

ICS 27.100
CCS K 52



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

GB/T 20136-2025

Replacing GB/T 20136-2006

**General methods of test for electric power plants with internal
combustion engines**

内燃机电站通用试验方法

Issued on: December 2, 2025

Implemented on: July 1, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

1	Scope
2	Normative references
3	Terms and Definitions
4	Classification of Test Methods
5	Generator sets
5.1.1	Method 101 Insulation Resistance Measurement
5.1.2	Method 102 Withstand Voltage Test
5.2	Test methods for performance-related items of.200 series components
5.2.1	Method.201 Visual Inspection
5.2.2	Method 202 Completeness Inspection
5.2.3	Method 203 Marking and Packaging Inspection
5.2.4	Method 204 Mass Measurement
5.2.5	Method 205 Dimensional Measurement
5.2.6	Method 206 Room Temperature Start-up Performance Check
5.2.7	Method 207 Low Temperature Start-up Measures Inspection
5.2.8	Method 208 Inspection of Control Panel Indicator Devices
5.2.9	Method 209 Automatic Maintenance Readiness Status Check
5.2.10	Method 210 Automatic Startup Success Rate Check
5.2.11	Method 211 Automatic power-on and automatic shutdown checks
5.2.12	Method 212 Automatic Replenishment Power Check
5.2.13	Method 213 Automatic Gas Replenishment Check
5.2.14	Method 214 Automatic Fuel Replenishment Check
5.2.15	Method 215 Manual Control Inspection
5.2.16	Method 216 Inspection of Vehicle Braking Performance
5.2.17	Method 217 Parking Brake Performance Inspection
5.2.18	Method 218 Drop Test
5.2.19	Method 219 Inspection of Protective Devices (or Measures)
5.2.20	Method 220 High Temperature Protection Inspection
5.2.21	Method 221 Functional check of manual emergency stop device (or emergency switch)
5.2.22	Method 222 Interlocking Function Check for Connection with Aircraft Electrical System
5.3	Series 300 Protective Function Category Test Methods

- 5.3.1 Method 301 Short-circuit protection function check
- 5.3.2 Method 302 Overload (Current) Protection Function Check
- 5.3.3 Method 303 Reverse Power Protection Function Check
- 5.3.4 Method 304 Overvoltage Protection Function Check
- 5.3.5 Method 305 Undervoltage Protection Function Check
- 5.3.6 Method 306 Overfrequency protection function check
- 5.3.7 Method 307 Underfrequency protection function check
- 5.3.8 Method 308 Overheat protection function check
- 5.3.9 Method 309 Low oil pressure protection function check
- 5.3.10 Method 310 Overspeed protection function check
- 5.3.11 Method 311 Fuel Low Alarm Function Check
- 5.4 Series 400 Performance Index Test Methods
 - 5.4.1 Method 401 Frequency Drop Measurement
 - 5.4.2 Method 402 Steady-state frequency band measurement
 - 5.4.3 Method 403 Measurement of relative frequency setting drop range and relative frequency setting rise range
 - 5.4.4 Method 404 Measurement of the rate of change of frequency tuning
 - 5.4.5 Method 405. Transient frequency deviation (to the initial frequency) and transient frequency deviation (to the rated frequency), respectively, are calculated according to... Load increase (-) and load decrease () and frequency recovery time measurement
 - 5.4.6 Method 406 Steady-state voltage deviation measurement
 - 5.4.7 Method 407 Voltage Unbalance Measurement
 - 5.4.8 Method 408 Measurement of relative voltage setting drop range and relative voltage setting rise range
 - 5.4.9 Method 409 Measurement of Voltage Setting Change Rate
 - 5.4.10 Method 410 Transient voltage deviation and voltage recovery time, measured separately for load increase (-) and load decrease ()
 - 5.4.11 Method 411 Voltage Modulation Measurement
 - 5.4.12 Method 412 Parallel Operation Test
 - 5.4.13 Method 413 Parallel Operation Test (Automated Power Plant)
 - 5.4.14 Method 414 Performance parameter measurement during dual-frequency power generation
 - 5.4.15 Method 415 Measurement of various performance indicators of the intermediate frequency generator during frequency conversion power generation
 - 5.4.16 Method 416 Measurement of transient voltage regulation under simulated motor load
 - 5.4.17 Method 417 Measurement of AC transient surge voltage range

