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English

SIMATIC NET

Product Information/ Installation Instructions

S79220-A5814-X-05-7419

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CP 5613	6GK1561-3AA00
CP 5614	6GK1561-4AA00
CP 5613 FO	6GK1561-3FA00
CP 5614 FO	6GK1561-4FA00
CP 5613 A2	6GK1561-3AA01
CP 5614 A2	6GK1561-4AA01

This document contains information in English.

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1 Introduction

SIMATIC NET CP 5613 and CP 5614 Communications Processors

Thank you for deciding to buy the SIMATIC NET CP 5613/CP 5614. You have acquired an innovative product that combines very fast S7, DP, DP-Base, and FMS access with easy installation.

Purpose of this Document

Apart from general product information, this document also describes how to install the following modules on programming devices/PCs.

- CP 5613
- CP 5614
- CP 5613 FO
- CP 5614 FO
- CP 5613 A2
- CP 5614 A2

Validity of the Product Information/Installation Instructions

This document is valid for the following hardware versions:

Name	Hardware Version
CP 5613	as of Version 5
CP 5614	as of Version 5
CP 5613 FO	as of Version 3
CP 5614 FO	as of Version 3
CP 5613 A2	as of Version 1
CP 5614 A2	as of Version 1

2 Product Information

2.1 Overview of the Communications Processor Types

Introduction

The following communications processors are described in this document:

- CP 5613
- CP 5614
- CP 5613 FO
- CP 5614 FO
- CP 5613 A2
- CP 5614 A2

2.1.2 CP 5614

Properties of the CP 5614

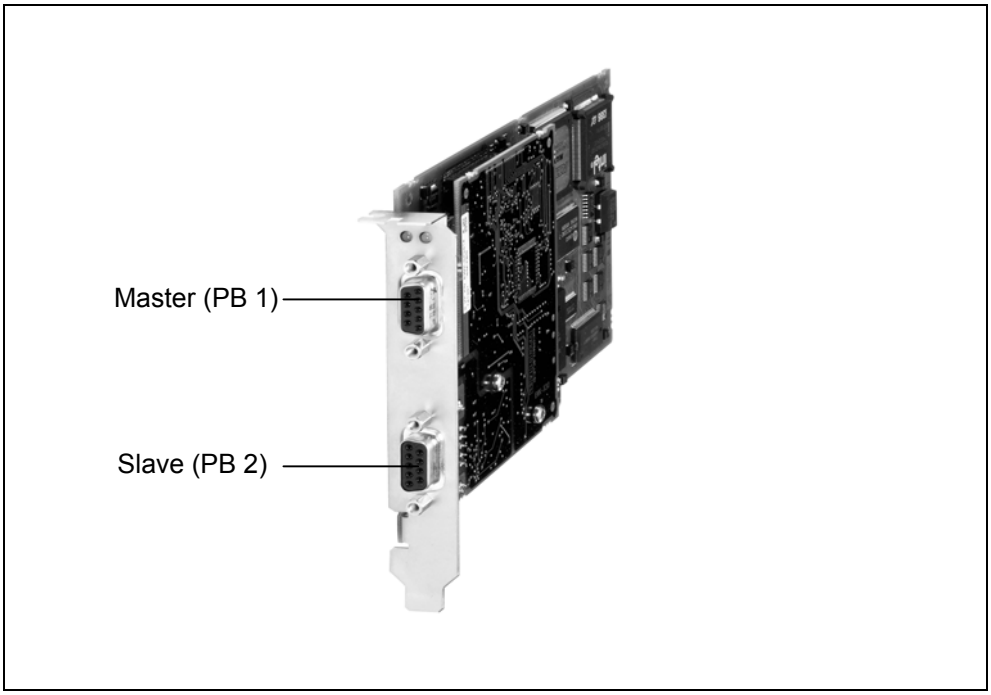
The CP 5614 has the same characteristics as the CP 5613 but has the following extra features:

- Second RS-485 port for additional attachment of the CP as a DP slave to a second DP network.
- Program-controlled transfer of data between the master and slave module to allow the implementation of HIERARCHICAL PROFIBUS networks.
- DP master and DP slave can be operated at the same time.

