13611:2019, 6.1 with the following modification and addition:

The 3rd paragraph of EN 13611:2019, 6.1 is not applicable.

Controls shall shut off the gas way to the burner automatically with at least the sealing force specified in 7.104 in case of failure in the thermoelectric current. Controls shall also be designed so that during ignition either the gas way to the main burner is open, if there is no pilot burner, or the gas way to the main burner is closed and that to the pilot burner is open.

6.2 Mechanical parts of the control

6.2.1 Appearance

Shall be according to EN 13611:2019, 6.2.1.

6.2.2 Holes

Shall be according to EN 13611:2019, 6.2.2.

6.2.3 Breather holes

EN 13611:2019, 6.2.3 is not applicable.

6.2.4 Screwed fastenings

Shall be according to EN 13611:2019, 6.2.4.

6.2.5 Jointing

Shall be according to EN 13611:2019, 6.2.5.

6.2.6 Moving parts

Shall be according to EN 13611:2019, 6.2.6.

6.2.7 Sealing caps

Shall be according to EN 13611:2019, 6.2.7.

6.2.8 Dismantling and reassembly

Shall be according to EN 13611:2019, 6.2.8.

6.2.9 Auxiliary canals and orifices

Shall be according to EN 13611:2019, 6.2.9.

6.2.10 Presetting device

Shall be according to EN 13611:2019, 6.2.10.

6.3 Materials

6.3.1 General material requirements

Shall be according to EN 13611:2019, 6.3.1.

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