

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

SIEMENS SIMATIC NET

6AG1343-1EX30-7XE0

SIPLUS CP 343-1 INDUSTRIAL ETHERNET PROCESSOR

Applicable product family: SIPLUS S7-300 communication processors

OFFICIAL SOURCE

6AG1343-1EX30-7XE0.pdf

The following pages are selected from the supplied manufacturer document and retain their original page content.

SIMATIC NET

S7-300 - Industrial Ethernet / PROFINET CP 343-1

Equipment Manual

Preface

Properties / services

1

Performance data

2

Requirements for use

3

LEDs

4

Installation, connection, commissioning, removal

5

Configuration and operation

6

Diagnostics and maintenance

7

Technical specifications

8

Approvals

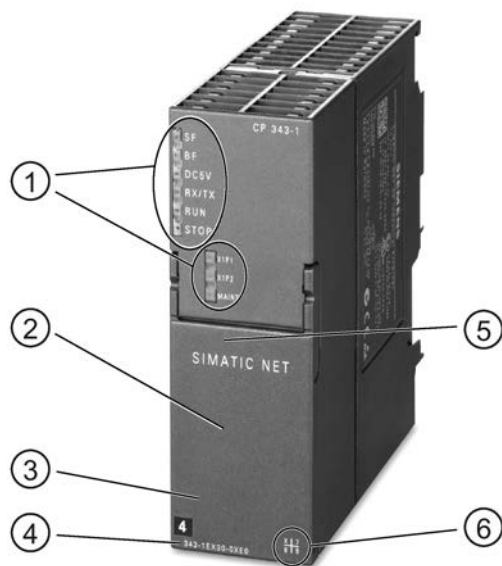
A

References

B

Manual Part B

Preface



Legend:

- ① LEDs
- ② Under the front panel:
PROFINET interface, 2 x 8-pin RJ-45 jack
- ③ Under the front panel:
 - Socket for 24 V DC power supply
 - Slider for setting the ground connector
- ④ Article number
- ⑤ Under the front panel:
printed text with MAC addresses and firmware version
- ⑥ X = placeholder for hardware product version

Figure 1 CP 343-1

Validity and product names

This description contains information on the following product:

- CP 343-1
Article number 6GK7343-1EX30-0XE0
Hardware product version 7
Firmware version V3.0
Communications processor for SIMATIC S7-300 / C7-300 und SINUMERIK 840D power line
- CP 343-1
Article number 6AG1343-1EX30-7XE0
Hardware product version 7

Installation, connection, commissioning, removal

5

5.1 Important notes on using the device

The following safety notices must be adhered to when setting up and operating the device and during all associated work such as installing, connecting, replacing or removing devices.

5.1.1 Notices on use in hazardous areas

WARNING

The device may only be operated in an environment with pollution degree 1 or 2 as described in EN/IEC 60664-1, GB/T 16935.1.

WARNING

EXPLOSION HAZARD

You may only connect or disconnect cables carrying electricity when the power supply is switched off or when the device is in an area without inflammable gas concentrations.

5.1.2 Notes on use in hazardous areas according to ATEX / IECEx / UKEX

WARNING

Requirements for the cabinet

To comply with EU Directive 2014/34 EU (ATEX 114), UK Regulation SI 2016/1107 or the conditions of IECEx or CCC-Ex, the housing or cabinet must meet the requirements of at least IP54 (according to EN/IEC 60529, GB/T 4208) in compliance with EN IEC/IEC 60079-7, GB 3836.8.

5.1 Important notes on using the device

 WARNING

Suitable cables at high ambient temperatures in hazardous area

Use heat-resistant cables with an ambient temperature $\geq 60\text{ °C}$; these cables must be rated for an ambient temperature that is at least 20 °C higher. The cable entries used on the housing must comply with the IP degree of protection required by EN IEC 60079-0 / GB 3836.1.

 WARNING

Transient overvoltages

Take measures to prevent transient overvoltages of more than 40% of the rated voltage (or more than 119 V). This is the case if you only operate devices with SELV (safety extra-low voltage).

5.1.3

Notes on use in hazardous areas according to UL HazLoc / FM

This equipment is suitable for use in Class I, Division 2, Groups A, B, C and D or non-hazardous locations only.

This equipment is suitable for use in Class I, Zone 2, Group IIC or non-hazardous locations only.

