

STN	Bezpečnostné požiadavky na elektrické zariadenia na meranie, riadenie a laboratórne použitie Časť 2-130: Osobitné požiadavky na vybavenie vzdelávacích zariadení určených na používanie deťmi	STN EN IEC 61010-2-130 36 2000
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Safety requirements for electrical equipment for measurement, control, and laboratory use - Particular requirements for equipment intended to be used in educational establishments by children

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 07/21

Obsahuje: EN IEC 61010-2-130:2021, IEC 61010-2-130:2021

133244

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN IEC 61010-2-130

May 2021

ICS 19.080

English Version

**Safety requirements for electrical equipment for measurement,
control, and laboratory use - Particular requirements for
equipment intended to be used in educational establishments by
children
(IEC 61010-2-130:2021)**

Exigences de sécurité pour appareils électriques de
mesurage, de régulation et de laboratoire - Partie 2-130:
Exigences particulières pour appareils destinés à une
utilisation dans les établissements scolaires par des enfants
(IEC 61010-2-130:2021)

Sicherheitsbestimmungen für elektrische Mess-, Steuer-,
Regel- und Laborgeräte - Teil 2-130: Besondere
Anforderungen an Geräte, die für den Gebrauch in
Bildungseinrichtungen durch Kinder vorgesehen sind
(IEC 61010-2-130:2021)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN IEC 61010-2-130:2021 (E)**European foreword**

The text of document 66/724/FDIS, future edition 1 of IEC 61010-2-130, prepared by IEC/TC 66 "Safety of measuring, control and laboratory equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61010-2-130:2021.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2022-01-27 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2024-04-27 document have to be withdrawn

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

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

Endorsement notice

The text of the International Standard IEC 61010-2-130:2021 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60086-1	NOTE	Harmonized as EN 60086-1
IEC 61010-031	NOTE	Harmonized as EN 61010-031
IEC 61439-1	NOTE	Harmonized as EN 61439-1
IEC 62368-1	NOTE	Harmonized as EN IEC 62368-1
ISO 13857:2019	NOTE	Harmonized as EN ISO 13857:2019 (not modified)

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Annex ZA of EN 61010-1:2010/A1:2019 is applicable with the following changes:

Delete the following:

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61010-031	2002	Safety requirements for electrical equipment for measurement, control and laboratory use – Part 031: Safety requirements for hand-held probe assemblies for electrical measurement and test	EN 61010-031	2002
+ A1	2008		+ A1	2008

Annex ZZ (informative)

Relationship between this European standard and the safety objectives of Directive 2014/35/EU [2014 OJ L96] aimed to be covered

This European standard has been prepared under a Commission's standardization request relating to harmonized standards in the field of the Low Voltage Directive, M/511, to provide one voluntary means of conforming to safety objectives of Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits [2014 OJ L96].

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZZ.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding safety objectives of that Directive, and associated EFTA regulations.

Table ZZ.1 — Correspondence between this European standard and Annex I of Directive 2014/35/EU [2014 OJ L96]

Safety objectives of Directive 2014/35/EU (Annex I)	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
1. General conditions		
1 (a) the essential characteristics, the recognition and observance of which will ensure that electrical equipment will be used safely and in applications for which it was made, shall be marked on the electrical equipment, or, if this is not possible, on an accompanying document	5.1 5.2 5.3 5.4	
1 (b) the electrical equipment, together with its component parts, shall be made in such a way as to ensure that it can be safely and properly assembled and connected	5.4 6.6 6.10 6.11 Annex F	
1 (c) the electrical equipment shall be so designed and manufactured as to ensure that protection against the hazards set out in points 2 and 3 is assured, providing that the equipment is used in applications for which it was made and is adequately maintained	5.4 Annex F 17 (for hazards not covered by clauses 6-16) See also the details in points 2 and 3	
2. Protection against hazards arising from the electrical equipment		
Measures of a technical nature shall be laid down in accordance with point 1, in order to ensure that:		

Safety objectives of Directive 2014/35/EU (Annex I)	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
2 (a) persons and domestic animals are adequately protected against the danger of physical injury or other harm which might be caused by direct or indirect contact	4, 6.1 – 6.11, 9.6, 11.6, 14.4 Annex D Annex F, Annex K	
2 (b) temperatures, arcs or radiation which would cause a danger, are not produced	4, 4.4.4.2, 6.3.1.b) 2), 6.3.2 b) 2), 9.5, 9.6, 10.1 – 10.5, 12	
2 (c) persons, domestic animals and property are adequately protected against non-electrical dangers caused by the electrical equipment which are revealed by experience	4, 4.4, 7.2- 7.7, 9, 12.3, 12.5, 12.6, 13.1, 13.2, 16.2	
2 (d) the insulation is suitable for foreseeable conditions	4, 6.7, Annex K	
3. Protection against hazards which may be caused by external influences on the electrical equipment Technical measures shall be laid down in accordance with point 1, in order to ensure that the electrical equipment:		
3 (a) meets the expected mechanical requirements in such a way that persons, domestic animals and property are not endangered	4, 7, 8	
3 (b) is resistant to non-mechanical influences in expected environmental conditions, in such a way that persons, domestic animals and property are not endangered	1.4, 4, 6.7.2.2.1, 10.5, 11.6, 14.3, 14.8, 14.101, 15	
3 (c) does not endanger persons, domestic animals and property in foreseeable conditions of overload	4, 9, 14, 16.1	

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.



