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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 47940.2-2026

**Pneumatic fluid power - Electro-pneumatic continuous flow
control valves - Part 2: Test methods to determine main
characteristics to include in the supplier's literature**

气动 电-气连续流量控制阀 第2部分：评定商务文件中包含的主要特性的试验方法
(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 2 of GB/T 47940 "Pneumatic-Electro-Pneumatic Continuous Flow Control Valves". GB/T 47940 has the following publications.

part.

---Part 1: Key Features Included in Business Documents;

---Part 2: Test methods for evaluating key characteristics contained in business documents.

This document is modified to adopt ISO 10041-2:2010 "Pneumatic-electric continuous flow control valves - Part 2: Evaluation of commercial documents containing..." Test methods for the main characteristics contained therein.

The technical differences between this document and ISO 10041-2:2010, and the reasons therefor, are as follows.

---ISO 10041-1:2010 (see Chapter 3) has been replaced with the normatively referenced GB/T 47940.1 to adapt to my country's technical requirements.

Improve operability;

---ISO 5598 (see Chapter 3) has been replaced with the normatively referenced GB/T 17446 to adapt to my country's technical conditions and improve operability.

Actual nature;

---The requirement for the temperature of the tested component has been removed from the test conditions (see 5.2) to adapt to my country's technical conditions and improve operability;

---ISO 2944 has been replaced with the normatively referenced GB/T 2346 (see 5.3.2) to adapt to my country's technical conditions and improve operability.

Actual nature;

---The content of the "Note" in the static test section has been changed to a "Warning" requirement (see 6.3) to adapt to my country's technical conditions and improve operability;

---ISO 6358-1 (see 7.1.3, 8.2.1, 8.2.2, and 8.3.1) has been replaced with the normatively referenced GB/T 14513.1 to suit my needs.

Improve the country's technical conditions and enhance operability;

---The requirement for "Test of Control Signal-Forward Flow Characteristics" has been removed without changing the electronic control signal values (see 7.2.4.2.7).

To adapt to my country's technological conditions and improve operability;

---Some requirements for the presentation of test results have been revised (see Chapter 12) to adapt to my country's technical conditions and improve operability.

The following editorial changes have been made to this document.

---Notes in the range have been removed;

---ISO 1219-1 has been replaced by GB/T 786.1, which is cited in the informational reference.

---Table 1 has removed the symbols and units for "Linearity" and "Maximum Linearity Difference," the unit "%" for "Repeatability and Resolution," and the table's headings.

footnote;

---The unit "bar" has been removed;

---Columns in 7.1.2.2 have been removed.

Please note that some content in this document may involve patents. The issuing

organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Hydraulics and Pneumatics (SAC/TC3).

Introduction

In pneumatic systems, power is transmitted and controlled via compressed gas in a circuit. When precise control based on a variable flow rate setpoint is required...

For precise flow regulation, electro-pneumatic continuous flow control valves can be used. These control valves can continuously regulate the system's flow rate in response to continuous flow.

The system continuously inputs electrical signals and proportionally correlates the input signal value with the flow rate value. Therefore, it is necessary to understand these electro-pneumatic continuous flow control techniques.

The performance characteristics of the valve are used to determine its applicability.

GB/T 47940 aims to determine the key characteristics and test methods for electro-pneumatic continuous flow control valves included in the evaluation commercial documents, and is intended to be developed by [the relevant authority/organization].

It consists of two parts.

---Part 1: Key Characteristics Included in the Commercial Documents. The purpose is to identify the electro-pneumatic continuous flow control valves included in the commercial documents.

---Part 2: Test methods for evaluating the key characteristics contained in the commercial documentation. The aim is to determine the performance of the electro-pneumatic continuous flow control valve.

The test methods and parameter expressions for evaluating the key characteristics contained in the business documents.

Pneumatic-electric continuous flow control valve Part 2: Evaluation of the business documents contained herein Test methods for key characteristics

1 Scope

This document specifies the test methods and parameter expressions for the key characteristics of electro-pneumatic continuous flow control valves included in the evaluation commercial documents.

Way.

This document applies to two-port and electro-pneumatic continuous flow control valves with vent ports.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 2346 Fluid transmission systems and components, nominal pressure series (GB/T 2346-2003, ISO 2944:2000, MOD) GB/T 14513.1 Determination of flow characteristics of compressible fluid elements used in pneumatic applications-Part 1: General rules for steady-state flow and Test methods (GB/T 14513.1-2017, ISO 6358-1:2013, IDT) GB/T 17446 Glossary of Fluid Transmission Systems and Components (GB/T 17446-2024, ISO 5598:2020, MOD) GB/T 47940.1 Pneumatic-Electro-Pneumatic Continuous Flow Control Valves - Part 1: Key Characteristics Contained in Commercial Documents (GB/T 47940.1-2026, ISO 10041-1:2010, MOD) the terms and definitions defined in GB/T 17446 and GB/T 47940.1 apply to this document.

4 Symbols and Units

The symbols and units used in this document are shown in Table 1. The graphic symbols used in Figures 1-4 and Figures 6-8 conform to GB/T 786.1.

Table 1 Symbols and Units

Parameter	symbol	unit	Critical back pressure ratio	b	-Sound velocity	conductance	C
	m ³ /(s·Pa)	(ANR)	Subsonic index	m	-Atmospheric pressure	(Pa)	Reference pressure
Inlet stagnation pressure (gauge pressure)	p1	Pa					