

JB

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

JB/T 5555-2013

Replacing JB/T 5555-2001

Transformers for Machine Tools

机床控制变压器

(English Translation)

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1 Scope

This standard specifies the terms and definitions, symbols, classifications, characteristics, relevant product information, normal use, installation and transportation conditions, structural and performance requirements and tests of control transformers for machine tools (hereinafter referred to as transformers).

This standard applies to single-phase control transformers.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) is applicable to this standard.

GB/T 2900.1 Electrotechnical terminology - Fundamental terms

GB/T 2900.15 Electrotechnical terminology - Transformer, instrument transformer, voltage regulator and reactor

GB/T 5169.10-2006 Fire hazard testing for electric and electronic products - Part 10:

Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure

GB/T 5169.11-2006 Fire hazard testing for electric and electronic products - Part 11:

Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products

GB 5226.1-2008 Electrical safety of machinery - Electrical equipment of machines - Part 1: General requirements

GB/T 13384 General specifications for packing of mechanical and electrical product

GB 14048.1-2006 Low-voltage switchgear and controlgear - Part 1: General rules

3.1 Terms and definitions

The terms and definitions as defined in GB/T 2900.1, GB/T 2900.15, GB 14048.1-2006, as well as the following terms and definitions, apply to this document.

3.1.1 Transformers for machine tools

Transformers with two or more electrically isolated windings, used as power supplies for control circuits, lighting circuits, signal circuits, electronic equipment in the electrical systems of machine tools and other mechanical equipment.

3.1.2 Rated supply voltage

The nominal voltage applied to the input terminal of the transformer, under normal operating conditions.

3.1.3 Rated output voltage

The nominal value of the transformer output voltage, under normal operating conditions.

3.1.4 Rated output power

The rated output power is equal to the product of the rated output voltage multiplied by the rated output current of the transformer. When the transformer has multiple independent output windings, the rated output power is equal to the sum of the products of the rated voltage of each output winding multiplied by the rated current of the winding.

3.1.5 No-load output voltage

The output voltage when no-load at rated supply voltage and rated frequency.

3.1.6 Load output voltage

The output voltage, when rated power is output at rated supply voltage and rated frequency.

3.1.7 Output voltage of instantaneous power

The output voltage, when instantaneous power is output at rated supply voltage and rated frequency.

3.2 Symbols

The main symbols specified in this document are as follows. U_e - Rated supply voltage; U_H - Rated output voltage; U_i - Rated insulation voltage; U_k - No-load output voltage; U_m - Load output voltage; $U_{m\phi}$ - Output voltage of instantaneous power.

4 Classification

4.1

According to the structure, it can be divided into shell type and core type.

4.2

According to the installation type, it can be divided into vertical type and horizontal type.

5.1 Structural type

The transformer is generally an open structure; it can also be made into a shell structure if necessary.

6.1 Information content

The manufacturer shall specify the following related information.

- a) Manufacturer name or trademark;
- b) Product model and (or) name;
- c) Standard number that the product complies with;
- d) Year and month of manufacture;
- e) Rated output power, rated supply voltage, rated output voltage (see 5.2.2.1);
- f) Rated frequency (see 5.2.2.2);
- g) Rated capacity of each output winding (if applicable);
- h) Rated insulation voltage (see 5.2.2.3);
- i) IP rating (if applicable) (see 8.1.6);
- j) Pollution level (see 7.1.3.2);
- k) Conformity mark and certification mark (if applicable).

6.1

The information content of items a) ~ g) shall be marked on the nameplate of the transformer, so that complete information can be obtained from the manufacturer. The markings shall be clear, indelible, easily identifiable, which shall not be marked on screws and movable parts. If the location permits, the parameters of items h) ~ k) may also be marked on the nameplate or transformer, or included in the documents published by the manufacturer.

6.3 Installation, operation, maintenance instructions

The manufacturer shall specify the installation, operation, maintenance conditions of the transformer during operation and after a fault, in its documents (such as the instruction manual) or samples (if any).

If necessary, the transportation, installation, operation instructions of the transformer shall specify the appropriate and correct installation, transportation, operation methods of the transformer.

The manufacturer shall provide instructions, to recommend what measures the user shall