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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 10069.3–2008/IEC 60034-9: 2007

Replace GB 10069.3–2006

Measurement of airborne noise emitted by rotating electrical machines and the noise limits—Part 3: Noise limits

旋转电机噪声测定方法及限值

第 3 部分：噪声限值

(IEC 60034-9: 2007, IDT)

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Standardization Administration of the People's Republic of China

Contents

Foreword

Clause 6 of this Standard is mandatory, the rest are recommendatory.

At current, National Standard *Measurement of airborne noise emitted by rotating electrical machines and the noise limits* consists of two parts:

— Part 1: Method for the measurement of airborne noise emitted by rotating electrical machines;

— Part 3: Noise limits.

This Part is part 3, this Part is identical to IEC 60034-9: 2007 *ROTATING ELECTRICAL MACHINES -Part 9: Noise limits* (English version, Edition 4.1). This Part shall be used together with GB/T 10069.1-2006 *Measurement of airborne noise emitted by rotating electrical machines and the noise limits Part 1: Method for the measurement of airborne noise emitted by rotating electrical machines*.

This Standard will replace GB 10069.3-2006 *Measurement of airborne noise emitted by rotating electrical machines and the noise limits - Part 3: Noise limits.*

Comparison with GB 10069.3-2006, main changes of this Standard are as follows:

— “Determine noise of AC squirrel-cage induction motor with converter supply” is added to the range;

— A new Chapter VII is added: determination of increase of noise caused by converter supply.

— A new Chapter VIII is added: determination of sound pressure level.

— The content of Chapter IX is Chapter VII of the original standard. However, major changes are made.

— In Table 2, no-load noise limit of one-velocity three-phase squirrel-cage induction motor is change from “being indicated by power” to “being indicated by height of center”. The range is changed from 1 kW~ 400 kW to H90~ H560. Moreover, no-load noise limit of one-velocity three-phase squirrel-cage induction motor is reduced.

In Table 3, load noise increment is changed from being indicated by motor power to being

Introduction

Acoustic quantities can be expressed in sound pressure terms or sound power terms. The use of a sound power level, which can be specified independently of the measurement surface and environment conditions, avoids the complications associated with sound pressure levels, which require additional data to be specified. Sound power levels provide a measure of radiated energy and have advantages in acoustic analysis and design.

Measurement of airborne noise emitted by rotating electrical machines and the noise limits—Part 3: Noise limits

1 Scope

This part:

- specifies test methods for the determination of sound power level of rotating electrical machines;

- specifies maximum A-weighted sound power levels for factory acceptance testing of rotating electrical machines in accordance with GB 755, having methods of cooling according to GB/T 1993-1993 and degrees of protection according to GB/T 4942.2-2006, and having the following characteristics:

• standard design, either a.c. or d.c, without additional special electrical, mechanical, or acoustical modifications intended to reduce the sound power level;

• rated output from 1 kW (or kVA) up to and including 5 500 kW (or kVA);

• speed not greater than 3 750 r/min.

Excluded are a.c. motors supplied by converters. For these conditions for guidance.

The object of this standard is to determine maximum A-weighted sound power levels, L_{WA} in decibels, dB, for airborne noise emitted by rotating electrical machines of standard design, as a function of power, speed and load, and to specify the method of measurement and the test conditions appropriate for the determination of the sound power level of the machines to provide a standardized evaluation of machine noise up to the maximum specified sound power levels. This standard does not provide correction for the existence of tonal characteristics.

Sound pressure levels at a distance from the machine may be required in some applications, such as hearing protection programs. Information is provided on such a

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