



National Standards Authority of Ireland  
Údarás um Chaighdeáin Náisiúnta na hÉireann

IRISH STANDARD

**I.S. EN 88-2:2007**

ICS 23.060.40

**PRESSURE REGULATORS AND ASSOCIATED  
SAFETY DEVICES FOR GAS APPLIANCES -  
PART 2: PRESSURE REGULATORS FOR  
INLET PRESSURES ABOVE 500 MBAR UP TO  
AND INCLUDING 5 BAR**

National Standards  
Authority of Ireland  
Glasnevin, Dublin 9  
Ireland

Tel: +353 1 807 3800  
Fax: +353 1 807 3838  
<http://www.nsai.ie>

**Sales**

<http://www.standards.ie>

*This Irish Standard was  
published under the authority  
of the National Standards  
Authority of Ireland and  
comes into effect on:  
21 December 2007*

**NO COPYING WITHOUT NSAI  
PERMISSION EXCEPT AS  
PERMITTED BY COPYRIGHT  
LAW**

© NSAI 2007

**Price Code N**

Údarás um Chaighdeáin Náisiúnta na hÉireann

*This page is intentionally left BLANK.*

ICS 23.060.40

English Version

**Pressure regulators and associated safety devices for gas  
appliances - Part 2: Pressure regulators for inlet pressures  
above 500 mbar up to and including 5 bar**

Régulateurs de pression et dispositifs de sécurité associés  
pour appareils à gaz - Partie 2: Régulateurs de pression  
pour pression amont supérieure à 500 mbar et inférieure ou  
égale à 5 bar

Druckregler und zugehörige Sicherheitseinrichtungen für  
Gasgeräte - Teil 2: Druckregler für Eingangsdrücke über  
500 mbar bis einschließlich 5 bar

This European Standard was approved by CEN on 8 May 2007.

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, 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: rue de Stassart, 36 B-1050 Brussels**

## Contents

Page

Foreword .....	4
Introduction .....	5
1 Scope .....	6
2 Normative references .....	6
3 Terms and definitions .....	7
3.1 Pressure regulator .....	7
3.2 Components .....	7
3.3 Safety shut-off devices .....	9
3.4 Control variables .....	10
3.4.1 Reference values .....	10
3.4.2 Variables in the controlling process .....	11
3.4.3 Possible values of all variables .....	11
3.4.4 Terms pertinent to the controlled variable .....	12
3.5 Operating features in stable conditions .....	12
3.6 Features pertinent to accuracy .....	14
3.7 Features pertinent to lock-up behaviour .....	15
3.8 Further functional terminology .....	16
3.8.1 Pressures pertinent to design of gas pressure regulator .....	16
3.8.2 nominal pressure .....	17
3.8.3 operating temperature range temperature range at which the pressure regulator components and fixtures are capable of operating continuously .....	17
4 Classification .....	17
5 Units of measurement and test conditions .....	17
5.1 Units of measurement .....	17
5.2 Test conditions .....	17
6 Construction requirements .....	18
6.1 General .....	18
6.2 Construction .....	18
6.2.1 General .....	18
6.2.2 Breather holes .....	18
6.2.3 External visual Indication of the position of the closure member .....	18
6.2.4 Parts transmitting actuating forces .....	19
6.2.5 Pressure adjustment .....	19
6.3 Materials .....	19
6.3.1 General .....	19
6.3.2 Springs .....	19
6.3.3 Requirements for elastomers (including vulcanized rubbers) .....	19
6.4 Gas connections .....	19
6.4.1 General .....	19
6.4.2 Connection sizes .....	19
6.4.3 Threads .....	20
6.4.4 Pressure test nipples (applicable only for outlet connections operating at $\leq$ 500 mbar) .....	20
7 Performance requirements .....	20
7.1 General .....	20
7.2 Strength of housings .....	20
7.2.1 Requirement .....	20
7.2.2 Performance test .....	21
7.3 External and internal leak tightness .....	21

7.4	Torsion and bending.....	21
7.5	Control classification.....	21
7.5.1	General.....	21
7.5.2	Control classifications for pressure regulators.....	21
7.5.3	Safety shut-off device accuracy group for over-pressure.....	22
7.6	Safety devices .....	22
7.6.1	Over-pressure safety shut-off device .....	22
7.6.2	Under-pressure safety shut-off devices .....	23
7.6.3	Bypass.....	23
7.6.4	Response time.....	23
7.7	Durability of performance .....	23
7.7.1	Pressure regulator .....	23
7.7.2	Safety slam-shut device .....	23
8	Marking, installation and operating instructions.....	24
8.1	Marking .....	24
8.2	Installation, operating and servicing instructions.....	24
8.3	Warning notice .....	25
Annex A	(informative) Main components for direct acting and pilot controlled pressure regulators.....	26
A.1	Main components of a pressure regulator .....	26
A.2	Main components of a gas safety shut-off device.....	27
Annex B	(informative) Use of ISO 7-1 and EN ISO 228-1 threads for gas connections (see 6.4.3).....	29
Annex C	(normative) Performance test methods .....	30
C.1	General.....	30
C.2	Apparatus and test rig.....	30
C.3	Performance tests under stable conditions .....	32
C.3.1	General.....	32
C.3.2	Determination of a performance curve.....	34
C.3.3	Determination of the lock-up pressure.....	35
C.3.4	Regulator accuracy class.....	36
C.4	Safety shut-off device accuracy group.....	37
C.4.1	General conditions and apparatus.....	37
C.4.2	Test at ambient temperature .....	39
C.4.3	Test at the limit temperatures between 0 °C and 60 °C.....	39
C.4.4	Verification of the upper limit of the highest set range .....	40
C.4.5	Response time.....	40
C.5	Durability of performance .....	41
C.5.1	General.....	41
C.5.2	Pressure regulator .....	41
C.5.3	Safety shut-off devices.....	42
Annex ZA	(informative) Relationship between this European Standard and the Essential Requirements of EU Directive 90/396/EEC .....	43
Bibliography	.....	45

## **Foreword**

This document (EN 88-2:2007) has been prepared by Technical Committee CEN/TC 58 "Safety and control devices for gas-burners and gas-burning appliances", 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 2008, and conflicting national standards shall be withdrawn at the latest by May 2008.

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.

EN 88 consists of the following parts under the general title "Pressure regulators and associated safety devices for gas appliances":

Part 1: Pressure regulators for inlet pressures up to and including 500 mbar;

Part 2: Pressure regulators for inlet pressures above 500 mbar up to and including 5 bar.

This European Standard should be used in conjunction with EN 13611 "Safety and control devices for gas burners and gas burning appliances — General requirements."

SIL classification according to EN 61508 cannot automatically be claimed based upon compliance with this standard. Pressure regulators with SIL classification do not meet automatically the requirements of this standard.

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, 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.

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
-