TECHNICAL REPORT

IEC TR 61010-3

Second edition
2003-04

Safety requirements for electrical equipment for measurement, control, and laboratory use –

Part 3:
Protocol for the preparation of conformity verification reports for the IEC 61010 2nd edition series

Règles de sécurité pour appareils électriques de mesurage, de régulation et de laboratoire –

Partie 3:
Protocole pour l'élaboration des rapports de vérification de la conformité de la série de publications 61010 de deuxième édition

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SAFETY REQUIREMENTS FOR ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL, AND LABORATORY USE –

Part 3: Protocol for the preparation of conformity verification reports for the IEC 61010 2nd edition series

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.
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6) Attention is drawn to the possibility that some of the elements of this Technical Report may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different kind from that which is normally published as an International Standard, for example "state of the art".

IEC 61010-3, which is a technical report, has been prepared by technical committee 66: Safety of measuring, control, and laboratory equipment.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
66/275/DTR	66/302/RVC

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This report is a Technical Report and is of a purely informative nature and is therefore by itself not to be regarded as an International Standard.

The committee has decided that the contents of this publication will remain unchanged until 2008. At this date, the publication will be

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- withdrawn;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

SAFETY REQUIREMENTS FOR ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL, AND LABORATORY USE –

Part 3: Protocol for the preparation of conformity verification reports for the IEC 61010 2nd edition series

1 Scope

This part of IEC 61010 is a technical report, which provides a test protocol to assist with determining and recording verification of conformity of the equipment under test with the reference documents identified on the front cover of the appropriate report.

2 General

Conformity verification reports (CVRs) should only be used with the appropriate standards.

Individual report layouts reflecting the referenced documents are presented for each part of the IEC 61010 series in the form of a check list, together with the forms (where required) for reflecting the results of tests. Key words or phrases of the appropriate standard(s) are mainly used, but in order to understand the full details of the requirements to be met when using a CVR, it is essential that test personnel refer to the appropriate standard(s). Where any doubts arise, the requirements of standards take preference over the text of CVRs.

The part 2 standards indicate in their forewords which amendments (if any) are applicable to IEC 61010-1: 2001 2nd edition.

Care should be taken to ensure that any potentially destructive testing is performed last in the sequence of testing, as determined by the tester.

Clauses or subclauses which are not applicable need not be included in the prepared report, provided that these omissions are indicated in the contents list of the report. An example of a contents list based on IEC 61010-1: 2001 is given in Annex A for a report on a specific product.

3 Applicability of conformity verification reports

3.1 CVR for IEC 61010-1: 2001, 2nd edition

IEC 61010-3-1: 2003 for:

a) IEC 61010-1: 2001

or

b) IEC 61010-1: 2001 + amendment 1: (in preparation)

3.2 CVRs for part 2 standards with cross-references to IEC 61010-1: 2001 - 2nd edition

a) IEC 61010-3-010 for IEC 61010-2-010. (standard in preparation);

b) IEC 61010-3-020 for IEC 61010-2-020. (standard in preparation);

c) IEC 61010-3-051 for IEC 61010-2-051. (standard in preparation);

d) IEC 61010-3-061 for IEC 61010-2-061. (standard in preparation);

e) IEC 61010-3-081 for IEC 61010-2-081 (standard in preparation)

f) IEC 61010-3-101 for IEC 61010-2-101 (standard in preparation)

3.3 CVRs for stand-alone standards in the IEC 61010 series

A stand-alone standard is one, which does not cross-refer to IEC 61010-1.

a) IEC 61010-3-031 for IEC 61010-031: (standard in preparation)

b) IEC 61010-3-040 for IEC 61010-040: (standard in preparation)

4 Documents

The documents a) to d), together with any others required by the standard, should be reviewed and listed in the report:

a) general description of the equipment tested;

b) OPERATOR instructions;

c) installation instruction;

d) service instructions.

