

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Industrial-process measurement and control – Programmable controllers –  
Part 2: Equipment requirements and tests**

**Mesurage et contrôle des processus industriels – Automates programmables –  
Partie 2: Exigences et essais des équipements**



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**INDUSTRIAL-PROCESS MEASUREMENT AND CONTROL –  
PROGRAMMABLE CONTROLLERS –****Part 2: Equipment requirements and tests**

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International Standard IEC 61131-2 has been prepared by subcommittee 65B: Measurement and control devices, of IEC technical committee 65: Industrial-process measurement, control and automation.

This fourth edition cancels and replaces the third edition published in 2007. This edition constitutes a technical revision.

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

- a) removal of safety requirements and instead pointing to IEC 61010-2-201;
- b) addition of negative logic digital inputs and outputs;
- c) addition of Type 3-d digital input;
- d) addition of 2,7 GHz to 6 GHz requirement for Radio-frequency electro-magnetic amplitude modulated immunity;

- e) clarification of temperature testing;
- f) clarification of type testing;
- g) deprecation of certain technologies;
- h) general update of multiple aspects of functionality and EMC;
- i) reorganization of clauses to associate requirements and verifications more closely.

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

FDIS	Report on voting
65B/1083/FDIS	65B/1091/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.

A list of all parts in the IEC 61131 series, published under the general title *Industrial-process measurement and control – Programmable controllers*, can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

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

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- withdrawn,
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## INTRODUCTION

IEC 61131-2 is part of a series of standards on industrial control equipment, including programmable controllers, and their associated peripherals and should be read in conjunction with the other parts of the series. However, it can be read and applied alone.

Where a conflict exists between this and other IEC standards, the provisions of this standard should be considered to govern in the area of industrial control equipment, including programmable controllers, and their associated peripherals.

This standard defines for industrial control equipment the following:

- Testing and verifications methods (Clause 4);
- Operating conditions (5.2);
- Temperature and climatic tests (5.2.1);
- Mechanical requirements and tests (5.3);
- Functional requirements and tests for power supplies, I/Os and other components (Clause 6);
- EMC requirements and tests (Clause 7);
- Marking and documentation requirements (Clause 8).

Product safety requirements for PLC and the other types of industrial control equipment now in the scope of this standard are specified in IEC 61010-2-201, which replaces the requirements of Clauses 11 to 14 of IEC 61131-2:2007.

The operating conditions and the temperature derating for altitudes are aligned with IEC 61010-2-201:–1.

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<sup>1</sup> Under preparation. Stage at the time of publication: IEC /CDV 61010-2-201:2016.

# INDUSTRIAL-PROCESS MEASUREMENT AND CONTROL – PROGRAMMABLE CONTROLLERS –

## Part 2: Equipment requirements and tests

### 1 Scope

This part of IEC 61131 specifies functional and electromagnetic compatibility requirements and related verification tests for industrial control equipment of the following types:

- programmable controllers (PLC);
- programmable automation controller (PAC);
- remote I/O;
- programming and debugging tools (PADTs);
- industrial PC (computers) and industrial panel PC;
- displays and human-machine Interfaces (HMI) for industrial use;
- distributed control system (DCS), and DCS components that are listed here in the scope;
- any product where the primary purpose is performing the function of industrial control equipment, including PLC and/or PAC, and/or their associated peripherals which have as their intended use the control and command of machines, automated manufacturing and industrial processes, e.g. discrete, batch and continuous control.

In this document “control equipment” is equivalent to “industrial control equipment” as are PLC and PAC.