

### Technical specifications (continued)

	6ES7 636-2EC00-0AE3
IEC counter	
- available	Yes
- Type	SFB, unlimited quantity (only limited by working memory)
- Number	Unlimited (limited only by the main memory)
S7 times	
- Number	256
•of which retentive without battery	
- adjustable	Yes; Default setting: no retention
- lower limit	0
- upper limit	256
•Retentivity	
- adjustable	Yes
- preset	No retention
•Timing range	
- lower limit	10 ms
- upper limit	9,990 s
IEC timer	
- available	Yes
- Type	SFB, unlimited quantity (only limited by working memory)
- Number	Unlimited (limited only by the main memory)
<b>Data areas and their retentive characteristics</b>	
•Retentive data area as a whole, max.	all
Flags	
- Number	2,048 Byte
- adjustable retentivity	Yes; MB 0 to MB 255
- preset retentivity	MB 0 to MB 15
- Number of clock memories	8; 1 memory byte
Data blocks	
- Number, max.	1,023
- Size, max.	16 KByte
Local data	
- per priority class, max.	1,024 Byte; max. 510 bytes per block
<b>Address area</b>	
I/O address area	
- Inputs	2 KByte
- Outputs	2 KByte
Process image	
- Inputs	128 Byte
- Outputs	128 Byte
Digital channels	
- integrated channels (DI)	24
- integrated channels (DO)	16
- Inputs	16,384
- Outputs	16,384
- Inputs, of which central	992
- Outputs, of which central	992
Analog channels	
- integrated channels (AI)	4; + 1 AI
- integrated channels (AO)	2
- Inputs	1,024
- Outputs	1,024
- Inputs, of which central	248
- Outputs, of which central	248

	6ES7 636-2EC00-0AE3
<b>Configuration</b>	
•Number of modules per system, max.	23
•Racks, max.	4
•Modules per rack, max.	8; Modules in subrack 0: max. 4 Modules in subracks 1 and 2: max. 8 Modules in subrack 3: max. 7
•Number of rows, max.	4
Number of DP masters	
- integral	1
- via CP	1
Number of FMs and CPs that can be operated (recommendation)	
- FM	8
- CP, point-to-point	8
- CP, LAN	10
Expansion modules	
- Number of expansion modules, max.	4; max. 2 flat alignment, max. 4 deep alignment
<b>Time</b>	
Clock	
- Hardware clock (realtime clock)	Yes
- buffered	Yes
- Backup duration	6 weeks; at 40 °C ambient temperature
- Deviation per day, max	10 s
Run-time meter	
- Quantity	1
- Number	0
- Range of values	0 to 2 <sup>31</sup> hours (when using SFC 101)
- Granularity	1 hour
- retentive	Yes; must be restarted on each complete restart
Time synchronization	
- supported	Yes
- on MPI, master	Yes
- on MPI, slave	Yes
- in AS, master	Yes
<b>S7 message functions</b>	
•Number of stations that can log on for message functions, max.	16
•Process diagnostic messages	Yes
•simultaneously active Alarm-S blocks, max.	40

#### Technical specifications (continued)

	6ES7 636-2EC00-0AE3
<b>Test and startup functions</b>	
Status/modify	
- Variable	Yes
- Variables	Inputs, outputs, flags, DB, timers, counters
- Number of variables, max.	30
- of which status variables, max.	30
- of which modify variables, max.	14
Forcing	
- Forcing	Yes
- Forcing, variables	Inputs, outputs
- Forcing, number of variables, max.	10
•Status block	Yes
•Single step	Yes
•Number of breakpoints	2
•Number of entries in the diagnostic buffer, max.	100
Diagnostic buffer	
- available	Yes
- Number of inputs, max.	100
- adjustable	No
<b>Communication functions</b>	
•PG/OP communication	Yes
Global data communication	
- supported	Yes
- Number of GD packets, max.	8
- Number of send GD packets, max.	8
- Number of receive GD packets, max.	8
- Size of GD packets, max.	22 Byte
- Size of GD packets (of which consistent), max.	22 Byte
S7 basic communication	
- supported	Yes
- User data per job	76 Byte
- User data per job (of which consistent), max.	76 Byte; 76 byte (for X_SEND and X_RCV) 64 byte (for X_PUT and X_GET as server)
S7 communication	
- supported	Yes
- as server	Yes
- as client	Yes; via CP and loadable FB
- User data per job, max.	180 Byte; at PUT/GET
- User data per job (of which consistent), max.	64 Byte
S5 compatible communication	
- supported	Yes; via CP and loadable FC
Standard communication	
- Supported	No

	6ES7 636-2EC00-0AE3
Number of connections	
- overall	16
- usable for PG communication	15
- reserved for PG communication	1
- customizable for PG communication, min.	1
- customizable for PG communication, max.	15
- usable for OP communication	15
- reserved for OP communication	1
- customizable for OP communication, min.	1
- customizable for OP communication, max.	15
- usable for S7 basic communication	12
- reserved for S7 basic communication	12
- customizable for S7 basic communication, min.	0
- customizable for S7 basic communication, max.	12
<b>Interfaces</b>	
•Number of printer interfaces	1; serial
<b>1st interface</b>	
•Type of interface	integrated RS 485 interface
•Physical	RS 485
•Isolated	No
•Power supply to interface (15 to 30 V DC), max.	200 mA
Functionality	
- MPI	Yes
- DP master	No
- DP slave	No
MPI	
- Number of connections	16
•Services	
- PG/OP communication	Yes
- Routing	Yes
- Global data communication	Yes
- S7 basic communication	Yes
- S7 communication	Yes
- S7 communication, as client	Yes; via CP and loadable FB
- S7 communication, as server	Yes
- Transmission rates, max.	187.5 kBit/s

**Technical specifications (continued)**

	6ES7 636-2EC00-0AE3
<b>2nd interface</b>	
•Type of interface	integrated RS 485 interface
•Physical	RS 485
•Isolated	Yes
•Power supply to interface (15 to 30 V DC), max.	200 mA
•Number of connection resources	16
Functionality	
- MPI	No
- DP master	Yes
- DP slave	Yes
DP master	
- Number of connections, max.	16; for PG/OP communication
- Number of connections (of which reserved), max.	1 for PG, 1 for OP
•Services	
- PG/OP communication	Yes
- Routing	Yes
- Global data communication	No
- S7 basic communication	No
- S7 communication	No
- S7 communication, as client	No
- S7 communication, as server	No
- Equidistance support	Yes
- SYNC/FREEZE	Yes
- Activate/deactivate DP slaves	Yes
- Direct data exchange (lateral communication)	Yes
- Transmission rates, max.	12 Mbit/s
- Number of DP slaves, max.	125
•Address area	
- Inputs, max.	244 Byte
- Outputs, max.	244 Byte
DP slave	
- Number of connections	16
•Services	
- PG/OP communication	Yes
- Routing	Yes
- Global data communication	No
- S7 basic communication	No
- S7 communication	No
- Direct data exchange (lateral communication)	Yes
- Transmission rates, max.	12 Mbit/s
•Intermediate memory	
- Inputs	244 Byte
- Outputs	244 Byte
- Address areas, max.	32
- User data per address area, max.	32 Byte

	6ES7 636-2EC00-0AE3
<b>CPU/ programming</b>	
Configuration software	
- STEP 7	Yes; as of V5.2 SP1 and HSP
- ProTool	Yes; as of Version 6.0 SP2 and Setup C7-636
- ProTool/Lite	Yes; as of Version 6.0 SP2 and Setup C7-636
- ProTool/Pro	Yes; as of Version 6.0 SP2 and Setup C7-636
Programming language	
- LAD	Yes
- FBD	Yes
- STL	Yes
- SCL	Yes
- CFC	Yes
- GRAPH	Yes
- HiGraph®	Yes
Software library	
•Instruction set	see instruction list
•Bracket levels	8
•User program protection/ password protection	Yes
•System functions (SFC)	see instruction list
•System function blocks (SFB)	see instruction list
<b>Integrated inputs/outputs</b>	
Default addresses of the integral	
- Digital input	124.0 to 126.7
- Digital outputs	124.0 to 125.7
- Analog inputs	752
- Analog outputs	761
<b>Digital inputs</b>	
•Number of digital inputs	24
- which can be used as inputs for technological functions	16
Number of inputs that can be driven in parallel	
•vertical mounting positions	
- up to 40°C	18
•horizontal mounting positions	
- up to 40°C	12
Length of cable	
- Length of cable shielded, max.	1,000 m; 100 m for technological functions
- Length of cable unshielded, max.	600 m
•Technological function	
- shielded, max.	50 m; at maximum count frequency not allowed
- unshielded, max.	
•Standard DI	
- shielded, max.	1,000 m
- unshielded, max.	600 m
•Input characteristic to comply with IEC 1131, Type 1	Yes

#### Technical specifications (continued)

	6ES7 636-2EC00-0AE3
Input voltage	
- Rated value, DC	24 V
- for signal "0"	-3 to 5 V
- for signal "1"	15 to 30 V
Input current	
- for 1 signal, typical	7 mA
Input delay (at rated value of the input voltage)	
•For standard inputs	
- Parameterizable	Yes; 0.1 / 0.3 / 3 / 15 ms
- Rated value	3 ms
•for counters/technological functions	
- at 0 to 1, max.	8 µs
<b>Digital outputs</b>	
•Number of digital outputs	16
- of which fast outputs	4
•Length of cable shielded, max.	1,000 m
•Length of cable unshielded, max.	600 m
•Short-circuit protection of the output	Yes; clocking electronically
•Short-circuit protection of the output, response threshold, typical	1 A
•Limitation of voltage induced on circuit interruption to	L+ (-48 V)
•Lamp load, max.	5 W
•Driving a digital input	Yes
Output voltage	
- for 1 signal	L+ (-0.8 V)
Output current	
- for 1 signal rated value	0.5 A
- permissible range for signal "1", min.	5 mA
- permissible range for signal "1", max.	0.6 A
- for 1 signal permissible range for 0 to 40 °C, max.	0.5 A
- for 1 signal permissible range for 40 to 60 °C, max.	0.5 A; up to max. 50 °C
- for 1 signal minimum load current	5 mA
- for 0 signal residual current, max.	0.5 mA
Parallel switching of 2 outputs	
- to increase power	No
- to redundantly drive a load	Yes
Switching frequency	
- at resistive load, max.	100 Hz
- at inductive load, max.	0.5 Hz
- at lamp load, max.	100 Hz
- of pulse outputs, at resistive load, max.	2.5 kHz
Summation current of the outputs (per group)	
•vertical mounting positions	
- up to 40 °C., max.	3 A
•horizontal mounting positions	
- up to 40 °C., max.	2 A
- up to 40 °C, max.	3 A
- up to 60 °C, max.	2 A; up to max. 50 °C
Load impedance range	
- lower limit	48 Ω
- upper limit	4 kOhm

	6ES7 636-2EC00-0AE3
<b>Analog inputs</b>	
•Number of analog inputs	4
•Number of analog inputs for voltage/current measurement	4
•Number of analog inputs for resistance/temperature measurement	1
•Length of cable shielded, max.	100 m
•Permissible input voltage for the voltage input (destruction limit), max.	30 V; permanent
•Permissible input voltage for the current input (destruction limit), max.	2.5 V; max. 2.5 V continuous; max. 24 V transient
•Permissible input voltage for the voltage input (destruction limit), max.	0.5 mA; permanent
•Permissible input voltage for the current input (destruction limit), max.	50 mA; permanent
•Technical unit for temperature measurement, adjustable	Yes; degrees Celsius / degrees Fahrenheit / Kelvin
Input ranges (rated values), voltages	
- 0 to +10 V	Yes
- -10 V to +10 V	Yes
Input ranges (rated values), currents	
- 0 to 20 mA	Yes
- -20 to +20 mA	Yes
- 4 to 20 mA	Yes
Input ranges (rated values), resistances	
- Open-circuit voltage (DC), type	2.5 V
- Current measurement, type.	1.8 mA to 3.3 mA
- 0 to 600 ohms	Yes
Input ranges (rated values), resistance thermometer	
- Pt 100	Yes
Characteristic curve linearization	
- parameterizable	Yes; by the software
- for resistance thermometer	Pt 100
Temperature compensation	
- parameterizable	No
<b>Analog outputs</b>	
•Number of analog outputs	2
•Length of cable shielded, max.	200 m
•Voltage output, short-circuit protection	Yes
•Voltage output, short-circuit current, max	55 mA
•Current output, open-circuit voltage, max.	17 V
Output ranges, voltage	
- 0 to 10 V	Yes
- -10 to +10 V	Yes
Output ranges, current	
- 0 to 20 mA	Yes
- -20 to +20 mA	Yes
- 4 to 20 mA	Yes

### Technical specifications (continued)

	6ES7 636-2EC00-0AE3
<b>Actuator connection</b> - for voltage output 2-wire connection - for voltage output 4-wire connection - for current output 2-wire connection	Yes; without cable resistance compensation No Yes
<b>Burden resistance</b> (in the nominal output range) - at voltage outputs, min. - at voltage outputs, capacitive load, max. - at current outputs, max. - at current outputs, inductive load, max.	1 kOhm 0.1 $\mu$ F 300 $\Omega$ 0.1 mH
<b>Destruction limit against voltages and currents applied from outside</b> - Voltages at the outputs against MANA - Current (DC), max.	16 V; permanent 50 mA; permanent
<b>Analog value formation</b>	
•Measuring principle	Measuring principle Encoding of instantaneous value (successive approximation)
<b>Integration and conversion time/triggering per channel</b> - with over-range (bits incl. sign), max. - Integration time parameterizable - Permissible input frequency, max. - Conversion time (per channel) - Response time of the input filter - Basic execution time of the module (all channels enabled)	12 Bit Yes; 2.5 / 16.6 / 20 ms 400 Hz 1 ms 0.38 ms 1 ms
<b>Settling time</b> - for resistive load - for capacitive load - for inductive load	0.6 ms 1 ms 0.5 ms
<b>Sensor</b>	
<b>Connectable encoders</b> - 2-wire BEROs - permissible closed-circuit current (2-wire BEROs), max.	Yes 1.5 mA
<b>Error/accuracies</b>	
<b>Operational limit in the entire temperature range</b> - Relative to the output range, voltage - Relative to the output range, current - relative to the input range, voltage - relative to the input range, current - relative to the input range, resistance	+/- 1 % +/- 1 % +/- 1 % +/- 1 % +/- 5 %

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<b>Basic error limit</b> (operational limit at 25 °C) - relative to the output range, voltage - relative to the output range, current - relative to the input range, voltage - relative to the input range, current - relative to the input range, resistance - relative to the input range, resistance thermometer	+/- 0,7 % +/- 0,7 % +/- 0,7 % +/- 0,7 % +/- 3 % +/- 3 %
<b>Interference voltage suppression</b> for $f = n \times (f_l \pm 1 \%)$ - Series-mode interference (peak value of interference < rated value input range) - Common-mode interference, min.	30 dB 40 dB
<b>Integral functions</b>	
•Number of counters	4; in total 4 channels
•Count frequency (counters) max.	60 kHz
•Frequency sensor	Yes
•Frequency measurement	Yes
•Number of frequency sensors	4; in total 4 channels
•Controlled positioning	Yes
•Integrated function blocks (control)	Yes
•PID controller	Yes
•Pulse outputs	Yes
•Number of pulse outputs	4; in total 4 channels
•Cut-off frequency (pulse)	2.5 kHz
<b>Status information/ interrupts/ diagnostics</b>	
<b>Interrupts</b> - Interrupts	Yes; - No interrupts when used as standard I/O. - When using the technological functions see the S7-300 Automation System manual, CPU31xC Technological Functions.
<b>Diagnostics</b> - Diagnostic functions	No; - No diagnostics when using as standard I/O. - When using the technological functions see the S7-300 Automation System manual, CPU31xC Technological Functions.

#### Technical specifications (continued)

	6ES7 636-2EC00-0AE3
<b>Operator control and monitoring</b>	
•Process pictures	Yes
•Graphic objects	Yes
•Text elements	Yes
•Info texts	Yes
•Messages	Yes; Alarm messages, event messages
•Number of process pictures	300
•Number of variables per picture, max.	200
•Number of variables in message text, max.	8
•Password protection	Yes
•Password levels	10
<b>Keyboard</b>	
- Type	Membrane keyboard
- Number of function keys	24; 18 with LED
- Number of softkey keys	14
<b>Display</b>	
- Type	CSTN, CCFL backlit, 5,7" Color (256 colors)
- Background lighting MTBF (at 20°C)	40,000 h
<b>Resolution (pixels)</b>	
- Width	320
- Height	240
<b>Event/alarm messages</b>	
- Event messages	Yes
- Number of entries in process event buffer, max.	Message archive limited by storage medium
- Alarm messages	Yes
- Number of entries in the alarm message buffer, max.	Message archive limited by storage medium
<b>Recipes</b>	
- Number, max.	300
- Data records per recipe, max.	500
- Entries per data record, max.	1,000
<b>Insulation</b>	
•Insulation tested with	500 V DC
<b>Potentials/ electrical isolation</b>	
<b>Analog output functions</b>	
- Electrical isolation, analog output functions	Yes
- between the channels	No
- between the channels and the backplane bus	Yes
<b>Analog output functions</b>	
- Electrical isolation, analog inputs	Yes
- between the channels	No
- between the channels and the backplane bus	Yes
<b>Digital output functions</b>	
- Electrical isolation, digital output functions	Yes
- between the channels	Yes
- between the channels, in groups of	8
- between the channels and the backplane bus	Yes

	6ES7 636-2EC00-0AE3
<b>Digital input functions</b>	
- Electrical isolation, digital input functions	Yes
- between the channels	No
- between the channels and the backplane bus	Yes
<b>Permissible potential difference</b>	
•between different circuits	75 V DC / 60 V AC
<b>Environmental requirements</b>	
•Environmental conditions	Not suitable for open air use
<b>Operating temperature</b>	
- 45 degree mounting, min.	0 °C
- 45 degree mounting, max.	45 °C
- vertical mounting, min.	0 °C
- vertical mounting, max.	50 °C
- horizontal mounting, min.	0 °C
- horizontal mounting, max.	40 °C
<b>Air pressure</b>	
- Operation, min.	795 hPa
- Operation, max.	1,080 hPa
- Storage/transportation, min.	660 hPa
- Storage/transportation, max.	1,080 hPa
- permissible range, min	795 hPa
- permissible range, max	1,080 hPa
<b>Relative humidity</b>	
- Operation, min.	5 %
- Operation, max.	85 %; at <40 °C (no condensation)
- Storage/transportation, max.	85 %; at <40 °C (no condensation)
<b>Degree of protection and class of protection</b>	
- IP 20	Yes; Housing
- IP 65	Yes; Front
<b>Dimensions and weight</b>	
•Weight, approx.	1,750 g
•Width	260 mm
•Height	274 mm
•Depth	80 mm
•Installation cutout, width	231 mm; Tolerance: +1 mm
•Installation cutout, height	257 mm; Tolerance: +1 mm
<b>Software requirements</b>	
<b>Operating system</b>	
- Windows CE	Yes
<b>Online languages</b>	
•Number	5

Ordering data	Order No.	Order No.
<b>Control system C7-636 Keys<sup>E)</sup></b> 128 KB RAM (PLC) 24 DI, 16 DO, 5 AI, 2 AO integrated; with integrated operator panel: 2048 KB Flash-EPROM for HMI data, STN LC display, CCFL backlit (320 x 240 pixels); with mounting accessories	<b>6ES7 636-2EC00-0AE3</b>	
<b>Micro memory card</b> Essential for operation 64 KB 128 KB 512 KB 2 MB 4 MB 8 MB	<b>6ES7 953-8LF11-0AA0</b> <b>6ES7 953-8LG11-0AA0</b> <b>6ES7 953-8LJ11-0AA0</b> <b>6ES7 953-8LL11-0AA0</b> <b>6ES7 953-8LM11-0AA0</b> <b>6ES7 953-8LP11-0AA0</b>	
<b>Connector set</b> for I/O and power supply with screw-type terminals with spring-loaded terminals	<b>6ES7 635-0AA00-4AA0</b> <b>6ES7 635-0AA00-4BA0</b>	
<b>CF card, 16 MB</b>	<b>6AV6 574-2AC00-2AA0</b>	
<b>C7-636 manual package</b> C7-636 manual, S7-300 documentation package and OP 270B hardware manual German English French Spanish Italian	<b>6ES7 636-1EA00-8AA0</b> <b>6ES7 636-1EA00-8BA0</b> <b>6ES7 636-1EA00-8CA0</b> <b>6ES7 636-1EA00-8DA0</b> <b>6ES7 636-1EA00-8EA0</b>	
<b>C7-636 manual</b> German English French Spanish Italian	<b>6ES7 636-1AA00-8AA0</b> <b>6ES7 636-1AA00-8BA0</b> <b>6ES7 636-1AA00-8CA0</b> <b>6ES7 636-1AA00-8DA0</b> <b>6ES7 636-1AA00-8EA0</b>	
<b>Accessories</b>		
<b>I/O set</b> For expanding the C7-613/C7-635/C7-636 with up to 4 modules; piggy-back mounting for 2 modules, flat mounting for 4 modules, deep mounting		<b>6ES7 635-0AA00-6AA0</b> <b>6ES7 635-0AA00-6BA0</b>
<b>I/O expansion cable</b> For external expansion of the SIMATIC C7-613/C7-635/C7-636 with up to 4 modules; length 1,5 m		<b>6ES7 635-0AA00-6CA0</b>
<b>SIMATIC Manual Collection<sup>B)</sup></b> Electronic manuals on CD-ROM, multilingual		<b>6ES7 998-8XC01-8YE0</b>
<b>SIMATIC Manual Collection update service for 1 year<sup>B)</sup></b> Up-to-date Manual Collection CD as well as the three subsequent updates		<b>6ES7 998-8XC01-8YE2</b>
<b>Replacement parts</b>		
<b>Service package</b> 3 seals, 10 holders, for all SIMATIC C7-613, C7-635 and C7-636		<b>6ES7 635-0AA00-3AA0</b>
<b>Earthing rail</b> With shield terminals for analog I/O		<b>6ES7 635-0AA00-6EA0</b>

B) Subject to export regulations: AL: N and ECCN: EAR99S

E) Subject to export regulations: AL: N and ECCN: 5D002ENC3

## Customer-specific design

## Overview

- Custom design for the SIMATIC C7
- Free choice of company logo, selectable color specifications for the unit front panel and keyboard labeling
- For control systems to be integrated into customers' plants

## Ordering data

## Order No.

**Company logo in two colors**

On request

**Company logo in two colors  
and a special membrane color**

On request

**Company logo in two colors,  
special membrane color, and  
specific key labeling**

On request

**Additional color**

(for logo and key labeling)

On request

**Bezel in special color**

(extra charge per unit)

On request



# SIMATIC Industrial Software

# 7



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## Introduction

Software  
for SIMATIC S7/C7/WinAC

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## Standard Tools

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STEP 7  
STEP 7 Professional  
STEP 7 Lite  
STEP 7 - Micro / WIN  
STEP 7 Micro/WIN command library  
Technical specifications

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## Engineering Tools

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S7-SCL  
S7-GRAPH  
S7-HiGraph  
CFC  
S7-PDIAG  
S7-PLCSIM  
TeleService  
DOCPRO  
S7-200 PC Access  
SIMATIC iMap  
S7-Technology  
D7-SYS  
Engineering package Drive ES  
Software update service for Drive ES  
Distributed Safety Software  
Technical specifications

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## Runtime Software

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Standard PID Control  
Modular PID Control  
PID Self-Tuner  
Fuzzy Control  
NeuroSystems  
Loadable drivers  
for CP 441-2 and CP 341  
Software redundancy  
PRODAVE MPI  
Easy Motion Control  
Technical specifications

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## HMI-Software

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SIMATIC ProTool/Lite and  
SIMATIC ProTool  
SIMATIC ProTool/Pro  
SIMATIC WinCC flexible ES  
WinCC flexible /ChangeControl  
SIMATIC WinCC flexible RT  
SIMATIC WinCC  
SIMATIC ProAgent

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## Supplementary Components

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SIMATIC ADDM  
Technical product data  
for CAX applications  
HVAC Lite Library runtime software  
External programmer



# SIMATIC Industrial Software

## Introduction

### Software for SIMATIC S7/C7/WinAC

#### Overview



- System of seamlessly integrated software tools for SIMATIC S7 and PC-based Control SIMATIC WinAC
- User-friendly functions for all phases of an automation project
- Consists of:
  - Standard tools:  
Basis for the SIMATIC hardware
  - Engineering tools:  
High-level programming languages and technology-oriented software
  - Runtime software:  
Ready-to-use runtime software for the production process
  - Human Machine Interface:  
Software specifically for operator control and monitoring

#### Overview



- STEP 7 basic software:  
The standard tool for the SIMATIC S7, SIMATIC C7 and SIMATIC WinAC automation systems.
- Makes use of the full performance capabilities of the systems
- User-friendly functions for all phases of an automation project:
  - Configuring and parameterizing the hardware
  - Definition of communication
  - Programming
  - Testing, commissioning and service
  - Documentation, archiving
  - Operating, diagnostics function

#### Components for connection of the PC to MPI and PROFIBUS

The PC modules described below support, in combination with STEP 7, the connection of programming devices and AT-compatible PCs or notebooks to PROFIBUS and the MPI of SIMATIC S7.

##### PC adapter USB

- For connecting a PC to the SIMATIC S7 automation system via the USB interface
- Can be connected to USB 1.1 and 2.0 interfaces
- For use with SIMATIC S7-300 and S7-400
- Supports routing
- Automatic transmission rate and profile search
- Significantly enhanced performance (up to 3 times faster than the PC adapter via RS 232)
- With firmware that can be upgraded in the future, e.g., for function expansion or error rectification
- Can be used with Windows 2000, Windows XP Home and Windows XP Professional
- Scope of supply:
  - PC adapter USB
  - CD "SIMATIC Software PC Adapter USB" with software and documentation
  - USB cable, 5 m
  - MPI cable, 0.3 m

##### CP 5512

- For PGs/PCs/notebooks with PCMCIA slot
- PCMCIA card type II (Cardbus 32-bit)
- Incl. adapter with 9-pin Sub D socket for connection to PROFIBUS

##### CP 5611 or CP 5611-MPI

- For PGs/PCs with a PCI slot
- Short PCI card (32-bit)
- CP 5611 MPI including MPI cable

#### Components for connecting the PC to Industrial Ethernet

The PC modules described below support, in combination with the software STEP 7 and SOFTNET-PG (V6.0 or later) for Industrial Ethernet, the connection of programming devices and AT-compatible PCs or notebooks to Industrial Ethernet.

##### CP 1512

- For PGs/PCs/notebooks with PCMCIA slot
- PCMCIA card type II (Cardbus 32-bit); 10/100 Mbps
- Incl. adapter with RJ45 socket for connection to Industrial Ethernet

##### CP 1612

- For PGs/PCs with a PCI slot
- Short PCI card (32-bit); 10/100 Mbps
- With RJ45 socket for connection to Industrial Ethernet

For technical details concerning versions and supported operating systems, please refer to the catalog data for the respective products.

For further information about online connection of PCs and SIMATIC S7/C7 controllers, see "SIMATIC NET Communication Systems" in the catalog IK PI or in the A&D Mall.

### STEP 7

#### Technical specifications

For the technical specifications of STEP 7, see "Standard Tools".

<b>PC Adapter USB</b>	
Dimensions (W x H x D) in mm, approx.	105 x 58 x 26
Weight, approx.	100 g
Supply voltage	24 V DC/ 100 mA
Max. power consumption.	2.5 W
<b>Electromagnetic compatibility (EMC)</b>	
Noise emission	Limit class B acc. to EN 55022
Immunity to fault voltages on supply cables	2 kV (as per IEC 61000-4-4; burst) 1 kV (as per IEC 61000-4-5; symm. surge) 2 kV (as per IEC 61000-4-5; asymm. surge)
Immunity to signal line interference	1 kV (as per IEC 61000-4-4; burst; length < 3 m) 2 kV (as per IEC 61000-4-4; burst; length > 3 m)
Immunity to static discharge interference (ESD)	6 kV, contact discharge (as per IEC 61000-4-2) 8 kV, air discharge (as per IEC 61000-4-2)
Immunity to high-frequency radiation	10 V/m, 80 - 1000 MHz (as per IEC 61000-4-3) 10 V/m, 900 MHz, 1.89 GHz, 50% ED (as per IEC 61000-4-3)
High-frequency irradiation	10 V, 9 kHz - 80 MHz (as per IEC 61000-4-6)
Magnetic field	30 A/m, 50 Hz (as per IEC 61000-4-8)
<b>Climatic conditions</b>	
Temperature	Tested according to DIN EN 60068-2-2, DIN IEC 60068-2-1
• Operation	+5°C to +40 °C (temperature change max. 10 K/h)
• Storage/transport	-20 °C to +60 °C (temperature change max. 20 K/h)
Relative humidity	Checked as per IEC 60068-2-3, IEC 60068-2-30, IEC 60068-2-14
• Operation	5% to 80% at 25 °C (no condensation)
• Storage/transport	5% to 95% at 25 °C (no condensation)
<b>Mechanical ambient conditions</b>	
Vibration	Checked as per DIN IEC 60068-2-6
• Operation	10 to 58 Hz, amplitude 0.075 mm 58 to 500 Hz, acceleration 9.8 m/s <sup>2</sup>
• Transport (packed)	5 to 9 Hz, amplitude 3.5 mm 9 to 500 Hz, acceleration 9.8 m/s <sup>2</sup>
Shock	Checked as per DIN IEC 60068-2-2
• Operation	950 m/s <sup>2</sup> (10 g), 30 ms, 100 shocks
• Transport (packed)	250 m/s <sup>2</sup> (25 g), 6 ms, 1000 shocks

#### Ordering data

#### Order No.

##### STEP 7 Version 5.3

###### Target system:

SIMATIC S7-300/-400, SIMATIC C7, SIMATIC WinAC

###### Prerequisite:

Windows 2000 Prof./XP Prof.

###### Delivery package:

German, English, French, Spanish, Italian; incl. 3.5" automation disk, without documentation

Floating license on CD

**6ES7 810-4CC07-0YA5**

Floating license on CD, Japanese

**6ES7 810-4CC07-0JA5**

Software Update Service on CD

**6ES7 810-4BC01-0YX2**

Upgrade floating license V2.x/3.x/4.x/5.x to V5.3; on CD

**6ES7 810-4CC07-0YE5**

Upgrade floating license V2.x/3.x/4.x/5.x to V5.3, Japanese; on CD

**6ES7 810-4CC07-0JE5**

Powerpack STEP 7 Lite according to STEP 7 V5.3; Floating license on CD

**6ES7 810-4CC07-0YC5**

Trial license STEP 7 V5.3; on CD, can be used for 14 days

**6ES7 810-4CC07-0YA7**

##### STEP 7 Basic Knowledge documentation package

consisting of Getting Started, Hardware Configuration Manual, Programming Manual, Migration Manual

German

**6ES7 810-4CA07-8AW0**

English

**6ES7 810-4CA07-8BW0**

French

**6ES7 810-4CA07-8CW0**

Spanish

**6ES7 810-4CA07-8DW0**

Italian

**6ES7 810-4CA07-8EW0**

##### STEP 7 reference manuals

consisting of IL, LAD and CSF manuals as well as reference manual for standard and system functions for SIMATIC S7-300/400

German

**6ES7 810-4CA07-8AW1**

English

**6ES7 810-4CA07-8BW1**

French

**6ES7 810-4CA07-8CW1**

Spanish

**6ES7 810-4CA07-8DW1**

Italian

**6ES7 810-4CA07-8EW1**

##### SIMATIC Manual Collection<sup>B)</sup>

Electronic manuals on CD-ROM, 5 languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, Engineering Software, Runtime Software, PCS 7, SIMATIC HMI, SIMATIC NET

**6ES7 998-8XC01-8YE0**

##### SIMATIC Manual Collection update service for 1 year<sup>B)</sup>

Up-to-date Manual Collection CD as well as the three subsequent updates

**6ES7 998-8XC01-8YE2**

##### EPROM programming device USB Prommer

**6ES7 792-0AA00-0XA0**

for programming SIMATIC memory cards and EPROM modules

##### MPI cable

**6ES7 901-0BF00-0AA0**

for connecting SIMATIC S7 and CP via MPI (5 m)

B) Subject to export regulations: AL: N and ECCN: EAR99S

#### Ordering data

#### Order No.

#### Order No.

##### Components for connection of the PC to MPI and PROFIBUS

- For a PC with a free PCI slot

**CP 5611**

**6GK1 561-1AA00**

**CP 5611 MPI**

**6GK1 561-1AM00**

incl. MPI cable (5 m)

- For a PC with a free PCMCIA slot:

**CP 5512**

**6GK1 551-2AA00**

For Windows XP Professional

- For a PC without a free PCI slot

**PC adapter USB**

**6ES7 972-0CB20-0XA0**

for connecting a PC to a S7 300/400/C7 via the USB interface; with an USB cable (5 m)

##### Components for connecting the PC to Industrial Ethernet

- For a PC with a free PCI slot:

**CP 1612** <sup>A)</sup>

**6GK1 161-2AA00**

- For a PC with a free PCMCIA slot:

**CP 1512**

**6GK1 151-2AA00**

**SOFTNET-PG V6.2** <sup>D)</sup>

**6GK1 704-1PW62-3AA**

A) Subject to export regulations: AL: N and ECCN: EAR99H

D) Subject to export regulations: AL: N and ECCN: 5D992B1

#### STEP 7 selection assistance

	STEP 7 Lite	STEP 7	STEP 7 Professional
<b>Configuration</b>			
Target systems	S7-300/C7	S7-300/S7-400/C7/WinAC	
Boards	Digital, analog I/O, IFM only central	Digital, analog I/O, IFM, FM, CP central and distributed (DP)	
Network/communication	No	Time-based, cyclic data transmission between automation components; MPI, PROFIBUS or Industrial Ethernet	
Distributed I/Os	No	Yes	
Message configuration (HMI display)	No	Yes	
Read from/write on MMC	Yes, only in CPU	Yes, in CPU and directly on PG/PC (updating of AS operating system possible)	
Export/import	Program, symbols	Program, symbols, HW configuration	
Documentation function	Included	Included; option DOCPRO for standardized documentation of the S7 project	
Multilingual project documentation	Yes	Yes	
Multi-user engineering	No	Yes	
<b>Programming</b>			
Languages	LAD/FBD/IL	LAD/FBD/IL and IL source	Like STEP 7 plus S7-GRAPH (sequencer)/ S7-SCL (textual high-language)
Structured/symbolic programming	Yes/yes	Yes/yes	
Checking/establishing program consistently	Yes/yes	Yes/yes	
Standard/user libraries	Yes/no	Yes/yes	
<b>Online functions</b>			
Online access	MPI	MPI, PROFIBUS, option: Industrial Ethernet	
Test functions	Monitoring, control, forcing	Monitoring, control, forcing, single step (debugging)	
Offline/online comparison functions	Program, HW configuration	Program	
Diagnostics	System diagnostics	System diagnostics, signaling of system faults, integrated process fault diagnostics with S7-GRAPH	
<b>Option packages</b>			
Optional programming languages	None	S7-GRAPH, S7-SCL, S7-HiGraph, CFC	S7-HiGraph, CFC
Options for simulation, documentation, diagnostics and remote maintenance	S7-PLCSIM, S7-Teleservice	S7-PLCSIM, S7-DOCPRO, TeleService, S7-PDiag	DOCPRO, TeleService, S7-PDiag (S7-PLCSIM included in scope of delivery)

### STEP 7 Professional

#### Overview

STEP 7 Professional supports all IEC languages.

In addition to the languages recognized by STEP 7

- LAD
- FBD
- IL

The following are also available:

- "Sequential Function Chart"
- "Structured Text"

An offline simulation of programs created with these languages is included. STEP 7 Professional thus replaces the combination of the individual packages STEP 7, S7-GGRAPH, S7-SCL and S7-PLCSIM.

A POWERPACK is offered to customers who use STEP 7 already and wish to change. A valid STEP 7 license is required for purchasing the POWERPACK. A separate update service is available for STEP 7 Professional.

#### Ordering data

#### Order No.

##### STEP 7 Professional Edition 2004

###### Target system:

SIMATIC S7-300/-400, SIMATIC C7, SIMATIC WinAC

###### Prerequisite:

Windows 2000 Prof./XP Prof.

###### Type of delivery:

German, English, French, Spanish, Italian; incl. 3.5" automation disk, without documentation

Floating License

Software update service

Upgrade floating license on Edition 2004

Powerpack floating license for migrating from STEP 7 to STEP 7 Professional

Trial license for STEP 7 Professional Edition 2004; on CD, can be used for 14 days

6ES7 810-5CC08-0YA5

6ES7 810-5CC04-0YE2

6ES7 810-5CC08-0YE5

6ES7 810-5CC08-0YC5

6ES7 810-5CC08-0YA7

##### STEP 7 Basic Knowledge documentation package

consisting of Getting Started, Hardware Configuration Manual, Programming Manual, Conversion Manual

German

6ES7 810-4CA07-8AW0

English

6ES7 810-4CA07-8BW0

French

6ES7 810-4CA07-8CW0

Spanish

6ES7 810-4CA07-8DW0

Italian

6ES7 810-4CA07-8EW0

##### STEP 7 reference manuals

consisting of IL, LAD and CSF manuals as well as a reference manual for standard and system functions for SIMATIC S7-300/-400

German

6ES7 810-4CA07-8AW1

English

6ES7 810-4CA07-8BW1

French

6ES7 810-4CA07-8CW1

Spanish

6ES7 810-4CA07-8DW1

Italian

6ES7 810-4CA07-8EW1

A) Subject to export regulations: AL: N and ECCN: EAR99H

B) Subject to export regulations: AL: N and ECCN: EAR99S

D) Subject to export regulations: AL: N and ECCN: 5D992B1

#### Order No.

##### SIMATIC Manual Collection <sup>B)</sup>

Electronic manuals on CD-ROM, 5 languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, Engineering Software, Runtime Software, PCS 7, SIMATIC HMI, SIMATIC NET

6ES7 998-8XC01-8YE0

##### SIMATIC Manual Collection update service for 1 year <sup>B)</sup>

Up-to-date Manual Collection CD as well as the three subsequent updates

6ES7 998-8XC01-8YE2

##### EPROM programming device USB Prommer

for connecting SIMATIC S7 and CP via MPI (5 m)

6ES7 792-0AA00-0XA0

##### MPI cable

for connecting SIMATIC S7 and CP via MPI (5 m)

6ES7 901-0BF00-0AA0

#### Components for connection of the PC to MPI and PROFIBUS

- For a PC with a free PCI slot

##### CP 5611

6GK1 561-1AA00

##### CP 5611 MPI

6GK1 561-1AM00

incl. MPI cable (5 m)

- For a PC with a free PCMCIA slot:

##### CP 5512

6GK1 551-2AA00

For Windows XP Professional

- For a PC without a free PCI slot

##### PC adapter USB

6ES7 972-0CB20-0XA0

for connecting a PC to a S7 300/400/C7 via the USB interface; with an USB cable (5 m)

#### Components for connecting the PC to Industrial Ethernet

- For a PC with a free PCI slot

##### CP 1612 <sup>A)</sup>

6GK1 161-2AA00

- For a PC with a free PCMCIA slot:

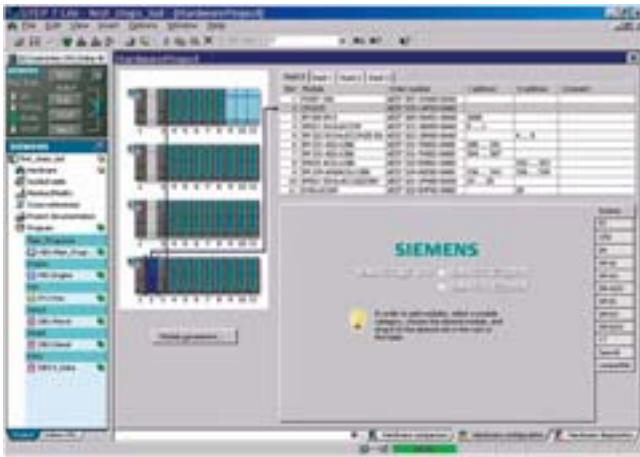
##### CP 1512

6GK1 151-2AA00

##### SOFTNET-PG V6.2 <sup>D)</sup>

6GK1 704-1PW62-3AA0

#### Overview



- Programming software for implementing non-networked solutions with SIMATIC S7-300, SIMATIC C7, ET 200S and ET 200X
- Simple and intuitive operation
- Projects created with STEP 7 Lite can be reused with STEP 7 and STEP 7 Professional

#### Ordering data

#### Order No.

##### STEP 7 Lite V3.0

**Target system:**  
SIMATIC S7-300, SIMATIC C7,  
ET 200S, ET 200X

**Requirements:**  
Windows 2000 Prof./XP Home/  
XP Prof.

**Delivery type:**  
German, English, French,  
Spanish, Italian;  
incl. authorization diskette 3.5"

Floating license <sup>B)</sup>

**6ES7 810-3CC07-0YA5**

Software update service <sup>B)</sup>

**6ES7 810-3BC01-0YX2**

##### SIMATIC Manual Collection <sup>B)</sup>

**6ES7 998-8XC01-8YE0**

Electronic manuals on CD-ROM,  
5 languages: S7-200/300/400,  
C7, LOGO!, SIMATIC DP, PC, PG,  
STEP 7, Engineering Software,  
Runtime Software, PCS 7,  
SIMATIC HMI, SIMATIC NET

##### SIMATIC Manual Collection update service for 1 year <sup>B)</sup>

**6ES7 998-8XC01-8YE2**

Up-to-date Manual Collection CD  
as well as the three subsequent  
updates

##### EPROM programming device USB Prommer

**6ES7 792-0AA00-0XA0**

for connecting SIMATIC S7  
and CP via MPI (5 m)

##### MPI cable

**6ES7 901-0BF00-0AA0**

for connecting SIMATIC S7  
and CP via MPI (5 m)

#### Engineering Software for use with STEP 7 Lite

##### S7-PLCSIM

see Page 7/16

##### TeleService

see Page 7/17

#### Components for connection of the PC to MPI and PROFIBUS

- For a PC with a free PCI slot

##### CP 5611

**6GK1 561-1AA00**

##### CP 5611 MPI

**6GK1 561-1AM00**

incl. MPI cable (5 m)

- For a PC with a free PCMCIA  
slot:

##### CP 5512

**6GK1 551-2AA00**

For Windows XP Professional

- For a PC without a free PCI slot

##### PC adapter USB

**6ES7 972-0CB20-0XA0**

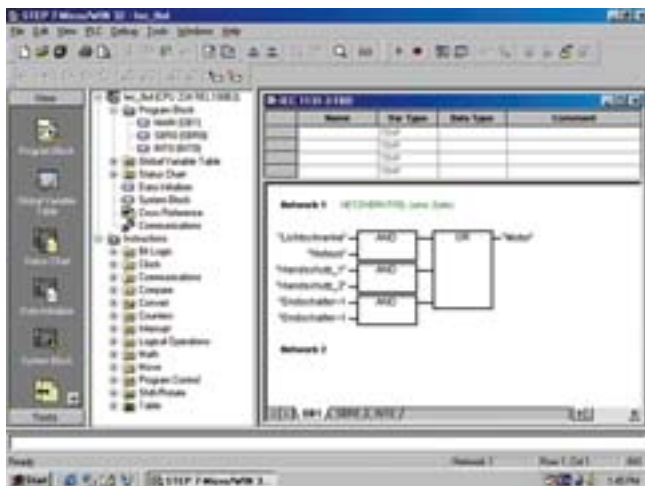
for connecting a PC to a  
S7 300/400/C7 via the USB inter-  
face; with an USB cable (5 m)

B) Subject to export regulations: AL: N and ECCN: EAR99S



### STEP 7 - Micro / WIN

#### Overview



- The simple and easily learned programming software executing under Windows NT/2000/XP for the SIMATIC S7-200
- A large number of wizards support the programming even of difficult automation tasks
- For fast startup and time-saving programming
- With large scope of functions
- Based on standard Windows software (desktop corresponds to standard applications, e.g., MS Word, MS Outlook)
- With 3 standard editors IL, LAD and CSF; switching between the editors is possible at any time
- Generation, exporting and import ing of user-specific libraries (including standard commands and user-defined subroutines)
- Documentation CD with manuals, software tools and example programs as support

#### Ordering data

#### Order No.

##### STEP 7-Micro/WIN V4 programming software

###### Target system:

All CPUs of the SIMATIC S7-200 range

###### Requirements:

Windows 2000/XP on PG or PC

###### Delivery type:

English, German, French, Spanish, Italian, Chinese; with online documentation

Single license <sup>B)</sup>

Upgrade single license <sup>1) B)</sup>

To be ordered separately:

##### Intelligent RS 232/PPI multimaster cable <sup>A)</sup>

for connecting devices with an RS 232 interface to the SIMATIC S7-200 or PPI network; master in the multimaster PPI network

##### Intelligent USB/PPI multimaster cable <sup>A)</sup>

for connecting devices with an USB interface to the SIMATIC S7-200 or PPI network; master in the multimaster PPI network

##### System manual for S7-22x-CPU

German

English

French

Spanish

Italian

Chinese

6ES7 810-2CC03-0YX0

6ES7 810-2CC03-0YX3

6ES7 901-3CB30-0XA0

6ES7 901-3DB30-0XA0

6ES7 298-8FA24-8AH0

6ES7 298-8FA24-8BH0

6ES7 298-8FA24-8CH0

6ES7 298-8FA24-8DH0

6ES7 298-8FA24-8EH0

6ES7 298-8FA24-8FH0

#### Components for connection of the PC to MPI and PROFIBUS

- For a PC with a free PCI slot

##### CP 5611

##### CP 5611 MPI

incl. MPI cable (5 m)

- For a PC with a free PCMCIA slot:

##### CP 5512

For Windows XP Professional

- For a PC without a free PCI slot

##### PC adapter USB

for connecting a PC to a S7 300/400/C7 via the USB interface; with an USB cable (5 m)

6GK1 561-1AA00

6GK1 561-1AM00

6GK1 551-2AA00

6ES7 972-0CB20-0XA0

A) Subject to export regulations: AL: N and ECCN: EAR99H

B) Subject to export regulations: AL: N and ECCN: EAR99S

1) Upgrade for all previous STEP 7 Micro/WIN and STEP 7 Micro/DOS versions



### STEP 7 Micro/WIN command library

#### Overview

- Additional instruction libraries for STEP 7 Micro/WIN V3.2:
  - USS protocol library
  - MODBUS protocol library

#### Ordering data

#### Order No.

##### **STEP 7-Micro/Win command library V1.1**

**6ES7 830-2BC00-0YX0**

Protocol libraries for USS and MODBUS protocols; can be used with STEP 7-Micro/Win32 V3.2; including documentation, on CD-ROM

# SIMATIC Industrial Software

## Standard tools

### Technical specifications

#### Technical specifications

Standard tool	STEP 7 Professional	STEP 7	STEP 7 Lite	STEP 7-Micro/WIN
License form	Floating license	Floating license	Floating license	Single license
Software class	A	A	A	A
Current version	Edition 2004	V 5.3	V 3.0	V4.0
Target system	SIMATIC S7-300 SIMATIC S7-400 SIMATIC C7	SIMATIC S7-300 SIMATIC S7-400 SIMATIC C7	SIMATIC S7-300 SIMATIC C7	SIMATIC S7-200
Operating system	Windows 2000 Professional Windows XP Professional	Windows 2000 Professional Windows XP Professional	Windows XP Home Windows 2000 Professional Windows XP Professional	Windows 2000 Windows XP
Memory configuration in PG/PC, min.	Depending on the Microsoft Windows operating system used. Recommended: 256 MB	Depending on the Microsoft Windows operating system used. Recommended: 256 MB	Depending on the Microsoft Windows operating system used. Recommended: 128 MB	32 MB
Disk space requirement in PG/PC	Depending on installation 200 to 430 MB	Depending on installation 200 to 380 MB	Depending on installation 90 to 250 MB.	50 MB
Size of user program in CPU	About factor 1.5 compared to STEP 5 for IL, LAD, CSF	About factor 1.5 compared to STEP 5 for IL, LAD, CSF	About factor 1.5 compared to STEP 5 for IL, LAD, CSF	Approx. 1.0 times larger than STEP 5 with IL, LAD
Note	Contains all 5 IEC programming languages - LAD, CSF, IL, SCL, and GRAPH - and PLC simulation software S7-PLCSIM	-	For non-networked applications with central I/O.	Single license

#### Overview



- PASCAL-type high-level language
- Optimized for programming programmable controllers
- With PLCopen Base Level certificate
- For use in SIMATIC S7-300 (recommended for CPU 314 and CPU 312C or higher), S7-400, C7 and WinAC



#### Ordering data

#### Order No.

##### SIMATIC S7-SCL, Version 5.3

###### Task:

High-level programming language programming

###### Target system:

SIMATIC S7-300 (CPU 314 or later), SIMATIC S7-400, SIMATIC C7, SIMATIC WinAC

###### Prerequisite:

STEP 7 V5.3 or later

###### Delivery type:

on CD; German, English, French, Spanish, Italian; incl. authorization disk, with electronic documentation

Floating License

**6ES7 811-1CC05-0YA5**

Software Update Service

**6ES7 811-1CA01-0YX2**

Upgrade Floating to V5.3

**6ES7 811-1CC05-0YE5**

##### SIMATIC Manual Collection <sup>B)</sup>

Electronic manuals on CD-ROM, 5 languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, Engineering Software, Runtime Software, PCS 7, SIMATIC HMI, SIMATIC NET

**6ES7 998-8XC01-8YE0**

##### SIMATIC Manual Collection update service for 1 year <sup>B)</sup>

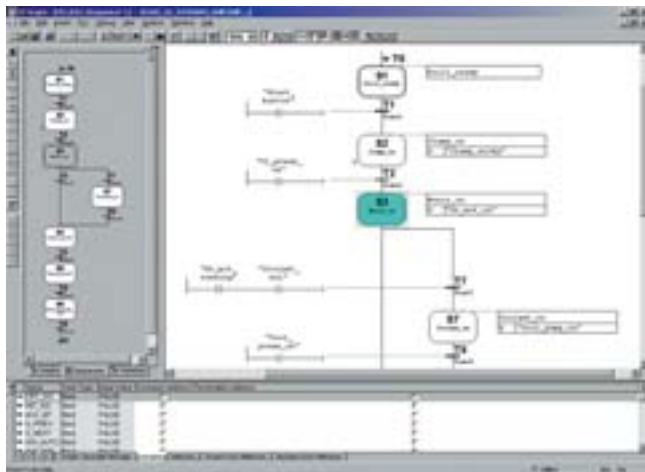
Up-to-date Manual Collection CD as well as the three subsequent updates