The documents e) to n), if applicable, should also be listed in the report:

e) component data sheets and certification details;

f) wire data sheets;

g) flammability test results or data sheets;

h) enclosure flammability test results and/or material data sheets;

i) comparative tracking indices of printed wiring board materials;

j) data sheets, test results or certification details for cathode-ray tubes;

k) constructional drawings and specifications for transformers including winding and insulation details;

l) test results for abnormal operation and fault conditions;

m) layout of printed wiring boards with primary and secondary hazardous voltages showing all working voltages on the tracks;

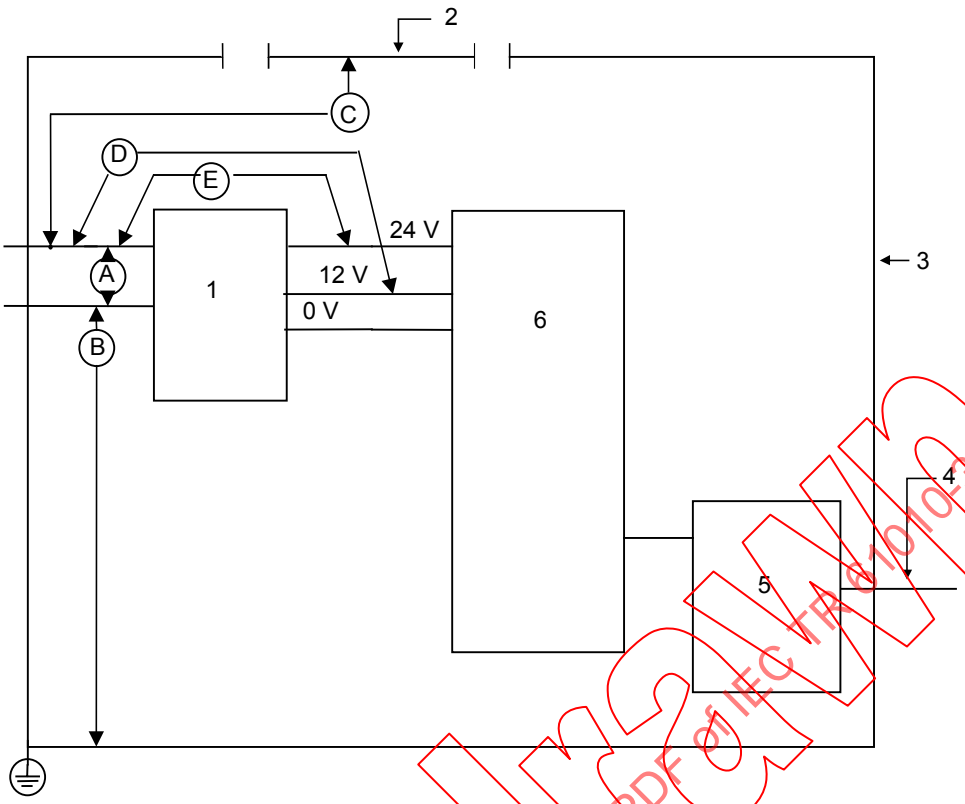
n) circuit diagrams, and assembly drawings of printed wiring boards.

5 Completion of the report

a) If additional information is required for any part of the report, it should be included on a separate sheet.

b) Clause 6 – *Protection against electric shock – Block diagram of a system*.

Where applicable, the table in Form A.5 should be completed and a block diagram included (where possible) to assist analysis of the product. See Figure 1 and Table 1 as examples of a block diagram and of a completed table. The letters A, B, etc., indicate points between which dielectric strength tests, or measurements of CREEPAGE DISTANCE or CLEARANCE, should be made.



Key

1 = Separation from mains

2 = Metal part not connected to protective earth

3 = ENCLOSURE connected to protective earth

4 = ACCESSIBLE TERMINALS

5 = ACCESSIBLE voltages below the limit of 6.3.1

6 = Internal voltages below the limits of 6.3.1

Figure 1 – Example of a block diagram for Form A.5 based on circuits in IEC 61010-1:2001

Table 1 – Example of Table A.5 completed
Pollution degree: 2; Installation category (overvoltage category): II

Location or description	Insulation type (note 1)	Maximum working voltage V	CREEPAGE DISTANCE				CLEARANCE	Test voltage (note 2)	Comments (note 3)
			PWB mm	CTI	Other mm	CTI	mm	V	
A	BI	230	1,5	100	3,0	100	1,5	1 900 d.c.	
B	BI	230	1,5	100	2,1	400	1,5	1 900 d.c.	
C	DI/RI	230	3,3	100	6,0	100	3,3	2 300 r.m.s.	
D	DI	230	3,3	100	6,0	100	3,3	2 300 r.m.s	
E	DI	230	3,3	100	3,3	600	3,3	2 300 r.m.s.	

