

European Committee for Electrotechnical Standardization (CENELEC)
Cenelec Electronic Components Committee

CECC

Système Harmonisé d'Assurance de la Qualité
des Composants Electroniques

SPECIFICATION PARTICULIERE CADRE:

**CONTACTS DE TRAVAIL SECS
EN ENCEINTE SCELLEE POUR
LES APPLICATIONS EN
TELECOMMUNICATION**

Harmonized System of Quality Assessment for
Electronic Components

BLANK DETAIL SPECIFICATION:

**DRY REED MAKE CONTACT
UNITS FOR
TELECOMMUNICATION
APPLICATIONS**

Harmonisiertes Gütebestätigungssystem für
Bauelemente der Elektronik

VORDRUCK FÜR
BAUARTSPEZIFIKATION:

**TROCKENE REEDKONTAKT-
EINHEITEN MIT SCHLIESSER
FÜR NACHRICHTEN-
TECHNISCHE ANWENDUNGEN**



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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 specification has been formally approved by the CECC, and has been prepared for those countries taking part in the System who wish to issue national harmonized specifications for DRY REED MAKE CONTACT UNITS FOR TELECOMMUNICATION APPLICATIONS. It should be read in conjunction with document CECC 00 100: Basic Rules (1974).

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

PREFACE

This blank detail specification was prepared by Working Group 19: "Reed contact devices".

It is one of a series of blank detail specifications all relating to the generic specification printed as CECC 19 000.

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

The text of this specification was circulated to the CECC for voting in the document 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)848	August 1979	CECC(Secretariat)990

KEY FOR PAGE 3

The numbers in brackets on page 3 correspond to the following indications which shall be given:

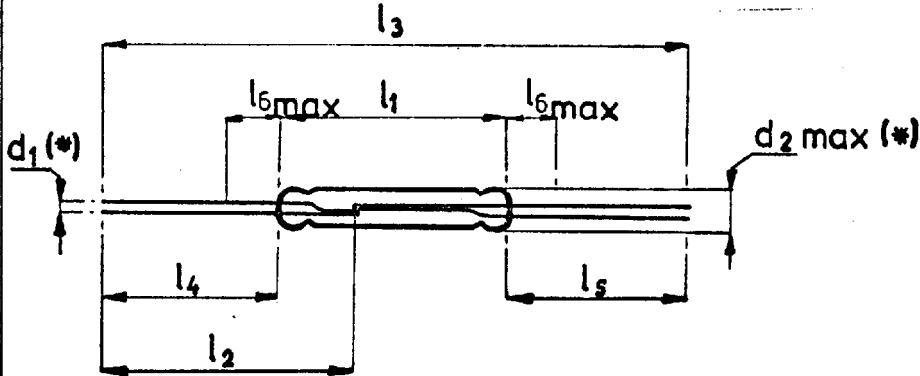
Identification of the detail specification

- (1) The name of the National Standards Organization under whose authority the detail specification is published, and, if applicable, the organization from whom the specification is obtainable.
- (2) The CECC symbol and the number allotted to the detail specification by the CECC General Secretariat.
- (3) The number and issue number of the CECC generic or sectional specification as relevant; also national reference if different.
- (4) If different from the CECC number, the national number of the detail specification, date of issue and any further information required by the national system, together with any amendment numbers.

Identification of the dry reed make contact unit

- (5) A short description of the type of reed make contact unit.
- (6) Information on typical construction (see examples given on page 3).
- (7) Quick reference data (see examples given on page 3) and quality assessment level.
- (8) Outline drawing with main dimensions which are of importance for interchangeability and/or reference to the national or international documents for outlines.

For (5) and (6), the text given should be suitable for an entry in CECC 00 200 or CECC 00 300.

Specification available (1) from:	Page.. of..	CECC 19 001-xxx (2)
Electronic components of (3) assessed quality in accordance with:	(4)	
(5) DETAIL SPECIFICATION FOR DRY REED MAKE CONTACT UNITS FOR TELECOMMUNICATION APPLICATIONS		
TYPICAL CONSTRUCTION: (6) Wire terminations: round or flat for welding or soldering with the terminal finish being a maximum of l_6 from the seal end not plated material of envelope: material of blades : contact plating :		
FUNCTION : (7) Telecommunication applications	OUTLINE AND DIMENSIONS: (8)  Dimensions in millimetres (*) If not round give cross-section. Note 1 : bend or cut not permitted within mm from the seal end. Note 2 : requirements for concentricity may be added to the "Guide for visual inspection" of Appendix A.	
See the current Qualified Products List for the availability of components made to this detail specification.		

When a dimension, rating or characteristic is not supported by a test in test schedules 1 or 2, it shall be indicated as "not for inspection purposes". Full information is to be given in an appendix to the detail specification, on how this dimension, rating or characteristic is derived.

1 RATINGS

1.1 Contact rating - resistive load

(1) Contact voltage and contact current

...V d.c. max. ...A max.(d.c.) ...VA max.
...V d.c. min. ...mA min.(d.c.)

(2) Rated load and life expectancy at ambient temperature, 50 % duty cycle and operations per s

d.c.: ...VA max. at V max. operations
d.c.: ...VA max. at I max. operations
d.c.: at V min.and I min. operations

1.2 Insulation resistance ... min.

1.3 Maximum voltage across open contact ...V d.c.

1.4 Environmental category .../..../...

2 CHARACTERISTICS

2.1

(1) Mounting: the reed contact unit may be mounted in any plane

(2) Saturate value ...A (ampère-turns)

(3) Must-release value ...A (ampère-turns)

(4) Must-operate value ...A (ampère-turns)

(5) Contact circuit resistance:
initial value ...ohm max.

(6) Mass ...g

2.2

(1) Must-not-release value ...A (ampère-turns)

(2) Must-not-operate value ...A (ampère-turns)

(3) Characteristic non release value ...A (ampère-turns)

(4) Operate time ...ms max.

(5) Release time ...ms max.

(6) Operate contact bounce time ...ms max.

3 QUALIFICATION APPROVAL PROCEDURE

The tests and inspections performed shall be those prescribed in Table 1 or Table 2 (see 3.3.3 of CECC 19 000). These shall be read in conjunction with CECC 19 000 and the appropriate IEC publications.

Samples which have been subjected to destructive tests shall not be delivered to the customer, even if they pass all the post test inspection requirements.

4 QUALITY CONFORMANCE INSPECTION

The dry reed contact units covered by this specification shall be tested to the inspection schedule given in Table 2. This shall be read in conjunction with CECC 19 000 and the appropriate IEC publications.

Samples which have been subjected to destructive tests shall not be delivered to the customer, even if they pass all the post test inspection requirements.

Sampling for periodic tests: samples shall be representative of the whole production period.

5 TEST COIL

The CECC test coil number and the position of the reed contact unit within the test coil, if other than with its gap centrally positioned in the coil, shall be specified in the relevant detail specification.

6 MARKING

See 5.3 of CECC 19 000.

7 CERTIFIED TEST RECORDS (R.C.E.)

The R.C.E. shall give the information from all A,B,C and D tests in Table 2.

8 ORDERING INFORMATION

Orders for reed contact units covered by this specification shall make reference to the number of the relevant detail specification.

9 RELATED DOCUMENTS

Dry reed make contact units

(National Authorized Institutions shall complete this section, with references to any documents, recommendations or specifications directly referred to in their national equivalent of this document.)

TABLE 1

SINGLE SCHEDULE FOR QUALIFICATION APPROVALTest procedures

1. Group 0 : all the 315 specimens + 35 spares are submitted to all tests mentioned in Group 0 in the given order.
2. Each further group uses specimens accepted by test Group 0, possibly complemented by those spares passing Group 0.
3. For each group of tests the same specimens are used and the tests are performed in the given order.
4. Defectives are replaced by spares before carrying out the next test in the group.

Note: All clause number references refer to CECC 19 000.

