



NSAI
Standards

Irish Standard
I.S. EN 61010-2-030:2010

Safety requirements for electrical
equipment for measurement, control,
and laboratory use -- Part 2-030:
Particular requirements for testing and
measuring circuits (IEC 61010-2
-030:2010 (EQV))

I.S. EN 61010-2-030:2010

Incorporating amendments/corrigenda issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

<i>This document replaces:</i>	<i>This document is based on:</i> EN 61010-2-030:2010	<i>Published:</i> 15 October, 2010
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NSAI 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAI.ie	Sales: T +353 1 857 6730 F +353 1 857 6729 W standards.ie
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EUROPEAN STANDARD

EN 61010-2-030

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2010

ICS 19.080; 71.040.10

English version

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

**Part 2-030: Particular requirements for testing and measuring circuits
(IEC 61010-2-030:2010)**

Règles de sécurité pour appareils
électriques de mesure, de régulation et
de laboratoire -
Partie 2-030: Exigences particulières pour
les circuits de test et de mesure
(CEI 61010-2-030:2010)

Sicherheitsbestimmungen für elektrische
Mess-, Steuer-, Regel- und Laborgeräte -
Teil 2-030: Besondere Bestimmungen für
Prüf- und Messkreise
(IEC 61010-2-030:2010)

This European Standard was approved by CENELEC on 2010-10-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 66/417/FDIS, future edition 1 of IEC 61010-2-030, prepared by IEC TC 66, Safety of measuring, control and laboratory equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61010-2-030 on 2010-10-01.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

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) 2011-07-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2013-10-01

This Part 2-030 is to be used in conjunction with the latest edition of EN 61010-1, Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements. It was established on the basis of the 2010 edition of EN 61010-1. Amendments and revisions of Part 1 have also to be taken into account and the dates when such changes become applicable will be stated in the relevant amendment or revision of Part 1.

This Part 2-030 supplements or modifies the corresponding clauses in EN 61010-1 so as to convert it into the European Standard: *Particular requirements for testing and measuring circuits*.

Where a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. Where this part states “addition”, “modification”, “replacement”, or “deletion” the relevant requirement, test specification or note in Part 1 should be adapted accordingly.

In the second edition of EN 61010-1, the requirements for testing and measuring circuits were included in Part 1 itself. In the third edition of EN 61010-1, these requirements have been removed from Part 1 and have become the basis for the requirements in this Part 2.

In addition to the requirements removed from Part 1, the following major requirements have been added to this standard. Numerous other changes have also been made.

- The terminology for MEASUREMENT CATEGORY I has changed. In this Part 2, it is termed “not rated for measurements within MEASUREMENT CATEGORIES II, III, or IV”.
- CLEARANCES and CREEPAGE DISTANCES have been added for unmated measuring circuit TERMINALS.
- Requirements have been added for specialized measuring circuit TERMINALS.
- Requirements for TRANSIENT OVERVOLTAGE limiting devices have been revised.
- Requirements have been revised and added pertaining to REASONABLY FORESEEABLE MISUSE of measuring circuits, including disconnection of the protective earth and usage of the equipment in a manner that might cause arc flash.
- Insulation requirements for measuring circuits have been primarily located in Annex K.
- Annex AA has been added to describe the characteristics of MEASUREMENT CATEGORIES.
- Annex BB has been added to describe hazards that may be encountered when using measuring circuits.

NOTE 1 The following print types are used:

- requirements: in roman type;

- *conformity and test: in italic type;*
- NOTES: in small roman type;
- terms used throughout this standard which have been defined in Clause 3: SMALL ROMAN CAPITALS;

NOTE 2 Subclauses, figures, tables and notes which are additional to those in Part 1 are numbered starting from 101. Additional Annexes are numbered AA and BB.

Annex ZA of Part 1 is applicable.

Endorsement notice

The text of the International Standard IEC 61010-2-030:2010 was approved by CENELEC as a European Standard without any modification.

