SLOVENSKI STANDARD
oSIST prEN 61010-2-061:2018

01-februar-2018

Varnostne zahteve za električno opremo za meritve, nadzor in laboratorijsko uporabo - 2-061. del: Posebne zahteve za laboratorijske atomske spektrometre s termično atomizacijo in ionizacijo

Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-061: Particular requirements for laboratory atomic spectrometers with thermal atomization and ionization

Sicherheitsbestimmungen für elektrische Mess-, Steuer-, Regel- und Laborgeräte - Teil 2 -061: Besondere Anforderungen an Labor-Atomspektrometer mit thermischer Atomisierung und Ionisation

Règles de sécurité pour appareils électriques de mesurage, de régulation et de laboratoire - Partie 2-061: Exigences particulières pour spectromètres atomiques de laboratoire avec vaporisation et ionisation thermiques

Ta slovenski standard je istoveten z: **prEN 61010-2-061:2017**

ICS:

19.080	Električno in elektronsko preskušanje	Electrical and electronic testing
71.040.20	Laboratorijska posoda in aparati	Laboratory ware and related apparatus

oSIST prEN 61010-2-061:2018 **en,fr,de**

66/643/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER:	
IEC 61010-2-061 ED4	
DATE OF CIRCULATION:	CLOSING DATE FOR VOTING:
2017-12-01	**2018-02-23**
SUPERSEDES DOCUMENTS:	
66/628A/RR	

IEC TC 66 : SAFETY OF MEASURING, CONTROL AND LABORATORY EQUIPMENT

SECRETARIAT:	SECRETARY:
United Kingdom	Mr David Hyde
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: ☐
	Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.

FUNCTIONS CONCERNED:

☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☐ SAFETY

☒ SUBMITTED FOR CENELEC PARALLEL VOTING ☐ NOT 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.

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 2-061: Particular requirements for laboratory atomic spectrometers with thermal atomization and ionization

NOTE FROM TC/SC OFFICERS:

This CDV is intended only to align IEC 61010-2-061:2015 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 61010-2-061 will be in line with the latest requirements of IEC 61010-1 + A1.

This document contains no technical changes to already accepted base documents (IEC 61010-1:2010 and its amendment 1:2016 and IEC 61010-2-061:2015) but two; Clause 6.8.3.1 is modified because otherwise it would need a specific European deviation in order to be harmonised to the LVD 2014/35/EU (ref. NAC assessment of IEC 61010-1/A1) and in 15.1 an alternative way to determine the requirements for interlocks is added. Further technical development is reserved for a new amendment or edition to be initiated separately as necessary.

This alignment is realised as a new 4th edition of IEC 61010-2-061 simply because of document control; the previous edition 3.0 is based on the third edition of IEC 61010-1:2010 (without the Amendment 1:2016) and amending it to incorporate the contents of IEC 61010-1 Amendment 1 would need an unnecessary repeating of the requirements in that amendment 1 that are not particular for the equipment in the scope of IEC 61010-2-061. Furthermore, technically, one would need to follow 4 documents in parallel to get the full text of this part 2 (61010-1:2010, 61010-1 A1:2016, 61010-2-061:2015, and 61010-2-061 A1).With this approach, and when the consolidated version of IEC 61010-1:2010/A1:2016 conveniently is published, only two documents are needed.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 2-061: Particular requirements for laboratory atomic spectrometers with thermal atomization and ionization

FOREWORD

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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 61010-2-061 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~~ fourth edition cancels and replaces the ~~second~~ third edition published in 2015~~03~~. It constitutes a technical revision and includes the following changes from the ~~second~~ third edition:

- adaptation of changes introduced by Amendment 1 of IEC 61010-1;
- added tolerance for stability of a.c. voltage test equipment to Clause 6;
- added requirement for interlock systems containing electric/electronic or programmable components to Clause 15;

- editorial changes.

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 2-061 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 2-061 supplements or modifies the corresponding clauses in IEC 61010-1 so as to convert that publication into the IEC standard: *Safety requirements for laboratory atomic spectrometers with thermal atomization and ionization.*

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" or "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 small 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. The additional annexes are lettered starting from AA.

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 2-061: Particular requirements for laboratory atomic spectrometers with thermal atomization and ionization

1 Scope and object

This clause of Part 1 is applicable except as follows:

1.1 Scope

1.1.1 Equipment included in scope

Replacement:

Replace the text by the following:

This part of IEC 61010 applies to electrically powered laboratory atomic spectrometers with thermal atomization.

NOTE 1 Examples include atomic absorption spectrometers, emission flame photometers, atomic fluorescence spectrophotometers, inductively coupled plasma spectrometers, microwave coupled plasma spectrometers and mass spectrometers, all with thermal atomization and ionization (including tubing and connectors which are provided by the manufacturer for connection to external supplies).

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, consideration is to be given to those other part 2 standards.

1.1.2 Equipment excluded from scope

Addition:

Add as the first paragraph:

This standard does not apply to thermal atomization detectors (flame ionization detectors) used in gas chromatography.

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 except as follows:

Additions:

Add the following definitions:

3.2.101
SPRAY CHAMBER
chamber in which droplets of sample in aerosol are allowed to separate so that the droplets of necessary size can be passed onward to the burner, with the remainder draining to waste

3.2.102
GAS LOCK
device to allow drainage of waste sample liquid, and to prevent unintentional escape of gas from the SPRAY CHAMBER through its drain outlet

Note 1 to entry: See for example Figure 101.

3.5.101
FLASH-BACK
event during which the flame travels back through the burner with the result that the gas in the mixing chamber is caused to ignite.

4 Tests

This clause of Part 1 is applicable except as follows:

Addition:

Add the following subclauses:

4.4.2.101 Sampling probe tip

Any system designed to withdraw a sampling probe tip after sampling has been completed shall be overridden, so as to leave the tip in its most exposed position when a sample vessel is removed.

Exceptions:

The withdrawal system need not be overridden if the sampling probe:

a) cannot cause a HAZARD to the OPERATOR when it is exposed;

b) is designed in such a manner that no SINGLE FAULT CONDITION can cause the tip to remain exposed after sampling has been completed.

4.4.2.102 Failure, or partial failure, of the MAINS supply

The voltage of the power supply to the equipment from the MAINS supply shall first be reduced to just less than 90 % of the RATED voltage, and shall then be switched off.

5 Marking and documentation

This clause of Part 1 is applicable except as follows:

Addition:

Add the following subclause:

5.1.5.101 Gas and liquid connections

The following shall be unambiguously marked adjacent to the connector on the equipment (see 5.2):

a) the identity of the gas or liquid;

b) the maximum permitted pressure,

c) flow direction of the gas and liquid, if applicable.

NOTE Such markings may be specific (for example acetylene, propane, water) or generic (for example fuel gas, oxidant gas, coolant, waste liquid).

Where no internationally recognized symbol (such as a chemical formula) exists, the equipment shall be marked with symbol 14 of Table 1 together with an unambiguous text in English. The documentation accompanying the equipment shall provide an adequate translation of this text (where it is required) in the language of the country in which it is to be installed, to assure that the installer or OPERATOR is able to connect the equipment correctly.

Conformity is checked by inspection.

5.2 Warning markings

Addition:

Add the following paragraph before the conformity statement:

Where hot gases or plasma emerge from equipment, the protective structure provided (for example a chimney, see 10.1), shall be clearly marked by symbol 13 of Table 1, to indicate where excessively hot temperatures may exist.

5.4.3 Equipment installation

Addition:

Add before the first paragraph the following new paragraph:

The documentation shall state that the RESPONSIBLE BODY shall ensure that the type of connector used at the outlet side of the gas-pressure regulator conforms to applicable national requirements;

Deletion:

Delete item f).

Addition:

Add, after item g) and before the note, the following new items:

aa) requirements for liquid connection;

bb) requirements for a fume extraction system to remove exhaust gases which may be hazardous. In the case of equipment using only a propane flame in a ventilated room, and when it is known that samples will not leave any hazardous residues, it is not necessary to provide an extraction system, since the exhaust gases from a propane flame will themselves not present any hazard.