

**Harmonized system of quality
assessment for electronic components**

Sectional specification: Quartz crystal controlled oscillators (Capability approval)

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British Standard

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This British Standard, having been prepared under the direction of the Electronic Components Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 15 August 1993

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National foreword

This British Standard has been prepared under the direction of the Electronic Components Standards Policy Committee. It is identical with EN 169100:1993 *Sectional specification: Quartz crystal controlled oscillators (Capability approval)*, published by the Electronic Components Committee (CECC) of the European Committee for Electrotechnical Standardization (CENELEC).

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 26, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Descriptors: Quality, electronic components, oscillators

English version

Sectional specification:
Quartz crystal controlled oscillators
(Capability approval)

Spécification intermédiaire:
Oscillateurs pilotés par quartz
(Agrément de savoir-faire)

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Quarzoszillatoren
(Befähigungsanerkennung)

This European Standard was approved by the CENELEC Electronic Components Committee (CECC) on 02 March 1992. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the General Secretariat of the CECC or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CECC Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom. The membership of the CECC is identical, with the exception of the national electrotechnical committees of Greece, Iceland and Luxembourg.

CECC

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

Central Secretariat: rue de Stassart 35, B-1050 Brussels

Foreword

The CENELEC Electronic Components Committee (CECC) is composed of those member countries of the European Committee for Electrotechnical Standardization (CENELEC) who wish to take part in a harmonized system for electronic components of assessed quality.

The object of the System is to facilitate international trade by the harmonization of the specifications and quality assessment procedures for electronic components, and by the grant of an internationally recognized Mark, or Certificate, of Conformity. The components produced under the System are thereby acceptable in all member countries without further testing.

This European Standard was prepared by CECC WG 17, Piezoelectric devices for frequency control and selection.

It is based, wherever possible, on the publications of the International Electrotechnical Commission (IEC) and in particular on IEC 679-1 *Quartz crystal controlled oscillators — Part 1: General information, test conditions and methods*.

The text of the draft based on document CECC(Secretariat)2806 was submitted to the formal vote; together with the voting report, circulated as document CECC(Secretariat)3027 it was approved by CECC as EN 169100 on 02 March 1992.

The following dates were fixed:

- latest date of announcement of the EN at national level (doa) 1993-04-05
- latest date of publication of an identical national standard (dop) 1993-10-05
- latest date of declaration of national standards obsolescence 1993-10-05
- latest date of withdrawal of conflicting national standards (dow) 2003-04-05

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Section 1. Scope

This sectional specification applies to quartz crystal controlled oscillators as custom built products or as standard catalogue items and whose quality is assessed on the basis of capability approval.

It prescribes the preferred ratings and characteristics, with the appropriate tests and measuring methods contained in the generic specification EN 169000, and gives the general performance requirements to be used in detail specifications for quartz crystal controlled oscillators.

The concept of preferred values is directly applicable to standard catalogue items but does not necessarily apply to custom built products.

Section 2. General, preferred ratings and guidance on detail specifications

2.1 Related documents

IEC 68, *Basic environmental testing procedures*.

EN 168000, *Generic specification: Quartz crystal units*.

EN 169000, *Generic specification: Quartz crystal controlled oscillators*.

NOTE The above references apply to the current editions except for IEC 68 for which the referred edition and the applicable test clauses of EN 169000 shall be used.

2.2 Preferred ratings and characteristics

The values given in detail specifications shall preferably be selected from those stated in **2.4** of the generic specification EN 169000.

2.3 Information to be prescribed in detail specifications (for both custom built and standard catalogue items)

Guidance on the preparation of detail specifications is given in the blank detail specification.

Each detail specification shall state all the tests and measurements required for inspection. For standard catalogue items this shall, as a minimum, include the relevant tests given in the blank detail specification, with methods and severities.

The following information shall be given in each detail specification.

2.3.1 Outline drawing and dimensions

The detail specification shall include a dimensional drawing of the crystal controlled oscillator, and/or reference to an appropriate International Standard, to permit easy recognition and to provide information for dimensioning and gauging procedures.

The dimensions shall include the overall dimensions of the body of the component and the size and spacing of the terminations. All dimensions shall be stated in mm.

Terminal connections shall be identified for all enclosures.

When a detail specification covers more than one enclosure the dimensions and their associated tolerances shall be placed in a table below the drawing.

When the configuration is other than described above, the detail specification shall state such dimensional information as will adequately describe the crystal controlled oscillator.

2.3.2 Marking

The detail specification shall prescribe the content of the marking on the crystal controlled oscillator and on the primary package in accordance with **2.5** of EN 169000.

2.3.3 Ordering information

The detail specification shall prescribe that the following information is required when ordering a crystal controlled oscillator:

- 1) Quantity
- 2) Detail specification number, issue number and date
and where applicable
- 3) Type of oscillator (e.g. SPX0, VCX0, TCX0 etc.)

- 4) Nominal frequency in kHz or MHz
- 5) Enclosure type
- 6) Frequency tolerance(s) and operating temperature range
- 7) Full description of any additional requirements to identify the oscillator.

2.3.4 Additional information (not for inspection purposes)

The detail specification may include information which does not normally require verification by the inspection procedure, such as circuit diagrams, curves, drawings and notes needed for clarification.

Section 3. Capability approval

3.1 Eligibility for capability approval

Prior to making an application for capability approval a manufacturer shall first obtain manufacturer's inspection approval in accordance with CECC 00114 Part I.

The primary stage of manufacture shall be as defined in **3.1** of the generic specification EN 169000.

3.2 Structural similarity

Structural similarity is not applicable to Capability Approval. However, it is applicable to released lots as defined in clause **3.14.1** of this specification.

3.3 Procedures for capability approval

3.3.1 General

Capability approval in quartz crystal controlled oscillator technology covers:

- the complete design, material preparation and manufacturing techniques, including control procedures and tests
- the performance limits claimed for the processes and products, that is, those specified for the Capability Qualifying Components (CQCs)
- the range of mechanical structures for which approval is granted.

3.3.2 Application for capability approval

In order to obtain capability approval the manufacturer shall apply the rules of procedure given in §2.4 of CECC 00114 Part III.

In an application for capability approval the manufacturer shall define the boundaries of the capability for which approval is sought in accordance with **3.5**.

3.3.3 Granting of capability approval

Capability approval shall be granted when the manufacturer has:

- prepared a capability manual describing the capability for which he wishes to be approved, to the satisfaction of the ONS
- agreed with the ONS the range of CQCs, as defined in §2.7 of CECC 00114 Part III, to be used for the assessment of capability
- successfully demonstrated that he can design and manufacture components which satisfy the requirements of this sectional specification, within the limits of his capability
- prepared a capability approval test report to the satisfaction of the ONS.

3.4 Capability manual

The manufacturer shall prepare a manual describing his capability (see §2.5 of CECC 00114 Part III), in relation to the technologies involved.

The manual shall be approved by the ONS who shall ensure that it is a true and complete record of procedures carried out by the manufacturer during the design, production, testing, inspection and release of his products. The manual is a document that shall be treated as “commercial in confidence”.

The manual shall include the following as a minimum: