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

GB/T 2820.9-2024

**Reciprocating internal combustion engine driven alternating
current generating sets - Part 9: Measurement and evaluation of
mechanical vibrations**

(English Translation)

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Foreword

This document was drafted in accordance with the provisions of GB/T 1.1-2020

"Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents".

This document is Part 9 of GB/T 2820 "Reciprocating internal combustion engine driven alternating current generating sets". GB/T 2820 has published the following parts:

- Part 1: Application, ratings and performance;
- Part 2: Engines;
- Part 3: Alternating current generators for generating sets;
- Part 4: Controlgear and switchgear;

- Part 5: Generating sets;
- Part 6: Test methods;
- Part 7: Technical declarations for specification and design;
- Part 8: Requirements and tests for low-power generating sets;
- Part 9: Measurement and evaluation of mechanical vibrations;
- Part 10: Measurement of airborne noise by the enveloping surface method;
- Part 11: Rotary uninterruptible power systems - Performance requirements and test methods;
- Part 12: Emergency power supply to safety services.

This document replaces GB/T 2820.9-2002 "Reciprocating internal combustion engine driven alternating current generating sets - Part 9: Measurement and evaluation of mechanical vibrations". Compared with GB/T 2820.9-2002, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

- DELETE the symbols of acceleration and peak acceleration (see Chapter 4 of the

2002 edition);

- DELETE the measured value (see Chapter 6 of the 2002 edition);
- CHANGE the working state of the generator set during measurement (see Chapter 8; Chapter 9 of the 2002 edition).

Reciprocating internal combustion engine driven alternating
current generating sets - Part 9: Measurement and
evaluation of mechanical vibrations

1 Scope

This document describes the procedures for measuring and evaluating the specified external mechanical vibration characteristics of the generator set at specified measurement positions.

This document is applicable to fixed and mobile AC generator sets driven by reciprocating internal combustion engines with rigid and/or elastic mounting. This document is applicable to land and marine use, not to generator sets used in aviation or

generator sets used to drive land vehicles and locomotives.

For some specific applications (such as power supply to hospitals, high-rise buildings, etc.), additional requirements are required. The provisions of this document are regarded as the basis for these applications.

For generator sets driven by other reciprocating prime movers (such as biogas engines, steam engines, etc.), the provisions of this document are regarded as the basis for these applications.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in the text. Among them, for dated references, only the version corresponding to the date applies to this document; for undated references, the latest version (including all amendments) applies to this document.

ISO 2041 Mechanical vibration, shock and condition monitoring - Vocabulary

Note: GB/T 2298-2010 Mechanical vibration, shock and condition monitoring vocabulary (ISO 2041:2009, IDT).

ISO 8528-5:2022 Reciprocating internal combustion engine driven alternating current generating sets - Part 5: Generating sets

Note 1: There is no technical difference between the referenced content of ISO 8528-5:2022 and the referenced content of ISO 8528-5:2013.

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