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

GB/T 20485.22-2008

Replacing GB/T 13823.10-1995

**Methods for the calibration of vibration and shock transducers
-- Part 22: Shock calibration by comparison to a reference
transducer**

振动与冲击传感器校准方法 第22部分：冲击比较法校准
(English Translation)

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Foreword

GB/T 20485 "vibration and shock sensor calibration method" is expected from the basic concept of the structure, the absolute calibration method, comparative method calibration and the environment Analog calibration and other categories as well as the following components.

- Part 1. Basic Concepts;
- Part 11. vibration calibration by laser interferometry;
- Part 12. Primary vibration calibration by reciprocity;
- Shock calibration by laser interferometry;. --- Part 13
- Part 15. Laser interferometry angular vibration calibration;
- Part 21. Vibration calibration by comparison;
- Part 22. Shock calibration by comparison.

This section is Part 22 GB/T 20485 of.

This part identical with ISO 16063-22:2005 "vibration and shock sensor calibration method Part 22. Shock calibration by comparison." (In English).

This section is equivalent translation ISO 16063-22:2005.

For ease of use, this section made the following editorial changes.

- The term "international standards in this section" to "this Part";

--- Delete foreword international standards;

"," --- With a decimal point instead of a comma as the decimal point, "";

--- Of ISO 16063-22:2005 and other international standards referenced, there is adopted as the equivalent of a standard, instead of using our standard Corresponding to international standards, is not tantamount to the adoption of a standard for the direct reference to international standards.

This Part replaces GB/T 13823.10-1995 "calibration of vibration and shock pick - ups - Secondary shock calibration." Compared with GB/T 13823.10-1995, the main modifications are as follows.

--- Original frequency range specified in the standard 40Hz ~ 1250Hz to 40Hz ~ 5000Hz, and equipment required to do the phase it should be adjusted;

--- Calibration by the environmental conditions at room temperature $20\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$ to $23\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$;

--- Choose calibration frequency is changed in accordance with the 1/3 octave;

--- Increasing the content of the accelerometer sensitivity calculation phase shift;

--- Increased Chapter 3 Measurement Uncertainty;

--- Added A. Appendix A 1.2 and A. Uncertainty 2.2 complex sensitivity calibration phase shift calculation.

Appendix A of this section is normative appendix, Appendix B is an informative annex.

This part of the National mechanical vibration, shock and condition monitoring Standardization Technical Committee and centralized.

1 Scope

This section provides the use of measuring time-varying reference acceleration, velocity or force method, the impact is relatively linear accelerometers Method calibration equipment and operating procedures. This method is applicable to a range of 1 shock pulse duration) is 0.05ms ~ 8.0ms, dynamic range (Peak) of 100m/s² ~ 100km/s² (related to the duration of the pulse). These methods can be shock sensitivity of the sensor (also is the acceleration sensor output peak and peak acceleration relationship).

These methods are not used for calibration using modal analysis of dynamic force sensors.

Note 1: This section is for those who engage in impact measurement, they need such as GB/T 19001 "Quality Management System Requirements" (idt ISO 9001) and GB/T 15481 "testing and calibration laboratories General requirements" (idt ISO/IEC 17025) the traceability.

Note 2: The method specified in this part of the acceleration time history based measurements,

unlike the GB/T 20485.1-2008 based on the speed of the original fundamental change Other impact calibration method of treatment, and therefore the impact sensitivity is also different from the impact of the latter was fundamentally calibration factors, but and GB/T 20485.13-2007 impact consistent sensitivity.

2 Normative references

The following documents contain provisions cited by the present part of GB/T 20485, 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, under this part are encouraged to reach 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 2298 Mechanical vibration and shock term GB/T 20485.1-2008 vibration and shock sensor calibration methods - Part 1. Basic Concepts (ISO 16063-1:1998, IDT) GB/T 20485.11-2006 vibration and shock sensor calibration methods - Part 11. vibration calibration by laser interferometry (ISO 16063-11:1999, IDT) GB/T 20485.12-2008 vibration and shock sensor calibration methods - Part 12. vibration calibration by reciprocity method (ISO 16063-12:2002, IDT) GB/T 20485.13-2007 vibration and shock sensor calibration methods - Part 13. Shock calibration by laser interferometry (ISO 16063-13:2001, IDT) GB/T 20485.21-2007 vibration and shock sensor calibration methods - Part 21. Vibration calibration by comparison (ISO 16063-21.

2003, IDT)

ISO 5347-22 vibration and shock sensor calibration methods - Part 22. Accelerometer resonance testing General Method 2) ISO 18431-2 Mechanical vibration and shock - Signal processing - Part 2. used for Fourier transform analysis domain window

1) exceptions, shock pulse duration may be longer or shorter.

2) become part of the next version of ISO 16063.

3 Terms and Definitions

Terms and definitions GB/T 2298 and listed below apply to this standard.

GB/T 20485.22-2008/ISO 16063-22:2005