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SIMATIC NET

Installation Instructions/ Product Information

A5E00469482

Release 06/2005

CP 5611 A2

6GK1561-1AA01

Below you will find information in English.

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Classification of Safety-Related Notices

This document contains notices which you should observe to ensure your own personal safety, as well as to protect the product and connected equipment. These notices are highlighted in the manual by a warning triangle and are marked as follows according to the level of danger:



Danger

indicates that death or severe personal injury **will** result if proper precautions are not taken.



Warning

indicates that death or severe personal injury **can** result if proper precautions are not taken.



Caution

with warning triangle indicates that minor personal injury can result if proper precautions are not taken.

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Siemens AG
Automation and Drives
Industrial Communication
Postfach 4848, D-90327 Nürnberg

Disclaimer

We have checked the contents of this manual for agreement with the hardware and software described. Since deviations cannot be precluded entirely, we cannot guarantee full agreement. However, the data in this manual are reviewed regularly and any necessary corrections included in subsequent editions. Für Suggestions for improvement are welcomed.

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Siemens Aktiengesellschaft

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Caution

without warning triangle indicates that damage to property can result if proper precautions are not taken.

Notice

indicates that an undesirable result or status can occur if the relevant notice is ignored.

Note

highlights important information on the product, using the product, or part of the documentation that is of particular importance and that will be of benefit to the user.

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Third parties using for their own purposes any other names in this document which refer to trademarks might infringe upon the rights of the trademark owners.

Safety Instructions Regarding your Product

Before you use the product described here, read the safety instructions below thoroughly.

Qualified Personnel

Only qualified personnel should be allowed to install and work on this equipment. Qualified persons are defined as persons who are authorized to commission, to ground, and to tag circuits, equipment, and systems in accordance with established safety practices and standards.

Correct Usage of Hardware Products

Please adhere to the instructions regarding the correct usage of hardware products.

Caution

This device may only be used for the applications described in the catalog or the technical description, and only in connection with devices or components from other manufacturers which have been approved or recommended by Siemens. This product can only function correctly and safely if it is transported, stored, set up, and installed correctly, and operated and maintained as recommended.

Before you use the supplied sample programs or programs you have written yourself, make certain that no injury to persons nor damage to equipment can result in your plant or process.

EU Directive: Do not start up until you have established that the machine on which you intend to run this component complies with the directive 89/392/EEC.

Correct Usage of Software Products

Read the relevant software Installation Instructions and adhere to the instructions regarding the correct usage of software products.

Caution

This software may only be used for the applications described in the catalog or the technical description, and only in connection with devices or software products from other manufacturers which have been approved or recommended by Siemens.

Before you use the supplied sample programs or programs you have written yourself, make certain that no injury to persons nor damage to equipment can result in your plant or process.

Prior to Startup

Before putting the product into operation, note the following warning:

Caution

Before installing and starting the module, read the instructions in the corresponding documentation. For ordering data of the documentation please refer to the catalogs or contact your local SIEMENS representative.

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1 Introduction

CP 5611 Communications Processor A2

The CP 5611 A2 module is equipped with a PROFIBUS interface up to 12 Mbps. It is intended for operation in PGs and PCs with a PCI bus interface complying with PCI standard V2.2. The additional interface signals for the PLC direct link (PLC – Programmable Logic Controller) are supported up to 187.5 Kbps.

Purpose of the Installation Instructions/Product Information Bulletin

This installation description/product information bulletin supports you when installing the CP 5611 A2 communications processor in your PG/PC and informs you of the properties of the product.

Validity of these Installation Instructions

This document is valid for the following hardware versions of the CP 5611 A2:

Designation	Hardware Version
CP 5611 A2	as of version 1

Components of the Supplied Product

The following components are supplied with the CP 5611 A2:

- CP 5611 A2 communications processor
- Hardware Installation Instructions / Product Information Bulletin in German and English
- Packaging

MPI/DP Network

With the CP 5611 A2 communications processor, up to 32 devices (PC, PG, SIMATIC S7 or ET 200) can be connected together to form a network segment. By coupling several segments with repeaters, a maximum of 127 nodes can be connected.

The physical coupling of the MPI/DP interface to the MPI/DP network is over a floating RS-485 interface that is part of the module. Depending on the network configuration in the MPI/DP network, data transmission rates of 9.6 Kbps up to maximum of 12 Mbps are possible.

