

SLOVENSKI STANDARD

oSIST prEN 61010-2-081:2018

01-marec-2018

Varnostne zahteve za električno opremo za meritve, nadzor in laboratorijsko uporabo - 2-081. del: Posebne zahteve za avtomatsko in polavtomatsko laboratorijsko opremo, ki se uporablja za analizo in druge namene

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

Sicherheitsbestimmungen für elektrische Mess-, Steuer-, Regel- und Laborgeräte - Teil 2-081: Besondere Anforderungen an automatische und semiautomatische Laborgeräte für Analysen und andere Zwecke

Règles de sécurité pour appareils électriques de mesurage, de régulation et de laboratoire - Partie 2-081: Exigences particulières pour les appareils de laboratoire, automatiques et semi-automatiques, destinés à l'analyse et autres usages

Ta slovenski standard je istoveten z: prEN 61010-2-081:2018

ICS:

19.080	Električno in elektronsko preskušanje	Electrical and electronic testing
71.040.10	Kemijski laboratoriji. Laboratorijska oprema	Chemical laboratories. Laboratory equipment

oSIST prEN 61010-2-081:2018

en,fr,de



66/652/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER:

IEC 61010-2-081 ED3

DATE OF CIRCULATION:

2018-01-12

CLOSING DATE FOR VOTING:

2018-04-06

SUPERSEDES DOCUMENTS:

66/635A/RR

IEC TC 66 : SAFETY OF MEASURING, CONTROL AND LABORATORY EQUIPMENT	
SECRETARIAT: United Kingdom	SECRETARY: Mr David Hyde
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: <input type="checkbox"/> EMC <input type="checkbox"/> ENVIRONMENT <input type="checkbox"/> QUALITY ASSURANCE <input type="checkbox"/> SAFETY	
<input checked="" type="checkbox"/> SUBMITTED FOR CENELEC PARALLEL VOTING Attention IEC-CENELEC parallel voting The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.	<input type="checkbox"/> NOT SUBMITTED FOR CENELEC PARALLEL VOTING

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

TITLE:

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

PROPOSED STABILITY DATE: 2022

NOTE FROM TC/SC OFFICERS:

After the decision not to withdraw the publication it will be revised to incorporate the changes brought about by the Amendment 1 to IEC 61010-1. The task is only to align IEC 61010-2-081:2015 with IEC 61010-1:2010 and its amendment 1:2016. A revision this soon is justified by the large number of significant changes introduced by this amendment 1. With this revision IEC 61010-2-081 will be in line with the latest requirements of IEC 61010-1 + A1. Establishment of a new edition is for better readability instead of amending edition 2.

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN IEC 61010-2-081:2020

<https://standards.iteh.ai/catalog/standards/sist/2909f526-b202-49f2-a64b-ed9991df0ceb/sist-en-iec-61010-2-081-2020>

CONTENTS

1		
2	FOREWORD.....	4
3	1 Scope and object.....	7
4	2 Normative references	8
5	3 Terms and definitions	8
6	4 Tests	8
7	5 Marking and documentation	8
8	6 Protection against electric shock	10
9	7 Protection against mechanical HAZARDS	10
10	8 Resistance to mechanical stresses	10
11	9 Protection against the spread of fire	10
12	10 Equipment temperature limits and resistance to heat	11
13	11 Protection against hazards from fluids	11
14	12 Protection against radiation, including laser sources, and against sonic and	
15	ultrasonic pressure	11
16	13 Protection against liberated gases and substances, explosion and implosion	11
17	14 Components and subassemblies	11
18	15 Protection by interlocks	11
19	16 HAZARDS resulting from application	12
20	17 RISK assessment	12
21	Annexes	12
22	Bibliography.....	12
23		
24	Table 1 – Symbols	8
25		
26		

SIST EN IEC 61010-2-081:2020

standards.iteh.ai/catalog/standards/sist/2909f526-b202-49f2-a64b-ed9991df0ceb/sist-en-iec-61010-2-081-2020

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

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.
- 2) The formal decisions or agreements of 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 IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 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 61010-2-081 has been prepared by IEC technical committee 66: Safety of measuring, control and laboratory equipment.

It has the status of a group safety publication in accordance with IEC Guide 104.

This third edition cancels and replaces the second edition published in 2015 . It constitutes a technical revision and includes the following significant changes from the second edition, as well as a few editorial changes:

- adaptation of changes introduced by Amendment 1 of IEC 61010-1;
- added tolerance for stability of a.c. voltage test equipment to Clause 6.

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

FDIS	Report on voting
------	------------------

66/xxx/FDIS	66/xxx/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 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*, may be found on the IEC website.

This Part 2-081 is intended to be used in conjunction with IEC 61010-1. It was established on the basis of the third edition (2010) and its Amendment 1 (2016). This Part 2-081 supplements or modifies the corresponding clauses in IEC 61010-1 so as to convert that publication into the IEC standard: *Safety requirements for automatic and semi-automatic laboratory equipment for analysis and other purposes*.

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 this standard:

1) the following print types are used:

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

2) subclauses, figures, tables and notes which are additional to those in part 1 are numbered starting from 101. Additional annexes are lettered starting from AA.

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

- 109 • reconfirmed,
- 110 • withdrawn,
- 111 • replaced by a revised edition, or
- 112 • amended.

113

114

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN IEC 61010-2-081:2020

<https://standards.iteh.ai/catalog/standards/sist/2909f526-b202-49f2-a64b-ed9991df0ceb/sist-en-iec-61010-2-081-2020>

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

1 Scope and object

This clause of part 1 is applicable except as follows:

1.1.1 Equipment included in scope

Replacement:

Replace the text by the following:

This part of IEC 61010 applies to automatic and semi-automatic laboratory equipment for analysis and other purposes.

Automatic and semi-automatic laboratory equipment consists of instruments or systems for measuring or modifying one or more characteristics or parameters of samples, performing the complete process or parts of the process without manual intervention. Equipment forming part of such a system is within the scope of this standard.

Examples of equipment within the scope of this standard include:

- analytical equipment;
- automatic sampler (pipettor, aliquoter);
- equipment for sample replication and amplification.

NOTE 1 In the case of analytical equipment the complete process usually includes the following steps:

- taking a specific quantity of the sample;
- preparing the sample by chemical, thermal, mechanical or other means;
- measurement;
- display, transmission or printing of the results of measurement.

NOTE 2 If all or part of the equipment falls within the scope of one or more other part 2 standards of IEC 61010 as well as within the scope of this standard, considerations have to be given to those other part 2 standards.

1.1.2 Equipment excluded from scope

Addition:

Add the following item:

- aa) IEC 61010-2-101 (IVD Equipment)

1.2 Object

1.2.1 Aspects included in scope

Addition:

Add the following items:

- aa) biohazards;

bb) hazardous chemical substances.

1.2.2 Aspects excluded from scope

Addition:

Add the following item and note:

aa) handling or manipulation of material outside the equipment.

NOTE Requirements covering these subjects are the responsibility of committees preparing the relevant standards.

2 Normative references

This clause of Part 1 is applicable except as follows:

Addition:

Add the following references to the list:

IEC 62061, *Safety of machinery – Functional safety of safety-related electrical, electronic and programmable electronic control systems*

ISO 13849 (all parts), *Safety of machinery – Safety-related parts of control systems*

3 Terms and definitions

This clause of Part 1 is applicable.

4 Tests

This clause of Part 1 is applicable.


5 Marking and documentation

This clause of Part 1 is applicable except as follows:

Table 1 – Symbols

Additions:

Add the following symbol to Table 1:

Number	Symbol	Publication	Description
101	 <p>Background colour – optional; Symbol colour – optional; Outline / outline colour – optional;</p>	ISO 7000-0659 (2004-01)	Biological risks

Add the following subclause: