

Industrial Ethernet

CP 343-1 Lean

NEW

- Connection of SIMATIC S7-300 to Industrial Ethernet
 - 10/100 Mbit/s full/half duplex connection with Autosensing for automatic switchover
 - RJ45 connection
 - Multi-protocol mode with TCP and UDP Transport protocol
 - Keep Alive function
- Communication services:
 - TCP/IP und UDP transport protocol
 - Programming device/operator panel communication
 - S7 communication (server)
 - S5-compatible communication
- Multicast for UPD
- Complete remote programming and initial startup possible via Industrial Ethernet
- Integration into network management through SNMP
- Configuration of CP 343-1 Lean with NCM S7 for Industrial Ethernet (integrated into STEP 7)
- Network-wide PG/OP communication through S7 Routing



simatic net

PRELIMINARY

SIEMENS

Industrial Ethernet

System interfacing for SIMATIC S7

CP 343-1 Lean

Benefits



- Direct integration of S7-300 even in complex systems by means of Industrial Ethernet at 100 Mbit/s
- Investment protection for existing plants through integration of the SIMATIC S7-300 by means of S5-compatible communication
- Flexible use thanks to lack of slot rules
- One slot is saved thanks to single-width format
- Remote programming is possible due to the WAN characteristic of TCP/IP, even via the telephone network (e.g. ISDN)
- A large number of stations can be accessed thanks to the multicast function
- Access to the SIMATIC S7-300 by up to 4 HMI systems
- Use of the socket interface in the partner system
- Initial start-up can be performed directly over Industrial Ethernet

Application

The CP 343-1 Lean is the communications processor for SIMATIC S7-300 for Industrial Ethernet.

With its own processor, it relieves the CPU of communications tasks and facilitates additional connections.

Communication options of the S7-300 through CP 343-1 Lean with:

- Programming devices, processors and HMI devices
- Other SIMATIC S7 systems
- SIMATIC S5 PLCs

Design

The CP 343-1 Lean offers all the advantages of SIMATIC S7-300 system design:

- Compact design; the rugged plastic casing features on the front:
 - RJ45 socket for connection to Industrial Ethernet with automatic transmission rate detection through autosensing;
 - 2-pin plug-in terminal block for connecting the external supply voltage of 24 V DC.
- Easy installation; The CP 343-1 Lean is snap-mounted on the S7-300 DIN rail and connected to adjacent modules through the bus connectors. There are no slot rules.
- The CP 343-1 Lean can be operated without a fan. A standby battery is not required.
- In combination with IM 360/361, CP 343-1 Lean can also be used in an expansion rack (ER).
- The module can be replaced without the need for a programming device

Function

The CP 343-1 Lean independently handles data traffic over Industrial Ethernet. The module has its own processor. Layers 1 to 4 comply with international standards.

Multi-protocol mode of the TCP/IP and UDP Transport protocols are possible.

The CP 343-1 Lean has a preset unique Ethernet address and can be put directly into operation through the network.

The CP 343-1 Lean works in multi-protocol mode for the following communication services:

Programming device/operator panel communication

PG/OP communication allows all S7 stations connected to the network to be remotely programmed.

- S7 routing; With the aid of S7 routing it is possible to use programming device communication across networks

S7 communication

For connecting the S7-300 (server only) to S7-400, HMI units and PCs (CP 1613 with S7-1613 or SOFTNET-S7).

S5-compatible communication

Based on layer 4, this is a simple, optimized interface for data communication. Up to 8 KB of data can be transmitted in one call.

This interface enables

- TCP transport connections
- UDP
 - Multicast for UDP

to be used.

S5-compatible communication is used for communication with SIMATIC S5, SIMATIC S7-400/-300 and computers/PCs.

The function calls required are a component part of NCM S7 for Industrial Ethernet and must be integrated into the S7 user program.

S5-compatible communication with FETCH/WRITE allows direct access to the CPU data of the SIMATIC S5 (e.g. through CP 1430 TCP). This means existing HMI systems can still be used.

Implementing UDP as the transmission protocol for S5-compatible communication allows utilization of the multicast function to simultaneously send and receive data on configured multicast circuits.

Diagnostics

Extensive diagnostic options are available via NCM S7, including:

- Status of the CP
- General diagnostics and statistics functions
- Connection diagnostics
- LAN controller statistics
- Diagnostics buffer

All MIB 2 objects can be read out through SNMP. This can be used to call up the current status of the Ethernet Interface.

Configuring

Version 5.2 or higher of STEP 7 and NCM S7 for Industrial Ethernet is required for configuring the CP 343-1 Lean. NCM S7 is completely embedded in the STEP7 environment.

