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Methods for the calibration of vibration and shock transducers —

Part 21:
Vibration calibration by comparison to a reference transducer

Méthodes pour l'étalonnage des transducteurs de vibrations et de chocs —

Partie 21: Étalonnage de vibrations par comparaison à un transducteur de référence

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO 16063-21 was prepared by Technical Committee ISO/TC 108, *Mechanical vibration and shock*, Subcommittee SC 3, *Use and calibration of vibration and shock measuring instruments*.

This first edition of ISO 16063-21 cancels and replaces ISO 5347-3:1993, which has been technically revised.

ISO 16063 consists of the following parts, under the general title *Methods for the calibration of vibration and shock transducers*:

— *Part 1: Basic concepts*

— *Part 11: Primary vibration calibration by laser interferometry*

— *Part 12: Primary vibration calibration by the reciprocity method*

— *Part 13: Primary shock calibration using laser interferometry*

— *Part 21: Vibration calibration by comparison to a reference transducer*

— *Part 22: Shock calibration by comparison to an accelerometer, velocity or force transducer*

Introduction

The ISO 16063 series of standards is concerned with methods for the calibration of vibration and shock transducers under both standard laboratory conditions and in the field.

As such, the intended user group of this part of ISO 16063 is wide, ranging from metrologists in mechanical vibration to technicians evaluating the vibration characteristics of a machine or structure, or human exposure to vibration. The key to the application of this part of ISO 16063 is in the careful detailed specification and evaluation of measurement uncertainty, i.e. the error budget and computation of expanded uncertainty associated with the measurement of vibration.

This part of ISO 16063 is particularly intended for those engaged in vibration measurements requiring traceability to primary national or international standards through a secondary, reference, working or check standard (portable calibrator intended for field use) as defined in the *International vocabulary of basic and general terms in metrology* (VIM). The specifications for the instrumentation and the procedures given are intended to be used for calibration of rectilinear vibration transducers (with or without signal conditioning) to obtain the magnitude and (optionally) phase shift of the complex sensitivity at frequencies in the range of 0,4 Hz to 10 kHz.

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