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INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Programmable controllers –
Part 3: Programming languages**

**Automates programmables –
Partie 3: Langages de programmation**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

PROGRAMMABLE CONTROLLERS –**Part 3: Programming languages**

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IEC 61131-3 has been prepared by subcommittee 65B: Measurement and control devices, of IEC technical committee 65: Industrial-process measurement, control and automation. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2013. This edition constitutes a technical revision.

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

- a) inclusion of UTF-8 strings and their associated functions;
- b) Annex B contains a comprehensive list of features that have been added, removed or deprecated in comparison to IEC 61131-3:2013.

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

Draft	Report on voting
65B/1281/FDIS	65B/1291/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/publications.

A list of all the parts in the IEC 61131 series, published under the general title *Programmable controllers* can be found on the IEC website.

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- withdrawn, or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.

PROGRAMMABLE CONTROLLERS –

Part 3: Programming languages

1 Scope

This part of IEC 61131 specifies the syntax and semantics of programming languages for programmable controllers as defined in IEC 61131-1.

This document specifies the syntax and semantics of a unified suite of programming languages for programmable controllers (PCs). This suite consists of the textual language structure text (ST), and the graphical languages, ladder diagram (LD) and function block diagram (FBD).

An additional set of graphical and equivalent textual elements named sequential function chart (SFC) is defined for structuring the internal organization of programs and function blocks. Also, configuration elements are defined which support the installation of programmable controller programs into programmable controller systems.

In addition, features are defined which facilitate communication among programmable controllers and other components of automated systems.

2 Normative references

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.

IEC 61131-1, *Programmable controllers – Part 1: General information*

IEC 61131-5, *Programmable controllers – Part 5: Communications*

ISO/IEC 10646, *Information technology – Universal Coded Character Set (UCS)*

ISO/IEC 60559, *Floating point arithmetic*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61131-1 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

access path

association of a symbolic name with a variable for the purpose of open communication