

SIMATIC NET

S7-300 - PROFIBUS CP 343-5

Equipment Manual

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Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree 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 **may** result if proper precautions are not taken.

CAUTION

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

NOTICE

indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

WARNING

Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

Trademarks

All names identified by ® are registered trademarks of Siemens AG. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

Preface

Product overview and notes

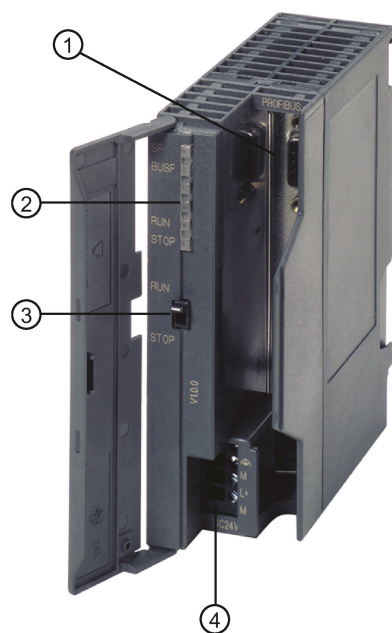
CP 343-5

Article number: 6GK7343-5FA01-0XE0

Hardware product version: 4

Firmware version: V4.1

Communications processor for connecting SIMATIC S7-300 / C7-300 to PROFIBUS DP



- ① 9-pin D-sub socket
- ② Status and error displays
- ③ Mode switch
- ④ Connector for power supply and functional earth

Product notes

Note

All notes in the Product Information supplied with the product described in this document are valid and must be observed.

New in this edition

- New approvals
- Editorial revision

Replaced documentation

This manual replaces the manual edition 11/2002.

Structure of the documentation

The documentation for this device consists of the following parts:

- Manual Part A - Configuration manual "Configuring and Commissioning S7 CPs for PROFIBUS"

You will find this manual on the Manual DVD that ships with the CP or on the Internet at the following address:

Link: (<https://support.industry.siemens.com/cs/ww/de/view/1158693>)

- Manual Part B - Equipment manual "CP 343-5" (this document)

Current manual release on the Internet

You will also find the current version of this manual on the Internet pages of Siemens Industry Online Support:

Link: (<https://support.industry.siemens.com/cs/ww/en/ps/15676/man>)

Compatibility with previous versions

Note

Make sure that you read the information relating to enhanced functions and restrictions in the section Compatibility with previous product (Page 23) of this manual!

Note on firmware/software support

Check regularly for new firmware/software versions or security updates and apply them. After the release of a new version, previous versions are no longer supported and are not maintained.

Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

For additional information on industrial security measures that may be implemented, please visit

Link: (<http://www.siemens.com/industrialsecurity>)

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customers' exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under

Link: (<https://www.siemens.com/cert>)

Observe the following security recommendations to prevent unauthorized access to the system.

- Evaluate your plant as a whole in terms of security. Use a cell protection concept with suitable products.
- Keep the firmware up to date. Check regularly for security updates of the firmware and use them.
- Restrict physical access to the device to qualified personnel.
- Configure a protection level of the CPU.

Recycling and disposal



The product is low in pollutants, can be recycled and meets the requirements of the WEEE directive 2012/19/EU "Waste Electrical and Electronic Equipment".

Do not dispose of the product at public disposal sites. For environmentally friendly recycling and the disposal of your old device contact a certified disposal company for electronic scrap or your Siemens contact.

Keep to the local regulations.

You will find information on returning the product on the Internet pages of Siemens Industry Online Support:

Link: (<https://support.industry.siemens.com/cs/ww/en/view/109479891>)

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Properties / services

1.1 Use

Automation system

The CP 343-5 communications processor is intended for operation in a SIMATIC S7-300 / C7-300 automation system. It allows connection of the S7-300 / C7-300 to a PROFIBUS fieldbus system.

