

TECHNICAL SPECIFICATION

**Piezoelectric, dielectric and electrostatic devices and associated materials for
frequency control, selection and detection – Glossary –
Part 5: Piezoelectric sensors**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**PIEZOELECTRIC, DIELECTRIC AND ELECTROSTATIC DEVICES
AND ASSOCIATED MATERIALS FOR FREQUENCY CONTROL,
SELECTION AND DETECTION –
GLOSSARY –****Part 5: Piezoelectric sensors****FOREWORD**

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IEC TS 61944-5, 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.

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

Draft TS	Report on voting
49/1295/DTS	49/1296/RVDTS

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.

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

Part 5: Piezoelectric sensors

1 Scope

This part of IEC 61994 gives the terms and definition for sensors representing the state of the art, which are intended for manufacturing piezoelectric elements, cells and the modules.

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

delay line type sensor element

piezoelectric sensor component using a delay-line of surface acoustic wave (SAW) transversal filter type

[SOURCE: IEC 63041-1:2017, 3.2.3, modified – The phrase has been rewritten in an easy-to-understand manner using a well-known term.]

3.2

non-acoustic type sensor element

piezoelectric sensor component using the electrical charge induced by a quasi-static force, torque or the like

[SOURCE: IEC 63041-1:2017, 3.2.4, modified – Note 1 to entry has been deleted.]

3.3

piezoelectric biochemical sensor element

piezoelectric sensor component including a receptive layer (target recognition material), which is necessary for the practical measurement of complex biological molecules in quantity, and which works mainly in aqueous media and detects biomolecules therein

[SOURCE: IEC 63041-1:2017, 3.3.2]

3.4

piezoelectric chemical sensor element

piezoelectric sensor component including a sensitive layer (target recognition material), which is necessary for the practical measurement of simple non-biological molecules in quantity, and which works and detects chemical substances mainly in the gas phase

[SOURCE: IEC 63041-1:2017, 3.3.1, modified – Note 1 to entry has been deleted.]

3.5

piezoelectric film-thickness sensor element

piezoelectric sensor component whose resonance frequency is used for film-thickness measurement

[SOURCE: IEC 63041-1:2017, 3.4.6]

3.6

piezoelectric force sensor element

piezoelectric sensor component whose resonance frequency, delay or electrical charge/voltage is used for force measurement

[SOURCE: IEC 63041-1:2017, 3.4.1]

3.7

piezoelectric pressure sensor element

piezoelectric sensor component whose resonance frequency, delay or electrical charge/voltage is used for pressure measurement

[SOURCE: IEC 63041-1:2017, 3.4.2]

3.8

piezoelectric sensor

generic term that includes a sensor element, cell and module

[SOURCE: IEC 63041-1:2017, 3.2.7]

3.9

piezoelectric sensor cell

sensor element equipped with necessary mechanical accessories and attachments to correctly detect the parameters to be measured

[SOURCE: IEC 63041-1:2017, 3.2.5]

3.10

piezoelectric sensor element

electronic component which is able to detect physical quantities as a change in its frequency, phase, delay, electrical charge, resistance, Q-value, bandwidth, etc.

[SOURCE: IEC 63041-1:2017, 3.2.1, modified – Note 1 to entry has been deleted.]

3.11

piezoelectric sensor module

sensor element or cell equipped with electronic accessories for interfacing to external data acquisitions

[SOURCE: IEC 63041-1:2017, 3.2.6]

3.12**piezoelectric temperature sensor element**

piezoelectric sensor component whose resonance frequency or delay is used for temperature measurement

[SOURCE: IEC 63041-1:2017, 3.4.5]

3.13**piezoelectric torque sensor element**

piezoelectric sensor component whose resonance frequency, delay or electrical charge/voltage is used for torque measurement

[SOURCE: IEC 63041-1:2017, 3.4.3]

3.14**piezoelectric viscosity sensor element**

piezoelectric sensor component whose resonance frequency, delay or insertion loss/gain is used for viscosity measurement

[SOURCE: IEC 63041-1:2017, 3.4.4]

3.15**QCM****quartz crystal microbalance**

one of the families of chemical and biochemical sensors using crystal resonators

[SOURCE: IEC 63041-1:2017, 3.2.8, modified – Note 1 to entry has been deleted.]

3.16**resonator type sensor element**

piezoelectric sensor component using acoustic resonances

[SOURCE: IEC 63041-1:2017, 3.2.2]