



**NSAI**  
Standards

Irish Standard  
I.S. EN 1854:2010

# Pressure sensing devices for gas burners and gas burning appliances

## I.S. EN 1854:2010

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

<i>This document replaces:</i> EN 1854:2006	<i>This document is based on:</i> EN 1854:2010 EN 1854:2006	<i>Published:</i> 26 May, 2010 26 April, 2006
This document was published under the authority of the NSAI and comes into effect on: 10 June, 2010		ICS number: 23.060.40
<div> <div> <b>NSAI</b>  1 Swift Square,  Northwood, Santry  Dublin 9 </div> <div> T +353 1 807 3800  F +353 1 807 3838  E standards@nsai.ie  W NSAI.ie </div> <div> <b>Sales:</b>  T +353 1 857 6730  F +353 1 857 6729  W standards.ie </div> </div>		
Údarás um Chaighdeáin Náisiúnta na hÉireann		

I.S. EN 1854:2010

EUROPEAN STANDARD

**EN 1854**

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2010

ICS 23.060.40

Supersedes EN 1854:2006

English Version

## Pressure sensing devices for gas burners and gas burning appliances

Dispositifs de surveillance de pression pour brûleurs à gaz  
et appareils à gaz

Druckwächter für Gasbrenner und Gasgeräte

This European Standard was approved by CEN on 15 April 2010.

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 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 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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

**Management Centre: Avenue Marnix 17, B-1000 Brussels**

## Contents

Page

<b>Foreword</b> .....	<b>4</b>
<b>1 Scope</b> .....	<b>5</b>
<b>2 Normative references</b> .....	<b>5</b>
<b>3 Terms and definitions</b> .....	<b>5</b>
<b>4 Classification</b> .....	<b>10</b>
<b>5 Units of measurement and test conditions</b> .....	<b>11</b>
<b>6 Construction requirements</b> .....	<b>11</b>
<b>7 Performance</b> .....	<b>17</b>
<b>8 EMC/Electrical requirements</b> .....	<b>28</b>
<b>9 Marking, installation and operating instructions</b> .....	<b>30</b>
<b>Annex A (informative) Gas connections in common use in the various countries</b> .....	<b>33</b>
<b>Annex B (informative) Leak-tightness test – volumetric method</b> .....	<b>34</b>
<b>Annex C (informative) Leak-tightness test – pressure loss method</b> .....	<b>35</b>
<b>Annex D (informative) Conversion of pressure loss into leakage rate</b> .....	<b>36</b>
<b>Annex E (normative) Electrical/electronic component fault modes</b> .....	<b>37</b>
<b>Annex F (normative) Additional requirements for safety accessories and pressure accessories as defined in EU Directive 97/23/EC</b> .....	<b>38</b>
<b>Annex G (normative) Materials for pressurized parts</b> .....	<b>39</b>
<b>Annex H (informative) Additional materials for pressurized parts</b> .....	<b>40</b>
<b>Annex I (normative) Requirements for controls used in DC supplied gas burners and gas burning appliances</b> .....	<b>41</b>
<b>Annex AA (informative) Manufacturers declaration for EPSDs</b> .....	<b>42</b>
<b>Annex ZA (informative) Clauses of this European Standard addressing requirements or provisions of EU-Directives</b> .....	<b>43</b>
<b>Bibliography</b> .....	<b>45</b>

## Figures

<b>Figure 1 — Differential PSD</b> .....	<b>6</b>
<b>Figure 2 — Atmospheric PSD</b> .....	<b>6</b>
<b>Figure 3 — Absolute PSD</b> .....	<b>6</b>
<b>Figure 4 — EPSD</b> .....	<b>7</b>
<b>Figure 5 — Step response of EPSD</b> .....	<b>8</b>
<b>Figure 6 — Clarification of definitions for PSD-M and PSD-S</b> .....	<b>9</b>

<b>Figure 7 — Clarification of definitions for EPSD .....</b>	<b>10</b>
---	-----------

## Tables

<b>Table 1 — Maximum external leakage rates for air/combustion products .....</b>	<b>18</b>
<b>Table 2 — Number of cycles PSD-M and PSD-S.....</b>	<b>27</b>
<b>Table E.1 — Electrical/electronic component faults modes.....</b>	<b>37</b>
<b>Table AA.1 — Sensor measurement: Pressure.....</b>	<b>42</b>
<b>Table ZA.1 — Correspondence between this European Standard and Directive (Directive 2009/142/EC relating to appliances burning gaseous fuels) .....</b>	<b>43</b>

## **Foreword**

This document (EN 1854:2010) 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 November 2010, and conflicting national standards shall be withdrawn at the latest by May 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1854:2006.

This document has been prepared under a mandate 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.

This European Standard refers to clauses of EN 13611:2007 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 European Standard adds clauses or subclauses to the structure of EN 13611:2007 which are particular to this European Standard. It should be noted that these clauses and subclauses are not indicated as an addition.

It should be noted that the following significant technical changes compared to the previous edition have been incorporated in this revised European Standard:

- a) the scope introduces a new declaration concerning the maximum inlet pressure covered by the revised standard;
- b) incorporation of the requirements and tests for electronic pressure sensing devices (EPSDs);
- c) alignment with EN 13611:2007;
- d) updating of definitions and normative references.

According to the CEN/CENELEC Internal Regulations, the national standards organizations 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

## 1 Scope

This European Standard specifies the safety, construction and performance requirements for pressure sensing devices.

This European Standard covers type testing only.

It applies to pressure sensing devices for the measurement of pressures of combustible gases of the first, second and third families, air, combustion products for maximum inlet pressures up to 500 kPa (5 bar).

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

It specifies requirements for pressure sensing devices which are intended to be applied to steam boilers and as such need to meet increased reliability requirements. These devices are classified as PSD-S in this European Standard.

## 2 Normative references

The following referenced documents are indispensable for the application 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 13611:2007, *Safety and control devices for gas burners and gas burning appliances — General requirements*

EN 60529:1991, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)*

EN 60730-2-6:2008, *Automatic electrical controls for household and similar use — Part 2-6: Particular requirements for automatic electrical pressure sensing controls including mechanical requirements (IEC 60730-2-6:2007, modified)*

EN 61058-1:2002, *Switches for appliances — Part 1: General requirements (IEC 61058-1:2000 + A1:2001, modified)*

EN 175301-803, *Detail Specification: Rectangular connectors — Flat contacts, 0,8 mm thickness, locking screw not detachable*

EN ISO 75 (all parts), *Plastics — Determination of temperature of deflection under load*

IEC 60730-1:2007, *Automatic electrical controls for household and similar use — Part 1: General requirements*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13611:2007 and the following apply.

### 3.101

#### **pressure sensing device**

#### **PSD**

device which senses pressure and provides a signal

NOTE Different types of PSDs are given in Figures 1 to 3.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- Looking for additional Standards? Visit Intertek Inform Infostore
  - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-