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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

中华人民共和国国家标准

GB 14711-2006
Replace GB 14711-1993

Safety Requirements of Small and Medium Size Rotating Electrical Machines

中小型旋转电机安全要求

Issued on August 25, 2006 **Implemented on March 01, 2007**

Issued by **General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China**

Standardization Administration of the People's Republic of China

Contents

Foreword

All the technical content of the standard is compulsory.

The standard is consistent with the safety requirements in GB755-2000 *Rotating Machine Rating and Performance*.

The standard is a substitute for GB14711-1993 *General Safety Requirements of Small and Medium Rotating Electrical Machines*, with the present title *Safety Requirements of Small and Medium Size Rotating Electrical Machines*.

The standard differs from GB14711-1993 mainly in the following respects:

1. Standard was rearranged;
2. The safety requirements of portable, auxiliary, and variable-frequency & adjustable-speed motors were included;
3. Tables related were placed at the back of this book, for easy reference.

The standard is proposed by China Electrical Equipment Industry Association.

The preparation and management of standard is under the supervision of the China Rotating Electrical Machine Standardization & Technology Committee (SAC/TC 26).

Shanghai Electrical Equipment Research Institute was responsible for the drafting of the standard. Other organizations that participated in the drafting include: Beijing B.J. Electric Motor Co., Ltd., Chongqing Sailimeng Electric Motor Co., Ltd., Shandong Qilu Electric Motor Manufacturing Co., Ltd., Lanzhou Electric Motor Co., Ltd., Shanghai United Electric Motor (Group) Corporation, Zhejiang Jinlong Electric Motor Co., Ltd., Shandong Huali Electric Motor Co., Ltd., Jiangsu Qingjiang Electric Motor Co., Ltd., Kunming Electrical Engineering Co., Ltd., and Shanxi Electric Motor Manufacturing Co., Ltd.

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The standard shall replace GB 14711-1993 from the effective date.

GB 14711-1993 is the first edition. This standard is the first amendment.

Safety Requirements of Small and Medium Size Rotating Electrical Machines

1 Scope

1.1 The standard specifies the safety requirements of small/medium general-purpose rotating electrical machines (electric motor and generator, hereinafter referred to as “motor”).

1.2 This standard is not applicable to astronautic motors, traction motors, explosion-proof motors, hoist and metallurgical motors, shield motors. Tests of small power motors produced according to GB/T 5171 can also refer to GB12350.

1.3 In case other types of motors involve special requirements that are not covered in this standard, new standard should be developed.

2 Normative sources of standards

The terms and conditions quoted from the following documents became the terms and conditions of this standard. Where documents are dated, their attached modification list (exclusive of corrections) or the revised edition is not applicable to this standard. Nevertheless, the concerned parties are encouraged to consider the latest editions of those documents when reaching agreement based on this standard. Where documents are undated, their latest versions are applicable to this standard.

GB755-2000 Rotating electrical machines　Rating and performance (idt IEC 60034-1: 1996)

GB/T 825-1988 Eye screw (NEQ ISO 3266: 1984)

GB1971 Rotating electrical machines　Cable terminal symbol and sense of rotation (GB1971-2006, 60034-8: 2002, IDT)

GB/T 2423.4-1993 Electrical and electronic products environmental tests procedures　Tests Db: temperature & humidity testing methods (eqv IEC 60068-2-30: 1980)

GB/T 4207-2003 CTI and PTI testing methods for solid insulation material under humid conditions (IEC 60112: 1979, IDT)

GB4706.1-1998 House and similar purpose appliances safety　Part one: general requirements (eqv IEC 60335-1: 1991)

GB/T 4942.1-2001 Rotating electrical machine housing protection grading (IP code) (idt IEC 60034-5: 1991)

GB/T 5169.11-1997 Electrical and electronic products fire hazard tests　Testing methods　Glow wire test and guidelines for the finished products (idt IEC 60695-2-1/1: 1994)

GB/T 5169.12-1999 Electrical and electronic products fire hazard tests　Testing methods　Glow wire flammability test for materials (idt IEC 60695-2-1/2: 1994)

GB/T 5465.2-1996 Electrical equipment diagrams and symbols (idt IEC 60417: 1994)

GB/T 11020-1989 Flammability testing methods for solid insulation material exposed to ignition source (eqv IEC 60707: 1981)

GB/T 13002 Built-in thermal protector of rotating electrical machines　Rotating electrical machines protection rules (GB/T 13002-1991, eqv IEC 34-11-1: 1978)

GB/T 16422.2-1999 Testing methods of exposure to laboratory light sources for plastics　Part two: xenon-arc lamp (idt ISO 4892-2: 1994)

GB/T 17948.1-2000 Rotating electrical machines insulation performance appraisal　Random windings test procedures　Thermal appraisal and grading (idt IEC 60034-18-21: 1992)

GB/T 18380.1-2001 Burning test for cables exposed to flames　Part 1: vertical burning test of single insulated wire or cable (idt IEC 60332-1: 1993)

GB/T 18380.2-2001 Burning test for cables exposed to flames　Part 2: vertical burning test of single insulated thin copper-core wire or cable (idt IEC 60332-2: 1989)

GB/T 18380.3-2001 Burning test for cables exposed to flames　Part 3: burning test of bunched wires or cables (idt IEC 60332-3: 1992)

JB/T 7589-1994 High-voltage electrical machines insulation thermal stability appraisal methods (eqv IEC 60034-18-31: 1992)

JB/T 8158-1999 Starting performance of single-speed, three-phase, squirrel-cage induction motors (voltage≤690V) (eqv IEC 60034-12: 1995)

JB/T 10098-2000 Impulse-voltage endurance of AC motor stator coils (idt IEC 60034-15: 1995)

IEC 60034-18-22: 2000 Rotating electrical machine insulation function appraisal—Formed winding test procedures—Insulation compositions substitution and change grading

IEC 60034-18-31: 1992 Rotating electrical machine insulation function appraisal—Formed winding test procedures—Insulation's thermal property appraisal and grading for motors≤50MVA and 15kV

IEC 60034-18-32: 1995 Rotating electrical machine insulation function appraisal—Formed winding test procedures—Insulation's electric property appraisal and grading for motors≤50MVA and 15kV

3　Technical terms and explanations

The following terms and explanations are applicable to this standard.

3.1 Clearance

Clearance is the shortest distance between two conductive parts measured through air.

3.2 Creepage distance

Creepage is the shortest path between two conductive parts measured along the surface of the insulation.

Note: the seam between two insulating parts is taken as a part of the surface.

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