SLOVENSKI STANDARD
SIST EN 116504:2001

01-september-2001

Blank Detail Specification: Electromechanical all-or-nothing TELECOM relays of assessed quality, dual-in-line, with 15 x 7,5 mm base, 2 change-over contacts

Blank Detail Specification: Electromechanical all-or-nothing TELECOM relays of assessed quality, dual-in-line, with 15 x 7,5 mm base, 2 change-over contacts

Vordruck für Bauartspezifikation: Gütebestätigte elektromechanische Dual-in-line TELEKOM-Relais mit 15 x 7,5 mm-Grundfläche, 2 Wechsler

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Spécification particulière cadre: Relais électromécaniques de tout ou rien TELECOM, dual-in-line avec une surface d'encombrement de 15 x 7,5 mm, soumis au régime d'assurance de la qualité, 2 contacts à deux directions

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Ta slovenski standard je istoveten z: EN 116504:1995

ICS:

29.120.70 Releji Relays

SIST EN 116504:2001 en

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 116504

August 1995

Descriptors: Quality, electronic components, TELECOM relays

English version

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

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CENELEC

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

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

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Foreword

This European Standard was prepared by Working Group CLC/TC CECC/WG 16.

The text of the draft based on document CECC(Secretariat)3593 was submitted to the formal vote; together with the voting report, circulated as document CECC(Secretariat)3653, it was approved as EN 116504 on 1996-06-23.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1996-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1997-07-01

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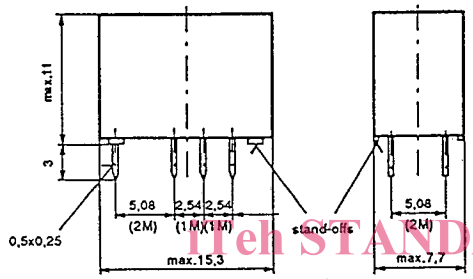
(1)	CECC 16 504 - xxx (2) Issue: Page 1 of
Electronic components of assessed quality in accordance with: (3) EN 116 000 - 1 : 1992 (CECC 16 000 / I, 1990) EN 116 500 : 1992	(4)

Detail specification for electromechanical all-or-nothing TELECOM relays of assessed quality, dual-in-line, with 15 x 7,5 mm base, 2 change-over contacts

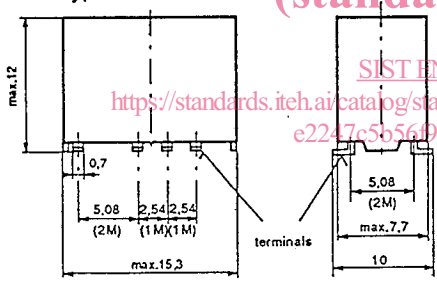
Type: ..... 2 change-over contacts (5)

Construction: Dual-in-line, with 15 x 7,5 mm base
plastic sealed case, overall height *through hole type* of 11 max., *surface mounting type* of 12 mm max. (6)
Relay properties RT III
For conventional assembling techniques of printed circuit boards using mounting holes and soldering or for surface mounting technology (if applicable)

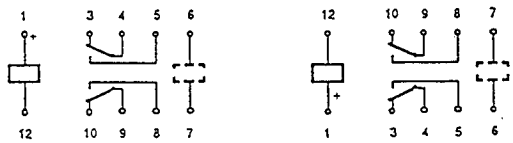
Outline drawing resp. wiring diagram (7)
Dimensions in mm



Through - hole type



Surface mounting type (if applicable)



Wiring diagram bottom view top view

NOTE - Drawings are examples; the maximum outer dimensions, the wiring diagram of one coil relay, the terminal arrangement and the same orientation of all rectangular terminals are mandatory.

Application: (8)

Relays according to this standard are provided for the operation in telecommunication applications. However, as printed circuit board relays they are suitable also for control or switching functions in particular industrial and other applications.

Coil data (9)

Rated voltages: ..... V d. c.
Rated power: ..... mW

Contact data (10)

Change-over break-before-make contacts
Rated contact voltage: 125 V d.c. / 110 V a.c.
Rated contact current: 1,25 A
Rated contact power: 30 W / 50 VA
Limiting continuous current: 2 A

Component climatic category: 25 / 70 / 21 (11)

Temperature range - operating ambient temperature: - 25 to + 70 °C
- storage temperature: - 40 to + 85 °C

Information about manufacturers who have components qualified to this detail specification is available in the current CECC 00 200.

