

ISO 23555-2:2022-01 (E)

Gas pressure safety and control devices for use in gas transmission, distribution and installations for inlet pressures up to and including 10 MPa - Part 2: Gas pressure regulator

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	2
3	Terms and definitions and symbols	2
3.1	Terms and definitions	2
3.1.1	General terms	2
3.1.2	Terms related to flow	5
3.1.3	Terms related to variables in the controlling process	6
3.1.4	Terms related to the controlled process	6
3.1.5	Terms related to functional performance	6
3.1.6	Feature related to accuracy	8
3.1.7	Terms related to lock-up behaviour	8
3.1.8	Terms related to design and tests	10
3.1.9	Summary of symbols for creep relief valves	10
3.2	Symbols	10
4	Classification	11
4.1	General	11
4.2	Temperature classes	11
4.3	Strength types	11
4.4	Fail conditions	11
5	Materials	11
6	Design	11
6.1	General	11
6.2	Strength of metallic body and its inner metallic partition walls	12
6.3	Other pressure metallic containing parts of integral and differential strength controls	12
6.4	Strength of parts transmitting actuating forces	12
6.5	Strength of diaphragms (elastomeric parts)	12
6.6	Welding	12
6.7	Main function of a regulator	12
6.7.1	General	12
6.7.2	Gas pressure regulators with associated safety devices	13
7	Performance and testing requirements	14
7.1	General	14
7.1.1	Approach to stable product phase	14
7.1.2	Test conditions	15
7.1.3	Test tolerances	15
7.1.4	Overview table	15
7.2	Requirements	16
7.2.1	Test rig	16
7.2.2	Classification of stable production tests	16
7.2.3	Dimensional check and visual inspection	16
7.2.4	Shell strength	16
7.2.5	External/Internal tightness	16

7.2.6	Antistatic characteristics	16
7.2.7	Sound emission	16
7.2.8	Control classifications	17
7.2.9	Fail close conditions	18
7.2.10	Fail open conditions	18
7.2.11	Closing force for monitor at full open position	18
7.2.12	Gas pressure regulator sizing	19
ISO 23555-2:2022(E) ISO 23555-2:2022(E) 7.3 Tests		
7.3.1	General	22
7.3.2	Materials check at stable production phase	22
7.3.3	Dimensional check and visual inspection	22
7.3.4	Mounting position	22
7.3.5	Shell strength	22
7.3.6	External tightness	22
7.3.7	Internal tightness	23
7.3.8	Antistatic characteristics	23
7.3.9	Methods for calculating and measuring the sound pressure level	23
7.3.10	Control classifications	23
7.3.11	Final visual inspections	32
7.3.12	Verification of closing force for monitor in fully open position under normal operating conditions	33
8 Documentation		
8.1	General	33
8.2	Documentation related to type test	33
8.3	Documentation related to batch surveillance	33
8.4	Documentation related to the routine tests	33
8.4.1	Documentation provided at the request of the customer	33
8.4.2	Documentation provided with the regulator	33
9 Marking		
9.1	General	33
9.2	Basic requirements	34
9.3	Markings for the various connections	34
9.4	Marking of integrated safety devices	34
9.5	Other additional requirements	34
10 Packaging and transportation of finished product		
Annex A (normative) List of materials		35
Annex B (normative) Elastomeric material		36
Annex C (normative) High pressure event limiter		37
Annex D (normative) Compliance evaluation		38
Annex E (informative) Alternative methods for the determination of the accuracy class, the lock-up pressure class, the maximum accuracy flow rate, the flow coefficients and the verification of the hysteresis band		39
Annex F (informative) Inspection certificate		47
Annex G (informative) Acceptance test		50
Annex H (normative) Token (creep) relief device		51
Annex I (informative) Order specification		53
Annex J (informative) Dynamic force calculation method		55
Bibliography		58