UL 61010-2-201:2026

(IEC 61010-2-201:2024, MOD)

STANDARD FOR SAFETY

Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-201: Particular Requirements for Control Equipment

UL Standard for Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-201: Particular Requirements for Control Equipment, UL 61010-2-201

Third Edition, Dated February 6, 2026

Summary of Topics

This Third Edition of ANSI/UL 61010-2-201 dated February 6, 2026 is an Adoption of IEC 61010-2-201, Third edition issued by the IEC October 2024. Please note the National Difference document incorporates all of the U.S. national differences for UL 61010-2-201.

The requirements are substantially in accordance with Proposal(s) on this subject dated December 19, 2025.

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UL 61010-2-201:2026
(IEC 61010-2-201:2024, MOD)

Standard for Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-201: Particular Requirements for Control Equipment

First Edition – January, 2014
Second Edition – May, 2018

Third Edition

February 6, 2026

This ANSI/UL Standard for Safety consists of the Third Edition.

The most recent designation of ANSI/UL 61010-2-201 as an American National Standard (ANSI) occurred on February 6, 2026. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page, or Preface. The National Difference Page and IEC Foreword are also excluded from the ANSI approval of IEC-based standards.

Comments or proposals for revisions on any part of the Standard may be submitted to ULSE at any time. Proposals should be submitted via a Proposal Request in the Collaborative Standards Development System (CSDS) at https://csds.ul.com.

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PREFACE

This UL Standard is based on IEC Publication 61010-2-201: Third edition Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-201: Particular Requirements for Control Equipment. IEC publication 61010-2-201 is copyrighted by the IEC.

This edition has been issued to satisfy UL Standards policy.

This UL Standard 61010-2-201 Standard for Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-201: Particular Requirements for Control Equipment, is to be used in conjunction with the third edition of UL 61010-1. The requirements for control equipment are contained in this Part 2 Standard and UL 61010-1.

Requirements of this Part 2 Standard, where stated, amend the requirements of UL 61010-1.

Where a particular subclause of UL 61010-1 is not mentioned in UL 61010-2-201, the UL 61010-1 subclause applies.

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Note – Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.

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NATIONAL DIFFERENCES

National Differences from the text of International Electrotechnical Commission (IEC) Publication 61010-2-201, Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-201: Particular Requirements for Control Equipment copyright October 2024 are indicated by notations (differences) and are presented in bold text. The national difference type is included in the body.

There are five types of National Differences as noted below. The difference type is noted on the first line of the National Difference in the standard. The standard may not include all types of these National Differences.

DR – These are National Differences based on the **national regulatory requirements**.

D1 – These are National Differences which are based on **basic safety principles and requirements**, elimination of which would compromise safety for consumers and users of products.

D2 – These are National Differences from IEC requirements based on existing **safety practices**. These requirements reflect national safety practices, where empirical substantiation (for the IEC or national requirement) is not available or the text has not been included in the IEC standard.

DC – These are National Differences based on the **component standards** and will not be deleted until a particular component standard is harmonized with the IEC component standard.

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Each national difference contains a description of what the national difference entails. Typically one of the following words is used to explain how the text of the national difference is to be applied to the base IEC text:

Addition / Add - An addition entails adding a complete new numbered clause, subclause, table, figure, or annex. Addition is not meant to include adding select words to the base IEC text.

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Deletion / Delete - A deletion entails complete deletion of an entire numbered clause, subclause, table, figure, or annex without any replacement text.

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FOREWORD

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SAFETY REQUIREMENTS FOR ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL, AND LABORATORY USE – Part 2-201: Particular requirements for control equipment

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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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.

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

This third edition cancels and replaces the second edition published in 2017. This edition constitutes a technical revision.

