

Australian Standard™

Programmable controllers

Part 4: User guidelines

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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This Standard was issued in draft form for comment as DR 03590.

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Part 4: User guidelines

First published as AS IEC 61131.4—2004.

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Published by Standards Australia International Ltd
GPO Box 5420, Sydney, NSW 2001, Australia

ISBN 0 7337 5773 1

PREFACE

This Standard was prepared by the Standards Australia Committee IT-006, Information Technology for Industrial Automation.

This Standard is identical with, and has been reproduced from, IEC/TR3 61131-4:1995, *Programmable controllers—Part 4: User guidelines*.

The objective of this Standard is to provide guidelines that address the application of the programmable controllers (PC) and associated peripherals. It also deals with the integration of PCs into the automated system.

This Standard is Part 4 of AS IEC 61131 *Programmable controllers*, which consists of the following:

Part 1: General information

Part 2: Equipment requirements and tests

Part 3: Programming languages

Part 4: User guidelines (this Standard)

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 Technical Report provides guidelines that address the application of the programmable controllers (PC) and associated peripherals. It also deals with the integration of PCs into the automated system. Overall automated system safety, including installation and application, is beyond the scope of this part of the report.

The terms in upper case are defined either in IEC 61131-1 if of general use, or in 2.2 of this report.

Annexes provide explanations or further information on subject items.

User guidelines are written to assist the USER in the specification and implementation of the PC system. The document is primarily intended for the USER responsible for all system level design, installation and final commissioning. The guideline covers the control system in general, and the programmable controller portion of the system in particular (see figures 1a and 1b).

The PC application process (the specification, design, development, and installation of a PC-based system for a particular application) may be a reiterative process to understand and address all system requirements. This reiteration can occur at any portion of the system life cycle, e.g., user system analysis, PC system selection and application engineering, safety and protection considerations, pre-installation system testing, installation, commissioning and maintenance.

STANDARDS AUSTRALIA

Australian Standard**Programmable controllers
Part 4: User guidelines**

Any table, figure or text of the international standard that is struck through is not part of this standard. Any Australian/New Zealand table, figure or text that is added is part of this standard and is identified by shading.

1 General**1.1 Scope**

The complete programmable controller standard applies to PROGRAMMABLE CONTROLLERS and their associated PERIPHERALS such as PROGRAMMING and DEBUGGING TOOLS (PADTs), TEST EQUIPMENT (TE) and MAN-MACHINE INTERFACES (MMIs), etc.

This Technical Report refers to equipment for the control and command of machines and industrial processes used in OVERVOLTAGE CATEGORY II (IEC 60664), in low-voltage installations, where the rated mains supply voltage does not exceed 1 000 V a.c. (50 Hz/60 Hz), or 1 500 V d.c.

PROGRAMMABLE CONTROLLERS and associated PERIPHERALS (PC system) are considered COMPONENTS of a control system and may be provided as ENCLOSED or OPEN EQUIPMENT. This report deals with the PC and interfaces to the other parts of the AUTOMATED SYSTEM and does not deal with the whole automated system itself (see figure 1a).

1.2 Object

The purpose of IEC 61131-4 is to provide information that assists the user in:

- utilizing the other parts of the programmable controller standard;
- specifying the requirements for PC applications;
- selecting and implementing PC systems.

The following topics are covered in this Technical Report:

- references to pertinent information in other parts of the programmable controller standard. This information is useful in obtaining a better understanding of the environment and application of the PC;
- description of supplemental information, helpful in making use of other parts of this standard;
- system level functional analysis of the user's process;
- specification of a programmable controller system;
- programmable controller installation, commissioning and maintenance.

IEC 61131-4 does not provide a comprehensive analysis of a complete automated system. It is intended as a source of information about programmable controllers, their specifications, and selection. The reader may also refer to other parts of IEC 61131.