- 5.4.18 Method 418 Measurement of AC transient frequency range
- 5.4.19 Method 419 Measurement of DC transient surge voltage range
- 5.4.20 Method 420 Checking the ability to directly start the motor
- 5.4.21 Method 421 Checking Voltage Changes in Hot and Cold States
- 5.4.22 Method 422 Measurement of line voltage deviation under unbalanced load
- 5.4.23 Method 423 Measurement of Three-Phase Voltage Unbalance Value
- 5.4.24 Method 424 Phase Voltage Crest Coefficient Measurement
- 5.4.25 Method 425 Three-phase voltage phase shift measurement
- 5.4.26 Method 426 Measurement of sinusoidal distortion rate of line voltage waveform
- 5.4.27 Method 427 Measurement of Total Harmonic Content of Phase Voltage
- 5.4.28 Method 428 Measurement of Single Harmonic Content of Voltage
- 5.4.29 Method 429 Voltage Deviation Coefficient Measurement
- 5.4.30 Method 430 Measurement of Frequency Modulation Amount and Frequency Modulation Rate
- 5.4.31 Method 431 Measurement of frequency drift and frequency drift rate
- 5.4.32 Method 432 Continuous operation test
- 5.4.33 Method 433 Temperature Rise Measurement
- 5.4.34 Method 434 Measurement of steady current accuracy
- 5.4.35 Method 435 Voltage Regulation Accuracy Measurement
- 5.4.36 Method 436 Pulsating Voltage Measurement
- 5.4.37 Method 437 Telephone Harmonic Factor Measurement
- 5.4.38 Method 438 Steady-state voltage range measurement (medium frequency)
- 5.4.39 Method 439 Steady-state voltage range measurement (DC)
- 5.5 Series 500 Safety Performance Test Methods
 - 5.5.1 Method 501 Insulation monitoring device inspection
 - 5.5.2 Method 502 Grounding Resistance Measurement
 - 5.5.3 Method 503 Phase Sequence Check
 - 5.5.4 Method 504 Illuminance Test
- 5.6 Series 600 Radio Interference Category Test Methods
 - 5.6.1 Method 601 Conducted Interference Measurement
 - 5.6.2 Method 602 Radiated Interference Measurement
- 5.7 Series 700 Environmental Protection Project Test Methods
 - 5.7.1 Method 701 Vibration Value Measurement
 - 5.7.2 Method 702 Noise Level Measurement
 - 5.7.3 Method 703 Measurement of the Concentration of Hazardous Substances

- 5.7.4 Method 704 Smoke Opacity Measurement
- 5.8 Series 800 Economic Project Test Methods
 - 5.8.1 Method 801 Fuel Consumption Rate Measurement
 - 5.8.2 Method 802 Oil Consumption Rate Measurement
- 5.9 Series 900 Environmental Adaptability Test Methods
 - 5.9.1 Method 901 High Temperature Test
 - 5.9.2 Method 902 Low Temperature Test
 - 5.9.3 Method 903 Damp heat test
 - 5.9.4 Method 904 Damp Heat Test (Components)
 - 5.9.5 Method 905 Mold Test
 - 5.9.6 Method 906 Mold Test (Components)
 - 5.9.7 Method 907 Rain test
 - 5.9.8 Method 908 Inclined Operation Test
- 5.10 Series 1000 Test Methods for Transport-Related Items
 - 5.10.1 Method 1001 Transport Test
 - 5.10.2 Method 1002 Driving Test
- 5.11 Series 1100 Reliability and Maintainability Test Methods
 - 5.11.1 Method 1101 Reliability and Maintainability Test (Constant Load)
 - 5.11.2 Method 1102 Reliability and Maintainability Test (Alternating Load)
 - 5.11.3 Method 1103 Reliability and Maintainability Testing (Field Use)
 - 5.11.4 Method 1104 Unattended operation time check
- 9 Measurement and evaluation of mechanical vibration
- 10 Noise measurement (surface method)

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document replaces GB/T 20136-2006 "General Test Methods for Internal Combustion Engine Power Stations". Compared with GB/T 20136-2006, except for the structure... Aside from adjustments and editorial changes, the main technical changes are as follows:

---Change "Check short-circuit protection function (ammeter method)" and "Check short-circuit protection function (oscilloscope method)" to "Short-circuit protection function check" (See 5.3.1, Methods 303 and 304 of the 2006 edition);