 WARNING

EXPLOSION HAZARD

Replacing components may impair suitability for Class 1, Division 2 or Zone 2.

 WARNING

When used in hazardous environments corresponding to Class I, Division 2 or Class I, Zone 2, the device must be installed in a cabinet or a suitable enclosure.

 WARNING

If the device is installed in a cabinet, the inner temperature of the cabinet corresponds to the ambient temperature of the device.

 WARNING

EXPLOSION HAZARD

The equipment is intended to be installed within an ultimate enclosure. The inner service temperature of the enclosure corresponds to the ambient temperature of the module. Use installation wiring connections with admitted maximum operating temperature of at least 30 °C higher than maximum ambient temperature.

5.2 Installation, removal and repairs in hazardous areas

 WARNING

Impermissible accessories and spare parts

Risk of explosion in hazardous areas

- Only use original accessories and original spare parts.
- Observe all relevant installation and safety instructions described in the manuals for the device or supplied with the accessories or spare parts.

 WARNING

Unsuitable cables or connectors

Risk of explosion in hazardous areas

- Only use connectors that meet the requirements of the relevant type of protection.
- If necessary, tighten the connector screw connections, device fastening screws, grounding screws, etc. according to the specified torques.
- Close unused cable openings for electrical connections.
- Check the cables for a tight fit after installation.

 WARNING

Improper installation of shielded cables

There is a risk of explosion due to equalizing currents between the hazardous area and the non-hazardous area.

- Ground shielded cables that cross hazardous areas at one end only.
- Lay a potential equalization conductor when grounding at both ends.

 WARNING

Lack of equipotential bonding

If there is no equipotential bonding in hazardous areas, there is a risk of explosion due to equalizing current or ignition sparks.

- Ensure that equipotential bonding is available for the device.

 WARNING

Unprotected cable ends

There is a risk of explosion due to unprotected cable ends in hazardous areas.

- Protect unused cable ends according to IEC/EN 60079-14.

 WARNING

Insufficient isolation of intrinsically safe and non-intrinsically safe circuits

Risk of explosion in hazardous areas

- When connecting intrinsically safe and non-intrinsically safe circuits, ensure that the galvanic isolation is performed properly in compliance with local regulations (e.g. IEC 60079-14).
- Observe the device approvals applicable for your country.

 WARNING

Unauthorized repair of devices in explosion-proof design

Risk of explosion in hazardous areas

- Repair work may only be performed by personnel authorized by Siemens.

5.3 Installing and connecting up

NOTICE

Improper mounting

Improper mounting may damage the device or impair its operation.

- Before mounting the device, always ensure that there is no visible damage to the device.
- Mount the device using suitable tools. Observe the information in the respective section about mounting.

! WARNING**Open equipment**

The devices are "open equipment" acc. to the standard IEC 61010-2-201 or UL 61010-2-201 / CSA C22.2 No. 61010-2-201. To fulfill requirements for safe operation with regard to mechanical stability, flame retardation, stability, and protection against contact, the following alternative types of installation are specified:

- Installation in a suitable cabinet.
- Installation in a suitable enclosure.
- Installation in a suitably equipped, enclosed control room.

! WARNING**Power supply**

The device is designed for operation with a directly connectable safety extra low voltage (SELV) from a limited power source (LPS).

The power supply therefore needs to meet at least one of the following conditions:

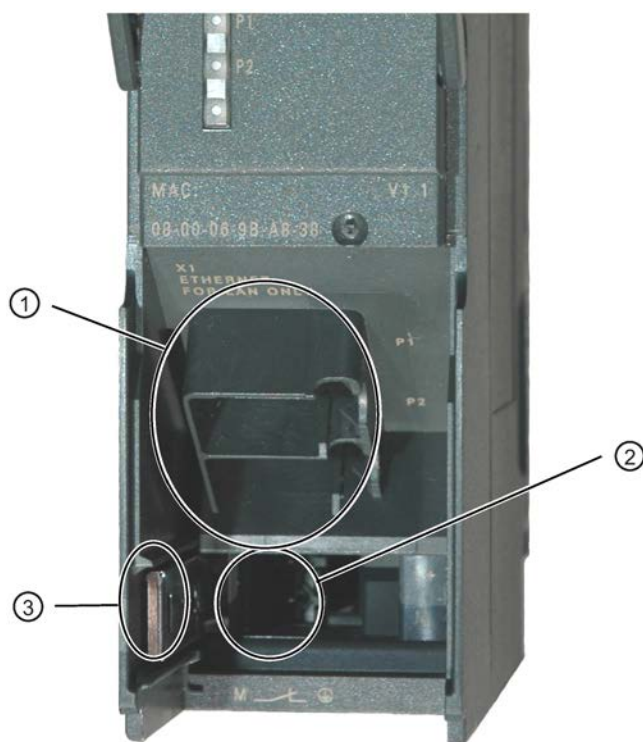
- Only safety extra low voltage (SELV) with limited power source (LPS) complying with IEC 60950-1 / EN 60950-1 / VDE 0805-1 or IEC 62368-1 / EN 62368-1 / VDE 62368-1 may be connected to the power supply terminals.
- The power supply unit for the device must meet NEC Class 2 according to the National Electrical Code (r) (ANSI / NFPA 70).

