

DIN EN 16830:2017-06 (E)

Safety and control devices for burners and appliances burning gaseous or liquid fuels - Control functions in electronic systems - Temperature Control function

Contents		Page
European foreword		4
Introduction		5
Figure 1 -- Standards house		5
1	Scope	7
2	Normative references	7
3	Terms and definitions	7
4	Classification	8
4.1	Classes of control	8
4.2	Groups of control	8
4.3	Classes of control functions	8
4.4	Types of DC supplied controls	8
5	Test conditions and measurement tolerances	8
6	Construction requirements	8
6.1	General	8
6.2	Mechanical parts of the control	8
6.3	Materials	9
6.4	Gas Connections	9
6.5	Electrical parts of the control	9
6.5.1	General	9
6.5.2	Switching elements	9
6.5.3	Electrical components	9
6.6	Protection against internal faults for the purpose of functional safety	10
6.6.1	Design and construction requirements	10
6.6.2	Class A	10
6.6.3	Class B	10
6.6.4	Class C	11
6.6.5	Circuit and construction evaluation	11
6.7	TTB	11
6.7.1	General	11
6.7.2	Threshold value	11
6.8	TCF	12
7	Performance	12
7.1	General	12
7.2	Leak-tightness	12
7.3	Test for leak-tightness	12
7.4	Torsion and bending	12
7.5	Torsion and bending tests	12
7.6	Rated flow rate	12
7.7	Test for rated flow rate	13
7.8	Durability	13
7.8.1	Elastomers in contact with gas	13
7.8.2	Marking	13

7.8.3	Resistance to scratching	13
7.8.4	Resistance to humidity	13
7.9	Performance tests for electronic controls	13
7.9.1	At ambient temperature	13
7.9.2	At minimum temperature	13
7.9.3	At maximum temperature	13
7.10	Long-term performance for electronic controls	13
7.10.1	General	13
7.10.2	Stress test	13
7.10.3	Long term performance test	14
7.10.101	TCF Sensing element(s) assembly	14
7.10.102	TTB Sensing element(s) assembly	14
7.11	Data exchange	14
8	Electrical requirements	14
9	Electromagnetic compatibility (EMC)	15
10	Marking, installation and operating instructions	15
10.1	Marking	15
10.2	Installation and operating instructions	15
10.3	Warning Notice	15
Annex A (informative) Abbreviations and Symbols		16
Annex B (informative) Leak-tightness test for gas controls - volumetric method		17
Annex C (informative) Leak-tightness test for gas controls - pressure loss method		18
Annex D (normative) Conversion of pressure loss into leakage rate		19
Annex E (normative) Electrical/electronic component fault modes		20
Annex F (normative) Additional requirements for safety accessories and pressure accessories as defined in EU Directive 97/23/EC		21
Annex G (normative) Materials for pressurized parts		22
Annex H (normative) Additional materials for pressurized parts		23
Annex I (normative) Requirements for controls used in DC supplied burners and appliances burning gaseous or liquid fuels		24
Annex J (normative) Method for the determination of a Safety Integrity Level (SIL)		25
Annex K (normative) Method for the determination of a Performance Level (PL)		26
Annex L (informative) Relationship between Safety Integrity Level (SIL) and Performance Level (PL)		27
Annex M (normative) Reset functions		28
Annex N (informative) Guidance document on Environmental Aspects		29
Annex O (normative) Seals of elastomer, cork and synthetic fibre mixtures		30
Bibliography		31