ICS 91.140.40, 97.100.20 SLOVENSKÁ TECHNICKÁ NORMA Február 2022

STN	**Bezpečnostné a ovládacie zariadenia horákov a spotrebičov na plynné alebo kvapalné palivá Ovládacie funkcie v elektronických systémoch Metódy klasifikácie a posudzovania**	**STN EN 14459** 06 1807

Safety and control devices for burners and appliances burning gaseous or liquid fuels - Control functions in electronic systems - Methods for classification and assessment

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/22

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EUROPEAN STANDARD
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EN 14459

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ICS 91.140.40; 97.100.20 Supersedes EN 14459:2015

English Version

Safety and control devices for burners and appliances burning gaseous or liquid fuels - Control functions in electronic systems - Methods for classification and assessment

Dispositifs de commande et de sécurité pour brûleurs et appareils utilisant des combustibles gazeux ou liquides - Fonctions de commande des systèmes électroniques - Méthodes de classification et d'évaluation

Sicherheits- und Regeleinrichtungen für Brenner und Brennstoffgeräte für gasförmige oder flüssige Brennstoffe - Regel- und Steuerfunktionen in elektronischen Systemen - Verfahren für die Klassifizierung und Bewertung

This European Standard was approved by CEN on 24 October 2021.

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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

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European foreword

This document (EN 14459:2021) 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 2022, and conflicting national standards shall be withdrawn at the latest by May 2022.

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 14459:2015.

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

a) Alignment with EN 13611:2019;

b) Clause 2 “Normative references” has been updated;

c) The Bibliography has been updated.

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, Turkey 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 it 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 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.

Control systems are designed to control and protect gas and/or oil appliances and the combustion process. All functions are performed depending on their safety relevance within a specific tolerance of measures and time with a specific certainty under external influences and internal failures.

It was concluded by CEN/TC 58 that it is not always necessary to protect against the consequences of hazardous events with uniform measures as hazards differ in severity and the probability of unwanted occurrences may differ. As there exist large differences of interpretation on what level of protection is necessary against certain hazards, there is a need for guidance to bring the safety philosophy for gas and oil appliances and controls in line. The discussions of CEN/TC 58 regarding safety related control functions and the use of control systems in the appliances show that it is worthwhile to refine the basic safety philosophy of gas and oil appliances into different risk levels.

For the evaluation of preventative measures concerning fault tolerance and avoidance of hazards, it is essential to classify control functions with regard to their fault behaviour. For the classification of control functions, their integration into the complete safety concept of the appliance should be taken into account.

In the appliance standards, only specific fault conditions are considered when controls conforming to CEN/TC 58 standards are used, e.g. flame simulation and air proving before each new start. In some cases (e.g. switch contacts) shorting is excluded, when certain tests have proven that the probability of a fault occurrence is low. For gas valves, a single shut-off valve is considered insufficient.

This document gives methods for the assessment of control functions in controls for burners and appliances burning one or more gaseous or liquid fuels for which no specific product standards are actually available. The assessment is described in three steps:

— assessment of the application,

— translation into control requirements,

— assessment of the control solution,

leading to defined classes for the specified control function(s)and a set of safety measures with additional/modified construction and test requirements for the application and/or the specified control function(s).

The assessment is focused on the controlled parameters (e.g. high/low temperature, pressure, flow, combustion quality) in the combustion process and in the functionality of the controls (e.g. open/closed; lock/unlock; start/stop). Each control function needs to be classified according to the required safety aspects (Class A, B, C).

To analyse the effect of fault conditions it is essential to know the specific application and to determine the related risks.

1 Scope

EN 13611:2019, Clause 1 is replaced by the following:
This document specifies methods for the classification and assessment of function blocks for burners and appliances burning one or more gaseous or liquid fuels with particular regards to their fault behaviour and preventative measures.

This document is applicable to new control function blocks, not covered by dedicated control standards.

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