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Methods for the calibration of vibration and shock transducers —

Part 33: Testing of magnetic field sensitivity

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

Partie 33: Essai de sensibilité aux vibrations transversale

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 108, *Mechanical vibration, shock and condition monitoring*, Subcommittee SC 3, *Use and calibration of vibration and shock measuring instruments*.

This second edition cancels and replaces the first edition (ISO 5347-19:1993), which has been technically revised.

A list of all the parts in the ISO 16063 series can be found on the ISO website.

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Methods for the calibration of vibration and shock transducers —

Part 33:
Testing of magnetic field sensitivity

1 Scope

This document specifies a method, procedures and the specifications for an apparatus to be used for testing the magnetic field sensitivity of vibration and shock transducers. It is applicable to all kinds of vibration and shock transducers.

This document is applicable for a reference test sinusoidal magnetic field having a root mean square (r.m.s.) value more than 10^{-3} T at 50 Hz or 60 Hz. Typically, a test magnetic field of 10^{-2} T at 50 Hz or 60 Hz is used.

This document is primarily intended for those who are required to meet internationally standardized methods for the measurement of magnetic field sensitivity under laboratory conditions.

NOTE 1 T (tesla) = 1 Wb/m^2.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 16063-1:1998, *Methods for the calibration of vibration and shock transducers — Part 1: Basic concepts*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

4 Uncertainty of measurement

Uncertainty of measurements can be expressed as relative expanded uncertainty. If the test signal is big and the signal-to-noise ratio (SNR) is more than 20 dB, ignoring the influence of the ambient vibration and apparatus background noise, a relative expanded uncertainty of 10 % (coverage factor $k = 2$) or less can be achieved according to this document. However, when the test signal is small and the SNR is not more than 20 dB, the uncertainty components caused by ambient vibration and apparatus background noise cannot be ignored. Conversely, it shall be taken into account carefully because it has now become as a main part of the uncertainty.

All users of this document shall assess and report the uncertainty of measurement according to ISO 16063-1:1998, Annex A. The uncertainty of measurement is expressed as expanded uncertainty for

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