CP 5614

The CP 5614 consists of a main board with an additional piggy-back board. Two PROFIBUS networks can be attached:

- PROFIBUS 1 (PB 1) - Master
- PROFIBUS 2 (PB 2) - Slave



3 Installation Instructions

Procedure

Once you have installed the product software, install the CP 5613/CP 5614 modules as follows:

Step	Description
1	Make sure that you keep to the following rules for handling and installing modules (guidelines for avoiding ESD): ● Do not touch components and pick up modules only by their edges. Do not touch the pins or conductors. ● Before opening the computer, 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 computer before unplugging the power supply cable. ● Make sure that you also discharge any electrostatic charge from tools you intend to use inside the computer. ● Components and modules must only be inserted or removed when the power supply is off. ● Do not operate the computer with the housing open. ● Read any sections in the manual of your computer relating to the operation of modules on the PCI bus.
2	Turn off your computer and disconnect all the cables.
3	Open the computer as described in the computer manual.
4	Make sure that the following conditions are met: ● A PCI slot is free. (For more detailed information on the requirements of the PCI slot, refer to Chapter 4.) ● Make sure that your PC is powerful enough, in other words, at least a 266 MHz Pentium II processor and at least 256 Mbytes of memory. ● Check that you have the required resources as described in Chapter 4.
5	Insert the module in one of the free PCI or PCI-X slots on the mother board; PCI-X slots only for the CP 5613 A2 or CP 5614 A2.

Steps continued on following page

Steps continued from previous page

6	Secure the module and close your computer as described in the manual for your computer.
7	Reconnect all the cables to the computer except for the PROFIBUS cable(s) and turn on your computer.
8	Read the information in the document "Commissioning PC Stations".

Note 1

There are no hardware settings necessary on the module itself.

Note 2

If a module is inserted in a module slot, that is designed for a higher clock rate than the module, the clock rate adapts to the inserted module.

CP 5613 A2 and CP 5614 A2 are designed for a 66 MHz PCI bus clock rate.
If the CP 5613 A2 or CP 5614 A2 is operated in a PCI-X slot, the bus clock rate in this PCI-X segment is automatically reduced to 66 MHz.

With the CP 5613 and CP 5614 communications processors, the PCI bus clock rate must not exceed a maximum of 33 MHz.
(If the bus of your PC has a clock speed of 66 MHz or faster, this clock speed is automatically reduced to 33 MHz by installing the CP 5613 or CP 5614.)

The bus clock rate of the CP 5613 A2 or CP 5613 A2 is also reduced to 33 MHz if there is another module on the same bus that can only operate at 33 MHz.

Notice 1

CP 5613 and CP 5614 cannot be operated in a PCI-X slot.

Notice 2

The communications processors CP 5613 A2 and CP 5614 A2 can be operated as of SIMATIC NET CD 11/2003 (V6.2).

4 FAQ (Frequently Asked Questions)

Overview

In this chapter, you will find the answers to typical questions (**F**requently **A**sked **Q**uestions) about product properties.

4.1 Questions Relating to all Types

What do the LEDs mean?

Green and yellow LED	Meaning
green lit	DP master: Indicates token rotation (in other words, normal operation)
green off	DP master: Incorrect bus parameters, defective bus, or CP not in operation
green flashing at one second intervals	DP master: Errors in database
green and yellow flashing alternately	Module being addressed by the diagnostic tool to check the installation.
yellow lit	DP slave: Indicates polling by the DP master (in other words, normal operation)
yellow off	DP slave: Port not being addressed.
Extra on the CP 5613 A2 and CP 5614 A2:	
green flashing fast	Module not started (normal state after reset).
green and yellow flashing synchronously	Exception state (error in firmware)
one of the two LEDs is on the other flashes fast.	Error initializing the module.

Does the module have the CE mark?

Yes, refer to the Appendix, page 68.

Which approvals do the CP 5613, CP 5614, CP 5613 FO and CP 5614 FO have for USA and Canada?

The modules have the following approvals for the USA and Canada:

- Underwriters Laboratories (UL) complying with Standard UL 1950 UL Recognition Mark
- Canadian Standard Association (CSA) complying with Standard C 22.2 No 950
- FCC Class A

Which approvals do the CP 5613 A2 and CP 5614 A2 have for USA and Canada?

- cULus — Combined UL and CSA approval
- FCC Class B

4.2 CP 5613 and CP 5614

What are the technical specifications of the CP 5613 and CP 5614 modules?

