PD IEC TS 61994-3:2021

BSI Standards Publication

Piezoelectric, dielectric and electrostatic devices and associated materials for frequency control, selection and detection — Glossary

Part 3: Piezoelectric, dielectric and electrostatic oscillators

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National foreword

This Published Document is the UK implementation of IEC TS 61994-3:2021. It supersedes DD IEC/TS 61994-3:2011, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EPL/49, Piezoelectric devices for frequency control and selection.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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TECHNICAL SPECIFICATION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

PIEZOELECTRIC, DIELECTRIC AND ELECTROSTATIC DEVICES AND ASSOCIATED MATERIALS FOR FREQUENCY CONTROL, SELECTION AND DETECTION – GLOSSARY –

Part 3: Piezoelectric, dielectric and electrostatic oscillators

FOREWORD

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Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC TS 61994-3, which is a technical specification, has been prepared by IEC technical committee 49: Piezoelectric, dielectric and electrostatic devices and associated materials for frequency control, selection and detection.

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This third edition of IEC 61994-3 cancels and replaces the second edition published in 2011. This edition constitutes a technical revision.

The main changes with respect to the previous edition are as listed below:

– some definitions have been updated;
– the terminology given in IEC 60679-1:2017 has been taken into account;
– new terminologies are added.

The text of this Technical Specification is based on the following documents:

Enquiry draft	Report on voting
49/1348/DTS	49/1355/RVC

Full information on the voting for the approval of this technical specification can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 61994 series, published under the general title *Piezoelectric, dielectric and electrostatic devices and associated materials for frequency control, selection and detection – Glossary*, can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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PIEZOELECTRIC, DIELECTRIC AND ELECTROSTATIC DEVICES AND ASSOCIATED MATERIALS FOR FREQUENCY CONTROL, SELECTION AND DETECTION – GLOSSARY –

Part 3: Piezoelectric, dielectric and electrostatic oscillators

1 Scope

This part of IEC 61994 gives the terms and definitions for piezoelectric, dielectric and electrostatic oscillators representing the state of the art, which are intended for use in the standards and documents of IEC TC 49.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

3.1
adjustment frequency
frequency to which an oscillator must be adjusted, under a particular combination of operating conditions, in order to meet the requirement for the frequency tolerance specification over the specified range of operating conditions

Note 1 to entry: Adjustment frequency corresponds to nominal frequency plus frequency offset.

[SOURCE: IEC 60679-1:2017, 3.2.22]

3.2
ADEV of fractional frequency fluctuation
Allan deviation of fractional frequency fluctuation
measure in the time domain of the short-term frequency stability of oscillator, based on the statistical properties of a number of frequency measurements, each representing an average of the frequency over the specified sampling interval τ

Note 1 to entry: The preferred measure of fractional frequency fluctuation is:

$$\sigma_y(\tau) \cong \left[\frac{1}{2(M-1)} \sum_{k=1}^{M-1} (Y_{k+1} - Y_k)^2 \right]^{1/2}$$

where

Y_k are the average fractional frequency fluctuations obtained sequentially, with no systematic dead time between measurements;

τ is the sample time over which measurements are averaged;

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