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Key for page 3:

The numbers between brackets on page 2 correspond to the following indications which should 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 detail specification is available

(2) The CECC symbol and the number allotted to the completed detail specification by the CECC General Secretariat

(3) The number and the year of availability of the EN generic specification and / or sectional specification; 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 relay

(5) Type: Monostable or bistable, non-polarized or polarized, 2 change-over contacts

(6) Construction: Sizes, e. g. dual-in-line, base and overall height, type of relay, based upon environmental protection (RT III), mounting variants and other typical construction details

(7) An outline drawing with main dimensions which are of importance for interchangeability, and / or reference to the appropriate national or international document for outlines - see also note in (7). Alternatively, this drawing may be given in an annex to the detail specification, but (7) should always contain an illustration of the general outer appearance of the relay.

Location and dimensions of stand-offs (maximum relay height shall include stand-offs), position of terminal no. 1 relative to the outside shape, acceptable offset of the tip of a terminal relative to the nominal grid position, indication of the area on the top of the relay housing to enable automatic mounting using aspirators, suitable hole diameter for assembling on printed circuit board

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(8) Typical field of applications

(9) Available rated coil voltages and rated power

(10) Available contact arrangements, defined special contact materials and contact voltage, current and power. The respective code digit for contact materials shall be listed in an annex, if applicable.

(11) Component climatic category and temperature range.

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1 Related documents

EN 116 000 - 1 : 1992 (CECC 16 000 / I, 1990)	Generic specification for electromechanical all-or-nothing relays, Part I: General
EN 116 500 : 1992	Sectional specification for electromechanical all-or-nothing telecom relays of assessed quality

(National authorized institutions will complete this section making reference to any documents or specifications directly referred to in their national equivalent of this document.)

2 Characteristic values of the relay

2.1 General data

- Thermal resistance: max. ..... K / W
- Contact application: CA 0, CA 1 and CA 2
- Relay mass: max. ..... g
- Finish of the terminals: tinned; admissible non-tinned part: max. 1 mm to the stand offs' plane, if applicable
- Insulation resistance: 1000 Mohm min. at 500 V d. c. initial value
  100 Mohm min. at 500 V d. c. after tests
- Dielectric strength: see table 1

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Table 1 Dielectric test voltages

	Dielectric test V a. c. min.	Impulse voltage test 10 / 700 µs V min.
Opened contact circuits	500	
Between adjacent contact circuits	500	
Coil to contact circuits	500	
Between separate windings (if applicable)		

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2.2 Construction of CECC type designation (ordering information):

Relay CECC 16 504 - xxx - X Y 9 Z

Denomination

CECC number

Type code (CECC registration number)

Rated coil voltage (first letter of identification code of table 2)

Rated power (second letter of identification code of table 2)

Defined, special contact material (according to annex)

Special attributes and / or surface mounting type (according to detail specification)

Note - The coding of the monostable or bistable relay type shall be combined with the rated power of the coil, if applicable. The reference to 2 change-over contacts shall be given on page 3 of the specification.

Use code 0 as last digit if no special attributes apply. If one of the attributes in the example for a detail specification shall not be considered, the corresponding code number or letter shall be deleted; there shall be no special marks or open space for non applicable attributes.

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2.3 Coil data

Table 2

Identification code	Rated voltage V	Coil resistance at (23 ± 2) °C ohm ± 10 %	Must operate voltage V at coil temperature of		Maximum coil voltage V at	Must not release voltage V at	Must release voltage V at	Rated power mW
			23 °C	70 °C	70 °C	23 °C	23 °C	

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2.4 Contact data

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2.4.1 Electrical endurance and switching frequency

Contact failure: Contact-circuit resistance of a closed contact higher than the value stated in 2.4.2, or resistance of an open contact circuit lower than 100 kohm, both more than once per 10^5 cycles or for the minimum number of switching cycles stated, calculated for each single contact; or a contact fault due to non-opening with a short circuit between break and make contact (resistance value lower than 100 ohm), i.e. one contact fault is permissible for 100 000 switching cycles and seven contact faults are permissible for 700 000 switching cycles.

Example: At a given endurance of 10^6 operations the total number of faults, as described above, shall not exceed 10.