Note

For information on the configuration of an MPI network, refer to the manual “S7–300 Hardware and Installation”, order number 6ES7030-0AA01–8BA0.

2 Installing the CP 5611 A2 in the PG/PC

2.1 Important Notes

Electrostatic Discharge

When installing the module, please keep to the rules for avoiding electrostatic discharge (ESD - **E**lectro**s**tatic **D**is-charge).

Important Rules (ESD guidelines)

When handling and installing modules, keep to the following rules (ESD guidelines):



Warning

- Pick up components and modules only by their edges.
- Do not touch the pins or conductors.
- Before opening the device, make sure that you discharge any electrostatic charge from your body. You can do this by touching metal parts on the back panel of the device before unplugging the power supply cable.
- Make sure that you also discharge any electrostatic charge from tools you intend to use.
- Components and modules must only be inserted or removed when the power supply is off.
- Do not operate the unit with the housing open.

Installing the CP 5611 A2

Opening the PG/PC and inserting or removing the module is permitted only when the power is turned **off**.

Read the Manual

Before installing the module, **please read** the section on installing modules thoroughly in the manual of your PG/PC and follow the instructions.

2.2 Installing and Connecting

2.2.1 Requirements and Notes

Computer Requirements

The CP 5611 A2 module is a plug and play network card for devices with a 32-bit PCI bus interface conforming with the PCI V2.2 specification.

The CP 5611 A2 is universally coded according to the PCI standard, in other words 3.3 and 5 V slots are supported. PCI-X slots with 32 or 64 bits are also supported. The module has the dimensions of a short PCI module (102 mm x 130 mm).

Note

For the DP mode, at least a 166 MHz Pentium processor or comparable processor is recommended.

Software Requirements

The software for operating the module is not supplied with the module. You can order this from your Siemens contact.

Possible Number of CP 5611 Modules in One Computer

A maximum number of two CP 5611 modules are permitted in a PG/PC at the same time.

2.2.2 How to Install the CP 5611 A2

Caution 1

The components on the pcbs are extremely sensitive to electrostatic discharge.

Please keep to the rules for handling components sensitive to electrostatic discharge (ESD guidelines).

Caution 2

If you insert the CP 5611 A2 in a suitable PCI slot and then secure the metal panel to the housing, the module sometimes skews in the slot in computers of some manufacturers.

After securing the module, please make sure that it is still sitting correctly and firmly in the slot!

To install and attach the CP 5611 A2 follow the steps outlined below:

Step	Procedure
1	Turn off your computer and pull out the power cable connector from the socket.
2	Open the computer housing as described in the manual for your PG/PC.
3	Insert the CP 5611 A2 in a PCI slot. Make sure that the CP 5611 A2 sits firmly and uniformly in the slot. **Notice** When handling the module, do not touch the terminals or the electronic components.
4	Close the computer housing as described in the manual for your PG/PC.
5	Reinsert the power supply connector in the socket and turn on your computer.

3 Commissioning

Requirements for Problem-free Operation

To operate correctly, the module requires three memory windows and an interrupt. These are assigned by the PCI-BIOS or PnP operating system when the PC/PG starts up.

Resource Conflicts

If you encounter problems during installation, this may be due to the following problems:

Cause	Remedy
The resources required by the module are not available. This is displayed by the PCI-BIOS on the screen prior to booting. The message depends on the particular BIOS but will say something like: "Resource Conflict PCI Network Controller in slot ...“.	Change the hardware configuration of the computer so that the required resources are available (see Chapter 2).
The resources assigned to the module by the PCI-BIOS are already being used by non plug and play ISA modules.	Change the configuration of the relevant ISA modules.

4 Technical Specifications

CP 5611 A2

The following technical specifications apply to the CP 5611 A2 communications processor:

Construction	
Module format	PC card, short PCI format
Dimensions (H x D) in mm	102 x 130
Weight	Approx. 100 g
Module insertion principle	PCI bus direct connect (32 bits)
Bus interface	PCI V2.2, plug and play
Voltage	
Operating voltage	Safety extra-low voltage (SELV) complying with EN 60950
Rated voltage (limit values)	5 VDC (4.75 to 5.25 V)
Current consumption	
Current consumption at rated voltage	500 mA, maximum