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

a) 1.1.1: the related equipment included in the Scope has been clarified;

b) 4.3.2.101: the optical fibre module has been deleted;

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c) 5.4.3: equipment installation has been clarified;

d) 6.7.1.1: revision of the figure representing insulation between separate circuits has been included;

e) 6.7.101: the subclause relating to insulation for FIELD WIRING TERMINALS of OVERVOLTAGE CATEGORY II with a nominal voltage up to 1 000 V has been deleted;

f) 6.7.1.101: a new subclause relating to insulation for SELV/PELV CIRCUITS has been included;

g) 6.8.3: specification of voltage tester has been added;

h) 6.9.3: an additional exception relating to colour coding has been included;

i) 6.9.101: a new subclause relating to wiring for secondary circuits e.g. SELV/PELV has been included;

j) 8.2.2.101: additional requirements for glass displays have been included;

k) 8.3: the subclause relating to the drop test has been removed;

l) 9.3.2: additional requirements for material of connectors and insulating material have been included;

m) The particular requirements for non-metallic material have been clarified;

n) Clause 11: the particular requirements for protection against HAZARDS from fluid and solid foreign objects have been removed;

o) 12.4: an additional subclause relating to microwave radiation has been included;

p) 14.102: the description of switching devices has been clarified;

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

Draft	Report on voting
65/1049/FDIS	65/1095/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

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 61010-1:2010, and IEC 61010-1:2010/AMD1:2016.

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This document 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 IEC 61010-1 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 IEC 61010-1 should be adapted accordingly.

In this document,

a) 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 document which have been defined in Clause 3: SMALL ROMAN CAPITALS.

b) subclauses, figures, tables and notes which are additional to those in IEC 61010-1 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 webstore.iec.ch in the data related to the specific document. At this date, the document will be

• reconfirmed,

• withdrawn, or

• revised.

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INTRODUCTION

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

This document 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 relevant part of the IEC 61010 series.

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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

IEC 61010-1:2010, Clause 1 and IEC 61010-1:2010/AMD1:2016, Clause 1 apply, except as follows:

1DV DR *Modification of Clause 1 to replace with the following:*

UL 61010-1 3rd Edition Clause 1 applies, except as follows:

Throughout the Standard replace IEC 61010-1:2010 and IEC 61010-1:2010/AMD1:2016 with UL 61010-1 3rd Edition.

1.1.1 Equipment included in scope

Replacement:

Replace the existing text with the following:

This part of IEC 61010 specifies safety requirements and related verification tests for control equipment or their associated peripherals, or both.

Some equipment examples are:

• programmable logic controller (PLC);

• programmable automation controller (PAC);

• distributed control systems (DCS);

• industrial PC (computers) and panel PC;

• programming and debugging tools (PADTs);

• displays and human-machine interfaces (HMI);

• any product performing the function of control equipment or their associated peripherals, or both;

• positioners; and

• control equipment which have as their intended use the command and control of machines, automated manufacturing and industrial processes, for example discrete and continuous control.

Components of the above named equipment and within the scope of this document are, for example:

• (auxiliary) stand-alone power supplies;

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• peripherals such as digital and analogue I/O,

• remote-I/O;

• industrial network equipment, embedded or stand-alone (e.g. switches, routers, wireless base station).

Control equipment and their associated peripherals are intended to be used in an industrial environment. This document considers equipment designed 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 for example: insulation, spacings and power restrictions.

NOTE 2 Computing devices and similar equipment within the scope of the IEC 60950 series or the IEC 62368 series and conforming to their requirements are considered to be suitable for use with control equipment within the scope of this document. However, some of the requirements of the IEC 60950 series for resistance to moisture and liquids are less stringent, IEC 61010-1:2010, 5.4.4, second paragraph takes this aspect into account.

Control equipment covered in this document is typically intended for use in OVERVOLTAGE CATEGORY II (IEC 60664-1) in low-voltage installations, where the RATED equipment supply voltage does not exceed 1 000 V a.c. RMS (50/60 Hz), or 1 000 V d.c..

Where control equipment is intended for installation to supply systems with OVERVOLTAGE CATEGORY III or IV, additional requirements are identified in Annex K.

