

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Piezoelectric sensors –
Part 1: Generic specifications**

**Capteurs piézoélectriques –
Partie 1: Spécifications génériques**





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PIEZOELECTRIC SENSORS –**Part 1: Generic specifications**

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IEC 63041-1 has been prepared by IEC technical committee 49: Piezoelectric, dielectric and electrostatic devices and associated materials for frequency control, selection and detection. It is an International Standard.

This second edition cancels and replaces the first edition published in 2017. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) the new terms "piezoelectric sensor system" and "wireless SAW sensor system" and their definitions have been added;
- b) new types of sensor modules and sensor system have been added;
- c) some symbols of sensor elements are added in Clause 4;
- d) a new Figure B.3 has been added in Annex B;
- e) Annex C has been added.

The text of this International Standard is based on the following documents:

Draft	Report on voting
49/1357/CDV	49/1364/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the IEC 63041 series, published under the general title *Piezoelectric sensors*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under 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- withdrawn,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.

PIEZOELECTRIC SENSORS –

Part 1: Generic specifications

1 Scope

This part of IEC 63041 applies to piezoelectric sensors of resonator, delay-line and non-acoustic types, which are used in physical and engineering sciences, chemistry and biochemistry, medical and environmental sciences, etc.

The purpose of this document is to specify the terms and definitions for piezoelectric sensors, and to make sure from a technological perspective that users understand the state-of-art piezoelectric sensors and how to use them correctly.

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.

IEC 60027 (all parts), *Letter symbols to be used in electrical technology*

IEC 60050-561, *International Electrotechnical Vocabulary – Part 561: Piezoelectric, dielectric and electrostatic devices and associated materials for frequency control, selection and detection*

IEC 60122-2-1, *Quartz crystal units for frequency control and selection – Part 2: Guide to the use of quartz crystal units for frequency control and selection – Section One: Quartz crystals for microprocessor clock supply*

IEC 60444-9, *Measurement of quartz crystal unit parameters – Part 9: Measurement of spurious resonances of piezoelectric crystal units*

IEC 60617, *Graphic symbols for diagrams*, available at <https://std.iec.ch/iec60617>

IEC 63041-3:2020, *Piezoelectric sensors – Part 3: Physical sensors*

ISO 2859-1:1999, *Sampling procedures for inspection by attributes – Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 80001-1, *Quantities and units – Part 1: General*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60027, IEC 60050-561, IEC 60617, ISO 80000-1 and the following apply.