

ICS 29.160.01
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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 34861-2026

Replacing GB/T 34861-2017

**Specific methods for determining separate losses of large
machines from tests**

确定大电机各项损耗的专用试验方法

(English Translation)

Issued on: July 2, 2026

Implemented on: February 1, 2027

Issued by: State Administration for Market Regulation

Table of Contents

Preface
1 Scope
2 Normative References
3 Terms and Definitions
4 Symbols and Abbreviations
5 Basic Requirements
6 Dedicated test methods for determining the efficiency of large electric motors
Reference

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 replaces GB/T 34861-2017 "Special Test Methods for Determining Various Losses of Large Electric Machines" and is consistent with GB/T 34861-2017.

Compared to previous versions, aside from structural adjustments and editorial changes, the main technical changes are as follows.

- a) The term "thermal balance" has been changed to "thermal stability," defined as "the temperature rise of the motor's heating components does not exceed 1K within half an hour." the state of (see 3.5, 2017 edition 3.5);
- c) The definition of "preferred method" for large motors has been removed (see 5.3 in the 2017 edition);
- d) The list of test methods for large motors has been revised (see Table 1, 2017 version);
- e) Flowcharts for determining efficiency using experimental methods such as the calibration motor method, self-deceleration method, and calorimetry have been added (see Figures 1, 2, and 4);
- f) Added test procedure 4 "Running the motor under no-load" for the self-deceleration method (see 6.3.2).

This document adopts IEC 60034-2-2:2024 "Rotating electrical machines - Part 2-2.Determinative test methods for the determination of various losses in large electrical machines".

Supplement to IEC 60034-2-1.

The following minimal editorial changes have been made to this document.

---To align with existing standards, the standard name has been changed to "Special Test Methods for Determining Various Losses of Large Electric Machines".

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 Electrical Equipment Industry Association.

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

1 Scope

This document describes specific test methods for determining various losses and efficiencies of large electric motors, and is a supplement to IEC 60034-2-1. These methods...

This method is suitable for situations where full-load testing is not possible, but its results have high uncertainty.

Note: Field tests conducted under full-load conditions using calorimetry are generally accepted.

The specific methods described in this document include.

---Motor calibration method;

---Self-deceleration method;

---Calcium method;

---Loss summation method for permanent magnet synchronous motors (see Appendix A).

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.

performance)

IEC 60034-2-1 Rotating electrical machines - Part 2-1. Test methods for determining losses and efficiency (excluding traction machines) Note. GB/T 25442-2026 Rotating electrical machines (excluding traction machines) - Test methods for determining losses and

efficiency (IEC 60034-2-1:2024, IDT)

3 Terms and Definitions

The terms and definitions defined in IEC 60034-1 and IEC 60034-2-1, as well as the following terms and definitions, apply to this document.

ISO and IEC maintain a terminology database for standardization at the following address.

calibrated machine

The input or output mechanical power value with low uncertainty is determined by using the measured output or input electrical power according to the prescribed test method.

The motor.

calibrated-machine method by mechanically coupling a calibration motor to the motor under test, the output power of the motor under test is calculated from the input/output power values of the calibration motor.

Methods for input/output mechanical power values.