1 Types of insulation to be stated:

BI = BASIC INSULATION RI = REINFORCED INSULATION

DI = DOUBLE INSULATION SI = SUPPLEMENTARY INSULATION

PI = PROTECTIVE IMPEDANCE

2 Types of voltage:

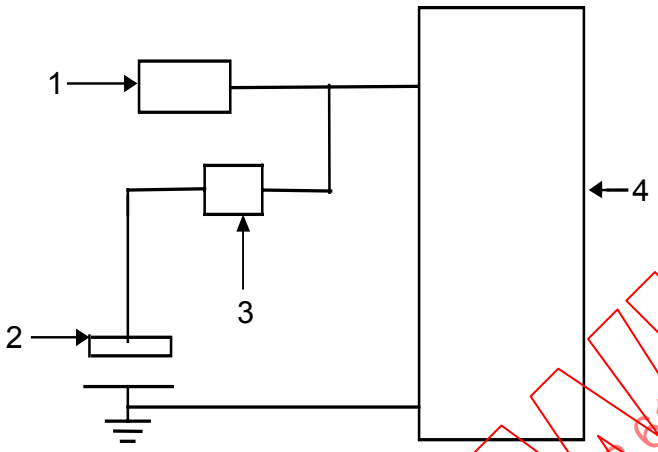
Peak impulse test voltage (pulse) d.c.

r.m.s.

3 INSTALLATION (OVERVOLTAGE) CATEGORIES or POLLUTION DEGREES, which differ from these, should be shown under 'Comments'.

5.1 Batteries

Examples of block diagrams of battery load and charging circuits (see 13.2.2 and Form A.27)



Key

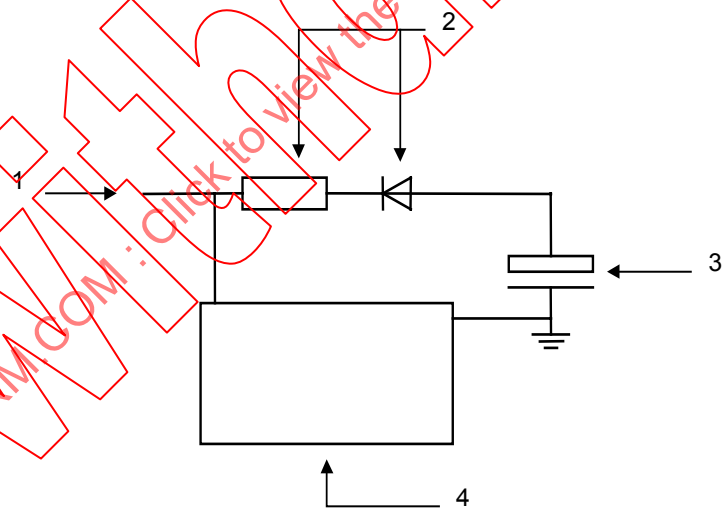
1 = From power supply: +5 V d.c.

2 = NiCd rechargeable battery. Charge and discharge current shall be limited to safe values

3 = Fuse

4 = Battery-powered RAM module

Figure 2 – Battery circuit using a rechargeable battery



Key

1 = From power supply: +5 V d.c.

2 = Reverse-current protection devices

3 = Lithium battery, not rechargeable

4 = Battery-powered RAM module

Figure 3 – Battery circuit with a battery that is not rechargeable

Annex A
(Informative)

Example of a contents list based on IEC 61010-1: 2001 -2nd edition, for a report on a typical item of laboratory equipment.

NOTE Clauses and subclauses with a line through them are not applicable to the product concerned.

Summary of tests