**6ES7 998-8XC01-8YE2**

B) Subject to export regulations: AL: N and ECCN: EAR99S

### S7-GRAPH

#### Overview



- For configuring and programming sequential processes using sequencers
- Standardized representation to DIN EN 1131-3
- Clearly comprehensible program thanks to structuring of the process into separate steps
- With extensive diagnostics functions, integrated into the SIMATIC diagnostics concept
- With PLCopen Base Level certificate
- For use in SIMATIC S7-300 (recommended for CPU 315 and CPU 312C or higher), S7-400, C7 and WinAC



#### Ordering data

#### Order No.

##### **SIMATIC S7-GRAPH, Version 5.3**

###### *Task:*

Configuration and programming of execution sequences

###### *Target system:*

SIMATIC S7-300, SIMATIC S7-400, SIMATIC C7, SIMATIC WinAC

###### *Prerequisite:*

STEP 7 V5.3 or later

###### *Delivery type:*

on CD; German, English, French, Spanish, Italian; incl. authorization disk, with electronic documentation

Floating License

**6ES7 811-0CC06-0YA5**

Software update service

**6ES7 811-0CA01-0YX2**

Upgrade floating license on V5.3

**6ES7 811-0CC06-0YE5**

##### **SIMATIC Manual Collection<sup>B)</sup>**

**6ES7 998-8XC01-8YE0**

Electronic manuals on CD-ROM, 5 languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, Engineering Software, Runtime Software, PCS 7, SIMATIC HMI, SIMATIC NET

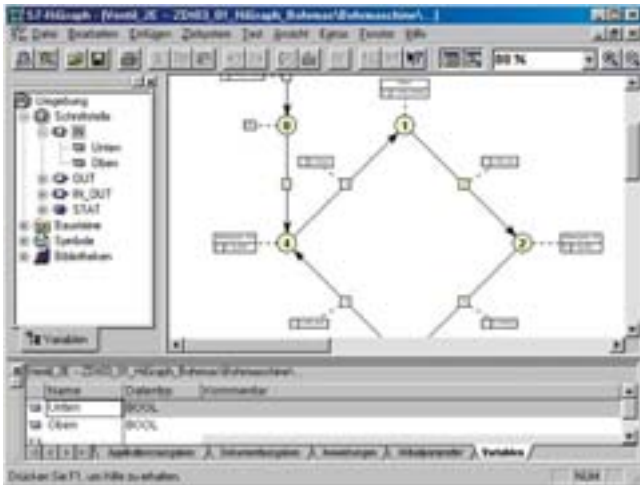
##### **SIMATIC Manual Collection update service for 1 year<sup>B)</sup>**

**6ES7 998-8XC01-8YE2**

Up-to-date Manual Collection CD as well as the three subsequent updates

B) Subject to export regulations: AL: N and ECCN: EAR99S

#### Overview



- For graphic description of asynchronous processes using state graphs
- Also particularly suitable for machine constructors (technologists), commissioning engineers and service engineers
- Extremely flexible using freely-positionable graphic elements
- With integrated monitoring and signaling functions
- Can be used in SIMATIC S7-300, S7-400, C7 and WinAC

#### Ordering data

#### Order No.

##### **SIMATIC S7-HiGraph, Version 5.3**

###### *Task:*

Programming of status graphs

###### *Target system:*

SIMATIC S7-300,  
SIMATIC S7-400, SIMATIC C7,  
SIMATIC WinAC

###### *Prerequisite:*

STEP 7 V5.3 or later

###### *Delivery type:*

on CD; German, English,  
French, Spanish, Italian;  
incl. authorization disk,  
with electronic documentation

Floating license

**6ES7 811-3CC05-0YA5**

Software update service

**6ES7 811-3BA01-0YX2**

Upgrade floating license on V5.3

**6ES7 811-3CC05-0YE5**

##### **SIMATIC Manual Collection <sup>B)</sup>**

**6ES7 998-8XC01-8YE0**

Electronic manuals on CD-ROM,  
5 languages: S7-200/300/400,  
C7, LOGO!, SIMATIC DP, PC, PG,  
STEP 7, Engineering Software,  
Runtime Software, PCS 7,  
SIMATIC HMI, SIMATIC NET

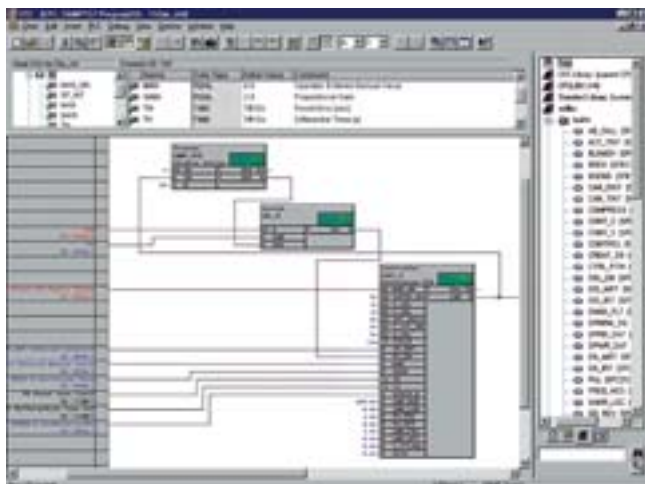
##### **SIMATIC Manual Collection update service for 1 year <sup>B)</sup>**

**6ES7 998-8XC01-8YE2**

Up-to-date Manual Collection CD  
as well as the three subsequent  
updates

B) Subject to export regulations: AL: N and ECCN: EAR99S

#### Overview



#### Ordering data

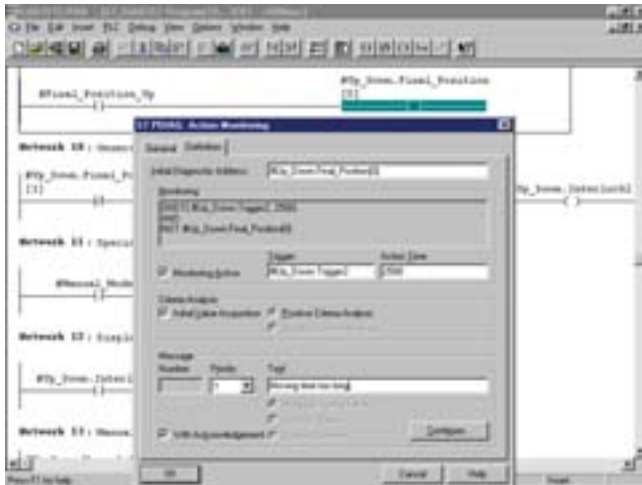
CFC, version 6.0

#### Order No.

- For creating automation programs by drawing a function chart
- With extensive libraries of prefabricated function blocks to which function blocks created by the user can be added
- Reduced costs and fewer mistakes by simply interconnecting read-to-use function blocks
- Optimized integration in the world of automation, for example, through guaranteed compatibility with all STEP 7 tools
- Can be used for SIMATIC S7-300 (recommended for CPU 316 or CPU 314C or higher), SIMATIC S7-400, SIMATIC WinAC and D7-SYS

B) Subject to export regulations: AL: N and ECCN: EAR99S

#### Overview



- For configuration of process diagnostics with SIMATIC S7
- Increases the availability of machines and production plants and supports with fault analysis and elimination on site
- For use on the SIMATIC S7-300, S7-400

#### Ordering data

#### Order No.

##### S7-PDIAG, Version 5.1

###### Function:

Configuring of process diagnostics for LAD/FBD/STL

###### Target system:

SIMATIC S7-300 (CPU 314 or newer); SIMATIC S7-400

###### Requirements:

STEP 7 V5.1 SP6 or newer

###### Type of delivery:

on CD; German, English, French, Spanish, Italian; including authorization diskette, with electronic documentation

Single license

**6ES7 840-0CC03-0YE0**

Software Update Service

**6ES7 840-0CA01-0YX2**

Upgrade of single license to V5.1

**6ES7 840-0CC03-0YE4**

##### SIMATIC Manual Collection <sup>B)</sup>

**6ES7 998-8XC01-8YE0**

Electronic manuals on CD-ROM, in 5 languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, engineering software, runtime software, PCS 7, SIMATIC HMI, SIMATIC NET

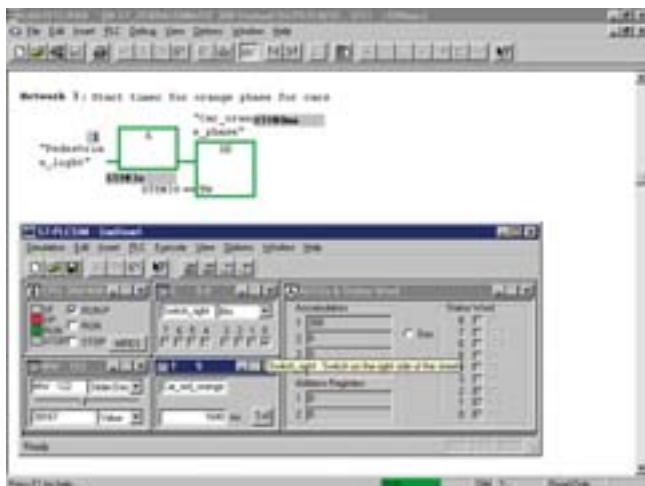
##### SIMATIC Manual Collection update service for 1 year <sup>B)</sup>

**6ES7 998-8XC01-8YE2**

Current Manual Collection CD as well as the three following updates

B) Subject to export regulations: AL: N and ECCN: EAR99S

#### Overview



- For functional testing of the generated SIMATIC S7 user blocks on the PG/PC, independent of the availability of the target hardware
- To transfer detection and elimination of program faults to an early phase of program development
- Permits accelerated, cost-reduced initial commissioning, and an increase in program quality
- Can be used for LAD, FBD, STL, S7-GRAPH, S7-HiGraph, S7-SCL, CFC, S7-PDIAG, WinCC (local installation)

#### Ordering data

#### Order No.

##### S7-PLCSIM, Version 5.3

###### Task:

Functional testing of SIMATIC S7 application blocks on a PG/PC

###### Target system:

SIMATIC S7-300, SIMATIC S7-400, SIMATIC C7

###### Prerequisite:

for STEP 7 V5.3 or later

###### Delivery package:

on CD; German, English, French, Spanish, Italian; incl. authorization disk, with electronic documentation

Floating License

**6ES7 841-0CC04-0YA5**

Software update service

**6ES7 841-0CA01-0YX2**

Upgrade floating license on V5.3

**6ES7 841-0CC04-0YE5**

##### SIMATIC Manual Collection <sup>B)</sup>

**6ES7 998-8XC01-8YE0**

Electronic manuals on CD-ROM, 5 languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, Engineering Software, Runtime Software, PCS 7, SIMATIC HMI, SIMATIC NET

##### SIMATIC Manual Collection update service for 1 year <sup>B)</sup>

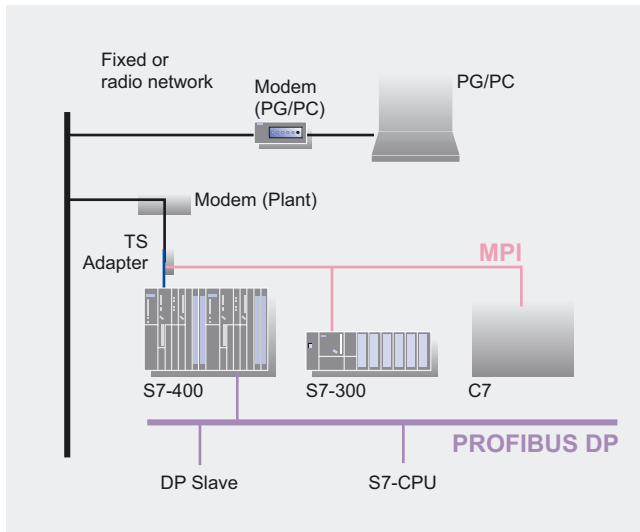
**6ES7 998-8XC01-8YE2**

Up-to-date Manual Collection CD as well as the three subsequent updates

B) Subject to export regulations: AL: N and ECCN: EAR99S



### Overview



- For remote maintenance of SIMATIC S7/C7 automation systems using a wired or radio network
- Functions:
  - Access to remote plants ([remote maintenance](#)): Distributed plants can be managed, controlled and monitored centrally using remote connections (can be used in SIMATIC S7-300 and S7-400).
  - Establishment of connection from/to remote plants ([PG-AS remote coupling](#))
  - Data exchange between plants ([AS-AS remote coupling](#)): Exchange of process data between two SIMATIC automation systems via the telephone network
  - Sending a [text message](#): A SIMATIC automation system can send a text message via a GSM radio modem.
- For use on the SIMATIC S7-300, S7-400, C7

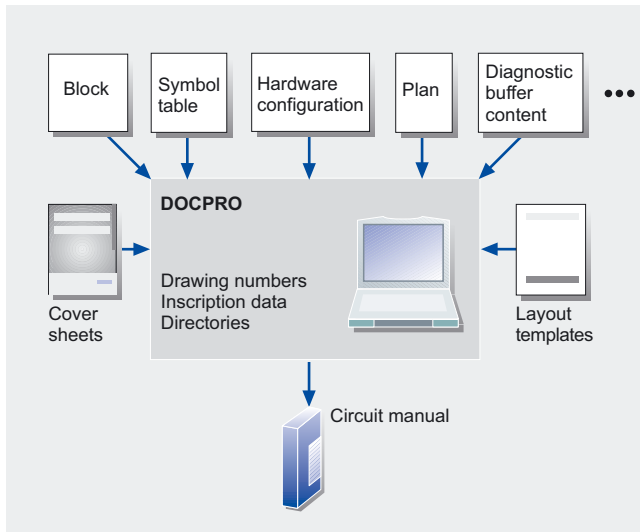
### Technical specifications

See "Engineering Tools" for Technical specifications of TeleService.

Ordering data	Order No.	Order No.
<b>TeleService, Version 5.2</b> <i>Task:</i> Remote maintenance of SIMATIC S7/C7 over fixed-line network and radio network <i>Target system:</i> SIMATIC S7-300, SIMATIC S7-400, SIMATIC C7 <i>Prerequisite:</i> STEP 7 V5.1 and higher; TS Adapter required <i>Delivery type:</i> on CD; German, English, French, Spanish, Italian; incl. authorization disk, with electronic documentation Single license Upgrade single license from V3 to V5.0	6ES7 842-0CC03-0YE0 6ES7 842-0CC03-0YE4	<b>TS Adapter</b> With MPI connection and RS 232; 9-pin, male (modem end) <b>6ES7 972-0CA34-0XA0</b> <b>RS 232 cable</b> Null modem cable for adapter parameterization; 9-pole socket/9-pole socket <b>6ES7 901-1BF00-0XA0</b> <b>TS Adapter II analog</b> With MPI connection and RS 232; 9-pin, male (modem end) <b>6ES7 972-0CB35-0XA0</b> <b>TS Adapter II ISDN</b> With MPI connection and RS 232; 9-pin, male (modem end) <b>6ES7 972-0CC35-0XA0</b> <b>SIMATIC Manual Collection <sup>B)</sup></b> Electronic manuals on CD-ROM, 5 languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, Engineering Software, Runtime Software, PCS 7, SIMATIC HMI, SIMATIC NET <b>6ES7 998-8XC01-8YE0</b>
<b>TeleService, Version 6.0</b> <i>Task:</i> Remote maintenance of SIMATIC S7/C7 over fixed-line network and radio network <i>Target system:</i> SIMATIC S7-200, SIMATIC S7-300, SIMATIC S7-400, SIMATIC C7 <i>Requirements:</i> TS Adapter (STEP 7 not required) <i>Delivery type:</i> on CD; German, English, French, Spanish, Italian; with electronic documentation Floating license Floating license upgrade (from every previous version) Software update service	6ES7 842-0CC10-0YA5 6ES7 842-0CC10-0YE5 6ES7 842-0CA01-0YX2	<b>SIMATIC Manual Collection update service for 1 year <sup>B)</sup></b> Up-to-date Manual Collection CD as well as the three subsequent updates <b>6ES7 998-8XC01-8YE2</b>

B) Subject to export regulations: AL: N and ECCN: EAR99S

#### Overview



- For creating and managing plant documentation
- Permits structuring of project data, the preparation in the form of wiring manuals, and the printout in a unified print image.
- For use in SIMATIC S7-300, S7-400 and C7

#### Ordering data

#### Order No.

##### DOCPRO, Version 5.1

###### Function:

Creation of circuit manuals for system document management

###### Target system:

SIMATIC S7-300, SIMATIC S7-400, SIMATIC C7

###### Requirements:

STEP 7 V3.2 or newer;

###### Type of delivery:

on CD; German, English, French, Spanish, Italian; including authorization diskette, with electronic documentation

Single license <sup>B)</sup>

Software update service <sup>B)</sup>

Upgrade single license to V5.1 <sup>B)</sup>

**6ES7 803-0CC02-0YE0**

**6ES7 803-0CA01-0YX2**

**6ES7 803-0CC02-0YE4**

##### SIMATIC Manual Collection <sup>B)</sup>

Electronic manuals on CD-ROM, in 5 languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, engineering software, runtime software, PCS 7, SIMATIC HMI, SIMATIC NET

**6ES7 998-8XC01-8YE0**

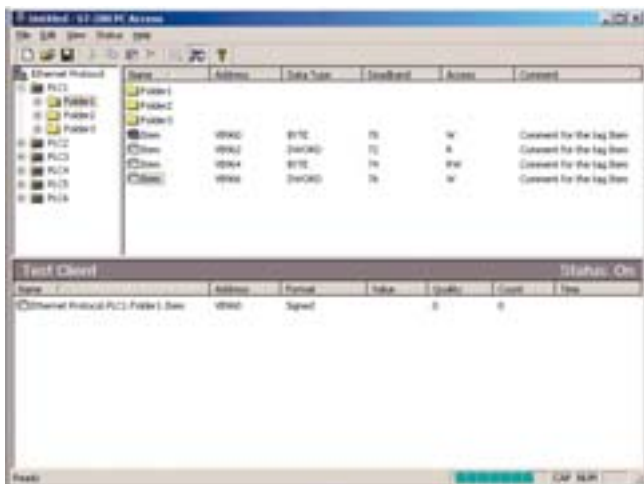
##### SIMATIC Manual Collection update service for 1 year <sup>B)</sup>

Current Manual Collection CD as well as the three following updates

**6ES7 998-8XC01-8YE2**

B) Subject to export regulations: AL: N and ECCN: EAR99S

#### Overview



- OPC server as the bridge between the SIMATIC S7-200 and the PC world
- For processing and visualizing data from the S7-200 with standard Windows applications
- Database applications, human/machine interfaces (HMIs), tools for statistical evaluations with Excel, for instance, or calculation modules for complex requirements are examples of what can be created.

#### Ordering data

#### Order No.

##### S7-200 PC Access V1.0

###### Task:

OPC-Server for SIMATIC S7-200.

###### Target system:

SIMATIC S7-22x.

###### Prerequisite:

Windows 2000/XP; on PG or PC;  
STEP 7-Micro/Win V4.

###### Delivery package:

English, German, French,  
Spanish, Italian, Chinese,  
with electronic documentation

Single license <sup>B)</sup>

Multi-copy license  
for 15 installations <sup>B)</sup>

**6ES7 840-2CC01-0YX0**

**6ES7 840-2CC01-0YX1**

##### Intelligent RS 232/PPI multimaster cable <sup>A)</sup>

for connecting devices with a  
RS 232 interface to the SIMATIC  
S7-200 or PPI network; master in  
the multimaster PPI network

**6ES7 901-3CB30-0XA0**

##### Intelligent USB/PPI multimaster cable <sup>A)</sup>

for connecting devices with  
an USB interface to the SIMATIC  
S7-200 or PPI network; master in  
the multimaster PPI network

**6ES7 901-3DB30-0XA0**

##### CP 5512

PC card (CardBus, 32-bit) for  
connecting a PG or notebook to  
PROFIBUS or MPI under 32-bit Win-  
dows XP Professional  
(Windows 2000 Professional  
available soon), executable under  
32-bit Windows 2000 Professional  
and Windows XP Professional in  
combination with STEP 7 V5.2  
German/English

**6GK1 551-2AA00**

##### CP 5611

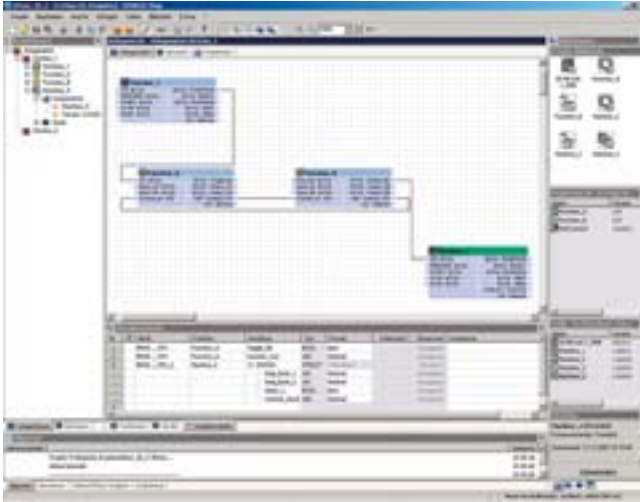
PCI card for connecting a PC to the  
CPU interface or PROFIBUS DP  
module (187.5 Kbit/s or 12 Mbit/s)  
over MPI cable

**6GK1 561-1AA00**

A) Subject to export regulations: AL: N and ECCN: EAR99H

B) Subject to export regulations: AL: N and ECCN: EAR99S

#### Overview



- Component-based software tool for configuration of communication in distributed automation solutions
- Based on PROFINET standard
- For simple graphic configuring of communication between system modules and machine-machine on the production line
- Open for PROFINET devices from different vendors on Industrial Ethernet
- Runs on Windows 2000 and Windows XP

#### Technical specifications

Engineering tool	SIMATIC iMap
Current version	V2.0
Software class	A
<b>Applications</b>	
Slogan	SIMATIC iMap is an engineering tool for configuration of communication between intelligent automation systems and field devices in distributed automation solutions.
Marketing message	"Reduction in time and costs for modular machine and plant construction using Component based Automation." "Modularization and machine-machine communication along the production line"
Advantages	<ul style="list-style-type: none"> <li>• Neutral component-based engineering tool in conformance with the PROFINET standard.</li> <li>• Simple communication between intelligent automation systems and field devices on PROFIBUS DP and on the Ethernet.</li> <li>• Graphic configuring of communication on PROFIBUS DP and on the Ethernet</li> <li>• Very high reusability of the software components (technological modules)</li> <li>• Graphic configuring of plant using chart-in-chart function</li> <li>• Convenient navigation in project tree</li> <li>• Convenient generation and structuring of technological libraries</li> <li>• PROFIBUS and Ethernet in overview in the network view</li> <li>• Fast startup by downloading and testing directly on the Ethernet (also of PROFIBUS slaves)</li> <li>• Online display of values of technological modules on the interfaces and in the variables table</li> <li>• Diagnostics of communication in the diagnostics window</li> </ul>
Sectors	<ul style="list-style-type: none"> <li>• Automotive industry (especially for assembly, conveyor systems and paint shops)</li> <li>• More complex food and packaging machines</li> <li>• Conveyor systems based on PROFIBUS DP</li> <li>• Production lines with several combined machines</li> </ul>

#### Target systems

- SIMATIC S7 CPU 317-2 PN/DP (with integrated PROFINET interface. Can be used as a proxy for the devices of a complete PROFIBUS segment, only one line.)
- SIMATIC WinAC PN (can be used as a proxy for the devices of a complete PROFIBUS segment, only one line)
- SIMATIC NET IE/PB Link (can be used as a proxy for the devices of a complete PROFIBUS segment)
- SIMATIC NET CP 343-1 PN (for connecting the SIMATIC S7-300 to Ethernet), CP443-1 Advanced (for connecting the SIMATIC S7-400 to Ethernet)
- Distributed I/O stations with own CPU (all intelligent field devices on the PROFIBUS such as SIMATIC CPU 313C-2DP, CPU 314C-2DP, CPU 315-2DP, CPU 316-2DP, ET 200 IM 151 CPU, ET 200S BM 147 CPU),
- PROFINET OPC server (for access from PC applications to data in PROFINET devices)
- Devices on Industrial Ethernet based on the PROFINET CBA standard
- SIMATIC OPs (within the components)
- SIMATIC ProTool/Pro, WinCC or any other visualization system with OPC client function

#### Technical specifications (continued)

System requirements	
Operating system	Windows 2000 Prof. with Service Pack 4 or Windows XP Prof. with Service Pack 1; PC administration privileges are required for installation
PG/PC hardware	Pentium processor with 800 MHz or more (1.2 GHz recommended)
Recommended memory configuration on PG/PC	At least 256 MB RAM (512 MB recommended)
Hard disk storage requirement in PG/PC	Approx. 50 MB
Required software	<ul style="list-style-type: none"> <li>•STEP 7 V5.2 Service Pack 1 or later including NCM</li> <li>•SIMATIC NET IE SOFTNET-PG V6.2 or later</li> <li>•PN OPC server V6.2 or later</li> </ul> <p>The following software must be installed prior to installation of iMap (included in delivery of iMap):</p> <ul style="list-style-type: none"> <li>•MS Internet Explorer V6.0 or later Service Pack 1</li> <li>•MS XML Parser V4.0 Service Pack 1</li> <li>•Adobe Acrobat Reader V5.0</li> </ul>
Form supplied	
Languages	English and German
Single license	Yes
Upgrade license	Yes, from V1.2 to V2.0
Printed manuals	Present in electronic form on CD
Authorization/licenses	
Authorization	Yes
Single license	Yes
Upgrade license	Yes
Software update service	Yes
Unlock copy license	No

#### Ordering data

#### Order No.

##### SIMATIC iMap V2.0

**Target system:**  
CPU 317-2 PN/DP, SIMATIC WinAC PN, SIMATIC NET IE/PB Link, SIMATIC NET CP 343-1 PN, SIMATIC NET CP 443-1 Advanced, distributed I/O stations with separate CPU, PROFINET OPC server, SIMATIC ProTool/Pro

**Prerequisite:**  
Windows 2000 Prof. SP4 or Windows XP Prof SP1; on PG or PC with Pentium processor, min. 500 MHz; STEP 7 V5.2 SP 1 or later incl. NCM, SIMATIC NET IE SOFTNET PG V6.2 or newer, PN OPC server V6.2 or newer

**Delivery package:**  
English, German, with electronic documentation

Single license

Software update service

Upgrade to V2.0, single license

**6ES7 820-0CC03-0YX0**

**6ES7 820-0CC01-0YX2**

**6ES7 820-0CC03-0YX4**

### S7 Technology

#### Overview

- Options package for creating motion control applications for CPU 317T-2 DP
- Optimum embedding in the automation world due to guaranteed integration with STEP 7 tools
- Programming in the standard SIMATIC programming languages LAD, FBD and STL
- Additional engineering tools such as S7-SCL or S7-GGRAPH can be used

#### Ordering data

#### Order No.

##### S7 technology V1.0

**6ES7 864-1CC10-0YX0**

##### *Task:*

Options package for configuring and programming technological tasks with the SIMATIC S7 CPU 317T-2 DP

##### *Prerequisite:*

STEP 7 V5.2 or later

##### *Delivery type:*

on CD;  
incl. documentation for CPU 317T-2 DP (included on CD)

##### S7 technology V2.0

**6ES7 864-1CC20-0YX0**

##### *Task:*

Options package for configuring and programming technological tasks with the SIMATIC S7 CPU 317T-2 DP

##### *Prerequisite:*

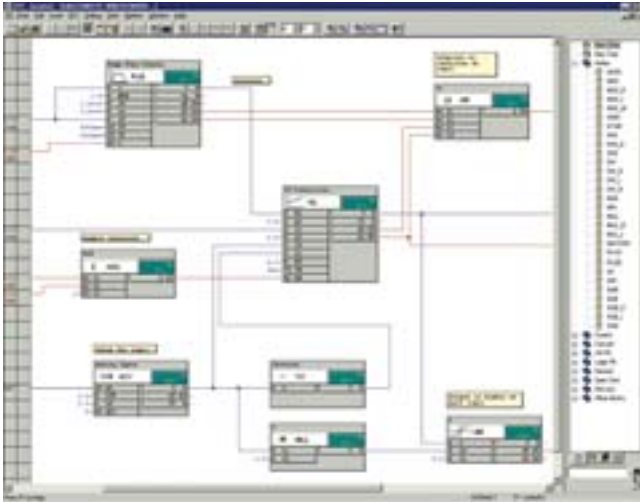
STEP 7 V5.3 or later

##### *Delivery type:*

on CD;  
incl. documentation for CPU 317T-2 DP (included on CD)



#### Overview



- Add-on for STEP 7/CFC/SFC for programming control and automation tasks with T400, FM 458, SIMADYN D or SIMATIC TDC
- Contains function blocks for every application
- For customers who do not own STEP 7 software: [D7-ES](#), comprising D7-SYS, STEP 7, CFC and, as an option, SFC
- [D7-FB-Gen](#), function block generator for generating own function blocks

#### Ordering data

#### Order No.

##### SIMATIC D7-SYS V6.1

###### Function:

Function block library for configuration of control and automation tasks

###### Target system:

SIMATIC S7-400/FM 458

###### Requirements:

Windows 95/98/Me/NT/2000/XP

###### Type of delivery:

on CD; German, English, with electronic documentation

Single license

**6DD1 801-5DA8**

Upgrade from V4.x or higher

**6DD1 807-5DA8**

##### SIMATIC D7-SYS-SFC V6.1

###### Function:

Function block library for configuration of control and automation tasks; incl. sequence generator

###### Target system:

SIMATIC S7-400/FM 458

###### Requirements:

Windows 2000

###### Type of delivery:

on CD; German, English, with electronic documentation

Single license

**6DD1 801-7DA8**

##### SIMATIC D7-ES V6.1

Complete package comprising STEP 7, CFC and D7-SYS; executes on Windows 95/98/Me/NT/2000/XP

Single license <sup>B)</sup>

**6DD1 801-4DA8**

##### SIMATIC D7-ES-SFC V6.1

Complete package comprising STEP 7, CFC, D7-SYS and SFC; executes on Windows 2000

Single license <sup>B)</sup>

**6DD1 801-6DA8**

##### SIMATIC D7-FB-Gen V2.1 <sup>B)</sup>

Function block generator

**6DD1 805-5DA0**

##### SIMATIC Manual Collection <sup>B)</sup>

Electronic manuals on CD-ROM, in 5 languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, engineering software, runtime software, PCS 7, SIMATIC HMI, SIMATIC NET

**6ES7 998-8XC01-8YE0**

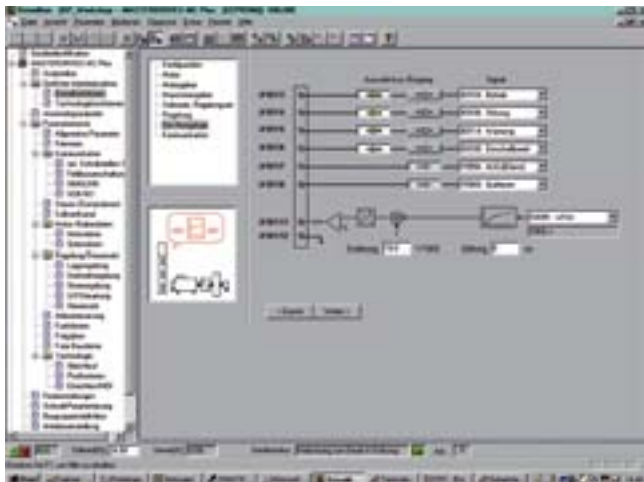
##### SIMATIC Manual Collection update service for 1 year <sup>B)</sup>

Current Manual Collection CD as well as the three following updates

**6ES7 998-8XC01-8YE2**

B) Subject to export regulations: AL: N and ECCN: EAR99S

#### Overview



With Drive ES, Siemens drives may be fully integrated into the SIMATIC automation world with regard to communication, configuring and data management saving you trouble, time and money.

The basis is the user interface of the STEP 7 manager which guarantees consistent configuration.

The following software packages are available:

- **Drive ES Basic** introduces you to the world of Totally Integrated Automation and permits routing across network boundaries and use of the SIMATIC Teleservice.
- **Drive ES Graphic** is the software for convenient configuration of free drive functions for SIMOVERT MASTERDRIVES and SIMOREG DC Master.
- **Drive ES SIMATIC** enables you to assign parameters to the STEP 7 communication program instead of programming.
- **Drive ES PCS7** integrates drives with PROFIBUS interface into the PCS7 process control system.

#### Ordering data

#### Order No.

##### Drive ES Basic V 5.3

- Configuring software for integration of drives in Totally Integrated Automation
- Requirement: STEP 7 from V 5.1, SP 3
- Delivery form: on CD-ROM Ger, En, Fr, Sp, It with electronic documentation

Single license

**6SW1 700-5JA00-3AA0**

Copy license, qty: 60

**6SW1 700-5JA00-3AA1**

Update service for single license

**6SW1 700-0JA00-0AB2**

Update service for copy license

**6SW1 700-0JA00-1AB2**

Upgrade from V 5.x to V 5.3

**6SW1 700-5JA00-3AA4**

##### Drive ES Graphic

- Option for Drive ES Basic, in conjunction with SIMATIC tool CFC for graphical configuring the functions available in SIMOVERT MASTERDRIVES
- Requirement: Drive ES Basic from V 5 and CFC from V 5.1, SP 2
- Delivery form: on CD-ROM Ger, En, Fr, Sp, It with electronic documentation

Single license V 5.2

**6SW1 700-5JB00-2AA0**

Upgrade from V 5.x to V 5.2

**6SW1 700-5JB00-2AA4**

##### Drive ES SIMATIC V 5.3

- Block library for SIMATIC for parameterizing communication with the drives
- Requirement: STEP 7 from V 5.1, SP 3
- Delivery form: on CD-ROM Ger, En, Fr, Sp, It with electronic documentation

Single license, incl. 1 runtime license

**6SW1 700-5JC00-3AA0**

Runtime license

**6SW1 700-5JC00-1AC0**

Update service for single license

**6SW1 700-0JC00-0AB2**

Upgrade from V 5.x to V 5.3

**6SW1 700-5JC00-3AA4**

##### Drive ES PCS 7 V 6.0

- Block library for PCS 7 for integration of drives
- Requirement: PCS 7 from V 6.
- Delivery form: on CD-ROM Ger, En, Fr, Sp, It with electronic documentation

Single license, incl. 1 runtime license

**6SW1 700-6JD00-0AA0**

Runtime license

**6SW1 700-5JD00-1AC0**

Update service for single license

**6SW1 700-0JD00-0AB2**

Upgrade from V 5.x to V 6.x

**6SW1 700-6JD00-0AA4**

#### Overview

A software update service can also be purchased for the Drive ES software. The user is automatically supplied with the current software, service packs and complete versions for one year after the date of ordering.

The update service can only be ordered if the customer already has a complete version of the software.

- Duration of the update service: 1 year.

6 weeks before expiry, the customer and his Siemens contact will be informed in writing that the update service will automatically be extended by another year if it is not cancelled on the part of the customer.

#### Ordering data

#### Order No.

##### Drive ES Basic V 5.3

Update service for single license

**6SW1 700-0JA00-0AB2**

Update service for copy license

**6SW1 700-0JA00-1AB2**

##### Drive ES Graphic

Update service for single license

**6SW1 700-0JB00-0AB2**

##### Drive ES SIMATIC V 5.3

Update service for single license

**6SW1 700-0JC00-0AB2**

##### Drive ES PCS 7 V 6.0

Update service for single license

**6SW1 700-0JD00-0AB2**

### Distributed Safety Software

#### Overview

- For creating safety-oriented automation applications with SIMATIC S7 in LAD or FBD (STEP 7 required)
- Implementation of safety functions by making simple connections between function blocks
- With preconfigured function block library
- User-defined blocks can be created
- Optimum embedding in the automation world due to guaranteed integration with STEP 7 tools
- Scope of supply:
  - Distributed Safety editor
  - Code generator
  - Debugger
  - Libraries of standard blocks

#### Ordering data

#### Order No.

##### **Distributed Safety V5.2 programming tool**

**6ES7 833-1FC00-0YX0**

##### *Task:*

Configuration software for  
configuring failsafe user  
programs for SIMATIC S7-300F

##### *Requirements:*

STEP 7 from V5.1 SP6

##### **Documentation for S7-300F**

System description for  
configuration and programming,  
failsafe PROFISAFE modules

German

**6ES7 988-8FB10-8AA0**

English

**6ES7 988-8FB10-8BA0**

French

**6ES7 988-8FB10-8CA0**

#### Technical specifications

Engineering Tool	S7-SCL	S7-GRAPH
Current version	V5.3	V5.3
Software class	A	A
<b>Applications</b>		
Can be used for	Text high-level language programming of simple and complex calculations, CASE, loop, jump and compare functions	Graphical programming of sequential control systems and sequencers
Marketing message	Programming of algorithms and calculations made easy!	The fast and elegant way to program sequential processes in a simple and clear manner!
Advantages	<ul style="list-style-type: none"> <li>• Easy-to-read and clear programs</li> <li>• Functional module-oriented programming</li> <li>• CASE instruction replaces a large number of jump and compare functions</li> <li>• Simple change for PLC programmers, since the programming philosophy of LAD, CSF, and IL is retained</li> <li>• Simple change for PC programmers to PLC programming</li> <li>• Interchangeability (porting) of partial programs as specified in IEC 61131-3</li> <li>• Saving of time on engineering overhead compared to LAD, CSF, and IL: Up to 20% with simple programs; at least 50% with sophisticated program structures</li> </ul>	<ul style="list-style-type: none"> <li>• Ready for optimum use in the design phase</li> <li>• Lower configuration overhead due to graphical structuring and programming</li> <li>• Rapid and easy familiarization</li> <li>• Precise error locating by means of integrated diagnostics combined with ProAgent for ProTool/Pro and WinCC</li> <li>• Saving of time on engineering overhead compared to LAD, CSF, and IL: Approximately 40 to 70%</li> </ul>
Sectors	<ul style="list-style-type: none"> <li>• Labeling machines</li> <li>• Chemical plants (e.g., oxygen production, evaluation of measured values)</li> <li>• Rubber and plastics machines</li> <li>• Woodworking machinery</li> <li>• Warehouse systems and logistics</li> <li>• Paper processing and printing machines</li> <li>• Punching and cutting machines</li> <li>• Water industry</li> <li>• Reeling machines</li> </ul>	<ul style="list-style-type: none"> <li>• Automobile production (e.g., body-in-white, final assembly)</li> <li>• Electrical equipment manufacture</li> <li>• Rubber and plastics machines</li> <li>• Handling machines</li> <li>• Woodworking machinery</li> <li>• Metalworking machinery</li> <li>• Paper processing and printing machines</li> <li>• Testing machines</li> <li>• Rolling mills</li> <li>• Reeling machines</li> <li>• Leisure and entertainment facilities</li> </ul>
<b>Target systems</b>		
Suitable for use on	S7-300 (CPU 313 or later and CPU 312C or later recommended) S7-400 C7 (recommended for C7-626) WinAC	S7-300 (CPU 314 or later and CPU 312C or later recommended) S7-400 C7 (recommended for C7-626) WinAC
<b>System requirements</b>		
Operating system	Windows 2000 Professional Windows XP Professional	Windows 2000 Professional Windows XP Professional
Hard disk requirements on PG/PC approx.	8 MB	15 MB
Required software	STEP 7 V5.3	STEP 7 V5.3
<b>Features</b>		
Monitor tags	Yes	Yes
Modify tags	Yes	Yes
Single-step processing	Yes	Yes
Integration in CFC	Yes	-
<b>Program execution times</b>		
For S7-300 (typically)	Similar to LAD, CSF and IL	3 ms per block + 1 ms per active step
For S7-400 (typically)	Similar to LAD, CSF and IL	0.4 ms per block + 0.06 ms per active step
<b>Diagnostics</b>		
Integration of diagnostic data in ProAgent	-	Yes
Integration of diagnostic data in ProTool/Pro	-	Using ProAgent
Integration of diagnostic data in WinCC	-	Using ProAgent

### Technical specifications

#### Technical specifications (continued)

Engineering Tool	S7-SCL	S7-GRAPH
<b>Supported standards</b>		
IEC 61131-3	PLCopen certification •Base level ST present •Conformity and reusability level ST (available soon)	PLCopen certification •Base level SFC present
State of PLCopen activities	Test profile is available for conformity and reusability level ST	-
<b>Order variants/licenses</b>		
Floating license	CD-ROM with •Tool •Electronic manual •Getting started and •Examples Authorization floppy Certificate of License Product information sheet	CD-ROM with •Tool •Electronic manual •Getting started and •Examples Authorization floppy Certificate of License Product information sheet
Upgrade (floating license)	CD-ROM with •Tool •Electronic manual •Getting started and •Examples Authorization floppy Certificate of License Product information sheet	CD-ROM with •Tool •Electronic manual •Getting started and •Examples Authorization floppy Certificate of License Product information sheet
Software update service (SUS)		
<b>Also included in</b>		
STEP 7 Professional	Yes	Yes
S7 Trainer Package	Yes	Yes
PCS 7	Yes	-
D7-SYS	-	-

Engineering Tool	S7-HiGraph	CFC
Current version	V5.3	V6.0
Software class	A	A
<b>Applications</b>		
Can be used for	Graphical and flexible state description of functional units and coordination functions	Graphical creation, interconnection and parameterization of (preassembled) blocks and functions
Marketing message	A common language for technologists, programmers, commissioning engineers, operators and maintenance technicians	Interconnection and parameterization instead of programming
Advantages	<ul style="list-style-type: none"> <li>•Ready for optimum use in the design phase</li> <li>•Overview of mechanical functions made easy</li> <li>•Lower configuration overhead due to graphical programming</li> <li>•High degree of reusability of previously described functions, such as the response of valves, motors, clamping devices, etc.</li> <li>•Rapid and easy familiarization</li> <li>•Short program execution times</li> <li>•Precise error locating by means of integrated diagnostics combined with ProAgent for ProTool/Pro</li> <li>•Saving of time on engineering overhead compared to LAD, CSF, and IL: Up to 50%</li> </ul>	<ul style="list-style-type: none"> <li>•Ready for optimum use in the design phase</li> <li>•Lower configuration overhead due to graphical interconnection</li> <li>•High degree of reusability of previously created charts</li> <li>•Rapid and easy familiarization</li> <li>•Rapid and neat interconnection of preassembled functions</li> <li>•Technological creation of the overall program</li> <li>•Clear presentation of control engineering structures</li> <li>•Short commissioning time</li> <li>•High system availability</li> <li>•Saving of time on engineering overhead compared to LAD, CSF, and IL: Up to 50%</li> </ul>
Sectors	<ul style="list-style-type: none"> <li>•Automobile production (e.g., engine building, axle production, gearbox production)</li> <li>•Chemical plants (e.g., oxygen production)</li> <li>•Rubber and plastics machines</li> <li>•Food, beverages and tobacco machines</li> <li>•Packaging machines</li> <li>•Machine tools</li> <li>•Reeling machines</li> <li>•Special-purpose machines</li> </ul>	<ul style="list-style-type: none"> <li>•Automobile production (e.g., temperature controls, processes involved in tire production)</li> <li>•Chemical industry</li> <li>•Power engineering and supply</li> <li>•Rubber and plastics machines</li> <li>•Metalworking machinery</li> <li>•Food, beverages and tobacco machines</li> <li>•Petrochemicals</li> <li>•Rolling mills</li> <li>•Water industry</li> <li>•Reeling machines</li> </ul>

#### Technical specifications (continued)

EngineeringTool	S7-HiGraph	CFC
<b>Target systems</b>		
Suitable for use on	S7-300 S7-400 C7 WinAC	S7-300 S7-400 F/H systems WinAC
<b>System requirements</b>		
Operating system	Windows 2000 Professional Windows XP Professional	Win 95/98/Me/NT4.0/2000 Professional, XP Professional
Hard disk requirements on PG/PC approx.	10 MB	51 MB
Required software	STEP 7 V5.3	STEP 7 V5.1 or V1 S7-SCL V5.0 or V5.1
<b>Features</b>		
Monitor tags	Yes	Yes
Modify tags	Yes	Yes
Single-step processing	-	-
Integration in CFC	Yes	Yes
<b>Program execution times</b>		
For S7-300 (typically)	0.1 ms per graph group + 0.1 ms per state graph	Depends on interconnected blocks
For S7-400 (typically)	0.1 ms per graph group + 0.01 ms per state graph	Depends on interconnected blocks
<b>Diagnostics</b>		
Integration of diagnostic data in ProAgent	Yes	-
Integration of diagnostic data in ProTool/Pro	Using ProAgent	-
Integration of diagnostic data in WinCC	Using ProAgent (available soon)	-
<b>Supported standards</b>		
IEC 61131-3	Compliant addition to IEC standard	Based on IEC standard
State of PLCopen activities	-	-
<b>Order variants/licenses</b>		
Floating license (S7-HiGraph) or Single license (CFC)	CD-ROM with •Tool •Electronic manual •Getting started and •Examples Authorization floppy Certificate of License	CD-ROM with •Tool •Electronic manual •Getting started and •Examples Authorization floppy Certificate of License
Upgrade (floating license (S7-HiGraph) or Single license (CFC))	CD-ROM with •Tool •Electronic manual •Getting started and •Examples Authorization floppy Certificate of License Product information sheet	CD-ROM with •Tool •Electronic manual •Getting started and •Examples Authorization floppy Certificate of License Product information sheet
Software update service (SUS)		
<b>Also included in</b>		
STEP 7 Professional	-	-
S7 Trainer Package	Yes	-
PCS 7	-	Yes
D7-SYS	-	Yes

### Technical specifications

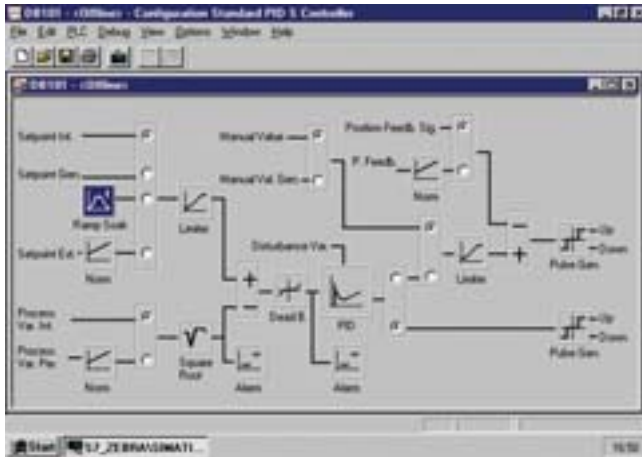
#### Technical specifications (continued)

Engineering Tool	S7-PDIAG	S7-PLCSIM
License form	Single license	Floating license
Software class	A	A
Current version	V5.1	V5.3
Target system (recommended)	SIMATIC S7-300 (CPU 314 or later) SIMATIC S7-400	SIMATIC S7-300 SIMATIC S7-400 SIMATIC C7
Operating system	Windows 95/98/Me/NT4.0/2000 Prof., XP Prof.	Windows 2000 Professional Windows XP Professional
Required software package	STEP 7 V5.1 or V1	STEP 7 V5.3 or later
Disk storage requirement in PG/PC	6 MB	5 MB

Engineering Tool	TeleService	DOCPRO
Software class	A	A
Current version	V6.0	V5.1
Target system (recommended)	SIMATIC S7-300/400 SIMATIC C7	SIMATIC S7-300/400 SIMATIC C7
Operating system	Windows 2000 Windows XP Home Windows XP Professional	Win 95/98/Me/NT4.0/2000 Professional/ XP Professional
Required software package	-	STEP 7 V5.1 or V1
Disk storage requirement in PG/PC	2 MB	5 MB



#### Overview



- For integrating continuous PID controllers, pulse controllers and step controllers in the application program
- Reduces engineering costs thanks to space-saving parameterization and optimization of the controller
- For use in SIMATIC S7-300 (CPU 313 or higher), S7-400 and C7

#### Technical specifications

Parameterization tool data	
Requirements	STEP 7 V5.2 or newer

Standard function blocks	PID_CP (FB 1)		PID_ES (FB 2)		LP_SCHED (FC 1)	
Memory requirements	Load memory	RAM	Load memory	RAM	Load memory	RAM
•FB length in memory	8956 byte	7796 byte	9104 byte	7982 byte	1064 byte	976 byte
•DB length in memory	1168 byte	510 byte	1124 byte	484 byte	184 byte <sup>2)</sup>	100 byte <sup>2)</sup>
Runtimes						
•in S7-300/C7 <sup>1)</sup>	0.18 - 4.4 ms		0.2 - 5.1 ms		0.03 - 0.3 ms	
•in S7-400 <sup>1)</sup>	0.13 –0.35 ms		0.16 - 0.35 ms		0.03 - 0.08 ms	
Target system	SIMATIC S7-300, S7-400, C7					

1) Depending on CPU

2) With 5 control loops

#### Ordering data

##### Parameterization tool Standard PID Control, V5.1

**Task:**  
Parameterization tool for standard controls

**Requirements:**  
STEP 7 V5.2 or newer

**Delivery package:**  
With el. manual/Getting Started Ger, Eng; incl. authorization diskette

Single license

Software update service

Upgrade single license from V5.0 to V5.1

#### Order No.

**6ES7 830-2AA21-0YX0**  
**6ES7 830-2AA00-0YX2**  
**6ES7 830-2AA21-0YX4**

##### Standard function blocks Standard PID Control, V5.1

**Task:**  
Standard FBs for standard controllers

**Target system:**  
SIMATIC S7-300 (from CPU 313), S7-400, C7

**Delivery type:**  
With el. manual/Getting Started Ger, Eng

Single license

Single license without software and documentation

**6ES7 860-2AA21-0YX0**  
**6ES7 860-2AA21-0YX1**

##### SIMATIC Manual Collection<sup>B)</sup>

Electronic manuals on CD-ROM, 5 languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, Engineering Software, Runtime Software, PCS 7, SIMATIC HMI, SIMATIC NET