1.2 Communications services

Supported communications services

In its current configuration, the CP 343-5 supports the following communications services:

- PROFIBUS FMS (complying with EN 50170, FMS client and server function)
 - As FMS master for the following connection types:
 - MMAZ: Master-master acyclic
 - MSAZ: Master-slave acyclic
 - MSAZ_SI: Master-slave acyclic with slave initiative
 - MSZY: Master-slave cyclic
 - BRCT (Broadcast): Send to all FMS subscribers
- S7 communication and PG/OP communication
 - PG functions with uploading/downloading of FM modules, configuration/diagnostics and routing
 - Operator control and monitoring functions (HMI)
 - Server for data exchange on connections configured at one end only without communication blocks in the S7 station
- S5-compatible communication (SEND/RECEIVE interface) over FDL connections of the following type:
 - Specified FDL connections
 - Free Layer 2 connections (SDA, SDN)
 - Broadcast
 - Multicast

The services of the CP 343-5 listed above can be used independently of one another at the same time.

Configuration

STEP 7 as of V5.1 SP3 and the installation of the NCM S7 for PROFIBUS option package supplied with STEP 7 are required for configuration.

Configuration is possible over MPI or LAN/PROFIBUS.

Note

If you change the bus parameters in the configuration data, you can only load this configuration data into the CP via MPI!

Programming – Using blocks

Preconfigured blocks (FCs/FBs) provide the interface in your STEP 7 user program to some of the communications services available with the PROFIBUS CP. You will find a detailed description of these blocks in the NCM S7 for PROFIBUS manuals.

Note

Always use the current block versions

We recommend that you always use the latest block versions for all module types.

You will find information on the current block versions and the current blocks to download in our Customer Support on the Internet:

Link: (<https://support.industry.siemens.com/cs/ww/en/view/62543517>)

With older module types, this recommendation assumes that you are using the latest firmware version for the particular module type.

Replace module without PG

The CP supports the option of storing the configuration data of the CP on the CPU. When you use this option, replacing modules is possible without having to download the configuration data via the PG.

The configuration data is then stored in load memory of the CPU. Storage of the configuration data is protected from power failure by the battery backup or the EPROM module card in the CPU.

Performance data

2.1 Transmission speeds supported

The transmission speed is set with the SIMATIC STEP 7 configuration software. For the permitted values, refer to Table 6-1 in Section 6 (Page 27)

2.2 Characteristics of FMS connections

General characteristic data

The following characteristic data is important when operating FMS connections:

Component	Explanation / values
Number of operable FMS connections	16 max.
Payload data length	237 bytes for READ 233 bytes for WRITE and REPORT
Configurable variables	256 server variables and 256 variable descriptions that can be loaded from the partner. The can be distributed over the max. number of configurable FMS descriptions as desired. The value refers to elementary data types or arrays of elementary data types. The value does not apply to composite data types (STRUCT)! Also observe the explanations in the manual /2/ (Page 35) relating to the consideration of composite data types (STRUCT).

Cycle load time due to FMS connections

The runtime of the function blocks (FBs) in the S7-300 CPU (see following table for 314-1) is decisive for calculating the response times for FMS connections.

The following table lists the cycle load time due to the available FBs in ms. The values have been determined with a data length of 230 bytes (array).

Component / FB	FB number	Job initiation in ms (first call)	Job running in ms (follow-on call)	Job finished without error in ms (last call)
IDENT	FB 2	1.8	0.2	5.5
READ	FB 3	2.2	0.2	7.6
REPORT	FB 4	8.0	0.2	1.8
STATUS	FB 5	1.8	0.2	2.2
WRITE	FB 6	7.6	0.2	2.0

Other notes on FMS

Note: In FMS server operation, the CP occupies an unconfigured communication bus connection in the S7 CPU.

Note that the S7 CPU 314 supports a maximum of 4 (maximum of 12 with newer CPU types) unconfigured communication bus connections. If you operate a PG and an OP on the S7 CPU, for example, two more unconfigured communication bus connections are free.

Note

Replace module without PG

CPU settings need to be modified to replace a module without a PG. For this purpose, select the properties dialog of the CPU in HW Config; the following values must be checked and increased if necessary in the "Monitoring time for..." input field in the "Startup" tab:

- "Transfer of parameters to modules"

Depending on the system (station expansion), you may also need to increase the value of the following parameter:

- "Signaling readiness by modules"

2.3 Characteristic data of S5-compatible communication (SEND/RECEIVE interface) over FDL connections

General characteristic data

The following characteristic data is important when operating FDL connections (specified, free Layer 2 (SDA and SDN), broadcast, multicast):

Characteristic	Explanation / values
Total number of FDL connections that can be operated.	16 max.
Size of the transferable data area for FDL connections.	1-240 bytes max. per specified FDL connection (for sending and receiving) Free Layer 2, broadcast and multicast: 1 to 236 bytes of payload data can be transferred per job. The job header occupies an additional 4 bytes.