Clause Number and Test	D(*) or ND	Conditions of test	Sample size & criterion of acceptability		Performance requirements
			n (*)	c (*)	
<u>Group 0</u>	ND				
4.4.1 Visual inspection		as in 4.4	315 +35	10	As listed in Appendix A of this detail specification
4.4.2 Dimensions		as in 4.4		10	See outline and dimensions on page 3 + seal eccentricity
4.7 Contact circuit resistance		as in 4.7.1 and in 4.7.3		2	as in 4.7.2
4.5 Functional test		as in 4.5.1 and in 4.5.3		5	as in 4.5.2
4.8 Voltage test		as in 4.8.1 and in 4.8.3		5	as in 4.8.2
4.22 Sealing		as in 4.22.1 and in 4.22.3		1	as in 4.22.2 Leakage rate expressed in the measured units

(*) See note 2 page 14

Clause Number and Test	D or ND	Conditions of test	Sample size & criterion of acceptability		Performance requirements
			n (*)	c (*)	
<u>Group 1</u>					
4.10 Operate, release and bounce time	ND	as in 4.10.1 and in 4.10.3	50	1	as in 4.10.2
This sample is divided in two parts:					
<u>Sub-Group 1a</u>					
4.13 Solderability	D	as in 4.13.1(1) and in 4.13.3	20	1	as in 4.13.2
<u>Sub-Group 1b</u>					
4.11 Contact sticking magnetostrictive	D	as in 4.11.2(1) and 4.11.2(3)	20	1	as in 4.11.2(2)
<u>Group 2</u>					
4.9 Insulation test	ND	as in 4.9.1 and in 4.9.3	80	3	as in 4.9.2
This sample is divided in two parts:					
<u>Sub-Group 2a</u>					
4.23 Electrical endurance test (1) for early failures: low loads	D	as in 4.23.4 and in 4.23.6	50	2	as in 4.23.5
<u>Sub-Group 2b</u>					
4.23 Electrical endurance test (2) for early failures: high loads	D	as in 4.23.4 and in 4.23.6	20	1	as in 4.23.5

Clause number and test	D or ND	Conditions of test	Sample size & criterion of acceptability		Performance requirements
			n	c	
<u>Group 3</u> 4.12 Robustness of terminations	D	as in 4.12.1 and in 4.12.3	32	1	as in 4.12.2
<u>Group 4</u> 4.13 Resistance to soldering heat	D	as in 4.13.1(2) and in 4.13.3	32	1	as in 4.13.2
<u>Group 5</u> 4.14 Climatic sequence (if required by the detail specification)	D	as in 4.14.1 and in 4.14.3	32	1	as in 4.14.2 Leakage rate expressed in the measured units
<u>Group 6</u> 4.19 Vibration (if required by the detail specification)	D	as in 4.19.2(1) and in 4.19.2(3)	32	1	as in 4.19.2(2) Leakage rate expressed in measured units
<u>Group 7</u> 4.20 Shock (if required by the detail specification)	D	as in 4.20.1(method 2) and in 4.20.3	32	1	as in 4.20.2 (method 2) Leakage rate expressed in measured units
<u>Group 8</u> 4.23 Electrical endurance test (3) for long life test	D	as in 4.23.4 and in 4.23.6	20	2	as in 4.23.5

TABLE 2
LOT BY LOT

TEST PROCEDURE

1. All A and B tests are performed in the given order.
2. The same specimens are used for all A tests, whenever possible.
3. Specimens used for A tests may be used for B tests.
4. Specimens used for the B1 test shall preferably be used for B2, B3, B4 and B5 tests, and also for C and D tests.
5. Specimens submitted to a destructive test shall not be re-utilized for another test unless otherwise specified.
6. Defectives are replaced by spares before going to the next test in the group.

GROUP A INSPECTION

Note: All clause number references refer to CECC 19 000.

