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

GB/T 30144-2024

**YZP-H series variable-frequency adjustable-speed three-phase
induction motors for crane in ships - Technical specification
(frame size 112 to 400)**

YZP-H系列船用起重用变频调速三相异步电动机 技术规范（机座号112~400）

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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 for standardization documents" Drafting. This document replaces GB/T 30144-2013 "Technical Specifications for YZP-H Series Variable Frequency Speed Regulating Three-Phase Asynchronous Motors for Marine Hoisting" and Compared with GB/T 30144-2013, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

--- Added motor models and examples (see 4.1);

--- Added the protection level IP56 for the junction box, and deleted "It can also be made into IP54 and IP55 according to the purchaser's requirements" (see 4.2,.2013 edition 3.1);

--- Changed the constant torque frequency range from "2.5~50" to "3~50" (see Table 2, Table 2 of the.2013 edition);

--- Added the corresponding data of motor with frame size 400 (see Table 2, Table 3, Table 6, Table 9, Table 11 and Table 16);

--- Changed the K basic dimensions and position tolerances of the machine frame sizes 160M~225M in Table 3, and changed the K basic dimensions and position tolerances of the machine frame sizes 112M, 200L~280M and Table 5 for frame size 112M, changed the D limit deviation of Table 4 and Table 5 for frame size 160M~200L E limit deviation, changed the S basic size and position tolerance of the machine frame size 112M~280M in Table 4 and Table 5, deleted HE dimensions in Table 4 and Table 5 (see Table 3 to Table 5,.2013 edition of Table 3 to Table 5);

- Changed the limit deviation of key width (see Table 6, Table 6 of the.2013 edition);
- Added "Motors should be made of flame-retardant, durable, moisture-resistant, mildew-resistant and low-toxic materials, and materials containing asbestos are prohibited" (see 5.3.6);
- Changed the values corresponding to the nominal power and maximum torque/rated torque (see Table 13, Table 13 of the.2013 edition);
- Changed the guaranteed value of the ratio of the stall torque to the rated torque (see 5.5.4, 4.5.5 of the.2013 edition);
- Added "The deviation of any phase of the DC resistance of the three-phase stator winding of the motor in the actual cold state from the average value of the three phases should not exceed $\pm 2\%$ of the mean value" (see 5.5.6);
- Changed the overspeed test requirements (see 5.5.9,

1 Scope

GB/T 30144-2024 is the Chinese technical specification for the YZP-H series of inverter-fed three-phase induction motors used on shipboard cranes, in frame sizes 112 to 400. A crane motor at sea faces a combination of demands that no land motor does: intermittent duty with frequent starting, reversing and plugging, full torque at low speed while a load hangs, a heeling and rolling platform, and a salt-laden humid atmosphere, all on a supply that is a shipboard inverter rather than a stiff grid. The standard sets the types, basic parameters and dimensions so that motors are interchangeable, then the technical requirements: the duty types and their ratings, the torque and speed characteristics across the frequency range, the insulation system and the temperature rise under inverter supply, the bearing currents and their mitigation, the enclosure and corrosion protection, the vibration and noise, the ability to withstand the inclination and vibration of a ship, and the terminal box and cooling arrangements. It then gives the test methods and the inspection rules. It took effect on 23 August 2024.

This document specifies the types, basic parameters and dimensions of YZP-H series variable frequency speed regulating three-phase asynchronous motors for marine hoisting. It specifies technical requirements, describes the corresponding test methods, and stipulates inspection rules as well as marking, packaging and warranty period. This document is applicable to the manufacture of YZP-H series variable frequency speed regulating three-phase asynchronous motors for marine lifting (frame sizes 112~400).

2 Normative references

The contents of the following documents constitute essential clauses of this document

through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 191 Pictorial markings for packaging, storage and transportation

GB/T 755 Ratings and performance of rotating electrical machines

GB/T 756 Cylindrical shaft extensions for rotating electrical machines

GB/T 997 Classification of structural types, installation types and terminal box positions of rotating electrical machines (IM code)

GB/T 1032 Test methods for three-phase asynchronous motors

GB/T 1096 Ordinary flat key

GB/T 1958 Geometrical Specifications for Products (GPS) Geometric Tolerance Testing and Verification

GB/T 1971 Terminal marking and direction of rotation of rotating electrical machines

GB/T 1993 Cooling methods for rotating electrical machines

GB/T 2423.16-2022 Environmental testing Part

3 Noise limits

GB/T 12665 Requirements for damp heat tests on motors used under normal environmental conditions

GB/T 14048.1-2023 Low-voltage switchgear and controlgear Part