

DIN EN 12067-2:2024-02 (E)

Safety and control devices for burners and appliances burning gaseous or liquid fuels - Control functions in electronic systems - Part 2: Fuel/air ratio control /supervision of the electronic type

Contents		Page
European foreword		5
Introduction		6
1	Scope	7
2	Normative references	7
3	Terms and definitions	8
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 DC supplied controls	14
5	Test conditions and uncertainty of measurements	14
6	Design and construction	15
6.1	General	15
6.2	Mechanical parts of the control	16
6.3	Materials	16
6.4	Gas connections	16
6.5	Electronic parts of the control	16
6.6	Protection against internal faults for the purpose of functional safety	17
6.101	Requirements for using alternative actuators on application level	20
7	Performance	20
7.1	General	20
7.2	Leak-tightness	20
7.3	Torsion and bending	20
7.4	Rated flow rate	21
7.5	Durability	21
7.6	Performance tests for electronic controls	21
7.7	Long-term performance for electronic controls	21
7.8	Data exchange	23
7.101	Functional requirements	23
8	Electrical requirements	26
8.1	General	26
8.2	Protection by enclosure	26
9	Electromagnetic compatibility (EMC)	26
9.1	Protection against environmental influences	26
9.2	Supply voltage variations below 85 % of rated voltage	28
9.3	Voltage dips and interruptions	28
9.4	Supply frequency variations	28
9.5	Surge immunity test	28
9.6	Electrical fast transient/burst	29

9.7	Immunity to conducted disturbances induced by radio frequency fields	29
9.8	Immunity to radiated fields induced by radio frequency fields	29
9.9	Electrostatic discharge test	29
9.10	Power frequency magnetic field immunity test	29
9.11	Harmonics and interharmonics including mains signalling at AC power port, low frequency immunity tests	30
10	Marking, instructions	30
10.1	Marking	30
10.2	Instructions	30
10.3	Warning notice	32
Annex A (informative) Abbreviations and symbols		33
Annex B (informative) Leak-tightness tests for gas controls - volumetric method		34
Annex C (informative) Leak-tightness tests for gas controls - pressure loss method		35
Annex D (normative) Calculation of pressure loss into leakage rate		36
Annex E (normative) Electrical/electronic component fault modes		37
Annex F (normative) Additional requirements for safety accessories and pressure accessories as defined in 2014/68/EU		38
Annex G (normative) Materials for pressurized parts		39
Annex H (normative) Additional materials for pressurized parts		40
Annex I (normative) Requirements for controls used in DC supplied burners and appliances burning gaseous or liquid fuels		41
Annex J (normative) Method for the determination of a Safety integrity level (SIL)		42
Annex K (normative) Method for the determination of a Performance Level (PL)		43
Annex L (informative) Relationship between Safety Integrity Level (SIL) and Performance Level (PL)		44
Annex M (normative) Reset functions		45
Annex N (informative) Guidance document on Environmental Aspects		46
Annex O (normative) Seals of elastomer, cork and synthetic fibre mixtures		47
Annex AA (normative) Declaration for sensors, actuators and repeatability		48
Annex BB (normative) Special requirements for single position feed-back potentiometers in electromechanical actuators		52
BB.1	Requirements	52
BB.2	Endurance test	52
Annex CC (informative) Overall fuel/air ratio accuracy		53
CC.1	General	53
CC.2	Method A:	53
CC.3	Method B:	53

Annex DD (informative) Guideline for the integration of an ERC, ERS or ERT into the appliance	55
DD.1 General	55
DD.2 Integrational aspects	55
DD.3 Rules for mechanical integration	56
DD.4 Rules for electrical integration	56
DD.5 Rules for functional integration/functional tests of the appliance	56
DD.6 Responsibility matrix	56
Annex EE (informative) Guideline for the definition of limits for safe operation of the appliance	57
EE.1 Introduction	57
EE.2 General aspects	57
EE.3 Rules for the evaluation of the risk of explosion	58
EE.4 Rules for the evaluation of the risk of poisoning	59
EE.5 Rules for the evaluation of the risk of fire	61
EE.6 Rules for the evaluation of the risks due to vibration	62
Annex FF (normative) Requirements for using alternative actuators on application level	63
FF.1 General	63
FF.2 Requirements for the use of alternative actuators	63
FF.3 Documentation	65
Annex ZA (informative) Relationship between this European Standard and the essential requirements of Directive 2009/142/EC aimed to be covered	66
Annex ZB (informative) Relationship between this European Standard and the essential requirements of Regulation (EU) 2016/426 aimed to be covered	67
Annex ZC (informative) Relationship between this European Standard and the essential requirements of Directive 2014/68/EU aimed to be covered	68
Bibliography	69