ISO 6953-2:2024-01 (E)

Pneumatic fluid power - Compressed air pressure regulators and filter-regulators - Part 2: Test methods to determine the main characteristics to include in supplier's literature

Contents

Page

Foreword ..... **v**

Introduction ..... **vi**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **2**

4 Symbols and units **2**

5 Test conditions **2**
5.1 Gas supply 2
5.2 Temperature 2
5.3 Pressures 3
5.4 Inlet pressure 3
5.5 Test pressures (regulated pressure) 3

6 Test procedure to verify rated pressure **3**

7 Flow characteristics tests **4**
7.1 Test installation 4
7.2 General requirements 5
7.3 Test procedures 6
7.3.1 Initial test procedure 6
7.3.2 Forward flow rate-pressure characteristics test 6
7.3.3 Relief flow rate-pressure characteristics test 6
7.3.4 Procedure for other regulated pressure values 7
7.4 Calculation of characteristics 7
7.4.1 Flow rate-pressure characteristic curves 7
7.4.2 Flow rate-pressure hysteresis 8
7.4.3 Maximum forward sonic conductance 8
7.4.4 Maximum relief sonic conductance 9

8 Pressure regulation test **9**
8.1 Test circuit 9
8.2 Test procedure 9

9 Maximum air consumption at null forward flow rate or relief flow rate for pilot-operated regulator with air bleed **10**
9.1 Test installation 10
9.2 Test procedures 10
9.3 Calculation of characteristics 10

10 Special test procedures **11**
10.1 Pilot pressure/regulated pressure characteristics test in the case of external pilot-operated pressure regulators 11
10.1.1 Test installation 11
10.1.2 Test procedures 11
10.1.3 Calculation of characteristics 11
10.2 Output resolution in the case of manual air pressure regulator 13
10.2.1 Test installation 13
10.2.2 Test procedures 13

10.2.3 Calculation of characteristic 14
10.3 Resolution in case of pressure-pilot air pressure regulator 15
10.3.1 Test procedures 15
10.3.2 Calculation of characteristic 15
10.4 Sensitivity 15
10.4.1 Test procedures 15
10.4.2 Calculation of characteristic 16
10.5 Repeatability test 16
10.5.1 General 16
10.5.2 Test installation 16
10.5.3 General test method 17
10.5.4 Test execution 17
10.5.5 Calculation of the repeatability value 18

11 Presentation of data 18
11.1 General 18
11.2 Flow rate-pressure characteristics 18
11.3 Pressure regulation characteristics 18
11.4 Maximum air consumption for pilot operated regulators with air bleed 18
11.5 Additional characteristics for pressure-pilot air pressure regulators 18
11.6 Additional characteristics for manual air pressure regulators 19

Annex A (informative) **Comparison of repeatability test methods for manual air pressure regulators 20**

Bibliography 39