Physical Values	Values
Dimensions	Short PCI module format (107 x 168 mm)
Weight	120 g for CP 5613, 170 g for CP 5614
Module insertion principle	PCI bus direct connect (5 V, 32 bits)
Bus interface	PCI V2.1, Plug and Play

Electrical Values	Values
Power supply from PCI slot	Safety extra-low voltage (SELV) complying with EN 60950 +5 V DC +/- 5%
Current consumption from PCI slot	**CP 5613** typical: 1.4 A **CP 5614** typical: 1.6 A

Safety	Values
VDE directive	VDE 0805 = EN 60950 and IEC 950
Approvals	• UL approval: UL 1950 • CSA approval: CSA C 22.2 no. 950

PROFIBUS	Values
Connector to PROFIBUS	9-pin sub D female connector with screw locking mechanism. (The CP 5614 has two interfaces. Due to lack of space, no angled bus connectors can be used.) The following network components are recommended for attachment to PROFIBUS: ● Bus connector RS 485, order number 6GK1500-0EA01 ● Bus terminal 12M, order number 6GK1500-0AA10
Type of transmission	RS 485 floating within the SELV limits
Supported data transmission rates	9,6 Kbps 19,2 Kbps 45,45 Kbps 93,75 Kbps 187,5 Kbps 500,0 Kbps 1,5 Mbps 3,0 Mbps 6,0 Mbps 12,0 Mbps
Mode of the PROFIBUS interface	Floating (interface signals) Non-floating (cable shield)
PROFIBUS controller used	● CP 5613/CP 5614 Master: ASPC2 Step E2 ● CP 5614 Slave: DPC31

Electromagnetic Compatibility	Values
Noise emission	complying with EN 55022 = CISPR 22 ● Limit class B ● FCC class A
Noise immunity on signal lines	+/-2 kV complying with EN 61000-4-5 (corresponds to IEC 61000-4-5), surge
Immunity to electrostatic discharge	+/-6 kV, Contact discharge complying with EN 61000-4-2 (corresponds to IEC 61000-4-2)
Immunity to high-frequency interference	● 10 V/m at 80% amplitude modulation and 1 kHz, 80 MHz to 1 GHz complying with EN 61000-4-3 ● 10 V/m 50 % on duration at 900 MHz complying with ENV 50204 ● 10 V/m at 80 % amplitude modulation with 1 kHz 10 kHz to 80 MHz complying with ENV 50141 (corresponds to IEC 61000-4-6)

Climatic Conditions	Values
Temperature	Tested in compliance with: ● DIN EN 60068-2-1 ● DIN EN 60068-2-2 ● DIN IEC 60068-2-14
Operation	● 0 °C to +40 °C without fan ● 0 °C to +60 °C with fan and an airflow of at least 0.5 m/s over the module ● Temperature change max. 10 K/h
Storage/transportation	-40 °C to +70 °C, Temperature change max. 20 K/h
Relative humidity	Tested in compliance with DIN IEC 60068-2-3 ● In operation: 5% to 80% at 25 °C (no condensation) ● Storage/transportation: 5 % to 95 % at 25 °C (no condensation)

Mechanical Conditions	Values
Vibration	Tested in compliance with DIN EN 60068-2-6 In operation 10 to 58 Hz; amplitude 0.0375 mm, 58 to 500 Hz; acceleration 4.9 m/s^2
Shock	Tested in compliance with DIN EN 60068-2-27 In operation half sine: 50 m/s^2 (5g), 30 ms

Notes on the CE Mark of SIMATIC NET Products

Product Name:

SIMATIC NET, CP 5613	C79458-L8000-A77
SIMATIC NET, CP 5614	C79458-L8001-A77
SIMATIC NET, CP 5613 FO	A5E00047996
SIMATIC NET, CP 5614 FO	A5E00047997
SIMATIC NET, CP 5613 A2	6GK1561-3AA01
SIMATIC NET, CP 5614 A2	6GK1561-4AA01

EMC Directive

CE

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

89/336/EEC "Electromagnetic Compatibility"

Area of Application

The products are designed for use in the following areas:

Area of Application	Requirements	
	Noise emission	Noise immunity
Household, commercial, light industry	EN 50081-1 : 1992	EN 50082-1 : 1997
Industry	EN 50081-2 : 1993	EN 50082-2 : 1995

Installation Guidelines

The product meets the requirements providing you adhere to the guidelines for installation and safety described in this Section "Notes on the CE Mark" and in the following documentation:

SIMATIC NET, PROFIBUS Networks, manual