

TECHNICAL REPORT

IEC
61010-3-1

First edition
1997-07

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

**Part 3-1:
Conformity verification report for IEC 61010-1**

*Règles de sécurité pour appareils électriques
de mesure, de régulation et de laboratoire –*

*Partie 3-1:
Rapports de vérification de la conformité
de la CEI 61010-1*

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Terminologie, symboles graphiques et littéraux

En ce qui concerne la terminologie générale, le lecteur se reportera à la CEI 60050: *Vocabulaire Electrotechnique International* (IEV).

Pour les symboles graphiques, les symboles littéraux et les signes d'usage général approuvés par la CEI, le lecteur consultera la CEI 60027: *Symboles littéraux à utiliser en électrotechnique*, la CEI 60417: *Symboles graphiques utilisables sur le matériel. Index, relevé et compilation des feuilles individuelles*, et la CEI 60617: *Symboles graphiques pour schémas*.

Publications de la CEI établies par le même comité d'études

L'attention du lecteur est attirée sur les listes figurant à la fin de cette publication, qui énumèrent les publications de la CEI préparées par le comité d'études qui a établi la présente publication.

* Voir adresse «site web» sur la page de titre.

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Validity of this publication

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- **IEC Bulletin**
- **IEC Yearbook**
On-line access*
- **Catalogue of IEC publications**
Published yearly with regular updates (On-line access)*

Terminology, graphical and letter symbols

For general terminology, readers are referred to IEC 60050: *International Electrotechnical Vocabulary* (IEV).

For graphical symbols, and letter symbols and signs approved by the IEC for general use, readers are referred to publications IEC 60027: *Letter symbols to be used in electrical technology*, IEC 60417: *Graphical symbols for use on equipment. Index, survey and compilation of the single sheets* and IEC 60617: *Graphical symbols for diagrams*.

IEC publications prepared by the same technical committee

The attention of readers is drawn to the end pages of this publication which list the IEC publications issued by the technical committee which has prepared the present publication.

* See web site address on title page.

TECHNICAL REPORT – TYPE 3

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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For price, see current catalogue*

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SAFETY REQUIREMENTS FOR ELECTRICAL EQUIPMENT
FOR MEASUREMENT, CONTROL, AND LABORATORY USE –****Part 3-1: Conformity verification report for IEC 61010-1:1990,
General Requirements
(including amendment 1: 1992 or amendment 1: 1992 and 2: 1995)**

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 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.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 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.

The main task of IEC technical committees is to prepare International Standards. In exceptional circumstances, a technical committee may propose the publication of a technical report of one of the following types:

- type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;
- type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;
- type 3, when a technical committee has collected data of a different kind from that which is normally published as an International Standard, for example "state of the art".

Technical reports of types 1 and 2 are subject to review within three years of publication to decide whether they can be transformed into International Standards. Technical reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

IEC 61010-3-1, which is a technical report of type 3, has been prepared by IEC technical committee No. 66: Safety of measuring, control and laboratory equipment.

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

Committee draft	Report on voting
66/145/CDV	66/165/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 report is a Technical Report of type 3 and is of a purely informative nature and is therefore by itself not to be regarded as an International Standard. It is for use by test houses and other users to assist them with determining and recording verification of conformity of the equipment under test with the requirements of:

IEC 61010-1: 1990 + amendment 1: 1992,
or

IEC 61010-1: 1990 + amendment 1: 1992 + amendment 2: 1995

The protocol for completion of this report is contained in publication IEC 61010-3: 1997.

Requirements which apply only to amendment 2 to IEC 61010-1 are indicated by “(AM 2)” in the first column. Requirements deleted by amendment 2 to IEC 61010-1 are indicated by “(AM 1 only)” in the second column.

A diskette containing the text of this report is to be found in a pocket affixed to the back cover of this publication.

Conformity Verification Report IEC 61010-1 Safety requirements for electrical equipment for measurement, control, and laboratory use: Part 1, General Requirements	
Report reference No.....: Compiled by (+ signature).....: Approved by (+ signature).....: Date of issue.....:	
Testing organization.....: Address.....: Testing location	
Applicant.....: Address.....:	
Standard.....: Copyright blank test report....:	IEC 61010-1:1990 + A 1:1992 + A 2:1995 This report has been prepared by IEC TC 66, which retains responsibility for any changes or corrections required.
Test procedure.....: Procedure deviation.....: Non-standard test method.....:	IEC TR 61010-3-1:1997 https://standards.iteh.ai/catalog/standards/iec/36a8cb59-0403-446d-917c-9bc4a012dea7/iec-tr-61010-3-1-1997
Type of item tested.....: ☐ Measurement ☐ Control ☐ Laboratory Trademark.....: Model/type reference.....: Manufacturer.....: Rating.....:	
Copy of rating plate:	

