

TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

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

General requirements for equipment intended to be used in educational establishments by children

[IEC TS 62850:2013](#)

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

Règles générales pour appareils destinés à une utilisation dans les établissements scolaires par des enfants



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

General requirements for equipment intended to be used in educational establishments by children

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IEC/TS 62850, which is a technical specification, has been prepared by technical committee 66: Safety of measuring, control and laboratory equipment.

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

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INTRODUCTION

Based on a TC 66 decision at the plenary meeting held in Everett on 2010-09-03, it was agreed that as an interim solution this document is to be published as a Technical Specification. This document publishes provisions pertaining to the use of this equipment by children in educational establishments which, if the provisions prove useful, are intended to be integrated into a future edition of IEC 61010-1. This publication will be reviewed in accordance with the rules of Part 1 of the ISO/IEC Directives where it is stated that a Technical Specification has to be reviewed within 3 years of its publication with the options of extension for another 3 years; conversion to an International Standard; or withdrawal.

This Technical Specification includes the following significant changes with respect to IEC 61010-1:2010, as well as other changes:

- a) a marking is added to indicate the age of CHILDREN by whom the equipment is intended to be used;
- 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 take into account the general unpredictability of the behaviour of CHILDREN.

Electrical equipment dealt with in this Technical Specification is used for teaching CHILDREN under the age of 16 in educational establishments.

CHILDREN are likely to poke objects and materials through apertures into the interior of electrical equipment. Consequently, more stringent criteria for access to HAZARDOUS LIVE conductors are required for educational establishment equipment than for general laboratory use. Moreover, the temperatures of parts that may be touched by CHILDREN should be lower than for equipment that is handled only by adults. Ergonomic considerations and mechanical RISKS need to be addressed with regard to the anthropomorphic dimensions of CHILDREN instead of adults. Requirements for equipment to be used by CHILDREN must also take into account REASONABLY FORESEEABLE MISUSE and the unpredictable behaviour of CHILDREN.

This Technical Specification addresses the safety requirements for equipment within the scope of IEC 61010 to be used by children between the ages of 3 and 16 in educational establishments, when supervised by the RESPONSIBLE BODY.

For certain types of equipment, these requirements will be supplemented or modified by the special requirements of one, or more than one, particular part 2 of the IEC 61010 series which must be read in conjunction with the requirements of this technical specification. In that case this IEC/TS 62850 is to be considered the alternative for IEC 61010-1.

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

General requirements for equipment intended to be used in educational establishments by children

1 Scope and object

1.1 Scope

1.1.1 Equipment included in scope

~~This part of IEC 61010 specifies general safety requirements for the following types of electrical equipment and their accessories, wherever they are intended to be used.~~

This Technical Specification IEC 62850 specifies general safety requirements for the following types of equipment and their accessories 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 the RESPONSIBLE BODY.

If all or part of the equipment falls within the scope of one or more part 2 standards of IEC 61010 as well as within the scope of this technical specification, it will also need to meet the requirements of those other part 2 standards.

NOTE 1 In some countries age limits can be different from those used in this technical specification or can be replaced by capability requirements.

a) Electrical test and measurement equipment

This is equipment which by electromagnetic means tests, measures, indicates or records one or more electrical or physical quantities, also non-measuring equipment such as signal generators, measurement standards, power supplies for laboratory use, transducers, transmitters, etc.

NOTE 2 This includes bench-top power supplies intended to aid a testing or measuring operation on another piece of equipment. Power supplies intended to power equipment are within the scope of IEC 61558 (see 1.1.2 h)).

This Technical Specification also applies to test equipment integrated into manufacturing processes and intended for testing manufactured devices.

NOTE 3 Manufacturing test equipment is likely to be installed adjacent to and interconnected with industrial machinery in this application.

b) Electrical industrial process-control equipment

This is equipment which controls one or more output quantities to specific values, with each value determined by manual setting, by local or remote programming, or by one or more input variables.

c) Electrical laboratory equipment

This is equipment which measures, indicates, monitors, inspects or analyses materials, or is used to prepare materials, and includes in vitro diagnostic (IVD) equipment.

~~This equipment may also be used in areas other than laboratories; examples include self-test IVD equipment to be used in the home and inspection equipment to be used to check people or material during transportation.~~

1.1.2 Equipment excluded from scope

This Technical Specification does not apply to equipment within the scope of: