Highlights

Communication

■ Overview

PROFINET

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PROFINET is the innovative, open Industrial Ethernet standard for the industrial automation industry. PROFINET combines IT communication, data communication and cyclic process communication in a single communication medium. PROFINET thus permits uniform communication from the control level down through to the field level, offers plant-wide engineering and uses well-proven standards from the IT world for communication into the field level, such as TCP/IP and UDP. PROFINET satisfies all the main requirements of industrial automation, such as:

• Industry-standard installation technology

• Real-time capability

• Deterministic behavior

• Integration of distributed field devices

• Simple network administration and diagnostics

• Protection against unauthorized access

• Efficient, cross-vendor engineering

• Isochronous motion control applications

PROFINET uses standard TCP/IP for non-time-critical communication, e.g. for parameter assignment, configuration, commissioning and diagnostics. PROFINET offers the following performance levels for real-time communication when transferring process data:

• Real Time (RT)
  RT uses the option of prioritizing the communication stack of the bus nodes. This permits high-performance data transmission with standard network components.

• Isochronous Real-Time (IRT)
  IRT permits strict deterministic, cyclic data transmission with extremely short cycle times and minimum jitter for high-performance motion control applications.

The PROFINET ports are integrated in the drives and so permit the optimum design and wiring for the application at hand. You can find the corresponding modules in all product families of the SINAMICS product range which can be connected with PROFINET for automation solutions with SIMOTION or SIMATIC S7 CPU.

Overview of the types of communication

Protocols	SINAMICS G							SINAMICS S	
	G110	G120C	G120P/G120	G120		G110D	G120D	S110	S120
			CU230P-2 Control Unit	CU240B-2 Control Unit	CU240E-2 Control Unit		CU240D Control Unit	CU305 Control Unit	CU310-2 Control Unit
USS	✓	✓	✓	✓	✓	–	–	✓	✓
Modbus RTU	–	✓	✓	✓	✓	–	–	–	–
BACnet MS/TP	–	–	✓	–	–	–	–	–	–
CANopen	–	✓	✓	–	–	–	–	✓	–
AS-Interface	–	–	–	–	–	✓	–	–	–
PROFIBUS DP	–	✓	✓	✓	✓	–	✓	✓	✓
PROFINET	–	–	–	–	–	–	✓	✓	✓