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NATIONAL METROLOGY TECHNICAL SPECIFICATION OF THE

PEOPLE'S REPUBLIC OF CHINA

JJF 1918-2021

Calibration Specification for Capacitive Acceleration Sensor

电容式加速度传感器校准规范

(English Translation)

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Introduction

This specification is prepared in accordance with JJF 1071-2010 "Rules for Compilation of National Metrology and Calibration Specifications". JJF 1071 "Country Rules for Writing Metrological Calibration Specifications, JJF 1001 "General Metrology Terms and Definitions" and JJF 1059.1 "Inaccurate Measurements" "Sentimental Evaluation and Representation" together constitute the basic series of specifications supporting the

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formulation of this specification.

This specification is published for the first time.

Calibration Specification for Capacitive Accelerometers

1 Scope

This specification applies to the calibration of capacitive acceleration sensors (hereinafter referred to as accelerometers).

2 Reference documents this specification references the following documents.

JJG2054-2015 Vibration measuring instrument verification system table JJF 1156-2006 Terms and Definitions of Vibration Shock Speed Measurement GB/T 20485.11-2006 Vibration and shock sensor calibration method Part 11: Laser interferometry vibration Dynamic absolute calibration GB/T 20485.16-2018 Vibration and shock sensor calibration method Part 16: Earth gravity method calibration GB/T 20485.21-2007 Vibration and shock sensor calibration method Part 21: Vibration comparison method calibration IEC 60747-14-4:2011 Semiconductor devices Discrete devices Part 14-4.Semiconductor inductors (Semi-for dated references, only the dated version applies to this specification; for undated references the latest version (including all amendments) applies to this specification.

3 Overview

Capacitive accelerometers are widely used for vibration and shock measurements.

The structure of capacitive acceleration sensor generally adopts a spring mass system, which consists of a fixed mass block and a sensitive mass block.

to form a plate capacitor. The mass block is moved by the inertial force to change the capacitance value of the plate. By detecting large changes in capacitance Small, measure the magnitude and direction of the sensitive axis acceleration.

4 Metrology characteristics

4.1 Static characteristics Static sensitivity.

4.2 Dynamic Characteristics

a) reference sensitivity;

b) Sensitivity frequency response;

c) Sensitivity amplitude linearity.

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