TECHNICAL REPORT

IEC TR 61010-3-081

First edition
2003-04

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

Part 3-081:
Conformity verification report for IEC 61010-2-081:2001 – Particular requirements for automatic and semi-automatic laboratory equipment for analysis and other purposes

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

Partie 3-081:
Rapport de vérification de la conformité de la CEI 61010-2-081:2001 – Prescriptions particulières pour appareils de laboratoire, automatiques et semi-automatiques, destinés à l'analyse et autres usages

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 3–081: Conformity verification report for IEC 61010–2–081:2001 Particular requirements for automatic and semi-automatic laboratory equipment for analysis and other purposes

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.
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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 61010-3-081, which is a technical report, has been prepared by IEC 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
66/277/DTR	66/315 /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 IEC/ISO 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. It is to assist users of the standard with determining and recording verification of conformity of the equipment under test with the requirements of:

IEC 61010–2–081: 2001

The protocol for completion of this report is contained in publication IEC 61010-3:2003 (2nd edition).

The IEC sells read-only PDF files as a general rule. In the present instance, and quite exceptionally, to enable the user to fill in the forms, a revisable file is included in a pocket affixed to the back cover of this publication.

This file can also be downloaded from the Web as a PDF file. There is, however, at the end of the document, a revisable file containing the forms. Please use the zip/unzip function.

WARNING – Experience has shown that if a version is downloaded in Word 97or Word 2000 and is subsequently converted to Word 6, some of the symbols may have been incorrectly changed in the conversion. Care must, therefore, be taken to verify the symbols used in the converted document.

The committee has decided that the contents of this publication will remain unchanged until 2006. At this date, the publication will be

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

TEST REPORT

IEC 61010–2–081

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

Part 2–081: Particular requirements for automatic and semi-automatic laboratory equipment for analysis and other purposes

Report Reference No. ..... :	
Tested by (name and signature) . :	
Approved by (name and signature) ..... :	
Date of issue ..... :	
Contents ..... :	Pages
Testing organisation ..... :	
Address ..... :	
Testing location ..... :	
Applicant's name ..... :	
Address ..... :	
Test specification:	
Standard ..... :	IEC 61010-2-081:2001 and IEC 61010 – 1 : 2001 (2nd Edition)
Copyright blank test report ..... :	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 ..... :	

Test item description ..... :	
Trademark ..... :	
Model/Type reference ..... :	
Rating(s) ..... :	

Test item particulars	:	
Type of item tested	:	Measurement / Control / Laboratory
Description of equipment function	:	
Intended use	:	
INSTALLATION/OVERVOLTAGE CATEGORY	:	
POLLUTION DEGREE	:	
Environmental rating	:	standard / extended (specify):
Equipment mobility	:	portable / hand-held / floorstanding / fixed / built in/
Connection to mains supply	:	Permanent / detachable cord set / non detachable cord set / none
Operating conditions	:	continuous / short-time / intermittent
Overall size of the equipment (L x W x H)	:	
Mass of the equipment (kg)	:	
Marked degree of protection to IEC 60529	:	IP____ ____
Accessories and detachable parts included in the evaluation	:	
Options included	:	
Test case verdicts:		
Test case does not apply to the test object	:	N/A
Test object does meet the requirement	:	P(Pass)
Test object does not meet the requirement	:	F(Fail)

General remarks:

The test results presented in this report relate only to the item(s) tested.

"(see remark #)" refers to a remark appended to the report.
"(see Annex #)" refers to an annex appended to the report.
"(see Form A.#)" refers to a table appended to the report.

Throughout this report a comma (point) is used as the decimal separator.

