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

GB/T 10066.31-2007

**Test methods for electro-heat installations -- Part 31:
High-frequency induction heating installation -- Test methods
for the determination of power output of the generator
(English Translation)**

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5.1 Cone calorimeter load

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Foreword

GB/T 10066 "test methods for electric devices" There are 13 parts.

--- Part 1. General part;

--- Part 2. Interested induction furnace;

--- Part 3. Heartless induction furnace;

--- Part 31. Determination of high frequency induction heating device generator output;

--- Part 4. Indirect resistance furnace;

--- Part 5. Plasma devices (GB/T 13535-1992 "plasma apparatus for electric heating test method");

--- Part 6. Determination of industrial microwave heating device output power (GB/T 18662-2002 "industrial microwave heating equipment Determination of output power ");

--- Part 7. electric heating device with electron gun;

--- Part 8. ESR furnace;

--- Part 9. high frequency dielectric heating device output power measurement method (GB/T 14809-2000 "high frequency dielectric heating equipment Out of power

measurement method ");

--- Part 10. Direct electric arc furnace;

--- Part 11. Submerged arc furnace;

--- Part 12. Infrared heating device.

Note: The test method for some existing electric devices is not subject to segment numbers (as shown in brackets) and will be changed to the segment numbers as specified above when amended.

This section GB/T 10066 Part 31 should be used in conjunction with the first part.

This section identical with IEC 61922.:2002 "high-frequency induction heating device --- Determination of the generator output power test method" in use, for IEC 61922.:2002, this section also made the following editorial changes.

--- "This Standard" be replaced by "this section";

--- Remove the foreword of the international standard;

Part. Determination of high frequency induction heating device generator output power ", the English name corresponding modification;

--- "The main purpose of this standard is to provide test methods for the determination of the output power of industrial high-frequency induction heating power supply." Replaced by "This section Provides high-frequency induction heating device generator output power measurement method ";

--- "This international standard applies to the industrial use of heating (such as surface hardening, welding, brazing, melting, forging, semiconductor refining, etc.) Frequency or high-frequency induction heating device. This standard relates to high-frequency generators and sensors and the necessary mechanical equipment holding the charge (Such as quenching machine), the frequency up to 300MHz, the power is equal to and greater than 500W high-frequency induction heating device. Two Paragraph read as follows. "This section applies to the high-frequency generators and sensors and the necessary mechanical equipment holding the charge (such as quenching machine) Composition, the frequency range up to 300MHz, the power is equal to and greater than 500W heating (such as surface (or local) quenching and through Thermal, soldering, brazing, melting, forging, refining of the semiconductor area, etc.) for industrial RF or HF induction heating. ";

--- "2 reference standard" to "2 normative references";

--- "The following referenced documents are indispensable for the use of this document. For dated references, only the edition cited is applicable.

For undated references, the latest version of the referenced document (including all amendments) applies. "Replace" with the following document this section through the

reference and become the provisions of this section. For dated references, all subsequent amendments (no Including errata content) or revisions do not apply to this section, however, encouraged by the parties to reach an agreement under this section is no The latest versions of these files are available. For undated references, the latest version applies to this section ";

GB/T 10066.31-2007/IEC 61922.:2002

--- "3 definition" title changed to "3 terms and definitions." Appendix A of this section is informative appendix.

This part is proposed by China Electrical Equipment Industry Association.

This part of the National Industrial Heating Equipment Standardization Technical Committee.

This section is drafted. Xi'an Electric Furnace Institute.

1 Scope and purpose

GB/T 10066 provisions of this part of the high-frequency induction heating device generator output power measurement method.

This section applies to the high-frequency generator and inductor and hold the charge required by the mechanical equipment (such as quenching machine) composition, the frequency Range up to 300MHz, power is equal to and greater than 500W Heating (such as surface (or local) quenching and diathermy, welding, brazing, melting, forging Manufacturing, semiconductor refining, etc.) industrial RF or high frequency induction heating device.

The load described in this section can be used for EMC compliance CISPR11 assessment.

This section relates to the power generator rated at continuous operation under the conditions specified by the manufacturer.

The method for measuring the output power of a generator running in a short-pulse cycle (for example, using an adiabatic calorimeter) thinking.

Care must be taken when using electronic systems for power measurements because their accuracy can not be guaranteed, especially at higher frequencies. These ones the instrument requires a large current transformer and a voltage transformer when measuring the output power. These transformers also have errors at higher frequencies. These measurements Quantitative methods require specialized knowledge to be applied correctly and are therefore not described in detail in this section.

2 Normative references

The following documents contain provisions which, through reference in this part of GB/T 10066, become the provisions of this section. For dated references, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, to encourage the agreement reached under this section the parties study whether the latest versions of these documents are available. For undated references, the latest version applies to this section.

GB/T 2900 Electrotechnical terminology Industrial electric heating device (GB/T 2900.23-1995, neq IEC 60050 (841). 1983) GB 5959.1-2005 Safety of electric heating equipment - Part 1. General requirements (IEC 60519-1.:2003, IDT) GB 5959.3 electric apparatus - Safety Part 3. Particular requirements for induction and conduction heating apparatus and induction melting apparatus (GB 5959.3-1988, IEC 60519-3.:1998, MOD) GB/T 14809-2000 high-frequency dielectric heating device output power measurement method (eqv IEC 61308.:1994) GB 4824-2004 Industrial, scientific and medical (ISM) radio frequency electromagnetic disturbance characteristics of measuring methods and limits (IEC/CISPR11.

2003, IDT)

3 Terms and definitions

The GB/T 2900, GB 5959.1-2005 and GB 5959.3 established and the following terms and definitions apply to this section.

At the generator power output, enter the power of the test load specified in this standard.

Note: This definition is explained by Figure 1. To the left of the graph is the generator and bounded by its two output terminals. The load is connected to these two output terminals. Outside the generator cabinet all the power shown is defined as the generator's output power. It includes power consumed in inductors, power leads and calorimeters.

For the measurement of high-frequency power by the water-cooled components of the device, the flow of cooling water is controlled, the temperature difference between incoming and outgoing water is monitored.

Note: The water-cooled parts made of steel or other conductive materials, high-frequency current is induced in it.

GB/T 10066.31-2007/IEC 61922.:2002