ICS 31.140 SLOVENSKÁ TECHNICKÁ NORMA Január 2022

| STN | **Piezoelektrické snímače**<br>**Časť 1: Všeobecné špecifikácie** | **STN**<br>**EN IEC 63041-1**<br><br>35 8400 |
|---|---|---|

Piezoelectric sensors - Part 1: Generic specifications

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 12/21

Obsahuje: EN IEC 63041-1:2021, IEC 63041-1:2021

Oznámením tejto normy sa od 22.10.2024 ruší
STN EN IEC 63041-1 (35 8400) z februára 2019

**134202**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN IEC 63041-1

October 2021

ICS 31.140

Supersedes EN IEC 63041-1:2018 and all of its amendments and corrigenda (if any)

English Version

# Piezoelectric sensors - Part 1: Generic specifications (IEC 63041-1:2021)

Capteurs piézoélectriques - Partie 1: Spécifications génériques (IEC 63041-1:2021)

Piezoelektrische Sensoren - Teil 1: Fachgrundspezifikation (IEC 63041-1:2021)




European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**



Ref. No. EN IEC 63041-1:2021 E

# European foreword

The text of document 49/1357/CDV, future edition 2 of IEC 63041-1, prepared by IEC/TC 49 “Piezoelectric, dielectric and electrostatic devices and associated materials for frequency control, selection and detection” was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 63041-1:2021.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2022–07–22
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024–10–22

This document supersedes EN IEC 63041-1:2018 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users’ national committee. A complete listing of these bodies can be found on the CENELEC website.

## Endorsement notice

The text of the International Standard IEC 63041-1:2021 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

| | |
|---|---|
| IEC 60068 (series) | NOTE Harmonized as EN 60068 (series) |
| IEC 60122-1 | NOTE Harmonized as EN 60122-1 |
| IEC 60444-1 | NOTE Harmonized as EN 60444-1 |
| IEC 60444-5 | NOTE Harmonized as EN 60444-5 |
| IEC 60679 (series) | NOTE Harmonized as EN 60679 (series) |
| IEC 60689 | NOTE Harmonized as EN 60689 |
| IEC 60758:2016 | NOTE Harmonized as EN 60758:2016 (not modified) |
| IEC 60862-1 | NOTE Harmonized as EN 60862-1 |
| IEC 61019-1 | NOTE Harmonized as EN 61019-1 |
| IEC 61240:2016 | NOTE Harmonized as EN 61240:2017 (not modified) |
| IEC 61760 (series) | NOTE Harmonized as EN 61760-4:2015/A1 (series) |
| IEC 61837 (series) | NOTE Harmonized as EN 61837 (series) |
| IEC 63041-2 | NOTE Harmonized as EN IEC 63041-2 |
| ISO 80000 (series) | NOTE Harmonized as EN ISO 80000 (series) |

# Annex ZA
(normative)

## Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

| Publication | Year | Title | EN/HD | Year |
|---|---|---|---|---|
| IEC 60027 | series | Letter symbols to be used in electrical technology | EN 60027 | series |
| 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 crystal units for microprocessor clock supply | - | - |
| IEC 60444-9 | - | Measurement of quartz crystal unit parameters - Part 9: Measurement of spurious resonances of piezoelectric crystal units | EN 60444-9 | - |
| IEC 60617 | - | Graphical symbols for diagrams | - | - |
| IEC 63041-3 | 2020 | Piezoelectric sensors - Part 3: Physical sensors | EN IEC 63041-3 | 2020 |
| 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 80000-1 | - | Quantities and units - Part 1: General | EN ISO 80000-1 | - |

IEC 63041-1

Edition 2.0 2021-09

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

## Piezoelectric sensors – Part 1: Generic specifications

## Capteurs piézoélectriques – Partie 1: Spécifications génériques

IEC 63041-1:2021-09(en-fr)

IEC 63041-1

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# INTERNATIONAL STANDARD

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## Piezoelectric sensors – Part 1: Generic specifications

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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# PIEZOELECTRIC SENSORS –

# Part 1: Generic specifications

## FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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, *Graphical 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 80000-1, *Quantities and units – Part 1: General*