

ICS 07.060
CCS A 47



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

GB/T 45962-2025

**Performance test methods for meteorological instruments and
equipments - Atmospheric pressure**

气象仪器设备性能测试方法 大气压力

Issued on: August 1, 2025

Implemented on: February 1, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

Preface	III
1 Scope	1
2 Normative references	1
3 Terms and Definitions	1
4 Instruments and Equipment	1
4.1 General requirements	1
4.2 Standard	1
4.3 Air pressure control equipment	1
4.4 Standard thermometer	1
4.5 Temperature coefficient test box	2
5 Test Condition	2
6 Test Item	2
6.1 Empty box pressure gauge/gauge	2
6.2 Electronic barometer	2
7 Test Method	2
7.1 Empty box pressure gauge/gauge	2
7.2 Electronic barometer	3
8 Data Processing	4
9 Test Report	4
Appendix A (Normative) Calculation Method for Empty Box Air Pressure Gauge/Gauge Test Items	5
A.1 Temperature coefficient	5
A.2 Indication error	5
A.3 Supplementary correction value	6
Appendix B (Normative) Calculation Method for Electronic Barometer Test Items	7
B.1 Indication error	7
B.2 Stability	8
B.3 Return Error	8

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents"

Drafting.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed by the China Meteorological Administration.

This document is under the jurisdiction of the National Technical Committee for Standardization of Meteorological Instruments and Observation Methods (SAC/TC507).

This document was drafted by: China Meteorological Administration Meteorological Observation Center, Xinjiang Uygur Autonomous Region Meteorological Technology and Equipment Support Center, Liaoning Provincial Meteorological Administration, Xiang Equipment Support Center, Tianjin Yunnao Aerospace Technology Co., Ltd., 61540 Unit of the Chinese People's Liberation Army, Shandong Meteorological Engineering Technology Center, Zhejiang Provincial Atmospheric Sounding Technology Support Center, Hunan Provincial Meteorological Technology and Equipment Center, and the 93220 Unit of the Chinese People's Liberation Army.

The main drafters of this document are: Chen Xi, Yin Xingchen, Chong Wei, Li Songkui, Sha Li, Li Fenghui, Jiang Mingbo, Yan Mingming, Zhu Mingyu, Qiu Shi, Luo Chang, Yuan Shuai, Yang Yuexin, Wang Pengyu, and Zhang Chenyang.

Meteorological instrument performance test method atmospheric pressure

1 Scope

This document specifies the instrumentation, test conditions, test items, and data processing for the performance test of atmospheric pressure measuring instruments used in meteorology.

The standard describes the test methods for the performance of atmospheric pressure measuring instruments used in meteorology and the test report requirements.

This document is applicable to the performance test of empty box barometers/gauges and electronic barometers with a measurement range of (450~1100)hPa.

2 Normative references

GB/T 37467-2019

3 Terms and Definitions

The terms and definitions defined in GB/T 37467-2019 and QX/T 26-2004 apply to this document.

4.1 General requirements

The uncertainty introduced by the test instruments and equipment should not be greater than $1/3$ of the uncertainty introduced by the maximum allowable error of the instrument under test.

When the standard instrument uses an absolute pressure gas piston pressure gauge, the introduced uncertainty should not be greater than the maximum allowable error of the instrument being measured. $1/2$ of the uncertainty.

4.2 Standards

The measuring range of the standard instrument should cover the measuring range of the instrument under test.

4.3 Air pressure control equipment

The air pressure control device consisting of a pressure source, a vacuum source and a pressure regulator should be selected in combination with the performance requirements and physical characteristics of the instrument being tested.

Or an air pressure box as the air pressure generator, and meet the following requirements;

- a) The air pressure range covers the measuring range of the instrument under test;
- b) The size of the working area can meet the placement depth and spacing requirements of the standard part and the measured instrument part;
- c) The air leakage rate of the air pressure box shall not exceed $0.3\text{hPa}/10\text{min}$.

4.4 Standard thermometer

The measurement range of the standard thermometer is $-10^{\circ}\text{C}\sim 40^{\circ}\text{C}$, and the maximum allowable error is $\pm 0.3^{\circ}\text{C}$.

Note. The standard thermometer is used for the temperature coefficient test of the empty box barometer/gauge.