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**Kristalne enote določene kakovosti - 4. del: Kristalne enote s termistorji (IEC 60122-4:2019)**

Quartz crystal units of assessed quality - Part 4: Crystal units with thermistors (IEC 60122-4:2019)

Schwingquarze mit bewerteter Qualität - Teil 4: Schwingquarze mit Thermistoren (IEC 60122-4:2019)

Résonateurs à quartz sous assurance de la qualité - Partie 4: Résonateurs à quartz équipés de thermistances (IEC 60122-4:2019)

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**Ta slovenski standard je istoveten z: EN IEC 60122-4:2019**

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Piezoelektrične naprave

Piezoelectric devices

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EUROPEAN STANDARD  
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**EN IEC 60122-4**

March 2019

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English Version

**Quartz crystal units of assessed quality - Part 4: Crystal units  
with thermistors  
(IEC 60122-4:2019)**

Résonateurs à quartz sous assurance de la qualité - Partie  
4: Résonateurs à quartz équipés de thermistances  
(IEC 60122-4:2019)

Schwingquarze mit bewerteter Qualität - Teil 4:  
Schwingquarze mit Thermistoren  
(IEC 60122-4:2019)

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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**

**EN IEC 60122-4:2019 (E)****European foreword**

The text of document 49/1281/CDV, future edition 1 of IEC 60122-4, 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 60122-4:2019.

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) 2019-11-28
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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

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)

## 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](http://www.cenelec.eu).

Publication	Year	Title	EN/HD	Year
IEC 60027	series	Letter symbols to be used in electrical technology	EN IEC 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 60068	series	Environmental testing	EN IEC 60068-3	series
IEC 60122-1	2002	Quartz crystal units of assessed quality - Part 1: Generic specification	EN 60122-1	2002
+ A1	2017		+ A1	2018
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 60444-1	-	Measurement of quartz crystal unit parameters by zero phase technique in a pi-network - Part 1: Basic method for the measurement of resonance frequency and resonance resistance of quartz crystal units by zero phase technique in a pi-network	EN 60444-1	-
IEC 60444-5	-	Measurement of quartz crystal units parameters - Part 5: Methods for the determination of equivalent electrical parameters using automatic network analyzer techniques and error correction	EN 60444-5	-
IEC 60444-9	-	Measurement of quartz crystal unit parameters - Part 9: Measurement of spurious resonances of piezoelectric crystal units	EN 60444-9	-
IEC 60539-1	2016	Directly heated negative temperature coefficient thermistors - Part 1: Generic specification	EN 60539-1	2016
IEC 60617	series	Graphical symbols for diagrams (available at <a href="http://std.iec.ch/iec60617">http://std.iec.ch/iec60617</a> )	-	-
IEC 63041-1	-	Piezoelectric sensors - Part 1: Generic specifications	EN IEC 63041-1	-
ISO 80000	series	Quantities and units	EN ISO 80000	series

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IEC 60122-4

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# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Quartz crystal units of assessed quality –  
Part 4: Crystal units with thermistors**

**Résonateurs à quartz sous assurance de la qualité –  
Partie 4: Résonateurs à quartz équipés de thermistances**

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**QUARTZ CRYSTAL UNITS OF ASSESSED QUALITY –****Part 4: Crystal units with thermistors****FOREWORD**

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International Standard IEC 60122-4 has been prepared by IEC technical committee TC 49: Piezoelectric, dielectric and electrostatic devices and associated materials for frequency control, selection and detection.

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

CDV	Report on voting
49/1281/CDV	49/1291/RVC

Full information on the voting for the approval of this International Standard 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 60122 series, published under the general title *Quartz crystal units of assessed quality*, 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 "<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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## QUARTZ CRYSTAL UNITS OF ASSESSED QUALITY –

### Part 4: Crystal units with thermistors

#### 1 Scope

This part of IEC 60122 is applicable to crystal units with thermistors mainly used in the field of mobile communication that requires high frequency stability such as local reference signal generator for the mobile phone base station or GPS. This document provides users with technical guidelines of crystal units with thermistors as well as basic knowledge of common crystal units with thermistors.

#### 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*

[SIST EN IEC 60122-4:2019](https://standards.iteh.ai/catalog/standards/sist/2b31ce49-d67f-4de2-b39f-195614c5840d/sist-en-iec-60122-4-2019)

IEC 60068 (all parts), *Environmental testing*

IEC 60122-1:2002, *Quartz crystal units of assessed quality – Part 1: Generic specification*  
IEC 60122-1:2002/AMD1:2017

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 60444-1, *Measurement of quartz crystal unit parameters by zero phase technique in a pi-network – Part 1: Basic method for the measurement of resonance frequency and resonance resistance of quartz crystal units by zero phase technique in a pi-network*

IEC 60444-5, *Measurement of quartz crystal unit parameters – Part 5: Methods for the determination of equivalent electrical parameters using automatic network analyzer techniques and error correction*

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

IEC 60539-1:2016, *Directly heated negative temperature coefficient thermistors – Part 1: Generic specification*

IEC 60617 (all parts), *Graphical symbols for diagrams* (available at <http://std.iec.ch/iec60617>)

IEC 63041-1, *Piezoelectric sensors – Part 1: Generic specifications*