IEC 61010-2-130

Edition 1.0 2021-03

INTERNATIONAL STANDARD

NORME INTERNATIONALE

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

Part 2-130: Particular requirements for equipment intended to be used in educational establishments by children

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

Partie 2-130: Exigences particulières pour appareils destinés à une utilisation dans les établissements scolaires par des enfants:

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IEC 61010-2-130

Edition 1.0 2021-03

INTERNATIONAL STANDARD

NORME INTERNATIONALE

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Part 2-130: Particular requirements for equipment intended to be used in educational establishments by children

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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 19.080

ISBN 978-2-8322-9492-5

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SAFETY REQUIREMENTS FOR ELECTRICAL EQUIPMENT
FOR MEASUREMENT, CONTROL, AND LABORATORY USE –****Part 2-130: Particular requirements for equipment intended
to be used in educational establishments by children**

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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International Standard IEC 61010-2-130 has been prepared by IEC Technical Committee 66: Safety of measuring, control and laboratory equipment.

This first edition cancels and replaces IEC TS 62850, published in 2013.

This edition includes the following significant technical changes with respect to IEC TS 62850:

- a) marking and documentation requirements;
- b) stability and handling requirements.

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

FDIS	Report on voting
66/724/FDIS	66/726/RVD

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 and taking into account ISO/IEC Guide 50:2014.

A list of all parts in 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 document is to be used in conjunction with IEC 61010-1. It was established based on the third edition (2010) of IEC 61010-1, including its Amendment 1 (2016) hereinafter referred to as Part 1.

This document supplements or modifies the corresponding clauses in IEC 61010-1 to convert that publication into the IEC standard: *Particular requirements for equipment intended to be used in educational establishments by children*.

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

In this standard, the following print types are used:

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

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).

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

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

INTRODUCTION

This document specifies particular safety requirements for equipment and accessories intended to be used in educational establishment by PUPIL OPERATORS. PUPIL OPERATORS are for the sake of this document, children between the ages of 3 years and 16 years operating electrical equipment under supervision of a RESPONSIBLE BODY.

Equipment and accessories are considered intended for use in educational establishments, when it is either explicitly stated in accompanying documentation, or where sales and marketing materials indicate such intended use. This does not limit the use of other equipment for use in educational establishments, however equipment and accessories not evaluated to the requirements of this document may need additional precautions and attestation when used by PUPIL OPERATORS.

Readily predictable behaviour of PUPIL OPERATORS can include poking objects and materials associated with equipment and accessories, which poses additional challenges for determination of reasonably foreseeable misuse. Consequently, more stringent criteria for access to potentially hazardous parts are required for educational establishment equipment than for general laboratory use.

Moreover, the maximum temperatures of parts that may be touched by children should be lower than for equipment handled only by adults. Ergonomic considerations and mechanical risks need to be addressed with regard to the anthropomorphic dimensions of children instead of adults.

This document includes the following significant changes with respect to Part 1, as well as other changes:

- a) a marking is added to indicate to the RESPONSIBLE BODY that the equipment is intended to be used by PUPIL OPERATORS under supervision;
- b) accessibility requirements are enhanced to take into account the propensity of children to insert foreign objects wherever they can;
- c) temperature limits have been decreased to take into account the greater sensitivity of a child's skin;
- d) mechanical access dimensions have been reduced to take into account the smaller dimensions of a child's body;
- e) limits for non-collimated optical radiation have been introduced;
- f) limits for ionizing radiation have been reduced;
- g) small detachable parts below certain dimensions have been prohibited;
- h) manufacturers are required to consider the general unpredictability of the behaviour of PUPIL OPERATORS.

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

Part 2-130: Particular requirements for equipment intended to be used in educational establishments by children

1 Scope and object

This clause of Part 1 is applicable except as follows:

1.1.1 Equipment included in scope

Deletion: Delete paragraph 1.

Replacement:

Replace the second paragraph immediately before the lettered list, with the following:

This part of IEC 61010 specifies particular safety requirements for the following types of equipment a), b) or c) and their accessories intended to be used in educational establishments by children under the supervision of the RESPONSIBLE BODY. It specifies general safety requirements for equipment intended to be used in educational establishments by persons between the age of 3 years and the age of 16 years under the supervision of a RESPONSIBLE BODY.

Children are considered as persons between the age of 3 years and 16 years.

It is recognized that pupils with additional educational or physical support needs may have needs beyond the level addressed in this document (see Clause 17 risk assessment).

NOTE 1 The term "children" used in this document does not match the definitions found in ISO/IEC Guide 50 and other documents.

It is possible that all or part of the equipment falls within the scope of one or more IEC 61010 Part 2 standards as well as within the scope of this document. In that case the requirements of those other Part 2 standards apply.

NOTE 2 In some countries, age limits can be different from those used in this document or can be replaced by capability requirements.

Renumber the existing NOTE 1 and NOTE 2 as NOTE 3 and NOTE 4.

1.1.3 Computing equipment

Renumber NOTE as NOTE 1.

Addition:

Add the following note after the existing note.

NOTE 2 General information technology equipment such as projector, tablet PC, monitor, electronic whiteboard, power supplies, etc. used by children in an educational establishment are excluded from the scope unless those are specifically designed for the type of equipment covered under the scope of IEC 61010-1 or any of its Part 2 standards.

1.2.1 Aspects included in scope

Replace the existing note by the following notes:

NOTE 1 Attention is drawn to the additional requirements that can be specified by national authorities responsible for health and safety in education. In particular, there can be limitations on the use of radioactive materials, X-ray and laser equipment and hazardous substances.

NOTE 2 Attention is also drawn to the existence of additional requirements that can be specified by national authorities responsible for the health and safety of children in education with special needs.

2 Normative references

This clause of Part 1 is applicable except as follows:

Delete:

IEC 61010-031, *Safety requirements for electrical equipment for measurement, control and laboratory use – Part 031: Safety requirements for hand-held probe assemblies for electrical measurement and test*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN