

# INTERNATIONAL STANDARD

# IEC 61811-53

QC 160503

Second edition  
2002-03

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## Electromechanical all-or-nothing relays –

### Part 53:

**Blank detail specification –  
Electromechanical all-or-nothing telecom  
relays of assessed quality –  
Two change-over contacts,  
14 mm × 9 mm base**

*Relais électromécaniques de tout-ou-rien –*

### *Partie 53:*

*Spécification particulière cadre –  
Relais électromécaniques de tout-ou-rien télécom  
soumis au régime d'assurance de la qualité –  
Deux contacts à deux directions,  
surface d'encombrement de 14 mm × 9 mm*



Reference number  
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International Electrotechnical Commission  
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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTROMECHANICAL ALL-OR-NOTHING RELAYS –****Part 53: Blank detail specification –  
Electromechanical all-or-nothing telecom relays of assessed quality –  
Two change-over contacts, 14 mm × 9 mm base**

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
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- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61811-53 has been prepared by IEC technical committee 94:  
All-or-nothing electrical relays.

This second edition of IEC 61811-53 cancels and replaces the first edition published in 1997 and constitutes a technical revision.

The text of this standard is based on the following documents:

FDIS	Report on voting
94/147/FDIS	94/161/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

The QC number that appears on the front cover of this publication is the specification number in the IEC Quality Assessment System for Electronic Components (IECQ).

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

The committee has decided that the contents of this publication will remain unchanged until 2007. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

Withdrawn

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## ELECTROMECHANICAL ALL-OR-NOTHING RELAYS –

### Part 53: Blank detail specification – Electromechanical all-or-nothing telecom relays of assessed quality – Two change-over contacts, 14 mm × 9 mm base

## 1 General

### 1.1 Scope

This part of IEC 61811 is a blank detail specification applicable to electromechanical all-or-nothing telecom relays of assessed quality. Relays according to this standard are provided for operation in telecommunication applications. However, as electromechanical all-or-nothing relays, they are also suitable for particular industrial and other applications.

This standard selects from IEC 61810-7 and other sources the appropriate methods of test to be used in detail specifications derived from this specification, and contains basic test schedules to be used in the preparation of such specifications in accordance with IEC 61811-1.

### 1.2 Normative references

The following referenced documents are indispensable for the application 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 60068-1:1988, *Environmental testing – Part 1: General and guidance*  
Amendment 1 (1992)

IEC 60068-2-17:1994, *Environmental testing – Part 2: Tests: Test Q – Sealing*

IEC 60068-2-20:1979, *Environmental testing – Part 2: Tests: Test T – Soldering*  
Amendment 2 (1987)

IEC 60068-2-47:1999, *Environmental testing – Part 2-47: Test methods – Mounting of components, equipment and other articles for vibration, impact and similar dynamic tests*

IEC 60255-14:1981, *Electrical relays – Part 14: Endurance test for electrical relay contacts – Preferred values for contact loads*

IEC 60695-2-2:1991, *Fire hazard testing – Part 2: Test methods – Section 2 – Needle-flame test*

IEC 61709:1996, *Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion*

IEC 61810-7:1997, *Electromechanical all-or-nothing relays – Part 7: Test and measurement procedures*

IEC 61811-1:1999, *Electromechanical non-specified time all-or-nothing relays of assessed quality – Part 1: Generic specification*

IEC 61811-50:2002, *Electromechanical all-or-nothing relays – Part 50: Sectional specification – Electromechanical all-or-nothing telecom relays of assessed quality*

QC 001002-2:1998, *Rules of Procedure of the IEC Quality Assessment System for Electronic Components (IECQ) – Part 2: Documentation*

QC 001002-3:1998, *Rules of Procedure of the IEC Quality Assessment System for Electronic Components (IECQ) – Part 3: Approval procedures*

QC 001005:1996, *Register of Firms, Products and Services approved under the IECQ System, including ISO 9000*

CECC 00802:1990, *Guidance document: CECC Standard Method for the Specification of Surface Mounting Components (SMDs) of Assessed Quality*

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

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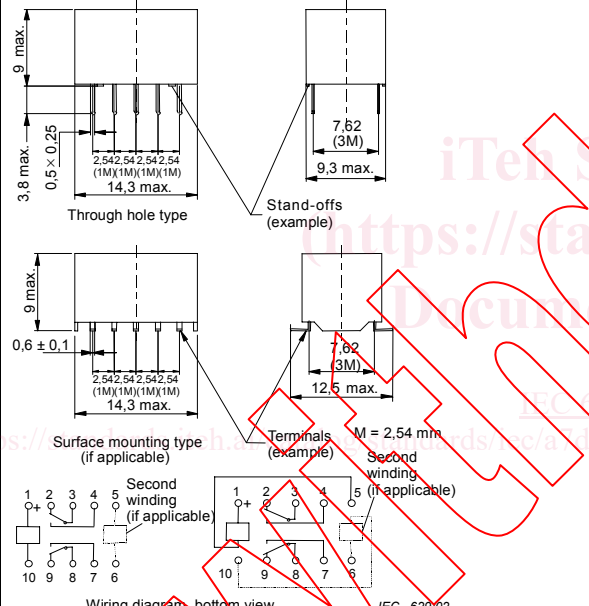
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WITHDRAWN



### 1.3 Front page of the detail specification

The layout of the front page of the detail specification is as follows.