#### Order No.

**6ES7 998-8XC01-8YE0**

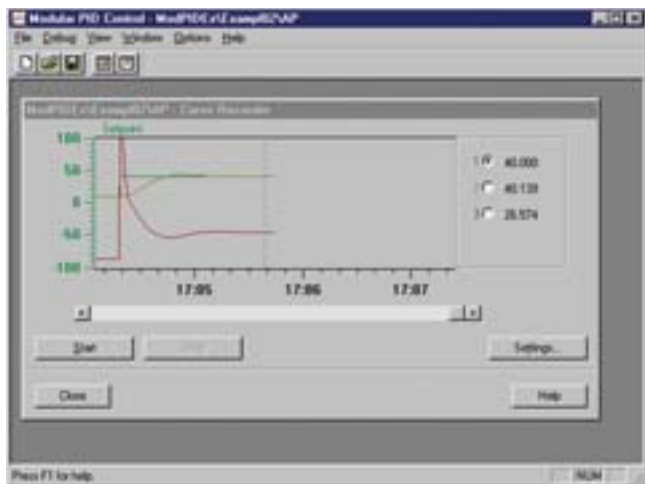
##### SIMATIC Manual Collection update service for 1 year<sup>B)</sup>

Up-to-date Manual Collection CD as well as the three subsequent updates

**6ES7 998-8XC01-8YE2**

B) Subject to export regulations: AL: N and ECCN: EAR99S

#### Overview



- For creating complex closed-loop control structures
- Preferred for implementation in closed-loop control equipment in mid-range and high-end applications and in process engineering
- For use in SIMATIC S7-300 (CPU 313 or newer), S7-400 and C7

7

#### Technical specifications

##### Startup software

Requirements	STEP 7 V3.1 or higher
Main memory expansion	16 MB
Processor, at least	486
Windows swap area, approx	20 MB (largest possible)

Standard Function Blocks	A_DEAD_B		CRP_IN		CRP_OUT	
Memory requirements	Load memory	RAM	Load memory	RAM	Load memory	RAM
•FB length in memory	898 bytes	692 bytes	182 bytes	70 bytes	206 bytes	96 bytes
•DB length in memory	186 bytes	44 bytes	122 bytes	20 bytes	114 bytes	14 bytes
Runtimes in S7-300/C7	0.13 to 0.17 ms		0.06 ms		0.18 to 0.22 ms	
Runtimes in S7-400	0.01 to 0.03 ms		0.01 to 0.02 m		0.01 to 0.04 ms	
Target system	SIMATIC S7-300 (from CPU 313), S7-400, C7		SIMATIC S7-300 (from CPU 313), S7-400, C7		SIMATIC S7-300 (from CPU 313), S7-400, C7	

Standard Function Blocks	DEAD_T		DEAD_BAND		DIF	
Memory requirements	Load memory	RAM	Load memory	RAM	Load memory	RAM
•FB length in memory	532 bytes	394 bytes	232 bytes	120 bytes	410 bytes	268 bytes
•DB length in memory	142 bytes	22 bytes	114 bytes	16 bytes	158 bytes	30 bytes
Runtimes in S7-300/C7	0.26 to 0.33 ms		0.16 to 0.21 ms		0.55 to 0.71 ms	
Runtimes in S7-400	0.02 to 0.06 m		0.01 to 0.03 ms		0.03 to 0.09 ms	
Target system	SIMATIC S7-300 (from CPU 313), S7-400, C7		SIMATIC S7-300 (from CPU 313), S7-400, C7		SIMATIC S7-300 (from CPU 313), S7-400, C7	

Standard Function Blocks	ERR_MON		INTEG		LAG1ST	
Memory requirements	Load memory	RAM	Load memory	RAM	Load memory	RAM
•FB length in memory	558 bytes	360 bytes	488 bytes	314 bytes	534 bytes	368 bytes
•DB length in memory	206 bytes	52 bytes	168 bytes	36 bytes	156 bytes	30 bytes
Runtimes in S7-300/C7	0.27 to 0.35 ms		0.40 to 0.51 ms		0.52 to 0.67 ms	
Runtimes in S7-400	0.01 to 0.05 ms		0.02 to 0.07 ms		0.03 to 0.09 ms	
Target system	SIMATIC S7-300 (from CPU 313), S7-400, C7		SIMATIC S7-300 (from CPU 313), S7-400, C7		SIMATIC S7-300 (from CPU 313), S7-400, C7	

#### Technical specifications (continued)

Standard Function Blocks	LAG2ND		LIMALARM		LIMITER	
Memory requirements	Load memory	Load memory	Load memory	RAM	Load memory	RAM
•FB length in memory	690 bytes	516 bytes	390 bytes	240 bytes	262 bytes	140 bytes
•DB length in memory	190 bytes	46 bytes	152 bytes	28 bytes	124 bytes	20 bytes
Runtimes in S7-300/C7	0.88 to 1.14 ms		0.47 to 0.61 ms		0.14 to 0.17 ms	
Runtimes in S7-400	0.04 to 0.16 ms		0.02 to 0.07 ms		0.03 to 0.01 ms	
Target system	SIMATIC S7-300 (from CPU 313), S7-400, C7		SIMATIC S7-300 (from CPU 313), S7-400, C7		SIMATIC S7-300 (from CPU 313), S7-400, C7	

Standard Function Blocks	LMNGEN_C		LMNGEN_S		NONLIN	
Memory requirements	Load memory	RAM	Load memory	RAM	Load memory	RAM
•FB length in memory	1576 bytes	1280 bytes	2578 bytes	2152 bytes	826 bytes	672 bytes
•DB length in memory	276 bytes	80 bytes	360 bytes	110 bytes	138 bytes	18 bytes
Runtimes in S7-300/C7	0.32 to 0.41 ms		1.16 to 1.47 ms		0.32 to 0.41 ms	
Runtimes in S7-400	0.02 to 0.06 ms		0.06 to 0.18 ms		0.02 to 0.07 ms	
Target system	SIMATIC S7-300 (from CPU 313), S7-400, C7		SIMATIC S7-300 (from CPU 313), S7-400, C7		SIMATIC S7-300 (from CPU 313), S7-400, C7	

Standard Function Blocks	NORM		OVERRIDE		PARA_CTL	
Memory requirements	Load memory	RAM	Load memory	RAM	Load memory	RAM
•FB length in memory	234 bytes	122 bytes	362 bytes	214 bytes	406 bytes	232 bytes
•DB length in memory	130 bytes	24 bytes	146 bytes	28 bytes	234 bytes	82 bytes
Runtimes in S7-300/C7	0.33 to 0.43 ms		0.15 to 0.18 ms		0.12 to 0.15 ms	
Runtimes in S7-400	0.02 to 0.07 ms		0.01 to 0.04 ms		0.01 to 0.03 ms	
Target system	SIMATIC S7-300 (from CPU 313), S7-400, C7		SIMATIC S7-300 (from CPU 313), S7-400, C7		SIMATIC S7-300 (from CPU 313), S7-400, C7	

Standard Function Blocks	PID		PULSEGEN		RMP_SOAK	
Memory requirements	Load memory	RAM	Load memory	RAM	Load memory	RAM
•FB length in memory	1560 bytes	1242 bytes	1110 bytes	872 bytes	1706 bytes	1500 bytes
•DB length in memory	340 bytes	98 bytes	190 bytes	34 bytes	212 bytes	62 bytes
Runtimes in S7-300/C7	1.15 to 1.46 ms		0.17 to 0.20 ms		0.16 to 0.20 ms	
Runtimes in S7-400	0.06 to 0.18 ms		0.01 to 0.05 ms		0.01 to 0.04 ms	
Target system	SIMATIC S7-300 (from CPU 313), S7-400, C7		SIMATIC S7-300 (from CPU 313), S7-400, C7		SIMATIC S7-300 (from CPU 313), S7-400, C7	

Standard Function Blocks	ROC_LIM		SCALE		SP_GEN	
Memory requirements	Load memory	RAM	Load memory	RAM	Load memory	RAM
•FB length in memory	1242 bytes	980 bytes	136 bytes	32 bytes	658 bytes	484 bytes
•DB length in memory	222 bytes	50 bytes	114 bytes	16 bytes	164 bytes	40 bytes
Runtimes in S7-300/C7	0.53 to 0.68 ms		0.10 to 0.13 ms		0.27 to 0.35 ms	
Runtimes in S7-400	0.02 to 0.09 ms		0.01 to 0.02 ms		0.02 to 0.06 ms	
Target system	SIMATIC S7-300 (from CPU 313), S7-400, C7		SIMATIC S7-300 (from CPU 313), S7-400, C7		SIMATIC S7-300 (from CPU 313), S7-400, C7	

Standard Function Blocks	SPLT_RAN		SWITCH		LP_SCHED	
Memory requirements	Load memory	RAM	Load memory	RAM	Load memory	Load memory
•FB length in memory	304 bytes	180 bytes	238 bytes	116 bytes	1104 bytes	972 bytes <sup>1)</sup>
•DB length in memory	138 bytes	28 bytes	118 bytes	18 bytes	234 bytes	64 bytes <sup>1)</sup>
Runtimes in S7-300/C7	0.09 to 0.11 ms		0.07 to 0.09 ms		0.28 to 0.34 ms	
Runtimes in S7-400	0.01 to 0.02 ms		0.01 to 0.03 ms		0.03 to 0.08 ms	
Target system	SIMATIC S7-300 (from CPU 313), S7-400, C7		SIMATIC S7-300 (from CPU 313), S7-400, C7		SIMATIC S7-300 (from CPU 313), S7-400, C7	

1) With 5 control loops

## Modular PID Control

Ordering data	Order No.		Order No.
<b>Commissioning tool</b> <b>Modular PID Control, V4.0</b> <b>for SIMATIC S7 and C7</b> <i>Task:</i> Commissioning tool for modular PID controls <i>Prerequisite:</i> STEP 7 V3.1 or later <i>Delivery package:</i> with electronic manual in German and English; incl. authorization diskette  Single license Software update service			<b>SIMATIC Manual Collection <sup>B)</sup></b> Electronic manuals on CD-ROM, 5 languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, Engineering Software, Runtime Software, PCS 7, SIMATIC HMI, SIMATIC NET  <b>SIMATIC Manual Collection</b> <b>update service for 1 year <sup>B)</sup></b> Up-to-date Manual Collection CD as well as the three subsequent updates
	<b>6ES7 830-1AA10-0YX0</b>		<b>6ES7 998-8XC01-8YE0</b>
	<b>6ES7 830-1AA00-0YX2</b>		<b>6ES7 998-8XC01-8YE2</b>
<b>Standard function blocks</b> <b>Modular PID Control, V4.1</b>  <i>Task:</i> Standard FBs for modular PID controls <i>Target system:</i> SIMATIC S7-300 (from CPU 313), S7-400, C7 <i>Delivery type:</i> German, English; with electronic manual  Single license Single license, without software and documentation			
	<b>6ES7 860-1AA10-0YX0</b>		
	<b>6ES7 860-1AA10-0YX1</b>		

B) Subject to export regulations: AL: N and ECCN: EAR99S

- Ideal application is in temperature controllers, but also suitable for level and flow controllers
- Used with SIMATIC S7-300 (CPU 313 upwards), SIMATIC S7-400 and SIMATIC C7; in combination with PID Control (integrated in STEP 7), standard PID Control, modular PID Control, FM 355, FM 455 as well as with any PID algorithm

## Technical specifications

PID Self-Tuner	TUN_EC		TUN_ES	
Memory requirements	Load memory	RAM	Load memory	RAM
•FB length in memory	approx. 6542 bytes	approx. 5956 bytes	6332 bytes	5714 bytes
•DB length in memory	644 bytes	294 bytes	638 bytes	288 bytes
Runtimes				
•in S7-300, C7	1.0 to 1.5 ms <sup>1)</sup>		1.0 to 1.5 ms <sup>1)</sup>	
•in S7-400	0.06 to 0.19 ms <sup>1)</sup>		0.06 to 0.19 ms <sup>1)</sup>	

1) Depending on the selected CPU

## Ordering data

**Order No.**

<p><b>PID Self Tuner V5.0</b></p> <p><i>Function:</i> Online optimization for PID controllers</p> <p><i>Target system:</i> SIMATIC S7-300 (CPU 313 or higher), S7-400, C7</p> <p><i>Type of delivery:</i> Standard function blocks, electronic manual and Getting Started in German/English</p> <p>Single license</p> <p>Single license, without software or documentation</p>	<p><b>6ES7 860-4AA01-0YX0</b></p> <p><b>6ES7 860-4AA01-0YX1</b></p>
<p><b>SIMATIC Manual Collection <sup>B)</sup></b></p> <p>Electronic manuals on CD-ROM, in 5 languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, engineering software, runtime software, PCS 7, SIMATIC HMI, SIMATIC NET</p>	<p><b>6ES7 998-8XC01-8YE0</b></p>
<p><b>SIMATIC Manual Collection update service for 1 year <sup>B)</sup></b></p> <p>Current Manual Collection CD as well as the three following updates</p>	<p><b>6ES7 998-8XC01-8YE2</b></p>

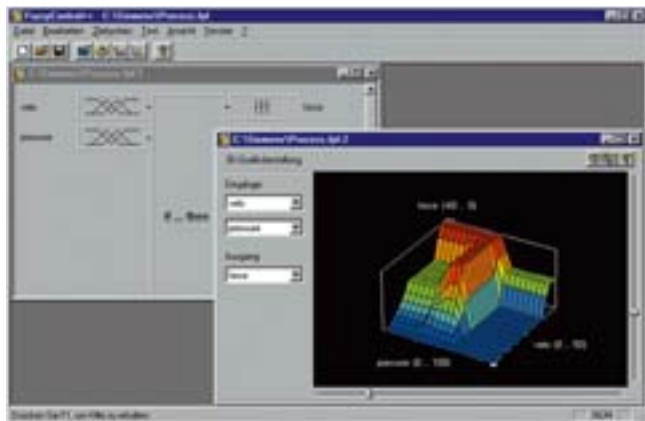
B) Subject to export regulations: AL: N and ECCN: EAR99S

# SIMATIC Industrial Software

## Runtime software

### Fuzzy control

#### Overview



- For creating Fuzzy systems for SIMATIC S7 and SIMATIC WinCC
- For use at all levels of automation from the standalone controller through to plant optimization
- Can be combined with classical PID controllers to utilize the advantages of both systems for optimized closed-loop control

#### Technical specifications

Configuring tool	Requirements
Processor	PC or PG with 80486 processor (or higher)
Main memory, min.	16 MB RAM
Hard disk	5 MB free storage space on the hard disk
Operating system	Windows 95 or Windows NT 4.0

Standard function blocks	FUZZY_4K (FB 30)	FUZZY_20K (FB 31)	FUZZY_WinCC
Target system	SIMATIC S7-300 from CPU 314, SIMATIC S7-400	SIMATIC S7-400	SIMATIC WinCC
Communication between PC/PG and S7	MPI bus, SOFTNET S7 for PROFIBUS	MPI bus, SOFTNET S7 for PROFIBUS	Not required
Runtimes	Depending on the number of rules, inputs and outputs: 13 to 180 ms (S7-300) 1.8 to 22 ms (S7-400)	Depending on the number of rules, inputs and outputs: 1.8 to 150 ms (S7-400)	Cannot be measured
Memory requirements			
•FB	1524 byte	1524 byte	Cannot be measured
•DB	4228 byte	20612 byte	
Number of inputs	8 with up to 7 membership functions each	8 with up to 7 membership functions each	8 with up to 7 membership functions each
Number of outputs	4 with up to 9 membership functions each	4 with up to 9 membership functions each	4 with up to 9 membership functions each
Number of rules, max.	200	2000	2000

#### Ordering data

##### Fuzzy Control++ configuration tool

Function blocks for S7-300/400 CPU 314 and higher, incl. Smart-Object for SIMATIC WinCC, manual; single license

Basic license<sup>B)</sup>

Copy license<sup>B)</sup>

#### Order No.

**2XV9 450-1WC10-0AA0**

**2XV9 450-1WC11-4XA0**

#### Order No.

##### SIMATIC Manual Collection<sup>B)</sup>

Electronic manuals on CD-ROM, in 5 languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, engineering software, runtime software, PCS 7, SIMATIC HMI, SIMATIC NET

##### SIMATIC Manual Collection update service for 1 year<sup>B)</sup>

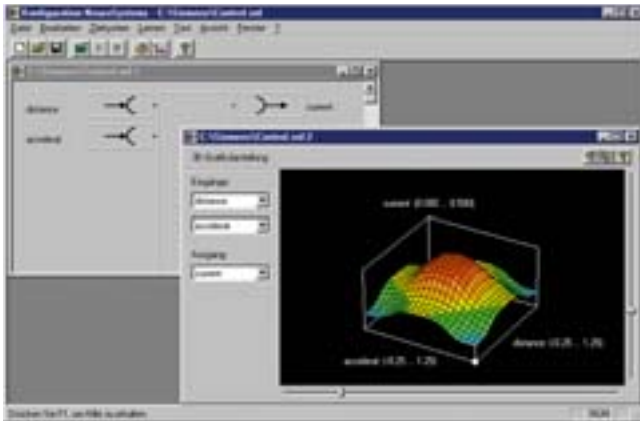
Current Manual Collection CD as well as the three following updates

**6ES7 998-8XC01-8YE0**

**6ES7 998-8XC01-8YE2**

B) Subject to export regulations: AL: N and ECCN: EAR99S

#### Overview



- For creating and teaching neuronal networks
- For use with problems whose structure and solution are only partially known
- Applications:
  - Data-based optimization
  - Identification of characteristics or processes
  - Filtering of data
  - Data evaluation and interpretation
  - Non-linear single and multiple-variable closed-loop control
  - Pattern recognition and diagnostics

#### Technical specifications

Configuring tool	Requirements
Processor	PC or PG with 80486 processor (or higher)
Main memory, min.	16 MB RAM
Hard disk	5 MB free storage space on the hard disk
Operating system	Windows 95 or Windows NT 4.0

Function blocks	NEURO_4K (FB 100)	NEURO_20K (FB 101)	NEURO_WinCC
Target system	SIMATIC S7-300 from CPU 314, SIMATIC S7-400	SIMATIC S7-400	SIMATIC WinCC
Communication PC/PG –S7	MPI bus, SOFTNET S7 for PROFIBUS	MPI bus, SOFTNET S7 for PROFIBUS	Not required
Runtimes	Depending on the number of inputs, outputs and neurons: 6.5 to 270 ms (S7-300) 3.3 to 140 ms (S7-400)	Depending on the number of rules, inputs and outputs: 3.3 to 260 ms (S7-400)	Cannot be measured
Memory requirements			
•FB	2246 byte	2210 byte	Cannot be measured
•DB	4278 byte	20612 byte	
Number of inputs, max.	4	100	10
Number of outputs, max.	4	10	10
Types of network	MLP, RBF, Neuro-fuzzy	MLP, RBF, Neuro-fuzzy	MLP, RBF, Neuro-fuzzy

Ordering data	Order No.	Order No.
<b>NeuroSystems configuration tool</b> Function blocks for S7-300/400 CPU 314 and higher, incl. SmartObject for SIMATIC single license Basic license <sup>B)</sup> Copy license <sup>B)</sup>	<b>2XV9 450-1WC15-0AA0</b> <b>2XV9 450-1WC16-4XA0</b>	<b>SIMATIC Manual Collection<sup>B)</sup></b> Electronic manuals on CD-ROM, in 5 languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, engineering software, runtime software, PCS 7, SIMATIC HMI, SIMATIC NET <b>SIMATIC Manual Collection update service for 1 year<sup>B)</sup></b> Current Manual Collection CD as well as the three following updates
		<b>6ES7 998-8XC01-8YE0</b> <b>6ES7 998-8XC01-8YE2</b>

B) Subject to export regulations: AL: N and ECCN: EAR99S

#### Overview

- Driver for MODBUS protocol with RTU message format; communication as master or slave
- Driver for full-duplex protocol for Data Highway Asynchronous Link from Allen Bradley
- Loadable on CP 341 and CP 441-2 (6ES7 441-2AA03-0AE0)

#### Configuring

For loading and configuring the driver, the configuration package for CP 441-2 and CP 341, V4.0 upwards and STEP 7 V4.0 are necessary. The drivers are copy-protected by a dongle.

#### Technical specifications

##### MODBUS master

- MODBUS protocol with RTU format
- Master/slave coupling: SIMATIC S7 is master
- Implemented function codes: 01, 02, 03, 04, 05, 06, 07, 08, 11, 12, 15, 16
- No V.24 control and signaling lines
- CRC polynomial:  $X^{16} + x^{15} + x^2 + 1$
- Interfaces: TTY (20 mA); V.24 (RS 232 C); X.27 (RS 422/485) two-wire or four-wire
- Inbox specified on BRCV
- Delay time 3.5 characters or multiple thereof
- Broadcast message possible

##### Adjustable parameters

- Data transmission rate 300 bit/s up to 76800 bit/s; (TTY to 19200 bit/s)
- Character frame
- With/without RS 485 mode for two-wire connections
- With/without modem mode (ignore scratch character)
- Response timer 100 ms to 25.5 s in steps of 100 ms
- Factor for character delay time 1-10
- Default input of receive line when using X.27 interface module

##### MODBUS slave

- MODBUS protocol with RTU format
- Master/slave coupling: SIMATIC S7 is slave
- Implemented function codes: 01, 02, 03, 04, 05, 06, 08, 15, 16
- No V.24 control and signaling line
- CRC polynomial  $X^{16} + x^{15} + x^2 + 1$
- Interfaces: TTY (20 mA), V.24 (RS 232C), X.27 (RS 422/485) two-wire or four-wire
- Communication FB 180, instance DB 180 (use of a multi-instance)
- Conversion of MODBUS data address to S7 data areas. Processed data areas: DB, bit memories, outputs, inputs, timers, counters
- Delay time 3.5 characters or multiple thereof

##### MODBUS slave (continued)

##### Adjustable parameters

- Data transmission rate 300 bit/s up to 76800 bit/s; (TTY to 19200 bit/s)
- Character frame
- Slave address of CP (1 to 255)
- With/without RS 485 mode for two-wire connection
- With/without modem mode (ignore scratch character)
- Factor for character delay time 1-10
- Number of work DB (for FB processing)
- Enabling of memory areas for writing by master
- Default input of receive line when using X.27 interface module
- Conversion of MODBUS addresses to S7 data areas

##### Data Highway

- Data highway full duplex (DF1) protocol
- Interfaces: TTY (20 mA), V.24 (RS 232C), RS 422/485 (four-wire)
- No "embedded responses"

##### Adjustable parameters

- Data transmission rate 300 bit/s up to 76800 bit/s; (TTY to 19200 bit/s)
- Character frame: 7/8 bit; 1/2 stop bits; even/odd/no parity
- Inbox DB and data word
- Timeout for acknowledgment character: 30 ms to 10 s
- Number of repeats with NAK: 0 to 5
- Number of ENQ prompts: 0 to 5
- Duplicate message transmission detection: On or Off
- Acknowledgment of CP immediately following receipt or only following transfer to CPU



Ordering data	Order No.		Order No.
<b>MODBUS master V3.1</b> <i>Function:</i> Communication using MODBUS protocol with RTU format, SIMATIC S7 as the master <i>Requirements:</i> CP 341 or CP 441-2; STEP 7 V4.02 or newer <i>Type of delivery:</i> Driver program/documentation, German, English, French Single license Single license, without software or documentation	<b>6ES7 870-1AA01-0YA0</b> <b>6ES7 870-1AA01-0YA1</b>	<b>Data Highway V1.0</b> <i>Function:</i> Communication over data highway asynchronous link with DF1 protocol <i>Requirements:</i> CP 341 or CP 441-2; STEP 7 V4.02 or newer <i>Type of delivery:</i> Driver program/documentation, German, English, French Single license Single license, without software or documentation	<b>6ES7 870-1AE00-0YA0</b> <b>6ES7 870-1AE00-0YA1</b>
<b>MODBUS slave V3.1</b> <i>Function:</i> Communication using MODBUS protocol with RTU format, SIMATIC S7 as the slave <i>Requirements:</i> CP 341 or CP 441-2; STEP 7 V4.02 or newer <i>Type of delivery:</i> Driver program/documentation, German, English, French Single license Single license, without software or documentation	<b>6ES7 870-1AB01-0YA0</b> <b>6ES7 870-1AB01-0YA1</b>	<b>SIMATIC Manual Collection <sup>B)</sup></b> Electronic manuals on CD-ROM, in 5 languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, engineering software, runtime software, PCS 7, SIMATIC HMI, SIMATIC NET	<b>6ES7 998-8XC01-8YE0</b>
		<b>SIMATIC Manual Collection update service for 1 year <sup>B)</sup></b> Current Manual Collection CD as well as the three following updates	<b>6ES7 998-8XC01-8YE2</b>

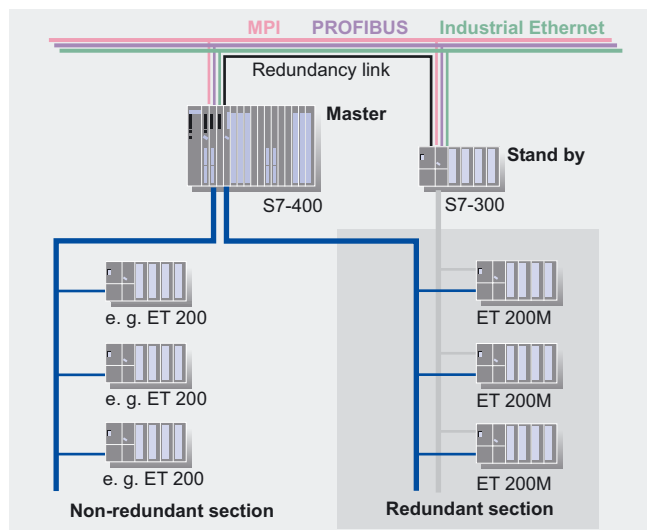
B) Subject to export regulations: AL: N and ECCN: EAR99S

# SIMATIC Industrial Software

## Runtime software

### Software redundancy

#### Overview



- Software package for assembling fault-tolerant control systems based on software
- Designed for control systems with single-channel distributed I/O
- For use in applications with low demands on changeover speed, such as the control of hydroelectric power plants, cooling circuits, traffic flows, level control, measured data acquisition
- Inexpensive thanks to the use of standard S7-300 and S7-400 components
- I/O linking with PROFIBUS DP in redundant configuration
- Optional control via WinCC operator station

#### Technical specifications

Hardware requirements	
CPU	S7-300: CPU 313C-2 DP, 314C-2 DP, 315-2 DP, 316-2 DP, 318-2 DP S7-400: all CPUs
Redundancy link of the CPUs	MPI, PROFIBUS, Industrial Ethernet; existing connections can also be used.
Suitable modules for ET 200M	IM153-2; all DI/O, AI/O for ET 200M; FM 350-1 counter module CP 341

Software requirements	
Configuring/programming	STEP 7 V4.0
Communication configuration for redundant PROFIBUS DP	NCM S7 for PROFIBUS

#### Ordering data

##### Software Redundancy V1.2 program package

###### Function:

To configure a redundant control

###### Target system:

SIMATIC S7-300, S7-400

###### Requirements:

STEP 7 V5.2,

NCM S7 for PROFIBUS

###### Type of delivery:

incl. electronic documentation (German, English, French, Spanish, Italian), 4 application examples and picture block for WinCC, on CD-ROM

Single license (for 2 CPUs)

Single license, without software or documentation

#### Order No.

6ES7 862-0AC01-0YA0

6ES7 862-0AC01-0YA1

#### Order No.

##### SIMATIC Manual Collection <sup>B)</sup>

Electronic manuals on CD-ROM, in 5 languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, engineering software, runtime software, PCS 7, SIMATIC HMI, SIMATIC NET

6ES7 998-8XC01-8YE0

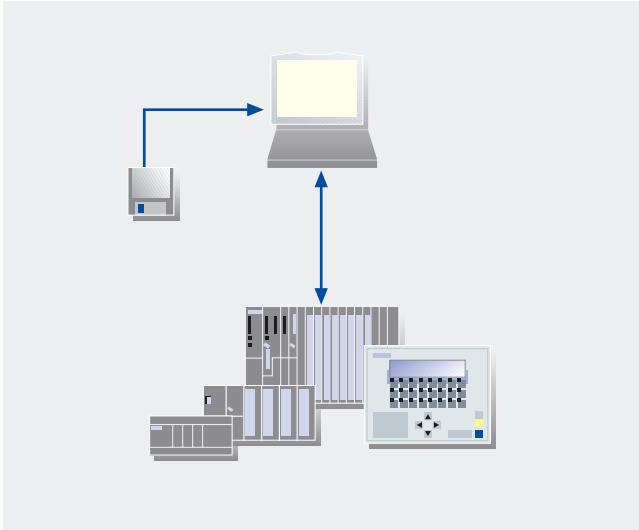
##### SIMATIC Manual Collection update service for 1 year <sup>B)</sup>

Current Manual Collection CD as well as the three following updates

6ES7 998-8XC01-8YE2

B) Subject to export regulations: AL: N and ECCN: EAR99S

### Overview



- The toolbox for process data traffic between SIMATIC S7, SIMATIC M7, SIMATIC C7 and a PG/PC
- For autonomous handling of data traffic via MPI/PPI

Ordering data

Order No.

Order No.

7

B) Subject to export regulations: AL: N and ECCN: EAR99S

#### Overview

- Low-cost package for simple positioning control and simple gearbox synchronism
- For use with any variable-speed standard drive, e.g., frequency converter, servo drive.
- For incremental and absolute sensor

#### Changes in Version 2.0:

- Reduction in runtimes of function blocks
- Modification of FB names in conformance with PLCopen 1.0
- Gearbox synchronism (MC\_GearIn)
- Driver for CPU 314C (CPU FW Version 2.0 or newer)
- PROFIBUS DP driver for MM4

#### Technical specifications

##### Supported hardware

Easy Motion Control executes on the following CPUs:

- S7-300 with CPU 314 or higher
- S7-400
- C7 with C7-633 or higher
- WinAC.

Supported modules for actual-value sensing:

- CPU 314C (CPU with FW version 2.0 or newer)
- ET 200S 1 Count 5V/500 kHz
- ET 200S 1 Count 24V/100 kHz
- ET 200S 1SSI
- SM 338

- FM 350-1, FM 450-1
- SIMODRIVE sensor with PROFIBUS DP
- Other actual-value sensing modules (using free drivers)

Supported modules for setpoint output:

- ET 200S 2AO U
- SM 332
- SM 432
- Other setpoint output modules (using free drivers)

Drives supported via PROFIBUS DP:

- MM4

##### Memory requirements

##### Required RAM in byte

Block	Required RAM per block	Additionally required RAM per invocation
MC_Init	1086	-
MC_MoveAbsolute	3924	112
MC_MoveRelative	2982	110
MC_MoveJog	3110	110
MC_Home	2886	104
MC_StopMotion	1114	70
MC_Control	1756	58
MC_Simulation	410	64
MC_GearIn	3476	128
Input drivers	1416 ... 2654	76 ... 128
Output drivers	384 ... 1242	52 ... 68
Axle data block	-	294

##### Runtime load

##### Typical runtimes of blocks in µs

Block	CPU 416-2 DP 6ES7 416-2XK02-AB0	CPU 314C 6ES7 314-6CF00-0AB0	CPU 315-2 DP 6ES7 315-2AF03-0AB0	WinLC RTX 3.1 on AMD, 1333 MHz
MC_Init	53	967	2203	21
MC_MoveAbsolute <sup>1)</sup>	67	908	2138	18
MC_MoveRelative <sup>1)</sup>	67	911	2143	18
MC_MoveJog <sup>1)</sup>	48	605	1387	15
MC_Home <sup>1)</sup>	49	592	1332	15
MC_StopMotion <sup>1)</sup>	23	309	696	8
MC_Control	27	343	819	11
MC_Simulation	23	259	584	6
MC_GearIn	66	931	2130	21
Input drivers	50	662	1323	44
Output drivers	20	223	413	31

<sup>1)</sup> The identified motion blocks require more runtime when starting a traverse.  
You will find further information on this subject in the manual.

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# SIMATIC Industrial Software

## Runtime software

### Technical specifications

#### Technical specifications

##### Runtime software

Parameterization software	Standard PID control	Modular PID control	PID Self-Tuner	Fuzzy control++
License form	Single license	Single license	-	Single license
Software class	A	A	-	-
Current version	V5.1	V4.0	-	-
Target system	SIMATIC S7-300 (CPU 313 or newer) SIMATIC S7-400 SIMATIC C7	SIMATIC S7-300 (CPU 313 or newer), SIMATIC S7-400, SIMATIC C7	-	SIMATIC S7-300 (CPU 314 or newer), SIMATIC S7-400
Operating system	-	-	-	Windows 95 / NT
Required software package	STEP 7 V5.2 or newer	STEP 7 V3.1/V3.2 or newer	-	-
Main memory configuration in PG/PC	16 MB	16 MB	-	16 MB
Disk storage requirement in PG/PC	1.85 MB	1.85 MB	-	5 MB
<b>Standard FBs</b>				
Required libraries	Standard PID Control FBs V5.1	Modular PID Control FBs V4.0	PID self-tuner FBs V5.0	Fuzzy Control++ FBs
License forms	Single license and 1 runtime license; 1 runtime license	Single license and 1 runtime license; 1 runtime license	-	Single license
Software class	A	A	A	A
Current version	V 5.0	V 4.1	V5.0	V4.0
Target system	SIMATIC S7-300 (CPU 313 or newer), SIMATIC S7-400, SIMATIC C7	SIMATIC S7-300 (CPU 313 or newer), SIMATIC S7-400, SIMATIC C7	SIMATIC S7-300 (CPU 313 or newer), SIMATIC S7-400, SIMATIC C7	SIMATIC S7-300 (CPU 314 or newer), SIMATIC S7-400
Operating system	-	-	-	Windows 95 / NT
Required software package	STEP 7 V5.2 or newer	STEP 7 V3.1/V3.2 or newer	STEP 7 V3.2 or newer	-
Main memory configuration in PG/PC	16 MB	16 MB	-	16 MB on PG/PC
Disk storage requirement in PG/PC	1.85 MB	1.85 MB	-	5 MB

##### Runtime software

Parameterization software	Neuro systems	Loadable drivers for CP 441-2 and CP 341	Software redundancy	PRODAVE MPI
License form	Single license	Single license, copy license	Single license, copy license	Single license, copy license
Software class	-	-	-	A
Current version	-	-	-	V5.6
Target system	SIMATIC S7-300 (CPU 314 or newer), SIMATIC S7-400	SIMATIC CP 341, SIMATIC CP 441-2	SIMATIC S7-300 (CPU 315-2 DP only), SIMATIC S7-400	SIMATIC S7-200 SIMATIC S7-300 SIMATIC S7-400 SIMATIC C7
Operating system	Windows 95/NT	-	-	Windows 98/Me/NT/ 2000 Prof./XP
Required software package	-	-	STEP 7 V4.0	-
Main memory configuration in PG/PC	16 MB	-	-	8 MB on PG/PC
Disk storage requirement in PG/PC	5 MB	-	-	2 MB
<b>Standard FBs</b>				
Required libraries	Neuro systems FBs	-	-	-
License forms	Single license	-	-	-
Software class	-	-	-	-
Current version	-	-	-	-
Target system	SIMATIC S7-300 (CPU 314 or newer), SIMATIC S7-400	-	-	-
Operating system	Windows 95/NT	-	-	-
Required software package	-	-	-	-
Main memory configuration in PG/PC	16 MB on PG/PC	-	-	-
Disk storage requirement in PG/PC	5 MB	-	-	-

#### Overview



- Standard **configuration software** for SIMATIC Operator Panels and for the HMI part of the SIMATIC C7
- Executable under Windows 98 SE/ME and Windows NT 4.0/2000/XP Professional
- Current versions:
  - SIMATIC ProTool/Lite V6.0 + SP2
  - SIMATIC ProTool V6.0 + SP2

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Ordering data	Order No.		Order No.
<b>Configuration software</b> <b>SIMATIC ProTool V6.0 + SP2</b> <b>including ProAgent V6.0 + SP2</b> <sup>1) B)</sup> (ProAgent for OP; ProAgent/MP), language versions: G/E/F/I/S, incl. native drivers on CD-ROM; electronic documentation (.pdf/.chm) in German, English, French, Spanish, Italian on CD-ROM	6AV6 581-3BX06-0CX0	<b>Software update service</b> •SIMATIC ProTool <sup>2) B)</sup> •SIMATIC ProTool/Lite <sup>2) B)</sup>	6AV6 581-3AX00-0AX2 6AV6 580-3AX00-0AX2
<b>Configuration software</b> <b>SIMATIC ProTool/Lite</b> <b>V6.0 + SP2</b> <sup>B)</sup> language variants: G/E/F/I/S, incl. native drivers on CD-ROM; electronic documentation (.pdf/.chm) in German, English, French, Spanish, Italian on CD-ROM	6AV6 580-3BX06-0CX0	<b>Powerpack</b> •ProTool/Lite to ProTool V6.0 + SP2	6AV6 571-3AB06-0CX0
<b>Standard function blocks</b> <b>V3.32 for SIMATIC S5</b> for linking TD17, OP7, OP17, OP27, OP37, TP27, TP37; executes on SIMATIC S5-90U to 155U, on 3.5" diskettes (MS-DOS)	6AV3 980-1AA21-0AX0	<b>Upgrade</b> •ProTool/Lite to ProTool/Lite V6.0 + SP2 <sup>B)</sup> •ProTool to ProTool V6.0 + SP2 <sup>B)</sup>	6AV6 580-3BX06-0CX4 6AV6 581-3BX06-0CX4

B) Subject to export regulations: AL: N and ECCN: EAR99S

1) Runtime licenses for ProAgent must be ordered separately

2) For a period of 12 months, the customer automatically receives all upgrades and service packs for a fixed price per installed ProTool or ProTool/Lite package.  
The contract is automatically extended by a further year unless canceled 12 weeks prior to expiry.

### SIMATIC ProTool/Lite and SIMATIC ProTool

#### Ordering data (continued)

#### Order No.

#### Order No.

#### Documentation

##### ProTool user manual, configuring line-oriented displays

- German
- English
- French
- Italian
- Spanish

6AV6 594-1AA06-0AA0  
6AV6 594-1AA06-0AB0  
6AV6 594-1AA06-0AC0  
6AV6 594-1AA06-0AD0  
6AV6 594-1AA06-0AE0

##### ProTool user manual, configuring graphic displays

- German
- English
- French
- Italian
- Spanish

6AV6 594-1BA06-0AA0  
6AV6 594-1BA06-0AB0  
6AV6 594-1BA06-0AC0  
6AV6 594-1BA06-0AD0  
6AV6 594-1BA06-0AE0

##### ProTool user manual, configuring Windows-based systems

- German
- English
- French
- Italian
- Spanish

6AV6 594-1MA06-1AA0  
6AV6 594-1MA06-1AB0  
6AV6 594-1MA06-1AC0  
6AV6 594-1MA06-1AD0  
6AV6 594-1MA06-1AE0

#### Communication manual

Description of TD/OP/TP  
connection to the controller

- German
- English
- French
- Italian
- Spanish

6AV3 991-1BC05-1AA0  
6AV3 991-1BC05-1AB0  
6AV3 991-1BC05-1AC0  
6AV3 991-1BC05-1AD0  
6AV3 991-1BC05-1AE0

#### Communication manual

Description of connection of  
Windows-based systems to the  
controller

- German
- English
- French
- Italian
- Spanish

6AV6 596-1MA06-0AA0  
6AV6 596-1MA06-0AB0  
6AV6 596-1MA06-0AC0  
6AV6 596-1MA06-0AD0  
6AV6 596-1MA06-0AE0

#### SIMATIC HMI Manual Collection

Electronic documentation,  
on CD-ROM

5 languages  
(English, French, German, Italian  
and Spanish);  
Comprising: all currently available  
user manuals, product manuals  
and communication manuals for  
SIMATIC HMI

6AV6 691-1SA01-0AX0



## Overview



- **PC-based HMI solution** for single-user systems direct at the machine
- SIMATIC ProTool/Pro consists of:
  - SIMATIC ProTool/Pro RT runtime software for PC-based systems
  - Configuring software SIMATIC ProTool/Pro Configuration (CS) for configuring PC-based systems as well as SIMATIC Operator Panels
- For Windows 98 SE/ME and Windows NT4.0/2000/XP Professional
- **Current version:**
  - SIMATIC ProTool/Pro Configuration V6.0 + SP2
  - SIMATIC ProTool/Pro Runtime V6.0 + SP2

## Technical specifications

Type	SIMATIC ProTool/Pro Runtime
	The specifications are maximum values
<b>Operating system</b>	MS Windows 98 SE/ME (ME not for ASIA version), MS Windows NT 4.0/2000/XP Professional
<b>Messages</b>	4000
• Message text (number of characters)	70
• Message buffer size	1024
• Pending message events	500
<b>Archives (number)</b>	100
• Archivable data	Process values (max. 100), messages
• Max. number of entries per archive (incl. sequential archive)	500,000
• Archive types	Short-term archives, sequential archives (max. 40 per archive)
• Data storage format	CSV (Comma Separated Variable) and interfacing to ODBC database (database not included in scope of supply)
<b>Recipes</b>	1000
• Entries per recipe	2000 <sup>3)</sup>
• Data records	5000 <sup>2)</sup>
<b>Diagrams</b>	300
• Fields per diagram	400
• Variables per diagram	400
• Static text	30,000
• Graphics objects	2000
• Complex objects per picture (e.g. bars)	40
• Trend curves	800
• Graphics lists <sup>1)</sup>	500
• Text lists <sup>1)</sup>	500
• Number of entries in symbol lists	3,500

- 1) Only 500 text and graphics lists in total.  
 2) Depends on the storage medium used.  
 3) Depends on the number of licensed PowerTags.

Type	SIMATIC ProTool/Pro Runtime
<b>Variables</b>	2048 <sup>3)</sup>
<b>Password protection</b>	
• Password levels	10 (0 ... 9)
• Number of passwords	50
<b>Visual Basic scripts</b>	50
• Number of lines	100
<b>Online languages, max.</b>	5
<b>Communication</b>	
SIMATIC S7 MPI interface/ PROFIBUS DP interface	
• Number of connectable partners, max.	ProTool/Pro permits up to 8 connections, depending on the scope of configuration (communication)
SIMATIC S7 PPI interface	
• Number of connectable partners, max.	1 for ProTool/Pro
SIMATIC S5 loop-through arrangement	No
SIMATIC S5 PROFIBUS DP interface,	
• Number of connectable partners, max.	1 for ProTool/Pro

#### Ordering data

#### Order No.

#### SIMATIC ProTool/Pro Configuration V6.0 + SP2 incl. ProAgent V6.0 + SP2 <sup>3) B)</sup>

language versions: G/E/F/I/S on CD-ROM, containing:

- ProTool/Pro Configuration (CS) V6.0 + SP2
- Simulation software for Mobile Panel 170, TP 170A/B, OP 170B, TP 270, OP 270, MP 270 10", MP 270B, MP 370 and ProTool/Pro Runtime
- Native drivers
- Electronic documentation (.pdf/.chm) in German, English, French, Spanish, Italian

**6AV6 582-2BX06-0CX0**

#### SIMATIC ProTool/Pro Runtime V6.0 + SP2 for PC systems incl. ProAgent V6.0 + SP2 <sup>3)</sup>

on CD-ROM with license (single license) for

- 128 PowerTags (RT 128) <sup>B)</sup>
- 256 PowerTags (RT 256) <sup>B)</sup>
- 512 PowerTags (RT 512) <sup>B)</sup>
- 2048 PowerTags (RT 2048) <sup>B)</sup>

**6AV6 584-1AB06-0CX0**

**6AV6 584-1AC06-0CX0**

**6AV6 584-1AD06-0CX0**

**6AV6 584-1AF06-0CX0**

#### Upgrade

- ProTool/Pro to ProTool/Pro V6.0 + SP2 <sup>1) B)</sup>
- ProTool/Pro RT to ProTool/Pro RT V6.0 + SP2 <sup>B)</sup>

**6AV6 582-2BX06-0CX4**

**6AV6 584-3AX06-0CX4**

#### Powerpacks

#### SIMATIC ProTool/Pro RT PowerTags from

- 128 to 256 PowerTags <sup>B)</sup>
- 128 to 512 PowerTags <sup>B)</sup>
- 128 to 2048 PowerTags <sup>B)</sup>
- 256 to 512 PowerTags <sup>B)</sup>
- 256 to 2048 PowerTags <sup>B)</sup>
- 512 to 2048 PowerTags <sup>B)</sup>
- SIMATIC ProTool/Lite to ProTool/Pro V6.0 + SP2 <sup>B)</sup>
- SIMATIC ProTool to ProTool/Pro V6.0 + SP2 <sup>B)</sup>

**6AV6 570-1BC00-0AX0**

**6AV6 570-1BD00-0AX0**

**6AV6 570-1BF00-0AX0**

**6AV6 570-1CD00-0AX0**

**6AV6 570-1CF00-0AX0**

**6AV6 570-1DF00-0AX0**

**6AV6 571-2AC06-0CX0**

**6AV6 571-2BC06-0CX0**

#### Software update service <sup>2)</sup>

- Software update service SIMATIC ProTool/Pro <sup>B)</sup>

**6AV6 582-3AX00-0AX2**

A) Subject to export regulations: AL: N and ECCN: EAR99H

B) Subject to export regulations: AL: N and ECCN: EAR99S

D) Subject to export regulations: AL: N and ECCN: 5D992B1

1) Upgrade for Configuration Station (CS) as well as Runtime (RT) Station

2) For a period of 12 months and for a fixed price, the customer is automatically provided with all upgrades and service packs per installed ProTool/Pro package. The contract is automatically extended by a further year unless canceled 12 weeks prior to expiry.

