

<b>STN</b>	<b>Bezpečnostné a ovládacie zariadenia pre horáky a spotrebiče spaľujúce plynné a/alebo kvapalné palivá</b> <b>Snímače tlaku plynu pre horáky a pre spotrebiče na plynné palivá</b>	<b>STN EN 1854+A1</b>  06 1808
------------	--	--------------------------------------

Safety and control devices for burners and appliances burning gaseous and/or liquid fuels - Pressure sensing devices for gas burners and gas burning appliances

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. 05/24

Obsahuje: EN 1854:2022+A1:2023

Oznámením tejto normy sa ruší  
STN EN 1854 (06 1808) z apríla 2023

**138655**

---

Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2024  
Slovenská technická norma a technická normalizačná informácia je chránená zákonom č. 60/2018 Z. z. o technickej normalizácii v znení neskorších predpisov.

EUROPEAN STANDARD

**EN 1854:2022+A1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2023

ICS 23.060.40

Supersedes EN 1854:2022

English Version

## Safety and control devices for burners and appliances burning gaseous and/or liquid fuels - Pressure sensing devices for gas burners and gas burning appliances

Equipements auxiliaires pour brûleurs et appareils  
utilisant des combustibles gazeux ou liquides -  
Dispositifs de surveillance de pression pour brûleurs et  
appareils à gaz

Sicherheits- und Regeleinrichtungen für Brenner und  
Brennstoffgeräte für gasförmige und/oder flüssige  
Brennstoffe - Druckwächter für Gasbrenner und  
Gasgeräte

This European Standard was approved by CEN on 26 September 2022 and includes Amendment approved by CEN on 11 October 2023. This European Standard was corrected and reissued by the CEN-CENELEC Management Centre on 24 January 2024.

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.

CEN members are the national standards bodies of 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 United Kingdom.



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

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

## EN 1854:2022+A1:2023 (E)

<b>Contents</b>	<b>Page</b>
European foreword.....	5
Introduction .....	6
<b>1 Scope.....</b>	<b>7</b>
<b>2 Normative references.....</b>	<b>7</b>
<b>3 Terms and definitions .....</b>	<b>8</b>
<b>4 Classification.....</b>	<b>14</b>
4.1 Classes of control.....	14
4.2 Groups of control.....	14
4.3 Classes of control functions.....	15
4.4 Types of <i>DC</i> supplied controls .....	15
<b>5 Test conditions and uncertainty of measurements.....</b>	<b>15</b>
<b>6 Design and construction.....</b>	<b>15</b>
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.....	16
6.2.5 Jointing.....	16
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
6.2.101 Manual reset.....	16
6.2.102 Sensed medium.....	16
6.2.103 PSD-S.....	16
6.3 Materials.....	17
6.3.1 General material requirements .....	17
6.3.2 Housing.....	17
6.3.3 Zinc alloys .....	18
6.3.4 Springs .....	18
6.3.5 Resistance to corrosion and surface protection .....	18
6.3.6 Impregnation.....	18
6.3.7 Seals for glands for moving parts .....	18
6.3.101 Plastics materials.....	18
6.4 Gas connections .....	18
6.4.1 Making connections.....	18
6.4.2 Connection sizes .....	18
6.4.3 Threads.....	18
6.4.4 Union joints .....	19
6.4.5 Flanges .....	19
6.4.6 Compression fittings.....	19

6.4.7	Nipples for pressure test.....	19
6.4.8	Strainers.....	19
6.4.101	Connections for PSDs specified for air and combustion products.....	19
6.5	Electrical parts of the control.....	19
6.5.1	General .....	19
6.5.2	Switching elements .....	19
6.5.3	Electrical components.....	19
6.6	Protection against internal faults for the purpose of functional safety.....	20
6.6.1	Design and construction requirements.....	20
6.6.2	Class A .....	20
6.6.3	Class B .....	20
6.6.4	Class C .....	21
6.6.5	Circuit and construction evaluation .....	21
7	Performance .....	21
7.1	General .....	21
7.2	Leak-tightness.....	22
7.2.1	Requirements.....	22
7.2.2	Tests .....	22
7.3	Torsion and bending .....	23
7.3.1	General .....	23
7.3.2	Torsion and bending moments.....	23
7.4	Rated flow rate .....	24
7.5	Durability.....	24
7.5.1	Elastomers in contact with gas .....	24
7.5.2	Durability of marking.....	24
7.5.3	Resistance to scratching.....	24
7.5.4	Resistance to humidity .....	24
7.5.5	Lubricants in contact with gas .....	24
7.6	Performance tests for electronic controls.....	24
7.7	Long-term performance for electronic controls .....	24
7.7.1	General .....	24
7.7.2	Stress test.....	24
7.7.3	Long-term performance tests.....	25
7.8	Data exchange .....	25
7.101	Function of the PSD .....	26
7.101.1	MPSD .....	26
7.101.2	EPSD .....	27
7.101.3	Endurance .....	31
8	Electrical requirements.....	32
8.1	General .....	32
8.2	Protection by enclosure .....	33
9	Electromagnetic compatibility (EMC) .....	33
9.1	Protection against environmental influences.....	33
9.2	Supply voltage variations below 85 % of rated voltage.....	35
9.3	Voltage dips and interruptions.....	35
9.4	Supply frequency variations.....	35
9.5	Surge immunity tests.....	35
9.6	Electrical fast transient/burst .....	35
9.7	Immunity to conducted disturbances induced by radio frequency fields .....	35
9.8	Immunity to radiated disturbances induced by radio frequency fields .....	35
9.9	Electrostatic discharge tests.....	35
9.10	Power frequency magnetic field immunity tests .....	36

