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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 9651-2022

Replacing GB/T 9651-2008

Test methods for single-phase induction motors

单相异步电动机试验方法

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Table of Contents

Foreword

This document was issued on 30 December 2022 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 July 2023.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

It is classified under ICS 29.160.30, Chinese classification K22.

It replaces GB/T 9651-2008, which is superseded.

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.

This document replaces GB/T 9651-2008 "Test methods for single-phase asynchronous motors".

In addition to rectification and editorial changes, the main technical changes are as follows.

--- Added terms and definitions (see Chapter 3);

--- Deleted the three chapters "Test Items", "Test Equipment" and "Measurement" (see Chapter 3, Chapter 4 and Chapter 5 of the.2008 edition);

--- Added two chapters "Basic Requirements for Test" and "Test Preparation" (see Chapter 4 and Chapter 5);

---Changed the temperature rise test method, according to the provisions of 6.5 in GB/T

5171.21-2016 (see Chapter 6, Chapter 8 of the.2008 edition);

--- Changed the working characteristic curve (see Figure 1, Figure 4 of the.2008 edition);

--- Deleted "short-time elevated voltage test" and "life test" (see 10.15 and 10.17 of the.2008 edition);

--- Added "dimension inspection", "repeated electric strength test", "inter-turn insulation electric strength test", "accidental overcurrent test" and "other rings

environmental test", "other safety test" and "working period test" (see 9.1, 9.9, 9.10, 9.12, 9.16, 9.17 and 9.18);

--- Deleted the correction method of instrumentation error (see B.2, B.3 and B.4 of the.2008 edition).

Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents.

This document is proposed by China Electrical Equipment Industry Association.

This document is under the jurisdiction of the National Standardization Technical Committee of Rotating Electric Machines (SAC/TC26).

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The release status of previous versions of this document and the documents it replaces are as follows.

--- First published as GB/T 9651-1988 in 1988, first revised in.2008;

--- This is the second revision.

Test methods for single-phase asynchronous motors

1 Scope

GB/T 9651-2022 is the test book for single-phase asynchronous motors, the small machines that drive fans, pumps and household appliances. It sets the basic conditions any test has to meet, with the ambient conditions, the test supply and the use of measuring instruments taken from GB/T 5171.21-2016, and then the preparation work: the insulation resistance, and the cold winding temperature and cold winding resistance on which every later correction depends. The temperature rise test follows, then the determination of efficiency, the stall test, and a closing clause on the remaining test items. Efficiency and temperature rise are the two figures a purchaser pays for, and both are meaningless unless the winding resistance is corrected back to a stated reference cooling medium temperature; get the cold measurement or the correction wrong and a motor can be sold at an efficiency grade it does not hold, or run hotter in service than its insulation class allows. Fixing one method for every laboratory is what makes two motors from two suppliers comparable at all. Used by motor makers' own test rooms, by third-party laboratories carrying out energy efficiency verification, and by purchasers who write acceptance testing into a supply contract.

This document describes the basic requirements for testing single-phase asynchronous motors, test preparation, temperature rise test, efficiency measurement, stall test and others

Pilot projects.

This document applies to single-phase asynchronous motors.

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text. Among them, dated references

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

this document.

GB/T 755 Rating and performance of rotating electrical machines

GB/T 4942-2021 Degree of protection (IP code) classification of the overall structure of rotating electrical machines

GB/T 5171.21-2016 Small power motors Part 21.General test methods

GB/T 10069.1 Measurement methods and limits of noise of rotating electrical machines Part 1.Measurement methods of noise of rotating electrical machines

GB/T 12350 Safety requirements for small power motors

GB/T 12665 Damp heat test requirements for motors used under general environmental conditions

JB/T 10490 Vibration measurement method, evaluation and limit value of mechanical vibration of small power motor

3 Terms and Definitions

The following terms and definitions defined in GB/T 5171.21-2016 apply to this document.

3.1

The value when the working temperature of the winding is corrected to the reference cooling medium temperature of 25°C.

4 Basic requirements of the test

4.1 The environmental conditions of the test shall comply with the provisions in 4.1 of GB/T 5171.21-2016.

4.2 The test power supply shall comply with the provisions in 4.2 of GB/T 5171.21-2016.

4.3 The use of measuring instruments shall comply with the provisions in 4.3 of GB/T 5171.21-2016.