From Version V5 of STEP 7/NCM S7 for Industrial Ethernet, the configuration data of the CP can also be saved on the CPU, if required. This allows the module to be replaced without a programming device. It is important to take into account the memory capacity of the S7 CPU.

All function blocks (FC) required for S5-compatible communication and programmable block communication (S7 client) are contained in the scope of supply of NCM S7 for Industrial Ethernet.

Industrial Ethernet

System interfacing for SIMATIC S7

CP 343-1 Lean

Technical specifications

CP 343-1 Lean	
Data transmission rate	10/100 Mbit/s autosensing
Interfaces	
• 10BaseT, 100BaseTX	RJ45
• Connection for power supply	2-pole plug-in terminal block
Power supply	+5 V DC (±5%) and +24 V DC (±5%)
Current consumption	
• From backplane bus	200 mA
• From 24 V DC external	typ. 160 mA max. 200 mA
Power loss	5.8 W
Perm. ambient conditions	
• Operating temperature	0 °C to +60 °C
• Transport/storage temperature	-40 °C to +70 °C
• Relative humidity	max. 95% at +25 °C
Construction	
• Module format	Compact S7-300 module single width
• Dimensions (WxHxD) in mm	40 x 125 x 120
• Weight	approx. 200 g
Configuring software	NCM S7 for Industrial Ethernet (supplied with STEP 7 V5.2)
Performance data	
S5-compatible communication (SEND/RECEIVE)	
• Sum of all simultaneously operable TCP/UDP connections	max. 8
• Useful data	
- TCP	8 KB
- UDP	2 KB
S7 communication	
• Number of connections	max. 4
Programming device/operator panel communication	
• Number of operable OP connections (non-isochrone services)	max. 4
Multi-protocol operation	
• Sum of all simultaneously operable connections	max. 12
Multicast	8

Ordering data

	Order No.
CP 343-1 Lean communications processor	6GK7 343-1CX00-0XE0
For connecting SIMATIC S7-300 to Industrial Ethernet through TCP/IP and UDP; S7 communication, S5-compatible communication (SEND/RECEIVE), FETCH/WRITE, diagnostic expansions, Multicast, SNMP, initial start-up over LAN 10/100 Mbit/s; with electronic manual on CD-ROM	
NCM S7 configuration software for Industrial Ethernet	
NCM S7 configuration software for Industrial Ethernet CPs for SIMATIC S7 V5.2, for execution under STEP 7 V5.2; on CD-ROM, with electronic manual in English, German, French, Spanish and Italian	included in the scope of supply of STEP 7 V5.2 and higher
Manual for NCM S7 for Industrial Ethernet	
Paper version for V5.x (STEP 7 V5.x)	
• German	6GK7 080-1AA03-8AA0
• English	6GK7 080-1AA03-8BA0
• French	6GK7 080-1AA03-8CA0
• Spanish	6GK7 080-1AA03-8DA0
• Italian	6GK7 080-1AA03-8EA0
IE FC RJ45 Plug 180	
RJ45 plug-in connector for Industrial Ethernet with a rugged metal housing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 180° cable outlet; for network components and CPs/CPU with Industrial Ethernet interface	
• 1 pack = 1 item	6GK1 901-1BB10-2AA0
• 1 pack = 10 items	6GK1 901-1BB10-2AB0
• 1 pack = 50 items	6GK1 901-1BB10-2AE0

More information

The NCM S7 configuration software for Industrial Ethernet is included in the scope of supply of STEP 7 V5.2.

Industrial Ethernet

System interfacing for SIMATIC S7

CP 343-1 Lean

In various SIMATIC NET components (e.g. OSM/ESM, CPs with IT-functions) extensive parameterizing and diagnostic functions (e.g. Web server, network management) are made available via open protocols and interfaces.

These open interfaces provide access to those components, which can also be used for illicit activities.

When using the above-mentioned functions and these open interfaces and protocols (such as SNMP, HTTP, Telnet), therefore, appropriate security precautions must be taken which prevent unauthorized access to the components or the network, especially from the WAN / Internet.

For this purpose automation networks should be separated from the remaining corporate network using suitable network transitions (e.g. the proven firewall systems).

The information provided in this document contains descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products.

An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract. Availability and technical specifications are subject to change without notice.

Siemens AG

Automation and Drives
SIMATIC NET Industrial Communication
Postfach 4848, D-90327 Nürnberg
Federal Republic of Germany

www.siemens.com/automation

PDF (E86060-K6710-E114-B4-7600)
Federal Republic of Germany
401629 KVI PDF 0604 En

© Siemens AG 2004

On publication of the new IK PI Catalog this information becomes invalid.
Subject to change without prior notice