Reaction times of FDL connections

The calculation of the reaction times for FDL connections is largely dependent on the time required to execute the function blocks (AG_SEND, AG_RECV) on the S7-300 / C7-300 CPU.

Component	Explanation / values	
Runtime in the CPU 314-1 (6ES7 314-1AE04-0AB0)	Per AG_SEND block call: • 6.0 ms at 240 bytes	Per AG_RECV block call: • 7.5 ms at 240 bytes

Speed of the FDL connections

Refer to the following table for transmission rates with FDL connections dependent on the following parameters:

- Frame length (number of bytes)
- CPU type

The values were measured while sending or receiving successively (at a transmission rate of 1.5 Mbps; bus profile standard; 9 subscribers).

Table 2- 1 Number of FDL frames per second

Frame length / CPU type / baud rate	CPU 314 / 1.5 MBaud
8 bytes	129 / s
128 bytes	130 / s
240 bytes	122 / s

2.4 Characteristic data of S7 communication

General characteristic data

The following characteristic data is important when operating S7 connections:

Characteristic	Explanation / values
Number of operable S7 connections	16 max. ¹⁾

¹⁾ The actual possible number of S7 connections that can be operated depends on the type of CPU being used.

2.5 Parallel use of communications services (multiprotocol mode)

Speed

Using the various available communications services at the same time affects the communication speed:

- The FMS speed can decrease with large configuration limits (16 FMS connections) and more than 8 S7 connections.
- With cyclic NCM diagnostics, the update time should be set to 3 seconds; otherwise, the communication speed can decrease.

2.5 Parallel use of communications services (multiprotocol mode)

Displays and mode selector

3.1 LEDs

LED display of the operating status of the CP

The different combinations of the four LEDs on the front panel indicate the status of the CP:

SF (red)	BUSF (red)	RUN (green)	STOP (yellow)	CP operating mode
				Starting up (STOP->RUN)
				Running (RUN)
				Stopping (RUN->STOP)
				Stopped (STOP)
				Stopped (STOP) with error
				Running (RUN) with problems on PROFIBUS
				Ready to begin loading firmware (mode active for 10 seconds)
				Loading firmware
				Invalid firmware loaded
				Waiting for firmware update (CP currently has an incomplete firmware version)
				Module fault / system error

Table 3- 1 Legend - meaning of the symbols:

Symbol	  		  
State	ON (steady light)	OFF	Flashing

3.2 Mode selector

Controlling the mode

Note

Modes

Note the explanations in the manual /2/ (Page 35) on the topic of operating modes.

You can control the mode of the CP 343-5 in the following ways:

- Mode selector
- Configuration software NCM S7 for PROFIBUS
- SIMATIC Manager in STEP 7

To control the CP mode from STEP 7 / NCM S7 for PROFIBUS, the mode selector must be set to RUN.

Mode selector

Note

Load the database to the CP

Note the explanations in the manual /2/ (Page 35) on the topic of loading the database to the CP.

With the mode selector, you can set the following modes:

- Change from STOP to RUN:

The CP loads configured and/or downloaded data into the work memory and then changes to RUN mode.

- Change from RUN to STOP:

The CP changes to STOP. Established connections (FDL, FMS and S7 connections) are terminated.

In STOP mode, configuring and performing diagnostics on the CP 343-5 remain possible.

Installation, connection, commissioning, removal

4

4.1 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.

4.1.1 Notes 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.

WARNING

EXPLOSION HAZARD

Do not operate the mode switch if there is a potentially explosive atmosphere.

4.1.2 Notes on use in hazardous areas according to ATEX / UKEX / IECEx / CCC-Ex

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.

4.1 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).

4.1.3

Notes on use in hazardous areas according to UL HazLoc and 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

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

EXPLOSION HAZARD

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

 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.

4.2 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.

4.3 Installing, connecting and commissioning

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.

PROFIBUS connection

Only use 90° connectors for the PROFIBUS connection. With other connector types, you cannot close the front cover of the device.

