

Safety and control devices for burners and appliances burning gaseous or liquid fuels - Control functions in electronic systems - Part 2: Fuel/air ratio control/supervision of the electronic type

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 12067-2:2022 sisaldab Euroopa standardi EN 12067-2:2022 ingliskeelset teksti.	This Estonian standard EVS-EN 12067-2:2022 consists of the English text of the European standard EN 12067-2:2022.
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.
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Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

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ICS 23.060.40, 27.060.20

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EUROPEAN STANDARD

EN 12067-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

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ICS 23.060.40; 27.060.20

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English Version

Safety and control devices for burners and appliances
burning gaseous or liquid fuels - Control functions in
electronic systems - Part 2: Fuel/air ratio
control/supervision of the electronic type

Dispositifs de commande et de sécurité pour les brûleurs et les appareils utilisant des combustibles gazeux ou liquides - Dispositifs électroniques de régulation - Partie 2 : Régulation et surveillance du rapport air/combustible de type électronique

Sicherheits- und Regeleinrichtungen für Brenner und Brennstoffgeräte für gasförmige oder flüssige Brennstoffe - Regel- und Steuerfunktionen in elektronischen Systemen - Teil 2: Elektronische Gas-Luft-Verbundregel- und Überwachungseinrichtungen

This European Standard was approved by CEN on 2 October 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

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European foreword

This document (EN 12067-2:2022) 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 May 2023, and conflicting national standards shall be withdrawn at the latest by November 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 12067-2:2004.

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

- a) alignment with EN 13611:2019;
- b) title change to include liquid fuel and to bring it in line with the title of EN 13611:2019;
- c) integration of the requirements for fuel/air ratio using oil as the fuel;
- d) addition of the control types ERS and ERT;
- e) update to EN 60730-1:2016;
- f) update of requirements for fault reaction time and fault tolerating time;
- g) update of the Annexes for sensors and actuators (see Annex AA);
- h) inclusion of the use of pressure and combustion products sensing devices already conforming to EN 1854:—¹, EN 60730-2-6:2016, and EN 16340:2014 respectively;
- i) new Annex Guideline for the integration of ERC, ERS or ERT into the appliances (see Annex DD);
- j) new Annex Guideline for the definition of limits for safe operation on the appliance (see Annex EE);
- k) new Annex Requirements for using alternative actuators on application level (see Annex FF).

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.

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 fuel/air ratio control/supervision system”.

EN 12067-2 compliance for electronic fuel/air ratio control/supervision system cannot be claimed based upon SIL classification according to EN 61508.

SIL classification cannot be claimed based upon compliance with this document only. A supplementary method for SIL determination is specified in EN 13611:2019, Annex J.

1 Scope

EN 13611:2019, Clause 1 is replaced by the following:

This document specifies the safety, design, construction and performance requirements, and testing for electronic fuel/air ratio control systems (ERC), electronic fuel/air ratio supervision systems (ERS) and electronic fuel/air ratio trim systems (ERT) intended for use with burners and appliances burning gaseous or liquid fuels. It also describes the procedures for evaluating these requirements and specifies information necessary for installation and use.

This document is applicable to:

- closed loop fuel/air ratio control systems, see 3.101;
- fuel/air ratio supervision systems, see 3.102;
- closed loop fuel/air ratio trim systems, see 3.103;

and does not differentiate into classification by heat input.

NOTE The documents for burners, appliances or processes which use ERC, ERS or ERT can override the requirements of this document.

2 Normative references

EN 13611:2019, Clause 2 applies with the following additions:

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 298:2022, *Automatic burner control systems for burners and appliances burning gaseous or liquid fuels*

EN 267:2020, *Forced draught burners for liquid fuels*

EN 676:2020, *Forced draught burners for gaseous fuels*

EN 1854:—¹, *Safety and control devices for burners and appliances burning gaseous and/or liquid fuels — Pressure sensing devices for gas burners and gas burning appliances*

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

EN 16340:2014, *Safety and control devices for burners and appliances burning gaseous or liquid fuels — Combustion product sensing devices*

EN 60204-1:2018, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2016)*

EN 60335-1:2012³, *Household and similar electrical appliances — Safety — Part 1: General requirements (IEC 60335-1:2010)*

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

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

EN 60529:1991⁴, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

EN 60730-1:2016⁵, *Automatic electrical controls — Part 1: General requirements (IEC 60730-1:2013, modified)*

EN 60730-2-5:2015⁶, *Automatic electrical controls — Part 2-5: Particular requirements for automatic electrical burner control systems (IEC 60730-2-5:2013)*

EN 60730-2-6:2016⁷, *Automatic electrical controls — Part 2-6: Particular requirements for automatic electrical pressure sensing controls including mechanical requirements (IEC 60730-2-6:2015)*

EN IEC 60730-2-14:2019⁸, *Automatic electrical controls — Part 2-14: Particular requirements for electric actuators (IEC 60730-2-14:2017)*

EN IEC 61000-6-2:2019, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity standard for industrial environments (IEC 61000-6-2:2016)*

EN 61000-6-4:2007⁹, *Electromagnetic compatibility (EMC) — Part 6-4: Generic standards — Emission standard for industrial environments (IEC 61000-6-4:2006)*

EN 61010-2-202:2017, *Safety requirements for electrical equipment for measurement, control and laboratory use — Part 2-202: Particular requirements for electrically operated valve actuators (IEC 61010-2-202:2016)*

3 Terms and definitions

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

ISO and IEC maintain terminology 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 As impacted by EN 60335-1:2012/AC:2014, EN 60335-1:2012/A11:2014, EN 60335-1:2012/A13:2017, EN 60335-1:2012/A1:2019, EN 60335-1:2012/A2:2019, EN 60335-1:2012/A14:2019 and EN 60335-1:2012/A15:2021.

⁴ As impacted by EN 60529:1991/corrigendum May 1993, EN 60529:1991/A1:2000, EN 60529:1991/A2:2013 and EN 60529:1991/AC:2016-12.

⁵ As impacted by EN 60730-1:2016/A1:2019 and EN 60730-1:2016/A2:2022.

⁶ As impacted by EN 60730-2-5:2015/A1:2019 and EN 60730-2-5:2015/A2:2021.

⁷ As impacted by EN 60730-2-6:2016/A1:2020.

⁸ As impacted by EN IEC 60730-2-14:2019/A2:2021 and EN IEC 60730-2-14:2019/A1:2022.

⁹ As impacted by EN 61000-6-4:2007/A1:2011.