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

GB/T 21973-2021

Replacing GB/T 21973-2008

**YZR3 series wound-rotor three-phase induction motors for
crane and metallurgical applications - Technical specification**

YZR3系列起重及冶金用绕线转子三相异步电动机 技术条件

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part

1. Structure and Drafting Rules of Standardization Documents" Drafting. This document replaces GB/T 21973-2008 "YZR3 series of hoisting and metallurgical wound rotor three-phase asynchronous motors technical conditions", and Compared with GB/T 21973-2008, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

---Added the motor model and example description (see 4.1);

---Change the K basic size and position tolerance of table 3 for frame numbers 160M~225M, and table 4 for S for frame numbers 100L~225M Basic size and position tolerance, table 5 S basic size and position tolerance of frame size 100L~280M (see Table 3~Table 5, Table 3~Table 5 of the.2008 edition);

---Change the limit deviation of the key width (see Table 6, Table 6 of the.2008 edition);

---Added "The deviation of any one phase of the DC resistance of the motor three-phase stator winding in the actual cold state from the three-phase average value should not exceed $\pm 2\%$ of the average value" (see 5.7);

--- Added "The cold insulation resistance value of the motor windings should not be less than 5M Ω " (see 5.8);

--- Added 1s test (see 5.9);

---The requirements for motor vibration and noise have been changed (see 5.14, 5.15, 4.16, 4.17 in the.2008 edition);

---The regulations on the unevenness of the air gap of the motor have been deleted, and the inspection of the unevenness of the air gap has been cancelled accordingly (see the 2008 edition Of 4.18);

---Added "for motors with a rated power exceeding 100kW" (see 5.17);

---The requirements for the direction of rotation of the motor have been added (see 5.20);

---Added the motor appearance and assembly quality requirements (see 5.22);

1 Scope

GB/T 21973-2021 is the Chinese national standard on yzr3 series wound-rotor three-phase induction motors for crane and metallurgical applications - technical specification, in the field of electrical engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 11 October 2021 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 May 2022. Classification: ICS 29.160.30, CCS K 26. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the type, basic parameters and dimensions, and technical requirements of the YZR3 series of winding rotor three-phase asynchronous motors for cranes and metallurgy. Requirements, test methods, inspection rules and signs, packaging and warranty period. This document is applicable to all kinds of hoisting machinery and metallurgical auxiliary equipment supporting the lifting and metallurgical wound rotor three-phase asynchronous motor (frame No. 100~400) (hereinafter referred to as electric motors), all the motors derived from this series of motors are implemented by reference.

2 Normative references

The content of the following documents constitutes an indispensable clause of this document through normative references in the text. Among them, dated quotations Only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to This document.

GB/T 191 Packaging, storage and transportation pictorial signs

GB/T 755 Rotating motor rating and performance

GB/T 756 Cylindrical shaft extension of rotating electric machine

GB/T 757 Conical shaft extension of rotating electric machine

GB/T 997 Classification of structure type, installation type and junction box position of rotating electric machine (IM code)

GB/T 1032 Three-phase asynchronous motor test method

GB/T 1096 Ordinary flat key

GB/T 1958 Product Geometric Technical Specification (GPS) Geometric Tolerance Testing and Verification

GB/T 1971 Rotating electrical machine wire end mark and direction of rotation

GB/T 1993 Rotating electric machine cooling method

GB/T 2423.4 Environmental testing of electrical and electronic products Part

3 Noise limit

GB/T 12351 Environmental technical requirements for tropical rotating electrical machines

GB 20237-2006 Safety requirements for crane metallurgy and shielded motors

GB/T 21975 Three-phase asynchronous motor reliability test method for lifting and metallurgy

GB/T 22714 Test Specification for Interturn Insulation of Formed Windings of AC Low-Voltage Motors

GB/T 22719.1 Inter-turn insulation of scattered windings of AC low-voltage motors Part

6 Test Methods and Chapter

7 Inspection Rules, and the inspection rules are in tabular form Presentation (see Chapter 6, Chapter 7, Chapter 5 of the.2008 edition);

---Added "cooling method" and "noise limit" items (see 8.2);

---Deleted the grounding graphic symbol requirements (see

6.5 in the.2008 edition). Please note that some of the contents of this document may involve patents. The issuing agency of this document is not responsible for identifying patents. This document was proposed by the China Electrical Equipment Industry Association. This document is under the jurisdiction of the National Rotating Machine Standardization Technical Committee (SAC/TC26). Drafting organizations of this document. Jiamusi Explosion-proof Motor Research Institute Co., Ltd., Jiamusi Electric Co., Ltd., Henan Benyu Motor Technology Co., Ltd., Wuxi Xindali Motor Co., Ltd., Shanxi Motor Manufacturing Co., Ltd., Daqing Huayu Petroleum Machinery Manufacturing Co., Ltd., Anhui Wannan Electric Co., Ltd., Shandong Zotye Explosion-proof Electric Co., Ltd., Dalian Riqian Electric Co., Ltd. The main drafters of this document. Wang Weiyue, Chang Yanqin,

Guo Wenqing, Xu Min, Maria, Xi He, Wenming, Zhao Zhulei, Wang Weiguo. The previous releases of this document and the documents it replaced are as follows:

---In.2008, it was first published as GB/T 21973-2008;

---This is the first revision. YZR

3 Series Wound Rotor for Lifting and Metallurgy Technical requirements for three-phase asynchronous motors

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