

CECC



CONDENSATEURS FIXES A ELECTRODES METALLISES ET A DIELECTRIQUE EN POLYPROPYLENE

FIXED CAPACITORS WITH METALLIZED ELECTRODES AND POLYPROPYLENE DIELECTRIC

FESTKONDENSATOREN MIT METALLISIERTEN POLYPROPYLENFOLIEN ALS DIELEKTRIKUM

1 Edition
Issue
Ausgabe

CECC 31201

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Documents

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ERRATUM

10 11 12 13 14 15 16

TEXTE FRANCAIS:

Cette page bleue doit être insérée après la page de garde de la CECC 31 201, Edition 1 (1981).

Supprimer la page 8/9 et insérer la nouvelle page 8/9 qui comprend sur la page 8 la modification suivante :

4.10.5 Ea : Chocs

Méthode de montage :
Voir 2 de la présente spécification
Accélération: ... m/s²
Durée de l'impulsion : ... ms

4.10.6 Eb : Secousses

Méthode de montage :
Voir 2 de la présente spécification
Nombre de secousses: ...
Accélération: ... m/s²
Durée de l'impulsion : ... ms

ENGLISH TEXT :

This blue page should be inserted after the title page of CECC 31 201 Issue 1 (1981).

Remove page 8/9 and insert the new page 8/9 which includes the following change on page 8 :

4.10.5 Ea : Shock

Method of mounting :
See 2 of this specification
Acceleration: ... m/s²
Duration of pulse : ... ms

4.10.6 Eb : Bump

Method of mounting :
See 2 of this specification
Number of bumps : ...
Acceleration m/s²
Duration of pulse : ... ms

GERMAN TEXT :

Dieses blaue Blatt ist nach dem Titelblatt CECC 31 201 Ausgabe 1 (1981) einzufügen.

Die Seite 8/9 ist herauszunehmen und die neue Seite 8/9 einzufügen. Sie enthält folgende Änderung auf Seite 8 :

4.10.5 Ea : Schocken Befestigung :
 Siehe 2 dieser Spezifikation
 Beschleunigung : ... m/s²
 Schockdauer : ... ms

4.10.6 Eb : Dauerschocken Befestigung :
 Siehe 2 dieser Spezifikation
 Anzahl der Schocks : ...
 Beschleunigung : ... m/s²
 Schockdauer : ... ms

CECC 31 201 Edition 1
Issue 1 ERRATUM (1987)
Ausgabe 1



1st AMENDMENT TO CECC 31 201:
BLANK DETAIL SPECIFICATION:
FIXED CAPACITORS WITH METALLIZED
ELECTRODES AND POLYPROPYLEN
DIELECTRIC

The following amendments to Issue 1 (1981)
of CECC 31 201 should be made in manuscript:

In Table 4A, Sub-Groups B1 and B2, the "D"
in the second column is to be replaced by "ND".

Add the following Note at the bottom of Table 4A:

Note: Specimens having passed the Group B
non destructive tests shall still satisfy
the tests of Group A.

CECC 31 201 Issue 1 Amendment 1 1983

Information about the System may be obtained from:



FEN e.V. Secretariat
and
CECC General Secretariat
Gartenstraße 179
D - 6000 Frankfurt am Main 70
Telephone: Int. + 49 69 639171
Telex: 4 032 175 cecc d
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or from the National Authorized Institutions
of the participating countries listed
who can supply copies of:

- 1 The Internal Regulations of the FEN e.V.
- 2 The Rules of Procedure of the System
- 3 CECC Specifications of the FEN and National Specifications for the System
- 4 CECC 00 200: Qualified Products List (QPL)
- 5 CECC 00 300: List of CECC European Standards (ENs), CECC Publications and related national documents
- 6 CECC 00 301: List of CECC Specifications and related Detail Specifications
- 7 Other CECC Publications and publicity documents

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to be determined.

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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 accepted by all member countries without further testing.

This blank detail specification has been formally approved by the CECC and has been prepared for those member countries taking part in the System who wish to issue national harmonized specifications for FIXED CAPACITORS WITH METALLIZED ELECTRODES AND POLYPROPYLENE DIELECTRIC. It should be read in conjunction with document CECC 00 100: Basic Rules (1974).

At the date of printing of this document the member countries of the CECC are Belgium, Denmark, France, Germany, Ireland, Italy, the Netherlands, Norway, Sweden, Switzerland and the United Kingdom. Copies of it can be obtained from the addressees shown on the inside cover.

PREFACE

This blank detail specification was prepared by CECC Working Group 3: Capacitors.

It is one of a series of blank detail specifications all relating to the sectional specification CECC 31 200.

In accordance with the requirements of document CECC 00 100 it is based, wherever possible, on the Publications of the International Electrotechnical Commission.