3) The runtime licenses for ProAgent/PC must be purchased separately for each target system

#### Order No.

#### Versions for China/Taiwan/Korea/Japan

#### SIMATIC ProTool/Pro <sup>D)</sup> Configuration V6.0 + SP2 ASIA

Language/script variants: English/Chinese traditional and simplified/Korean/Japanese; comprising:

- ProTool/Pro Configuration (CS) V6.0 + SP2 ASIA
- Simulation software for Mobile Panel 170, TP 170A/B, OP 170B, TP 270, OP 270, MP 270, MP 270B 10", MP 370 and ProTool/Pro Runtime
- Electronic documentation (.pdf/.chm) in: English, Chinese (traditional and simplified), Korean and Japanese

**6AV6 582-2BX06-0CV0**

#### SIMATIC ProTool/Pro Runtime V6.0 + SP2 ASIA for PC systems

on CD-ROM with license (single license) for

- 128 PowerTags (RT 128) <sup>D)</sup>
- 256 PowerTags (RT 256) <sup>D)</sup>
- 512 PowerTags (RT 512) <sup>D)</sup>
- 2048 PowerTags (RT 2048) <sup>D)</sup>

**6AV6 584-1AB06-0CV0**

**6AV6 584-1AC06-0CV0**

**6AV6 584-1AD06-0CV0**

**6AV6 584-1AF06-0CV0**

#### Communication via Industrial Ethernet

#### CP 1613

PCI card (32 bits) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)

**6GK1 161-3AA00**

#### S7-1613 V6.1 <sup>D)</sup>

Software for S7 communication, S5-compatible communication (SEND/RECEIVE) incl. OPC, PG/OP communication (S5/505 Layer 4 communication with TCP/IP), for Windows NT4.0 / 2000 / XP

**6GK1 716-1CB61-3AA0**

#### CP 1612 <sup>A)</sup>

PCI card (32-bit) for connecting a PG/PC to Industrial Ethernet (SOFTNET-S7 must be ordered separately)

**6GK1 161-2AA00**

#### CP 1512

PCMCIA card (Cardbus 32-bit) for connecting a PG/Notebook to Industrial Ethernet (SOFTNET-S7 must be ordered separately)

**6GK1 151-2AA00**

#### SOFTNET-S7 V6.1 <sup>D)</sup>

Software for S5-compatible communication (SEND/RECEIVE) and S7 communication for Windows NT4.0 / 2000 / XP (max. 64 connections)

**6GK1 704-1CW61-3AA0**

#### SOFTNET-S7/Lean V6.1 <sup>D)</sup>

Software for S5-compatible communication (SEND/RECEIVE) and S7 communication for Windows 2000 / XP (max. 8 connections)

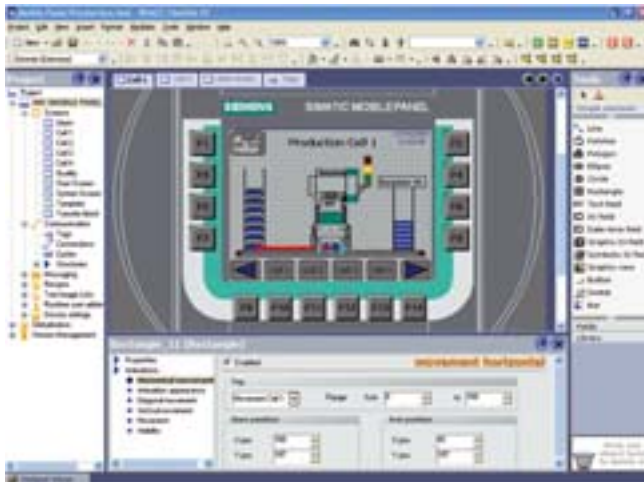
**6GK1 704-1LW61-3AA0**

Ordering data	Order No.	Order No.
<b>Communication via PROFIBUS</b>		<b>Documentation (must be ordered separately)</b>
<b>CP 5613 A2</b> PCI card (32 bits) for connecting a PC to PROFIBUS (communications software must be ordered separately)	<b>6GK1 561-3AA01</b>	<b>ProTool/Pro Runtime user manual</b> •German •English •French •Italian •Spanish
<b>CP 5614 A2<sup>D)</sup></b> PCI card (32 bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)	<b>6GK1 561-4AA01</b>	6AV6 594-1CA06-0AA0 6AV6 594-1CA06-0AB0 6AV6 594-1CA06-0AC0 6AV6 594-1CA06-0AD0 6AV6 594-1CA06-0AE0
<b>S7-5613 V6.1<sup>D)</sup></b> Software for S7 communication incl. PG/OP communication, FDL, S7 OPC server, for Windows NT4.0 / 2000 / XP	<b>6GK1 713-5CB61-3AA0</b>	<b>ProTool user manual, configuring Windows-based systems</b> •German •English •French •Italian •Spanish
<b>CP 5512</b> PCMCIA card (CARDBUS 32 bit) for connecting a PG/Notebook to PROFIBUS or MPI (communication software included in ProTool/Pro)	<b>6GK1 551-2AA00</b>	6AV6 594-1MA06-1AA0 6AV6 594-1MA06-1AB0 6AV6 594-1MA06-1AC0 6AV6 594-1MA06-1AD0 6AV6 594-1MA06-1AE0
<b>CP 5611</b> PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communication software included in ProTool/Pro)	<b>6GK1 561-1AA00</b>	<b>ProTool user manual configuring line-oriented displays</b> •German •English •French •Italian •Spanish
<b>CP 5611 MPI</b> Comprising PCI card CP 5611 (32-bit) and MPI cable, 5 m	<b>6GK1 561-1AM00</b>	6AV6 594-1AA06-0AA0 6AV6 594-1AA06-0AB0 6AV6 594-1AA06-0AC0 6AV6 594-1AA06-0AD0 6AV6 594-1AA06-0AE0
<b>PC/PPI adapter<sup>A)</sup></b> RS 232, 9-pin; male with RS 232/PPI converter, max. 19.2 Kbit/s	<b>6ES7 901-3CB30-0XA0</b>	<b>ProTool user manual, configuring graphic displays</b> •German •English •French •Italian •Spanish
<b>PC/MPI adapter</b> RS 232, 9-pin; male with RS 232/MPI converter, max. 19.2 Kbit/s	<b>6ES7 972-0CA23-0XA0</b>	6AV6 594-1BA06-0AA0 6AV6 594-1BA06-0AB0 6AV6 594-1BA06-0AC0 6AV6 594-1BA06-0AD0 6AV6 594-1BA06-0AE0
		<b>Communications manual for Windows-based systems</b> •German •English •French •Italian •Spanish
		6AV6 596-1MA06-0AA0 6AV6 596-1MA06-0AB0 6AV6 596-1MA06-0AC0 6AV6 596-1MA06-0AD0 6AV6 596-1MA06-0AE0
		<b>SIMATIC HMI Manual Collection</b> Electronic documentation, on CD-ROM 5 languages (German, English, French, Italian, Spanish); comprising: all available user manuals, product manuals and communication manuals for SIMATIC HMI
		6AV6 691-1SA01-0AX0

A) Subject to export regulations: AL: N and ECCN: EAR99H

D) Subject to export regulations: AL: N and ECCN: 5D992B1

#### Overview



- Uniform range of **engineering tools** for configuration of SIMATIC HMI devices, the operating component of SIMATIC C7 devices, the SIMOTION/SINUMERIK panel PCs, and the PC-based visualization software WinCC flexible Runtime
- For Windows 2000/XP Professional
- **Current version:**
  - SIMATIC WinCC flexible 2004 Advanced
  - SIMATIC WinCC flexible 2004 Standard
  - SIMATIC WinCC flexible 2004 Compact
  - SIMATIC WinCC flexible 2004 Micro

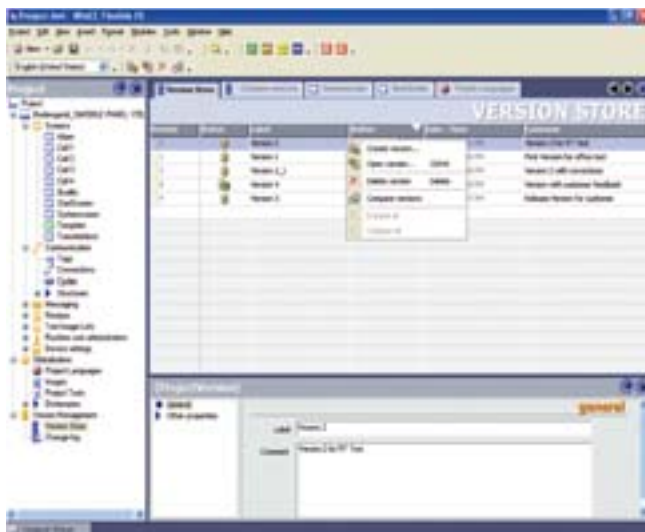
Ordering data	Order No.	Order No.
<b>WinCC flexible 2004 Advanced<sup>J)</sup></b> Single license, on CD-ROM incl. authorization, includes: <ul style="list-style-type: none"> <li>•Engineering software for configuring WinCC flexible Runtime as well as the Micro Panels and the Panels of the 70/170/270/370 series incl. C7-635/636</li> <li>•SW for WinCC flexible/Change-Control engineering option<sup>1)</sup></li> <li>•Simulation software for WinCC flexible Runtime as well as the Micro Panels and the Panels of the 70/170/270/370 series incl. C7-635/636</li> <li>•Native drivers</li> <li>•Electronic documentation (.pdf) in English, German, French, Italian, Spanish</li> </ul>	6AV6 613-0AA01-0AA0	<b>Powerpacks</b> <b>SIMATIC WinCC flexible Powerpacks</b> Single license, only authorization <ul style="list-style-type: none"> <li>•WinCC flexible Standard to WinCC flexible 2004 Advanced<sup>J)</sup> 6AV6 613-2CD01-0AD0</li> <li>•WinCC flexible Compact to WinCC flexible 2004 Advanced<sup>J)</sup> 6AV6 613-2BD01-0AD0</li> <li>•WinCC flexible Compact to WinCC flexible 2004 Standard<sup>J)</sup> 6AV6 612-2BC01-0AD0</li> </ul>
		<b>Software update service</b> <b>Software update service SIMATIC WinCC flexible<sup>2)</sup></b> <ul style="list-style-type: none"> <li>•WinCC flexible Advanced<sup>J)</sup> 6AV6 613-0AA00-0AL0</li> <li>•WinCC flexible Standard<sup>J)</sup> 6AV6 612-0AA00-0AL0</li> <li>•WinCC flexible Compact<sup>J)</sup> 6AV6 611-0AA00-0AL0</li> </ul>
		<b>Versions for China/Taiwan/Korea/Japan</b> <b>WinCC flexible 2004 ASIA Advanced<sup>J)</sup></b> Single license, on CD-ROM without authorization, includes: <ul style="list-style-type: none"> <li>•Engineering software for configuring WinCC flexible Runtime as well as the Micro Panels and the Panels of the 70/170/270/370 series incl. C7-635/636</li> <li>•SW for WinCC flexible/Change-Control engineering option<sup>1)</sup></li> <li>•Simulation software for WinCC flexible Runtime as well as the Micro Panels and the Panels of the 70/170/270/370 series incl. C7-635/636</li> <li>•Native drivers</li> <li>•Electronic Documentation(.pdf) in English, Chinese (simplified), Chinese (Traditional), Korean, Japanese</li> </ul>
		<b>Documentation (must be ordered separately)</b> <b>User Manual WinCC flexible Compact/Standard/Advanced</b> <ul style="list-style-type: none"> <li>•German 6AV6 691-1AB01-0AA0</li> <li>•English 6AV6 691-1AB01-0AB0</li> <li>•French 6AV6 691-1AB01-0AC0</li> <li>•Italian 6AV6 691-1AB01-0AD0</li> <li>•Spanish 6AV6 691-1AB01-0AE0</li> </ul>
<b>WinCC flexible 2004 Standard<sup>J)</sup></b> Single license, on CD-ROM incl. authorization, includes: <ul style="list-style-type: none"> <li>•Engineering software for configuring the Micro Panels and the Panels of the 70/170/270/370 series incl. C7-635/636</li> <li>•Simulation software for the Micro Panels and the Panels of the 70/170/270/370 series incl. C7-635/636</li> <li>•Native drivers</li> <li>•Electronic documentation (.pdf) in English, German, French, Italian, Spanish</li> </ul>	6AV6 612-0AA01-0AA0	
<b>WinCC flexible 2004 Compact<sup>J)</sup></b> Single license, on CD-ROM incl. authorization, includes: <ul style="list-style-type: none"> <li>•Engineering software for configuring the Micro Panels and the Panels of the 70/170 series incl. C7-635/636</li> <li>•Simulation software for the Micro Panels and the Panels of the 70/170 series incl. C7-635/636</li> <li>•Native drivers</li> <li>•Electronic documentation (.pdf) in English, German, French, Italian, Spanish</li> </ul>	6AV6 611-0AA01-0AA0	
<b>WinCC flexible 2004 Micro<sup>J)</sup></b> Single license, on CD-ROM without authorization, includes: <ul style="list-style-type: none"> <li>•Engineering software for configuring the Micro Panels</li> <li>•Electronic documentation (.pdf) in English, German, French, Italian, Spanish</li> </ul>	6AV6 610-0AA01-0AA0	<b>User manual WinCC flexible Micro</b> <ul style="list-style-type: none"> <li>•German 6AV6 691-1AA01-0AA0</li> <li>•English 6AV6 691-1AA01-0AB0</li> <li>•French 6AV6 691-1AA01-0AC0</li> <li>•Italian 6AV6 691-1AA01-0AD0</li> <li>•Spanish 6AV6 691-1AA01-0AE0</li> </ul>
		<b>User Manual WinCC flexible Communication</b> <ul style="list-style-type: none"> <li>•German 6AV6 691-1CA01-0AA0</li> <li>•English 6AV6 691-1CA01-0AB0</li> </ul>
		<b>SIMATIC HMI Manual Collection</b> Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); Comprising: all currently available user manuals, product manuals and communication manuals for SIMATIC HMI 6AV6 691-1SA01-0AX0

J) Subject to export regulations: AL: N and ECCN: 5D992B2

1) The licenses for WinCC flexible /ChangeControl must be purchased separately for each engineering station

2) For a period of 12 months, customers are automatically supplied with all updates and service packs for a fixed price per installed WinCC flexible engineering system or option.  
The contract is automatically extended by a further year unless canceled up to 12 weeks prior to expiry.

#### Overview



- Option for version assignment to configuration data and for tracking of modifications to configuration (e.g. as proof in regulated sectors)
- For the SIMATIC WinCC flexible Advanced engineering tool
- One license is necessary for each configuration station

#### Ordering data

#### Order No.

**WinCC flexible /ChangeControl  
2004 for WinCC flexible  
Advanced <sup>1) J)</sup>**

**6AV6 613-6AA01-0AB0**

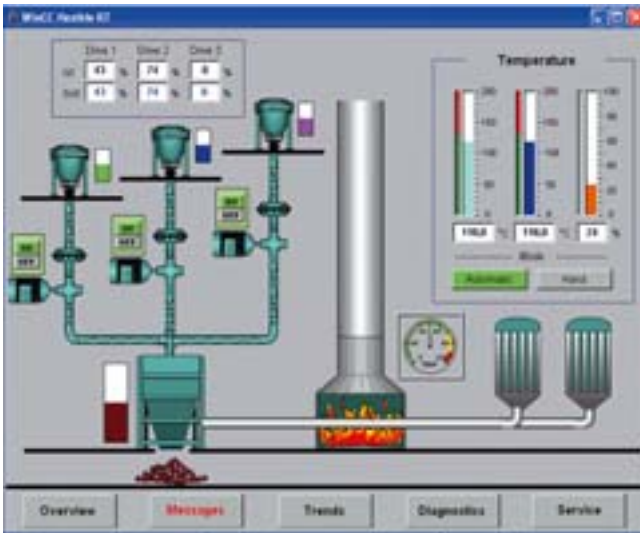
Single license, only authorization

J) Subject to export regulations: AL: N and ECCN: 5D992B2

1) Use of the ChangeControl option for integral operation with STEP 7 has not been released.



#### Overview



- **PC-based visualization software** for single-user systems direct at the machine
- For Windows 2000/XP Professional
- **Current version:**
  - SIMATIC WinCC flexible 2004 Runtime with 128, 512 or 2048 PowerTags

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#### Technical specifications

Type	SIMATIC WinCC flexible Runtime
	The specifications are maximum values
<b>Operating system</b>	MS Windows 2000 / XP Professional
<b>Diagrams</b>	500
• Fields per diagram	400
• Variables per diagram	400
• Static text	30,000
• Graphics objects	2,000
• Complex objects per picture (e.g. bars)	40
• Trend curves	800
• Graphics lists <sup>1)</sup>	500
• Text lists <sup>1)</sup>	500
• Number of entries in symbol lists	3,500
<b>Variables</b>	2,048 <sup>3)</sup>
<b>Messages bit-triggered / analog</b>	4,000 / 500
• Message text (number of characters)	80
• Number of process values per message	8
• Message buffer size	1,024
• Pending message events	500
<b>Archives <sup>4)</sup></b>	100
• Archivable data	Process values (max. 100) messages
• Max. number of entries per archive (incl. sequential archive)	500,000
• Archive types	Short-term archives, sequential archives (max. 400 per archive)
• Data storage format	CSV (Comma Separated Variable) and interfacing to ODBC database (database not included in scope of supply)

<b>Recipes <sup>4)</sup></b>	1,000
• Elements per recipe	2,000 <sup>3)</sup>
• Records per recipe	5,000 <sup>2)</sup>
<b>Password protection</b>	
• User privileges	32
• No. of user groups	10
<b>Visual Basic scripts</b>	200
<b>Online languages, max.</b>	16
<b>Communication</b>	
SIMATIC S7 MPI interface/ PROFIBUS DP interface	
• Number of connectable partners, max.	WinCC flexible Runtime permits up to 8 connections, depending on the scope of configuration (communication)
SIMATIC S7 PPI interface	
• Number of connectable partners, max.	1 for WinCC flexible Runtime
SIMATIC S5 PROFIBUS DP interface,	
• Number of connectable partners, max.	1 for WinCC flexible Runtime
Multi-protocol operation	Yes; OPC client or SIMATIC HMI HTTP protocol are additive, that is, they can be used in combination with other controller connections

1) Only 500 text and graphics lists in total.  
2) Depends on the storage medium used.  
3) Depends on the number of licensed PowerTags.  
4) Option for SIMATIC WinCC flexible Runtime.

### SIMATIC WinCC flexible RT

Ordering data	Order No.	Order No.
<b>SIMATIC WinCC flexible 2004 Runtime</b> for PC systems; incl. software of the options for PC systems <sup>1)</sup> Single license, on CD-ROM incl. authorization, for: <ul style="list-style-type: none"> <li>•128 PowerTags (RT 128) <sup>J)</sup> <b>6AV6 613-1BA01-0AA0</b></li> <li>•512 PowerTags (RT 512) <sup>J)</sup> <b>6AV6 613-1DA01-0AA0</b></li> <li>•2048 PowerTags (RT 2048) <sup>J)</sup> <b>6AV6 613-1FA01-0AA0</b></li> </ul>		<b>Versions for China/Taiwan/Korea/Japan</b> <b>SIMATIC WinCC flexible 2004 ASIA Runtime</b> for PC systems; incl. software of the options for PC systems <sup>1)</sup> Single license, on CD-ROM incl. authorization, for: <ul style="list-style-type: none"> <li>•128 PowerTags (RT 128) <sup>J)</sup> <b>6AV6 613-1BA11-0AA0</b></li> <li>•512 PowerTags (RT 512) <sup>J)</sup> <b>6AV6 613-1DA11-0AA0</b></li> <li>•2048 Pwer Tags (RT 2048) <sup>J)</sup> <b>6AV6 613-1FA11-0AA0</b></li> </ul>
<b>Powerpacks</b> <b>SIMATIC WinCC flexible 2004 Runtime</b> Single license, only authorization for PowerTags of <ul style="list-style-type: none"> <li>•128 to 512 PowerTags <sup>J)</sup> <b>6AV6 613-4BD01-0AD0</b></li> <li>•128 to 2048 PowerTags <sup>J)</sup> <b>6AV6 613-4BF01-0AD0</b></li> <li>•512 to 2048 PowerTags <sup>J)</sup> <b>6AV6 613-4DF01-0AD0</b></li> </ul>		<b>Documentation (must be ordered separately)</b> <b>User manual WinCC flexible Runtime</b> <ul style="list-style-type: none"> <li>•German <b>6AV6 691-1BA01-0AA0</b></li> <li>•English <b>6AV6 691-1BA01-0AB0</b></li> <li>•French <b>6AV6 691-1BA01-0AC0</b></li> <li>•Italian <b>6AV6 691-1BA01-0AD0</b></li> <li>•Spanish <b>6AV6 691-1BA01-0AE0</b></li> </ul>
<b>Upgrade</b> <ul style="list-style-type: none"> <li>•ProTool/Pro Runtime 128 PowerTags to WinCC flexible 2004 Runtime 128 PowerTags <sup>D)</sup> <b>6AV6 613-3BB01-0AA0</b></li> <li>•ProTool/Pro Runtime 256 PowerTags to WinCC flexible 2004 Runtime 512 PowerTags <sup>D)</sup> <b>6AV6 613-3CD01-0AA0</b></li> <li>•ProTool/Pro Runtime 512 PowerTags to WinCC flexible 2004 Runtime 512 PowerTags <sup>D)</sup> <b>6AV6 613-3DD01-0AA0</b></li> <li>•ProTool/Pro Runtime 2048 PowerTags to WinCC flexible 2004 Runtime 2048 PowerTags <sup>D)</sup> <b>6AV6 613-3FF01-0AA0</b></li> </ul>		<b>User Manual WinCC flexible Communication</b> <ul style="list-style-type: none"> <li>•German <b>6AV6 691-1CA01-0AA0</b></li> <li>•English <b>6AV6 691-1CA01-0AB0</b></li> </ul> <b>SIMATIC HMI Manual Collection</b> Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); Comprising: all currently available user manuals, product manuals and communication manuals for SIMATIC HMI <b>6AV6 691-1SA01-0AX0</b>

D) Subject to export regulations: AL: N and ECCN: 5D992B1

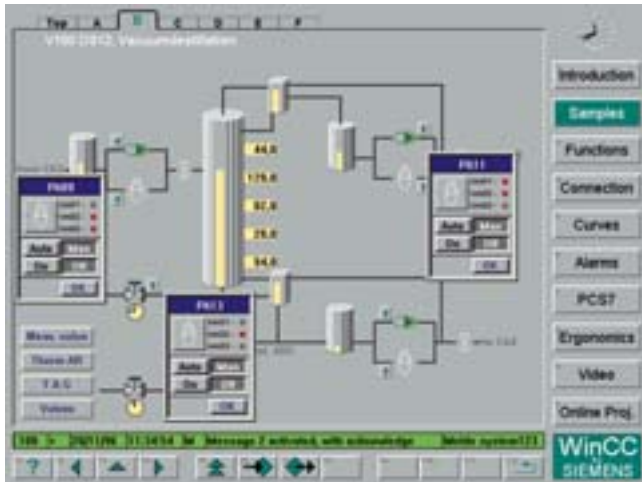
J) Subject to export regulations: AL: N and ECCN: 5D992B2

1) The runtime licenses for the WinCC flexible Runtime options must be purchased separately for each target system



Ordering data	Order No.		Order No.
Communication via Industrial Ethernet		Communication via PROFIBUS	
CP 1613 PCI card (32 bits) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)	6GK1 161-3AA00	CP 5613 A2 <sup>D)</sup> PCI card (32 bits) for connecting a PC to PROFIBUS (communications software must be ordered separately)	6GK1 561-3AA01
S7-1613/Windows V6.2 <sup>D)</sup> Software for S7 Communication, S5-compatible Communication (SEND/RECEIVE) incl. OPC, PG/OP communication (S5/505 Layer 4 communication with TCP/IP), for Windows 2000/XP/2003 Server	6GK1 716-1CB62-3AA0	CP 5614 A2 <sup>D)</sup> PCI card (32 bits) for connecting a PC to PROFIBUS (communications software must be ordered separately)	6GK1 561-4AA01
CP 1612 <sup>A)</sup> PCI card (32-bit) for connecting a PG/PC to Industrial Ethernet (SOFTNET-S7 must be ordered separately)	6GK1 161-2AA00	S7-5613 V6.2 <sup>D)</sup> Software for S7 Communication incl. PG/OP communication, FDL, S7-OPC server, for Windows 2000/XP/ 2003 Server	6GK1 713-5CB62-3AA0
CP 1512 PCMCIA card (Cardbus 32-bit) for connecting a PG/Notebook to Industrial Ethernet (SOFTNET-S7 must be ordered separately)	6GK1 151-2AA00	CP 5512 PCMCIA card (Cardbus 32-bit) for connecting a PG/Notebook to PROFIBUS or MPI (communications software included in WinCC flexible)	6GK1 551-2AA00
A) Subject to export regulations: AL: N and ECCN: EAR99H D) Subject to export regulations: AL: N and ECCN: 5D992B1		CP 5611 PCI card (32-bit) for connection to a PG/PC to PROFIBUS (communications software included in WinCC flexible)	6GK1 561-1AA00
		CP 5611 MPI Comprising CP 5611 (32-bit) and MPI cable, 5 m	6GK1 561-1AM00
		PC/PPI adapter RS 232, 9-pin; male with RS 232/PPI converter, max. 19.2 Kbit/s	6ES7 901-3CB30-0XA0
		PC/MPI adapter RS 232, 9-pin; male with RS 232/MPI converter	6ES7 972-0CA23-0XA0
		PC adapter USB For Windows 2000/XP	6ES7 972-0CB20-0XA0

#### Overview



#### New features of V6.0:

- Historian concept in the basic system with significantly enhanced archiving performance, integrated long-term archiving and optional evaluation functions; based on the Microsoft SQL Server 2000
- Customized expansion capability of the WinCC Graphics Designer by means of Visual Basic for Application (VBA)
- Easy, open and rugged Runtime Scripting with Visual Basic Scripting (VBScript)
- Expanded, uniform scalability by increasing the number of servers (12) and clients (32) with expansion of the functionality at the same time, and also through the possibility for use of a central archive server
- Extended Web functionality with WinCC clients as Web servers with access to all lower-level WinCC servers
- Further functional adaptation to the WebNavigator client on a WinCC client
- Enhancement of the reporting and logging system thanks to higher flexibility, greater openness and simple operation
- Executable under Windows XP (single-user station and client)
- New options:
  - WinCC/Dat@Monitor (display and analysis of current process states and historical data on office PCs)
  - WinCC/ConnectivityPack (OPC Alarms&Events / Historical Data Access, database access via WinCC OLE-DB)
  - WinCC/IndustrialDataBridge (connection of external databases)
  - FDA options: WinCC Audit and SIMATIC Logon Services

- PC-based operator control and monitoring system for visualizing and operating processes, production flows, machines and systems in all sectors - with the simple single-user station through to distributed multi-user systems with redundant servers and multi-site solutions with Web clients. WinCC is the information hub for corporation-wide vertical integration.
- The basic system configuration (WinCC basic software) includes functions meeting industrial requirements for signaling and acknowledging events, archiving of messages and measured values, logging of all process and configuration data, user administration and visualization.
- The WinCC basic software forms the core of a wide range of different applications. Building on the open programming interfaces, a wide range of WinCC options (from Siemens A&D) and WinCC add-ons have been developed (by Siemens-internal and external partners).
- Current versions:
  - **SIMATIC WinCC V6.0 SP2:**  
Executes under Windows 2000 / XP
  - **SIMATIC WinCC V5.1 SP2:**  
Executes under Windows NT 4.0 / 2000

#### Technical specifications

Type	SIMATIC WinCC V5.1 SP1	SIMATIC WinCC V6.0 SP2
<b>Operating system</b>	Windows NT4.0/ Windows 2000 WebClient, additionally: Windows 98, Windows ME, Windows 2000 terminal services	Windows XP Professional/ Windows 2000 WebClient/Dat@Monitor Client, additionally: Windows NT4.0/ Windows XP Home, Windows 2000 terminal services
<b>Hardware requirements for PC</b>		
<b>CPU</b> <sup>1)</sup>		
•Minimum	Pentium II, 400 MHz	Single-user system/server: Pentium III, 800 MHz Central archive server: Pentium IV, 2 GHz Client:: Pentium III, 300 MHz WebClient/Dat@Monitor client: Pentium III, 300 MHz
•Recommended	Pentium III, 400 MHz	Single-user system/server: Pentium IV, 1400 MHz Central archive server: Pentium IV, 2,5 GHz Client: Pentium III, 800 MHz WebClient/Dat@Monitor client: Pentium III, 800 MHz
<b>RAM (main memory)</b>		
•Minimum	>= 128/256 MB (single-user station/server), >= 128 MB (client) <sup>2)</sup>	Single-user system/server: 512 MB Central archive server: 1 GB Client: 256 MB WebClient/Dat@Monitor client: 128 MB
•Recommended	>= 256 MB (single-user station/server), >= 256 MB (client) <sup>2)</sup>	Single-user system/server: 1 GB Central archive server: >= 1 GB Client: 512 MB WebClient/Dat@Monitor client: 256 MB
<b>Graphics controller</b>		
•Minimum	SVGA (4 MB), 800 x 600	SVGA (16 MB), 800 x 600
•Recommended	XGA (8 MB), 1024 x 768	SXGA (32 MB), 1280 x 1024
<b>Hard disk</b>		
•Minimum	> 3 GB	Single-user system/server: 20 GB Client: 5 GB WebClient/Dat@Monitor client: 5 GB
•Recommended	> 3 GB	Single-user system/server: 80 GB Client: 20 GB WebClient/Dat@Monitor client: 10 GB
•Hard disk (free disk space for installation)		
- Minimum	650 MB	Server: 1 GB Client: 700 MB
- Recommended	>= 650 MB	Server: > 10 GB Client: > 1.5 GB
<b>CD-ROM/DVD-ROM/ diskette drive</b>	For software installation	For software installation

1) An AMD system of comparable performance can also be used

2) At least 32 MB more when using online configuration

#### Technical specifications (continued)

Type	SIMATIC WinCC V5.1 SP1	SIMATIC WinCC V6.0 SP2
<b>Functionality/quantity framework</b>		
Messages (number)	50,000	50,000
• Message text (number of characters)	10 x 256	10 x 256
• Message archive	> 500,000 messages <sup>1)</sup>	> 500,000 messages <sup>1)</sup>
• Process values per message	10	10
• Continuous loading, max. messages	2/s	Central archive server: 100/s Server/single-user station: 10/s
• Message surge, max.	2000 in 10 min.	Central archive server: 15,000/10 sec. every 5 min Server/single-user station: 2,000/10 sec. every 5 min
<b>Archive</b>		
• Archive data points	Max. 30,000 per server	Max. 80,000 per server <sup>2)</sup>
• Archive types	Polling and sequential archives	Short-term archive with and without long-term archiving
• Data storage format	Sybase SQL 7 or dBase III <sup>3)</sup>	Microsoft SQL Server 2000
• Measured values per second, max.	Server/single-user station: 360/s (500/s dBase III)	Central archive server: 10,000/s Server/single-user station: 5,000/s
<b>User archives</b>		
• Archive (recipes)	500	Determined by system <sup>1)</sup>
• Data records per user archive	65,536 <sup>4)</sup>	65,536 <sup>4)</sup>
• No. of fields per user archive	500 <sup>4)</sup>	500 <sup>4)</sup>
<b>Graphics system</b>		
• No. of diagrams	Determined by system <sup>1)</sup>	Determined by system <sup>1)</sup>
• No. of objects per picture	Determined by system <sup>1)</sup>	Determined by system <sup>1)</sup>
• No. of operator-controllable fields per picture	Determined by system <sup>1)</sup>	Determined by system <sup>1)</sup>
<b>Process variables</b>	64 K <sup>5)</sup>	64 K <sup>5)</sup>
<b>Trend curves</b>		
• Curve windows per display	8	25
• Curves per curve window	15	80
<b>User administration</b>		
• User groups	28	128
• No. of users	128	128
• Authorization groups	999	999
<b>Runtime languages</b>	> 9 per project	> 9 per project
<b>Configuration languages</b>	5 European (Ger., Eng., Fr., Ita., Sp.), 4 Asian (simpl.+trad. Chi. / Kor. / Jpn)	5 European (Ger., Eng., Fr., Ita., Sp.), 4 Asian (simpl.+trad. Chi. / Kor. / Jpn)
<b>Protocols</b>		
• Signal sequence protocols (simultaneous)	1 per server/single-user station	1 per server/single-user station
• Message archive reports (simultaneous)	1	3
• Application reports	Determined by system <sup>1)</sup>	Determined by system <sup>1)</sup>
• Report lines per body	66	66
• Variables per report	300 <sup>6)</sup>	300 <sup>6)</sup>
<b>Multi-user system</b>		
• Server	6	12
• Clients for server with operator terminal	3	4
• Clients for server without operator terminal	16	32 clients + 3 WebClients or 50 WebClients + 1 client

1) Depending on available memory

2) Depending on the number of licensed archive variables

3) Dbase III only with TagLogging short-term archives

4) The product of number of fields and number of data records must not exceed 320,000

5) Depending on the number of licensed PowerTags.

6) The number of variables per report depend on the performance of the process communication

Ordering data	Order No.	Order No.
<b>SIMATIC WinCC system software V5.1 SP2</b>		
<b>Runtime packages on CD-ROM</b> Language versions: G/E/F/I/S; with license for: <ul style="list-style-type: none"> <li>• 128 PowerTags (RT 128) <sup>E)</sup></li> <li>• 256 PowerTags (RT 256) <sup>E)</sup></li> <li>• 1024 PowerTags (RT 1024) <sup>E)</sup></li> <li>• 64K PowerTags (RT Max) <sup>E)</sup></li> </ul>	<b>6AV6 381-1BC05-1BX0</b> <b>6AV6 381-1BD05-1BX0</b> <b>6AV6 381-1BE05-1BX0</b> <b>6AV6 381-1BF05-1BX0</b>	
<b>Complete packages on CD-ROM</b> Language versions: G/E/F/I/S; with license for: <ul style="list-style-type: none"> <li>• 128 PowerTags (RC 128) <sup>E)</sup></li> <li>• 256 PowerTags (RC 256) <sup>E)</sup></li> <li>• 1024 PowerTags (RC 1024) <sup>E)</sup></li> <li>• 64 K PowerTags (RC Max) <sup>E)</sup></li> </ul>	<b>6AV6 381-1BM05-1BX0</b> <b>6AV6 381-1BN05-1BX0</b> <b>6AV6 381-1BP05-1BX0</b> <b>6AV6 381-1BQ05-1BX0</b>	
<b>SIMATIC WinCC system software V5.1 ASIA</b>		
<b>Runtime packages on CD-ROM</b> Language/script versions: English/Chinese traditional and simplified/Korean/Japanese; with license for: <ul style="list-style-type: none"> <li>• 128 PowerTags (RT 128) <sup>E)</sup></li> <li>• 256 PowerTags (RT 256) <sup>E)</sup></li> <li>• 1024 PowerTags (RT 1024) <sup>E)</sup></li> <li>• 64 K PowerTags (RT Max) <sup>E)</sup></li> </ul>	<b>6AV6 381-1BC05-1AV0</b> <b>6AV6 381-1BD05-1AV0</b> <b>6AV6 381-1BE05-1AV0</b> <b>6AV6 381-1BF05-1AV0</b>	
<b>Complete packages on CD-ROM</b> Language/script versions: English/Chinese traditional and simplified/Korean/Japanese; with license for: <ul style="list-style-type: none"> <li>• 128 PowerTags (RC 128) <sup>E)</sup></li> <li>• 256 PowerTags (RC 256) <sup>E)</sup></li> <li>• 1024 PowerTags (RC 1024) <sup>E)</sup></li> <li>• 64 K PowerTags (RC Max) <sup>E)</sup></li> </ul>	<b>6AV6 381-1BM05-1AV0</b> <b>6AV6 381-1BN05-1AV0</b> <b>6AV6 381-1BP05-1AV0</b> <b>6AV6 381-1BQ05-1AV0</b>	
<b>SIMATIC WinCC V5.1 Powerpacks</b>		
For upgrading from: <ul style="list-style-type: none"> <li>• 128 to 256 PowerTags</li> <li>• 128 to 1024 PowerTags</li> <li>• 128 to 64 K PowerTags</li> <li>• 256 to 1024 PowerTags</li> <li>• 256 to 64 K PowerTags</li> <li>• 1024 to 64 K PowerTags</li> </ul>	<b>6AV6 371-1BD05-0AX0</b> <b>6AV6 371-1BE05-0AX0</b> <b>6AV6 371-1BF05-0AX0</b> <b>6AV6 371-1BG05-0AX0</b> <b>6AV6 371-1BH05-0AX0</b> <b>6AV6 371-1BJ05-0AX0</b>	
<b>Complete packages</b> <ul style="list-style-type: none"> <li>• 128 to 256 PowerTags</li> <li>• 128 to 1024 PowerTags</li> <li>• 128 to 64 K PowerTags</li> <li>• 256 to 1024 PowerTags</li> <li>• 256 to 64 K PowerTags</li> <li>• 1024 to 64 K PowerTags</li> </ul>	<b>6AV6 371-1BD15-0AX0</b> <b>6AV6 371-1BE15-0AX0</b> <b>6AV6 371-1BF15-0AX0</b> <b>6AV6 371-1BG15-0AX0</b> <b>6AV6 371-1BH15-0AX0</b> <b>6AV6 371-1BJ15-0AX0</b>	
<b>SIMATIC WinCC system software V6.0 SP2</b>		
<b>Runtime packages on CD-ROM</b> Language versions: G/E/F/I/S; with license for: <ul style="list-style-type: none"> <li>• 128 PowerTags (RT 128) <sup>J)</sup></li> <li>• 256 PowerTags (RT 256) <sup>J)</sup></li> <li>• 1024 PowerTags (RT 1024) <sup>J)</sup></li> <li>• 8 K PowerTags (RT 8K) <sup>J)</sup></li> <li>• 64 K PowerTags (RT Max) <sup>J)</sup></li> </ul> Incl. 512 archive variables each	<b>6AV6 381-1BC06-0CX0</b> <b>6AV6 381-1BD06-0CX0</b> <b>6AV6 381-1BE06-0CX0</b> <b>6AV6 381-1BH06-0CX0</b> <b>6AV6 381-1BF06-0CX0</b>	
<b>Complete packages on CD-ROM</b> Language versions: G/E/F/I/S; with license for: <ul style="list-style-type: none"> <li>• 128 PowerTags (RC 128) <sup>J)</sup></li> <li>• 256 PowerTags (RC 256) <sup>J)</sup></li> <li>• 1024 PowerTags (RC 1024) <sup>J)</sup></li> <li>• 8 K PowerTags (RC 8K) <sup>J)</sup></li> <li>• 64 K PowerTags (RC Max) <sup>J)</sup></li> </ul> Incl. 512 archive variables each	<b>6AV6 381-1BM06-0CX0</b> <b>6AV6 381-1BN06-0CX0</b> <b>6AV6 381-1BP06-0CX0</b> <b>6AV6 381-1BS06-0CX0</b> <b>6AV6 381-1BQ06-0CX0</b>	
<b>SIMATIC WinCC system software V6.0 SP2 ASIA</b>		
<b>Runtime packages on CD-ROM</b> Language/script versions: English/Chinese traditional and simplified/Korean/Japanese; with license for: <ul style="list-style-type: none"> <li>• 128 PowerTags (RT 128) <sup>J)</sup></li> <li>• 256 PowerTags (RT 256) <sup>J)</sup></li> <li>• 1024 PowerTags (RT 1024) <sup>J)</sup></li> <li>• 8 K PowerTags (RT 8K) <sup>J)</sup></li> <li>• 64 K PowerTags (RT Max) <sup>J)</sup></li> </ul> Incl. 512 archive variables each	<b>6AV6 381-1BC06-0BV0</b> <b>6AV6 381-1BD06-0BV0</b> <b>6AV6 381-1BE06-0BV0</b> <b>6AV6 381-1BH06-0BV0</b> <b>6AV6 381-1BF06-0BV0</b>	
<b>Complete packages on CD-ROM</b> Language/script versions: English/Chinese traditional and simplified/Korean/Japanese; with license for: <ul style="list-style-type: none"> <li>• 128 PowerTags (RC 128) <sup>J)</sup></li> <li>• 256 PowerTags (RC 256) <sup>J)</sup></li> <li>• 1024 PowerTags (RC 1024) <sup>J)</sup></li> <li>• 8 K PowerTags (RC 8K) <sup>J)</sup></li> <li>• 64 K PowerTags (RC Max) <sup>J)</sup></li> </ul> Incl. 512 archive variables each	<b>6AV6 381-1BM06-0BV0</b> <b>6AV6 381-1BN06-0BV0</b> <b>6AV6 381-1BP06-0BV0</b> <b>6AV6 381-1BS06-0BV0</b> <b>6AV6 381-1BQ06-0BV0</b>	

E) Subject to export regulations: AL: N and ECCN: 5D002ENC3

J) Subject to export regulations: AL: N and ECCN: 5D992B2

#### Ordering data

#### Order No.

##### **SIMATIC WinCC V6.0 Powerpacks**

For upgrading from:

##### **Runtime packages**

- 128 to 256 PowerTags
- 128 to 1024 PowerTags
- 128 to 8 K PowerTags
- 128 to 64 K PowerTags
- 256 to 1024 PowerTags
- 256 to 8 K PowerTags
- 256 to 64 K PowerTags
- 1024 to 8 K PowerTags
- 1024 to 64 K PowerTags
- 8 K to 64 K PowerTags

**6AV6 371-1BD06-0AX0**  
**6AV6 371-1BE06-0AX0**  
**6AV6 371-1BK06-0AX0**  
**6AV6 371-1BF06-0AX0**  
**6AV6 371-1BG06-0AX0**  
**6AV6 371-1BL06-0AX0**  
**6AV6 371-1BH06-0AX0**  
**6AV6 371-1BM06-0AX0**  
**6AV6 371-1BJ06-0AX0**  
**6AV6 371-1BN06-0AX0**

##### **Complete packages**

- 128 to 256 PowerTags
- 128 to 1024 PowerTags
- 128 to 8 K PowerTags
- 128 to 64 K PowerTags
- 256 to 1024 PowerTags
- 256 to 8 K PowerTags
- 256 to 64 K PowerTags
- 1024 to 8 K PowerTags
- 1024 to 64 K PowerTags
- 8 K to 64 K PowerTags

**6AV6 371-1BD16-0AX0**  
**6AV6 371-1BE16-0AX0**  
**6AV6 371-1BK16-0AX0**  
**6AV6 371-1BF16-0AX0**  
**6AV6 371-1BG16-0AX0**  
**6AV6 371-1BL16-0AX0**  
**6AV6 371-1BH16-0AX0**  
**6AV6 371-1BM16-0AX0**  
**6AV6 371-1BJ16-0AX0**  
**6AV6 371-1BN16-0AX0**

##### **SIMATIC WinCC V6.0 Archive Powerpacks**

For upgrading the archiving from

- 512 to 1500 archive variables
- 512 to 5000 archive variables
- 512 to 30000 archive variables
- 512 to 80000 archive variables
- 1500 to 5000 archive variables
- 1500 to 30000 archive variables
- 1500 to 80000 archive variables
- 5000 to 30000 archive variables
- 5000 to 80000 archive variables
- 30000 to 80000 archive variables

**6AV6 371-1DQ06-0AX0**  
**6AV6 371-1DQ06-0BX0**  
**6AV6 371-1DQ06-0EX0**  
  
**6AV6 371-1DQ06-0AB0**  
**6AV6 371-1DQ06-0AE0**  
  
**6AV6 371-1DQ06-0BE0**

E) Subject to export regulations: AL: N and ECCN: 5D002ENC3

J) Subject to export regulations: AL: N and ECCN: 5D992B2

1) In accordance with license stipulations, 1 Upgrade Package must be ordered for each WinCC station.

2) Comprehensive Support runs for one year. The contract is automatically extended by a further year unless canceled 3 months prior to expiry. In accordance with license stipulations, 1 Comprehensive Support Package must be ordered for each WinCC station.

#### Order No.

##### **SIMATIC WinCC upgrade / comprehensive support**

##### **WinCC V5 Upgrade <sup>1)</sup>**

For upgrading of RT and RC software packages and stations to the newest version

- V4.x to V5.1 SP2 <sup>E)</sup>
- V5.x to V5.1 SP2 <sup>E)</sup>
- V4.x / V5.x ASIA to V5.1 ASIA <sup>E)</sup>

**6AV6 381-1AA05-1CX4**  
**6AV6 381-1AA05-1CX3**  
**6AV6 381-1AA05-1AV3**

##### **WinCC V6 Upgrade <sup>1)</sup>**

For upgrading the RT version

- from V5.x to V6.0 SP2 <sup>J)</sup>
- from V5.x ASIA to V6.0 SP2 ASIA <sup>J)</sup>

**6AV6 381-1AA06-0CX4**  
**6AV6 381-1AA06-0CV4**

For upgrading the RC version

- from V5.x to V6.0 SP2 <sup>J)</sup>
- from V5.x ASIA to V6.0 SP2 ASIA <sup>J)</sup>

**6AV6 381-1AB06-0CX4**  
**6AV6 381-1AB06-0CV4**

##### **WinCC comprehensive support <sup>2)</sup>**

Contains current updates/upgrades for WinCC basic software and options and the WinCC Knowledge Base CD

- 1 license <sup>J)</sup>
- 3 licenses <sup>J)</sup>
- 10 licenses <sup>J)</sup>

**6AV6 381-1AA00-0AX5**  
**6AV6 381-1AA00-0BX5**  
**6AV6 381-1AA00-0CX5**

##### **SIMATIC WinCC documentation (to be ordered separately)**

##### **SIMATIC WinCC V5 basic documentation in a slipcase**

Containing WinCC manual and software protection description

- German
- English
- French

**6AV6 392-1XA05-0AA0**  
**6AV6 392-1XA05-0AB0**  
**6AV6 392-1XA05-0AC0**

##### **SIMATIC WinCC V5 Configuration & Communication Manual**

Comprising: configuration manual + CD with examples, communication manual, Getting Started

- German
- English
- French

**6AV6 392-1CA05-0AA0**  
**6AV6 392-1CA05-0AB0**  
**6AV6 392-1CA05-0AC0**

##### **SIMATIC WinCC V6 basic documentation**

Containing WinCC manual and software protection description

- German
- English
- French
- Italian
- Spanish

**6AV6 392-1XA06-0AA0**  
**6AV6 392-1XA06-0AB0**  
**6AV6 392-1XA06-0AC0**  
**6AV6 392-1XA06-0AD0**  
**6AV6 392-1XA06-0AE0**



#### Ordering data

#### Order No.

#### Order No.

#### SIMATIC WinCC communication

##### Communication via Industrial Ethernet

<b>CP 1612</b> <sup>A)</sup> PCI card (32-bit) for connecting a PG/PC to Industrial Ethernet (SOFTNET-S7 must be ordered separately)	<b>6GK1 161-2AA00</b>
<b>CP 1512</b> PCMCIA card (Cardbus 32-bit) for connecting a PG/Notebook to Industrial Ethernet (SOFTNET-S7 must be ordered separately)	<b>6GK1 151-2AA00</b>
<b>SOFTNET-S7 V6.2</b> <sup>D)</sup> Software for S5-compatible communication (SEND/RECEIVE) and S7 communication for Windows 2000 / XP/2003 Server (max. 64 connections)	<b>6GK1 704-1CW62-3AA0</b>
<b>SOFTNET-S7 Lean V6.2</b> <sup>D)</sup> Software for S5-compatible communication (SEND/RECEIVE) and S7 communication for Windows 2000 / XP/2003 Server (max. 64 connections)	<b>6GK1 704-1LW62-3AA0</b>
<b>CP 1613</b> PCI card (32 bits) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)	<b>6GK1 161-3AA00</b>
<b>S7-1613 V6.2</b> <sup>D)</sup> Software for S7 communication, S5-compatible communication (SEND/RECEIVE) incl. OPC, PG/OP communication (S5/505 Layer 4 communication with TCP/IP), for Windows 2000/XP/2003 Server	<b>6GK1 716-1CB62-3AA0</b>
<b>TF-1613/Windows V6.2</b> <sup>D)</sup> Software for S7 communication, S5-compatible communication (SEND/RECEIVE) incl. OPC, PG/OP communication (S5/505 Layer 4 communication with TCP/IP), for Windows 2000/XP/2003 Server	<b>6GK1 716-1TB62-3AA0</b>
<b>Channel DLL SIMATIC S5 PMC Ethernet Layer 4</b> <sup>B)</sup> (only for WinCC V5.1) Additional software packages required for S5-PMC <ul style="list-style-type: none"> <li>•PMC/LS-B message functions</li> <li>•PMC/LS-B Status, standard displays from V4.3 upwards</li> <li>•Parameterization software PMC Pro from V2.2 upwards, German</li> <li>•Parameterization software PMC Pro from V2.2 upwards, English</li> </ul>	<b>6AV6 371-1CD05-0PX0</b>  <b>6ES5 848-7WL01</b> <b>6ES5 848-7UL01</b> <b>6ES5 886-4WF11</b> <b>6ES5 886-4WF21</b>

##### Communication via PROFIBUS

<b>CP 5611</b> PCI card (32-bit) for connection to a PG/PC to PROFIBUS (communications software included in the WinCC basic package)	<b>6GK1 561-1AA00</b>
<b>CP 5611 MPI</b> Comprising CP 5611 (32-bit) and MPI cable, 5 m	<b>6GK1 561-1AM00</b>
<b>CP 5512</b> PCMCIA card (Cardbus 32-bit) for connecting a PG/Notebook to PROFIBUS or MPI (communications software included in the WinCC basic package)	<b>6GK1 551-2AA00</b>
<b>PC/MPI adapter</b> RS 232, 9-pin; male with RS 232/MPI converter, max. 19.2 Kbit/s	<b>6ES7 972-0CA23-0XA0</b>
<b>CP 5613 A2</b> <sup>D)</sup> PCI card (32 bits) for connecting a PC to PROFIBUS (communications software must be ordered separately)	<b>6GK1 561-3AA01</b>
<b>S7-5613 V6.2</b> <sup>D)</sup> Software for S7 communication incl. PG/OP communication, FDL, S7-OPC server, for Windows 2000 / XP/ 2003 Server	<b>6GK1 713-5CB62-3AA0</b>
<b>DP-5613 V6.2</b> <sup>D)</sup> Software for DP protocol incl. PG/OP communication, FDL, DP-OPC server, for Windows 2000 / XP/ 2003 Server	<b>6GK1 713-5DB62-3AA0</b>
<b>FMS-5613 V6.2</b> <sup>D)</sup> Software for FMS protocol incl. PG/OP communication, FDL, FMS-OPC server, for Windows 2000 / XP/ 2003 Server	<b>6GK1 713-5FB62-3AA0</b>
<b>Channel DLL SIMATIC S5 PMC PROFIBUS</b> <sup>B)</sup> (only for WinCC V5.1) Additional software packages required for S5-PMC <ul style="list-style-type: none"> <li>•PMC/LS-B message functions</li> <li>•PMC/LS-B Status, standard displays from V4.3 upwards</li> <li>•Parameterization software PMC Pro from V2.2 upwards, German</li> <li>•Parameterization software PMC Pro from V2.2 upwards, English</li> </ul>	<b>6AV6 371-1CD05-0NX0</b>  <b>6ES5 848-7WL01</b> <b>6ES5 848-7UL01</b> <b>6ES5 886-4WF11</b> <b>6ES5 886-4WF21</b>

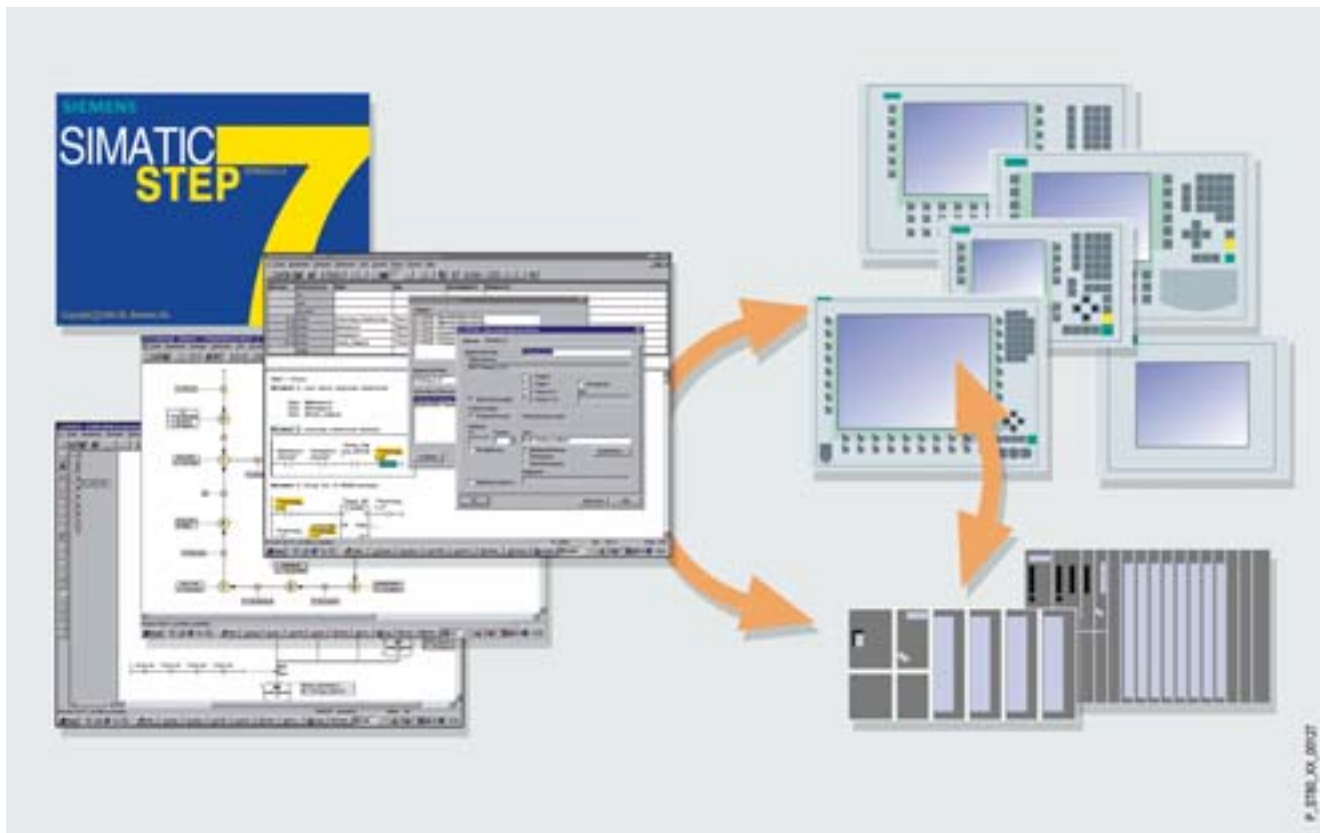
A) Subject to export regulations: AL: N and ECCN: EAR99H

B) Subject to export regulations: AL: N and ECCN: EAR99S

D) Subject to export regulations: AL: N and ECCN: 5D992B1

#### Overview

- Process diagnostics software for quick, selective fault diagnostics in plants and machines for SIMATIC S7 and SIMATIC HMI
- A standardized diagnostics concept for various SIMATIC components:  
Optimum interaction between STEP 7 engineering tools and SIMATIC HMI
- Standard user interface



Process fault diagnostics with ProAgent for ProTool and WinCC flexible/ProAgent as well as the STEP 7 engineering tools



#### Technical specifications

Interfaces

ProAgent for OP	ProAgent/MP	ProAgent/PC	WinCC/ProAgent	WinCC flexible / ProAgent <sup>1)</sup>
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1) WinCC flexible /ProAgent is not available until the release of Service Pack 1 of WinCC flexible 2004.

