

ISO 23551-9:2022-01 (E)

Safety and control devices for gas burners and gas-burning appliances - Particular requirements - Part 9: Mechanical gas thermostats

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Classification	3
4.1	Classes of controls	3
4.2	Groups of controls	4
4.3	Types of DC supplied controls	4
4.4	Classes of control functions	4
5	Test conditions	4
6	Construction	4
6.1	General	4
6.2	Construction requirements	4
6.2.1	Appearance	4
6.2.2	Holes	4
6.2.3	Breather holes	4
6.2.4	Vent limiter	4
6.2.5	Screwed fastenings	4
6.2.6	Moving parts	4
6.2.7	Sealing caps	5
6.2.8	Dismantling and reassembling for servicing and/or adjustment for controls	5
6.2.9	Auxiliary channels and orifices	5
6.2.10	Pre-setting device	5
6.3	Materials	5
6.3.1	General material requirements	5
6.3.2	Housing	5
6.3.3	Springs providing closing force and sealing force	5
6.3.4	Resistance to corrosion and surface protection	5
6.3.5	Impregnation	5
6.3.6	Seals for glands for moving parts	5
6.3.7	Jointing	5
6.4	Connections	5
6.5	Gas controls employing with electrical components in the gas way	6
6.6	Flow characteristics	6
6.7	Temperature adjustment of adjustable thermostats	6
6.7.1	Range adjustment	6
6.7.2	Set point adjustment	6
6.7.3	Fixed setting thermostat	6
7	Performance	6
7.1	General	6
7.2	Leak-tightness	7
7.2.1	General	7

7.2.2	Requirements	7
7.2.3	Test	7
7.3	Torsion and bending	7
7.4	Rated flow rate	7
7.4.1	General	7
7.4.2	Requirements	7
7.4.3	Test	8
7.5	Durability	8
7.6	Functional requirements	8
ISO 23551-9:2022(E)	ISO 23551-9:2022(E) 7.6.1 Calibration temperature set-point	8
7.6.2	Backlash	8
7.6.3	Opening of a snap-acting thermostat with a closed position	9
7.6.4	Opening pressure and closing pressure for thermostats with a closed position	9
7.6.5	Operating characteristic of the thermostat	9
7.6.6	Ambient temperature range of the body	14
7.6.7	Effect of storage and transport temperatures	14
7.6.8	Thermal overload of the thermal sensing element	14
7.6.9	Operating torque of the thermostat set-point adjuster	15
7.6.10	Effect of high ambient temperature on performance of thermostats for top burners and griddles	15
7.7	Endurance	15
7.7.1	Mechanical cycling	15
7.7.2	Thermal cycling	16
8	Electrical equipment	17
9	Electromagnetic compatibility (EMC)	17
10	Marking, installation and operating instructions	17
10.1	Marking	17
10.2	Installation and operating instructions	18
10.3	Warning notice	18
Annex A (informative)	Leak-tightness test -- Volumetric method	19
Annex B (informative)	Leak-tightness test -- Pressure-loss method	20
Annex C (normative)	Conversion of pressure loss into leakage rate	21
Annex D (normative)	Gas quick connector (GQC)	22
Annex E (normative)	Elastomers/requirements resistance to lubricants and gas	23
Annex F (normative)	Specific regional requirements in European countries	24
Annex G (normative)	Specific regional requirements in Canada and USA	25
Annex H (normative)	Specific regional requirements in Japan	26
Bibliography	27