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

1.1.2 Equipment excluded from scope

Replacement:

Replace the existing text with the following:

This document does not deal with aspects of the overall automated system, for example a complete assembly line. Control equipment (e.g. DCS and PLC), their application programme and their associated peripherals are considered as components (components in this context are items which perform no useful function by themselves) of an overall automated system.

Since control equipment (e.g. DCS and PLC) are component devices, safety considerations for the overall automated system including installation and application are beyond the scope of this document. Refer to the IEC 60364 series or applicable national and local regulations for electrical installation and guidelines.

1.1.3DV DR *Modification of Clause 1 of the Part 2 to add Clause 1.1.3DV.1 as follows:*

1.1.3DV.1 Control equipment for safety related applications

Control equipment intended to provide a safety related application(s) to protect persons use this Standard only in conjunction with a Functional Safety Standard, following examples:

a) General:

UL 991 and UL 1998; or

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IEC 61508-1; or

ISO 13849-1; or

UL 62745.

b) Associated peripherals:

UL 61496-1, UL 61496-2; or

UL 61800-5-2; or

UL 61800-5-3

NOTE 1 Local and national codes may have additional requirements based on the end products' intended use.

1.2.1 Aspects included in scope

Replace the first sentence with the following:

The purpose of the requirements of this document is to ensure that all HAZARDs to the OPERATOR, SERVICE PERSONNEL and the surrounding area are reduced to a tolerable level.

NOTE By using the terms "OPERATOR" and "SERVICE PERSONNEL" this document considers the perception of HAZARDS depending on training and skills. Annex AA provides a general approach in this regard.

1.2.2 Aspects excluded from scope

Replacement:

Replace the existing text with the following:

This document does not cover:

a) reliability, functionality, performance, or other properties of the control equipment not related to safety;

b) mechanical or climatic requirements for operation, transport or storage;

c) EMC requirements (see e.g. the IEC 61326 series or IEC 61131-2);

d) protective measures for explosive atmospheres (see e.g. the IEC 60079 series);

e) functional safety (see e.g. the IEC 61508 series, IEC 61131-6).

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2 Normative references

IEC 61010-1:2010, Clause 2 and IEC 61010-1:2010/AMD1:2016, Clause 2 apply, except as follows:

Addition:

Add the following new references:

IEC 60384-14, *Fixed capacitors for use in electronic equipment – Part 14: Sectional specification – Fixed capacitors for electromagnetic interference suppression and connection to the supply mains*

IEC 60695-2-11, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end products (GWEPT)*

IEC 60695-11-3, *Fire hazard testing – Part 11-3: Test flames – 500 W flames – Apparatus and confirmational test methods*

IEC 60695-11-20, *Fire hazard testing – Part 11-20: Test flames – 500 W flame test method*

IEC 60947-4-1, *Low-voltage switchgear and controlgear – Part 4-1: Contactors and motorstarters – Electromechanical contactors and motor-starters*

IEC 60947-4-2, *Low-voltage switchgear and controlgear – Part 4-2: Contactors and motorstarters – Semiconductor motor controllers, starters and soft-starters*

IEC 60947-5-1:2016, *Low-voltage switchgear and controlgear – Part 5-1: Control circuit devices and switching elements – Electromechanical control circuit devices*

IEC 61010-1:2010, *Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements*
IEC 61010-1:2010/AMD1:2016

IEC 61010-2-030, *Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 2-030: Particular requirements for equipment having testing or measuring circuits*

IEC 61810-1:2015, *Electromechanical elementary relays – Part 1: General and safety requirements*

3 Terms and definitions

IEC 61010-1:2010, Clause 3 applies, except as follows:

3.1.3

PORTABLE EQUIPMENT
Modification:

Replace the definition with the following:
equipment intended to be carried by hand and not fixed during NORMAL USE

3.2.3
PROTECTIVE CONDUCTOR TERMINAL
Modification:

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