What to do / steps

Step	Procedure / significance
1. Install the CP on the S7 mounting rail. 2. Establish the connection to the backplane bus via the supplied bus connector.	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 /1/ (Page 35) in the sections dealing with installation and wiring.

Note**Expansion rack**

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

4.4 Disassembly

Step	Procedure / significance
3. Connect the CP to the power supply.	Follow the steps as described in detail in /1/ (Page 35) when wiring between the power supply and the CPU.

Note**Connecting the CP to the power supply**

- The CPU, CP and IM (if one exists) must be connected to the same power supply.
- Only wire up the S7-300 / C7-300 with the power switched off!
- When it ships, the CP has a jumper inserted between the M and functional earth terminals. If you want to ground the reference potential, do not remove the jumper between the M and functional earth terminals (see also /1/ (Page 35) on the topic "Installing the S7-300 with grounded reference potential" and "Installing the S7-300 with ungrounded reference potential").

Step	Procedure / significance
4. Connect the CP to PROFIBUS.	
5. The remaining steps in commissioning involve loading the configuration data.	For more details, in particular on node initialization, refer to /2/ (Page 35).

4.4 Disassembly

 WARNING
Improper disassembly

Improper disassembly may result in a risk of explosion in hazardous areas.

For proper disassembly, observe the following:

- Before starting work, ensure that the electricity is switched off.
- Secure remaining connections so that no damage can occur as a result of disassembly if the system is accidentally started up.

Diagnostics and maintenance



! CAUTION

Hot surfaces

Risk of burns during maintenance work on parts with a surface temperature above 70 °C (158 °F).

- Take appropriate protective measures, for example, wear protective gloves.
- Once maintenance work is complete, restore the touch protection measures.

! WARNING

Cleaning the housing

- **In hazardous areas**
Only clean the outer parts of the housing with a damp, but not wet, cloth.
- **In non-hazardous areas**
Only clean the outer parts of the housing with a dry cloth.

Do not use any liquids or solvents.

5.1 Compatibility with previous product

5.1.1 Function extensions compared with previous product

Replacement part scenario

The CP 343-5 (6GK7 343-5FA01-0XE0) described here can be used as a replacement for the predecessor product CP 343-5 (6GK7 343-5FA00-0XE0).

Function extensions with the 6GK7 343-5FA01-0XE0

The CP 343-5 described here also supports transmission speeds > 1.5 Mbps.

5.1.2 Replacing older modules / module replacement

Module replacement

Follow the procedure below when replacing an older module with one of the modules described here.

Module used up to now	Configuration procedure
6GK7 343-5FA00-0XE0	Configuration unchanged (spare part scenario) If you have no requirements beyond what you had with the previous CP, you do not need to make changes in the configuration. You only need to remember the following distinction during commissioning: • If the option of storing the configuration data of the CP on the CPU was selected for the CPU you are replacing, the configuration data is loaded automatically from the CPU to the CP when the CP starts up. • Otherwise, download the configuration data again from your PG/PC to the CP. Extending the configuration (use new functions) If you want to use the extended options of the new CP, follow the steps below: 1. In STEP 7 / HW Config, replace the already configured CP 343-5 with the new module with order number 6GK7 343-5FA01-0XE0; you will find this in the hardware catalog. 2. Modify your configuration according to your requirements, for example in the Properties dialog for the PROFIBUS subnet. 3. Use the FBs supplied as of STEP 7 V5.1 (as of V1.5) for FMS operation and re-create the instance data blocks. 4. Save, compile and load the configuration data and blocks to the CPU or CP again.

Note

Free slot

If you cannot eliminate gaps in the slots caused by replacing modules by moving the remaining modules closer, you will need to use a dummy module (6ES7 370-0AA01-0AA0).

In this case, the address switch on the rear of the module must be set to "Non Address Mode" (NA).

Statements in the online help and documentation on NCM S7 for PROFIBUS

The additional information "for newer modules" in the online help for STEP 7 / NCM 7 and in the NCM S7 for PROFIBUS manual also applies to the CP described here.

