

# SoftPLC PLC S7-315®/PLC S7-416®

The **SoftPLC PLC S7-315/PLC S7-416** executes a program in the same manner as a hardware PLC. The advantage of executing a PLC program this way is, that the PLC status can be displayed in real time. Since the **Soft PLC** behaves like a original SIMATIC® PLC, the programming tools **S7 for Windows®** and STEP®7 can be used. Online connections can be established serial, via Ethernet, via PROFIBUS DP and directly on the same PC. Even for project engineering and diagnostics of the PROFIBUS DP **S7 for Windows®** or the original STEP®7 tool can be used. The program of a **S7-PLC** or a Siemens Win AC® SoftPLC including PROFIBUS DP configuration can be transferred to the **SoftPLC PLC S7-315/PLC S7-416**.

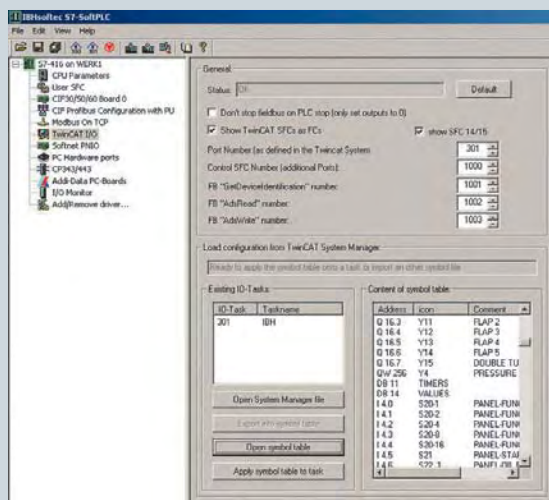
## Operating systems

To meet the demands of our customers and provide flexibility, a variety of hardware and software platforms are available that are supported by the **SoftPLC**. The S7 version can be installed on systems using Windows® 2000/XP and Vista. For OEM applications, also a Windows® CE version is available for almost every CPU architecture.

## SoftPLC I/Os

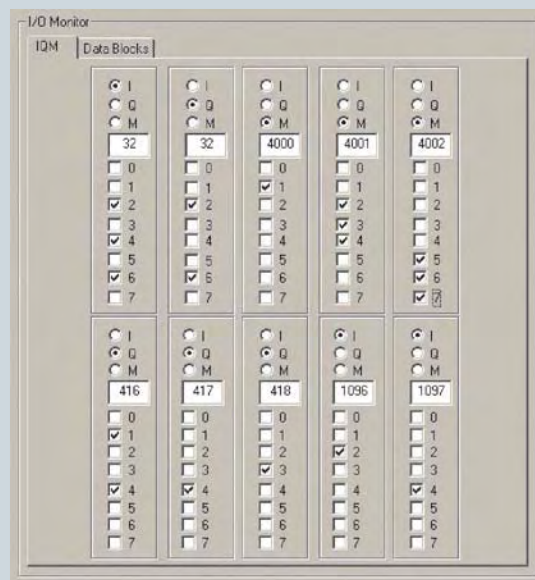
The **SoftPLC** can access standard I/O boards as well as numerous intelligent hardware boards available to control bus systems widely used in the industry. Also a driver for Modbus TCP is included. Modbus TCP is used by companies like Wago and Phoenix Contact.

The configuration of the fieldbus is very comfortable:



Fieldbuscard/-system	Hilscher	Beckhoff
Lightbus	-	✓
PROFIBUS	✓	✓
PROFINET IO	✓	✓
INTERBUS	✓	✓
DeviceNet	✓	✓
AS-i	✓	✓
CAN	✓	✓
SERCOS	✓	✓
EtherCAT	✓	✓
EtherNet/IP	✓	-
ControlNet	-	✓
Fipio	-	✓
CC-Link	-	✓
LON	-	✓
EIB/KNX	-	✓
MP-Bus	-	✓

Signal state watching and modification of the I/Os is simplified by the integrated IO monitor:



## Online-Functions

Direct Online Access with **S7 for Windows®** or STEP®7. Data exchange with the **SoftPLC** can be established with **S7 for Windows®** or Siemens STEP®7. If the programming system is installed on the same PC, the **SoftPLC** can be reached directly. All necessary drivers are included.

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## Access with S7 for Windows® or STEP®7 via Serial port

Alternatively data exchange can be established via serial interface using a zero-modem cable.

## Access with S7 for Windows® or STEP®7 via TCP/IP

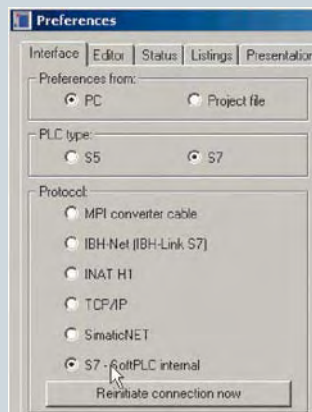
Further it is possible to access the **SoftPLC** via TCP/IP Ethernet using the **IBHNet** driver. The **IBHNet** driver can be downloaded from our homepage.

## Access with STEP®7 using Siemens ISO on TCP (RFC1006) protocol

Online functions are also possible using the Siemens ISO on TCP (RFC1006) protocol.

## Access with S7 for Windows® or STEP®7 via PROFIBUS DP

If a Hilscher CIF30/50/60 PROFIBUS card is used, the **SoftPLC** can be programmed or reached from an operator panel via the connected PROFIBUS, if the drivers are correctly configured.



## Monitoring, Operating, and Controlling simultaneously from one PC

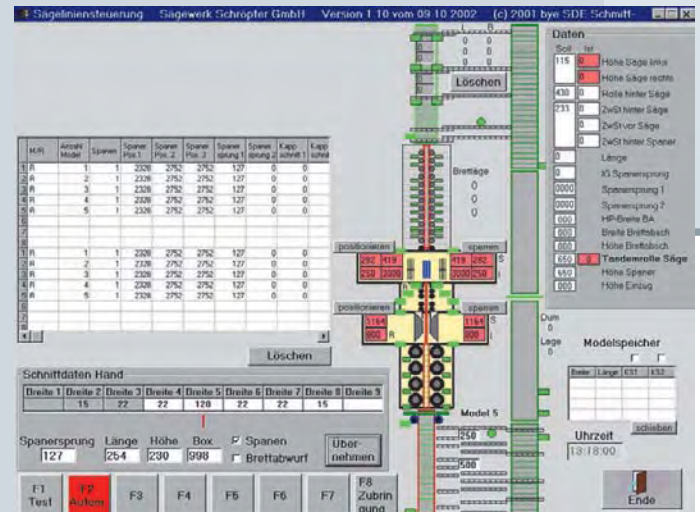
The **SoftPLC** allows process monitoring, operation, and control from one hardware unit. The use of the **SoftPLC** is especially useful if a PC for data collection, process visualization, programming, or any other reason needs to be used anyway. A **SoftPLC** solution eliminates the need for a hardware PLC and the corresponding communication processor.

## Access with IBH OPC Server/IBHNet/ RFC1006/DLL/Modbus TCP Server

The **S7 SoftPLC** has an integrated Modbus TCP-Server, which is supported by numerous visualization software suppliers.



With the **IBH OPC Server** a communication via Ethernet to the **S7 SoftPLC** as well as a direct communication in the same PC can be established.



For fast data transfer between the **SoftPLC** and other Windows® applications, a DLL is available. Examples for the usual programming tools are supplied.

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## PLC - PLC communication

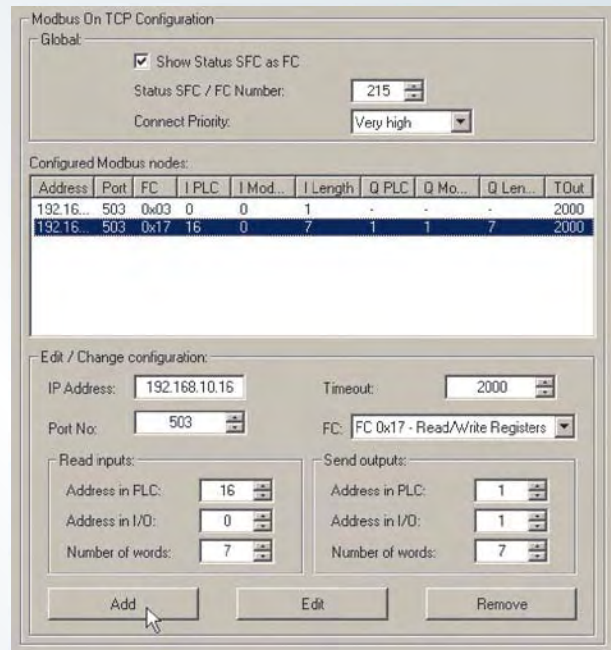
A data exchange between several PLC controls via Ethernet is possible. The **SoftPLC** contains a communications processor, which is compatible to the Siemens CP343/CP443. Send/Receive connections between two **SoftPLCs**, between **SoftPLC** and for example Siemens PLCs can be realized. The configuration is made using the STEP®7 tool NetPro®.

The following protocols are supported:

- ISO on TCP PU channel (PU, ProTool, WinCC, compatible OPC server etc..)
- ISO on TCP Send/Receive passive
- ISO on TCP Send/Receive active
- ISO on TCP Fetch/Write passive
- TCP Send/Receive passive
- TCP Send/Receive active
- TCP Fetch/Write passive
- UDP Send/Receive

## Additional Functions

The PC environment offers additional functions, which go beyond the usual S7 instructions. So own functions blocks, programmed in C++ can be integrated. This gives the possibility to program hardware drivers for customized I/O without large development.



## S7 Simulation PLC

The **SoftPLC** is also available as a pure Simulation-PLC. The **S7 Simulation PLC** also has the ModbusTCP- and CP-functionality integrated.

Timetable	Windows® NT 4.x/2000/XP/Vista			
	Compatible to STEP®5		Compatible to STEP®7	
	PLC S5-943	PLC S5-945	PLC S7-315®	PLC S7-416®
Load Memory	-	-	256 kByte	adjustable
Work Memory	48 kByte	720 kByte	256 kByte	adjustable
Memory bit	F 0.0 – 255.7	F 0.0 – 255.7	M 0.0 – 2047.7	M 0.0 – 16383.7
S-flags	S 0.0 – 4095.7	S 0.0 – 4095.7	-	-
Timer	256	256	256	2048
Counter	256	256	256	2048
Digital I/O	I/Q 0.0 – 127.7	I/Q 0.0 – 127.7	I/Q 0.0 – 127.7	I/Q 0.0 – 4095.7
Analog I/O	256	256	64	2048
Processing time for 1024 instructions*)				
Pentium III 600	190 µs	190 µs	100 µs	100 µs
Pentium IV 1,1 GHz	80 µs	80 µs	50 µs	50 µs
Pentium IV 2,6 GHz	55 µs	55 µs	28 µs	28 µs

\*) Time setting 50% PLC Time, 50% Windows®-Time, 1024 mixed instructions, (50% binary, 50% digital)