IEEE Standards

**IEEE Std 112™-2004**
(Revision of
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# 112™

# IEEE Standard Test Procedure for Polyphase Induction Motors and Generators

## IEEE Power Engineering Society

Sponsored by the
Electric Machinery Committee

IEEE

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# IEEE Standard Test Procedure for Polyphase Induction Motors and Generators

Sponsor

**Electric Machinery Committee**
of the

**IEEE Power Engineering Society**

Approved 12 May 2004

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Approved 9 February 2004

**IEEE-SA Standards Board**

**Abstract:** Instructions for conducting and reporting the more generally applicable and acceptable tests of polyphase induction motors and generators are covered.
**Keywords:** acceptance and performance testing, generators, induction, machines, motors, polyphase

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# Introduction

**This introduction is not part of IEEE Std 112-2004, IEEE Standard Test Procedure for Polyphase Induction Motors and Generators.**

This standard provides the basic test procedure for evaluating the performance of a polyphase induction motor or generator of any size. Each revision of the standard since its 1964 introduction as an IEEE standard has been to keep the standard current with improvements in instrumentation, with improvements in test techniques, with increased knowledge in the art of measurements, and with the constant change in the needs and desires of the machine users and of those concerned with energy conservation and the like. Major portions of the document have been rearranged to accomplish this and the user is cautioned to check any external references to particular clauses of previous versions for the correct clause number in this version. Each individual test is defined and each efficiency test method is now covered in more detail and step-by-step instructions are presented. Standard symbols are now used for all quantities.

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# IEEE Standard Test Procedure for Polyphase Induction Motors and Generators

## 1. Overview

### 1.1 Scope

This standard covers instructions for conducting and reporting the more generally applicable and acceptable tests of polyphase induction motors and generators. Many of the tests described may be applied to both motors and generators, as needed, and no attempt is made to partition the test procedure into clauses and subclauses that separately apply to motors or to generators. Whenever the term *motor* is used, it is to be understood that it may be replaced by the term *generator*, if applicable. Likewise, whenever *machine* is used, it may be replaced by either *motor* or *generator,* if applicable. Since polyphase power systems are almost universally three-phase systems, the equations in this standard have been written specifically for three phases. When the test is performed on other than three-phase power, the equations shall be modified appropriately.

### 1.2 Purpose

Instructions for conducting and reporting the more generally applicable and acceptable tests are covered to determine the performance and characteristics of polyphase induction motors and generators. Additional tests, not specified herein, may be required to satisfy specific research or application needs. These procedures shall not be interpreted as requiring the performing of any specific test in a given transaction.

## 2. References

This standard shall be used in conjunction with the following standards. When the following standards are superseded by an approved revision, the latest revision shall apply.

IEEE Std 43™-2000, IEEE Recommended Practice for Testing Insulation Resistance of Rotating Machinery.[1, 2]

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