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

GB/T 15913-2022

Replacing GB/T 15913-2009

**Monitoring and testing for energy saving of fan's unit and
distribute tube system**

风机机组与管网系统节能监测

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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 of Standardization Documents" drafted. This document replaces GB/T 15913-2009 "Energy Conservation Monitoring of Fan Units and Pipe Network Systems". Compared with GB/T 15913-2009, except In addition to structural adjustments and editorial changes, the main technical changes are as follows:

- Changed the power range of the drive motor applicable to the document, and added the document to the "fan unit using frequency conversion speed regulation". Applicable (see Chapter 1, Chapter 1 of the.2009 edition);
- Added energy-saving monitoring requirements for energy-saving monitoring of fan units and pipe network systems (see Chapter 4);
- Deleted the energy-saving monitoring items of fan units and pipe network systems (see Chapter 4 of the.2009 edition);
- Added calculation method (see Chapter 5);
- Deleted the energy-saving monitoring method (see Chapter 5 of the.2009 edition);
- Added the evaluation index of fan unit and pipe network system (see Chapter 6);
- Deleted the assessment indicators for fan units and pipe network systems (see Chapter 6 of the.2009 edition);
- Increased the requirements for the layout of the measuring points of the pipeline test section in the pipeline network system (see Appendix A);
- Changed the energy-saving monitoring data table of fan units and pipe network systems (see Appendix B, Appendix A of the.2009 edition);

- Added the calculation formula of energy saving monitoring of fan unit and pipe network system (see Appendix C);
- Changed the calculation formula of the average dynamic pressure of the test section [see formula (C.2), formula (3) of the 2009 edition];
- Added the method of measuring fan flow by gas flow meter (see C.3.2);

1 Scope

GB/T 15913-2022 is the Chinese national standard on monitoring and testing for energy saving of fan's unit and distribute tube system, in the field of energy and heat transfer engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 12 October 2022 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 12 October 2022. Classification: ICS 27.010, CCS F01. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the basic requirements, test requirements, calculation methods and evaluation indicators for energy-saving monitoring of fan units and pipe network systems. This document applies to centrifugal fans, axial fans and centrifugal blowers driven by electric motors of 5.5kW and above. It is suitable for fan units and pipe network systems that adopt speed regulation. This document does not apply to fan units and pipe network systems for conveying liquid and solid materials.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

GB/T 1236 Standardized air duct performance test for industrial fans

GB/T 10178 Field Performance Test of Industrial Fan

GB/T 21056 Fan, pump load variable frequency speed regulation power saving drive system and its application technical conditions

GB/T 34867.1 Electric motor system energy saving measurement and verification method Part

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Fan's unit It consists of a fan, an electric motor, a speed control device and a transmission mechanism.

4.1 Basic requirements

4.1.1 The equipment in the fan unit and the pipe network system should not be the products that are explicitly eliminated by the state.

4.1.2 Electric motors with a power of 55kW and above shall be equipped with energy measuring instruments.

4.1.3 The load rate of the motor at rated speed should not be lower than 45%.

4.1.4 The fan unit adopting variable frequency speed regulation shall comply with the provisions of GB/T 21056.

4.2 Test Requirements

4.2.1 The test should be carried out under the daily operation of the fan unit and the pipe network system.

- a) Under certain working conditions, the test is carried out under a stable load;
- b) Under variable operating conditions, test at the most frequently occurring loads.

4.2.2 The test instrument shall be within the validity period of the verification/calibration, and the accuracy shall not be lower than that specified in Table 1.