If the equipment is connected to a redundant power supply (two separate power supplies), both must meet these requirements.

Note**Pulling/plugging**

Pulling/plugging the CP when the power is on is not permitted.

You should also remember that by removing a module from the rack, all modules on the other side of it will be disconnected from the CPU.



Legend:

- 1) Attachment to Industrial Ethernet (PROFINET interface): 2 x 8pin RJ45 jack
- 2) Connecting the power supply
- 3) Slider for setting the chassis ground connection

Figure 5-1 Connectors of the CP

Ground/chassis ground concept

Note

Note the instructions regarding the grounding and chassis ground concept in the SIMATIC S7 installation guides; see "SIMATIC S7 Programmable Controller S7300 - Installation and Hardware: Installation Manual": /12/ (Page 82)".

Behind the hinged panel on the left of the device, you will see a slider with which you can connect or disconnect the chassis ground of the 24V power supply with reference ground.

- Slider pushed in: Chassis ground and reference ground are connected (caution: you can feel the slider lock into position).
- Slider pulled out: There is no connection between chassis ground and reference ground.

When shipped: Slider pushed in

Use a screwdriver to set the slider.

Installing and connecting up

NOTICE

Ensuring ventilation

During installation, make sure that the upper and lower ventilation slits of the module are not obstructed and good ventilation is possible.

1. Install the CP on the S7 standard rail.

Slots 4 to 11 are permitted for the CP in racks 0 to 3 (connected by IM 360/361). Follow the steps described in detail in /12/ (Page 82) in the sections dealing with installation and wiring.

Note

No installation in an expansion rack

The CP cannot be operated in an expansion rack that is connected via the IM 365. Reason: The required communication bus is not connected to the expansion rack via the IM 365.

2. Establish the connection via the enclosed bus connector to the backplane bus.
3. Connect the CP to the power supply.

Follow the steps as described in detail in /12/ (Page 82) when wiring between the power supply and the CPU.

NOTICE

Same power supply

The CPU, CP and IM (if one exists) must be connected to the same power supply.
Only wire up the S7300 / C7300 with the power switched off!

4. Connect the CP to Industrial Ethernet.

An Ethernet cable can also be inserted and removed with the power supply on.

The remaining steps in commissioning involve downloading the configuration data.

Downloading and addressing

You can connect the PG as follows when downloading the configuration data:

- Via MPI
- Via Industrial Ethernet

For further details, refer to the general Part A of this manual.

- Addressing the first time (IP address assignment / node initialization)
- To download the defined configuration

The PG / PC requires a LAN attachment, for example via a CP 1613 or CP 1411 and must have the necessary software (for example the S71613 package or SOFTNET IE). The TCP/IP protocol must be installed. The protocol used must then be applied to the S7ONLINE access point.

Diagnostics

Use the diagnostic functions during commissioning and to analyze problems. The following options are available:

- The LED displays on the CP
- Hardware diagnostics and troubleshooting with STEP 7
- Communication diagnostics with STEP 7 / NCM Diagnostics
- Static information using HW Config
- Web diagnostics
- If applicable, evaluation of the alarm block FB 54 in the user program
- Queries via SNMP

Connecting interface X1 to Industrial Ethernet

1. Connect the CP to Industrial Ethernet via one of the RJ45 jacks.
2. Where necessary, connect another component to the remaining free RJ45 jack.

