

Australian Standard™

Programmable controllers

Part 1: General information

This Australian Standard was prepared by Committee IT-006, Information Technology for Industrial Automation. It was approved on behalf of the Council of Standards Australia on 15 January 2004 and published on 22 March 2004.

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PREFACE

This Standard was prepared by the Standards Australia Committee IT-006, Information Technology for Industrial Automation to supersede AS 4168.1-1994, *Programmable controllers*, Part 1: *General information*.

This Standard is identical with, and has been reproduced from, IEC 61131-1:2003, *Programmable controllers—Part 1: General information*.

The objective of this Standard is to establish the definitions and identify the principal characteristics relevant to the selection and application of programmable controllers and their associated peripherals.

Minor editorial corrections have been made to Clause 4.6.4.

This Standard is Part 1 of AS IEC 61131 *Programmable controllers*, which consists of the following:

Part 1: General information (this Standard)

Part 2: Equipment requirements and tests

Part 3: Programming languages

Part 4: User guidelines

Part 5: Communications

Part 7: Fuzzy control programming

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

AS IEC 61131 does not have a Part 6. A project to develop IEC 61131-6 *Programmable controller communications via field bus* was deleted in September 2000 by the IEC.

In this Standard, the following print types are used:

- requirements proper: in arial type;
- *test specifications: in italic type;*
- explanatory matter: in smaller arial type.

As this Standard is reproduced from an International Standard, the following applies:

- (a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.
- (b) In the source text ‘this part of IEC 61131’ should read ‘this part of AS IEC 61131’.
- (c) A full point should be substituted for a comma when referring to a decimal marker.

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INTRODUCTION

This Part of IEC 61131 constitutes Part 1 of a series of standards on programmable controllers and their associated peripherals and should be read in conjunction with the other parts of the series.

Where a conflict exists between this and other IEC standards (except basic safety standards), the provisions of this standard should be considered to govern in the area of programmable controllers and their associated peripherals.

The purposes of this standard are:

Part 1 establishes the definitions and identifies the principal characteristics relevant to the selection and application of programmable controllers and their associated peripherals;

Part 2 specifies equipment requirements and related tests for programmable controllers (PLC) and their associated peripherals;

Part 3 defines, for each of the most commonly used programming languages, major fields of application, syntactic and semantic rules, simple but complete basic sets of programming elements, applicable tests and means by which manufacturers may expand or adapt those basic sets to their own programmable controller implementations;

Part 4 gives general overview information and application guidelines of the standard for the PLC end-user;

Part 5 defines the communication between programmable controllers and other electronic systems;

Part 6 is reserved;

Part 7 defines the programming language for fuzzy control;

Part 8 gives guidelines for the application and implementation of the programming languages defined in Part 3.

STANDARDS AUSTRALIA

Australian Standard**Programmable controllers
Part 1: General information**

1 Scope

This Part of IEC 61131 applies to programmable controllers (PLC) and their associated peripherals such as programming and debugging tools (PADTs), human-machine interface (HMIs), etc., which have as their intended use the control and command of machines and industrial processes.

PLCs and their associated peripherals are intended to be used in an industrial environment and may be provided as open or enclosed equipment. If a PLC or its associated peripherals are intended for use in other environments, then the specific requirements, standards and installation practices for those other environments must be additionally applied to the PLC and its associated peripherals.

The functionality of a programmable controller can be performed as well on a specific hardware and software platform as on a general-purpose computer or a personal computer with industrial environment features. This standard applies to any products performing the function of PLCs and/or their associated peripherals. This standard does not deal with the functional safety or other aspects of the overall automated system. PLCs, their application programme and their associated peripherals are considered as components of a control system.

Since PLCs are component devices, safety considerations for the overall automated system including installation and application are beyond the scope of this Part. However, PLC safety as related to electric shock and fire hazards, electrical interference immunity and error detecting of the PLC-system operation (such as the use of parity checking, self-testing diagnostics, etc.), are addressed later to IEC 60364 or applicable national/local regulations for electrical installation and guidelines.

This Part of IEC 61131 gives the definitions of terms used in this standard. It identifies the principal functional characteristics of programmable controller systems.

2 Normative references

References to international standards that are struck through in this clause are replaced by references to Australian or Australian/New Zealand Standards that are listed immediately thereafter and identified by shading. Any Australian or Australian/New Zealand Standard that is identical to the International Standard it replaces is identified as such.

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 61131-2, Programmable controllers — Part 2: Equipment requirements and tests~~