Table 3 Loads, contact-circuit resistance limits, switching cycles and frequencies for electrical endurance and overload tests

Loads	Contact-circuit resistance ohm max.	Number of switching cycles min.	Switching frequency cycles per s max.
contact application 0	1	700 000	12,5
resistive - max. contact voltage / max. power	1	100 000	3
resistive - max. contact current / max. power	1	100 000	3
d.c. open-ended cable	1	1 600 000	12,5
particular application-related, if required			
overload	1*	100	0,3

* unless otherwise stated in the detail specification

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2.4.2 Static contact-circuit resistance

100 mohm max.	initial value at rated voltage
10 mohm max.	difference of contact-circuit resistance at other coil voltages (e. g. at must operate voltage for make contacts), initial value
1 ohm max.	during / after electrical endurance and environmental tests at rated voltage

2.4.3 Mechanical endurance

10^7 min. switching cycles

2.4.4 Timing

- Operate time:	max. 5 ms
- Release time:	max. 5 ms
- Bounce time when the contacts are closing:	max. 5 ms
- Bounce time when the contacts are opening:	max. 0,3 ms
- Transfer time on operation and release (last break contact opens before first make contact closes respectively last make contact opens before first break contact closes):	min. 0,1 ms

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2.5 Mounting

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The relay terminals are designed to be directly soldered onto the printed circuit board using conventional assembling techniques or for surface mounting technology (if applicable).

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2.6 Environmental data

The relays shall withstand at least the following environmental stresses:

- shock, functional: 98,1 m / s^2 (10 g) half sine acceleration, 11 ms duration
- shock, survival: 294 m / s^2 (30 g) half sine acceleration, 11 ms duration
- vibration (sinusoidal): amplitude 0,75 mm or acceleration 98,1 m / s^2 (10 g), 10 to 500 Hz
- mechanical robustness of terminals:

  thrust 1 N
  bending 2 bends

- soldering

  through hole type:

  - solderability at 235° C: 2 s
  - resistance to soldering heat, terminal immersion time for 260 °C: 10 s

  surface mounting type:

  - class A1, CECC 00 802, cl. 6.2 (i. e. 260 °C / 5 s and 215 °C / 40 s)
  - category 3, CECC 00 802, cl. 6.2 (i. e. vapour phase soldering or infrared soldering, if the temperature stress is adequate)

- enclosure
  - leakage rate max. 100 Pa · cm^3 / s
- resistance to cleaning solvents when rubbing with wrapping tissue paper
  - mixture of 1, 1, 2- trichlorotrifluoroethene and 2-propanol 70 : 30 by weight, at boiling temperature 5 min
  - demineralized or distilled water at 55 °C 5 min
- fire hazard, needle flame min. 10 s

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2.7 Package of relays for automatic handling (if applicable)

If stick magazines for automatic handling (to facilitate automatic relay insertion) are used, their outline drawing (profile and length), storage capacity and possible marking shall be given in an annex.

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3 Qualification approval procedures

- as stated in CECC 00 114 Part II, § 1.4, (1) fixed sample
- sampling and test schedule are specified in table 5
- the tests specified and their order are mandatory

4 Quality conformance inspection

Quality conformance inspection contains the tests stated in table 4

- group A and B: lot-by-lot tests
- group C: periodic tests

Unless otherwise stated in this blank detail specification, all tests of table 4 are mandatory. Where a sub-group contains cumulative tests, the order of the tests is mandatory. Specimens subjected to tests denoted as destructive (D) shall not be released for delivery.

4.1 Formation of inspection lots

According to CECC 00 114 / II, § 3.1: the basis for determination of sample size for the quality conformance inspection is the relay quantity produced during 1 week.

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4.2 Intervals between tests

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- sub-group A4, B1 and B2: minimum once a week
- sub-group C1 and C2: once in 6 months
- sub-group C4 to C6: once in 2 years

5 Marking and documentation

Relays and their packaging shall be marked as follows:

5.1 Marking of the relay

The marking shall be durable and easily legible, the following items shall be present:

a) Manufacturer's name, logo or trade mark

b) CECC type designation; CECC in letters or CECC mark of conformity (shall be as specified in the detail specification)

c) Date of manufacture, year / week coded according to IEC 62

d) Identification of terminal no. 1