#### Technical specifications (continued)

	ProAgent for OP	ProAgent/MP	ProAgent/PC	WinCC/ProAgent	WinCC flexible / ProAgent <sup>1)</sup>
<b>Documentation</b>					
In electronic form	G/E/F/I/S; in scope of supply	G/E/F/I/S; in scope of supply	G/E/F/I/S; in scope of supply	G/E/F; in scope of supply	G/E/F/I/S; in scope of supply
<b>Prerequisites</b>					
HMI software	ProTool V6.0	ProTool V6.0	ProTool/Pro V6.0	WinCC V5.1 (ProAgent V5.6)/ WinCC V6.0 + SP2 (ProAgent V6.0 + SP1)	WinCC flexible 2004 + SP1
Operating system, configuration	Windows 98 SE/ME, Windows NT + SP6, Windows 2000 + SP2, Windows XP (ProTool V6.0 + SP2 upwards)	Windows 98 SE/ME, Windows NT + SP6, Windows 2000 + SP2, Windows XP (ProTool V6.0 + SP2 upwards)	Windows 98 SE/ME, Windows NT + SP6, Windows 2000 + SP2, Windows XP (ProTool V6.0 + SP2 upwards)	<a href="#">WinCC/ProAgent V5.6:</a> Windows NT + SP6a, Windows 2000 + SP2; <a href="#">WinCC/ProAgent V6.0:</a> Windows 2000 + SP3, Windows XP	Windows 2000 + SP3, Windows XP + SP1
Operating system, runtime	Runtime operator panel	Windows CE 3.0	Windows NT + SP6, Windows 2000 + SP2, Windows XP (ProTool V6.0 + SP2 upwards)	<a href="#">WinCC/ProAgent V5.6:</a> Windows NT + SP6a, Windows 2000 + SP2 <a href="#">WinCC/ProAgent V6.0:</a> Windows 2000 + SP3, Windows XP	<a href="#">WinCC flexible/ ProAgent for SIMATIC Panels:</a> Windows CE 3.0 <a href="#">WinCC flexible/ ProAgent for WinCC flexible Run- time:</a> Windows 2000 + SP3 Windows XP + SP1
STEP 7	V5.0 upwards	V5.0 upwards	V5.0 upwards	<a href="#">WinCC/ProAgent V5.6:</a> from V5.1 + SP2 <a href="#">WinCC/ProAgent V6.0 + SP1:</a> V5.3 upwards	V5.3 upwards
•S7-GRAPH	V5.0 upwards	V5.0 upwards	V5.0 upwards	V5.3 upwards	from V5.2 + SP3
•S7-PDIAG	V4.02 upwards	V4.02 upwards	V4.02 upwards	<a href="#">WinCC/ProAgent V5.6:</a> V5.0 upwards <a href="#">WinCC/ProAgent V6.0:</a> V5.1 upwards	V5.1 upwards
•S7-HiGraph	No	V5.0 upwards	V5.0 upwards	No	not yet released
Type of delivery (a license is required for each target hardware)	License verification	Runtime license	Runtime license	CD-ROM/ Runtime license	Runtime license

1) WinCC flexible /ProAgent is not available until the release of Service Pack 1 of WinCC flexible 2004.

Ordering data	Order No.	Order No.
<b>SIMATIC ProAgent</b> Software option package for process diagnostics on basis of S7-GRAPH, S7-PDIAG and S7-HiGraph <sup>1)</sup> , can be loaded with SIMATIC ProTool configuration software V6.0 upwards <sup>2)</sup> ; function expansion for ProTool, electronic documentation in German, English, French, Italian and Spanish <ul style="list-style-type: none"> <li>• <b>SIMATIC ProAgent for OP</b> <sup>B)</sup> Functions and standard screens for use on an OP27/OP37, TP27/TP37 or C7-626 in English, German, French, Italian and Spanish, runtime license (single license)</li> <li>• <b>SIMATIC ProAgent/MP</b> <sup>B)</sup> Functions and standard screens for use on an OP 270/TP 270 and MP 270/MP 370 Keys in English, German, French, Italian and Spanish, runtime license (single license)</li> <li>• <b>SIMATIC ProAgent/PC</b> <sup>B)</sup> Functions and standard screens for use on a Panel PC 670/870 10", 12" and 15" Keys, FI45, PC (resolution 640 x 480, 800 x 600 and 1024 x 768 pixels) in English, German, French, Italian and Spanish, runtime license (single license)</li> </ul>	<b>6AV3 681-1AB06-0AX0</b>  <b>6AV3 681-1CB06-0AX0</b>  <b>6AV3 681-1BB06-0AX0</b>	<b>SIMATIC WinCC flexible/ProAgent</b> Software optional package for process diagnostics based on S7-PDIAG from V5.1, S7-GRAPH from V5.2 + SP3; functional expansion for SIMATIC WinCC flexible; Electronic documentation in German, English, French, Spanish, Italian <ul style="list-style-type: none"> <li>• <b>WinCC flexible/ProAgent for SIMATIC Panels</b> <sup>J)</sup> Runtime license (single license) runs on TP/OP 270, MP 270B and MP 370</li> <li>• <b>WinCC flexible/ProAgent for WinCC flexible Runtime</b> <sup>J)</sup> Runtime license (single license)</li> </ul> <b>6AV6 618-7DB01-0AB0</b>  <b>6AV6 618-7DD01-0AB0</b>
<b>Documentation (must be ordered separately)</b>		
<b>SIMATIC HMI Manual Collection</b> Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); Comprising: all currently available user manuals, product manuals and communication manuals for SIMATIC HMI		<b>6AV6 691-1SA01-0AX0</b>
B) Subject to export regulations: AL: N and ECCN: EAR99S J) Subject to export regulations: AL: N and ECCN: 5D992B2 1) Only in combination with ProAgent/MP and ProAgent/PC 2) Configuration software included on ProTool CD V6		
<b>SIMATIC WinCC/ProAgent</b> Software option package for process diagnostics on basis of S7-GRAPH V5 or later and S7-PDIAG V5 or later; functional expansion for SIMATIC WinCC; electronic documentation in German, English, French; functions and standard screens for implementation on an FI45, PC (resolution 1024 x 768 pixels) and Panel PC 670/870 15" (resolution 1024 x 768 pixels) in German, English, French, runtime license (single license) WinCC version: <ul style="list-style-type: none"> <li>• V5.1 (ProAgent V5.6) <sup>B)</sup></li> <li>• V6.0 (ProAgent V6.0 SP1) <sup>B)</sup></li> </ul> Upgrade <ul style="list-style-type: none"> <li>• to V5.6 <sup>B)</sup></li> <li>• to V6.0 (SP1) <sup>B)</sup></li> </ul>	<b>6AV6 371-1DG05-6AX0</b> <b>6AV6 371-1DG06-0BX0</b>  <b>6AV6 371-1DG05-6AX4</b> <b>6AV6 371-1DG06-0BX4</b>	

# SIMATIC Industrial Software

## Supplementary Components

### SIMATIC ADDM

#### Overview



With the SIMATIC ADDM, you are completely in control of the SIMATIC and SINUMERIK controllers –around the clock and throughout every program version. This tool is indispensable in a modern production area and ensures convenient backup, comparison and management of control data.

#### **Absolute clarity in data management**

With ADDM, everything executes on a uniform user interface - all types and formats of CNC, PLC and configuration data right through to system software. The tool offers you unambiguous access authorizations and intuitive handling. The directory structure is always in line with the physical production layout, even complex systems can be understood at a glance.

#### **Secure and flexible management of distributed control concepts**

ADDM can be flexibly used for every client/server and online storage system as well as for stand-alone machines. This means: Central data storage with maximum fault tolerance and availability as well as efficient archiving of all machine data. Thus: Fast feedback of the required version, if required. Checked, controlled and documented archiving when several persons are working in parallel.

#### **Minimize downtimes**

You can rely on ADDM every time. Even when control components have to be replaced, for example. ADDM makes all the data available again immediately. With one click, without time-consuming reparameterization and configuration, whether for individual programs or complete hard disk partitions, you will have the right data in the right place.

#### Ordering data

#### Order No.

##### **SIMATIC ADDM V5.x on CD-ROM**

on CD-ROM;  
Languages: multi-language  
Server <sup>J)</sup>

**6BQ3 030-1AA00-3AB0**

Client

•Single license <sup>J)</sup>

**6BQ3 030-1AA10-0AB0**

•Copy license  
(without CD-ROM) <sup>J)</sup>

**6BQ3 030-1AA20-1AB0**

Single User

•Single license <sup>J)</sup>

**6BQ3 030-1AA30-3AB0**

•Trial license <sup>B)</sup>

**6BQ3 030-1AA70-3AB0**

Agent V1.0 single license

**6BQ3 030-3AA00-0AA0**

##### **SIMATIC ADDM Software Update Service**

Server <sup>J)</sup>

**6BQ3 030 1AB00 8AB0**

Client

**6BQ3 030 1AB10 8AB0**

Agent V1.0

**6BQ3 030-3AA10-0AA0**

##### **SIMATIC ADDM upgrade**

on CD-ROM;  
Languages: multi-language

Server  
from V5.0 to V5.1 <sup>J)</sup>

**6BQ3 030-1AB10-3AB0**

Client  
from V4.x to V5.1; Single license <sup>J)</sup>

**6BQ3 030-1AA40-3AB0**

Single User  
from V4.x to V5.1; Single license <sup>J)</sup>

**6BQ3 030-1AA60-3AB0**

B) Subject to export regulations: AL: N and ECCN: EAR99S

J) Subject to export regulations: AL: N and ECCN: 5D992B2

#### Overview

- Technical product data for S7-300, S7-400 and ET 200
- For in use in CAD/CAE applications
- Consists of:
  - Component data as per ECAD component standard
  - Dimensioned drawings for CAD/CAE systems
  - Macros/Macro libraries

#### Ordering data

#### Order No.

##### Technical product data for CAX applications

##### Function:

Product data for use in  
CAD/CAE applications

One off license

Software Update Service

**6ES7 991-0CC00-0YX0**

**6ES7 991-0CC00-0YX2**

# SIMATIC Industrial Software

## Supplementary Components

### HVAC Lite Library runtime software

#### Overview



The HVAC Lite Library runtime software features STEP 7 functions for all aspects of building automation, in particular for heating, ventilation, air conditioning and sanitary facilities as well as for the supply and distribution of media.

HVAC Lite Library provides users with the following features:

- Future-oriented thanks to constant updates and expansions
- Modifications in line with new SIMATIC components
- Use of all SIMATIC signal modules (input/output modules)
- Use of the new SIMATIC S7-300 central controller modules with Micro Memory Card (CPU 313 or later)
- Openness thanks to standardized and documented interfaces
- Expansion capability and flexibility thanks to bit-modular block concept
- Safety thanks to tested quality-assured software blocks
- Standardized software structure for easy expansion and modification
- Engineering guideline to support structured software generation
- Predefined safety and operating philosophy
- Documented block functionality
- Protection of user engineering through runtime license

Additional information is available in the Internet under:

<http://www.siemens.com/industrial-hvac>

#### Technical specifications

HVAC Lite Library	
<b>Basic hardware</b>	
SIMATIC S7	S7-300
Central processing units	CPU 313...317 (with MMC card and flag memory area 0...255)
Signal modules	All
Communication modules	PROFIBUS, Ethernet, AS-Interface
<b>Functionality</b>	
Input/output functions	Yes
Open-loop and closed-loop control functions	Yes
Optimization functions	Time switching
<b>Human machine interface</b>	
SIMATIC HMI	Yes
Via S7 functions	
•WinCC	Yes
•SCADA systems	Yes
•Operator control and monitoring via S7 OPC server	Yes
<b>Communication</b>	
PROFIBUS DP as master	Yes
AS-Interface as master	Yes
PROFIBUS DP as slave	Yes
SR via Ethernet	(optional instead of operator control and monitoring)
FDL via PROFIBUS	
S7 functions via MPI, PROFIBUS, Ethernet	Yes
<b>Engineering</b>	
Automation software	STEP 7 STL (LAD/CSF)
HMI software	SIMATIC ProTool/WinCC flexible/WinCC

#### Ordering data

#### Order No.

##### HVAC Lite Library

STEP 7 functions for building automation, e.g. for heating, ventilation, air-conditioning and sanitation engineering

- HVAC Lite Engineering Set; Module library, examples, documentation; license for 40 data points

**6FL4 214-4ND47-0AA0**

- Runtime license for 1 SIMATIC-CPU; max 40 data points

**6FL4 214-4ND40-0AB0**

- Runtime license for 1 SIMATIC-CPU; max. 125 data points

**6FL4 214-4ND41-0AB0**

- Runtime license for 1 SIMATIC-CPU; unlimited data points

**6FL4 214-4ND42-0AB0**

- Powerpack for 1 SIMATIC CPU; 40 to 125 data points

**6FL4 214-4ND43-0AD0**

- Powerpack for 1 SIMATIC CPU; 125 to unlimited data points

**6FL4 214-4ND44-0AD0**

- Powerpack for 1 SIMATIC CPU; 40 to unlimited data points

**6FL4 214-4ND45-0AD0**

#### Overview

- External EPROM programming device
- For programming SIMATIC memory cards, SIMATIC micro memory cards as well as SIMATIC EPROM and EEPROM modules
- For connection to the PC via the USB interface

For further information see section 8 „SIMATIC programming devices“.





# Programming devices



<b>8/2</b>	<b>Programming devices</b>
8/2	Field PG
8/5	Power PG
<b>8/8</b>	<b>Accessories</b>
8/8	External prommer
8/9	UD 700 Update Device
8/10	Trolley for Field PG and Power PG
8/11	CP 5613 A2
8/13	CP 5613 FO
8/15	CP 5614 A2
8/17	CP 5614 FO
8/19	CP 5512
8/21	CP 5611
8/23	SOFTNET for PROFIBUS
8/24	CP 1613
8/26	S7-REDCONNECT
8/27	CP 1612
8/29	CP 1512
8/31	CP 7515
8/33	SOFTNET for Industrial Ethernet
8/34	SOFTNET PN IO
8/35	OPC server for Industrial Ethernet
8/37	PN CBA OPC server
8/39	SNMP OPC server



# Programming devices

## Programming devices

### Field PG

#### Overview



- The mobile, industry-compatible programming device with Pentium 4, 2.2 GHz
- Used primarily for start-up, maintenance and servicing of automation systems
- Ideal for mobile on-site use, even when space is at a premium or when traveling
- Physical dimensions of a notebook PC
- Ready to use with preinstalled Engineering Software (STEP 7 Professional, STEP 5, etc.) and integrated interfaces  
–Engineering packages are released for use through license keys and authorization

#### Technical specifications

General features	
Configuration	Notebook
Processor	Mobile Intel Pentium 4, 2.2 GHz incl. 512 KB 2nd level cache
Main memory	512 MB; expandable to 1 GB
Free expansion slots	PC card (PCMCIA): 1 x type III or 2 x type II
Graphics	Unified Memory Architecture, up to 32 MB graphics memory; max. 1600 x 1200 external monitor
Display	14.1" TFT display, 1024 x 768 resolution; optional SXGA+, 1400 x 1050 resolution
Loudspeaker	Integrated stereo loudspeakers
Pointing device	Touch pad
Operating system	Windows 2000 Professional or Windows XP Professional
Power supply	External wide-range power supply unit, lithium-ion battery
Connection to theft protection	Kensington lock
Warranty	24 months on hardware components (except for rechargeable battery)
Disk drives	
Hard disk	40 GB; 80 GB optional 2,5"
DVD-ROM/CD-RW	24/10/24-times, for using rewritable CDs or for burning CDs
DVD-ROM/DVD-R/RW	optional; 2/1/8-times (DVD), 16/10/24-times (CD-ROM), for rewritable DVDs or for burning DVDs (multistandard)
Diskette drive	1.44 MB; 3.5"

Interfaces	
PROFIBUS DP/MPI	12 Mbps (CP 5611-compatible)
COM 1	25-pin Sub D, female; TTY; via I-Box
Application programmer interface	For memory cards, micro cards and S5 EPROM modules (using an adapter)
Ethernet	10/100 Mbps (CP 1411-compatible)
USB 2.0	One high power, one low power
PC card (PCMCIA)	1 x type III or 2 x type II
VGA	1 x
COM 2 (serial)	9-pin Sub-D, male; V.24; through I-Cable
Parallel (LPT 1)	25-pin Sub-D female; ECC/ECP; through I-Cable
Headset	1 (stereo)
Microphone	1 (stereo)
Ambient conditions	
Degree of protection to EN 60529	IP30 at the front with unit closed
Vibrations	Checked as per DIN IEC 68-2-6
• Operation	10 to 58 Hz: 0.01875 mm, 58 to 500 Hz: 4.9 m/s <sup>2</sup>
• Transport	5 to 9 Hz: 3.5 mm; 9 to 500 Hz: 9.8 m/s <sup>2</sup>
Resistance to shock	Tested to DIN IEC 68-2-29
• Operation	50 m/s <sup>2</sup> , 30 ms, 100 shocks
• Storage/transport	250 m/s <sup>2</sup> , 6 ms, 1000 shocks

#### Technical specifications (continued)

##### Electromagnetic compatibility (EMC)

• Noise emission	EN 55022 Class B
• Immunity to line-borne interference in power supply lines	± 2 kV (as per IEC 1000-4-4; 1995; burst) ± 1 kV (as per IEC 1000-4-5; 1995; symm. surge) ± 2 kV (as per IEC 1000-4-5; 1995; asymm. surge)
• Immunity to signal line interference	± 1 kV (as per IEC 1000-4-4; 1995; burst; length < 3 m) ± 2 kV (as per IEC 1000-4-4; 1995; burst; length > 3 m) ± 1 kV (as per IEC 1000-4-4; 1995; Surge symm; length > 3 m) ± 2 kV (as per IEC 1000-4-4; 1995; Surge asymm; length > 3 m)
• Immunity to static discharge interference	± 4 kV contact discharge (as per IEC 1000-4-2: 1995) ± 8 kV air discharge (as per IEC 1000-4-2: 1995)
• Immunity to high-frequency emissions	10 V/m; 80 to 1000 MHz; 80% AM (as per ENV 50140: 1993) 10 V/m; 900 MHz 50% duty cycle (to ENV 50204: 1995)
• Immunity to high-frequency current	10 V; 9 kHz to 80 MHz
• Immunity to magnetic field interference	30 A/m; 50 Hz

Temperature	Checked as per DIN IEC 60068-2-2 1994, DIN IEC 68-2-1, DIN IEC 68-2-14
• Operation <sup>1)</sup>	+ 5 to + 40 °C
• Storage/transport	- 20 to + 60 °C
• Gradient, max.	10 °C/h (no condensation)
Relative humidity	Checked as per DIN IEC 68-2-3, DIN IEC 68-2-30, DIN IEC 68-2-56
• Operation	5% to 80% at 25 °C (no condensation)
• Storage/transport	5% to 95% at 25 °C (no condensation)
<b>Weights and dimensions</b>	
Dimensions (W x H x D) in mm	328 x 294 x 52
Weight, approx.	3.9 kg

1) Batteries can be charged only up to a temperature of 35 °C (controlled with a charge controller)

# Programming devices

## Programming devices

### Field PG

#### Ordering data

#### Order No.

#### Field PG programming device<sup>D)</sup>

6ES7 711-2- - - - 3

#### Processor

- Pentium 4; 2.2 GHz, 512 KB 2nd Level Cache

#### Installed software

- Upgrade installation
- STEP 7, STEP 7 Micro/WIN
- STEP 5, STEP 7, STEP 7 Micro/WIN
- STEP 5, STEP 7 Professional, STEP 7 Micro/WIN
- STEP 7 Professional, STEP 7 Micro/WIN

#### Expansion

- None
- SIMATIC PG/PC Image&Partition Creator

#### RAM

- 256 MB RAM (1 x 256 MB DDR RAM)
- 512 MB RAM (1 x 512 MB DDR RAM)
- 1 GB RAM (2 x 512 MB DDR RAM)

#### Display, drives

- TFT XGA (1024x768), DVD-ROM/CD-RW drive
- TFT XGA (1024x768), DVD-R/RW / CD-R/RW drive
- TFT SXGA (1400x1050), DVD-ROM/CD-RW drive
- TFT SXGA (1400x1050), , DVD-R/RW / CD-R/RW drive

#### Hard disk drive

- 40 GB EIDE
- 80 GB EIDE

#### Operating system

- Windows 2000 MUI Ger, En, Fr, Sp, It
- Windows 2000 (German)
- Windows 2000 (French)
- Windows 2000 (Spanish)
- Windows 2000 (Italian)
- Windows XP Prof. MUI Ger, En, Fr, Sp, It

#### Power cable (required)

- for Germany, France, the Netherlands, Spain, Belgium, Austria, Sweden, Finland
- for Great Britain
- for Switzerland
- for the USA, Japan
- for Italy
- for Germany, France, the Netherlands, Spain, Belgium, Austria, Sweden, Finland; Keyboard with country-specific labeling for France, Belgium, Switzerland
- for Switzerland Keyboard with country-specific labeling for France, Belgium, Switzerland

A

B

C

D

E

A

B

1

2

3

1

2

4

5

2

3

F

G

H

J

K

L

B

C

D

E

F

G

H

#### Order No.

#### Memory expansion

128 MB DDR RAM<sup>A)</sup>

6ES7 648-2AE10-0CA0

256 MB DDR RAM<sup>A)</sup>

6ES7 648-2AE20-0CA0

512 MB DDR RAM<sup>A)</sup>

6ES7 648-2AE30-0CA0

#### USB mouse (PS/2 compatible)<sup>A)</sup>

6ES7 790-0AA01-0XA0

#### AC/DC power supply unit

6ES7 798-0GA00-0XA0

#### Power cable

for Germany, France, the Netherlands, Spain, Belgium, Austria, Sweden, Finland

6ES7 900-5AA00-0XA0

for Great Britain

6ES7 900-5BA00-0XA0

for Switzerland

6ES7 900-5CA00-0XA0

for the USA, Japan

6ES7 900-5DA00-0XA0

for Italy

6ES7 900-5EA00-0XA0

#### Spare rechargeable battery (lithium-ion, 6.6 Ah)<sup>1)</sup>

6ES7 798-0AA05-0XA0

#### MPI cable

for connecting a PG and SIMATIC S7 via MPI; 5 m

6ES7 901-0BF00-0AA0

#### EPROM programming adapter

for SIMATIC S5 EPROM programming with the Field PG

6ES7 798-0CA00-0XA0

#### Backpack for Field PG

6ES7 798-0DA00-0XA0

#### Trolley for Field PG

Backpack with wheels and telescope handle

6ES7 798-0FA00-0XA0

#### Dual boot system

for parallel operation of Windows NT 4.0 and Windows XP

For Field PG P4 (ordered with Windows XP and current STEP 7 software); German<sup>D)</sup>

9AC1 001-3AB05-0AA0

For Field PG P4 (ordered with Windows XP and current STEP 7 software); English<sup>D)</sup>

9AC1 001-3AB05-0BA0

Upgrade for Field PG: Existing DualBoot for Windows 98/Windows NT to Windows XP/Windows NT (incl. STEP 7 upgrade<sup>2)</sup>); German<sup>D)</sup>

9AC1 001-1AB05-0AA0

Upgrade for Field PG: Existing DualBoot for Windows 98/Windows NT to Windows XP/Windows NT (incl. STEP 7 upgrade<sup>2)</sup>); English<sup>D)</sup>

9AC1 001-1AB05-0BA0

A) Subject to export regulations: AL: N and ECCN: EAR99H

D) Subject to export regulations: AL: N and ECCN: 5D992B1

1) The capacity of the battery is reduced for technical reasons with each charge or discharge or when stored at excessively high or low temperatures. This means that over time, the operating time for each full charge is reduced. In normal use, the battery can be recharged within six months of purchasing the Field PG. Reduction in charging capacity is excluded from the guarantee. The battery function is guaranteed for six months. After the six months have elapsed, when the performance of the battery has fallen significantly, it is recommended that the battery is replaced with an original Siemens battery.

2) STEP 7 V5.2 or V5.3 is required, at least 40 GB hard disk, at least 256 MB main memory.

### Overview



- High-performance programming workstation
- Used primarily for configuration, programming and simulation
- Ideal for use in the office as a replacement desktop PC thanks to flexible mounting and the wireless full keyboard.
- High-end PC performance (e.g., Pentium 4, 2.2 GHz, 15" TFT display ...) as well as expansion capability thanks to 2 PCI slots
- Ready to use with preinstalled Engineering Software (STEP 7 Professional, STEP 5, etc.) and integrated SIMATIC interfaces  
–Engineering packages are released for use through license keys and authorization

### Technical specifications

General features	
Configuration	Mobile computer
Processor	Mobile Intel Pentium 4, 2.2 GHz incl. 512 KB 2nd level cache
Main memory	512 MB; expandable to 1.5 GB
Graphics	Unified Memory Architecture (with 32 MB video memory) for the connection of an external monitor with a resolution of up to 1600 x 1200, 75 Hz
Display	<ul style="list-style-type: none"> <li>• 15" TFT display, 1024 x 768 resolution</li> <li>• 15" TFT display, 1400 x 1050 resolution</li> </ul>
PC expansion slots	2 PCI (1 long; 1 short)
PC card slots	2 PC cards (PCMCIA): One type III or two type II
Loudspeaker	16-bit stereo
Pointing device	Touch Pad
Operating system	Windows 2000 Professional or Windows XP Professional
Power supply	Internal wide-range power supply unit
Connection to theft protection	Kensington lock
Warranty	24 months on hardware components
Disk drives	
Hard disk	80 GB 3.5"
DVD-ROM/CD-RW	24/10/24-times, for using rewritable CDs or for burning CDs
DVD-ROM/DVD-R/RW	optional; 2/1/8-times (DVD), 16/10/24-times (CD-ROM), for rewritable DVDs or for burning DVDs (multistandard)
Diskette drive	1.44 MB; 3,5"

Interfaces	
PROFIBUS DP/MPI	12 Mbps (CP 5611-compatible)
Ethernet	10/100 Mbps (CP 1411-compatible)
USB 2.0	1 high power, 1 low power
COM1	TTY for SIMATIC S5; 25-pin
COM2	V.24 for SIMATIC OPs, converters, etc.; 9-pin
Programming interface	For memory cards, micro memory cards and S5 EPROM modules (using an adapter)
LPT	1 x (Centronics); 25-pin
VGA	1x
Headset	1 (stereo)
Microphone	1 (stereo)
Ambient conditions	
Degree of protection to EN 60529	IP30 at the front with unit closed
Vibrations	Checked as per IEC 68-2-6
• Operation	10 to 58 Hz: 0.01875 mm, 58 to 500 Hz: 4.9 m/s <sup>2</sup>
• Transport	5 to 9 Hz: 3.5 mm; 9 to 500 Hz: 9.8 m/s <sup>2</sup>
Resistance to shock	Checked as per IEC 68-2-29
• Operation	50 m/s <sup>2</sup> , 30 ms, 100 shocks
• Storage/transport	250 m/s <sup>2</sup> , 6 ms, 1000 shocks

#### Technical specifications (continued)

##### Electromagnetic compatibility (EMC)

• Noise emission	EN 55022 Class B
• Immunity to line-borne interference in power supply lines	± 2 kV (as per IEC 1000-4-4; 1995; burst) ± 1 kV (as per IEC 1000-4-5; 1995; symm. surge) ± 2 kV (as per IEC 1000-4-5; 1995; asymm. surge)
• Immunity to signal line interference	± 1 kV (as per IEC 1000-4-4; 1995; burst; length < 3 m) ± 2 kV (as per IEC 1000-4-4; 1995; burst; length > 3 m) ± 1 kV (as per IEC 1000-4-4; 1995; symm. surge; length > 3 m) ± 2 kV (as per IEC 1000-4-4; 1995; asymm. surge; length > 3 m)
• Immunity to static discharge interference	± 4 kV contact discharge (as per IEC 1000-4-2: 1995) ± 8 kV air discharge (as per IEC 1000-4-2: 1995)
• Immunity to HF emissions	10 V/m; 80 to 1000 MHz; 80% AM (as per ENV 50140: 1993) 10 V/m; 900 MHz 50% ED (as per ENV 50204: 1995)
• Immunity to high-frequency current	10 V; 9 kHz to 80 MHz
• Immunity to magnetic field interference	30 A/m; 50 Hz

Temperature	Checked as per IEC 60068-2-2 1994, IEC 68-2-1, IEC 68-2-14
• Operation	+ 5 to + 40 °C
• Storage/transport	- 20 to + 60 °C
• Gradient, max.	10 °C/h (no condensation)
Relative humidity	Checked as per IEC 68-2-3, IEC 68-2-30, IEC 68-2-56
• Operation	5% to 80% at 25 °C (no condensation)
• Storage/transport	5% to 95% at 25 °C (no condensation)
<b>Weights and dimensions</b>	
Dimensions (W x H x D) in mm	392 x 325 x 135
Weight, approx.	6.9 kg

Ordering data	Order No.	Order No.
<b>Power PG programming device<sup>D)</sup></b>	<b>6ES7 751-0■■■■-0■■■3</b>	
Processor		
•Pentium 4 2.2 GHz, 512 KB 2nd level cache		
Installed software		
•Upgrade installation	A	
•STEP 7, STEP 7-Micro/WIN	B	
•STEP 5, STEP 7, STEP 7-Micro/WIN	C	
•STEP 5, STEP 7 Professional, STEP 7-Micro/WIN	D	
•STEP 7 Professional, STEP 7-Micro/WIN	E	
Expansion		
•None	A	
•SIMATIC PG/PC Image&Partition Creator	B	
RAM		
•512 MB RAM (2 x 256 MB DDR RAM)	2	
•1 GB RAM (2 x 512 MB DDR RAM)	3	
•1.5 GB RAM (3 x 512 MB DDR RAM)	4	
Display, drives		
•TFT XGA (1024x768), DVD-ROM/CD-RW drive	1	
•TFT XGA (1024x768), DVD-R/RW / CD-R/RW drive	2	
•TFT SXGA (1400x1050), DVD-ROM/CD-RW drive	4	
•TFT SXGA (1400x1050), DVD-R/RW / CD-R/RW drive	5	
Hard disk drive		
•80 GB EIDE		
Operating system		
•Windows 2000 MUI Ger, En, Fr, Sp, It	F	
•Windows 2000 (German)	G	
•Windows 2000 (French)	H	
•Windows 2000 (Spanish)	J	
•Windows 2000 (Italian)	K	
•Windows XP Prof. MUI Ger, En, Fr, Sp, It	L	
Power cable (required)		
•for Germany, France, the Netherlands, Spain, Belgium, Austria, Sweden, Finland	B	
•for Great Britain	C	
•for Switzerland	D	
•for the USA, Japan	E	
•for Italy	F	
•for Germany, France, the Netherlands, Spain, Belgium, Austria, Sweden, Finland; Keyboard with country-specific labeling for France, Belgium, Switzerland	G	
•for Switzerland Keyboard with country-specific labeling for France, Belgium, Switzerland	H	
<b>Memory expansion</b>		
256 MB DDR RAM <sup>A)</sup>		<b>6ES7 648-2AD20-0EA0</b>
512 MB DDR RAM <sup>A)</sup>		<b>6ES7 648-2AD30-0EA0</b>
1 GB DDR RAM <sup>A)</sup>		<b>6ES7 648-2AD40-0EA0</b>
<b>USB mouse (PS/2 compatible)<sup>A)</sup></b>		<b>6ES7 790-0AA01-0XA0</b>
<b>Power cable</b>		
for Germany, France, the Netherlands, Spain, Belgium, Austria, Sweden, Finland		<b>6ES7 900-0AA00-0XA0</b>
for the United Kingdom		<b>6ES7 900-0BA00-0XA0</b>
for Switzerland		<b>6ES7 900-0CA00-0XA0</b>
for the USA, Japan		<b>6ES7 900-0DA00-0XA0</b>
for Italy		<b>6ES7 900-0EA00-0XA0</b>
<b>MPI cable</b>		<b>6ES7 901-0BF00-0AA0</b>
for connecting a PG and SIMATIC S7 via MPI; 5 m		
<b>EPROM programming adapter</b>		<b>6ES7 798-0CA00-0XA0</b>
for SIMATIC S5 EPROM programming with the Power PG		
<b>Backpack for Power PG</b>		<b>6ES7 798-0EA00-0XA0</b>
<b>Trolley for Power PG</b>		<b>6ES7 798-0FA00-0XA0</b>
Backpack with wheels and telescope handle		
<b>Dual boot system</b>		
for parallel operation of Windows NT 4.0 and Windows XP		
For Power PG P4 (ordered with Windows XP and current STEP 7 software); German <sup>D)</sup>		<b>9AC1 001-4AB05-0AA0</b>
For Power PG P4 (ordered with Windows XP and current STEP 7 software); English <sup>D)</sup>		<b>9AC1 001-4AB05-0BA0</b>
Upgrade for Power PG: Existing DualBoot for Windows 98/Windows NT to Windows XP/Windows NT (incl. STEP 7 upgrade <sup>1)</sup> ); German <sup>D)</sup>		<b>9AC1001-2AB05-0AA0</b>
Upgrade for Power PG: Existing DualBoot for Windows 98/Windows NT to Windows XP/Windows NT (incl. STEP 7 upgrade <sup>1)</sup> ); English <sup>D)</sup>		<b>9AC1 001-2AB05-0BA0</b>

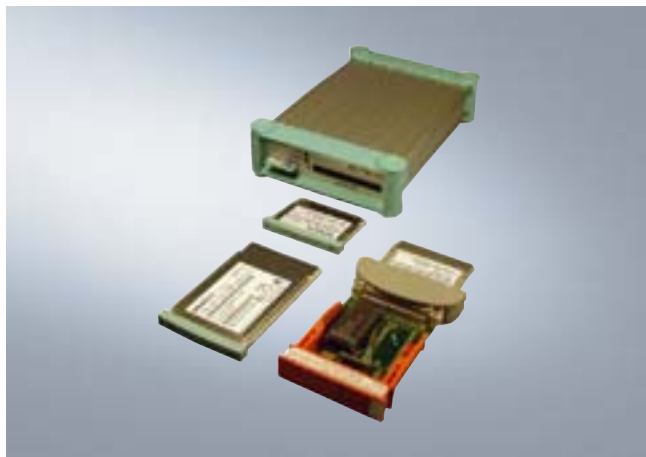
A) Subject to export regulations: AL: N and ECCN: EAR99H

D) Subject to export regulations: AL: N and ECCN: 5D992B1

1) STEP 7 V5.2 or V5.3 is required, at least 40 GB hard disk, at least 256 MB main memory.

### External prommer

#### Overview



- External EPROM programming device
- For programming SIMATIC memory cards, SIMATIC micro memory cards as well as SIMATIC EPROM and EEPROM modules
- For connection to the PC via the USB interface

#### Technical specifications

	6ES7 792-0AA00-0XA0
<b>Power supply</b>	
•Description	90 to 264 V; 47 to 63 Hz; long range power pack
<b>Environmental requirements</b>	
Operating temperature	
- min.	5 °C
- max.	40 °C
Storage/transportation temperature	
- min.	-20 °C
- max.	60 °C

	6ES7 792-0AA00-0XA0
<b>Dimensions and weight</b>	
•Weight, approx.	400 g
•Width	172 mm
•Height	40 mm
•Depth	121 mm

#### Ordering data

#### Order No.

#### EPROM programming device USB-Prommer

6ES7 792-0AA00-0XA0

for programming SIMATIC  
memory cards and EPROM  
modules



#### Overview



- The service partner for simplified program updating
- For saving programs and configuration data

#### Technical specifications

	6ES7 700-0AL00-0YA0
<b>Supply voltages</b>	
Rated value	
- 24 V DC	Yes
- permissible range, lower limit (DC)	15 V
- permissible range, upper limit (DC)	30 V
<b>Current consumption</b>	
• Current consumption, max.	160 mA; typical 80 mA
<b>Interfaces</b>	
• MPI	Yes; RS 485
<b>EMC</b>	
• Emitted interference to comply with EN 55022, class B	Yes; corresponds to CISPR 22
• Interference immunity on signal lines	+/-2 kV (to IEC 1000-4-4; burst)
• Interference immunity on signal lines to comply with IEC 61000-4-4	Yes
Interference immunity to the discharge of static electricity	
- Description	+/-6 kV contact; +/-8 kV air (to IEC 1000-4-2; ESD)
- To comply with IEC 61000-4-2	Yes
<b>Environmental requirements</b>	
Operating temperature	
- min.	0 °C
- max.	45 °C
Storage/transportation temperature	
- min.	-20 °C
- max.	70 °C

	6ES7 700-0AL00-0YA0
Relative humidity	
- Operation, min.	5 %
- Operation, max.	95 %; at 25°C (no condensation), tested to DIN IEC 68-2-3
Vibration	
- Operation, tested to IEC 60068-2-6	Yes; IEC 68, Part 2-6; 10 to 58 Hz; constant amplitude 0.075 mm; 58 to 150 Hz; acceleration 9.8 m/s <sup>2</sup>
Impact test	
- tested to IEC 60068-2-29	Yes; IEC 68, Part 2-27/29; semi-sinusoidal 100 m/s <sup>2</sup> (10 g), 16 ms
Degree of protection and class of protection	
- IP 20	Yes; Housing
- IP 65	Yes; Front
<b>Standards, approvals, certification</b>	
• DIN/ISO 9001	Yes
• CSA approval	Yes; to standard C22.2 or 950 or C22.2 No. 220, Report LR81690
• Developed to comply with IEC1131	Yes
• FM approval	Yes; FM standards No. 3611, Class I, Div. 2, Group A, B, C, D
• UL approval	Yes; UL 1950, E11 5352; chan. standard C22.2 No. 950
<b>Dimensions and weight</b>	
• Weight, approx.	250 g; without cables
• Width	144 mm
• Height	72 mm
• Depth	27 mm

#### Ordering data

Order No.	
<b>UD 700 update device<sup>B)</sup></b>	<b>6ES7 700-0AL00-0YA0</b>
For transferring configuration data from SIMATIC C7-62x; with UD connecting cable to C7, adapter to RS 232 cable and manual in German/English	
<b>RS 232 cable (zero modem cable)</b>	<b>6ES7 901-1BF00-0XA0</b>
9-pin female connector/9-pin female connector	

B) Subject to export regulations: AL: N and ECCN: EAR99S

#### Power pack (accessory)

Order No.	
for power supply if not connected to C7	
240 V AC	<b>6ES7 705-0AA00-1AA0</b>
120 V AC	<b>6ES7 705-0AA00-1BA0</b>

# Programming devices

## Accessories

### Trolley for Field PG and Power PG

#### Overview



- Trolley (carry case with telescopic handle and integrated rollers) for the Field PG and Power PG

#### Technical specifications

	<b>6ES7 798-0FA00-0XA0</b>
<b>Dimensions and weight</b>	
•Weight, approx.	1.5 kg
•Width	380 mm
•Height	510 mm
•Depth	250 mm

#### Ordering data

<b>Trolley for Power PG</b>	<b>Order No.</b>
Backpack with wheels and telescopic handle	<b>6ES7 798-0FA00-0XA0</b>

### Overview



- PCI card (universal key 5 V/3.3 V) with microprocessor for system interfacing for PCs and SIMATIC programming devices/PC to PROFIBUS up to 12 Mbit/s
- Communication services:
  - PROFIBUS DP master according to IEC 61158/EN 50170
  - PG/OP communication with STEP 5 and STEP 7
  - S7 communication
  - S5-compatible communication (SEND/RECEIVE) on the basis of the FDL interface
  - PROFIBUS FMS according to IEC 61158/EN 50170
- Extensive diagnostic facilities for installation, commissioning and operation of the module
- High performance through direct dual port RAM access
- Event and filter mechanism for relieving the host CPU
- Multiple protocol operation and parallel operation of up to 4 CPs
- Implementation for motion control applications possible through support of the equidistant mode
- The corresponding OPC Server and configuration tools are included in the scope of supply of the respective communications software

### Technical specifications

Data transmission rates	9.6 kbit/s to 12 Mbit/s
Interfaces	
• Connection to PROFIBUS	9-pin Sub-D connector
• Connection to PG/PC	PCI (32 bit; 3.3 V/5 V; universal keyed; 33/66 MHz)
Supply voltage (from PCI)	5 V DC $\pm$ 5%
Power consumption from 5 V DC	0.8 A
Power loss	4 W
Perm. environmental conditions	
• Operating temperature	+5 °C to +50 °C
• Transport/storage temperature	-40 °C to +70 °C
• Relative humidity	max. 85 % at +30 °C
Design	
• Module format	short PCI card
• Dimensions (W x H) in mm	107 x 168
• Weight	approx. 105 g
• Space required	1 x PCI slot (32 bit; 3.3 V/5 V; universal keyed; 33/66 MHz)
DP-Master	DP-V0, DP-V1, DP-V2

#### Performance data: Single protocol operation

• Number of connectable DP slaves	max. 124
• Number of parallel FDL tasks to be processed	max. 120
• Number of PG/OP and S7 connections	max. 50 <sup>1)</sup>
• Number of FMS connections	max. 40 <sup>2)</sup>

1) For Credit = 1; PDU size  $\leq$  480 bytes

2) For Credit = 1

### CP 5613 A2

Ordering data	Order No.	Order No.
<b>CP 5613 A2 communications processor</b> <sup>D)</sup> PCI card (32-bit; 3.3 V/5 V) for connection to PROFIBUS incl. DP-Base software with NCM PC; DP-RAM interface for DP master, incl. PG and FDL protocol; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, Class A, for 32-bit Windows 2000 Professional/Server; Windows XP Professional, 2003 Server, German/English	<b>6GK1 561-3AA01</b>	<b>FMS-5613 V6.2</b> <sup>D)</sup> Software for FMS protocol, incl. PG/OP communication; FDL, FMS OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional; 2003 Server, 2000 Professional/Server, for CP 5613, CP 5613 A2, CP 5613 FO, CP 5614, CP 5614 A2, CP 5614 FO German/English
<b>Development Kit DK-5613</b> Software development kit for CP 5613/CP 5614/CP 5613 A2/CP 5614 A2/CP 5613 FO/CP 5614 FO for integration in other operating system environments on systems with a PCI slot	see <a href="http://www.siemens.com/simatic-net/dk5613">http://www.siemens.com/simatic-net/dk5613</a>	<b>PROFIBUS FastConnect bus connector RS 485 Plug 180</b> With 180° cable outlet
<b>DP-5613 V6.2</b> <sup>D)</sup> Software for DP, incl. PG and FDL protocol, OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional; 2003 Server, 2000 Professional/Server, for CP 5613, CP 5613 A2, CP 5613 FO, CP 5614, CP 5614 A2, CP 5614 FO German/English	<b>6GK1 713-5DB62-3AA0</b>	<b>PROFIBUS bus terminal 12M</b> Bus terminal for connection of PROFIBUS stations up to 12 Mbit/s with plug-in cable
<b>S7-5613 V6.2</b> <sup>D)</sup> Software for S7 communication, incl. PG and FDL protocol, OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional; 2003 Server, 2000 Professional/Server, for CP 5613, CP 5613 A2, CP 5613 FO, CP 5614, CP 5614 A2, CP 5614 FO German/English	<b>6GK1 713-5CB62-3AA0</b>	<b>SIMATIC NET Software Update Service</b> For Industrial Ethernet, PROFIBUS, OPC server, for one year service incl. manuals on CD-ROM  Requirement: SIMATIC NET PC/Windows products German/English

D) Subject to export regulations: AL: N and ECCN: 5D992B1

#### Overview



- PCI card with microprocessor for system connection for PCs and SIMATIC PGs/PC to the optical PROFIBUS at up to 12 Mbit/s
- Integral fiber-optic interface for direct FO connection
- Communication services:
  - PROFIBUS DP masters according to IEC 61158/EN 50170
  - PG/OP communication with STEP 5 and STEP 7
  - S7 communication
  - S5-compatible communication (SEND/RECEIVE) based on the FDL interface
  - PROFIBUS FMS acc. to IEC 61158/EN 50170
- Comprehensive diagnostics possibilities for installation, start-up and operation of the module
- High performance over direct dual-port RAM access
- Event and filter mechanisms to reduce the loading on the host CPU
- Multi-protocol mode and parallel operation of up to 4 CPs
- Implementation in Motion Control applications is possible because a constant bus cycle time is supported
- The appropriate OPC server and configuration tools are included in the scope of supply of the respective communication software

#### Technical specifications

Data transmission rates	9.6 kbit/s to 12 Mbit/s
Interfaces	
• Connection to PROFIBUS	2 x duplex socket (FO)
• Connection to PG/PC	PCI (32 bit)
• External power supply (optical) through standard external power supply	Low voltage socket 3.5 mm/1.3 mm
Supply voltage from PCI	5 V DC +/- 5 % 12 V DC +/- 5 %
Current consumption	
• From 5 V DC	1.4 A
• From 12 V DC	0.3 A
Power loss	7 W
Supply voltage (optional)	9 to 12 V DC
• Current consumption	0.4 A
• Power loss	3.6 to 4.8 W
Perm. environmental conditions	
• Operating temperature	
- Without fan	+5°C to +40°C
- With fan (air flow 0.5 m/s)	+5°C to +60°C
• Transport/storage temperature	-40 °C to +70 °C
• Relative humidity	Max. 95% at +25 °C
Design	
• Module format	PCI card
• Dimensions (W x H) in mm	107 x 168
• Weight	Approx. 250 g
• Space required	1 x PCI slot (32 bits; 5 V)
DP master	DP V0, DP V1, DP V2

#### Performance data: Single protocol operation

• Number of connectable DP slaves	Max. 122
• Number of parallel FDL tasks to be processed	Max. 120
• Number of PG/OP and S7 connections	Max. 50 <sup>1)</sup>
• Number of FMS connections	Max. 40 <sup>2)</sup>

1) For Credit = 1; PDU size ≤ 480 byte

2) For Credit = 1

# Programming devices

## Accessories

### CP 5613 FO

Ordering data	Order No.		Order No.
<b>CP 5613 FO communications processor</b> <sup>D)</sup> PCI card (32-bit; 5 V) for connection to optical PROFIBUS incl. DP-Base software with NCM PC; DP-RAM interface for DP master, incl. PG and FDL protocol; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, Class A, for 32-bit Windows 2000 Professional/Server: Windows XP Professional, 2003 Server German/English	<b>6GK1 561-3FA00</b>	<b>S7-5613 V6.2</b> <sup>D)</sup> Software for S7 communication, incl. PG and FDL protocol, OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, Windows 2000 Professional/Server, for CP 5613, CP 5613 FO, CP 5614, CP 5614 FO German/English	<b>6GK1 713-5CB62-3AA0</b>
<b>Development Kit DK-5613</b> Software Development Kit for CP 5613/CP 5614 for integration in other operating system environments on systems with a PCI slot	You can find the DK-5613 on the Internet at: <a href="http://www.siemens.com/simatic-net/dk5613">http://www.siemens.com/simatic-net/dk5613</a>	<b>FMS-5613 V6.2</b> <sup>D)</sup> Software for FMS protocol, incl. PG/OP communication; FDL, FMS OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, Windows 2000 Professional/Server, for CP 5613, CP 5613 FO, CP 5614, CP 5614 FO German/English	<b>6GK1 713-5FB62-3AA0</b>
<b>DP-5613 V6.2</b> <sup>D)</sup> Software for DP, incl. PG and FDL protocol, OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, Windows 2000 Professional/Server, for CP 5613, CP 5613 FO, CP 5614, CP 5614 FO German/English	<b>6GK1 713-5DB62-3AA0</b>	<b>SIMATIC NET Software Update Service</b> <sup>D)</sup> For Industrial Ethernet, PROFIBUS, OPC server, for one year service incl. manuals on CD-ROM  Requirement: SIMATIC NET PC/Windows products German/English	<b>6GK1 704-0AA00-3AA2</b>

D) Subject to export regulations: AL: N and ECCN: 5D992B1

#### Overview



- PCI card (universal key 5 V/3.3 V) with microprocessor for system interfacing for PCs and SIMATIC programming devices/PC to PROFIBUS up to 12 Mbit/s
- Communication services:
  - PROFIBUS DP master according to IEC 61158/EN 50170 on a PCI card
  - PG/OP communication with STEP 5 and STEP 7
  - S7 communication
  - S5-compatible communication (SEND/RECEIVE) on the basis of the FDL interface
  - PROFIBUS FMS according to IEC 61158/EN 50170
- Extensive diagnostic facilities for installation, commissioning and operation of the module
- High performance through direct dual port RAM access
- Event and filter mechanism for relieving the host CPU
- Multiple protocol operation and parallel operation of up to 4 CPUs
- Implementation for motion control applications possible through support of the equidistant mode
- The corresponding OPC Server and configuration tools are included in the scope of supply of the respective communications software

