

# INTERNATIONAL STANDARD

# IEC 61131-5

First edition  
2000-11

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## Programmable controllers –

### Part 5: Communications

*Automates programmables –*

*Partie 5:  
Communications*

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# INTERNATIONAL ELECTROTECHNICAL COMMISSION

## PROGRAMMABLE CONTROLLERS –

### Part 5: Communications

#### FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
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- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61131-5 has been prepared by subcommittee 65B: Devices, of IEC technical committee 65: Industrial-process measurement and control.

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

FDIS	Report on voting
65B/411/FDIS	65B/420/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 3.

This part should be read in conjunction with the other parts of IEC 61131. IEC 61131 consists of the following parts under the general title: *Programmable controllers*.

Part 1:1992, General information.

Part 2:1992, Equipment requirements and tests.

Part 3:1993, Programming languages.

Part 4:1994, User guidelines (published as technical report IEC TR 61131-4)

Part 5:2000, Communications

Part 8:2000, Guidelines for the application and implementation of programming languages (published as technical report IEC TR 61131-8)

Annexes A and B form an integral part of this standard.

Annex C is for information only.

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 committee has decided that the contents of this publication will remain unchanged until 2006. At this date, the publication will be

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

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

## PROGRAMMABLE CONTROLLERS –

### Part 5: Communications

#### 1 Scope

This part of IEC 61131 specifies communication aspects of a programmable controller. It specifies from the viewpoint of a PC how any device can communicate with a PC as a server and how a PC can communicate with any device. In particular, it specifies the behavior of the PC as it provides services on behalf of other devices and the services the PC application program can request from other devices. It is not intended to specify how any device can communicate with any device using a PC as a router or gateway. The behavior of the PC as a communication client and server is specified independent of the particular communication subsystem, but the communication functionality may be dependent on the capabilities of the communication subsystem used.

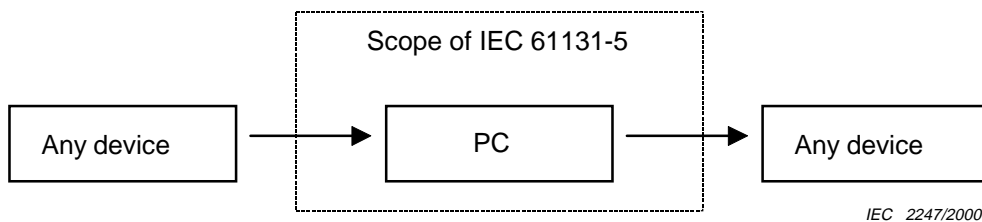


Figure 1 – Scope of this part of IEC 61131

The scope of this part is a subset of the "communication model" shown in figure 2 of IEC 61131-3; namely figures 2c and 2d are included in the scope of this part. Additionally, the means defined in this part of IEC 61131 may be used for communications within a program or between programs.

The mapping of the PC behavior to some particular communications subsystems is provided in the annexes.

#### 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61131. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 61131 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

IEC 60050-351:1998, *International Electrotechnical Vocabulary – Part 351: Automatic control*

IEC 61131-1:1992, *Programmable controllers – Part 1: General Information*

IEC 61131-2:1992, *Programmable controllers – Part 2: Equipment requirements and tests*

IEC 61131-3:1993, *Programmable controllers – Part 3: Programming languages*

ISO/IEC 2382-1:1993, *Information technology – Vocabulary – Part 1: Fundamental terms*

ISO/IEC 9506-1:1990, *Industrial automation systems – Manufacturing Message Specification – Part 1: Service definition*



ISO/IEC 9506-2:1990, *Industrial automation systems – Manufacturing Message Specification – Part 2: Protocol specification*