ISO 23550:2018 (E)

Safety and control devices for gas and/or oil burners and appliances — General requirements

Contents

Foreword

Introduction

1 Scope

2 Normative references

3 Terms and definitions

4 Classification

4.1 Classes of control
4.2 Groups of controls
4.3 Types of DC supplied controls
4.4 Classes of control functions

5 Test conditions and tolerances

5.1 Test conditions
5.2 Tolerances

6 Construction

6.1 General
6.2 Construction requirements
6.2.1 Appearance
6.2.1.1 General
6.2.1.2 Requirements
6.2.1.3 Test
6.2.2 Holes
6.2.2.1 General
6.2.2.2 Requirements
6.2.2.3 Test
6.2.3 Breather holes
6.2.3.1 General
6.2.3.2 Requirements
6.2.3.3 Test
6.2.4 Vent limiter
6.2.4.1 General
6.2.4.2 Requirements
6.2.4.3 Test
6.2.5 Screwed fastenings
6.2.5.1 General
6.2.5.2 Requirements
6.2.5.3 Test
6.2.6 Moving parts
6.2.6.1 General
6.2.6.2 Requirements
6.2.6.3 Test
6.2.7 Sealing caps
6.2.7.1 General
6.2.7.2 Requirements
6.2.7.3 Test
6.2.8 Disassembling and assembling for servicing and/or adjustment for controls
6.2.8.1 General

6.2.8.2 Requirements
6.2.8.3 Test
6.2.9 Auxiliary channels and orifices
6.2.9.1 General
6.2.9.2 Requirements
6.2.9.3 Test
6.2.10 Pre-setting device
6.2.10.1 General
6.2.10.2 Requirements
6.2.10.3 Test
6.3 Materials
6.3.1 General material requirements
6.3.1.1 General
6.3.1.2 Requirements
6.3.1.3 Test
6.3.2 Housing
6.3.2.1 General
6.3.2.2 Requirements
6.3.2.3 Test
6.3.3 Springs providing closing force and sealing force
6.3.3.1 General
6.3.3.2 Requirements
6.3.3.3 Test
6.3.4 Resistance to corrosion and surface protection
6.3.4.1 General
6.3.4.2 Requirements
6.3.4.3 Test
6.3.5 Impregnation
6.3.5.1 General
6.3.5.2 Requirements
6.3.5.3 Test
6.3.6 Seals for glands for moving parts
6.3.6.1 General
6.3.6.2 Requirements
6.3.6.3 Test
6.3.7 Jointing
6.3.7.1 General
6.3.7.2 Requirements
6.3.7.3 Test
6.4 Connections
6.4.1 General
6.4.2 Connection sizes
6.4.3 Connection types
6.4.4 Threads
6.4.4.1 General
6.4.4.2 Requirements
6.4.4.3 Test
6.4.5 Union joints
6.4.5.1 General
6.4.5.2 Requirements
6.4.5.3 Test
6.4.6 Flanges
6.4.6.1 General
6.4.6.2 Requirements
6.4.6.3 Test
6.4.7 Compression fittings
6.4.7.1 General
6.4.7.2 Requirements
6.4.7.3 Test
6.4.8 Flare connections
6.4.8.1 General
6.4.8.2 Requirements
6.4.8.3 Test
6.4.9 Nipples for pressure tests

6.4.9.1 General
6.4.9.2 Requirements
6.4.9.3 Test
6.4.10 Strainers
6.4.10.1 General
6.4.10.2 Requirements
6.4.10.3 Test
6.4.11 Gas connections by GQC
6.5 Gas controls employing with electrical components in the gas way
6.5.1 General
6.5.2 Requirements
6.5.3 Ignition trial test
6.5.4 Test of ignition source

7 Performance

7.1 General
7.2 Leak-tightness
7.2.1 General
7.2.2 Requirements
7.2.3 Test
7.2.3.1 General
7.2.3.2 Test for external leak-tightness
7.2.3.3 Test for internal leak-tightness of controls
7.3 Torsion and bending
7.3.1 General
7.3.2 Torsion
7.3.3 Bending moment
7.3.4 Torsion and bending tests
7.3.4.1 General
7.3.4.2 Ten-second torsion test — Group 1 and group 2 controls with threaded connections
7.3.4.3 Ten-second torsion test — Group 1 and group 2 controls with compression joints
7.3.4.3.1 Olive-type compression joints
7.3.4.3.2 Flared compression joints
7.3.4.3.3 Flanged or saddle-clamp inlet connections for attachment to cooking appliance gas manifolds
7.3.4.4 Ten-second bending-moment test
7.3.4.5 900-s bending-moment test
7.4 Rated flow rate
7.4.1 General
7.4.2 Requirements
7.4.3 Test
7.4.3.1 Apparatus
7.4.3.2 Test procedure
7.4.3.3 Conversion of air flow rate
7.5 Durability
7.5.1 Elastomers in contact with gas
7.5.1.1 General
7.5.1.2 Requirements
7.5.1.3 Test
7.5.2 Resistance of elastomers to lubricants and gases
7.5.2.1 General
7.5.2.2 Requirements
7.5.2.3 Test
7.5.3 Marking resistance
7.5.3.1 General
7.5.3.2 Requirements
7.5.3.3 Test
7.5.4 Resistance to scratching
7.5.4.1 General
7.5.4.2 Requirements
7.5.4.3 Test
7.5.5 Resistance to humidity
7.5.5.1 General
7.5.5.2 Requirements