Interfaces	
Connection to PG/PC	PCI-/PCI-X slot, 3.3 V/5 V, 32 bits, 33/66 MHz bus clock rate
Plug-in connectors	9-pin D-sub female connectors with screw securing mechanism
Type of transmission	RS 485 floating within the SELV limits
Mode of the MPI/DP interface	Floating (interface signals), non-floating (cable shield)
Data Transmission	
Transmission rate	9.6 Kbps to 12 Mbps

Security	
UL/CSA approval	The CP 5611 A2 meets all the requirements for supplementary modules according to the cULus approval.
Electromagnetic Compatibility (EMC)	
Noise emission	Class B to EN 55022 FCC class B
Noise immunity on signal lines	+/- 2 kV to IEC 61000-4-5, surge +/- 1 kV to IEC 61000-4-3, burst
Immunity to electrostatic discharge	+/- 6 kV, contact discharge to IEC 61000-4-2
Immunity to high-frequency interference	10 V/m at 80 MHz – 2 GHz to IEC 61000-4-3 10 V/m with 80 % amplitude modulation with 1 kHz 10 kHz – 80 MHz to IEC 61000-4-6

Climatic Conditions	
Temperature mode	Tested to IEC 60068 2-1, 60068-2-2 +5° C through +55° C Temperature change max. 10 K/h
Transport and storage temperature	-20°C to +60°C Temperature change max. 20 K/h
Humidity (operation)	Tested to EN/IEC 60068-2-78 5% to 85% at 30 °C (no condensation)
Fast temperature change during operation	+5 °C to +55 °C to IEC 60068-2-14 5 cycles
Fast temperature change during storage / transportation	-20 °C to +60 °C to IEC 60068-2-14 2 cycles
Temperature change with humidity during storage / transportation	Tested to EN/IEC 60068-2-30 25 °C to 55 °C at 95 % (no condensation)

Mechanical Environmental Conditions	
Vibration	Tested to IEC 60068-2-6, 10 to 58 Hz; Amplitude 0.075 mm, 58 to 500 Hz; Acceleration 10 m/s^2, 10 cycles/axis
Shock in operation	Tested to IEC 60068-2-27 Half sine: 50 m/s^2 (5 g), 30 ms 100 shocks/axis

Pinning of the PROFIBUS Port

The D-SUB socket connector has the following pin assignment:

Signal Description

Pin No.	Short Designation	Meaning	Input / Output
1	NC	Socket pin 1 is not used.	-
2	NC (M24)	Socket pin 2 is not used. With other MPI/DP components, the return wire of the floating 24 V power supply can be applied to this pin.	-
3	LTG_B	Signal line B of the CP 5611 A2 module	Input / output
4	RTSAS	RTSAS, input signal for MPI/DP bus. The control signal is “1” active when the PLC is sending.	Input
5	M5EXT	M5EXT return wire (GND) of the 5 V power supply. The current load of an external consumer connected between P5EXT and M5EXT can be up to a maximum of 90 mA.	Output

Table continued on next page

Continued

6	P5EXT	P5EXT supply (+5 V) of the 5 V supply. The current load of an external consumer connected between P5EXT and M5EXT can be up to a maximum of 90 mA (short-circuit proof).	-
7	NC (P24V)	Socket pin 7 is not used. With other MPI/DP components, the P24V pin of the 24 V floating power supply can be applied to this pin.	-
8	LTG_A	Signal line A of the CP 5611 A2 module	Input/ output
9	RTS	RTS output signal of the CP 5611 A2 module. The control signal is "1" active when the device (PG or PC) is sending.	Output
Shield		On connector housing	

5 Changing from CP 5611 to CP 5611 A2

The CP 5611 A2 can be used as a substitute for the CP 5611. This requires neither software updates nor a change to the configuration.

Follow the steps below:

Step	Procedure
1	Turn the PC off.
2	Remove the CP 5611.
3	Insert the CP 5611 A2 in the same PCI slot.
4	Restart the PC. **Note** When the Windows hardware wizard appears, confirm the proposed steps.

Caution
Observe the warnings and safety-related notices.

Note
The previously used configuration is loaded automatically.

6 Further Information

Additional Information on the Internet and on the SIMATIC NET Documentation CD

The following product-related Internet addresses are:

- Siemens AG, Automation and Drives:
  http://www.siemens.de/simatic-net
- SIMATIC NET product catalog "IK PI“:
  available on the SIMATIC NET Documentation CD under "IK PI Catalog – Industrial Communication and Field Devices“
  (double-click on the **START.HTM** file in the main directory of the SIMATIC NET Documentation CD ➔ **English** ➔ list box below "Industrial Communication SIMATIC NET“ **Catalogs ➔ IK PI Catalog - Industrial Communication and Field Devices**).