(1)	<b>QC xxxxxx</b> Edition: 200X Page 1 of X	(2)	
Electronic components of assessed quality in accordance with: IEC 61810-7:1997 IEC 61811-50:2002	(3)	(4)	
Detail specification for electromechanical all-or-nothing telecom relays of assessed quality, dual-in-line, with 14 mm × 9 mm base, two change-over contacts Type: ..... two change-over contacts		(5)	
Construction: dual-in-line, with 14 mm × 9 mm base plastic sealed case, overall height of 9 mm max. relay properties RT III for conventional assembling techniques of printed circuit boards using mounting holes and soldering or for surface mounting technology (if applicable)		(6)	
Outline drawing or wiring diagram Dimensions in millimetres  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.	(7)	Application: 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.	(8)
Coil data Rated voltages: .....V d.c. Rated power: .....mW		(9)	
Contact data Change-over break-before-make contacts Rated contact voltage: 110 V d.c. / 125 V a.c.* Rated contact current: 1,25 A max. Rated contact power: 30 W/50 VA* Limiting continuous current: 2 A max. * AC values mandatory only if stated in the detail specification.		(10)	
Component climatic category according to IEC 60068-1: 25/70/21 Temperature range – operating ambient temperature: –25 °C to 70 °C – storage temperature: –40 °C to 85 °C		(11)	
Information about manufacturers who have components qualified according to this detail specification is available in the current QC 001005.			

## Key to front page

The numbers between brackets on the front page 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 which the detail specification is available.
- (2) The IECQ symbol and the number allotted to the completed detail specification by the IECQ secretariat.
- (3) The number and the year of availability of the IEC standard concerning test and measurement procedures for electromechanical all-or-nothing relays and/or sectional specification; also national reference, if different.
- (4) If different from the IECQ 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, two change-over contacts.
- (6) Construction: sizes, for example 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 box (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 component.

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.

- (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 according to clause 8 and annex A of IEC 60068-1, and temperature range.

## 2 Characteristic values of the relay

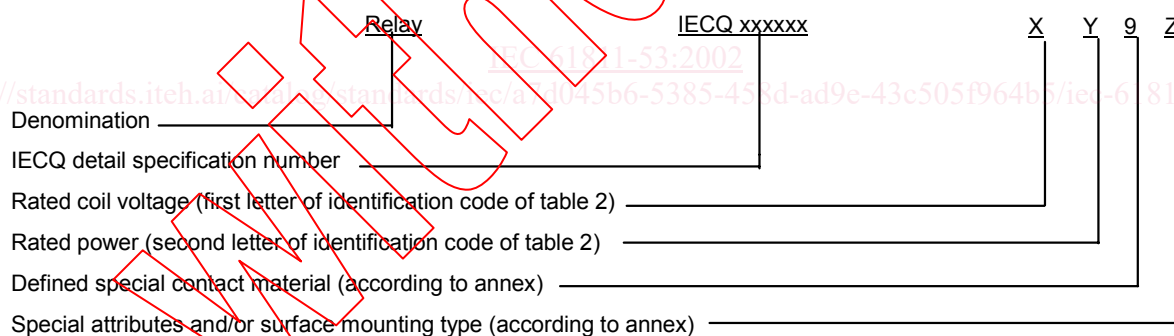
### 2.1 General data

- Thermal resistance: max. ... K/W
- Contact application: CA 0, CA 1, CA 2 and CA 3
- Relay mass: max. ... g
- Finish of the terminals: presoldering; admissible non-presoldered part: max. 1 mm to the stand-offs' plane, if applicable
- Insulation resistance: 1 000 MΩ min. at 500 V d.c. initial value
- Dielectric strength: see table 1

**Table 1 – Dielectric test voltages**

	Dielectric test V a.c. min.	Impulse voltage test 10/700 µs and/or 1,2/50 µs V min.
Opened contact circuits	500	
Between adjacent contact circuits	500	
Coil to contact circuits	500	
Between separated windings (if applicable)		

### 2.2 Construction of IECQ type designation (ordering information)



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

Use code 0 as the 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.

The manufacturer may use his own numbering system, provided that a conversion list with the IECQ type designations and the manufacturer's part numbers is given in an annex to the detail specification.