7.5.5.3 Test
7.6 Functional requirements
7.7 Endurance
7.8 Vibration test

8 Electrical equipment

8.1 General
8.2 Requirements
8.3 Test
8.4 Protection by enclosure

9 Electromagnetic compatibility (EMC)

9.1 Protection against environmental influences
9.1.1 General
9.1.2 Requirements
9.1.3 Test
9.2 Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity
9.2.1 General
9.2.2 Requirements
9.2.3 Test
9.3 Voltage dips, voltage interruptions and voltage variations in the power supply network
9.3.1 Voltage dips and voltage interruptions
9.3.1.1 General
9.3.1.2 Requirements
9.3.2 Test
9.3.3 Voltage variation
9.3.3.1 General
9.3.3.2 Requirements
9.3.3.3 Test
9.4 Test of influence of voltage unbalance
9.5 Surge immunity tests
9.5.1 General
9.5.2 Requirements
9.5.3 Test
9.6 Electrical fast transient/burst
9.6.1 General
9.6.2 Requirements
9.6.3 Test
9.7 Ring wave immunity
9.7.1 General
9.7.2 Requirements
9.7.3 Test
9.8 Electrostatic discharge
9.8.1 General
9.8.2 Requirements
9.8.3 Test
9.9 Radio-frequency electromagnetic field immunity
9.9.1 Immunity to conducted disturbances
9.9.1.1 General
9.9.1.2 Requirements
9.9.1.3 Test
9.9.2 Immunity to radiated disturbances
9.9.2.1 General
9.9.2.2 Requirements
9.9.2.3 Test
9.10 Influence of supply frequency variations
9.10.1 General
9.10.2 Requirements
9.10.3 Test
9.11 Power frequency magnetic field immunity
9.11.1 General
9.11.2 Requirements
9.11.3 Test

9.12 Evaluation of compliance

10 Marking, installation and operating instructions

10.1 Marking
10.2 Installation and operating instructions
10.3 Warning notice

Annex A (informative) Leak-tightness test — Volumetric method

A.1 Apparatus
A.2 Test procedure

Annex B (informative) Leak-tightness test — Pressure-loss method

B.1 Apparatus
B.2 Test method

Annex C (normative) Conversion of pressure loss into leakage rate

Annex D (normative) Gas quick connector (GQC)

D.1 General
D.2 Classification
D.3 Construction
D.3.1 Gas connection
D.3.2 Gas quick connector
D.4 Performance
D.4.1 Leak-tightness
D.4.2 Internal leak-tightness
D.4.3 Torsion and bending
D.4.3.1 Torsion
D.4.3.2 Bending moment
D.4.3.3 Torsion and bending test
D.4.3.3.1 General
D.4.3.3.2 900-s bending-moment test — Group 1 controls only
D.4.3.3.3 Assembly test
D.4.3.3.4 Tensile test
D.5 High temperature test for non-metallic sealing means of GQC, not part of another control
D.5.1 Requirement
D.5.2 Test
D.6 Marking, installation and operating instructions
D.6.1 Marking
D.6.2 Installation and operating instructions

Annex E (normative) Elastomers/requirements resistance to lubricants and gas

Annex F (normative) Specific regional requirements in European countries

F.1 General
F.2 Additional requirements
F.2.1 Addition to 6.3.2.2
F.2.2 Addition to 6.4.2

Annex G (normative) Specific regional requirements in Canada and USA

G.1 General
G.2 Additional requirements and modifications
G.2.1 Modification of 6.2.5.1
G.2.2 Modification of 6.2.5.2
G.2.3 Modification of 6.4.4.2
G.2.4 Modification of 6.4.5.2
G.2.5 Modification of and addition to 6.4.6.2
G.2.6 Modification of 7.2.3.1

Annex H (normative) Specific regional requirements in Japan

H.1 General
H.2 Additional requirements, replacements and modifications
H.2.1 Modification of Clause 5

H.2.2 Replacement of 6.3.2.2
H.2.3 Addition to 6.3.7.2
H.2.4 Modification of 6.4.4.2
H.2.5 Modification of 6.4.5.2
H.2.6 Modification of 6.4.6.2
H.2.7 Requirements for pipe fittings
H.2.8 Modification of 7.1
H.2.9 Addition to 7.3.4.1
H.2.10 Modification to 7.4.3.3
H.2.11 Modification to 10.1

Page count: 66