As there are more than nine sectional specifications related to CECC 30 000: generic specification, Fixed Capacitors, the CECC Management Committee decided that these extra specifications should be numbered in the series 31 100, 31 200, 31 300 etc. There is no generic specification numbered 31 000.

The text of this blank detail specification was circulated to the CECC for voting in the documents listed below and was ratified by the CECC Management Committee for printing as a CECC Specification:

<u>Document</u>	<u>Voting Date</u>	<u>Report on the Voting</u>
CECC(Secretariat)822	April 1980	CECC(Secretariat)912

KEY FOR PAGE 3

The numbers between square brackets on page 3 correspond to the following indications which should be given :

Identification of the harmonized detail specification

- [1] The name of National Standards Organization under whose authority the detail specification is drafted
- [2] The CECC Symbol and the number allotted by the CECC General Secretariat to the completed detail specification
- [3] The number and issue number of the national generic and sectional specifications
- [4] The national number of the detail specification, date of issue and any further information required by the national system.

Identification of the capacitor

- [5] A short description of the type of capacitor
- [6] Information on typical construction (see examples given on page 3)
- [7] Outline drawing with main dimensions which are of importance for interchangeability and/or reference to the national or international documents for outlines.
- [8] Quick reference data (see examples given on page 3) and level of quality assessment
- [9] Circuit diagram (if applicable).

NATIONAL STANDARDS ORGANIZATION [1]	CECC 31 201 - XXX  [2]
ELECTRONIC COMPONENTS OF ASSESSED QUALITY IN ACCORDANCE WITH : (Number of national generic and sectional specification) [3]	(National number of detail specification, date of issue, National type number, if any) [4]
DETAIL SPECIFICATION FOR FIXED METALLIZED POLYPROPYLENE FILM DIELECTRIC D.C. CAPACITORS [5]	
TYPICAL CONSTRUCTION : (Examples) cylindrical / rectangular non metallic / metallic case insulated / non insulated axial / radial terminations [6]	
OUTLINE DRAWING [7]	QUICK REFERENCE DATA : RATED CAPACITANCE RANGE CAPACITANCE TOLERANCE D.C. RATED VOLTAGE RANGE CLIMATIC CATEGORY PERFORMANCE GRADE STABILITY GRADE (IF APPLICABLE) ASSESSMENT LEVEL [8]
Circuit diagram (if applicable) [9]	
See the relevant Qualified Products List for the availability of components qualified to this detail specification.	

1. DimensionsTable 1

Case size (1) reference	Dimensions (2)					
	$\phi_{\max.}$	$L_{\max.}$	$H_{\max.}$	$d \pm \text{tol.}$	(3)	(3)

- (1) When there is no case size reference, Table 1 may be omitted and the dimensions shall be given in Table 2, which then becomes Table 1.
- (2) Body dimensions should preferably be expressed as maxima but, when necessary be nominal with tolerance.
- (3) Other important dimensions should be included as additional information.

2. Specified method of mounting for vibration, shock and bump testing

3. Ratings and characteristics

Performance grade
 Stability grade (if applicable)
 Capacitance range (See Table 2)
 Tolerance on rated capacitance
 Rated voltage (See Table 2)
 Category voltage (if applicable) (See Table 2)
 Rated temperature
 Tangent of loss angle
 Insulation resistance
 Vibration severity
 Climatic category
 Bump severity (if applicable)
 Shock severity (if applicable)

Note : Information on the above characteristics may be given in tabular form, if necessary.

Table 2

Values of capacitance and of voltage
related to case sizes

Rated voltage (V)				
Category voltage ⁽¹⁾				
Rated capacitance				

(1) If different from the rated voltage

Table 3

Other characteristics

This table is to be used for defining characteristics which are additional to or tighter than those given in the sectional specification.

4. Related documents

Generic specification	CECC 30 000
Sectional specification	CECC 31 200

5. Marking

The following details selected from those listed in 1.4 of CECC 31 200 shall be given on the capacitor.

6. Ordering information

Rated capacitance
Tolerance on rated capacitance
Rated d.c. voltage
Number of the detail specification and style reference
Performance and stability grade (if necessary)

Together with other information to identify a specific size, constructional details, etc. as necessary.

An example of ordering information shall be given.

7. Qualification approval and quality conformance inspection

For qualification approval tests and quality conformance inspection the test schedule, severities and requirements given in the sectional specification, completed by the relevant information given in Tables 4A and 4B, apply.

Note : Tests and requirements additional to or more severe than those given in the sectional specification, as defined in Table 3, shall also be specified in this table.

8. Certified test records

As required in accordance with CECC 31 200 .