#### Technical specifications

Transmission rates	9.6 kbit/s to 12 Mbit/s
Interfaces	
• Connection to PROFIBUS DP (master)	9-pin Sub-D socket
• Connection to PROFIBUS DP (slave)	9-pin Sub-D socket
• Connection to PG/PC	PCI (32-bit; 3.3 V/5 V; universal keyed; 33/66 MHz)
Supply voltage (from PCI)	5 V DC $\pm$ 5 %
Current input from 5 V DC	Approx. 0.9 A
Power loss	Approx. 4.5 W
Perm. ambient conditions	
• Operating temperature	+5 °C to +50 °C
• Transport/storage temperature	-40 °C to +70 °C
• Relative humidity	Max. 85 % at +30 °C
Construction	
• Module format	Short PCI card
• Dimensions (W x D) in mm	107 x 168
• Weight	approx. 120 g
• Space requirements	1 x PCI slot (32-bit; 3.3 V/5 V; universal keyed; 33/66 MHz)
DP master	DP-V0, DP-V1, DP-V2
DP slave	DP-V0, DP-V1

#### Performance data for mono-protocol operation

• Number of connectable DP slaves	Max. 124
• Data area of the slave interface: Input data, output data, diagnostics data	244 bytes each
• Number of parallel FDL tasks waiting	Max. 120
• Number of PG/OP and S7 connections	Max. 50 <sup>1)</sup>
• Number of FMS connections	Max. 40 <sup>2)</sup>

1) For Credit = 1; PDU size  $\leq$  480 bytes

2) For Credit = 1

# Programming devices

## Accessories

### CP 5614 A2

Ordering data	Order No.	Order No.
<b>CP 5614 A2 communications processor</b> <sup>D)</sup> PCI card (32-bit; 3.3 V/5 V) master and slave connection to PROFIBUS incl. DP-Base software with NCM PC; DP-RAM interface for DP master, incl. PG and FDL protocol; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, Class A, for 32-bit Windows 2000 Professional/Server; Windows XP Professional, 2003 Server, German/English	<b>6GK1 561-4AA01</b>	<b>FMS-5613 V6.2</b> <sup>D)</sup> Software for FMS protocol, incl. PG/OP communication; FDL, FMS OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows 2000 Professional/Server, Windows XP Professional, 2003 Server, for CP 5613, CP 5613 A2, CP 5613 FO, CP 5614, CP 5614 A2, CP 5614 FO German/English
<b>Development Kit DK-5613</b> Software development kit for CP 5613/CP 5614/CP 5613 A2/CP 5614 A2/CP 5613 FO/CP 5614 FO for integration in other operating system environments on systems with a PCI slot	see <a href="http://www.siemens.com/simatic-net/dk5613">http://www.siemens.com/simatic-net/dk5613</a>	<b>PROFIBUS FastConnect bus connector RS 485 Plug 180</b> With 180° cable outlet
<b>DP-5613 V6.2</b> <sup>D)</sup> Software for DP, incl. PG and FDL protocol, OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows 2000 Professional/Server, Windows XP Professional, 2003 Server, for CP 5613, CP 5613 A2, CP 5613 FO, CP 5614, CP 5614 A2, CP 5614 FO German/English	<b>6GK1 713-5DB62-3AA0</b>	<b>PROFIBUS bus terminal 12M</b> Bus terminal for connection of PROFIBUS stations up to 12 Mbit/s with plug-in cable
<b>S7-5613 V6.2</b> <sup>D)</sup> Software for S7 communication, incl. PG and FDL protocol, OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows 2000 Professional/Server, for CP 5613, CP 5613 A2, CP 5613 FO, CP 5614, CP 5614 A2, CP 5614 FO German/English	<b>6GK1 713-5CB62-3AA0</b>	<b>SIMATIC NET Software Update Service</b> <sup>D)</sup> For Industrial Ethernet, PROFIBUS, OPC server, for one year service incl. manuals on CD-ROM  Requirement: SIMATIC NET PC/Windows products German/English

D) Subject to export regulations: AL: N and ECCN: 5D992B1



### Overview



- PCI card with microprocessor for system connection for PCs and SIMATIC PGs/PC to the electrical and optical PROFIBUS at up to 12 Mbit/s
- Integral fiber-optic interface for FO direct connection; can be operated as a DP master or DP slave as required
- Communication services:
  - PROFIBUS DP master and slave interface according to IEC 61158/ EN 50170 on a PCI card
  - PG/OP communication with STEP 5 and STEP 7
  - S7 communication
  - S5-compatible communication (SEND/RECEIVE) based on FDL
  - PROFIBUS FMS acc. to IEC 61158/EN 50170
- Comprehensive diagnostics possibilities for installation, start-up and operation of the module
- High performance over direct dual-port RAM access
- Event and filter mechanisms to reduce the loading on the host CPU
- Multi-protocol mode and parallel operation of up to 4 CPs
- Implementation in Motion Control applications is possible because a constant bus cycle time is supported
- The appropriate OPC server and configuration tools are included in the scope of supply of the respective communication software

### Technical specifications

Data transmission rates	9.6 kbit/s to 12 Mbit/s
Basic interface setting	
•PROFIBUS master	2 x duplex socket (FO)
•PROFIBUS slave	9-pin Sub-D connector
Interfaces switchable through software call	
•PROFIBUS master	9-pin Sub-D connector
•PROFIBUS slave	2 x duplex socket (FO)
•Connection to PG/PC	PCI (32 bit; 5 V)
•External power supply (optional) through standard external power supply	Low voltage socket 3.5 mm/1.3 mm
Supply voltage (from PCI)	5 V DC +/- 5 % 12 V DC +/- 5 %
Current consumption	
•From 5 V DC	1.6 A
•From 12 V DC	0.3 A
Power loss	8 W
Supply voltage (optional) external power supply	9 to 12 V DC
•Current consumption	0.4 A
•Power loss	3.6 to 4.8 W
Perm. environmental conditions	
•Operating temperature	
- Without fan	+5°C to +40°C
- With fan (air flow 0.5 m/s)	+5°C to +60°C
•Transport/storage temperature	-40 °C to +70 °C
•Relative humidity	Max. 95% at +25 °C
Design	
•Module format	PCI card
•Dimensions (W x H) in mm	107 x 168
•Weight	Approx. 300 g
•Space required	1 x PCI slot
DP master	DP V0, DP V1, DP V2
DP slave	DP V0, DP V1

#### Performance data: Single protocol operation

•Number of connectable DP slaves	Max. 122
•Data area of slave interface: input data, output data, diagnostics data	244 byte each
•Number of parallel FDL tasks to be processed	Max. 120
•Number of PG/OP and S7 connections	Max. 50 <sup>1)</sup>
•Number of FMS connections	Max. 40 <sup>2)</sup>

- 1) For Credit = 1; PDU size ≤ 480 byte  
2) For Credit = 1

### CP 5614 FO

Ordering data	Order No.	Order No.	
<b>CP 5614 FO communications processor<sup>D)</sup></b> PCI card (32-bit; 5 V) master and slave connection to electrical and optical PROFIBUS incl. DP-Base software with NCM PC; DP-RAM interface for DP master, incl. PG and FDL protocol; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, Class A, for 32-bit Windows 2000 Professional/Server; Windows XP Professional, 2003 Server, German/English	<b>6GK1 561-4FA00</b>	<b>FMS-5613 V6.2<sup>D)</sup></b> Software for FMS protocol incl. PG/OP communication; FDL, FMS OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional incl. V6.0 for 32-bit Windows 2000 Professional/Server, Windows XP Professional, 2003 Server, for CP 5613 A2, CP 5613 FO, CP 5614 A2, CP 5614 FO German/English	<b>6GK1 713-5FB62-3AA0</b>
<b>Development Kit DK-5613</b> Software development kit for CP 5613 A2/CP 5614 A2/CP 5613 FO/CP 5614 FO for integration in other operating system environments on systems with a PCI slot	You can find the DK-5613 on the Internet at: <a href="http://www.siemens.com/simatic-net/dk5613">http://www.siemens.com/simatic-net/dk5613</a>	<b>PROFIBUS FastConnect bus connector RS 485 Plug 180</b>	<b>6GK1 500-0FC00</b>
<b>DP-5613 V6.2<sup>D)</sup></b> Software for DP, incl. PG and FDL protocol, OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows 2000 Professional/Server, Windows XP Professional, 2003 Server, for CP 5613, CP 5613 FO, CP 5614, CP 5614 FO German/English	<b>6GK1 713-5DB62-3AA0</b>	<b>PROFIBUS bus terminal 12M</b>	<b>6GK1 500-0AA10</b>
<b>S7-5613 V6.2<sup>D)</sup></b> Software for S7 communication, incl. PG and FDL protocol, OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows 2000 Professional/Server, Windows XP Professional, 2003 Serve for CP 5613 A2, CP 5613 FO, CP 5614 A2, CP 5614 FO German/English	<b>6GK1 713-5CB62-3AA0</b>	<b>PROFIBUS Plastic Fiber Optic, simplex plug/polishing set<sup>A)</sup></b>	<b>6GK1 901-0FB00-0AA0</b>
		<b>PROFIBUS Plastic Fiber Optic, stripping tool set<sup>A)</sup></b>	<b>6GK1 905-6PA10</b>
		<b>Plug-in adapter</b> •50 unit	<b>6ES7 195-1BE00-0XA0</b>
		<b>SIMATIC NET Software Update Service<sup>D)</sup></b> For Industrial Ethernet, PROFIBUS, OPC server, for one year service incl. manuals on CD-ROM, requirements: SIMATIC NET PC/Windows products German/English	<b>6GK1 704-0AA00-3AA2</b>

A) Subject to export regulations: AL: N and ECCN: EAR99H

D) Subject to export regulations: AL: N and ECCN: 5D992B1

### Overview



- For connecting programming devices, PCs and notebook computers with a PC slot (CardBus 32-bit) to PROFIBUS and the MPI of SIMATIC S7
- Communication services:
  - PROFIBUS DP master Class 1 including acyclic DP expansions with SOFTNET-DP
  - PROFIBUS DP master Class 2 including acyclic DP expansions with SOFTNET-DP
  - PROFIBUS DP slave with SOFTNET-DP slave
  - PG/OP communication
  - S7 communication with SOFTNET-S7
  - S5-compatible communication (SEND/RECEIVE based on the FDL interface) with SOFTNET-DP or SOFTNET-S7
- PC card Type II (CardBus 32-bit); for programming device/PC with PC card slot and notebook computers
- Can be used with:
  - STEP 7 and NCM PC; (ProTool®, Micro/Win, ProTool/Pro®, SIMATIC PDM for PG/OP communication available soon)
  - SOFTNET-S7 (for S7 communication)
  - SOFTNET-DP, SOFTNET-DP slave (for DP)
- The appropriate OPC servers are included in the scope of supply of the respective communication software

### Technical specifications

Data transmission rate	9.6 kbit/s to 12 Mbit/s
Interfaces	
• Connection to PROFIBUS	9-pin Sub-D connector
• Connection to PG/PC	PC Card Type II (CardBus 32 bit);
Supply voltage	3.0 V to 3.6 V DC
Current consumption	Typ. 520 mA
Power loss	1.8 W
Perm. environmental conditions	
• Operating temperature	+5°C to +45°C
• Transport/storage temperature	-20 °C to +60 °C
• Relative humidity	95% at +25 °C

Design	
• Module format	PC card Typ II for CardBus (32 bit)
• Dimensions (W x H x D) in mm	54 x 85 x 5
• Weight	
- Without adapter	Approx. 30 g
- With adapter	Approx. 130 g
• Space required	1 x PC Card slot Type II (CardBus 32 bit)
DP master	DP V0, DP V1 (with SOFTNET DP)
DP slave	DP V0, DP V1 (with SOFTNET DP slave)

# Programming devices

## Accessories

CP 5512

Ordering data	Order No.		Order No.
<b>CP 5512 communications processor</b> PC card (CardBus, 32-bit) for connecting a programming device or Notebook computer to PROFIBUS or MPI, with 32-bit Windows XP Professional (Windows 2000 Professional available soon), executable under 32-bit Windows 2000 Professional and Windows XP Professional in conjunction with STEP 7 V5.2 German/English	<b>6GK1 551-2AA00</b>	<b>SOFTNET-DP slave V6.2 <sup>D)</sup></b> Software for DP slave, with DP OPC server and NCM PC, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows 2000 Professional/Server, Windows XP Professional, 2003 Server, for CP 5512, CP 5611 German/English	<b>6GK1 704-5SW62-3AA0</b>
<b>SOFTNET-S7 V6.2 <sup>D)</sup></b> Software for S7 communication, incl. FDL protocol with OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows 2000 Professional/Server, Windows XP Professional, 2003 Server, for CP 5512, CP 5611 German/English	<b>6GK1 704-5CW62-3AA0</b>	<b>PROFIBUS FastConnect bus connector RS 485 Plug 180</b> With 180° cable outlet	<b>6GK1 500-0FC00</b>
<b>SOFTNET-DP V6.2 <sup>D)</sup></b> Software for DP protocol (Master-Class 1 and 2), incl. FDL protocol with OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows 2000 Professional/Server, Windows XP Professional, 2003 Server, for CP 5512, CP 5611 German/English	<b>6GK1 704-5DW62-3AA0</b>	<b>SIMATIC NET Software Update Service <sup>D)</sup></b> For Industrial Ethernet, PROFIBUS, OPC server, for one year warranty incl. manuals on CD-ROM  Requirement: SIMATIC NET PC/Windows products German/English	<b>6GK1 704-0AA00-3AA2</b>

D) Subject to export regulations: AL: N and ECCN: 5D992B1

### Overview



- For connecting the programming device or PC to PROFIBUS and the MPI of SIMATIC S7
- Communication services:
  - PROFIBUS DP master Class 1 including acyclic DP expansions with SOFTNET-DP
  - PROFIBUS DP master Class 2 including acyclic DP expansions with SOFTNET-DP
  - PROFIBUS DP slave with SOFTNET-DP slave
  - PG/OP communication
  - S7 communication with SOFTNET-S7
  - S5-compatible communication (SEND/RECEIVE based on the FDL interface) with SOFTNET-DP or SOFTNET-S7
- Short PCI card; for programming devices and PCs with a PCI slot (32 bits)
- Can be used with:
  - STEP 7, STEP 7-Micro/Win, ProTool, ProTool/Pro, SIMATIC PDM (for PG/OP communication)
  - COM PROFIBUS
  - SOFTNET-S7 (for S7 communication)
  - SOFTNET-DP, SOFTNET-DP slave (for DP)
- The appropriate OPC server and configuration tools are included in the scope of supply of the respective communication software

### Technical specifications

Data transmission rate	9.6 kbit/s to 12 Mbit/s
Interfaces	
•Connection to PROFIBUS	9-pin Sub-D socket
•Connection to PG/PC	PCI (32-bit)
Power supply	+5 V DC $\pm$ 5 %
Current consumption	0.5 A
Power loss	2.0 W
Perm. ambient conditions	
•Operating temperature	+5 °C to +40 °C
•Transport/storage temperature	-20 °C to +60 °C
•Relative humidity	Max. 95% at +25 °C

Construction	
•Module format	PCI card
•Dimensions (W x H x D) in mm	102 x 130
•Weight	Approx. 100 g
•Space requirements	1 x PCI slot
DP master	DP-V0, DP-V1 with SOFTNET-DP
DP slave	DP-V0, DP-V1 with SOFTNET-DP slave

# Programming devices

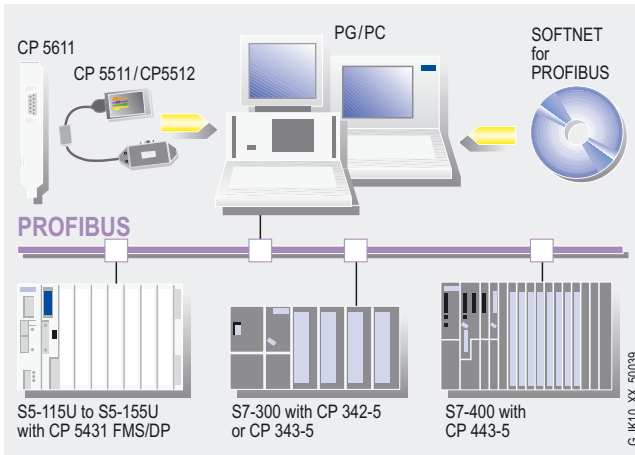
## Accessories

### CP 5611

Ordering data	Order No.		Order No.
<b>CP 5611 communications processor</b> PCI card (32-bit) for connection of a programming device or PC to PROFIBUS	<b>6GK1 561-1AA00</b>	<b>SOFTNET-DP slave V6.2 <sup>D)</sup></b> Software for DP slave, with DP OPC server and NCM PC, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows 2000 Professional/Server, Windows XP Professional, 2003 Server, for CP 5512, CP 5611 German/English	<b>6GK1 704-5SW62-3AA0</b>
<b>CP 5611 MPI communications processor</b> Comprising a PCI card (32-bit) CP 5611 and MPI cable, 5 m	<b>6GK1 561-1AM00</b>	<b>PROFIBUS FastConnect bus connector RS 485 Plug 180</b> With 180° cable outlet	<b>6GK1 500-0FC00</b>
<b>SOFTNET-S7 V6.2 <sup>D)</sup></b> Software for S7 communication, incl. FDL protocol with OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows 2000 Professional/Server, Windows XP Professional, 2003 Server, for CP 5512, CP 5611 German/English	<b>6GK1 704-5CW62-3AA0</b>	<b>PROFIBUS bus terminal 12M</b> Bus terminal for connection of PROFIBUS stations up to 12 Mbit/s with plug-in cable	<b>6GK1 500-0AA10</b>
<b>SOFTNET-DP V6.2 <sup>D)</sup></b> Software for DP protocol (Master-Class 1 and 2), incl. FDL protocol with OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows 2000 Professional/Server, Windows XP Professional, 2003 Server, for CP 5512, CP 5611 German/English	<b>6GK1 704-5DW62-3AA0</b>	<b>SIMATIC NET Software Update Service <sup>D)</sup></b> For Industrial Ethernet, PROFIBUS, OPC server, for one year warranty incl. manuals on CD-ROM  Requirement: SIMATIC NET PC/Windows products German/English	<b>6GK1 704-0AA00-3AA2</b>

D) Subject to export regulations: AL: N and ECCN: 5D992B1

#### Overview



- Software for coupling PCs/programming devices and notebooks to programmable controllers
- For use in combination with CP 5511 (PCMCIA) and CP 5512 (PC-Card, 32-bit CardBus). CP 5611 (PCI) and integral PROFIBUS interface of the SIMATIC PG/PC
- Communication services:
  - PROFIBUS DP master Class 1 and 2 with acyclic expansions
  - PROFIBUS DP slave
  - PG/OP communication
  - S7 communication
  - S5-compatible communication (SEND/RECEIVE based on the FDL interface)
- The appropriate OPC servers are included in the scope of supply of the respective communication software

#### Technical specifications

Performance data: Single protocol operation	CP 5511	CP 5611/ CP 5512
Number of connectable DP slaves	≤ 32 <sup>1)</sup>	max. 60
Number of parallel FDL tasks to be processed	max. 32	max. 100
Number of PG/OP and S7 connections	max. 8	max. 8
• DP master	DP-V0, DP-V1 with SOFTNET-DP	
• DP slave	DP-V0, DP-V1 with SOFTNET-DP slave	

1) dependent on available memory in the adapter area of the notebook

#### Ordering data

#### Order No.

##### SOFTNET-S7 V6.2 <sup>D)</sup>

Software for S7 communication, incl. FDL protocol with OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows 2000 Professional/Server, Windows XP Professional, 2003 Server, for CP 5512, CP 5611 German/English

**6GK1 704-5CW62-3AA0**

##### SOFTNET-DP V6.2 <sup>D)</sup>

Software for DP protocol (MasterClass 1 and 2), incl. FDL protocol with OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows 2000 Professional/Server, Windows XP Professional, 2003 Server, for CP 5512, CP 5611 German/English

**6GK1 704-5DW62-3AA0**

##### SOFTNET-DP Slave V6.2 <sup>D)</sup>

Software for DP slave, with DP OPC server and NCM PC, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows 2000 Professional/Server, Windows XP Professional, 2003 Server, for CP 5512, CP 5611 German/English

**6GK1 704-5SW62-3AA0**

##### SIMATIC NET Software Update Service <sup>D)</sup>

For Industrial Ethernet, PROFIBUS, OPC server, for one year warranty incl. manuals on CD-ROM

Requirement: SIMATIC NET PC/Windows products German/English

**6GK1 704-0AA00-3AA2**

D) Subject to export regulations: AL: N and ECCN: 5D992B1

#### Overview



- PCI card with a microprocessor for connecting the PG or PC to Industrial Ethernet with 10/100 Mbit/s Autosensing
- Communication services using
  - ISO or TCP/IP transport protocol
  - PG/OP communication
  - S7 communication
  - S5-compatible communication (SEND/RECEIVE)
- 15-pole ITP connection
- RJ45 connection
- Clock time synchronization
- ISO and TCP/IP transport protocol onboard
- SNMP-supported diagnostics
- The appropriate OPC server and configuration tools are included in the respective scope of supply of the communication software

#### Technical specifications

Data transmission rate	10/100 Mbit/s autosensing
Interfaces	
• Connection to Industrial Ethernet	15-pin Sub-D socket
- ITP (10/100 Mbit/s)	
• 10BaseT, 100BaseTX	RJ45
• Connection to PG/PC	PCI (32-bit, 5 V)
Power supply	5 V DC $\pm$ 5% 12 V DC $\pm$ 5 %
Current consumption	
• From 5 V DC	600 mA
• From 12 V DC	500 mA
Power loss	4 W
Perm. ambient conditions	
• Operating temperature	+5 °C to +60 °C
• Transport/storage temperature	-20 °C to +60 °C
• Relative humidity	Max. 95% at +25 °C
Construction	
• Module format	PCI card
• Dimensions (W x H x D) in mm	107 x 167
• Weight	Approx. 200 g
• Space requirements	1 x PCI slot (32-bit; 5 V)

#### Performance data for mono-protocol operation

S7 and programmable device/  
operator panel communication

- Number of connections that can be used

- ISO	max. 120
- TCP/IP	max. 120

S5-compatible communication  
(SEND/RECEIVE)

- Number of connections that can be used

- ISO	max. 120
- TCP/IP	max. 120

Total of all configurable  
connections per PC station

max. 207



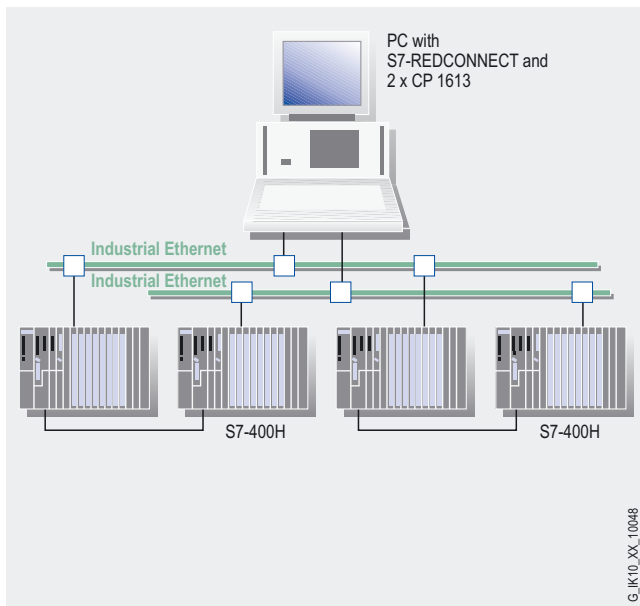
Ordering data	Order No.		Order No.
<b>CP 1613 communications processor</b> PCI card (32-bit; 5 V) for connecting to Industrial Ethernet (10/100 Mbit/s), with ITP and RJ45 connection over S7-1613 and S7-REDCONNECT, incl. driver for 32-bit Windows XP Professional, 2003 Server, Windows 2000 Professional/Server,	<b>6GK1 161-3AA00</b>	<b>S7-REDCONNECT V6.2</b> <sup>D)</sup> Software for failsafe S7 communication over redundant networks incl. S7-OPC server, S7-1613 V6.1, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, Windows 2000 Professional/Server; for CP 1613 German/English	<b>6GK1 716-0HB62-3AA0</b>
<b>CP 1613 A2 communications processor</b> PCI card (32-bit; 3.3V/5 V; 33/66 MHz) for connecting to Industrial Ethernet (10/100 Mbit/s), with ITP and RJ45 connection over S7-1613 and S7-REDCONNECT, incl. driver for 32-bit Windows XP Professional, 2003 Server, Windows 2000 Professional/Server	Available soon	<b>S7-REDCONNECT V6.2 upgrade</b> <sup>D)</sup> For expanding S7-1613 V6.1 to S7-REDCONNECT, incl. S7-OPC server, S7-1613 V6.1, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, Windows 2000 Professional/Server; for CP 1613 German/English	<b>6GK1 716-0HB62-3AA4</b>
<b>S7-1613 V6.2</b> <sup>D)</sup> Software for S7 and S5 communication incl. PG/OP communication, OPC server and NCM PC; up to 120 connections, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, Windows 2000 Professional/Server; for CP 1613 German/English	<b>6GK1 716-1CB62-3AA0</b>	<b>SIMATIC NET Software Update Service</b> <sup>D)</sup> For Industrial Ethernet, PROFIBUS, OPC server, for one year service incl. manuals on CD-ROM; prerequisite: SIMATIC NET PC/Windows products German/English	<b>6GK1 704-0AA00-3AA2</b>

D) Subject to export regulations: AL: N and ECCN: 5D992B1

### S7-REDCONNECT

#### Overview

- For interfacing PCs over redundant Industrial Ethernet to the SIMATIC S7-400H
- Protected from communication failures arising from a fault in the double bus or in redundant rings
- For redundantly configured Industrial Ethernet
- Can also be implemented in non-redundant networks
- No additional programming overhead for the PC and in H systems
- The appropriate OPC server and configuration tools are included in the scope of supply of the respective communication software
- Enhanced redundancy over 4-way communication (STEP 7 V5.1 + SP4 and higher)



System configuration for S7-REDCONNECT

#### Ordering data

#### Order No.

##### S7-REDCONNECT V6.2 <sup>D)</sup>

Software for failsafe S7 communication over redundant networks incl. S7-OPC server, S7-1613 V6.2, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, 2000 Professional/Server; for CP 1613 German/English

**6GK1 716-0HB62-3AA0**

##### S7-REDCONNECT V6.2 Upgrade <sup>D)</sup>

For expanding S7-1613 V6.2 to S7-REDCONNECT, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, 2000 Professional/Server; for CP 1613 German/English

**6GK1 716-0HB62-3AA4**

D) Subject to export regulations: AL: N and ECCN: 5D992B1

#### More information

Additional information is available in the Internet under:



<http://www.siemens.com/simatic-net/ik-info>

### Overview



- For connecting the PG/PC with a PCI slot to Industrial Ethernet with 10/100 Mbit/s
- Communication services with ISO or TCP/IP transport protocols
  - PROFINET
  - PG/OP communication
  - S7 communication
  - S5-compatible communication (SEND/RECEIVE)
- Designed for use in industrial environments
- PCI card (32-bit; Universal Key 3.3 V/5 V)
- Interfaces:
  - RJ45 (Twisted Pair)
- Plug&Play
- The appropriate OPC server and configuration tools are included in the scope of supply of the respective communication software

### Technical specifications

Data transmission rate	10/100 Mbit/s autosensing
Interfaces	
• 10BaseT, 100BaseTX	RJ45
• Connection to PG/PC	PCI (32 bits 3.3 V/5 V)
Supply voltage	5 V DC $\pm$ 5%, 12 V
Perm. environmental conditions	
• Operating temperature	0 °C to +50 °C
• Transport/storage temperature	-25 °C to +55 °C
• Relative humidity	Max. 95% at +25 °C
Design	
• Module format	PCI card
• Dimensions (H x D) in mm	50 x 120
• Weight	Approx. 100 g
• Space required	1 x PCI slot (32 bits; 3.3 V or 5 V)

# Programming devices

## Accessories

### CP 1612

Ordering data	Order No.		Order No.
<b>CP 1612 communications processor</b> <sup>A)</sup> PCI card (32-bit; 3.3 V/5 V) for connecting a programming device or PC to Industrial Ethernet (10/100 Mbit/s), with RJ45 connection incl. driver for 32-bit Windows 98, Me, NT 4.0, WS/Server, 2000 Professional/Server, XP Professional, 2003 Server	<b>6GK1 161-2AA00</b>	<b>SOFTNET-PG V6.2 for Industrial Ethernet</b> <sup>D)</sup> Software for PG/OP communication, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, 2000 Professional/Server; for CP 1512 and CP 1612 German/English	<b>6GK1 704-1PW62-3AA0</b>
<b>Additional components</b>		<b>SOFTNET-S7 with CP 1612</b> <sup>D)</sup> Bundle of SOFTNET-S7 and CP 1612 products	<b>6GK1 950-1AB00</b>
<b>SOFTNET Security Client 2004</b> <sup>E)</sup> Software for setting up safe IP-based VPN connections from a programming device/PC with network segments which are secured by SCALANCE S; single license for 1 installation, runtime software, configuring tool and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows 2000 Professional, XP Professional, 2003 Server German, English, French, Italian, Spanish	<b>6GK1 704-1VW01-0AA0</b>	<b>PN CBA OPC server V6.2</b> <sup>D)</sup> PROFINET OPC server for CBA; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2000 Professional/Server; for CP 1512 and CP 1612 German/English	<b>6GK1 706-0HB62-3AA0</b>
<b>SOFTNET PN IO V6.2</b> Software for PROFINET I/O controller with OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server; Windows 2000 Professional, server for CP 1512 and CP 1612, German/English	<b>6GK1 704-1HW62-3AA0</b>	<b>SNMP OPC server V6.2</b> including MIB compiler; single license for 1 installation of the runtime software, software and electronic manual on CD-ROM; license key on diskette, for 32-bit Windows XP Professional, 2003 server, 2000 Professional WS/Server; for CP 1512/CP 1612/CP 1613 German/English	<b>6GK1 706-1NW62-3AA0</b>  <b>6GK1 706-1NX62-3AA0</b>  <b>6GK1 706-1NW62-3AA4</b>
<b>SOFTNET-S7 V6.2 for Industrial Ethernet</b> <sup>D)</sup> Software for S7 and S5-compatible communication, incl. OPC server, PG/OP communication and NCM PC; up to 64 connections, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, 2000 Professional/Server; for CP 1512 and CP 1612 German/English	<b>6GK1 704-1CW62-3AA0</b>	<ul style="list-style-type: none"><li>• <b>Basic</b> <sup>D)</sup> Administration of up to 20 IP addresses</li><li>• <b>Extended</b> <sup>D)</sup> Administration of up to 200 IP addresses</li><li>• <b>Power Pack</b> <sup>D)</sup> Upgrade from SNM OPC Server Basic to SNMP OPC Server Extended</li></ul>	
<b>SOFTNET-S7 Lean V6.2</b> <sup>D)</sup> Software for S7 and S5-compatible communication, incl. OPC server, PG/OP communication and NCM PC; up to 8 connections, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, 2000 Professional/Server; for CP 1512 and CP 1612 German/English	<b>6GK1 704-1LW62-3AA0</b>	<b>SIMATIC NET Software Update Service</b> <sup>D)</sup> For Industrial Ethernet, PROFIBUS, OPC server, for one year service incl. manuals on CD-ROM  Requirement: SIMATIC NET PC/ Windows products German/English	
		<b>Documentation S7-CPs/NCM S7</b> for Industrial Ethernet and PROFIBUS; manual package for configuring C7-CPs, IE/PB Link and PC-Stations (STEP 7 V5.3)	
		<ul style="list-style-type: none"><li>• German</li><li>• English</li></ul>	<b>6GK7 080-0AA01-8AA0</b> <b>6GK7 080-0AA01-8BA0</b>

A) Subject to export regulations: AL: N and ECCN: EAR99H

D) Subject to export regulations: AL: N and ECCN: 5D992B1

E) Subject to export regulations: AL: N and ECCN: 5D002ENC3

#### Overview



- For connecting PGs/notebooks to Industrial Ethernet using a PCI card (CardBus interface, 32-bit) with 10/100 Mbit/s
- Communication services with ISO or TCP/IP transport protocols
  - PROFINET
  - PG communication
  - S7 communication
  - S5-compatible communication (SEND/RECEIVE)
- Designed for use in industrial environment
- PC card Type II (32-bit CardBus)
- Interfaces:
  - RJ45 (Twisted Pair)
- Plug&Play
- The appropriate OPC server and configuration tools are included in the scope of supply of the respective communication software

#### Technical specifications

Data transmission rate	10/100 Mbit/s autosensing
Interfaces	
• 10BaseT, 100BaseTX	RJ45
• Connection to PG/PC	PC Card Type II (CardBus 32-bit)
Supply voltage	+3.3 V DC (± 5%)
Perm. environmental conditions	
• Operating temperature	0°C to +60°C
• Transport/storage temperature	-20 °C to +70 °C
• Relative humidity	Max. 95% at +25 °C
Construction of the CP 1512	
• Module format	PC Card Type II
• Dimensions (H x W x D) in mm	85.6 x 54 x 3
• Weight	30 g
• Space required	1 x PC Card slot Type II
Constructional design of RJ45 adapter	
• Dimensions (H x W x D) in mm, approx.	40 x 22 x 20
• Weight, approx.	40 g
• Cable length, approx.	20 cm

Ordering data	Order No.		Order No.
<b>CP 1512 communications processor</b> PC card (Cardbus 32-bit) for connecting a programming device/Notebook computer to Industrial Ethernet incl. 2 adapters for Industrial Twisted Pair and RJ45, incl. driver for 32-bit Windows 98, Me, NT 4.0 WS/server (requirements: Cardwizard Systemsoft 5.2), 2000 Professional/server; XP Professional, 2003 Server	<b>6GK1 151-2AA00</b>	<b>SOFTNET-PG V6.2 for Industrial Ethernet <sup>D)</sup></b> Software for PG/OP communication, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, 2000 Professional/Server; for CP 1512 and CP 1612 German/English	<b>6GK1 704-1PW62-3AA0</b>
<b>Additional components</b>		<b>SOFTNET-PG with CP 1512 <sup>D)</sup></b> Bundle of SOFTNET-PG and CP 1512 products	<b>6GK1 950-1AA00</b>
<b>SOFTNET Security Client 2004 <sup>E)</sup></b> Software for setting up safe IP-based VPN connections from a programming device/PC with network segments which are secured by SCALANCE S; single license for 1 installation, runtime software, configuring tool and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows 2000 Professional, XP Professional, 2003 Server German, English, French, Italian, Spanish	<b>6GK1 704-1VW01-0AA0</b>	<b>PN CBA OPC server V6.2 <sup>D)</sup></b> PROFINET OPC server for CBA; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2000 Professional/Server; for CP 1512 and CP 1612 German/English	<b>6GK1 706-0HB62-3AA0</b>
<b>SOFTNET PN IO V6.2</b> Software for PROFINET I/O controller with OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server; Windows 2000 Professional, server for CP 1512 and CP 1612, German/English	<b>6GK1 704-1HW62-3AA0</b>	<b>SNMP OPC server V6.2</b> including MIB compiler; single license for 1 installation of the runtime software, software and electronic manual on CD-ROM; license key on diskette, for 32-bit Windows XP Professional, 2003 server, 2000 Professional WS/Server; for CP 1512/CP 1612/CP 1613 German/English	
<b>SOFTNET-S7 V6.2 for Industrial Ethernet <sup>D)</sup></b> Software for S7 and S5-compatible communication, incl. OPC server, PG/OP communication and NCM PC; up to 64 connections, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, 2000 Professional/Server; for CP 1512 and CP 1612 German/English	<b>6GK1 704-1CW62-3AA0</b>	<ul style="list-style-type: none"><li>• <b>Basic <sup>D)</sup></b> Administration of up to 20 IP addresses</li><li>• <b>Extended <sup>D)</sup></b> Administration of up to 200 IP addresses</li><li>• <b>Power Pack <sup>D)</sup></b> Upgrade from SNM OPC Server Basic to SNMP OPC Server Extended</li></ul>	<b>6GK1 706-1NW62-3AA0</b>  <b>6GK1 706-1NX62-3AA0</b>  <b>6GK1 706-1NW62-3AA4</b>
<b>SOFTNET-S7 Lean V6.2 <sup>D)</sup></b> Software for S7 and S5-compatible communication, incl. OPC server, PG/OP communication and NCM PC; up to 8 connections, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, 2000 Professional/Server; for CP 1512 and CP 1612 German/English	<b>6GK1 704-1LW62-3AA0</b>	<b>SIMATIC NET Software Update Service <sup>D)</sup></b> for Industrial Ethernet, PROFIBUS, OPC server, for one year service incl. manuals on CD-ROM; Prerequisite: SIMATIC NET PC/Windows products German/English	<b>6GK1 704-0AA00-3AA2</b>
		<b>Documentation S7-CPs/NCM S7</b> for Industrial Ethernet and PROFIBUS; manual package for configuring C7-CPs, IE/PB Link and PC-Stations (STEP 7 V5.3)	
		<ul style="list-style-type: none"><li>• German</li><li>• English</li></ul>	<b>6GK7 080-0AA01-8AA0</b> <b>6GK7 080-0AA01-8BA0</b>

D) Subject to export regulations: AL: N and ECCN: 5D992B1

E) Subject to export regulations: AL: N and ECCN: 5D002ENC3

#### Overview



- The CP 7515 is a PC card (32-bit CardBus) for operation on an Industrial Wireless LAN (IWLAN) radio network with reliable communication. The CP 7515 can be used in a standard WLAN according to IEEE 802.11b/g and IEEE 802.11a at 2.4 GHz or 5 GHz.  
Transmission rates up to 54 Mbps (108 Mbps in turbo mode) with IEEE 802.11g and IEEE 802.11a.
- Two integrated antennae (for antenna diversity) for reliable reception in areas that place high demands on radio communication
- Highly reliable thanks to reserving the data rate (only in combination with SCALANCE W-700 Access Points)
- High degree of protection against unauthorized access thanks to WPA and 128-bit encoding (AES)
- Integration in STEP 7/NCM PC
- Communication services using ISO or TCP/IP transport protocols:
  - PG communication
  - S7 communication
  - S5-compatible communication (SEND/RECEIVE)
- For use in industrial environments as well as in office/enterprise areas
- The appropriate OPC server and configuration tools are included in the scope of supply of the respective communication software.

#### Technical specifications

Data transmission rate	
• IEEE 802.11b	2.412 - 2.462 GHz, depending on the national approval, 1, 2, 5.5, 11 Mbit/s
• IEEE 802.11g	2.412 - 2.462 GHz, depending on the national approval, 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54 Mbit/s
• IEEE 802.11a	5.15 - 5.25 GHz, 5.25 - 5.35 GHz, 5.7 - 5.8 GHz, depending on the national approval, 6, 9, 12, 18, 24, 36, 48, 54 Mbit/s
• Turbo mode	Max. 108 Mbit/s
Interfaces	
• Connection to PG/PC/Notebook	PC card Type II (32-bit CardBus)
• Antennas	Two integral antennae (antenna diversity) for 2.4 GHz or 5 GHz
Encryption	
• IEEE 802.1x Support	EAP-TLS, TTLS, PEAP, WEP, WPA with AES and TKIP
Industrial wireless LAN	<ul style="list-style-type: none"> <li>• Reserving the data transmission rate for clients and deterministic data communication</li> <li>• Cyclic monitoring of the radio channel</li> </ul>

Wireless approvals	
• Wi-Fi Compliance (Wireless Fidelity)	Yes
• National approvals	current approvals can be found on the Internet under <a href="http://www.siemens.com/simatic-net/ik-info">www.siemens.com/simatic-net/ik-info</a>
Power supply	3.3 V DC
Current consumption	Max. 600 mA
Power loss	max. 2 W
Degree of protection	IP20
Permissible ambient conditions	
• Operating temperature	0 °C to +55 °C
• Transport/storage temperature	-20 °C to +75 °C
• Relative humidity in operation	Max. 90 %, non-condensing
Construction	
• Module format	PC card (32-bit CardBus)
• Dimensions (W x H x D) in mm	5 x 54 x 110 mm
• Weight	50 g
• Space requirements	1x PC Card Type II slot
Software	Driver software and client manager for 32-bit Windows 2000 Professional, XP Professional, 2003 Server



Ordering data	Order No.	Order No.
<b>CP 7515 communications processor</b> <sup>K)</sup> IWLAN PC Card (32-bit; CardBus) for connecting a PG/PC/notebook to Industrial Wireless LAN acc. to IEEE 802.11b/g/a (2.4/5 GHz, up to 54 Mbit/s), and national approvals; incl. Client Manager and driver for 32-bit Windows 2000 Professional/Server, XP Professional; manual on CD-ROM; German/English	<b>6GK1 751-5AA00</b>	<b>SOFTNET Security Client 2004</b> <b>SIMATIC NET Software Update Service</b> For Industrial Ethernet, PROFIBUS, OPC server, for one year service incl. manuals on CD-ROM; Prerequisite: SIMATIC NET PC/Windows products; German/English <b>SCALANCE W788-1PRO</b> IWLAN Access Point with built-in radio interface; radio networks IEEE 802.11b/g/a at 2.4/5 GHz to 54 Mbit/s. Wi-Fi Compliance; WPA/AES; Power over Ethernet (PoE), IP65 degree of protection (-20°C to +60°C); Scope of supply: 2 antennae 795-4MR, IE Hybrid RJ45 Plug pro, mounting materials, manual on CD ROM; German/English •National approvals for operation outside the USA and Canada <sup>K)</sup> •National approvals for operation in the USA and Canada <sup>K)</sup>
<b>Additional components</b> <b>SOFTNET-S7 V6.2 for Industrial Ethernet</b> <sup>D)</sup> Software for S7 and S5-compatible communication, incl. OPC server, PG/OP communication and NCM PC; up to 64 connections, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, 2000 Professional/Server; for CP 1512, CP 1612 and CP 7515 German/English	<b>6GK1 704-1CW62-3AA0</b>	<b>6GK1 704-0AA00-3AA2</b>
<b>SOFTNET-S7 Lean V6.2 for Industrial Ethernet</b> <sup>D)</sup> Software for S7 and S5-compatible communication, incl. OPC server, PG/OP communication and NCM PC; up to 8 connections, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, 2000 Professional/Server; for CP 1512, CP 1612 and CP 7515 German/English	<b>6GK1 704-1LW62-3AA0</b>	<b>6GK5 788-1ST00-2AA6</b>  <b>6GK5 788-1ST00-2AB6</b>
<b>SOFTNET-PG V6.2 for Industrial Ethernet</b> <sup>D)</sup> Software for PG/OP communication, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, 2000 Professional/Server; for CP 1512, CP 1612 and CP 7515 German/English	<b>6GK1 704-1PW62-3AA0</b>	<b>SCALANCE W788-2PRO</b> IWLAN Access Point with two built-in radio interfaces; radio networks IEEE 802.11b/g/a at 2.4/5 GHz to 54 Mbit/s. National approvals; WPA/AES; Power over Ethernet (PoE), IP65 degree of protection (-20°C to +60°C); Scope of supply: 2 antennae 795-4MR, IE Hybrid RJ45 Plug pro, mounting materials, manual on CD ROM; German/English •National approvals for operation outside the USA and Canada <sup>K)</sup> •National approvals for operation in the USA and Canada <sup>K)</sup>

D) Subject to export regulations: AL: N and ECCN: 5D992B1

K) Subject to export regulations: AL: N and ECCN: 5A002ENC3



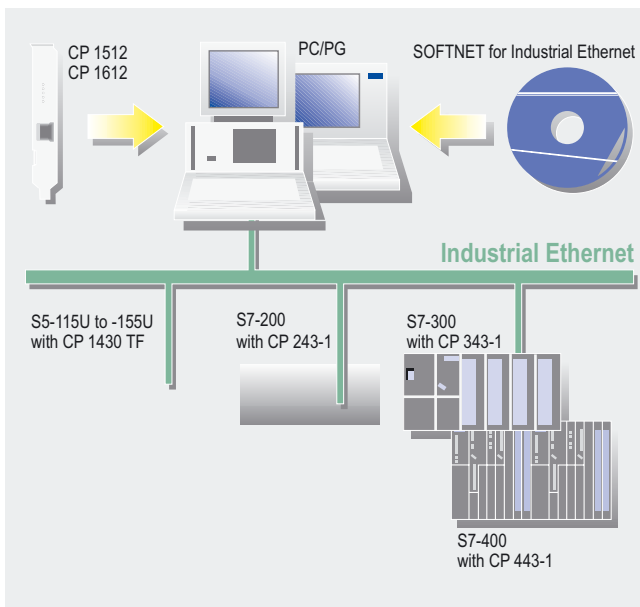
#### Overview

- For coupling programming devices/PCs/workstations to programmable controllers
- Communication services:
  - PG/OP communication
  - S7 communication
  - S5-compatible communication (SEND/RECEIVE)
- Can be used with
  - CP 1612 (PCI)
  - CP 1512 (PC Card)
  - CP 7515 (PC Card CardBus)
  - Integrated Industrial Ethernet interface
  - Modem (Remote Access Service RAS)
- Complete protocol stack as a software package
- The appropriate OPC server and configuration tools are included in the scope of supply of the respective communication software

#### Technical specifications

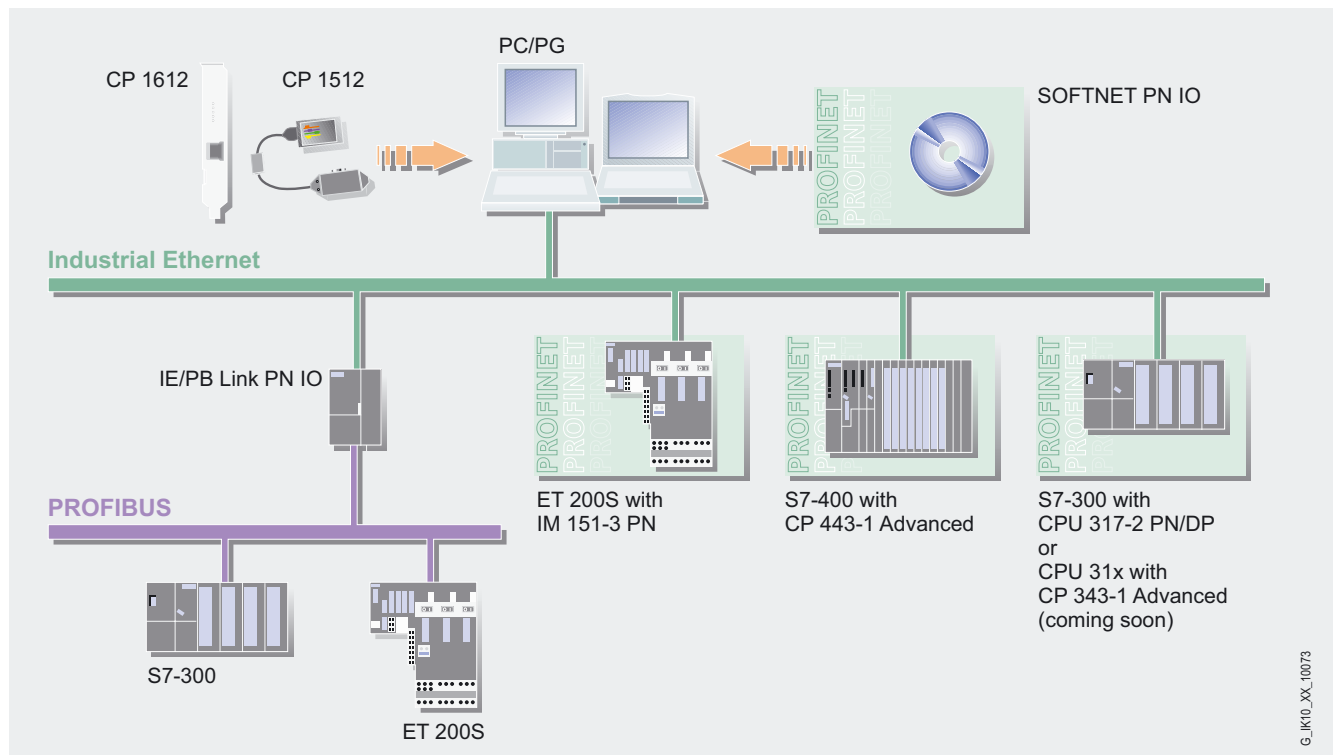
#### Ordering data

#### Order No.



System configuration SOFTNET for Industrial Ethernet

#### Overview



- Software for coupling PCs/programming devices and notebooks to PROFINET IO devices
- Possible applications:
  - PC-based control systems
  - HMI systems
  - Test applications
- Communication services:
  - PROFINET IO Controller

- Can be used with
  - CP 1612 (PCI)
  - CP 1512 (PC card)
  - Integrated interfaces of SIMATIC PGs/PCs
- Cost-effective solution for the low-end performance range
- OPC server for I/O interfacing over PROFINET included in scope of supply

#### Ordering data

#### Order No.

##### SOFTNET PN IO V6.2

Software for PROFINET I/O controller with OPC server and NCM PC; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server; Windows 2000 Professional, server for CP 1512 and CP 1612, German/English

**6GK1 704-1HW62-3AA0**

##### CP 1612 communications processor <sup>A)</sup>

PCI card (32-bit; 3.3 V/5 V) for connecting a programming device or PC to Industrial Ethernet (10/100 Mbit/s), with RJ45 connection incl. driver for 32-bit Windows 98, Me, NT 4.0, WS/Server, 2000 Professional/Server, XP Professional, 2003 Server

**6GK1 161-2AA00**

A) Subject to export regulations: AL: N and ECCN: EAR99H

#### Order No.

##### CP 1512 communications processor

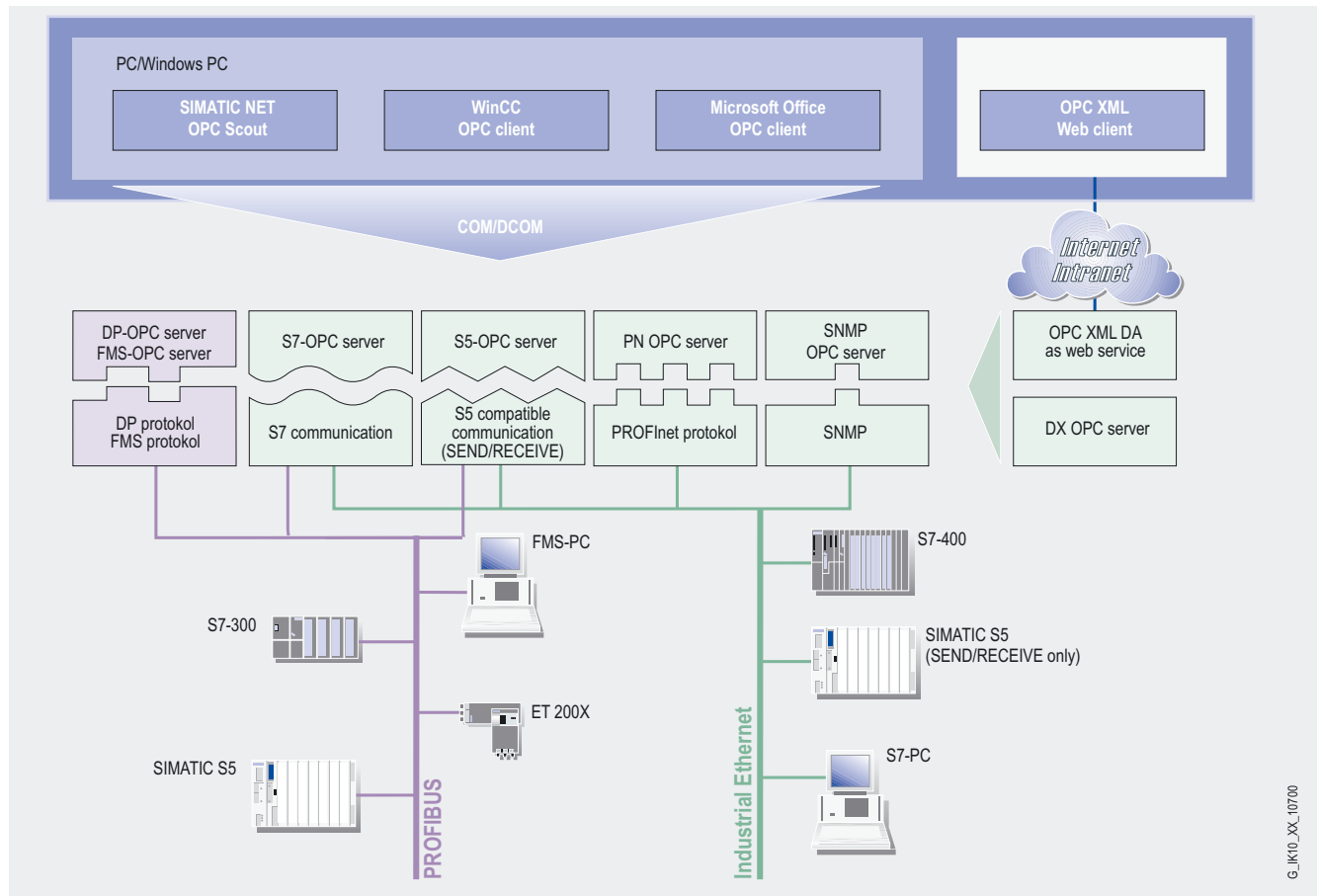
PC card (Cardbus 32-bit) for connecting a programming device/Notebook computer to Industrial Ethernet incl. 2 adapters for Industrial Twisted Pair and RJ45, incl. driver for 32-bit Windows 98, Me, NT 4.0 WS/server (requirements: Cardwizard Systemsoft 5.2), 2000 Professional/server; XP Professional, 2003 Server

**6GK1 151-2AA00**

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## Overview

- The appropriate OPC servers are included in the scope of supply of the respective communication software
- Standardized, open, manufacturer-independent interface
- Interfacing of OPC-capable Windows applications to S7-communication and S5-compatible communication functions (SEND/RECEIVE), PROFINET and SNMP
- OPC Scout with browser functions as OPC client and OCX Data Control



### System integration with the OPC server

## Technical specifications

Programming	<ul style="list-style-type: none"><li>•Synchronous and asynchronous reading and writing of variables</li><li>•Monitoring of variables using the OPC server with a signal to the client when a change occurs</li><li>•Use of quantity operations; so a large amount of data can be processed in a short time.</li></ul>	<table><tr><th>Product variants</th><th>include OPC servers for:</th></tr><tr><td>S7-1613</td><td>S7 communication, XML-DA S5-compatible communication</td></tr><tr><td>SOFTNET-S7 for Industrial Ethernet</td><td>S7 communication, XML-DA S5-compatible communication</td></tr><tr><td>SOFTNET-S7 Lean for Industrial Ethernet</td><td>S7 communication, XML-DA S5-compatible communication</td></tr><tr><td>PN CBA OPC server</td><td>PROFINET CBA, XML-DA</td></tr><tr><td>SOFTNET PN IO</td><td>PROFINET IO, XML-DA</td></tr><tr><td>SNMP OPC server</td><td>SNMP protocol access</td></tr><tr><td>DX OPC server</td><td>horizontal communication between OPC servers</td></tr></table>	Product variants	include OPC servers for:	S7-1613	S7 communication, XML-DA S5-compatible communication	SOFTNET-S7 for Industrial Ethernet	S7 communication, XML-DA S5-compatible communication	SOFTNET-S7 Lean for Industrial Ethernet	S7 communication, XML-DA S5-compatible communication	PN CBA OPC server	PROFINET CBA, XML-DA	SOFTNET PN IO	PROFINET IO, XML-DA	SNMP OPC server	SNMP protocol access	DX OPC server	horizontal communication between OPC servers
Product variants	include OPC servers for:																	
S7-1613	S7 communication, XML-DA S5-compatible communication																	
SOFTNET-S7 for Industrial Ethernet	S7 communication, XML-DA S5-compatible communication																	
SOFTNET-S7 Lean for Industrial Ethernet	S7 communication, XML-DA S5-compatible communication																	
PN CBA OPC server	PROFINET CBA, XML-DA																	
SOFTNET PN IO	PROFINET IO, XML-DA																	
SNMP OPC server	SNMP protocol access																	
DX OPC server	horizontal communication between OPC servers																	
Interfaces	<ul style="list-style-type: none"><li>•Custom Interface (C++, NET) for high OPC performance</li><li>•Automation Interface (VB, Excel, Access, Delphi, ...) for ease-of-use</li><li>•Graphics with OCX for configuring instead of programming</li><li>•OPC XML-Interface for Data Access</li></ul>																	
Protocols	<ul style="list-style-type: none"><li>•S5-compatible communication (SEND/RECEIVE)</li><li>•S7 communication</li><li>•PROFINET</li></ul>																	

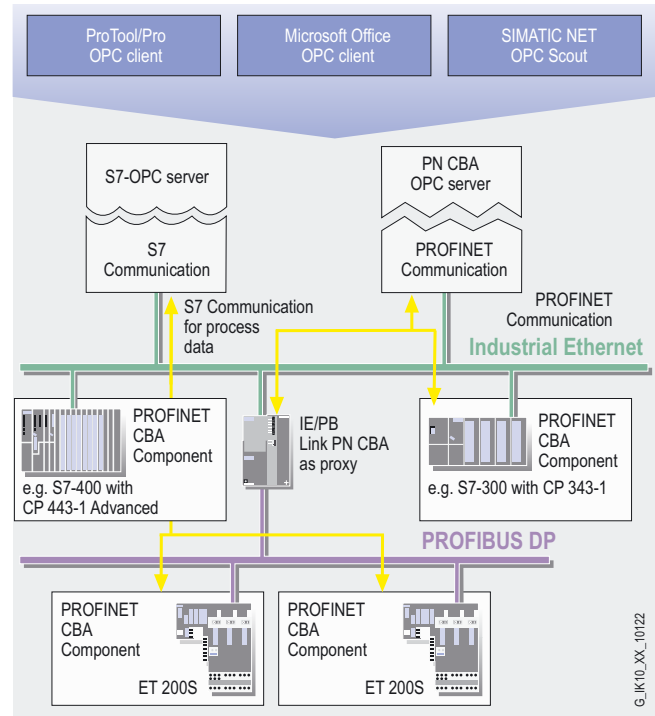
### OPC server for Industrial Ethernet

Ordering data	Order No.		Order No.
<b>DX OPC server V6.2</b> <sup>D)</sup> DX OPC server upgrade; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, 2000 Professional/Server; for CP 1512 and CP 1612; Requirements: SIMATIC NET IE PC / Windows product V6.2 with OPC interface; German/English	<b>6GK1 706-0XW62-3AA0</b>	<b>SNMP OPC server V6.2</b> including MIB compiler; single license for 1 installation of the runtime software, software and electronic manual on CD-ROM; license key on diskette, for 32-bit Windows XP Professio- nal, 2003 server, 2000 Professio- nal WS/Server; for CP 1512/CP 1612/CP 1613 German/English <ul style="list-style-type: none"> <li>• <b>Basic</b><sup>D)</sup> Administration of up to 20 IP addresses</li> <li>• <b>Extended</b><sup>D)</sup> Administration of up to 200 IP addresses</li> <li>• <b>Power Pack</b><sup>D)</sup> Upgrade from SNM OPC Server Basic to SNM OPC Server Extended</li> </ul>	<b>6GK1 706-1NW62-3AA0</b>  <b>6GK1 706-1NX62-3AA0</b>  <b>6GK1 706-1NW62-3AA4</b>
<b>PN CBA OPC server V6.2</b> PROFINET OPC server for CBA; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professio- nal, 2000 Professional/Server; for CP 1512 and CP 1612 German/English	<b>6GK1 706-0HB62-3AA0</b>		

D) Subject to export regulations: AL: N and ECCN: 5D992B1

#### Overview

- Access to variables in PROFIN ET CBA components over the OPC interface
- Use of the objects and symbols defined using the PROFINET engineering tool SIMATIC iMap and STEP 7
- Adding PROFINET functionality to existing installations. This enables it to be used in parallel with other communication protocols such as S7 communication with SOFTNET-S7 for Industrial Ethernet.
- OPC Scout as an OPC client with browser functions for the variables of the PROFINET CBA components



System integration with the PN CBA OPC server

#### Technical specifications

##### Programming

- Open and standardized
- Synchronous and asynchronous reading and writing of variables
- Monitoring of variables using the OPC server with a signal to the client when a change occurs
- Use of quantity operations; so a large amount of data can be processed in a short time.

##### Interfaces

- Custom Interface (C++, .NET)
- Automation Interface (Visual Basic, Excel, Access,...)
- OPC Data Control
- OPC XML-Interface for Data Access

##### Protocols

- DCOM protocol

##### Configuring

Configuring software for PROFINET SIMATIC iMap

PN CBA OPC server

Ordering data

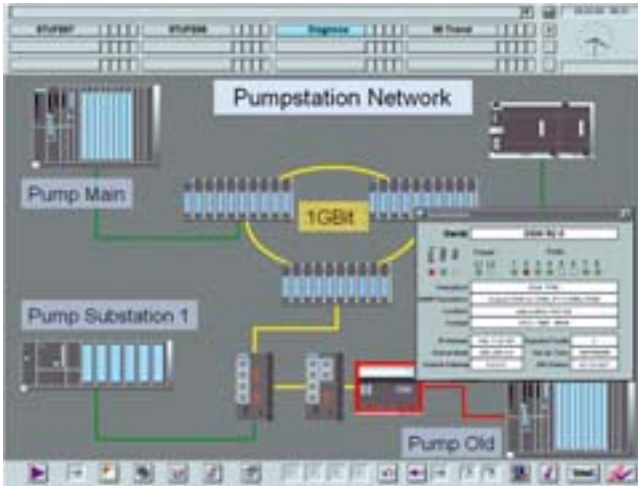
Order No.

Order No.

PN CBA OPC server V6.2 <sup>D)</sup>

D) Subject to export regulations: AL: N and ECCN: 5D992B1

#### Overview



- Status monitoring and network management of SNMP-capable devices in any OPC client systems; e.g. SIMATIC HMI/SCADA, office application
- Easy access to SNMP-capable devices over the OPC interface
- Devices without SNMP agents can be monitored using the ping mechanism
- Complete integration in the SIMATIC NET OPC server environment
- SNMP can be implemented in parallel with other communications protocols such as PROFINET or S7 communication
- Configuration and engineering is performed with STEP 7/NCM PC, V5.2 and higher.

#### Ordering data

#### Order No.

##### SNMP OPC server V6.2

including MIB compiler; single license for 1 installation of the runtime software, software and electronic manual on CD-ROM; license key on diskette, for 32-bit Windows XP Professional, 2003 server, 2000 Professional WS/Server; for CP 1512/CP 1612/CP 1613 German/English

- **Basic** <sup>D)</sup>  
Administration of up to 20 IP addresses
- **Extended** <sup>D)</sup>  
Administration of up to 200 IP addresses
- **Power Pack** <sup>D)</sup>  
Upgrade from SNM OPC Server Basic to SNMP OPC Server Extended

**6GK1 706-1NW62-3AA0**

**6GK1 706-1NX62-3AA0**

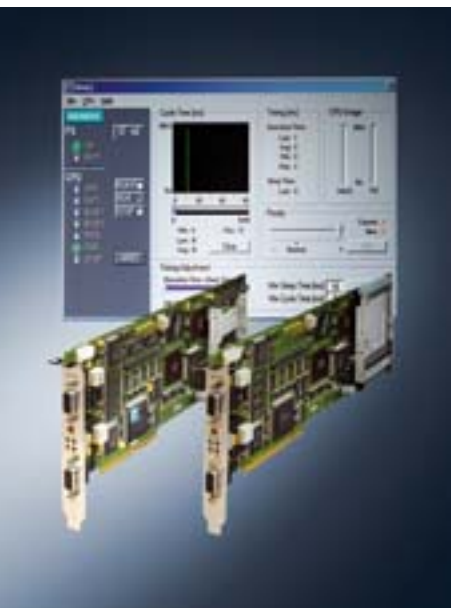
**6GK1 706-1NW62-3AA4**

D) Subject to export regulations: AL: N and ECCN: 5D992B1





# PC-based Automation



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**Introduction**

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**PC-based Control**

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SIMATIC PC-based Control

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SIMATIC WinAC Software PLC

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SIMATIC WinAC Slot PLC

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SIMATIC WinAC ODK

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**SIMATIC Embedded Control**

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SIMATIC Embedded Control

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SIMATIC WinAC MP

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SIMATIC MP 370



# PC-based Automation

## Introduction

### Logic Control

#### Overview



Siemens has developed a broad palette of perfectly interacting hardware and software components for PC-based Automation.

**The hub: SIMATIC PC-based Control** with SIMATIC WinAC, the open, flexible and reliable controller for your PC-based automation solution.

On the PC, all the tasks involved in automation, such as open-loop and closed-loop control, operator control and visualization and motion control can be implemented on the same platform. Whenever PC applications have to be implemented in addition to the classical PLC applications, PC-based Automation is the first choice.

**In addition: SIMATIC Embedded Control.** The product spectrum of SIMATIC PC-based Automation has been expanded with SIMATIC WinAC MP that transfers the advantages of PC-based Automation in processing large quantities of data and demanding visualization tasks to the rugged SIMATIC MP370 platform for installation at the machine.

Additional information is available in the Internet under:

<http://www.pcbasedautomation.de>

#### Overview

- Adds PC-based controllers to the SIMATIC S7 controller family
- Especially suitable where a variety of tasks such as data processing, communication, visualization, technology and control have to be integrated in one PC.

#### Versions

- **SIMATIC WinAC Software PLCs**  
for tasks requiring a high level of flexibility and integration capability.
- **SIMATIC WinAC Slot PLCs**  
for tasks where high operational reliability and availability are a priority.
- **SIMATIC WinAC ODK**  
allows PC solutions for technological tasks to be integrated flexibly and powerfully into the controller.

#### Properties:

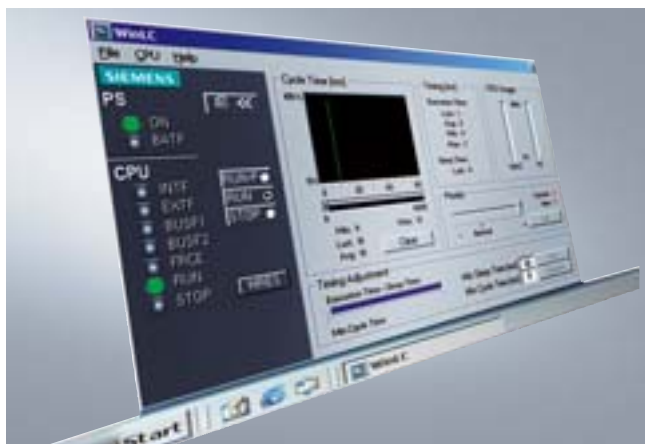
- Runs on standard PCs under Windows 2000 or Windows XP Professional.
- Code-compatible with SIMATIC S7:  
programmed with SIMATIC industrial software, programs can also be used for SIMATIC S7.
- Uses standard interfaces for integration into the office environment.
- Open interfaces for the integration of solution-specific technological hardware and software.

# PC-based Automation

## PC-based Control

### SIMATIC WinAC Software PLC

#### Overview



- Optimized for applications that demand high flexibility and integration capability.
- SIMATIC WinAC software PLCs comprise the following products
  - WinAC Basis and
  - WinAC RTX.
- WinAC Basis:
  - The low-cost solution for PC-based control tasks.
  - For data-intensive processes in connection with extensive PC tasks.

- WinAC RTX:
  - The software solution for tasks which demand hard deterministics.
  - With real-time extension to provide deterministic behavior for the control unit.

SIMATIC WinAC software PLCs each comprise the following components:

- Windows logic controller
- OPC server and ActiveX components
- Driver for PROFIBUS CPs
- VenturCom RTX real-time kernel (WinAC RTX only)

#### Optional:

- CP for connecting to PROFIBUS DP:
  - CP 5611 or the integral PROFIBUS interface on the SIMATIC PC (WinAC Basis only)
  - CP 5613 A2.
- SIMATIC WinAC PN option
  - Permits communication between WinAC Basis and further automation systems based on PROFINET CBA via Industrial Ethernet.
- WinAC Open Development Kit (ODK):
  - For using C/C++ code in WinAC Basis or WinAC RTX
  - For integrating external software (technology programs) or PC components (e.g. scanners, PC cards for measured data acquisition)

#### Technical specifications

	6ES7 671-0CC03-0YA0	6ES7 671-0RC04-0YA0
<b>Memory/backup</b>		
Memory		
• Load memory		
- integral RAM, max.	PC working memory usable	PC main memory can be used (non paged memory)
<b>CPU/blocks</b>		
DB		
- Number, max.	Limited only by the amount of available PC working memory	Limited only by the amount of available PC working memory
- Size, max.	64 KByte	64 KByte
FB		
- Number, max.	Limited only by the amount of available PC working memory	Limited only by the amount of available PC working memory
- Size, max.	64 KByte	64 KByte
FC		
- Number, max.	Limited only by the amount of available PC working memory	Limited only by the amount of available PC working memory
- Size, max.	64 KByte	64 KByte
OB		
- Size, max.	64 KByte	64 KByte

	6ES7 671-0CC03-0YA0	6ES7 671-0RC04-0YA0
<b>CPU/blocks (continued)</b>		
Nesting depth		
- per priority class	24	24
- additional levels within an error OB	24	24
<b>CPU/processing times</b>		
• for bit instruction, min.	0.013 µs; typ.	0.013 µs; typ.
• for integer math, min.	0.025 µs; typ.	0.025 µs; typ.
• for floating-point math, min.	0.025 µs; typ.	0.025 µs; typ.
• Reference platform	Pentium IV, 2.4 GHz	Pentium IV, 2.4 GHz
<b>Timers/counters and their retentive characteristics</b>		
S7 counter		
- Number	512	512
• Retentivity		
- adjustable	Yes	Yes
- lower limit	0	0
- upper limit	511	511
- preset	8	8
• Counting range		
- adjustable	Yes	Yes
- lower limit	0	0
- upper limit	999	999

#### Technical specifications (continued)

	6ES7 671-0CC03-0YA0	6ES7 671-0RC04-0YA0
<b>Timers/counters and their retentive characteristics</b> (continued)		
IEC counter		
- available	Yes	Yes
- Type	SFB, unlimited quantity (only limited by working memory)	SFB, unlimited quantity (only limited by working memory)
S7 times		
- Number	512	512
•Retentivity		
- lower limit	0	0
- upper limit	511	511
- preset	0	0
•Timing range		
- lower limit	10 ms	10 ms
- upper limit	9,990 s	9,990 s
IEC timer		
- available	Yes	Yes
- Type	SFB, unlimited quantity (only limited by working memory)	SFB, unlimited quantity (only limited by working memory)
<b>Data areas and their retentive characteristics</b>		
•Retentivity without UPS and PS extension board	No	No
•Retentivity with UPS	all data	all data
Flags		
- Number	2 KByte	2 KByte
- of which retentive	MB 0 - MB 2048	MB 0 - MB 2048
- preset retentivity	MB 0 - MB 15	MB 0 - MB 15
- Number of clock memories	8	8
<b>Address area</b>		
I/O address area		
- Inputs	16 KByte	16 KByte
- Outputs	16 KByte	16 KByte
•of which distributed		
- DP interface, inputs	16 KByte	16 KByte
- DP interface, outputs	16 KByte	16 KByte
Process image		
- Inputs, adjustable	8 KByte	8 KByte
- Outputs, adjustable	8 KByte	8 KByte
- Inputs, preset	512 Byte	512 Byte
- Outputs, preset	512 Byte	512 Byte
- Number of component process images, max.	15	15
Digital channels		
- Inputs	131,072	131,072
- Outputs	131,072	131,072
Analog channels		
- Inputs	8,192	8,192
- Outputs	8,192	8,192

	6ES7 671-0CC03-0YA0	6ES7 671-0RC04-0YA0
<b>Configuration</b>		
Number of DP masters		
- overall	4	4
- via CP	4; CP 5611 Integrated PB interface of the SIMATIC PC CP 5613 CP 5613-A2	4; CP 5613 CP 5613-A2
Number of FMs and CPs that can be operated (recommendation)		
- FM	FM distributed: FM350-1/350-2, FM 351, FM 352, FM 353, FM 354, FM 355, FM 355-2	FM distributed: FM 350-1/350-2, FM 351, FM 352, FM 353, FM 354, FM 355, FM 355-2
- CP, point-to-point	CP 340, CP 341 distributed	CP 340, CP 341 distributed
- CP, LAN	via PC-CP	via PC-CP
<b>Time</b>		
Clock		
- Hardware clock (realtime clock)	Yes	Yes
- buffered	Yes	Yes
Time synchronization		
- supported	No	No
<b>S7 message functions</b>		
•Number of stations that can log on for message functions, max.	64	64
•SCAN method	No	No
•Process diagnostic messages	Yes; Alarm_S	Yes; Alarm_S
•Alarm 8 blocks	No	No
•Statuses	No	No
<b>Test and startup functions</b>		
Status/modify		
- Variable	Yes	Yes
Forcing		
- Forcing	No	No
•Status block	Yes	Yes
•Single step	Yes	Yes
Diagnostic buffer		
- available	Yes	Yes
- Number of inputs, max.	3,200	3,200
- preset	120	120
<b>Communication functions</b>		
•PG/OP communication	Yes	Yes
Global data communication		
- supported	No	No
S7 basic communication		
- supported	No	No
S7 communication		
- as server	Yes	Yes
- as client	Yes	Yes
Number of connections		
- overall	64	64
- reserved for PG communication	1	1
- reserved for OP communication	1	1

#### Technical specifications (continued)

	6ES7 671-0CC03-0YA0	6ES7 671-0RC04-0YA0		6ES7 671-0CC03-0YA0	6ES7 671-0RC04-0YA0
<b>1st interface</b>			<b>2nd interface (continued)</b>		
•Type of interface	CP 5611, SIMATIC PC integral		DP master		
•Number of simultaneous operable CPs, max.	1		- Number of connections, max.	50	50
•Physical	RS 485 / PROFIBUS		•Services		
•Isolated	Yes		- PG/OP communication	Yes	Yes
Functionality			- Routing	Yes	Yes
- MPI	No		- Global data communication	No	No
- DP master	Yes		- S7 basic communication	No	No
- DP slave	No		- S7 communication	Yes	Yes
DP master			- Equidistance support	Yes	Yes
- Number of connections, max.	8		- SYNC/FREEZE	Yes	Yes
•Services			- Activate/deactivate DP slaves	Yes	Yes
- PG/OP communication	Yes		- Direct data exchange (lateral communication)	Yes	Yes
- Routing	Yes		- DPV0	Yes	Yes
- Global data communication	No		- DPV1	Yes	Yes
- S7 basic communication	No		- Transmission rates, max.	12 Mbit/s	12 Mbit/s
- S7 communication	Yes		- Number of DP slaves, max.	125	125
- Equidistance support	No		•Address area		
- SYNC/FREEZE	Yes		- Inputs, max.	16 KByte	16 KByte
- Activate/deactivate DP slaves	Yes		- Outputs, max.	16 KByte	16 KByte
- Direct data exchange (lateral communication)	Yes		•User data per DP Slave		
- DPV0	Yes		- Inputs, max.	244 Byte	244 Byte
- DPV1	No		- Outputs, max.	244 Byte	244 Byte
- Transmission rates, max.	12 Mbit/s		<b>Clock synchronism</b>		
- Number of DP slaves, max.	32		•Clock synchronous operation	No	Yes
•Address area			•Number of DP masters with clock synchronism		2
- Inputs, max.	16 KByte		•User data per clock synchronous slave, max.		128 Byte
- Outputs, max.	16 KByte		•Equidistance		Yes
•User data per DP Slave			•Shortest clock pulse		2.2 ms; 2.2 ms without process image section; 2.2 ms with process image section
- Inputs, max.	244 Byte		<b>CPU/ programming</b>		
- Outputs, max.	244 Byte		Programming language		
<b>2nd interface</b>			- STEP 7	Yes; as of V5.2, engineering tools (optional)	Yes; as of V5.2, engineering tools (optional)
•Type of interface	CP 5613, CP 5613-A2	CP 5613, CP 5613-A2	- LAD	Yes	Yes
•Number of simultaneous operable CPs, max.	4	4	- FBD	Yes	Yes
•Physical	RS 485 / PROFIBUS	RS 485 / PROFIBUS	- STL	Yes	Yes
•Isolated	Yes	Yes	- SCL	Yes	Yes
Functionality			- CFC	Yes	Yes
- MPI	No	No	- GRAPH	Yes	Yes
- DP master	Yes	Yes	- HiGraph®	Yes	Yes
- DP-Slave	No	No	Software library		
- PROFINET CBA		No	- Easy Motion Control	Yes	Yes
- PROFINET CBA-SRT		No	•Bracket levels	8	8
- PROFINET IO-Controller		No	•User program protection/ password protection	No	No

	6ES7 671- 0CC03-0YA0	6ES7 671- 0RC04-0YA0
<b>CPU/ programming</b> (continued)		
Open development interfaces		
- CCX (Custom Code Extension)	Yes; with WinAC ODK V4.1	Yes; with WinAC ODK V4.1
- SMX (Shared Memory Extension)	Yes; with WinAC ODK V4.1	Yes; with WinAC ODK V4.1
- Inputs	4 KByte	4 KByte
- Outputs	4 KByte	4 KByte
- CMI (Controller Management Interface)	Yes; with WinAC ODK V4.1	Yes; with WinAC ODK V4.1

Ordering Data	Order No.
<b>SIMATIC WinAC Basis V4.1 <sup>B)</sup></b> Software-based PC-based control system; CD-ROM with electronic documentation in German, English, French; single license, runs under Windows 2000/XP	<b>6ES7 671-0CC03-0YA0</b>
<b>SIMATIC WinAC Basis upgrade <sup>B)</sup></b> Upgrade from V4.0 to V4.1; single license, runs under Windows 2000/XP	<b>6ES7 671-0CC03-0YE0</b>
<b>SIMATIC WinAC PN Option V4.1 <sup>B)</sup></b> For using WinAC Basis for Component Based Automation, based on the PROFINET communication standard; single license, runs under Windows 2000/XP	<b>6ES7 671-0CC03-2YA0</b>
<b>SIMATIC WinAC RTX V4.1 <sup>B)</sup></b> Software-based PC-based control system for tasks with hard deterministics; CD-ROM with electronic documentation in German, English, French; single license, runs under Windows 2000/XP	<b>6ES7 671-0RC04-0YA0</b>
<b>SIMATIC WinAC RTX upgrade <sup>B)</sup></b> Upgrade from V4.0 to V4.1; single license, runs under Windows 2000/XP	<b>6ES7 671-0RC04-0YE0</b>

	Order No.
<b>CP 5613 A2 communications processor</b> <sup>D)</sup> PCI card (32 bit; 3.3 V/5 V) for connecting to PROFIBUS including DP base software with NCM PC; DP RAM interface for DP master, including PG and FDL protocol; single license for 1 installation, runtime software, software and electronic manual on CD-ROM, Class A, for 32 bit Windows 2000 Professional/Server; Windows XP Professional, German/English	<b>6GK1 561-3AA01</b>
<b>CP 5611 communications processor</b> PCI card (32 bit) for connecting a PG or PC to PROFIBUS	<b>6GK1 561-1AA00</b>

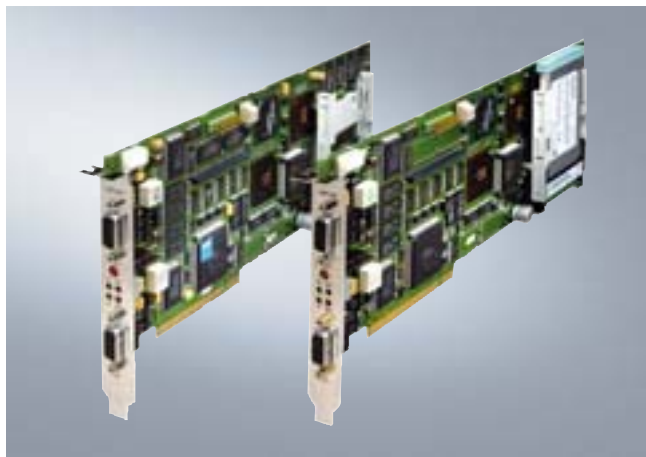
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# PC-based Automation

## PC-based Control

### SIMATIC WinAC Slot PLC

#### Overview



- WinAC Slot 412/416:  
Slot PLCs for PC-based applications demanding deterministics, availability and high operational reliability.

#### Products

- WinAC Slot 412:
  - PC-based control system as PCI board based on CPU 412-2 PCI
  - PROFIBUS DP and PROFIBUS DP/MPI interface on-board
- WinAC Slot 416:
  - PC-based control system as PCI board based on CPU 416-2 PCI
  - PROFIBUS DP and PROFIBUS DP/MPI interface on-board
- PS extension board (optional)
  - The PS extension board provides additional safety for the operation of WinAC Slot 412/416 and allows operation even if the PC fails.
  - External 24 V power supply and battery backup

#### Technical specifications

	6ES7 673-2CC02-0YA0	6ES7 673-6CC22-0YA0
<b>Voltages and currents</b>		
• Power consumption, typical	12 W	12 W
<b>Current consumption</b>		
• Current consumption, max.	1.5 A; Current consumption from PCI bus without PS extension board: 1.5 A Current consumption from PCI bus with PS extension board : 0.3 A Current consumption 12V/24V via PS extension board: 1.2 A	1.5 A; Current consumption from PCI bus without PS extension board: 1.5 A Current consumption from PCI bus with PS extension board : 0.3 A Current consumption 12V/24V via PS extension board: 1.2 A
Back-up battery		
- voltage	3.6 V; Lithium	3.6 V; Lithium
- Backup current, max.	500 µA	500 µA; Backup battery voltage: 3.6 V Lithium
- Backup current, typical	130 µA	130 µA
<b>Memory/backup</b>		
Memory		
• Working memory		
- integrated (for program)	128 KByte	1.6 MByte
- integrated (for data)	128 KByte	1.6 MByte
• Load memory		
- expandable FEPRM	Yes; Memory card (FLASH)	Yes; Memory card (FLASH)
- expandable FEPRM, max.	64 MByte	64 MByte
- integral RAM, max.	256 KByte	256 KByte
- expandable RAM	Yes; Memory card (FLASH)	Yes; Memory card (FLASH)
- expandable RAM, max.	16 MByte	16 MByte

	6ES7 673-2CC02-0YA0	6ES7 673-6CC22-0YA0
<b>CPU/blocks</b>		
DB		
- Number, max.	512	4.095
- Size, max.	64 KByte	64 KByte
FB		
- Number, max.	256	2.048
- Size, max.	64 KByte	64 KByte
FC		
- Number, max.	256	2.048
- Size, max.	64 KByte	64 KByte
OB		
- Size, max.	64 KByte	64 KByte
Nesting depth		
- per priority class	24	24
- additional levels within an error OB	2	2
<b>CPU/processing times</b>		
• for bit instruction, min.	0.2 µs	0.08 µs
• for integer math, min.	0.2 µs	0.08 µs
• for floating-point math, min.	0.6 µs	0.48 µs
<b>Timers/counters and their retentive characteristics</b>		
S7 counter		
- Number	256	512
• Retentivity		
- adjustable	Yes	Yes
- lower limit	0	0
- upper limit	255	511
- preset	Z 0 to Z 7	Z 0 to Z 7
• Counting range		
- adjustable	Yes	Yes
- lower limit	0	0
- upper limit	999	999



#### Technical specifications (continued)

	6ES7 673-2CC02-0YA0	6ES7 673-6CC22-0YA0
<b>Timers/counters and their retentive characteristics</b> (continued)		
IEC timer		
- available	Yes	Yes
- Type	SFB, unlimited quantity (only limited by working memory)	SFB, unlimited quantity (only limited by working memory)
S7 times		
- Number	256	512
•Retentivity		
- lower limit	0	0
- upper limit	255	511
- preset	no timer is retentive	no timer is retentive
•Timing range		
- lower limit	10 ms	10 ms
- upper limit	9,990 s	9,990 s
IEC timer		
- available	Yes	Yes
- Type	SFB, unlimited quantity (only limited by working memory)	SFB, unlimited quantity (only limited by working memory)
<b>Data areas and their retentive characteristics</b>		
•Retentivity without UPS and PS extension board	No	No
•Retentivity with UPS	No	No
•Retentivity with PS extension board and battery	all data	all data
Flags		
- Number	4 KByte	16 KByte
- of which retentive	MB 0 to MB 4095	MB 0 to MB 16383
- preset retentivity	MB 0 to MB 15	MB 0 to MB 15
- Number of clock memories	8	8
<b>Address area</b>		
I/O address area		
- Inputs	4 KByte	16 KByte
- Outputs	4 KByte	16 KByte
•of which distributed		
- MPI/DP interface, inputs	2 KByte	2 KByte
- MPI/DP interface, outputs	2 KByte	2 KByte
- DP interface, inputs	4 KByte	8 KByte
- DP interface, outputs	4 KByte	8 KByte
Process image		
- Inputs, adjustable	4 KByte	16 KByte
- Outputs, adjustable	4 KByte	16 KByte
- Inputs, preset	128 Byte	512 Byte
- Outputs, preset	128 Byte	512 Byte
- Number of component process images, max.	8	8
Digital channels		
- Inputs	32,768	81,920
- Outputs	32,768	81,920
Analog channels		
- Inputs	2,048	5,120
- Outputs	2,048	5,120

	6ES7 673-2CC02-0YA0	6ES7 673-6CC22-0YA0
<b>Configuration</b>		
Number of DP masters		
- overall	2	2
- integral	2	2
Number of FMs and CPs that can be operated (recommendation)		
- FM	FM distributed: FM 350-1, FM 350-2, FM 351, FM 352, FM 353, FM 354, FM 355, FM 355-2	FM distributed: FM 350-1, FM 350-2, FM 351, FM 352, FM 353, FM 354, FM 355, FM 355-2
- CP, LAN	via PC-CP	via PC-CP
<b>Time</b>		
Clock		
- Hardware clock (realtime clock)	Yes	Yes
- buffered	Yes	Yes
Run-time meter		
- Quantity	8	8
Time synchronization		
- supported	Yes	Yes; (on PC-CP: Slave)
- on PC-CP, slave	Yes	Yes
- on MPI, master	Yes	Yes
- on MPI, slave	Yes	Yes
<b>S7 message functions</b>		
•Number of stations that can log on for message functions, max.	8	12
•SCAN method	Yes	Yes
•Process diagnostic messages	Yes; (Alarm_S)	Yes; (Alarm_S)
•Alarm 8 blocks	Yes	Yes
•Statuses	Yes	Yes
<b>Test and startup functions</b>		
Status/modify		
- Variable	Yes	Yes
Forcing		
- Forcing	Yes	Yes
•Status block	Yes	Yes
•Single step	Yes	Yes
Diagnostic buffer		
- available	Yes	Yes
- Number of inputs, max.	400	3,200
- preset	120	120
<b>Communication functions</b>		
•PG/OP communication	Yes	Yes
Global data communication		
- supported	Yes	Yes
S7 basic communication		
- supported	Yes	Yes
S7 communication		
- as server	Yes	Yes
- as client	Yes	Yes
Number of connections		
- overall	16	64
- reserved for PG communication	1	1
- reserved for OP communication	1	1

#### Technical specifications (continued)

	6ES7 673-2CC02-0YA0	6ES7 673-6CC22-0YA0
<b>1st interface</b>		
•Type of interface	RS 485 / PROFIBUS	RS 485 / PROFIBUS
•Physical	RS 485	RS 485
•Isolated	Yes	Yes
Functionality		
- MPI	Yes	Yes
- DP master	Yes	Yes
- DP slave	Yes	Yes
MPI		
- Number of connections	16	44
•Services		
- PG/OP communication	Yes	Yes
- Routing	Yes	Yes
- Global data communication	Yes	Yes
- S7 basic communication	Yes	Yes
- S7 communication	Yes	Yes
- Transmission rates, max.	12 Mbit/s	12 Mbit/s
DP master		
- Number of connections, max.	16	32
•Services		
- PG/OP communication	Yes	Yes
- Routing	Yes	Yes
- Global data communication	No	No
- S7 basic communication	Yes	Yes
- S7 communication	Yes	Yes
- Equidistance support	Yes	Yes
- SYNC/FREEZE	Yes	Yes
- Activate/deactivate DP slaves	Yes	Yes
- Direct data exchange (lateral communication)	Yes	Yes
- DPV0	Yes	Yes
- DPV1	Yes	Yes
- Transmission rates, max.	12 Mbit/s	12 Mbit/s
- Number of DP slaves, max.	32	32
•Address area		
- Inputs, max.	2 KByte	2 KByte
- Outputs, max.	2 KByte	2 KByte
•User data per DP Slave		
- Inputs, max.	244 Byte	244 Byte
- Outputs, max.	244 Byte	244 Byte
DP slave		
•Services		
- PG/OP communication	Yes	Yes
- Routing	Yes	Yes
- Status/modify	Yes	Yes
- Programming	Yes	Yes
- Transmission rates, max.	12 Mbit/s	12 Mbit/s
•Intermediate memory		
- Inputs	244 Byte	244 Byte
- Outputs	244 Byte	244 Byte
- Address areas, max.	32	32
- User data per address area, max.	32 Byte	32 Byte
- User data per address area, of which consistent, max.	32 Byte	32 Byte

	6ES7 673-2CC02-0YA0	6ES7 673-6CC22-0YA0
<b>2nd interface</b>		
•Type of interface	RS 485 / PROFIBUS	RS 485 / PROFIBUS
•Physical	RS 485	RS 485
•Isolated	Yes	Yes
Functionality		
- MPI	No	No
- DP master	Yes	Yes
- DP slave	Yes	Yes
DP master		
- Number of connections, max.	16	16
•Services		
- PG/OP communication	Yes	Yes
- Routing	Yes	Yes
- Global data communication	No	No
- S7 basic communication	Yes	Yes
- S7 communication	Yes	Yes
- Equidistance support	Yes	Yes
- SYNC/FREEZE	Yes	Yes
- Activate/deactivate DP slaves	Yes	Yes
- Direct data exchange (lateral communication)	Yes	Yes
- DPV0	Yes	Yes
- DPV1	Yes	Yes
- Transmission rates, max.	12 Mbit/s	12 Mbit/s
- Number of DP slaves, max.	64	125
•Address area		
- Inputs, max.	4 KByte	8 KByte
- Outputs, max.	4 KByte	8 KByte
•User data per DP Slave		
- Inputs, max.	244 Byte	244 Byte
- Outputs, max.	244 Byte	244 Byte
DP slave		
•Services		
- PG/OP communication	Yes	Yes
- Routing	Yes	Yes
- Status/modify	Yes	Yes
- Programming	Yes	Yes
- Transmission rates, max.	12 Mbit/s	12 Mbit/s
•Intermediate memory		
- Inputs	244 Byte	244 Byte
- Outputs	244 Byte	244 Byte
- Address areas, max.	32	32
- User data per address area, max.	32 Byte	32 Byte
- User data per address area, of which consistent, max.	32 Byte	32 Byte

#### Technical specifications (continued)

	6ES7 673-2CC02-0YA0	6ES7 673-6CC22-0YA0
<b>Clock synchronism</b>		
•Clock synchronous operation	Yes	Yes
•Number of DP masters with clock synchronism	2	2
•User data per clock synchronous slave, max.	128 Byte	128 Byte
•Equidistance	Yes	Yes
•Shortest clock pulse	2.5 ms; 2.5 ms without process image section, 5 ms with process image section	2.5 ms; 2.5 ms without process image section, 5 ms with process image section
<b>CPU/ programming</b>		
Programming language		
- STEP 7	Yes; as of V 5.2	Yes; as of V 5.2
- LAD	Yes	Yes
- FBD	Yes	Yes
- STL	Yes	Yes
- SCL	Yes	Yes
- CFC	Yes	Yes
- GRAPH	Yes	Yes
- HiGraph®	Yes	Yes
Software library		
- Easy Motion Control	Yes	Yes
•Bracket levels	8	8
•User program protection/pass-word protection	Yes	Yes
Open development interfaces		
- CCX (Custom Code Extension)	No	No
- SMX (Shared Memory Extension)	Yes; with WinAC ODK V4.1	Yes; with WinAC ODK V4.1
- Inputs	4 KByte	4 KByte
- Outputs	4 KByte	4 KByte
- CMI (Controller Management Interface)	Yes; with WinAC ODK V4.1	Yes; with WinAC ODK V4.1

	6ES7 673-2CC02-0YA0	6ES7 673-6CC22-0YA0
<b>Dimensions and weight</b>		
•Weight, approx.	250 g; 450 g with PC extension board	250 g; CPU; 450 g with PC extension board
•Width	98 mm	98 mm
•Height	288 mm	288 mm
•Required slots	1; PCI, 2 PCI slots with PS extension board, PCI format: 3/4	1; PCI, 2 PCI slots with PS extension board, PCI format: 3/4
<b>Hardware requirements</b>		
•Required hardware	PC with color monitor, keyboard, mouse or pointing device for Windows	PC with color monitor, keyboard, mouse or pointing device for Windows
•required memory on hard disk, min.	60 MByte	60 MByte
•Main memory, min.	128 MByte	128 MByte
•Processor	Intel Pentium 300 MHz	Intel Pentium 300 MHz
<b>Software requirements</b>		
Operating system		
- Windows NT 4.0	No	Yes; 450 g with PC extension board
- Windows 2000	Yes; Professional, as of SP3	Yes; Professional, as of SP3
- Windows XP	Yes; Professional, SP1	Yes; Professional, SP1

# PC-based Automation

## PC-based Control

### SIMATIC WinAC Slot PLC

Ordering Data	Order No.	Order No.
<b>SIMATIC WinAC Slot 412 V3.4 <sup>C)</sup></b> PC-based control system with Slot-PLC CPU 412-2 PCI, 256 KB main memory; with electronic documentation (German, English, French) and software on CD-ROM; single license, runs under Windows 2000/XP Professional	<b>6ES7 673-2CC02-0YA0</b>	<b>Additional components</b> <b>SIMATIC WinAC PS extension board</b> with Slot-PLC power supply (24 V DC external, 12 V DC internal)
		<b>6ES7 678-1RA00-0XB0</b>
		<b>Backup battery</b> for WinAC Slot 412/416
		<b>6ES7 971-2BA00-0AA0</b>
<b>SIMATIC WinAC Slot 416 V3.4 <sup>C)</sup></b> PC-based control system with Slot-PLC CPU 416-2 PCI, 3.2 MB main memory; with electronic documentation (German, English, French) and software on CD-ROM; single license, runs under Windows 2000/XP Professional	<b>6ES7 673-6CC22-0YA0</b>	<b>RAM memory card</b> Long design 64 KB 256 KB 1 MB 2 MB
		<b>6ES7 952-0AF00-0AA0</b> <b>6ES7 952-1AH00-0AA0</b> <b>6ES7 952-1AK00-0AA0</b> <b>6ES7 952-1AL00-0AA0</b>
<b>SIMATIC WinAC Slot upgrade V3.4 <sup>C)</sup></b> Upgrade for WinAC Slot 412/416 V3.x to V3.4; WinAC Slot PC software on CD-ROM; includes SIMATIC NET OPC server	<b>6ES7 673-2CC02-0YE0</b>	<b>EEPROM memory card</b> Long design, 5 V flash EPROM 64 KB 256 KB 1 MB 2 MB 4 MB 8 MB 16 MB 32 MB <sup>A)</sup> 64 MB <sup>A)</sup>
		<b>6ES7 952-0KF00-0AA0</b> <b>6ES7 952-0KH00-0AA0</b> <b>6ES7 952-1KK00-0AA0</b> <b>6ES7 952-1KL00-0AA0</b> <b>6ES7 952-1KM00-0AA0</b> <b>6ES7 952-1KP00-0AA0</b> <b>6ES7 952-1KS00-0AA0</b> <b>6ES7 952-1KT00-0AA0</b> <b>6ES7 952-1KY00-0AA0</b>

A) Subject to export regulations: AL: N and ECCN: EAR99H

C) Subject to export regulations: AL: N and ECCN: EAR99T

#### Overview



- SIMATIC WinAC Software PLCs and SIMATIC WinAC Slot PLCs support powerful interfaces which allow the control task to be closely integrated with PC-based applications.
- WinAC ODK allows users to develop new applications or to integrate existing applications into the control task.
- New with WinAC ODK V4.1:  
WinAC ODK V4.1 also allows the development of applications for WinAC Slot and replaces WinAC Slot T-Kit.

#### Technical specifications

	6ES7 806-1CC02-0BA0
<b>CPU/ programming</b>	
Open development interfaces	
- CCX (Custom Code Extension)	Yes; C/C++, Unmanaged Code
- SMX (Shared Memory Extension)	Yes; C/C++, Unmanaged Code
- CMI (Controller Management Interface)	Yes; C/C++, C#, VB
<b>Hardware requirements</b>	
• Required hardware	PC with color monitor, keyboard, mouse or pointing device for Windows
• required memory on hard disk, min.	10 MByte
• Main memory, min.	256 MByte
• Processor	Intel Pentium 800 MHz

	6ES7 806-1CC02-0BA0
<b>Software requirements</b>	
• Required software	MS Visual Developers Studio, V6.0 >= SP 3; MS Visual Developers Studio .net 2003; VenturCom SDK V6.0 (only for realtime applications with WinAC RTX)
<b>Operating system</b>	
- Windows NT 4.0	No
- Windows 2000	Yes; Professional, as of SP 3
- Windows XP	Yes; Professional, SP 1
<b>Software</b>	
Configuration software	
- Description	WinAC product support: WinAC Basic V4.1; WinAC RTX V4.1; WinAC Slot V3.4

#### Ordering Data

#### Order No.

##### SIMATIC WinAC ODK V4.1

for using C/C++ code in WinAC PLCs, runs under Windows NT 2000/XP; CD-ROM with electronic documentation in English Single license <sup>B)</sup>

**6ES7 806-1CC02-0BA0**

B) Subject to export regulations: AL: N and ECCN: EAR99S

#### Overview

SIMATIC Embedded Control extends the SIMATIC product range with a class of devices for operator control at the machine level and visualization on a single platform.

- **SIMATIC WinAC MP** is the soft PLC which runs under Windows CE and can be installed on the multifunctional platform MP 370. WinAC MP is the cost-optimized solution for deterministic processes in conjunction with a rugged hardware platform. At the same time it is ideal for applications in which large amounts of data are processed.
- The **SIMATIC MP 370** also provides the cost-optimized rugged hardware platform and the visualization software. Similar to the Operator Panels and programmable controllers, it is constructed without a fan or hard disk and is realtime-capable and deterministic.

#### Overview



- The software PLC which runs under Windows CE and can be installed on the multifunctional platform MP 370 12" and MP 370 15"
- The cost-optimized solution for deterministic processes in conjunction with a rugged hardware platform. At the same time it is ideal for applications in which large amounts of data are processed.
- Ideal for tasks directly at the machine when a user-friendly user interface is extremely important or the control task demand large programs and extensive data memory.