Description of equipment function.....:

INSTALLATION/OVERVOLTAGE CATEGORY:

POLLUTION DEGREE:

Environmental rating: ☐ Standard ☐ Other (specify):

Equipment mobility: ☐ Portable ☐ Hand-held ☐ Floorstanding ☐ Fixed
☐ Built in ☐ Benchmounted ☐ Other (specify):

Connection to mains supply: ☐ Permanent ☐ Detachable ☐ Non detachable ☐ None

Operating conditions: ☐ Continuous ☐ Short-time ☐ Intermittent

Overall size of the equipment (Length x Width x Height):

Mass of the equipment (kg):

Marked degree of protection to IEC 60529: IP — —

Accessories and detachable parts included in the evaluation:

Options:

NOTE – "(see form A.X)" refers to a form appended to the report.

Table 1 – Documents attached to this report

[illegible]

Table 2 – Test equipment list

[illegible]

Table 3 – List of components relied on for safety

Unique component reference or location (including drawing reference if required)	Application/Function	Manufacturer and part number (note 1)	RATING (note 2)	Licence number, file number or other documentary evidence of acceptance

NOTES

1 List all manufacturers concerned.

2 Electrical, mechanical, flammability, etc.

Clause Subclause	Requirement	Result	Comments
5	Marking and documentation		
5.1.1	General Required equipment markings are: a) visible: – from the exterior - or – after removing a cover - or – opening a door - or – after removal from a rack or panel b) not put on parts which can be removed by an OPERATOR c) Letter symbols (IEC 60027) used d) Graphic symbols (IEC 61010-1:table 1) used		
5.1.2	Identification Equipment is identified by: – manufacturer's name or registered trade mark – model number, name or other means		
5.1.3	Mains supply Equipment is marked as follows: a) nature of supply: – a.c. RATED mains frequency or range of frequencies – d.c. with symbol 1 b) RATED supply voltage(s) or range c) – maximum RATED power (W or VA) or input current		
(AM 2)	If more than one voltage range: – separate values marked or – values differ by less than 20 % (see form A.3)		
F			

Clause Subclause	Requirement		Comments
	d) OPERATOR –set for different RATED supply voltages: – indicates the equipment set voltage – PORTABLE EQUIPMENT indication is visible from the exterior – changing the setting changes the indication e) Accessory mains socket-outlets accepting standard mains plugs are marked: – with the voltage if it is different from the mains supply voltage – for use only with specific equipment If not marked for specific equipment it is marked with: – the maximum RATED current or power, and maximum permitted leakage current or – symbol 14 with full details in the documentation		
F	The measured value not more than 110 % (see form A.3)		
5.1.4	Fuses		
	OPERATOR replaceable fuse marking (see also 5.4.5)		
5.1.5	Measuring circuit TERMINALS		
(AM 2)	RATED maximum working voltage or current marked Unless clear indication that below limits: – maximum RATED voltage to earth is marked or – for specific connection only, and means for identifying provided or – is adjacent to TERMINALS or – if insufficient space:		

Clause Subclause	Requirement	Result	Comments
	- on the RATING plate or scale plate or - if the TERMINAL is marked with symbol 14		
(AM 2)	INSTALLATION CATEGORY marked		
(AM 2)	TERMINALS permanently connected and not ACCESSIBLE		
5.1.6	TERMINALS and operating devices		
	Where necessary for safety, indication of purpose of TERMINALS, connectors, controls and indicators		
(AM 2)	Mains supply TERMINALS identified		
(AM 2)	Power supply switch on or off position marked if used as disconnecting device		
	TERMINAL marking:		
	a) FUNCTIONAL EARTH TERMINALS		
	b) PROTECTIVE CONDUCTOR TERMINALS:		
	- symbol 6 is placed close to or on the TERMINAL - or - part of appliance inlet		
	c) TERMINALS of measuring and control circuits		
	d) TERMINALS supplied from the interior		
	e) ACCESSIBLE FUNCTIONAL EARTH TERMINALS		
	f) Position on or off of power supply switch (AM 1 only)		
5.1.7	Equipment protected by DOUBLE INSULATION OR REINFORCED INSULATION		
	Protected throughout (symbol 11 used)		
	Only partially protected (symbol 11 not used)		
5.1.8	Battery charging		
	Equipment with means to charge re-chargeable batteries is marked:		