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# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



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

**Part 2-201: Particular requirements for control equipment**

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

**Partie 2-201: Exigences particulières pour les équipements de commande**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

ICS 17.020; 19.020; 25.040.40

ISBN 978-2-8322-4009-0

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

### Part 2-201: Particular requirements for control equipment

#### FOREWORD

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International Standard IEC 61010-2-201 has been prepared by IEC technical committee 65: Industrial-process measurement, control and automation.

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

FDIS	Report on voting
65/652/FDIS	65/657/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 second edition cancels and replaces the first edition published in 2013. This edition constitutes a technical revision.

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

- a) clarify, change, delete definitions which were causing confusion,
- b) change and clarify the temperature testing methodology,
- c) change documentation methodologies allowed,
- d) change some TERMINAL markings,
- e) add clarity to some of the informative annexes,
- f) add Annex E with changes,
- g) add Annexes AA – FF.

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

This Part 2-201 is intended to be used in conjunction with IEC 61010-1. It was established on the basis of the third edition (2010) of that standard. Consideration may be given to future editions of, or amendments to, IEC 61010-1.

This Part 2-201 supplements or modifies the corresponding clauses in IEC 61010-1 so as to convert that publication into the IEC standard: *Particular requirements for control equipment*.

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, the following print types are used:

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

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.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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.

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## INTRODUCTION

IEC 61010-2-2xx documents are a series of standards on safety of industrial-process measurement, control and automation equipment.

This part specifies the complete safety related requirements and related tests for control equipment (e.g. programmable controller (PLC), the components of distributed control systems (DCS), I/O devices, human machine interface (HMI)).

Safety terms of general use are defined in IEC 61010-1. More specific terms are defined in each part of IEC 61010.

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

## Part 2-201: Particular requirements for control equipment

### 1 Scope and object

This clause of Part 1 is applicable, except as follows.

#### 1.1.1 Equipment included in scope

*Replacement:*

- This part of IEC 61010 specifies safety requirements and related verification tests for any product performing the function of control equipment and/or their associated peripherals. In addition, these products have as their intended use the command and control of machines, automated manufacturing and industrial processes, e.g. discrete and continuous control. Some equipment examples are: programmable logic controller (PLC);
- programmable automation controller (PAC);
- distributed control systems (DCS);
- remote I/O;
- industrial PC (computers) and panel PC;
- programming and debugging tools (PADTs);
- displays and human-machine interfaces (HMI);
- positioners.

Components of the above named equipment and in the scope of this standard are:

- (auxiliary) stand-alone power supplies;
- peripherals such as digital and analogue I/O, remote-I/O;
- industrial network equipment.

Control equipment and their associated peripherals are intended to be used in an industrial environment and may be provided as OPEN or ENCLOSED EQUIPMENT.

NOTE 1 Control equipment intended also for use in other environments or for other purposes (example: for use in building installations to control light or other electrical installations, or for use on cars, trains or ships) can have additional conformity requirements defined by the safety standard(s) for these applications. These requirements can involve as example: insulation, spacings and power restrictions.

NOTE 2 Computing devices and similar equipment within the scope of IEC 60950 (planned to be replaced by IEC 62368) and conforming to its requirements are considered to be suitable for use with control equipment within the scope of this standard. However, some of the requirements of IEC 60950 for resistance to moisture and liquids are less stringent than those in IEC 61010-1:2010, 5.4.4 second paragraph.

Control equipment covered in this standard is intended for use in OVERVOLTAGE CATEGORY II, III and IV (IEC 60664-1) in low-voltage installations, where the RATED equipment supply voltage does not exceed AC 1 000 V r.m.s. (50/60 Hz), or DC 1 000 V.

The requirements of ISO/IEC Guide 51 and IEC Guide 104, as they relate to this part of IEC 61010, are incorporated herein.