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REDLINE VERSION

colour inside

GROUP SAFETY PUBLICATION

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

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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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.
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This Redline version provides you with a quick and easy way to compare all the changes between this standard and its previous edition. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

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. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- adaptation of changes introduced by Amendment 1 of IEC 61010-1:2010;
- added tolerance for stability of AC voltage test equipment to Clause 6.

The text of this International Standard is based on the following documents:

CDV	Report on voting
66/652/CDV	66/671A/RVC

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

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

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

This Part 2-081 is 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), hereinafter referred to as Part 1.

This Part 2-081 supplements or modifies the corresponding clauses in IEC 61010-1 so as to convert that publication into the IEC standard: *Particular 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 2-081, that subclause applies as far as is reasonable. Where this Part 2-081 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;*
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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 and additional list items are lettered from aa).

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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, except the first paragraph, by the following new text:

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 document.

Examples of equipment within the scope of this document 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 documents of IEC 61010 as well as within the scope of this document, considerations ~~have to be~~ is given to those other Part 2 documents.

1.1.2 Equipment excluded from scope

Addition:

Add the following new item:

aa) IEC 61010-2-101 (in vitro diagnostic (IVD) equipment).

1.2 Object

1.2.1 Aspects included in scope

Addition:

Add the following new items:

aa) biohazards;

bb) hazardous chemical substances.

1.2.2 Aspects excluded from scope

Addition:

Add the following new 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.

IEC 61010-2-081

Edition 3.0 2019-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE

GROUP SAFETY PUBLICATION
PUBLICATION GROUPÉE DE SÉCURITÉ

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

Exigences 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 à d'autres usages

IEC 61010-2-081:2019-02(en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

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

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- 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 documents of IEC 61010 as well as within the scope of this document, consideration is given to those other Part 2 documents.

1.1.2 Equipment excluded from scope

Addition:

Add the following new item:

aa) IEC 61010-2-101 (in vitro diagnostic (IVD) equipment).

1.2 Object

1.2.1 Aspects included in scope

Addition:

Add the following new items:

aa) biohazards;

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2 Normative references

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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EXIGENCES 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 à d'autres usages

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La Norme internationale IEC 61010-2-081 a été établie par le comité d'études 66 de l'IEC: Sécurité des appareils de mesure, de commande et de laboratoire.

Elle a le statut d'une publication groupée de sécurité conformément au Guide IEC 104.

Cette troisième édition annule et remplace la deuxième édition parue en 2015. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

- adaptation des modifications introduites par l'Amendement 1 de l'IEC 61010-1:2010;
- ajout de la tolérance de stabilité pour les appareils d'essai de tension en courant alternatif à l'Article 6.

Le texte de cette Norme internationale est issu des documents suivants:

CDV	Rapport de vote
66/652/CDV	66/671A/RVC

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cette Norme internationale.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2.

Une liste de toutes les parties de la série IEC 61010, publiées sous le titre général *Exigences de sécurité pour appareils électriques de mesurage, de régulation et de laboratoire*, peut être consultée sur le site web de l'IEC.

La présente Partie 2-081 doit être utilisée conjointement avec l'IEC 61010-1. Elle a été établie sur la base de la troisième édition (2010) et de son Amendement 1 (2016), ci-après dénommée la Partie 1.

La présente Partie 2-081 complète ou modifie les articles correspondants de l'IEC 61010-1 de façon à la transformer en norme IEC: *Exigences particulières pour les appareils de laboratoire, automatiques et semi-automatiques, destinés à l'analyse et à d'autres usages.*

Lorsqu'un paragraphe particulier de la Partie 1 n'est pas mentionné dans cette Partie 2, ce paragraphe s'applique pour autant qu'il est raisonnable. Lorsque cette partie spécifie "addition", "modification", "remplacement", ou "suppression", il convient d'adapter l'exigence, la modalité d'essai ou la note correspondante de la Partie 1 en conséquence.

Dans la présente norme:

1) les caractères d'imprimerie suivants sont employés:
   - exigences: caractères romains;
   - NOTES: petits caractères romains;
   - *conformité et essai: caractères italiques;*
   - termes définis à l'Article 3 et utilisés dans cette norme: PETITES CAPITALES EN CARACTERES ROMAINS.
2) les paragraphes, figures, tableaux et notes qui viennent en supplément de ceux de la Partie 1 sont numérotés à partir de 101. Les annexes supplémentaires sont désignées par des lettres à partir de AA et les listes supplémentaires à partir de aa).

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- amendé.

EXIGENCES 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 à d'autres usages

1 Domaine d'application et objet

L'article de la Partie 1 est applicable à l'exception de ce qui suit:

1.1.1 Appareils inclus dans le domaine d'application

Remplacement:

Remplacer le texte, excepté le premier alinéa, par le nouveau texte suivant:

La présente partie de l'IEC 61010 s'applique aux appareils de laboratoire, automatiques et semi-automatiques, destinés à l'analyse et à d'autres usages.

Les appareils de laboratoire automatiques et semi-automatiques comprennent les instruments ou systèmes utilisés pour mesurer ou modifier un ou plusieurs paramètres ou caractéristiques d'échantillons, réalisant tout ou partie du processus sans intervention manuelle. Les appareils faisant partie d'un tel système sont couverts par le domaine d'application du présent document.

Exemples d'appareils entrant dans le domaine d'application du présent document:

- appareils réalisant des analyses;
- échantillonneurs automatiques (pipeteur, aliquoteur);
- appareils réalisant la réplication ou l'amplification d'échantillon.

NOTE 1 En ce qui concerne les appareils réalisant des analyses, le processus complet comprend habituellement les phases suivantes:

- prélèvement d'une quantité déterminée de l'échantillon;
- préparation de l'échantillon par des moyens chimiques, thermiques, mécaniques ou autres;
- mesurage;
- affichage, transmission ou impression des résultats de mesure.

NOTE 2 Si l'appareil dans sa totalité ou certains de ses sous-ensembles relèvent du domaine d'application d'une ou de plusieurs autres Parties 2 de l'IEC 61010 ainsi que du domaine d'application du présent document, ces autres Parties 2 sont également prises en considération.

1.1.2 Appareils exclus du domaine d'application

Addition:

Ajouter le nouveau point suivant:

aa) IEC 61010-2-101 (appareils de diagnostic in vitro, DIV).

1.2 Objet

1.2.1 Aspects inclus dans le domaine d'application

Addition:

Ajouter les nouveaux points suivants:

aa) dangers biologiques;

bb) substances chimiques dangereuses.

1.2.2 Aspects exclus du domaine d'application

Addition:

Ajouter le nouveau point et la nouvelle note ci-dessous:

aa) la manutention ou la manipulation de substances en dehors de l'appareil.

NOTE Les exigences applicables à ces sujets sont de la responsabilité des comités établissant les normes appropriées.

2 Références normatives

L'article de la Partie 1 est applicable.