## EN 1854:2022+A1:2023 (E)

<b>9.11</b>	<b>Harmonics and interharmonics including mains signalling at AC power port, low frequency immunity tests .....</b>	<b>36</b>
<b>10</b>	<b>Marking, instructions .....</b>	<b>36</b>
<b>10.1</b>	<b>Marking.....</b>	<b>36</b>
<b>10.2</b>	<b>Instructions.....</b>	<b>37</b>
<b>10.3</b>	<b>Warning notice.....</b>	<b>37</b>
	<b>Annex A (informative) Abbreviations and Symbols .....</b>	<b>38</b>
	<b>Annex B (informative) Leak-tightness test for gas controls – volumetric method.....</b>	<b>39</b>
	<b>Annex C (informative) Leak-tightness test for gas controls – pressure loss method .....</b>	<b>40</b>
	<b>Annex D (normative) Calculation of pressure loss into leakage rate.....</b>	<b>41</b>
	<b>Annex E (normative) Electrical/electronic component fault modes.....</b>	<b>42</b>
	<b>Annex F (normative) Additional requirements for safety accessories and pressure accessories as defined in EU Directive 2014/68/EU .....</b>	<b>43</b>
	<b>Annex G (normative) Materials for pressurized parts.....</b>	<b>44</b>
	<b>Annex H (normative) Additional materials for pressurized parts.....</b>	<b>45</b>
	<b>Annex I (normative) Requirements for controls used in DC supplied gas burners and appliances burning gaseous or liquid fuels .....</b>	<b>46</b>
	<b>Annex J (normative) Method for the determination of a Safety integrity level (SIL) .....</b>	<b>47</b>
	<b>Annex K (normative) Method for the determination of a Performance Level (PL).....</b>	<b>48</b>
	<b>Annex L (informative) Relationship between Safety Integrity Level (SIL) and Performance Level (PL) .....</b>	<b>49</b>
	<b>Annex M (normative) Reset functions .....</b>	<b>50</b>
	<b>Annex N (informative) Guidance document on Environmental Aspects.....</b>	<b>51</b>
	<b>Annex O (normative) Seals of elastomer, cork and synthetic fibre mixtures.....</b>	<b>52</b>
	<b>Annex AA (normative) Declaration for EPSDs .....</b>	<b>53</b>
	<b>Annex ZA (informative) Relationship between this European Standard and the essential requirements of EU Directive 2009/142/EC aimed to be covered .....</b>	<b>54</b>
	<b>Annex ZB (informative) Relationship between this European Standard and the essential requirements of Regulation (EU) 2016/426 aimed to be covered.....</b>	<b>55</b>
	<b>Annex ZC (informative) Relationship between this European Standard and the essential requirements of Directive 2014/68/EU aimed to be covered.....</b>	<b>59</b>
	<b>Bibliography.....</b>	<b>60</b>

## European foreword

This document (EN 1854:2022+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 December 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 1854:2022 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 ZB, 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.

**EN 1854:2022+A1:2023 (E)****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 “pressure sensing device”.

## 1 Scope

EN 13611:2019, Clause 1 applies with the following modification:

Modification:

The 1<sup>st</sup> paragraph of EN 13611:2019, Clause 1 is replaced by:

This document specifies the safety, design, construction, and performance requirements and testing of pressure sensing devices for burners and appliances burning one or more gaseous fuels.

This document is applicable to pressure sensing devices for gaseous fuels, air, or combustion products with declared maximum inlet pressures up to and including 500 kPa.

It applies to all types of pressure sensing devices, including electronic, differential and inferential types.

It also specifies requirements for pressure sensing devices which are intended to be applied to steam boilers and as such need to meet increased reliability requirements.

EN 13611:2019 Clause 1, 4<sup>th</sup> paragraph is not applicable.

## 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<sup>1</sup>, *Safety and control devices for burners and appliances burning gaseous and/or liquid fuels — General requirements*

EN 60529:1991<sup>2</sup>, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

EN 60730-2-6:2016<sup>3</sup>, *Automatic electrical controls — Part 2-6: Particular requirements for automatic electrical pressure sensing controls including mechanical requirements (IEC 60730-2-6:2015)*

EN ISO 75-1:2020, *Plastics — Determination of temperature of deflection under load — Part 1: General test method (ISO 75-1:2020)*

EN IEC 61058-1:2018, *Switches for appliances — Part 1: General requirements (IEC 61058-1:2016)*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**

---

<sup>1</sup> As amended by EN 13611:2019/AC:2021.

<sup>2</sup> As amended by EN 60529:1991/A1:2000 and EN 60529:1991/A2:2013 (EN 60529:1991/A2:2013/AC:2019-02), and corrected by EN 60529:1991/AC:2016-12 and EN 60529:1991/corrigendum May 1993.

<sup>3</sup> As amended by EN 60730-2-6:2016/A1:2020.