

DIN EN 88-2:2025-08 (E)

Safety and control devices for gas burners and gas burning appliances - Part 2:
Pressure regulators for inlet pressures above 50 kPa up to and including 500 kPa
(includes Amendment A1:2024)

| Contents | Page |
|---|-------------|
| European foreword..... | 5 |
| Introduction | 6 |
| 1 Scope..... | 8 |
| 2 Normative references | 8 |
| 3 Terms and definitions | 9 |
| 4 Classification..... | 14 |
| 4.1 Classes of control..... | 14 |
| 4.2 Groups of control..... | 14 |
| 4.3 Classes of control functions..... | 14 |
| 4.4 Types of <i>DC</i> supplied controls | 15 |
| 5 Test conditions and uncertainty of measurements..... | 15 |
| 6 Design and construction | 15 |
| 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 | 15 |
| 6.2.5 Jointing..... | 15 |
| 6.2.6 Moving parts | 15 |
| 6.2.7 Sealing caps | 15 |
| 6.2.8 Dismantling and reassembly | 15 |
| 6.2.9 Auxiliary canals and orifices..... | 15 |
| 6.2.10 Presetting device..... | 16 |
| 6.2.101 External visual indication of the position of the closure member | 16 |
| 6.2.102 Parts transmitting actuating forces | 16 |
| 6.2.103 Adjustments..... | 16 |
| 6.2.104 Integral safety shut-off device..... | 16 |
| 6.2.105 Resistance to pressure..... | 16 |
| 6.2.106 Signal tube connections..... | 17 |
| 6.2.107 Creep relief device..... | 17 |
| 6.3 Materials..... | 17 |
| 6.3.1 General material requirements | 17 |
| 6.3.2 Housing | 18 |
| 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 |
| 6.4 Gas connections | 18 |
| 6.5 Electrical parts of the control | 18 |
| 6.5.1 General..... | 18 |
| 6.5.2 Switching elements..... | 18 |
| 6.5.3 Electrical components..... | 18 |
| 6.6 Protection against internal faults for the purpose of functional safety | 18 |

| | | |
|-----------------------|--|----|
| 7 | Performance | 18 |
| 7.1 | General | 18 |
| 7.2 | Leak-tightness..... | 19 |
| 7.2.1 | Requirements..... | 19 |
| 7.2.2 | Tests | 19 |
| 7.3 | Torsion and bending | 19 |
| 7.4 | Rated flow rate | 19 |
| 7.4.1 | Requirements..... | 19 |
| 7.4.2 | Test | 19 |
| 7.4.3 | Conversion of air flow rate..... | 20 |
| 7.5 | Durability..... | 20 |
| 7.5.1 | Elastomers in contact with gas | 20 |
| 7.5.2 | Marking | 20 |
| 7.5.3 | Resistance to scratching..... | 20 |
| 7.5.4 | Resistance to humidity | 20 |
| 7.6 | Performance tests for electronic controls..... | 20 |
| 7.7 | Long-term performance for electronic controls | 20 |
| 7.8 | Data exchange..... | 20 |
| 7.101 | Pressure regulator performance | 20 |
| 7.101.1 | General | 20 |
| 7.101.2 | General test procedure..... | 20 |
| 7.102 | Safety devices..... | 26 |
| 7.102.1 | Over-pressure safety shut-off devices | 26 |
| 7.102.2 | Under-pressure safety shut-off devices | 30 |
| 7.102.3 | Endurance of safety device | 30 |
| 8 | Electrical requirements..... | 31 |
| 8.1 | General | 31 |
| 8.2 | Protection by enclosure | 31 |
| 8.101 | Plug connections..... | 31 |
| 9 | Electromagnetic compatibility (EMC) | 32 |
| 9.1 | Protection against environmental influences..... | 32 |
| 9.2 | Supply voltage variations below 85 % of rated voltage..... | 32 |
| 9.3 | Voltage dips and interruptions..... | 32 |
| 9.4 | Supply frequency variations..... | 32 |
| 9.5 | Surge immunity tests..... | 32 |
| 9.6 | Electrical fast transient/burst | 32 |
| 9.7 | Immunity to conducted disturbances induced by radio frequency fields | 32 |
| 9.8 | Immunity to radiated disturbances induced by radio frequency fields..... | 32 |
| 9.9 | Electrostatic discharge tests..... | 32 |
| 9.10 | Power frequency magnetic field immunity tests | 32 |
| 9.11 | Harmonics and interharmonics including mains signalling at a. c. power port, low frequency immunity tests..... | 32 |
| 10 | Marking, instructions..... | 33 |
| 10.1 | Marking..... | 33 |
| 10.2 | Instructions..... | 33 |
| 10.3 | Warning notice | 34 |
| Annex A (informative) | Abbreviations and Symbols..... | 35 |
| Annex B (informative) | Leak-tightness tests for gas controls – volumetric method | 36 |
| Annex C (informative) | Leak-tightness tests for gas controls – pressure loss method..... | 37 |
| Annex D (normative) | Conversion of pressure loss into leakage rate | 38 |

| | |
|--|-----------|
| Annex E (normative) Electrical/electronic component fault modes..... | 39 |
| Annex F (normative) Additional requirements for safety accessories and pressure accessories as defined in EU Directive 2014/68/EU | 40 |
| Annex G (normative) Materials for pressurized parts..... | 41 |
| Annex H (normative) Additional materials for pressurized parts..... | 42 |
| Annex I (normative) Requirements for controls used in DC supplied burners and appliances burning gaseous or liquid fuels | 43 |
| Annex J (normative) Method for the determination of a Safety Integrity Level (SIL) | 44 |
| Annex K (normative) Method for the determination of a Performance Level (PL)..... | 45 |
| Annex L (informative) Relationship between Safety Integrity Level (SIL) and Performance Level (PL) | 46 |
| Annex M (normative) Reset functions | 47 |
| Annex N (informative) Guidance document on Environmental Aspects..... | 48 |
| Annex O (normative) Seals of elastomer, cork and synthetic fibre mixtures..... | 49 |
| Annex AA (informative) Typical pressure regulators and safety devices | 50 |
| AA.1 Main components of a pressure regulator | 50 |
| AA.2 Main components of a safety shut-off device | 53 |
| Annex BB (informative) Overview of requirements and test conditions (as given in 7.101), and examples of performance curves for pressure regulators | 55 |
| Annex CC (normative) Creep relief device | 58 |
| CC.1 General..... | 58 |
| CC.2 Design and construction..... | 58 |
| CC.3 Performance requirements..... | 58 |
| CC.4 Marking, instructions | 58 |
| Annex DD (informative) Comparison between EN 334:2019 and \square_{A1} EN 88-2:2022+A1:2024 \square_{A1} | 59 |
| Annex ZA (informative) Relationship between this European Standard and the essential requirements of Regulation (EU) 2016/426 aimed to be covered..... | 60 |
| Bibliography..... | 63 |