Worldwide (Nuernberg) – Technical Support

Local time:	24 hours a day/365 days a year
Telephone:	+49 (0) 180 5050-222
Fax:	+49 (0) 180 5050-223
Internet:	www.siemens.de/automation/support-request
GMT:	+1:00

Europe/Africa (Nuernberg) – Authorization

Local time:	Mo - Fr 8:00 a.m. to 5:00 p.m.
Telephone:	+49 (0) 180 5050-222
Fax:	+49 (0) 180 5050-223
Internet:	www.siemens.de/automation/ support-request
GMT:	+1:00

United States (Johnson City) – Technical Support and Authorization

Local time:	Mo - Fr 8:00 a.m. to 5:00 p.m.
Telephone:	+1 (423) 262 2522
Fax:	+1 (423) 262 2289
E-mail:	simatic.hotline@ sea.siemens.com
GMT:	-5:00

Asia/Australia (Peking) – Technical Support and Authorization

Local time:	Mo - Fr 8:00 a.m. to 5:00 p.m.
Telephone:	+86 10 64 71 99 90
Fax:	+86 10 64 74 74 74
E-mail:	adsupport.asia@siemens.com
GMT:	+8:00

Service & Support on the Internet

In addition to our paper documentation, we also provide all of our technical information on the Internet at:

http://www.siemens.com/automation/service&support

Here, you will find the following information:

- Newsletter providing the latest information on your products
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- Forum in which users and experts worldwide exchange ideas
- Information about local service, repair, and replacement parts. Much more information can be found under "Services“.

You will find your local contact for Automation & Drives in our partners database at:
http://www.automation.siemens.com/partner

7 Certificates and Approvals

7.1 Notes on the CE Mark of SIMATIC NET Products

Product Name:

SIMATIC NET, CP 5611 A2 6GK1561-1AA01

EMC Directive

CE The SIMATIC NET products listed above meet the requirements of the following EU directive:

89/336/EEC “Electromagnetic Compatibility”

Field of Application

The products are designed for use in the following areas:

Field of Application	Requirements	
	Noise Emission	Immunity to Interference
Household, commercial, light industry	EN 61000-6-3	EN 61000-6-2
Industry	EN 61000-6-3	EN 61000-6-2

Installation Guidelines

The products meet the requirements providing you adhere to the guidelines for installation and safety described in this Section "Notes on the CE Mark" and in the "PROFIBUS Network Manual":

Working on the Product

To protect the product from electrostatic discharge, first discharge any electrostatic charge from your body before touching the module.

Note

The product was tested in a device that also conforms to the standards listed above.

When operating the module in a device that does not conform to these standards, there can be no guarantee that the values will be adhered to.

Filing the Information

Please file this information on the CE mark in your "PROFIBUS Network Manual”!

Conformity Certificates

The EU declaration of conformity is available for the responsible authorities according to the above-mentioned EU directive at the following address:

Siemens Aktiengesellschaft
Automation and Drives
Industrial Communication (A&D PT 2)
Postfach 4848
D-90327 Nuernberg, Germany

Directive on Machines

The products remain components in compliance with Article 4(2) of the EU directive on machines 89/392/EEC.

According to the directive on machines, we are obliged to point out that the product described is intended solely for installation in a machine. Before the final product can be put into operation, it must be tested to ensure that it conforms with the directive 89/392/EEC.

7.2 Note for Australia



The product CP 5611 A2 meets the requirements of the AS/NZS 3548 standard.

7.3 Note for Canada

ICES Conformity

Canadian Notice - This Class **B** digital apparatus complies with Canadian ICES-003.
Avis Canadien - Ces appareils numérique de la classe B est conforme à la norme NMB-003 du Canada.

CSA Approval

The SIMATIC NET Product CP 5611 A2 has an approval according to the standard CAN/CSA C 22.2 No 60950-1.

7.4 Notes for USA

FCC compliance information

Note
The CP 5611 A2 has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded cables
Shielded cables must be used with this equipment to maintain compliance with FCC regulations.

Changes or modifications
Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

UL approval

The SIMATIC NET product CP 5611 A2 has an approval (UL) according to the standard UL 60950-1, First Edition

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