

NEMA IA 2.8-2005

PROGRAMMABLE
CONTROLLERS—

PART 8: GUIDELINES FOR
THE APPLICATION AND
IMPLEMENTATION OF
PROGRAMMING
LANGUAGES

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(Adoption of IEC Publication TR 61131-8)

*Programmable Controllers—
Part 8: Guidelines for the Application
and Implementation of Programming Languages*

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Foreword

This Standards Publication is a NEMA Authorized Engineering Information adopted from IEC TR 61131-8, *Programmable Controllers—Part 8: Guidelines for the Application and Implementation of Programming Languages*. IEC TR 61131-8 has been published by the International Electrotechnical Commission as a Type 3 Technical Report.

This NEMA Standards Publication was supported and reviewed by the Programmable Controller Technical Committee of the NEMA Automation Products and Systems Section. It was approved in accordance with the bylaws of NEMA and supersedes applicable portions of NEMA Standards Publication ICS 3-1988, Part 3-304.

This Standards Publication represents many years of direct NEMA member participation in IEC Subcommittee 65B/Working Group 7, and reflects the input provided to the IEC from the Programmable Controller Technical Committee.

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Proposed revisions to this Standards Publication should be submitted to:

Vice President, Technical Services
National Electrical Manufacturers Association
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Referenced Standards

This NEMA Standards Publication references standards published by the International Electrotechnical Commission (IEC), the International Organization for Standardization (ISO), and the National Fire Protection Association (NFPA). Copies of these standards are available from:

American National Standards Institute
11 West 42nd Street
New York, NY 10036

Amendments

IEC TR 61131-8, *Programmable Controllers—Part 8: Guidelines for the Application and Implementation of Programming Languages*, is adopted in its entirety.
Authorized Engineering Information

When the phrase “national code” or the like is used in IEC TR 61131-8, reference to ANSI/NFPA 70, *National Electrical Code*, and other applicable codes is to be understood.
Authorized Engineering Information

Where a conflict exists between the provisions of IA 2.8 and other NEMA Standards Publications, the provisions of IA 2.8 should take precedence in the area of programmable controllers and their associated peripherals.
Authorized Engineering Information

TECHNICAL REPORT

IEC
TR 61131-8

Second edition
2003-09

Programmable controllers –

Part 8: Guidelines for the application and implementation of programming languages

Automates programmables –

*Partie 8:
Lignes directrices pour l'application et la mise en oeuvre
des langages de programmation*



Reference number
IEC/TR 61131-8:2003(E)

Publication numbering

As from 1 January 1997 all IEC publications are issued with a designation in the 60000 series. For example, IEC 34-1 is now referred to as IEC 60034-1.

Consolidated editions

The IEC is now publishing consolidated versions of its publications. For example, edition numbers 1.0, 1.1 and 1.2 refer, respectively, to the base publication, the base publication incorporating amendment 1 and the base publication incorporating amendments 1 and 2.

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International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

PROGRAMMABLE CONTROLLERS –

Part 8: Guidelines for the application and implementation of programming languages

FOREWORD

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IEC 61131-8, which is a technical report, has been prepared by subcommittee 65B: Devices, of IEC technical committee 65: Industrial-process measurement and control.

This second edition cancels and replaces the first edition, published in 2000, and constitutes a technical revision.

The main changes with respect to the previous edition are to make IEC 61131-8 consistent with IEC 61131-3, 2nd edition.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
65B/478/DTR	65B/492/RVC

Full information on the voting for the approval of this technical report 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.

The committee has decided that the contents of this publication will remain unchanged until 2008. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

INTRODUCTION

This part of IEC 61131 is being issued as a technical report in order to provide guidelines for the implementation and application of the programming languages defined in IEC 61131-3:2003, second edition.

Its contents answer a number of frequently asked questions about the intended application and implementation of the normative provisions of IEC 61131-3, second edition and about its differences from IEC 61131-3:1993, first edition.

PROGRAMMABLE CONTROLLERS –

Part 8: Guidelines for the application and implementation of programming languages

1 General

1.1 Scope

This part of IEC 61131, which is a technical report, applies to the programming of programmable controller systems using the programming languages defined in IEC 61131-3. It also provides guidelines for the implementation of these languages in programmable controller systems and their programming support environments (PSEs).

IEC 61131-4 should be consulted for other aspects of the application of programmable controller systems.

NOTE Neither IEC 61131-3 nor this technical report explicitly addresses safety issues of programmable controller systems or their associated software. The various parts of IEC 61508 should be consulted for such considerations.

1.2 Normative references

The following referenced documents are indispensable for the application 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 61131-1:1992, *Programmable controllers – Part 1: General information*

IEC 61131-2:2003, *Programmable controllers – Part 2: Equipment requirements and tests*

IEC 61131-3:2003, *Programmable controllers – Part 3: Programming languages*

IEC 61131-5:2000, *Programmable controllers – Part 5: Communications*

1.3 Abbreviated terms

FB	Function Block
FBD	Function Block Diagram
LD	Ladder Diagram
IL	Instruction List
POU	Program Organization Unit
PSE	Programming Support Environment
SFC	Sequential Function Chart
ST	Structured Text