

ICS 23.140
CCS J 72



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

GB/T 10893.1-2012

Replacing GB/T 10893.2-2006, GB/T 10893.1-2012

**Compressed-air dryers - Specifications and testing
(English Translation)**

Issued on: October 31, 2025

Implemented on: February 1, 2026

Issued by: State Administration for Market Regulation

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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 supersedes GB/T 10893.1-2012 "Compressed Air Dryers - Part 1: Specifications and Tests" and GB/T 10893.2-2006.

"Compressed Air Dryers - Part 2: Performance Parameters". This document is based on GB/T 10893.1-2012, and integrates GB/T 10893.2-the content of 2006. Compared with GB/T 10893.1-2012, apart from structural adjustments and editorial changes, the main technical changes are as follows.

- The scope has been changed (see Chapter 1, Chapter 1 of the 2012 edition);
- Terms and definitions that were defined in the referenced documents have been removed (see Chapter 3, Chapter 3 of the 2012 edition);
- Added solutions suitable for the operating conditions of compression heat dryers (see Table 2);
- Added conditions suitable for the stability of compression heat dryers (see 7.2);
- The requirement for pressure drop has been increased (see 7.3).

This document is modified to adopt ISO 7183:2007 "Compressed air dryers - Specification and testing".

This document has undergone significant structural adjustments compared to ISO 7183:2007. A table comparing the structural numbering changes between the two documents is provided.

See Appendix A.

This document differs significantly from ISO 7183:2007 in several technical aspects. The relevant clauses are indicated in vertical single-line margins.

The lines (|) are marked. A summary of these technical differences and their reasons can be found in Appendix B.

The following editorial changes have been made to this document.

- GB/T 13277.1-2023 has replaced ISO 8573-1:2001;
- Notes in Table 1 have been deleted;
- The word "PAV" in formula (1) has been changed to "PEAv";
- Changed "qsum" to "Vsum" in formula (6);
- GB/T 4889 has replaced ISO 2854;
- The title of Appendix C has been changed;
- Added C.1 overview;
- Annex D (Informative) of ISO 7183:2007 concerning pressure tube measurement has been removed;
- Added operating condition A3 in Table D.1, replacing ISO 3744 and ISO 9614-2 with GB/T 4980;
- Appendix E (Informative) has been added, providing instructions on the locations for pressure, temperature, and pressure dew point measurements;
- Added Appendix G (Informative) Dryer Data Summary Table.

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 Compressor Standardization Technical Committee (SAC/TC145).

1 Scope

This document specifies the symbols, standard test conditions, and prescribed operating conditions for different types of compressed air dryers, and describes the performance testing.

The method provides information on uncertainties and experimental reports.

This document applies to adsorption-type compressed air dryers and membrane-type dryers with operating pressures greater than 0.05 MPa and less than or equal to 1.6 MPa.

Requirements and tests for compressed air dryers, refrigerated compressed air dryers (including those dried by cooling), and combined compressed air dryers.

This document does not apply to absorption compressed air dryers, overcompression compressed air dryers, or built-in compressed air dryers.

Note 1: The types and principles of compressed air dryers discussed in this document are detailed in Appendix C.

Note 2: This document specifies the partial load test method for determining the performance of energy-saving devices.

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 786.1 Graphical symbols and circuit diagrams for fluid transmission systems and components - Part 1: Graphical symbols (GB/T 786.1-2021, ISO 1219-1:2012, IDT) GB/T 4889 Statistical processing and interpretation of data. Estimation and testing of mean and variance of normal distribution (GB/T 4889-2008, ISO 2854:1976, MOD) GB/T 4980 Determination of noise in positive displacement compressors GB/T 13277.3 Compressed air - Part 3: Methods for measuring humidity (GB/T 13277.3-2015, ISO 8573-3:1999) MOD) JB/T 7664 Compressed Air Purification Terminology

results-Estimation of the mean-Confidence interval)

3 Terms and Definitions

The terms and definitions defined in JB/T 7664 apply to this document.

4 Symbols

The following symbols apply to this document.

4.1 Graphic Symbols

The symbols used in Figures 1 to 3 are in accordance with GB/T 786.1.