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

GB/T 34862-2017

**Test methods for determining quantities of equivalent circuit
diagrams for three-phase low-voltage cage induction motors**

确定三相低压笼型感应电动机等值电路参数的试验方法

(English Translation)

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the translation method identical with IEC 60034-28:2012 "Rotating motor Part 28. Determination of three-phase low voltage cage induction Motivation equivalent circuit parameters of the test method. " the documents of our country that are consistent with the corresponding international documents that are normative references in this standard are as follows.

--- GB/T 755-2008 Rotating electrical machinery quotas and properties (IEC 60034-1:2004, IDT);

--- GB/T 4772.1-1999 rotary motor size and output power rating Part 1. Frame number 56 ~ 400 and flange number 55 ~ 1080 (idt IEC 60072-1:1991);

--- GB/T 7676.1-1998 Direct acting analogue indicating electrical measuring instruments and their accessories Part 1. Definitions and general requirements [idt IEC 60051-1:1984 (97)];

--- GB/T 21209-2007 inverter powered cage induction motor design and performance guidelines (IEC/T S60034-25:2004, IDT);

Rotating electrical machines (other than traction motors) - Test method for determining loss and efficiency (IEC 60034-2-1).

2007, IDT);

--- GB/T 32877-2016 Inverter powered AC induction motors Specific test methods for

determining loss and efficiency (IEC/TS60034-2-3:2013, IDT).

This standard made the following editorial changes.

- Taking into account China's standard system, modified the standard name;
- For the convenience of use, an increase of the standard formula number;
- To facilitate the application, an increase of all the Appendix A table number.

This standard proposed by the China Electrical Equipment Industry Association.

This standard by the National Standardization Technical Committee rotating electrical (SAC/TC26) centralized.

This standard was drafted unit. Shanghai Electrical System Energy Engineering Research Center Co., Ltd., Wolong Electric Group Co., Ltd., West Aetna Fusima Motor Co., Ltd., Zhejiang Hulong Technology Co., Ltd., Shandong Huali Motor Group Co., Ltd., Zhejiang Jinlong Machine Co., Ltd., Hebei Electric Co., Ltd., Shanghai German drive the Electric Co., Ltd., Shanghai Tebo Motor Co., Ltd., CSR Zhuzhou Motor Co., Ltd., the car in Yongji Electric Co., Ltd., the national small and medium motor Quality Supervision and Inspection Center.

Introduction

Equivalent circuit is widely used in inverter-driven induction motor speed control system, based on field-oriented control or other based on the model the realization of the type control algorithm requires the use of equivalent motor parameters to the motor. Suppliers and system engineers need to know their values, especially this is the case where the motor and frequency converter are supplied by different suppliers.

This standard provides a standardized test procedures to determine the parameters of the motor, while this standard provides an improved equivalent Way method. This test method can be operated in a laboratory capable of performing standard motor tests.

Note: The main purpose of this standard is to assist in the establishment of the corresponding model of the frequency control motor, so the simplified results can not be used to accurately determine the performance of the motor and efficiency.

Technical specifications IEC/T S60034-25 lists the motor parameters requirements, but their definition and determination methods are not included.

Determine the three-phase low voltage cage induction motor equivalent circuit Test method of parameters

1 Scope

This standard applies to IEC 60072-1 in the frame number from 56 to 400 three-phase low voltage cage induction motor.

This standard defines the parameters of the single-phase equivalent circuit diagram, and provides the steps to obtain the value of the circuit diagram through the test.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

Rotating electrical machines - Part 1. Quotations and properties
(Rotatingelectricalmachines - Part 1.

Ratingandperformance) IEC 60034-2-1 Rotating electrical machines - Part 2-1. Test methods for determining loss and efficiency (except traction motors) [Rotating electricalmachines-Part 2-1.Standardmethodsfordetermininglossesandefficiencyfromtests (ex-cluding machinesfortractionvehicles)] IEC 60034-2-2, Rotating electrical machines - Part 2-2. Specific test methods for the determination of large motor losses (IEC 60034-2-1 (Supplement) Rotatingelectricalmachines-Part 2-2.Specifictestmethodsfordeterminingseparatelossesof large machinesfromtests) (Supplement to IEC 60034-2-1) IEC/T S60034-2-3 Rotating Electrical Machines Part 2-3. Inverter Powered AC Induction Motor Specific to Determining Losses and Efficiencies Test method (Rotatingelectrmachines-Part 2-3.Specifictestmethodsfordetermininglossesandef-ficiencyofconverter-fedACinductionmoto rs) IEC/T S60034-25 Rotating Electrical Machines - Part 25. Guidelines for the Application of Alternating Current Motors for Power Transmission Systems (Rotating electricalmachines-Part 25: ACMotorswhenusedinpowerdrivesystem-Applicationguide) IEC 60044 (all parts) Instrument transformers (Instrumenttransformers) IEC 60051-1 direct action instructions analogue electrical measuring instruments and their accessories Part 1. Definitions and common to all parts of one General requirements (Directactingindicatinganalogueelectricalmeasuringinstrumentandtheiraccessories-Part 1: Definitions and generalrequirementscommontoalparts) Dimensions and power ratings of IEC 60072-1 Rotating electrical machines - Part 1. Frame sizes 56 to 400, Flanges. 55 to 1080 (Di-mensionsandoutputseriesforrotatingelectricalmachines-Part 1: Framenumbers56to400and flangenumbers55to1080)

3.1 Terms and definitions

IEC 60034-1-2010 defined terms and definitions apply to this document.

3.2 Symbol

The following symbols apply to this document.