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

GB/T 13823.19-2008

**Earth gravity law calibration of vibration and shock sensor
calibration method**

振动与冲击传感器的校准方法 地球重力法校准

(English Translation)

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Foreword

GB/T 13823 "calibration of vibration and shock sensor" includes the following sections.

- Part 4. Magnetic sensitivity testing;
- Part 5. Testing of mounting torque sensitivity;
- Part 6. base strain sensitivity testing;
- Part 8. transverse vibration sensitivity testing;
- Part 9. transverse shock sensitivity test;
- Part 12. mounted on a steel block speedometer undamped resonance frequency of the test;
- Part 14. primary calibration by centrifuge;
- Part 15. Testing of transient temperature sensitivity method;
- Part 16. Comparison of temperature response test method;
- Part 17. Testing of acoustic sensitivity;
- Part 19. Calibration by Earth's gravity;
- Part 20. Accelerometer resonance testing - General method.

This part of GB/T 13823 Part 19.

This part identical with ISO 5347-5:1993 "vibration and shock sensor calibration method - Part 5. Gravitational calibration" (In English).

This section is equivalent translation ISO 5347-5:1993. For ease of use, this section made

the following editorial changes.

- With "this Part" instead of "this International Standard";
- With a decimal point instead of a comma as the decimal point, ",";
- Omitted International Standard ISO informative overview of elements related to presentation;
- Normative references added to the basic concepts and terminology standards;
- For text and formulas in the appendix are numbered;
- Added Appendix NA (informative).

This section of Appendix A normative annex, appendix NA informative appendices.

This part of the National mechanical vibration, shock and condition monitoring Standardization Technical Committee (SAC/TC53) and focal points.

1 Scope

GB/T 13823 provisions of this part of the Earth's gravity on the use of accelerometers is absolutely required for calibration and operation of equipment program.

This section applies to linear accelerometers with zero frequency response (mainly strain gauge or piezoresistive), servo accelerometers, including standard transmission Sensors and sensor work.

This part of the use of positive and negative local acceleration of gravity as the standard value of 0Hz.

This section allows uncertainty limit is $\pm 0.01\text{m/s}^2$.

2 Normative references

The following documents contain provisions which, through GB/T 13823 reference in this text, constitute provisions of this part. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 20485.1-2008 vibration and shock sensor calibration methods - Part 1. Basic Concepts (ISO 16063-1:1998, IDT) ISO 2041:1990 Mechanical vibration and shock term

3.1 Thermostat

The ability to maintain the room temperature at $23\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$ means of.

3.2 Working platform

The platform enables the design of an accelerometer to rotate within a vertical plane containing its axis of sensitivity of 180° .

At each measurement position, the working platform relative to said vertical plane an angle should be maintained within $\pm 0.5^{\circ}$.

3.3 Measuring instruments accelerometer output

Used to measure the accelerometer output equipment, should be better than its maximum uncertainty of reading $\pm 0.01\%$.

4 Preferred value

During calibration, you should use the local gravitational acceleration due to the Earth's gravity caused by positive and negative values (in m/s^2 representation).

Note: The output is often difficult due to the Earth's gravitational component caused due to transverse sensitivity and output areas due to separate, it is caused by the Earth's gravitational component of gravity Positive negative acceleration value between the calibration is not feasible.

5.1 Test Procedure

Between location and altitude due to different local acceleration due to Earth's gravity might $9.78\text{m/s}^2 \sim 9.83\text{m/s}^2$ Changes in the value of the acceleration of gravity it should take four significant digits.

The school is sensitive axial accelerometer were placed in a vertical plane with respect to the 0° and 180° position and measure these two bits Output voltage value is set when the accelerometer.

GB/T 13823.19-2008/ISO 5347-5:1993