

ISO 23553-1:2022-02 (E)

Safety and control devices for oil burners and oil-burning appliances - Particular requirements - Part 1: Automatic and semi-automatic valves

Contents		Page
Foreword.....		v
Introduction.....		vi
1	Scope.....	1
2	Normative references.....	1
3	Terms and definitions.....	2
4	Classification.....	6
4.1	Classes of control.....	6
4.2	Groups of control.....	6
4.3	Types of DC supplied controls.....	6
5	Test conditions.....	6
6	Construction.....	7
6.1	General.....	7
6.2	Construction requirements.....	7
6.2.1	Appearance.....	7
6.2.2	Holes.....	7
6.2.3	Flexible diaphragm, bellows or similar construction.....	7
6.2.4	Screwed fastenings.....	7
6.2.5	Jointing.....	8
6.2.6	Moving parts.....	8
6.2.7	Sealing caps.....	8
6.2.8	Dismantling and reassembling for servicing and/or adjustment.....	8
6.2.9	Auxiliary channels.....	9
6.2.10	Resistance against pressure.....	9
6.2.11	Connections.....	9
6.3	Materials.....	9
6.3.1	General material requirements.....	9
6.3.2	Springs.....	10
6.3.3	Resistance to corrosion and surface protection.....	10
6.3.4	Impregnation.....	10
6.3.5	Seals for glands for moving parts.....	10
6.3.6	Non-metallic sealing materials.....	10
6.3.7	Actuators.....	10
6.3.8	Enclosures.....	11
6.3.9	Extra low voltage terminals.....	11
6.4	Oil connections.....	11
6.4.1	Making connections.....	11
6.4.2	Connection sizes.....	11
6.4.3	Threads.....	11
6.4.4	Union Joints.....	12
6.4.5	Flanges.....	13
6.4.6	Compression fittings.....	13
6.4.7	Nipples for pressure tests.....	13
6.4.8	Welded connections.....	13
6.5	Strainers.....	13
6.6	Indicator.....	14
6.6.1	Position indicator.....	14
6.6.2	Closed position indicator switch.....	14

7	Performance	14
7.1	General	14
7.2	Leak-tightness	15
	7.2.1 Criteria	15
	7.2.2 Test for leak-tightness	15
7.3	Torsion and bending	16
	7.3.1 General	16
	7.3.2 Torsion	16
	7.3.3 Bending moment	16
	7.3.4 Torsion and bending tests	16
	7.3.5 Hydrostatic strength test	20
7.4	Rated oil flow	20
	7.4.1 Criteria	20
	7.4.2 Test of flow capacity	20
7.5	Durability	20
	7.5.1 Elastomers in contact with oil	20
	7.5.2 Resistance to oil	20
	7.5.3 Marking resistance	21
	7.5.4 Resistance to scratching	21
	7.5.5 Resistance to humidity	22
7.6	Functional requirements	23
	7.6.1 General	23
	7.6.2 Closing function	23
	7.6.3 Valve closing time	23
	7.6.4 Valve opening time	24
7.7	Endurance	24
	7.7.1 General	24
	7.7.2 Test of endurance	24
	7.7.3 Test of endurance of electrically operated valves	24
8	EMC/Electrical requirements	25
8.1	Protection against environmental influences	25
	8.1.1 Assessment Criterion I	25
	8.1.2 Assessment Criterion II	25
8.2	Surge immunity test	25
8.3	Electrical fast transient/burst	26
8.4	Immunity to conducted disturbances	26
8.5	Immunity to radiated fields	27
8.6	Electrostatic discharge immunity test	28
8.7	Test for immunity to power-frequency magnetic field	28
8.8	Electrical equipment	28
	8.8.1 General	28
	8.8.2 Heating of oil valves	28
	8.8.3 Heating for valves	30
	8.8.4 Burnout test for valves	30
	8.8.5 Blocking of valve mechanism	30
8.9	Electrical components	31
	8.9.1 Degree of protection	31
	8.9.2 Switches	31
	8.9.3 Plug connector	31
	8.9.4 Power-saving circuit	32
8.10	Ring wave	32
9	Marking, installation and operating instructions	32
9.1	Marking	32
9.2	Installation and operating instructions	33
9.3	Warning notice	33
	Annex A (normative) Test for immunity to power-frequency magnetic fields	35
	Annex B (normative) Specific regional requirements in European countries	36
	Annex C (normative) Specific regional requirements in Canada and USA	38
	Annex D (normative) Specific regional requirements in Japan	41
- 2 -	Bibliography	43