Copy of equipment markings:

Summary of test results (information/comments):

TABLE: 1 - Documents reviewed					
Document Name	**Version**	**Date**	**Editor**	**Attached Yes / No**	**Page Numbers**

TABLE: 2 - Test equipment list						
Test equipment number	Type and make	Unique identification number	Calibration date Last note 1	Due	Ranges used note 2	Comments
Note 1 Or interval between calibrations Note 2 Range used may be noted using the Instrument Code on the specific Form						

TABLE: 3 - List of components and circuits relied on for safety

Unique component reference or location (including drawing reference if required)	Safety Function	Manufacturer (note 1)	Part number	RATING (note 2)	Evidence of acceptance (note 3)

NOTE 1 - List all manufacturers concerned.
NOTE 2 - Electrical, mechanical, flammability, etc.
NOTE 3 - Licence number, file number or other documentary evidence of acceptance

Clause	Requirement – Test	Result - Remarks	Verdict
5	**MARKING AND DOCUMENTATION**		
5.1.1	**General**		
	Required equipment markings are:		
	visible:		
	From the exterior; or		
	After removing a cover; or		
	Opening a door		
	After removal from a rack or panel		
	Not put on parts which can be removed by an OPERATOR		
	Letter symbols (IEC 60027) used		
	Graphic symbols (IEC 61010-1: Table 1) used		
	Additional symbols cannot be confused with the international ones		
5.1.2	**Identification**		
	Equipment is identified by:		
5.1.2a)	Manufacturer's or supplier's name or trademark		
5.1.2b)	Model number, name or other means		
	Manufacturing location identified		
5.1.3	**Mains supply**		
	Equipment is marked as follows:		
5.1.3a)	Nature of supply:		
	1) A.C. RATED mains frequency or range . of frequencies .....:		
	2) D.C. with symbol 1		
5.1.3b)	RATED supply voltage(s) or range .....:		
5.1.3c)	Max. RATED power (W or VA)or input current.....:		
	The measured value not more than 110 %	(See Form A.3)	
	If more than one voltage range:		
	Separate values marked; or		
	Values differ by less than 20 %	(See Form A.3)	
5.1.3d)	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		
5.1.3e)	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; or		
	Symbol 14 with full details in the documentation		

Clause	Requirement – Test	Result - Remarks	Verdict
5.1.4	**Fuses**		
	OPERATOR replaceable fuse marking (see also 5.4.5) ..... :		
5.1.5	**TERMINALS, connections and operating devices**		
	Where necessary for safety, indication of purpose of TERMINALS, connectors, controls and indicators marked		
	If insufficient space, symbol 14 used		
5.1.5.1	**TERMINALS**		
	Mains supply TERMINALS identified		
	Other TERMINAL marking :		
5.1.5.1a)	FUNCTIONAL EARTH TERMINALS (symbol 5 used)		
5.1.5.1b)	PROTECTIVE CONDUCTOR TERMINALS:		
	Symbol 6 is placed close to or on the TERMINAL; or		
	Part of appliance inlet		
5.1.5.1c)	TERMINALS of measuring and control circuits (symbol 7 used)		
5.1.5.1d)	HAZARDOUS LIVE TERMINALS supplied from the interior		
	Standard MAINS socket outlet; or		
	RATINGS marked; or		
	Symbol 14 used		
5.1.5.1e)	ACCESSIBLE FUNCTIONAL EARTH TERMINALS:		
	Self-evident; or		
	Indication (symbol 8 acceptable)		
5.1.5.2	**Measuring circuit TERMINALS**		
	For TERMINALS other than those permanently connected and not ACCESSIBLE:		
	RATED voltage or current marked		
	Unless clear indication that below limits:		
	Maximum RATED voltage to earth is marked; or		
	For specific connection to other equipment TERMINALS only, and means for identifying provided		
	Appropriate measurement category marked (CAT II, CAT III or CAT IV); or		
	No measurement category marked (CAT I)		
	Required markings are adjacent to TERMINALS; OR		
	If insufficient space:		
	On the RATING plate or scale plate; or		
	TERMINAL is marked with symbol 14		
5.1.5.101	**Gas and liquid connections**		
	The equipment is clearly marked near to the connector on the equipment with:		
5.1.5.101a)	A means of identifying the gas or liquid to be used; or		
	Symbol 14 of Table 1		
5.1.5.101b)	The maximum permitted pressure or alternatively symbol 14 of Table 1 (see 5.4.3)		