



SLOVENSKI STANDARD

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SIST EN 61131-3:2004

Programirljivi krmilniki - 3. del: Programski jeziki (IEC 61131-3:2013)

Programmable controllers - Part 3: Programming languages (IEC 61131-3:2013)

Speicherprogrammierbare Steuerungen - Teil 3: Programmiersprachen (IEC 61131-3:2013)

iTeh STANDARD PREVIEW

Automates programmables - Partie 3: Langues de programmation (CEI 61131-3:2013)

Ta slovenski standard je istoveten z: **EN 61131-3:2013**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 61131-3

May 2013

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Supersedes EN 61131-3:2003

English version

**Programmable controllers -
Part 3: Programming languages
(IEC 61131-3:2013)**

Automates programmables -
Partie 3: Langages de programmation
(CEI 61131-3:2013)

Speicherprogrammierbare Steuerungen -
Teil 3: Programmiersprachen
(IEC 61131-3:2013)

This European Standard was approved by CENELEC on 2013-03-27. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 65B/858/FDIS, future edition 3 of IEC 61131-3, prepared by IEC TC 65 "Industrial-process measurement, control and automation" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61131-3:2013.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2013-12-27
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-03-27

This document supersedes EN 61131-3:2003.

EN 61131-3:2013 includes the following significant technical changes with respect to EN 61131-3:2003:

EN 61131-3:2013 is a compatible extension of EN 61131-3:2003. The main extensions are new data types and conversion functions, references, name spaces and the object oriented features of classes and function blocks. See Annex B.

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The text of the International Standard IEC 61131-3:2013 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60848	NOTE	Harmonised as EN 60848.
IEC 61499 series	NOTE	Harmonised in EN 61499 series.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61131-1	-	Programmable controllers - Part 1: General information	EN 61131-1	-
IEC 61131-5	-	Programmable controllers - Part 5: Communications	EN 61131-5	-
ISO/IEC 10646	2012	Information technology - Universal Coded Character Set (UCS)	-	-
ISO/IEC/IEEE 60559-		Information technology - Microprocessor Systems - Floating-Point arithmetic	-	-

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Edition 3.0 2013-02

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NORME INTERNATIONALE

Programmable controllers –
Part 3: Programming languages

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Automates programmables –
Partie 3: Langages de programmation

SIST EN 61131-3:2013

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

PROGRAMMABLE CONTROLLERS –

Part 3: Programming languages

FOREWORD

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

This third edition of IEC 61131-3 cancels and replaces the second edition, published in 2003. This edition constitutes a technical revision.

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

This third edition is a compatible extension of the second edition. The main extensions are new data types and conversion functions, references, name spaces and the object oriented features of classes and function blocks. See Annex B.

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

FDIS	Report on voting
65B/858/FDIS	65B/863/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 publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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 publication will remain unchanged until the stability date indicated on the IEC web site 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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PROGRAMMABLE CONTROLLERS –

Part 3: Programming languages

1 Scope

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

The functions of program entry, testing, monitoring, operating system, etc., are specified in Part 1 of IEC 61131.

This part of IEC 61131 specifies the syntax and semantics of a unified suite of programming languages for programmable controllers (PCs). This suite consists of two textual languages, Instruction List (IL) and Structured Text (ST), and two 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 programmable controller 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.

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2 Normative references

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

ISO/IEC 10646:2012, *Information technology – Universal Coded Character Set (UCS)*

ISO/IEC/IEEE 60559, *Information technology – Microprocessor Systems – 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.

3.1

absolute time

combination of time of day and date information