Clause Number and Test	D or ND	Conditions of test	IL (*)	AQL(*) %	Performance requirements
<u>Sub-Group A 1</u> 4.4.1 Visual inspection	ND	as in 4.4	I	1,5	As listed in Appendix A to this detail specification
4.4.2 Dimensions	ND	as in 4.4	I	1,5	See outline and dimensions on page 3 + seal eccentricity
<u>Sub-Group A 2</u> 4.7 Contact circuit resistance	ND	as in 4.7.1 and in 4.7.3	I	0,25	as in 4.7.2
<u>Sub-Group A 3</u> 4.5 Functional test	ND	as in 4.5.1 and in 4.5.3 See Note (1)	I	0,65	as in 4.5.2

(*) See note 1 on page 14

Clause Number and Test	D or ND	Conditions of test	IL	AQL %	Performance requirements
Sub-Group A4 4.8 Voltage test	ND	as in 4.8.1 and in 4.8.3	I	0,65	as in 4.8.2
Surge test (if required by the detail specification)		(*)			

Note 1 : A functional test ampèreturn band (Sub-Group A3) may be subdivided into smaller ampère-turn bands employing different AQLs provided that the same overall AQL is achieved.

(*) This test is under consideration.

GROUP B INSPECTION

Note: All clause number references refer to CECC 19 000.

Clause Number and Test	D or ND	Conditions of test	IL	AQL %	Performance requirements
<u>Sub-Group B1</u> 4.22 Sealing	ND	as in 4.22.1 and in 4.22.3	II	0,15	as in 4.22.2 Leakage rate expressed in the measured units
<u>Sub-Group B2</u> 4.13 Solderability	D	as in 4.13.1(1) and in 4.13.3	S-4	1,5	as in 4.13.2
<u>Sub-Group B3</u> 4.11 Contact sticking, magnetostrictive	D	as in 4.11.2(1) and in 4.11.2(3)	S-4	1,0	as in 4.11.2(2)
<u>Sub-Group B4</u> 4.23 Electrical endurance test (1) for early failures: low loads	D	as in 4.23.4 and 4.23.6	S-4	1,5	as in 4.23.5
<u>Sub-Group B5</u> 4.23 Electrical endurance test (2) for early failures: high loads	D	as in 4.23.4 and in 4.23.6	S-3	1,5	as in 4.23.5

GROUP C INSPECTION

To be conducted on a sampling basis at the periodicity given in column "P".

Clause Number and Test	D or ND	Conditions of Test	Sample size & criterion of acceptability			Performance requirements
			P (*)	n (*)	c (*)	
<u>Sub-Group C1</u> 4.12 Robustness of termina- tions	D	as in 4.12.1 and in 4.12.3	3	50	1	as in 4.12.2
<u>Sub- Group C2</u> 4.13 Resistance to solder- ing heat	D	as in 4.13.1(2) and in 4.13.3	3	50	1	as in 4.13.2
<u>Sub-Group C3</u> 4.10 Operate, release and bounce time	ND	as in 4.10.1 and in 4.10.3	3	50	1	as in 4.10.2
<u>Sub-Group C4</u> 4.9 Insula- tion test	ND	as in 4.9.1 and in 4.9.3	3	50	2	as in 4.9.2
<u>Sub-Group C5</u> 4.23 Electrical endurance test for long life test	D	as in 4.23.4 and in 4.23.6	3	32	3	as in 4.23.5

(*) See note 2 on page 14

GROUP D INSPECTION

Note: All clause number references refer to CECC 19 000.

Clause Number and Test	D or ND	Conditions of test	Sample size & criterion of acceptability			Performance requirements
			P	n	c	
<u>Sub-Group D1</u> 4.19 Vibration (if required by the detail specification)	D	as in 4.19.2(1) and in 4.19.2(3)	12	50	2	as in 4.19.2 (2) Leakage rate expressed in measured units
<u>Sub-Group D2</u> 4.20 Shock (if required by the detail specification)	D	as in 4.20.1 (method 2) and in 4.20.3	12	50	2	as in 4.20.2 (method 2) Leakage rate expressed in measured units
<u>Sub-Group D3</u> 4.14 Climatic sequence (if required by the detail specification)	D	as in 4.14.1 and in 4.14.3	12	50	2	as in 4.14.2 leakage rate expressed in measured units