Compatibility

Compared with previous modules, the CP 343-5 reacts differently in the following ways. Remember the effects in your user program. The following table provides an overview:

Topic / relates to	Previous	New
Receive buffer length too short for AG_RECV	If the receive buffer is too small, data is received until the buffer size is reached. The call is acknowledged with error code 8185 _H	If the receive buffer is too small, no data is received. The call is acknowledged with error code 80B1 _H .

Note

Always use current block versions

You should always use the latest block versions for new user programs. You will find information on the current block versions and the current blocks for download in Customer Support on the Internet:

Link: (<https://support.industry.siemens.com/cs/ww/en/ps/15676/pm>)

Technical specifications

General technical specifications

Technical specifications	Value
Transmission speeds supported	9.6 kbps, 19.2 kbps, 45.45 kbps, 93.75 kbps, 187.5 kbps, 500 kbps 1.5 Mbps, 3 Mbps, 6 Mbps, 12 Mbps
Interfaces • Connection to PROFIBUS • Maximum current consumption on the PROFIBUS interface when connecting network components (for example, optical network components)	• 9-pin D-sub socket • 100 mA at 5 V
Rated voltage	DC 24 V
Current consumption • from 24 V: • from S7-300 / C7-300 backplane bus	• 0.25 A typ. • 150 mA typ.
Cable cross-section for 24 V	0.25...2.5 mm ²
Power loss	6 W
Permitted ambient temperature • For operation – When installed horizontally – When installed vertically (refer to I1/ (Page 35)) • Transport/storage temperature	• 0...60°C • 0...40°C • -40 °C to +70 °C
• Max. relative humidity. • Operating altitude	• 95% at +25 °C • up to 2000 m above sea level
Dimensions W x H x D (mm)	40 x 125 x 120
Weight	Approx. 300 g

Over and above this, all information in I1/ (Page 35) in the section "General technical specifications" applies to the CP 343-5:

- 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.

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/15676/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:

Siemens Aktiengesellschaft
Digital Industries
P.O. Box 48 48
90026 Nuremberg
Germany

EU Declaration of Conformity



The product meets the requirements and safety objectives of the following EC directives and it complies with the harmonized European standards (EN) for programmable logic controllers which are published in the official documentation of the European Union:

- **2014/34/EU (ATEX explosion protection directive)**

Directive of the European Parliament and the Council of 26 February 2014 on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres, official journal of the EU L96, 29/03/2014, pages. 309-356

- **2014/30/EU (EMC)**

EMC directive of the European Parliament and of the Council of 26 February 2014 on the approximation of the laws of the member states relating to electromagnetic compatibility; official journal of the EU L96, 29/03/2014, pages 79-106

- **2011/65/EU (RoHS)**

Directive of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

UK Declaration of Conformity



Importer UK:

Siemens plc
Sir William Siemens House
Princess Road
Manchester
M20 2UR

The product meets the requirements of the following directives:

- **UKEX Regulations**

SI 2016/1107 The Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, and related amendments

- **EMC Regulations**

SI 2016/1091 The Electromagnetic Compatibility Regulations 2016

- **RoHS Regulations**

SI 2012/3032 The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

ATEX / IECEx / UKEX / CCC-Ex

Note the information in the document "Use of subassemblies/modules in a Zone 2 Hazardous Area", which you will find on the Internet at the following address:

Link: (<https://support.industry.siemens.com/cs/ww/en/view/78381013>)

The conditions must be met for safe usage of the product according to the section Notes on use in hazardous areas according to ATEX / UKEX / IECEx / CCC-Ex (Page 17).

! WARNING

Observe installation guidelines

The product meets the requirements if you observe the following during installation and operation:

- The notes in the section Installation, connection, commissioning, removal (Page 17)
- The installation guidelines in the document /1/ (Page 35)

The product meets the explosion protection requirements outlined below.

