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

GB/T 21971-2020

Replacing GB/T 21971-2008

**YZD series multi-speed three-phase induction motors for crane
application - Technical specification**

YZD系列起重用多速三相异步电动机 技术条件

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard replaces GB/T 21971-2008 "YZD series of multi-speed three-phase asynchronous motors for hoisting technical conditions", and GB/T 21971- Compared with.2008, the main technical changes are as follows:

---Added references to GB/T 756, GB/T 1958, GB/T 1971, GB/T 22719.1, GB/T 22719.2, GB/T 21975, Deleted GB/T 2423.4-1993, GB/T 13306-1991, JB/T 9615.1-2000, JB/T 9615.2-2000 (see Chapter 2, Chapter 2 of the.2008 edition);

---Added motor model and example description (see 3.1);

---Modified the D1 size of table 3 frame size 180L (see table 3, table 3 of the.2008 edition);

---Modified table 3 K basic size and position tolerance for frame sizes 160M~225M (see Table 3, Table 3 of the.2008 edition);

--- Modify the key width tolerance of the shaft extension key in Table 4 (see Table 4, Table 4 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 4.9);

---Added "At 40°C ambient temperature, the cold insulation resistance value of the motor stator winding should not be less than 5M Ω ." (see 4.10);

--- Added "1s test can also be used instead, but the test voltage value should be 120% of the specified value." (see 4.11);

--- 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 4.15);

---Modified the requirements for motor vibration and noise (see

4.18 in the.2008 edition);

--- Deleted the electric motor alternating damp heat test requirements (see.2008 version 4.17);

---Added the requirements of motor reliability (see 4.20);

1 Scope

GB/T 21971-2020 is the Chinese national standard on yzd series multi-speed three-phase induction motors for crane application - 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 19 November 2020 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 June 2021. Classification: ICS 29.160.30, CCS K26. 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 standard specifies the type, basic parameters and dimensions, technical requirements, and test methods of YZD series multi-speed three-phase asynchronous motors for hoisting. Laws, inspection rules and signs, packaging and warranty period. This standard applies to multi-speed three-phase asynchronous motors (frame size 112~250) (hereinafter referred to as "electric Motor"), all series of motors derived from this series of motors can be implemented by reference.

2 Normative references

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

GB/T 191 Packaging, Storage and Transportation Graphic Mark

GB/T 755 Rotating motor rating and performance

GB/T 756 Cylindrical shaft extension of rotating motor

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 motor wire end marking and direction of rotation

GB/T 1993 Rotating electric machine cooling method

GB/T 4772.1 Rotating electric machine size and output power rating Part

3 Type, basic parameters and dimensions

3.1 The model description is as follows: