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

GB/T 30844.2-2024

**Variable-frequency drive of 1 kV and below - Part 2: Test
methods**

1 kV及以下通用变频调速设备 第2部分：试验方法

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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 is required. This document is Part 2 of GB/T 30844 "General-purpose variable frequency speed regulating equipment of 1 kV and below". GB/T 30844 has been published as follows: Lower part. --Part

1 Scope

China's national test methods for general purpose low voltage variable frequency drives, and the current edition of GB/T 30844.2, replacing the 2014 edition. It is Part 2 of GB/T 30844 and specifies the test requirements and the test items and methods for variable frequency speed regulating equipment with a rated input of 1 kV AC or 1.5 kV DC and below. The test items map onto the requirements of Part 1: appearance and structure

inspection, safety performance, functional tests, performance tests, protective function tests, environmental adaptability, degree of protection, electromagnetic compatibility, and high and low voltage ride-through. Clause 4 comes first and sets the normal test environment and electrical conditions, other requirements, and the safety of the test itself. The 2024 revision follows the changes in Part 1 and adds three things of substance. An impulse withstand voltage test has been added, which verifies the drive's insulation against the transient overvoltages that arrive from the supply rather than only against a power frequency withstand voltage - a more realistic test of what actually destroys drives in service. A control performance test has been added, so that the quality of the drive's regulation is measured rather than claimed. And a high and low voltage ride-through test has been added to verify the new capability required by Part 1. The earthing continuity measurement and the environmental adaptability tests have been revised, and a normative annex on the general provisions for time response now defines response time, rise time, settling time and the load impact speed deviation area - the four quantities that describe how well a drive actually controls a machine. Issued on 31 December 2024 and in force since 1 July 2025.

This document describes the test methods for general purpose variable frequency speed regulating equipment (hereinafter referred to as "speed regulating equipment") of 1 kV and below. This document is applicable to rated input voltage of 1 kV AC and

1.5 kV DC and below, rated input frequency of

60 Hz, Inspection and acceptance of speed regulating equipment with output voltage not exceeding 1 kV and output frequency less than 600 Hz.

Note. Speed regulating equipment with rated input voltage of 1 140 V or output frequency greater than 600 Hz is also usually implemented in accordance with this document. To be determined through negotiation between the manufacturer and the user.

2 Test methods; --Part

3.Safety regulations. This document replaces GB/T 30844.2-2014 "1 kV and below general frequency conversion speed regulation equipment Part

2.Test methods" Compared with GB/T 30844.2-2014, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

a) Changed the scope of application of the document, changing the rated input voltage to 1 kV AC and

1.5 kV DC and below (see Chapter 1 of the.2014 edition);

b) The provisions related to the test requirements "normal test environment conditions" have been changed (see 4.1,

4.1 of the.2014 edition);

c) The provisions related to "other requirements" of the test requirements have been changed (see 4.3,

4.3 of the.2014 edition);

d) Added the relevant provisions of "Impulse Withstand Voltage Test" (see 5.2.1.4);

e) Changed the provisions related to "grounding continuity (measurement of grounding resistance of accessible metal parts)" (see 5.2.3,.2014 Version 5.4);

f) Added provisions related to "control performance test" (see 5.4.7);

g) The provisions related to "Environmental adaptability test" have been modified (see 5.6, 5.16 of the.2014 edition);

h) Added provisions related to "high and low voltage ride-through test" (see 5.9);

3 Terms and definitions

The terms and definitions defined in GB/T 30844.1-2024 and the following apply to this document.