Bibliography

Add the following reference to the Bibliography of Part 1:

EN 41003:1999

IEC 61010-2-032

NOTE Harmonized as EN 61010-2-032

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CONTENTS

FOREWORD.....	4
1 Scope and object.....	7
2 Normative references.....	7
3 Terms and definitions	7
4 Tests	8
5 Marking and documentation	8
6 Protection against electric shock.....	9
7 Protection against mechanical HAZARDS	12
8 Resistance to mechanical stresses	12
9 Protection against the spread of fire	12
10 Equipment temperature limits and resistance to heat	12
11 Protection against HAZARDS from fluids	12
12 Protection against radiation, including laser sources, and against sonic and ultrasonic pressure	12
13 Protection against liberated gases and substances, explosion and implosion.....	12
14 Components and subassemblies.....	12
15 Protection by interlocks	13
16 HAZARDS resulting from application	13
17 RISK assessment.....	13
101 Measuring circuits.....	13
Annexes	18
Annex K (normative) Insulation requirements not covered by 6.7	18
Annex L (informative) Index of defined terms	24
Annex AA (normative) Measurement categories.....	25
Annex BB (informative) Hazards pertaining to measurements performed in certain environments	28
Bibliography.....	31
Figure AA.1 – Example to identify the locations of measuring circuits	26
Table 101 – CLEARANCES and CREEPAGE DISTANCES for measuring circuit TERMINALS with HAZARDOUS LIVE conductive parts	11
Table 102 – Impulse withstand voltages.....	13
Table K.101 – CLEARANCES for MEASUREMENT CATEGORIES II, III and IV	19
Table K.102 – Test voltages for testing electric strength of solid insulation in measuring circuits of MEASUREMENT CATEGORY II	20
Table K.103 – Test voltages for solid insulation in measuring circuits of MEASUREMENT CATEGORY III	20
Table K.104 – Test voltages for testing electric strength of solid insulation in measuring circuits of MEASUREMENT CATEGORY IV	20
Table K.105 – Test voltages for testing long term stress of solid insulation in measuring circuits.....	21
Table K.106 – Maximum TRANSIENT OVERVOLTAGES	23

I.S. EN 61010-2-030:2010

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– 3 –

Table AA.1 – Characteristics of MEASUREMENT CATEGORIES	27
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 2-030: Particular requirements for testing and measuring circuits

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. 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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- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61010-2-030 has been prepared by IEC technical committee 66: Safety of measuring, control and laboratory equipment.

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

FDIS	Report on voting
66/417/FDIS	66/427/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.

This Part 2-030 is to be used in conjunction with the latest edition of IEC 61010-1. It was established on the basis of the third edition (2010) of IEC 61010-1. Consideration may be given to future editions of, or amendments to, IEC 61010-1.

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– 5 –

This Part 2-030 supplements or modifies the corresponding clauses in IEC 61010-1 so as to convert that publication into the IEC standard: *Particular requirements for testing and measuring circuits*.

Where a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. Where this part states “addition”, “modification”, “replacement”, or “deletion” the relevant requirement, test specification or note in Part 1 should be adapted accordingly.

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In this standard:

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- terms used throughout this standard which have been defined in Clause 3: SMALL ROMAN CAPITALS;

b) subclauses, figures, tables and notes which are additional to those in Part 1 are numbered starting from 101. Additional Annexes are numbered AA and BB.

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

A list of all parts of the IEC 61010 series, under the general title *Safety requirements for electrical equipment for measurement, control, and laboratory use*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

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

Part 2-030: Particular requirements for testing and measuring circuits

1 Scope and object

This clause of Part 1 is applicable except as follows:

1.1.1 Equipment included in scope

Replace the text with the following:

This part of IEC 61010 specifies safety requirements for testing and measuring circuits which are connected for test or measurement purposes to devices or circuits outside the measurement equipment itself.

These include measurement circuits which are part of electrical test and measurement equipment, laboratory equipment, or process control equipment. The existence of these circuits in equipment requires additional protective means between the circuit and an OPERATOR.

NOTE 1 These testing and measuring circuits may, for example:

- measure voltages in circuits of other equipment,
- measure temperature of a separate device via a thermocouple,
- measure force on a separate device via a strain gauge,
- inject a voltage onto a circuit to analyze a new design.

NOTE 2 Testing and measuring circuits that are not within the scope of this Part 2 are considered to be covered by the requirements of Part 1.

NOTE 3 Equipment containing these testing and measuring circuits may be intended for performing tests and measurements on hazardous conductors, including MAINS conductors and telecommunication network conductors. See Annex BB for considerations of HAZARDS involved in various tests and measurements.

2 Normative references

This clause of Part 1 is applicable.

3 Terms and definitions

This clause of Part 1 is applicable except as follows:

3.5 Safety terms

Add a new definition:

3.5.101

MEASUREMENT CATEGORY

classification of testing and measuring circuits according to the type of MAINS CIRCUITS to which they are intended to be connected

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