Table 4A

Lot by lot inspection (Group A and B)

Clause number and test (1)	D or ND (3)	Conditions of test	IL (2)	AQL % (2)	Performance requirements (1)
<u>Sub-Group A1</u> 4.2 Visual examination Marking Dimensions	ND		S4	2,5	No visible damage Marking legible See Table 1
<u>Sub-Group A2</u> 4.4 Capacitance	ND	See 4.4	II	1,0	Within tolerance limits for C_R
4.5 Tangent of loss angle		$f = 1000 \text{ Hz}$ Peak voltage $\leq 0,03 U_R$			See Table in 4.5
4.3 Voltage proof (Test point 1a)		Grade 1: $1,6 U_R$ Grade 2: $1,4 U_R$			No breakdown or flashover
4.6 Insulation resistance (Test point 1a)		Note: Specimens having passed the Group B non destructive tests shall still satisfy the tests of Group A.			
<u>Sub-Group B1</u> 4.10.2 Solderability	ND	Method	S3	2,5	

(1) Clause number and performance requirements refer to CECC 31 200

(2) Inspection Levels (IL) and Acceptable Quality Levels (AQL) are selected from IEC 410.

(3) In Table 4A and 4B: P = periodicity (in months)
 n = sample size
 c = acceptance criterion
 D = destructive
 ND = non-destructive

Table 4B
Periodic tests

Clause number and test (1)	D or ND (3)	Condition of test	P (3)	n (3)	c (3)	Performance requirements (1)
<u>Sub-Group C1a</u>	D		6	9	1	
4.9.1 Initial measurements		Capacitance tan δ Insulation resistance Measuring frequencies : See 4.9.1				
4.9.2 U : Robustness of terminations Ub and Uc not applicable to single ended terminations						
4.9.3 Tb: Resistance to soldering heat		No pre-drying Method :				
4.9.4 Final measurements		Visual examination Capacitance tan δ				See Table in 4.9.4
<u>Sub-Group C1b</u>	D		6	18	1	
4.10.1 Initial measurements		Capacitance tan δ Insulation resistance				
4.10.3 Na: Rapid change of temperature		5 cycles Duration $t_1 =$ 30 min, unless otherwise specified				
4.10.4 Fc: Vibration		Method B4 Amplitude: 0,75mm or 98 m/s ² Frequencies: 10 to 55 Hz, 10 to 500 Hz 10 to 2 000 Hz Duration: 6 h				No visible damage See detail specification

(1) and (3) : See page 6

Clause number and test (1)	D or ND (3)	Condition of test	P (3)	n (3)	c (3)	Performance requirements (1)
4.10.5 Ea: Shock or 4.10.6 Eb: Bump 4.10.7 Final measurements		Method of mounting: See 2 of this specification Acceleration: ... m/s ² Duration of pulse: ... ms Method of mounting: See 2 of this specification Number of bumps: ... Acceleration: ... m/s ² Duration of pulse: ... ms Visual examination Capacitance tan δ				See Table in 4.9.4
<u>Group C1</u> 4.11 Climatic sequence 4.11.1 Initial measurements 4.11.2 Ba: Dry heat 4.11.3 Db: Damp heat cyclic, 1st cycle 4.11.4 Aa: Cold 4.11.5 M : Low air pressure (if required) 4.11.6 Db: Damp heat cyclic, remaining cycles	D	Not required Temperature: Upper category temperature Duration: 16 h Severity b: 55 °C Duration: 2 h Temperature: Lower category temperature Air pressure : 8,5 kPa (85 mbar) Duration: 1 h U _R to be applied during last 5 min Severity b : 55 °C Using test conditions of 4.3.U _R shall be applied for 1 min within 15 min after removal from the damp heat test	6	27	2	No permanent breakdown, flashover or harmful deformation of the case

(1) and (3) : See page 6

- 8 -

CECC 31 201 Issue 1

ERRATUM

Clause number and test (1)	D or ND (3)	Condition of test	P (3)	n (3)	c (3)	Performance requirements (1)
4.11.7 Final measurements		Visual examination Capacitance tan δ Insulation resistance				See Table in 4.11.7
<u>Group C2</u> 4.12 Ca: Damp heat steady state Initial measurements Final measurements	D	Capacitance tan δ Insulation resistance Voltage proof within 15 min after removal from the test chamber Visual examination Marking, Capacitance tan δ Insulation resistance	6	15	1	See Table in 4.12
<u>Group C3</u> 4.13 Endurance 4.13.1 Initial measurements 4.13.2 Conditioning 4.13.3 Final measurements	D	Capacitance tan δ Insulation resistance Duration : Grade 1: 2 000 h Grade 2: 1 000 h See Table in 4.13.2 Visual examination Capacitance tan δ Insulation resistance	3	21	1	See Table in 4.13.3

(1) and (3) : See page 6