IECEX

Classification: Ex ec IIC T4 Gc, Certificate no.: IECEX DEK 18.0019X

The product meets the requirements of the standards:

- IEC 60079-0 - Explosive atmospheres - Part 0: Equipment - General requirements
- IEC 60079-7 - Explosive Atmospheres - Part 7: Equipment protection by increased safety 'e'

ATEX

Classification: II 3G Ex ec IIC T4 Gc, Certificate no.: DEKRA 18ATEX0027 X

The product meets the requirements of the standards:

- EN IEC 60079-0 - Explosive atmospheres - Part 0: Equipment - General requirements
- EN 60079-7 - Explosive Atmospheres - Part 7: Equipment protection by increased safety 'e'

UKEX

Classification: Ex ec IIC T4 Gc, Certificate no.: DEKRA 21UKEX0003 X

The product meets the requirements of the standards:

- EN IEC 60079-0 - Explosive atmospheres - Part 0: Equipment - General requirements
- EN 60079-7 - Explosive Atmospheres - Part 7: Equipment protection by increased safety 'e'

Importer UK: Siemens plc (see above)

CCC

Classification: Ex na IIC T4 Gc

The product meets the requirements of the following standards:

- GB 3836.1
Explosive atmospheres - Part 0: Equipment - General requirements
- GB 3836.3
Explosive atmospheres - Part 3: Equipment protection by increased safety "e"
- GB 3836.8
Explosive atmospheres - Part 15: Equipment protection by type of protection 'n'



EMC

The CP meets the requirements of the following directives:

- EU directive 2014/30/EU "Electromagnetic Compatibility" (EMC directive)
- EMC Regulations SI 2016/1091 The Electromagnetic Compatibility Regulations 2016

Applied standards:

- EN 61000-6-2

Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments

- EN 61000-6-4

Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments

RoHS

The CP meets the requirements of the following directives:

- EU directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment.
- SI 2012/3032 The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Applied standard: EN IEC 63000

cULus Hazardous (Classified) Locations



Underwriters Laboratories Inc.

cULus Listed 7RA9 IND. CONT. EQ. FOR HAZ. LOC.:

- UL 508 (Industrial Control Equipment)
- UL 1604 (Hazardous Location)
- CSA C22.2 No. 142 (Process Control Equipment)
- CSA C22.2 No. 213 (Hazardous Location)



APPROVED for Use in:

- Cl. 1, Div. 2, GP. A, B, C, D T4A; Ta = 0 °C...60 °C
- Cl. 1, Zone 2, GP. IIC T4; Ta = 0 °C...60 °C

FM



Factory Mutual Research (FM):

Approval Standard Class Number 3611

APPROVED for Use in:

Class I, Division 2, Group A, B, C, D, Temperature Class T4A; Ta = 0 °C...60 °C

Class I, Zone 2, Group IIC, Temperature Class T4; Ta = 0 °C...60 °C

Note for Australia



AS/NZS 2064 (Class A)

Note for Korea

KCC-REM-S49-S7300CP

Current approvals

SIMATIC NET products are regularly submitted to the relevant authorities and approval centers for approvals relating to specific markets and applications.

If you require a list of the current approvals for individual devices, consult your Siemens contact or check the Internet pages of Siemens Industry Online Support:

Link: (<https://support.industry.siemens.com/cs/ww/en/ps/15676/cert>)

Bibliography

Finding the SIMATIC NET documentation

- **Siemens Industry Mall**

You will find the order numbers for the Siemens products of relevance here in the Siemens Industry Mall:

Link: (<https://mall.industry.siemens.com>)

- **Documentation on the Internet**

You will find SIMATIC NET manuals on the Internet pages of Siemens Industry Online Support:

Link: (<https://support.industry.siemens.com/cs/ww/en/ps/15247/man>)

Navigate to the desired product group there.

- **Documentation in the STEP 7 V5 installation**

Manuals that are included in the online documentation of the STEP 7 installation on your PG/PC can be found in the start menu ("Start" > "All Programs" > "Siemens Automation" > "Documentation").

- **Documentation on the data storage medium**

You will find some of the documentation for the "SIMATIC NET PC Software" products directly on the data storage medium or, after installation, in the folder "%ProgramFiles%\Siemens\SIMATIC.NET\doc".

/1/

SIMATIC S7
S7-300 Automation System
Siemens AG

- CPU 31xC and 31x Installation: Operating instructions

Link: (<https://support.industry.siemens.com/cs/ww/en/view/13008499>)

- Module Data: Reference manual

Link: (<https://support.industry.siemens.com/cs/ww/en/view/8859629>)

/2/

SIMATIC NET
S7 CPs for PROFIBUS - Configuring and Commissioning
Manual Part A
Configuration Manual
Siemens AG
1158693 (<http://support.automation.siemens.com/WW/view/en/1158693>)

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