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**NATIONAL STANDARD OF THE
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**Minimum allowable values of energy efficiency and values of
efficiency grade for small-power motors**

小功率电动机能效限定值及能效等级

(English Translation)

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Foreword

Subclause 4.3 and 4.4 of this Standard are mandatory, the rest clauses are recommendatory.

This Standard is proposed by Environment and Resource Integrated Utilization Department of National Development and Reform Commission.

This Standard is under the jurisdiction of National Technical Committee (SAC/TC 20) on Energy Fundamentals and Management of Standardization Administration of China.

The responsible drafting organizations are. Guangzhou Electrical Apparatus Research Institute, China Standards Research Institute, Low-power Machinery Subcommittee of National Rotating Machinery Standardization Administration, Shanghai Entry-Exit Inspection And Quarantine Bureau, Guangdong Welling Motor Manufacturing Co., Ltd, International Copper Association, Emerson(China) Motor Co., Ltd, Kaiping Sanwei Micromotor Co., Ltd, Haicheng Suprasuny Pump Co., Ltd, Nanjing Nanvi Electric Motor Co., Ltd, Foshan City Nanhai Jiuzhou Popula Fan Co., Ltd, Tianjin Zhonghuan Tianhong Micromotor Co., Ltd, Foshan Tianyang Motor Manufacturing Co., Ltd, WeiHai Techfull Simo Motor Co., Ltd, Wuhu Tongli Motor Co.,Ltd and Guangzhou Vkan Certification & Testing Co., Ltd.

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Minimum allowable values of energy efficiency and
values of efficiency grade for small-power motors

1 Scope

This standard specifies energy efficiency grade, minimum allowable values of energy efficiency, target minimum allowable values of energy efficiency, evaluating values of energy conservation, and test method for small-power asynchronous motors (hereinafter referred to as "motor").

This standard is applicable to general purpose motors - small-power 3-phase asynchronous motor (10 W to 2200 W) powered by 50 Hz & 690 VAC and below voltage; capacitor running asynchronous motor (10 W to 2200 W); capacitor starting asynchronous motor (120 W to 3700 W), double-value capacitor asynchronous motor (250 W to 3000 W); and motor (6 W to 550 W) for air conditioning fan in room etc.

2 Normative and Quoted References

The articles contained in the following documents have become this standard when they are quoted herein. For the dated documents so quoted, all the modifications (excluding corrections) or revisions made thereafter shall not be applicable to this Standard. For the undated documents so quoted, the latest editions shall be applicable to this Standard.

GB/T 1032 Test procedures for three-phase induction motors

GB/T 5171 General technical requirements for small power motors

GB/T 9651-2008 Test procedures for single-phase induction motor

3 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

3.1

general purpose motor

The motor designed and manufactured in accordance with standard rated value. Its operating characteristics and mechanical structure apply to general operating conditions, and shall not be limited to a certain specified purpose or a certain type of purpose.

3.3

target minimum allowable values of energy efficiency for motors

After this Standard has been implemented for certain years (Translator's Note. see clause

4.4 for the exact number of years), the minimum standard value allowed for efficiency of

motor.

3.4

evaluating values of energy conservation for motors

The minimum standard value of motor efficiency which meets the requirements of energy conservation certification, under the testing conditions specified by this Standard

4.1 Basic requirements

Safety of motor shall be in accordance with GB 12350.

Performance of motor shall be in accordance with GB/T 5171 and in compliance with relevant product standards.

4.2 Energy efficiency grade of motor

Energy efficiency grade of motor is divided into 3 grades - Grade 1 is the highest grade of energy efficiency. Under the rated power output, the efficiency of each grade's motor shall not be less than those specified in Tables 1 to 5.

4.3 Minimum allowable value of energy efficiency for motor

Under the condition of rated power output, the minimum allowable values of the energy efficiency of motor shall not be less than Grade 3 specified in Tables 1 to 5.

4.4 Target minimum allowable value of energy efficiency for motor

Under the condition of rated power output, the target minimum allowable values of the energy efficiency of motor shall not be less than Grade 2 specified in Tables 1 to 5. This

value will be started to implement (Translator's Note.

4.5 Evaluating value of energy conservation for motor

Under the condition of rated power output, the evaluating value of energy conservation for motor shall not be less than Grade 2 specified in Tables 1 to 5.

5 Test Method

For a small-power 1-phase asynchronous motor, measurement of efficiency shall be carried out directly in accordance with GB/T 9651-2008.

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