Note

Autocrossing mechanism - effects on the connectors

For small local area networks or for attaching several Ethernet devices, a 2port switch has been integrated on the PROFINET interface of the CP.

With the autocrossing mechanism integrated in the switch, it is possible to use a standard cable to connect the PG/PC. A crossover cable is not necessary.

Please note the following points:

- Manual configuration
If a port is set to manual configuration and autonegotiation is disabled, the autocrossing mechanism is also disabled for this port. Which cable you need to use depends on the partner device (network component or end device).
In the factory, the ports are set for automatic configuration.
For more information, refer to section Network settings (Page 51)
 - Connecting switches
If you connect further switches, make sure that no ring is formed in the network.
-

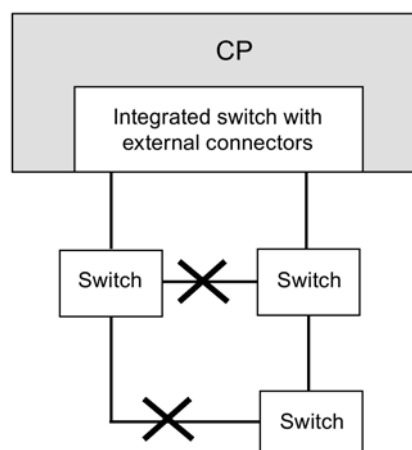


Figure 5-2 Connecting switches

Note

MRP configuration

With an MRP configuration, keep to the setup guidelines for MRP.

You will find examples of network attachments in the general Part A of this manual, see /1/ (Page 79).

Technical specifications

Table 8- 1 Technical specifications

Technical specifications		
Attachment to Industrial Ethernet		
Number	1 x PROFINET interface with 2port switch	
Execution	Connector	2 x RJ-45 jacks
	Transmission rate	10 / 100 Mbps
		When working with PROFINET IO and cyclic transfer, the transmission speed of 100 Mbps full duplex is mandatory.
	Aging time	5 minutes
	Special features of the X1P1R and X1P2R ports	Integration in ring topology / MRP possible
Electrical data		
Supply voltage	External power supply	24 VDC
	Permitted range	+20.4 V to +28.8 V
	From backplane bus	5 VDC
Current consumption	From external power supply	200 mA maximum
	From backplane bus	200 mA maximum
Effective power loss	5.8 W	
Permitted ambient conditions		
Ambient temperature	During operation with the rack installed horizontally	0 °C to +60 °C
	During operation with the rack installed vertically	0 °C to +40 °C
	During storage	-40 °C to +70 °C
	During transportation	-40 °C to +70 °C
Relative humidity	During operation	≤ 95 % at 25 °C, no condensation
Operating altitude	During operation	≤ 2,000 m above sea level
Contaminant concentration	Acc. to ISA-S71.04 severity level G1, G2, G3	
Design, dimensions and weight		
Module format	Compact module for S7-300, single width	
Degree of protection	IP20	
Weight	Approx. 220 g	
Dimensions (W x H x D)	40 x 125 x 120 mm	
Installation options	Mounting in an S7-300 rack	
Product functions *		

* You will find the product functions in the section Properties / services (Page 13).

For further data, refer to section Performance data (Page 19)

In addition to this, all the information in the "SIMATIC S7-300 Automation System Module Data" see /12/ (Page 82) in the section "General Technical Specifications" on the topics listed below applies to the CP:

- Electromagnetic compatibility
- Transportation/storage conditions
- Mechanical and climatic environmental conditions
- Information on insulation checks, protection class and degree of protection

Approvals

Approvals issued

Note

Issued approvals on the type plate of the device

The specified approvals apply only when the corresponding mark is printed on the product. You can check which of the following approvals have been granted for your product by the markings on the type plate.

Approvals for shipbuilding are not printed on the device type plate.

Current approvals on the Internet

You will find the current approvals for the product on the Internet pages of Siemens Industry Online Support at the following link:

(<https://support.industry.siemens.com/cs/ww/en/ps/15345/cert>)

Documents on the Internet

You will find the declarations of conformity listed below and certificates of the product on the Internet at the following address:

Link: (<https://support.industry.siemens.com/cs/ww/en/ps/15345/cert>)

You can see the current versions of the standards in the relevant certificate, which you will find on the Internet at the address specified above.

Address for declarations of conformity

The EU and the UK declarations of conformity are available to all responsible authorities at:

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