#### Technical specifications

##### SIMATIC WinAC MP V3.1

User memory	
•Flash memory (integrated)	5 MB
•Working memory (integrated)	1 MB
•Load memory (integrated)	1 MB
•Bit memories	2 KB
•Counters	512
•Timers	512
•Retentive data	Yes, with UPS
Number of blocks	
•FB/FC/OB/DB/SDB	total max. 2500
I/O	
•I/O address space	each 16 KB I/O
•Number of inputs/outputs	each 1 KB I/O
•Connection of the I/O	PROFIBUS DP up to 12 Mbits/s (MP 370 on board)
•Number of PROFIBUS DP slaves	32
Execution times	
•Bit operations (typ.)	0.2 µs
•Mathematical operations, typ.	0.15 µs
Technology	
•SIMATIC FMs	FM 350, FM 351, FM 352
•Easy Motion Control	Yes

System requirements	
•Hardware	SIMATIC MP 370 12" Touch, MP 370 12" Key or MP 370 15" Touch
•Operating system	Windows CE 3.0 (included on MP 370)
•PLC programming software	STEP 7, Version 5.2 or higher
•Visualization configuration software	ProTool, Version 6.0, SP2 or higher
•Communication software for Industrial Ethernet (only required on the programming device)	SOFTNET PG for IE
Communication functions	
Connections, total	24
•Ethernet, max.	22
•PROFIBUS, max.	4
•Reserved OS connections	1
•Reserved PG connection	1
PG/OP communication	Yes
Global data communication	No
S7 basic communication	No
S7 communication	
•As server	Yes
•As client	Yes

#### Ordering Data

#### Order No.

##### SIMATIC WinAC MP V3.1

Software-based PC-based control system under Windows CE;  
CD-ROM with electronic documentation (G, E, F)  
Single license <sup>B)</sup>

**6ES7 671-0EC02-0YA0**

B) Subject to export regulations: AL: N and ECCN: EAR99S

#### Overview



- Multi panels (MPs) can be used just like the operator panels for operating and monitoring machines on site.
- Their functional scope can be expanded by installing additional Windows CE applications (multi panel options)
- The SIMATIC MP 370 units based on Windows CE combine the ruggedness of operator panels with the flexibility of PCs
- Pixel graphics 12.1" or 15.1" TFT display, color (256 colors)
- **MP 370 12" Keys:**  
38 system keys, 36 freely-configurable and freely-inscribable function keys (36 with LEDs)
- **MP 370 12" and 15" Touch:**  
Touch screen (analog/resistive)
- All interfaces on board, e.g MPI, PROFIBUS DP, USB, Ethernet, serial

#### Technical specifications

Type	MP 370 12" Key	MP 370 12" Touch	MP 370 15" Touch
<b>Display</b>	TFT liquid crystal display (LCD)	TFT liquid crystal display (LCD)	TFT liquid crystal display (LCD)
•Size	12.1"	12.1"	15.1"
•Resolution (W x H in pixels)	800 x 600	800 x 600	1024 x 768
•Colors	256 colors	256 colors	256 colors
•MTBF of backlighting (at 25°C)	Approx. 50,000 hours	Approx. 50,000 hours	Approx. 50,000 hours
<b>Control elements</b>	Membrane keyboard	Touch screen	Touch screen
•Function keys, programmable	36 function keys, all with LEDs	-	-
•System keys	38 (3 with LED)	-	-
•Numeric/alphanumeric input	Yes/yes	Yes/yes	Yes/yes
•External mouse, keyboard, barcode reader	USB / USB / USB	USB / USB / USB	USB / USB / USB
<b>Processor</b>	RISC CPU	RISC CPU	RISC CPU
<b>Operating system</b>	Windows CE	Windows CE	Windows CE
<b>Memory</b>			
•Type	Flash / RAM	Flash / RAM	Flash / RAM
•Usable memory for user data	12 MB (of which 7 MB for configuration)	12 MB (of which 7 MB for configuration)	12 MB (of which 7 MB for configuration)
<b>Ports</b>	1 x TTY/RS 232, 1 x RS 232, 1 x RS 422/RS 485	1 x TTY/RS 232, 1 x RS 232, 1 x RS 422/RS 485	1 x TTY/RS 232, 1 x RS 232, 1 x RS 422/RS 485
•PC card slot	1 x PC card slot	1 x PC card slot	1 x PC card slot
•CF card slot	1 x CF card slot	1 x CF card slot	1 x CF card slot
•USB (Universal Serial Bus)	1 x USB	1 x USB	1 x USB
•Ethernet	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)	1 x Ethernet (RJ45)
Connection to PLC	S5, S7-200, S7-300/400, 505, WinAC, SINUMERIK, SIMOTION, Allen Bradley (DF1and DH485), Mitsubishi (FX), Telemecanique (ADJUST) <sup>1)</sup> , Modicon (Modbus), OMRON (Link/MultiLink), LG GLOFA GM, other non-Siemens PLCs	S5, S7-200, S7-300/400, 505, WinAC, SINUMERIK, SIMOTION, Allen Bradley (DF1and DH485), Mitsubishi (FX), Telemecanique (ADJUST) <sup>1)</sup> , Modicon (Modbus), OMRON (Link/MultiLink), LG GLOFA GM, other non-Siemens PLCs	S5, S7-200, S7-300/400, 505, WinAC, SINUMERIK, SIMOTION, Allen Bradley (DF1and DH485), Mitsubishi (FX), Telemecanique (ADJUST) <sup>1)</sup> , Modicon (Modbus), OMRON (Link/MultiLink), LG GLOFA GM, other non-Siemens PLCs

1) Cannot be connected in conjunction with WinCC flexible



#### Technical specifications (continued)

Type	MP 370 12" Key	MP 370 12" Touch	MP 370 15" Touch
<b>Supply voltage</b>	24 V DC	24 V DC	24 V DC
• Permitted range	-15%, + 20%	-15%, + 20%	-15%, + 20%
• Nominal current	1.15 A	1.15 A	1.8 A
<b>Backup battery</b>	Optional, 3.6 V	Optional, 3.6 V	Optional, 3.6 V
<b>Clock</b>	Hardware clock, backed up and synchronized	Hardware clock, backed up and synchronized	Hardware clock, backed up and synchronized
<b>Degree of protection</b>			
• Front	IP65, NEMA 12, NEMA 4x, NEMA 4	IP65, NEMA 12, NEMA 4x, NEMA 4	IP65, NEMA 12, NEMA 4x, NEMA 4
• Rear	IP20	IP20	IP20
<b>Certification</b>	FM Class I Div 2, cULus, EX Zone 2/22, CE	FM Class I Div 2, cULus, EX Zone 2/22, CE	FM Class I Div 2, cULus, EX Zone 2/22, CE, C-TICK
<b>Dimensions</b>			
• Front W x H (mm)	483 x 310	335 x 275	400 x 310
• Cut-out W x H (mm)	450 x 290	310 x 248	368 x 290
<b>Weight</b>	6 kg	5 kg	5.7 kg
<b>Ambient conditions</b>			
• Mounting position	Vertical	Vertical	Vertical
- Max. permissible angle of inclination without forced ventilation	+/- 35°	+/- 35°	+/- 35°
• Temperature			
- Operation (vertical installation)	0 to +50 °C	0 to +50 °C	0 to +50 °C
- Operation (max. angle of inclination)	0 to +35 °C	0 to +35 °C	0 to +35 °C
- Transport, storage	-20 to +60 °C	-20 to +60 °C	-20 to +60 °C
• Max. relative humidity	85 %	85 %	85 %
<b>Expansion for operator control of the process</b>			
• DP direct keys/LEDs (OP keys/LEDs as I/O peripherals)	Yes	-	-
• DP direct keys (TP buttons as I/O peripherals)	-	Yes	Yes
<b>Peripherals</b>	Printer, barcode reader, mouse, keyboard, diskette drive	Printer, barcode reader, mouse, keyboard, diskette drive	Printer, barcode reader, mouse, keyboard, diskette drive
<b>Applications/options</b>			
• Under ProTool	Soft PLC, Internet Explorer, ProAgent	Thin Client/MP, Soft PLC, Internet Explorer, ProAgent	Thin Client/MP, Soft PLC, Internet Explorer, ProAgent
• Under WinCC flexible	Internet Explorer, ProAgent, Sm@rtAccess, Sm@rtService, OPC server	Thin Client/MP, Internet Explorer, ProAgent, Sm@rtAccess, Sm@rtService, OPC server	Thin Client/MP, Internet Explorer, ProAgent, Sm@rtAccess, Sm@rtService, OPC server

# PC-based Automation

## SIMATIC Embedded Control

### SIMATIC MP 370

#### Technical specifications (continued)

Type	MP 370 12" Key	MP 370 12" Touch	MP 370 15" Touch
<b>Functionality when configuring with ProTool</b>			
Message system			
•Operating messages	2000	2000	2000
•Fault messages	2000	2000	2000
•Message length (lines x characters)	1 x 70	1 x 70	1 x 70
•No. of process values per message	8	8	8
•Message buffer	Circulating buffer, 1024 entries each <sup>2)</sup>	Circulating buffer, 1024 entries each <sup>2)</sup>	Circulating buffer, 1024 entries each <sup>2)</sup>
Recipes	500	500	500
•Data records per recipe	1000	1000	1000
•Entries per data record	1000	1000	1000
•Recipe memory	128 KB integrated flash, expandable	128 KB integrated flash, expandable	128 KB integrated flash, expandable
Process diagrams	300	300	300
•Text objects	30,000 text elements	30,000 text elements	30,000 text elements
•Variables per diagram	400	400	400
•Fields per diagram	400	400	400
•Graphics objects	Bitmaps, icons, background images, vector graphics	Bitmaps, icons, background images, vector graphics	Bitmaps, icons, background images, vector graphics
•Dynamic objects	Diagrams, bars, sliders, hidden buttons	Diagrams, bars, sliders, hidden buttons	Diagrams, bars, sliders, hidden buttons
- Directories	Yes	Yes	Yes
Variables	2048	2048	2048
Archiving			
•No. of archives per project	50	50	50
•No. of process tags per project	50	50	50
•No. of sequence archives	40	40	40
•Entries per archive	50,000	50,000	50,000
•Archive types	Short-term archive, sequence archive, message archive, process value archive	Short-term archive, sequence archive, message archive, process value archive	Short-term archive, sequence archive, message archive, process value archive
•Storage location	PC card, CF card, Ethernet	PC card, CF card, Ethernet	PC card, CF card, Ethernet
•Data storage format	CSV	CSV	CSV
•External evaluation	Readable, e.g. using MS Excel, MS Access	Readable, e.g. using MS Excel, MS Access	Readable, e.g. using MS Excel, MS Access
•Size of archive	Dependent on the available memory on the PC / CF card or spare hard disk memory on the network drive	Dependent on the available memory on the PC / CF card or spare hard disk memory on the network drive	Dependent on the available memory on the PC / CF card or spare hard disk memory on the network drive
•Online evaluation	Using trend curves	Using trend curves	Using trend curves
Password protection (levels)	10	10	10
Visual Basic Scripts	Number = 50 / number of lines per script = 100	Number = 50 / number of lines per script = 100	Number = 50 / number of lines per script = 100
Printer functions	Color printout, hardcopy, messages, shift log	Color printout, hardcopy, messages, shift log	Color printout, hardcopy, messages, shift log
Online languages	5	5	5
•Project languages	Traditional Chinese, simplified Chinese, Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	Traditional Chinese, simplified Chinese, Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	Traditional Chinese, simplified Chinese, Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish
Character set	Tahoma, Courier New, 4 further character sets can be loaded, ideographic languages freely scalable	Tahoma, Courier New, 4 further character sets can be loaded, ideographic languages freely scalable	Tahoma, Courier New, 4 further character sets can be loaded, ideographic languages freely scalable
Help system	Yes	Yes	Yes
PG functions (STATUS/CONTROL)	For SIMATIC S5/S7	For SIMATIC S5/S7	For SIMATIC S5/S7
Interval timer	Yes	Yes	Yes

2) Not battery-backed

#### Technical specifications (continued)

Type	MP 370 12" Key	MP 370 12" Touch	MP 370 15" Touch
<b>Functionality when configuring with WinCC flexible</b>			
Message system			
•No. of messages	4000	4000	4000
•Bit messages	Yes	Yes	Yes
•Analog messages	Yes	Yes	Yes
•No. of process values per message	8	8	8
•Message buffer	Circulating buffer, 1024 entries each <sup>2)</sup>	Circulating buffer, 1024 entries each <sup>2)</sup>	Circulating buffer, 1024 entries each <sup>2)</sup>
Recipes			
•Data records per recipe	500	500	500
•Entries per data record	1000	1000	1000
•Recipe memory	1000	1000	1000
	128 KB integrated flash, expandable	128 KB integrated flash, expandable	128 KB integrated flash, expandable
Process diagrams			
•Text objects	500	500	500
•Variables per diagram	30,000 text elements	30,000 text elements	30,000 text elements
•Fields per diagram	400	400	400
•Graphics objects	400	400	400
	Bitmaps, icons, background images, vector graphics	Bitmaps, icons, background images, vector graphics	Bitmaps, icons, background images, vector graphics
•Dynamic objects	Diagrams, bars, sliders, hidden buttons	Diagrams, bars, sliders, hidden buttons	Diagrams, bars, sliders, hidden buttons
- Directories	Yes	Yes	Yes
Variables	2048	2048	2048
Archiving			
•No. of archives per project	50	50	50
•No. of process tags per project	50	50	50
•No. of sequence archives	400	400	400
•Entries per archive	500.000	500.000	500.000
•Archive types	Short-term archive, sequence archive, message archive, process value archive	Short-term archive, sequence archive, message archive, process value archive	Short-term archive, sequence archive, message archive, process value archive
•Storage location	PC card, CF card, Ethernet	PC card, CF card, Ethernet	PC card, CF card, Ethernet
•Data storage format	CSV	CSV	CSV
•External evaluation	Readable, e.g. using MS Excel, MS Access	Readable, e.g. using MS Excel, MS Access	Readable, e.g. using MS Excel, MS Access
•Size of archive	Dependent on the available memory on the PC / CF card or spare hard disk memory on the network drive	Dependent on the available memory on the PC / CF card or spare hard disk memory on the network drive	Dependent on the available memory on the PC / CF card or spare hard disk memory on the network drive
•Online evaluation	Using trend curves	Using trend curves	Using trend curves
User administration (security)			
•No. of user groups	10	10	10
•No. of users	32	32	32
•No. of user group privileges	Variable	Variable	Variable
Visual Basic Scripts	Number = 100 / number of lines per script = 500	Number = 100 / number of lines per script = 500	Number = 100 / number of lines per script = 500
Printer functions	Color printout, hardcopy, messages, shift log	Color printout, hardcopy, messages, shift log	Color printout, hardcopy, messages, shift log
Online languages	5	5	5
•Project languages (incl. system messages)	Traditional Chinese, simplified Chinese, Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	Traditional Chinese, simplified Chinese, Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	Traditional Chinese, simplified Chinese, Czech, Danish, Dutch, German, English, Finnish, French, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish
Character set	Tahoma, Courier New, 4 further character sets can be loaded, ideographic languages freely scalable	Tahoma, Courier New, 4 further character sets can be loaded, ideographic languages freely scalable	Tahoma, Courier New, 4 further character sets can be loaded, ideographic languages freely scalable
Help system	Yes	Yes	Yes
PG functions (STATUS/CONTROL)	For SIMATIC S5/S7	For SIMATIC S5/S7	For SIMATIC S5/S7
Task planner (interval timer)	Yes	Yes	Yes

2) Not battery-backed

# PC-based Automation SIMATIC Embedded Control

## SIMATIC MP 370

### Technical specifications (continued)

Type	MP 370 12" Key	MP 370 12" Touch	MP 370 15" Touch
<b>Configuration tool</b>	ProTool from Version 5.2 SP3 or from WinCC flexible 2004 Standard (to be ordered separately)	ProTool from Version 5.2 SP3 or from WinCC flexible 2004 Standard (to be ordered separately)	ProTool from Version 6.0 SP2 or from WinCC flexible 2004 Standard (to be ordered separately)
•Transfer of the configuration	Serial / MPI / PROFIBUS DP / USB / Ethernet	Serial / MPI / PROFIBUS DP / USB / Ethernet	Serial / MPI / PROFIBUS DP / USB / Ethernet

### Ordering Data

#### SIMATIC MP 370

Multi Panel with  
12" color TFT display, Touch <sup>E)</sup>  
12" color TFT display, Key <sup>E)</sup>  
15" color TFT display, Touch <sup>E)</sup>  
incl. mounting accessories

### Order No.

**6AV6 545-0DA10-0AX0**  
**6AV6 542-0DA10-0AX0**  
**6AV6 545-0DB10-0AX0**

#### Configuration

with SIMATIC ProTool  
and ProTool/Pro

see catalog ST 80

with SIMATIC WinCC flexible

see catalog ST 80

#### Applications/options

#### When configuring with ProTool

- SIMATIC ProAgent/MP
- SIMATIC WinAC MP
- SIMATIC ThinClient/MP

see catalog ST 80  
see catalog ST 80  
see catalog ST 80

#### When configuring with WinCC flexible

- SIMATIC ThinClient/MP
- WinCC flexible /ProAgent
- WinCC flexible /Sm@rtAccess
- WinCC flexible /Sm@rtService
- WinCC flexible /OPC server

see catalog ST 80  
see catalog ST 80  
see catalog ST 80  
see catalog ST 80  
see catalog ST 80

#### Documentation (to be ordered separately)

#### Instruction manual MP 370 (WinCC flexible)

- German
- English
- French
- Italian
- Spanish

**6AV6 691-1DE01-0AA0**  
**6AV6 691-1DE01-0AB0**  
**6AV6 691-1DE01-0AC0**  
**6AV6 691-1DE01-0AD0**  
**6AV6 691-1DE01-0AE0**

#### User manual WinCC flexible Compact/Standard/Advanced

- German
- English
- French
- Italian
- Spanish

**6AV6 691-1AB01-0AA0**  
**6AV6 691-1AB01-0AB0**  
**6AV6 691-1AB01-0AC0**  
**6AV6 691-1AB01-0AD0**  
**6AV6 691-1AB01-0AE0**

#### User manual WinCC flexible Communication

- German
- English
- French
- Italian
- Spanish

**6AV6 691-1CA01-0AA0**  
**6AV6 691-1CA01-0AB0**  
**6AV6 691-1CA01-0AC0**  
**6AV6 691-1CA01-0AD0**  
**6AV6 691-1CA01-0AE0**

#### MP 370 manual (ProTool)

- German
- English
- French
- Italian
- Spanish

**6AV6 591-1DB10-2AA0**  
**6AV6 591-1DB10-2AB0**  
**6AV6 591-1DB10-2AC0**  
**6AV6 591-1DB10-2AD0**  
**6AV6 591-1DB10-2AE0**

#### ProTool user manual, configuring Windows-based systems

- German
- English
- French
- Italian
- Spanish

**6AV6 594-1MA06-1AA0**  
**6AV6 594-1MA06-1AB0**  
**6AV6 594-1MA06-1AC0**  
**6AV6 594-1MA06-1AD0**  
**6AV6 594-1MA06-1AE0**

#### Communications manual for Windows-based systems (ProTool)

- German
- English
- French
- Italian
- Spanish

**6AV6 596-1MA06-0AA0**  
**6AV6 596-1MA06-0AB0**  
**6AV6 596-1MA06-0AC0**  
**6AV6 596-1MA06-0AD0**  
**6AV6 596-1MA06-0AE0**

#### SIMATIC HMI Manual Collection

Electronic documentation,  
on CD-ROM  
  
5 languages (English, French,  
German, Italian and Spanish);  
Comprising: all currently available  
user manuals, product manuals  
and communication manuals for  
SIMATIC HMI

**6AV6 691-1SA01-0AX0**

E) Subject to export regulations: AL: N and ECCN: 5D002ENC3

Ordering Data	Order No.
<b>Accessories</b>	
<b>Memory cards</b>	
•CF card, 32 MB	<b>6AV6 574-2AC00-2AA0</b>
•PC card (ATA flash), 64 MB	<b>6AV6 574-2AC00-2AF0</b>
<b>Backup battery</b>	<b>W79084-E1001-B2</b>
Lithium battery, 2.6 V DC; 1.7 Ah, for TD17, OP17, OP25, OP27, OP 270, OP35, OP37, TP27, TP 270, TP37, MP 270, MP 270B and MP 370	
<b>Accessories for supplementary ordering</b>	
<b>Key inscription strips for MP 370 Keys</b>	<b>6AV6 574-1AB00-2BA0</b>
for function keys, without inscriptions, set of 2 (plastic)	
<b>Protective foil</b>	
to protect the touch front against contamination/scratching (set of 10)	
•for MP 370 12" Touch	<b>6AV6 574-1AD00-4CX0</b>
•for MP 370 15" Touch	<b>6AV6 574-1AD00-4EX0</b>
<b>Service package for MP 370 Touch</b>	<b>6AV6 574-1AA00-2CX0</b>
comprising:	
•Gasket	
•10 clamps	
•Clamp-type terminal strip (block of two)	
•Socket spanner	
<b>Service package for MP 370 Keys</b>	<b>6AV6 574-1AA00-2BX0</b>
comprising:	
•2 sets of inscription strips	
•6 clamps	
•Clamp-type terminal strip (block of two)	
•Socket spanner	
<b>Configuration cable</b>	<b>6ES7 901-1BF00-0XA0</b>
between PG/PC and MP, RS 232 cable (5 m)	
<b>RS 485 bus connector with axial cable outlet (180°)</b>	<b>6GK1 500-0EA02</b>
<b>System interfaces</b>	see catalog ST 80
<b>Connecting cables</b>	see catalog ST 80

#### More information

Additional information is available in the Internet under:

<http://www.siemens.com/mp>



# Component based Automation

# 10



**10/2 Introduction**  
10/2 Component based Automation

**10/3 Software**  
10/3 SIMATIC iMap  
10/4 PN CBA OPC server  
10/5 SIMATIC ProTool/Pro  
Sec. 7 <sup>1)</sup> SIMATIC WinCC flexible

**10/8 Controller / Distributed I/O  
for Industrial Ethernet**  
10/8 SIMATIC WinAC Software PLC  
10/9 CP 343-1 PN

**10/10 Controller / Distributed I/O  
for PROFIBUS**  
10/10 Central processing units of the  
S7-300  
10/13 IM 151-7 CPU interface modules  
10/16 BM 147/CPU intelligent basic  
modules

**10/19 Gateways**  
10/19 IE/PB Link  
  
<sup>1)</sup> See section 7 and catalog ST 80  
„Human Machine Interface  
Systems“



# Component based Automation

## Introduction

### Component based Automation

#### Overview



- Automation concept for implementing applications with "distributed intelligence"
- Simple data exchange between intelligent devices makes modularization of machines and plants easy
- Central, plant-wide engineering makes communication configuration easy
- Integration of Ethernet and fieldbus
- Support of vertical integration thanks to the use of IT standards in automation
- Use of the Ethernet standard PROFINET specified by PROFIBUS International (PI): Problem-free integration of standard-compliant devices from various manufacturers

#### Design

A configuration with Component based Automation comprises a number of components:

- Bus systems:
  - Industrial Ethernet (obligatory)
  - PROFIBUS, e.g. for real-time tasks (optional)
- Industrial Ethernet stations
- PROFIBUS stations

Industrial Ethernet stations require PROFINET communication mechanisms. The following Ethernet devices and software products are available:

- SIMATIC WinAC PN PC-based Control with software PLC
- PROFINET-compatible CP 343-1 PN for connecting the S7-300 to Ethernet
- PROFINET OPC server for access to data on PROFINET devices from PC applications and visualization systems
- Visualization via OPC:  
Any visualization product that can function as an OPC client can be used, e.g. SIMATIC ProTool/Pro, SIMATIC WinCC, third-party HMI. SIMATIC iMap features specific integration of SIMATIC ProTool/Pro.

PROFIBUS segments are connected to Industrial Ethernet via a PROFINET proxy. These devices operate as masters on PROFIBUS. They are available as:

- SIMATIC WinAC PN PC-based Control with software PLC
- SIMATIC NET IE/PB Link, compact gateway between Industrial Ethernet and PROFIBUS

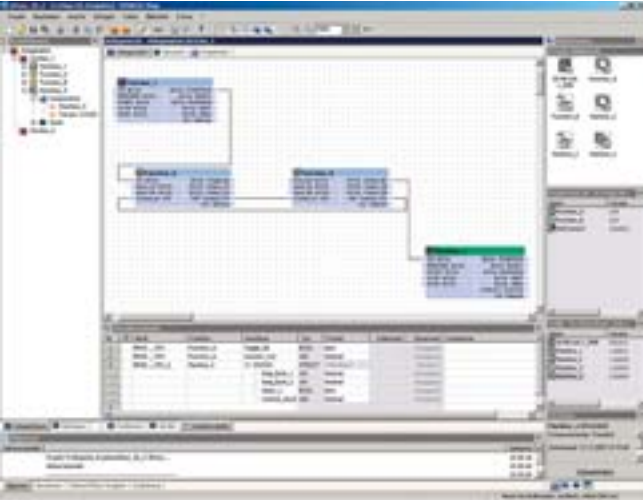
The following can be used as PROFIBUS nodes:

- SIMATIC ET 200X and ET 200S with separate CPU as intelligent field devices on PROFIBUS
- SIMATIC S7-300 CPUs with integrated PROFIBUS DP interface as intelligent slaves on PROFIBUS, e.g., compact CPUs CPU 313C-2 DP and CPU 314-2 DP
- All current standard slaves with GSD file to PROFIBUS DP standard

Even existing system sections networked with PROFIBUS can be integrated into Component based Automation systems. For this purpose, an Industrial Ethernet interface with PROFINET function must be added to the PROFIBUS master.



Overview



- Component-based software tool for configuration of communication in distributed automation solutions
- Based on PROFINET standard
- For simple graphic configuring of communication between system modules and machine-machine on the production line
- Open for PROFINET devices from different vendors on Industrial Ethernet
- Runs on Windows 2000 and Windows XP

Technical specifications

See section 7.

Ordering data

Order No.

**SIMATIC iMap V2.0**

*Target system:*

CPU 317-2 PN/DP,  
SIMATIC WinAC PN,  
SIMATIC NET IE/PB Link,  
SIMATIC NET CP 343-1 PN,  
SIMATIC NET CP 443-1 Advanced, distributed I/O stations with separate CPU, PROFINET OPC server, SIMATIC ProTool/Pro

*Prerequisite:*

Windows 2000 Prof. SP4 or  
Windows XP Prof SP1; on PG  
or PC with Pentium processor,  
min. 500 MHz; STEP 7 V5.2 SP 1  
or later incl. NCM, SIMATIC NET  
IE SOFTNET PG V6.2 or newer,  
PN OPC server V6.2 or newer

*Delivery package:*

English, German, with electronic  
documentation

Single license

Software update service

Upgrade to V2.0, single license

**6ES7 820-0CC03-0YX0**

**6ES7 820-0CC01-0YX2**

**6ES7 820-0CC03-0YX4**

# Component based Automation Software

## PN CBA OPC server

### Overview

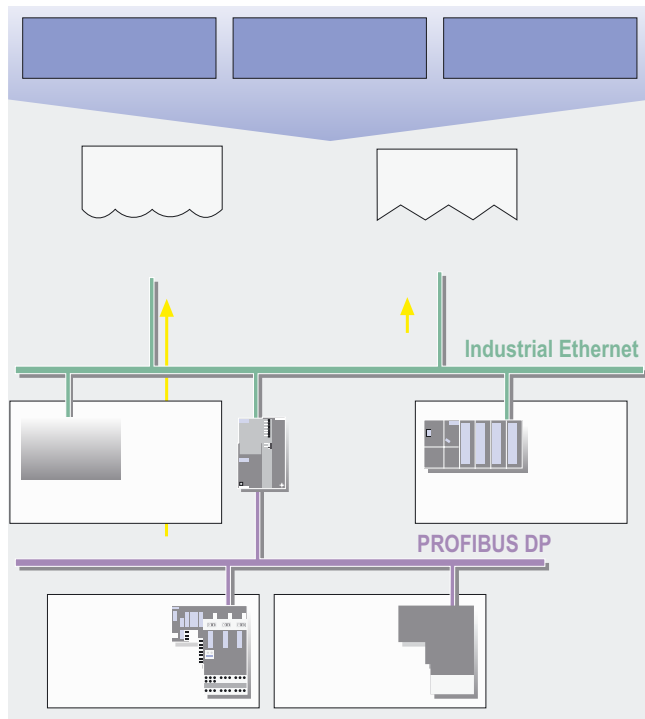
- Access to variables in PROFIN ET CBA components over the OPC interface
- Use of the objects and symbols defined using the PROFINET engineering tool SIMATIC iMap and STEP 7
- Adding PROFINET functionality to existing installations. This enables it to be used in parallel with other communication protocols such as S7 communication with SOFTNET-S7 for Industrial Ethernet.
- OPC Scout as an OPC client with browser functions for the variables of the PROFINET CBA components

### Technical specifications

See section 8.

### Ordering data

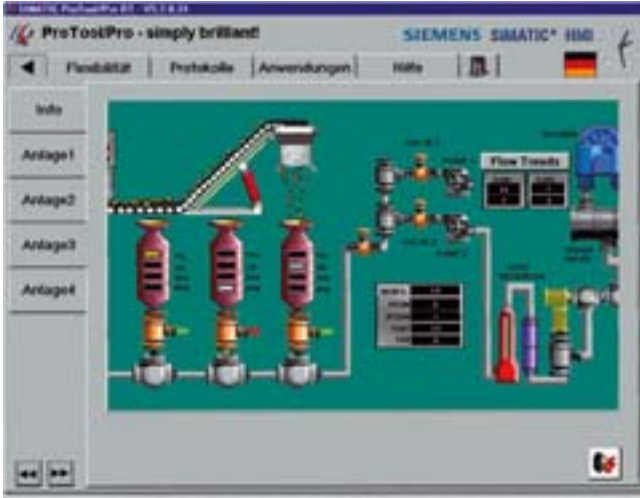
### Order No.



System integration with the PN CBA OPC server

D) Subject to export regulations: AL: N and ECCN: 5D992B1

### Overview



- **PC-based HMI solution** for single-user systems direct at the machine
- SIMATIC ProTool/Pro consists of:
  - SIMATIC ProTool/Pro RT runtime software for PC-based systems
  - Configuring software SIMATIC ProTool/Pro Configuration (CS) for configuring PC-based systems as well as SIMATIC Operator Panels
- For Windows 98 SE/ME and Windows NT4.0/2000/XP Professional
- **Current version:**
  - SIMATIC ProTool/Pro Configuration V6.0 + SP2
  - SIMATIC ProTool/Pro Runtime V6.0 + SP2

### Technical specifications

See section 7.

#### Ordering data

#### Order No.

**SIMATIC ProTool/Pro Configuration V6.0 + SP2, incl. ProAgent V6.0 + SP2<sup>3)</sup> B)**

**6AV6 582-2BX06-0CX0**

Language versions: G/E/F/I/S on CD-ROM, containing:

- ProTool/Pro Configuration (CS) V6.0 + SP2
- Simulation software for Mobile Panel 170, TP 170A/B, OP 170B, TP 270, OP 270, MP 270 10", MP 270B, MP 370 and ProTool/Pro Runtime
- Native drivers
- Electronic documentation (.pdf/.chm) in German, English, French, Spanish, Italian

**SIMATIC ProTool/Pro Runtime V6.0 + SP2 for PC systems incl. ProAgent V6.0 + SP2<sup>3)</sup>**

on CD-ROM with license (single license) for

- 128 PowerTags (RT 128) <sup>B)</sup>
- 256 PowerTags (RT 256) <sup>B)</sup>
- 512 PowerTags (RT 512) <sup>B)</sup>
- 2048 PowerTags (RT 2048) <sup>B)</sup>

**6AV6 584-1AB06-0CX0**

**6AV6 584-1AC06-0CX0**

**6AV6 584-1AD06-0CX0**

**6AV6 584-1AF06-0CX0**

#### Upgrade

- ProTool/Pro to ProTool/Pro V6.0 + SP2 <sup>1) B)</sup>

**6AV6 582-2BX06-0CX4**

- ProTool/Pro RT to ProTool/Pro RT V6.0 + SP2 <sup>B)</sup>

**6AV6 584-3AX06-0CX4**

#### Powerpacks

**SIMATIC ProTool/Pro RT PowerTags from**

- 128 to 256 PowerTags <sup>B)</sup>
- 128 to 512 PowerTags <sup>B)</sup>
- 128 to 2048 PowerTags <sup>B)</sup>
- 256 to 512 PowerTags <sup>B)</sup>
- 256 to 2048 PowerTags <sup>B)</sup>
- 512 to 2048 PowerTags <sup>B)</sup>
- SIMATIC ProTool/Lite to ProTool/Pro V6.0 + SP2 <sup>B)</sup>
- SIMATIC ProTool to ProTool/Pro V6.0 + SP2 <sup>B)</sup>

**6AV6 570-1BC00-0AX0**

**6AV6 570-1BD00-0AX0**

**6AV6 570-1BF00-0AX0**

**6AV6 570-1CD00-0AX0**

**6AV6 570-1CF00-0AX0**

**6AV6 570-1DF00-0AX0**

**6AV6 571-2AC06-0CX0**

**6AV6 571-2BC06-0CX0**

#### Software update service <sup>2)</sup>

- Software Update Service SIMATIC ProTool/Pro <sup>B)</sup>

**6AV6 582-3AX00-0AX2**

B) Subject to export regulations: AL: N and ECCN: EAR99S

1) Upgrade for Configuration Station (CS) as well as Runtime (RT) Station

2) For a period of 12 months and for a fixed price, the customer is automatically provided with all upgrades and service packs per installed ProTool/Pro package. The contract is automatically extended by a further year unless canceled 12 weeks prior to expiry.

3) The runtime licenses for ProAgent/PC must be purchased separately for each target system

# Component based Automation Software

## SIMATIC ProTool/Pro

### Ordering data

### Order No.

### Order No.

#### Versions for China/Taiwan/Korea/Japan

#### SIMATIC ProTool/Pro Configuration V6.0 + SP2 ASIA <sup>D)</sup>

6AV6 582-2BX06-0CV0

Language/script variants:  
English/Chinese traditional and  
simplified/Korean/Japanese;  
comprising:

- ProTool/Pro Configuration (CS) V6.0 + SP2 ASIA
- Simulation software for Mobile Panel 170, TP 170A/B, OP 170B, TP 270, OP 270, MP 270, MP 270B, MP 370 and ProTool/Pro Runtime
- Electronic documentation (.pdf/.chm) in: English, Chinese (traditional and simplified), Korean and Japanese

#### SIMATIC ProTool/Pro Runtime V6.0 + SP2 ASIA for PC systems

on CD-ROM with license (single license) for

- 128 PowerTags (RT 128) <sup>D)</sup>
- 256 PowerTags (RT 256) <sup>D)</sup>
- 512 PowerTags (RT 512) <sup>D)</sup>
- 2048 PowerTags (RT 2048) <sup>D)</sup>

6AV6 584-1AB06-0CV0  
6AV6 584-1AC06-0CV0  
6AV6 584-1AD06-0CV0  
6AV6 584-1AF06-0CV0

#### Communication via Industrial Ethernet

#### CP 1613

6GK1 161-3AA00

PCI card (32 bits) for connecting a PG/PC to Industrial Ethernet (communications software must be ordered separately)

#### S7-1613 V6.1 <sup>D)</sup>

6GK1 716-1CB61-3AA0

Software for S7 communication, S5-compatible communication (SEND/RECEIVE) incl. OPC, PG/OP communication (S5/505 Layer 4 communication with TCP/IP), for Windows NT4.0 / 2000 / XP

#### CP 1612 <sup>A)</sup>

6GK1 161-2AA00

PCI card (32-bit) for connecting a PG/PC to Industrial Ethernet (SOFTNET-S7 must be ordered separately)

#### CP 1512

6GK1 151-2AA00

PCMCIA card (Cardbus 32-bit) for connecting a PG/Notebook to Industrial Ethernet (SOFTNET-S7 must be ordered separately)

#### SOFTNET-S7 V6.1 <sup>D)</sup>

6GK1 704-1CW61-3AA0

Software for S5-compatible communication (SEND/RECEIVE) and S7 communication for Windows NT4.0 / 2000 / XP (max. 64 connections)

#### SOFTNET-S7/Lean V6.1 <sup>D)</sup>

6GK1 704-1LW61-3AA0

Software for S5-compatible communication (SEND/RECEIVE) and S7 communication for Windows 2000 / XP (max. 8 connections)

#### Communication via PROFIBUS

#### CP 5613 A2 <sup>D)</sup>

6GK1 561-4AA01

PCI card (32 bits) for connecting a PC to PROFIBUS (communications software must be ordered separately)

#### S7-5613 V6.1 <sup>D)</sup>

6GK1 713-5CB61-3AA0

Software for S7 communication incl. PG/OP communication, FDL, S7 OPC server, for Windows NT4.0 / 2000 / XP

#### CP 5512

6GK1 551-2AA00

PCMCIA card (CARDBUS 32 bit) for connecting a PG/Notebook to PROFIBUS or MPI (communication software included in ProTool/Pro)

#### CP 5611

6GK1 561-1AA00

PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communication software included in ProTool/Pro)

#### CP 5611 MPI

6GK1 561-1AM00

Comprising PCI card CP 5611 (32-bit) and MPI cable, 5 m

#### PC/PPI adapter <sup>A)</sup>

6ES7 901-3CB30-0XA0

RS 232, 9-pin; male with RS 232/PPI converter, max. 19.2 Kbit/s

#### PC/MPI adapter

6ES7 972-0CA23-0XA0

RS 232, 9-pin; male with RS 232/MPI converter, max. 19.2 Kbit/s

A) Subject to export regulations: AL: N and ECCN: EAR99H

D) Subject to export regulations: AL: N and ECCN: 5D992B1

- 1) Upgrade for Configuration Station (CS) as well as Runtime (RT) Station
- 2) For a period of 12 months and for a fixed price, the customer is automatically provided with all upgrades and service packs per installed ProTool/Pro package. The contract is automatically extended by a further year unless canceled 12 weeks prior to expiry.
- 3) The runtime licenses for ProAgent/PC must be purchased separately for each target system

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# Component based Automation

## Controller / Distributed I/O for Industrial Ethernet

### SIMATIC WinAC Software PLC

#### Overview



- Optimized for applications that demand high flexibility and integration capability.
- SIMATIC WinAC software PLCs comprise the following products
  - WinAC Basis and
  - WinAC RTX.
- WinAC Basis:
  - The low-cost solution for PC-based control tasks.
  - For data-intensive processes in connection with extensive PC tasks.
- WinAC RTX:
  - The software solution for tasks which demand hard deterministics.
  - With real-time extension to provide deterministic behavior for the control unit.

SIMATIC WinAC software PLCs each comprise the following components:

- Windows logic controller
- OPC server and ActiveX components
- Driver for PROFIBUS CPs
- VenturCom RTX real-time kernel (WinAC RTX only)

#### Optional:

- CP for connecting to PROFIBUS DP:
  - CP 5611 or the integral PROFIBUS interface on the SIMATIC PC (WinAC Basis only)
  - CP 5613 A2.
- SIMATIC WinAC PN option
  - Permits communication between WinAC Basis and further automation systems based on PROFINET CBA via Industrial Ethernet.
- WinAC Open Development Kit (ODK):
  - For using C/C++ code in WinAC Basis or WinAC RTX
  - For integrating external software (technology programs) or PC components (e.g. scanners, PC cards for measured data acquisition)

#### Technical specifications

See section 9.

#### Ordering data

#### Order No.

- B) Subject to export regulations: AL: N and ECCN: EAR99S  
D) Subject to export regulations: AL: N and ECCN: 5D992B1

## Overview



- The CP 343-1 PN enables connection of SIMATIC S7-300 to Industrial Ethernet
  - 10/100 Mbit/s full/half duplex connection with autosensing for automatic switching
  - Universal connection options for ITP, RJ45 and AUI
  - Adjustable Keep Alive function
  - TCP/UDP transport protocol
- PROFINET communications standards: PROFINET, the Ethernet-based communications standard, defines an engineering model for distributed automation solutions and a model for system-wide communication through PROFIBUS and Industrial Ethernet. This standard is implemented by Siemens as Component based Automation.
- Additional communication services:
  - PG/OP communication
  - S7 communication
  - S5-compatible communication
- Multicast at UDP
- Remote programming and commissioning through the network

## Technical specifications

See section 4.

### Ordering data

### Order No.

#### Communications processor CP 343-1 PN

For connecting SIMATIC S7-300 to Industrial Ethernet with PROFINET function, TCP/IP, S7 communication, FETCH/WRITE, SEND/RECEIVE, with/without RFC 1006, 10/100 Mbit/s with electronic manual on CD-ROM

**6GK7 343-1HX00-0XE0**

#### NCM S7 configuration software for Industrial Ethernet

Supplied with STEP 7 Version V5.1 SP 2 and higher

#### NCM S7 manual for Industrial Ethernet

Paper version

for V5.x (STEP 7 V5.x)

- German
- English
- French
- Spanish
- Italian

**6GK7 080-1AA03-8AA0**

**6GK7 080-1AA03-8BA0**

**6GK7 080-1AA03-8CA0**

**6GK7 080-1AA03-8DA0**

**6GK7 080-1AA03-8EA0**

#### Software iMap V2.0

For configuring

SIMATIC WinAC PN,  
SIMATIC NET IE/PB Link,  
SIMATIC NET CP 343-1 PN,  
SIMATIC NET CP 443-1 Advanced,  
distributed I/O stations with a  
separate CPU, PN OPC server,  
SIMATIC ProTool/Pro

Requirement:

Windows 2000 SP4 or  
Windows XP Prof. SP1;  
on programming devices or PC  
with Pentium processor, 500 MHz  
or faster; STEP 7 V5.2 SP 1  
incl. NCM, SIMATIC NET IE  
SOFTNET-PG V6.2 and higher,  
PN OPC server V6.2 and higher

Type of supply:

German, English, with electronic  
documentation

Single license

Software update service

Upgrade iMap to V2.0  
single license

**6ES7 820-0CC03-0YX0**

**6ES7 820-0CC01-0YX2**

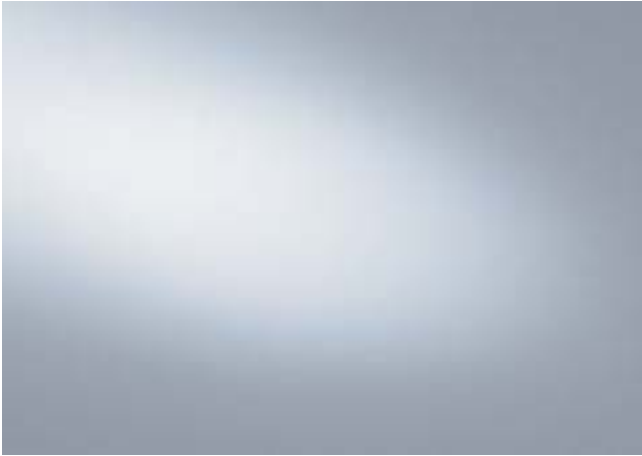
**6ES7 820-0CC03-0YX4**

# Component based Automation

## Controller / Distributed I/O for PROFIBUS

### Central processing units of the S7-300

#### CPU 313C-2 DP



- The compact CPU with integrated digital and analog I/Os and PROFIBUS DP master/slave interface
- With process-related functions
- For tasks with special functions
- For the connection of standalone I/O devices

*Micro memory card required to operate the CPU.*

#### CPU 315-2 DP

- The CPU with medium to large program memory and quantity framework for the use, if required, of SIMATIC Engineering Tools
- High processing performance in binary and floating-point arithmetic
- PROFIBUS DP master/slave interface
- For extensive I/O configurations
- For setting up distributed I/O structures

*Micro memory card required for operation of CPU.*

#### CPU 314C-2 DP

- The compact CPU with integrated digital and analog I/Os and PROFIBUS DP master/slave interface
- With process-related functions
- For tasks with special functions
- For the connection of standalone I/O devices

*Micro memory card required to operate the CPU.*

#### CPU 318-2 DP

- The CPU with a large program memory and PROFIBUS DP master/slave interface
- For extensive I/O configurations
- For setting up distributed I/O structures

### Technical specifications

See section 4.



# Component based Automation Controller / Distributed I/O for PROFIBUS

## Central processing units of the S7-300

Ordering data	Order No.		Order No.
<b>CPU 313C-2 DP</b> Compact CPU, 32 KB RAM, 24 V DC supply voltage, 16 DI/16 DO integrated, integrated functions, MPI, PROFIBUS DP master/slave interface; MMC is necessary	<b>6ES7 313-6CE01-0AB0</b>	<b>MPI cable</b> For connecting SIMATIC S7 and the PG through MPI; length 5 m	<b>6ES7 901-0BF00-0AA0</b>
<b>CPU 314C-2DP</b> Compact CPU, 48 KB RAM, 24 V DC supply voltage, 24DI/16DO/4AI/2AO integrated, integrated functions, MPI, PROFIBUS DP master/slave interface; MMC is necessary	<b>6ES7 314-6CF01-0AB0</b>	<b>Backup battery</b> for CPU 318-2 DP; 3.6 V, 850 mA	<b>6ES7 971-1AA00-0AA0</b>
<b>CPU 315-2 DP</b> 128 KB RAM, 24 V DC supply voltage, MPI, PROFIBUS DP master/slave interface; MMC is necessary	<b>6ES7 315-2AG10-0AB0</b>	<b>Spare key for CPU</b> 2 items (spare part)	<b>6ES7 911-0AA00-0AA0</b>
<b>CPU 318-2 DP</b> 512 KB RAM, 24 V DC supply voltage, PROFIBUS DP master/slave interface, MPI, slot for memory card, casing for backup battery; including slot number labels and 2 keys;	<b>6ES7 318-2AJ00-0AB0</b>	<b>Point-to-point link</b> for connection to CPU 31xC-2 PTP; length 5 m  5 m 10 m 50 m	<b>6ES7 902-3AB00-0AA0</b> <b>6ES7 902-3AC00-0AA0</b> <b>6ES7 902-3AG00-0AA0</b>
<b>Micro memory card</b> 64 KB 128 KB 512 KB 2 MB 4 MB 8 MB	<b>6ES7 953-8LF11-0AA0</b> <b>6ES7 953-8LG11-0AA0</b> <b>6ES7 953-8LJ11-0AA0</b> <b>6ES7 953-8LL11-0AA0</b> <b>6ES7 953-8LM11-0AA0</b> <b>6ES7 953-8LP11-0AA0</b>	<b>Sub-D connector</b> for connection to the second serial interface of CPU 31xC-2 PTP 15-pin, pins	<b>6ES5 750-2AA21</b>
<b>Programming adapter for micro memory card</b> For PG 720 and PG 740	<b>6ES7 798-0BA00-0XA0</b>	<b>Front connector (1 item)</b> for compact CPUs, CPU 31xF-2 DP, CPU 317T-2 DP  40-pin, screw-type contacts  • 1 item • 100 items 40-pin with spring loaded terminals	<b>6ES7 392-1AM00-0AA0</b> <b>6ES7 392-1AM00-1AB0</b> <b>6ES7 392-1BM01-0AA0</b>
<b>FEPROM memory card</b> for CPU 318-2 DP 16 KB 32 KB 64 KB 128 KB 256 KB 512 KB 1 MB 2 MB 4 MB	<b>6ES7 951-0KD00-0AA0</b> <b>6ES7 951-0KE00-0AA0</b> <b>6ES7 951-0KF00-0AA0</b> <b>6ES7 951-0KG00-0AA0</b> <b>6ES7 951-1KH00-0AA0</b> <b>6ES7 951-0KJ00-0AA0</b> <b>6ES7 951-1KK00-0AA0</b> <b>6ES7 951-1KL00-0AA0</b> <b>6ES7 951-1KM00-0AA0</b>	<b>Mounting location number plates</b> <b>S7-300 Manual</b> <sup>B)</sup> Configuration, CPU data, module data, command list  German English French Spanish Italian	<b>6ES7 912-0AA00-0AA0</b>  <b>6ES7 398-8FA10-8AA0</b> <b>6ES7 398-8FA10-8BA0</b> <b>6ES7 398-8FA10-8CA0</b> <b>6ES7 398-8FA10-8DA0</b> <b>6ES7 398-8FA10-8EA0</b>
<b>RAM memory card</b> for CPU 318-2 DP 128 KB 256 KB 512 KB 1 MB 2 MB	<b>6ES7 951-0AG00-0AA0</b> <b>6ES7 951-1AH00-0AA0</b> <b>6ES7 951-1AJ00-0AA0</b> <b>6ES7 951-1AK00-0AA0</b> <b>6ES7 951-1AL00-0AA0</b>	<b>SIMATIC Manual Collection</b> <sup>B)</sup> Electronic manuals on CD-ROM, 5 languages: S7-200/-300/-400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, Engineering Software, Runtime Software, PCS 7, SIMATIC HMI, SIMATIC NET	<b>6ES7 998-8XC01-8YE0</b>
		<b>SIMATIC Manual Collection update service for 1 year</b> <sup>B)</sup> Up-to-date Manual Collection CD as well as the three subsequent updates	<b>6ES7 998-8XC01-8YE2</b>
		<b>Power supply connector</b> For compact CPUs, innovated standard CPUs and CPU 315F-2 DP (10 items, spare part)	<b>6ES7 391-1AA00-0AA0</b>
		<b>Labeling strips</b> For compact CPUs, standard CPUs as well as CPU 315F-2 DP (10 items, spare part)	<b>6ES7 392-2XX00-0AA0</b>

B) Subject to export regulations: AL: N and ECCN: EAR99S

# Component based Automation Controller / Distributed I/O for PROFIBUS

## Central processing units of the S7-300

Ordering data	Order No.		Order No.
<b>Label cover</b> For compact CPUs, standard CPUs as well as CPU 315F-2 DP (10 items, spare part)	<b>6ES7 392-2XY00-0AA0</b>	<b>SIMATIC S7 Demo Case</b> with mounting equipment for installation of S7-200 and S7-300	<b>6ES7 910-3AA00-0XA0</b>
<b>S7 SmartLabel</b> Software for labeling modules mechanically directly in the STEP 7 project	<b>2XV9 450-1SL01-0YX0</b>	<b>Accumulator for real-time clock</b>	<b>6ES7 971-5BB00-0AA0</b>
<b>Sheets of labels for machine inscription</b> For 16-channel signal modules, DIN A4, for printing using a laser printer; 10 items Petrol Light beige Yellow Red  For 32-channel signal modules, DIN A4, for printing using a laser printer; 10 items Petrol Light beige Yellow Red	<b>6ES7 392-2AX00-0AA0</b> <b>6ES7 392-2BX00-0AA0</b> <b>6ES7 392-2CX00-0AA0</b> <b>6ES7 392-2DX00-0AA0</b>  <b>6ES7 392-2AX10-0AA0</b> <b>6ES7 392-2BX10-0AA0</b> <b>6ES7 392-2CX10-0AA0</b> <b>6ES7 392-2DX10-0AA0</b>	<b>PROFIBUS DP bus connector RS 485</b> •With 90° cable outlet, max. transmission rate 12 Mbps - without PG interface - with PG interface •With 90° cable outlet for Fast-Connect connection technique, max. transmission rate 12 Mbps - without PG interface - with PG interface •With axial cable outlet for SIMATIC OP, for connecting to PPI, MPI, PROFIBUS	<b>6ES7 972-0BA12-0XA0</b> <b>6ES7 972-0BB12-0XA0</b>  <b>6ES7 972-0BA50-0XA0</b> <b>6ES7 972-0BB50-0XA0</b> <b>6GK1 500-0EA02</b>
<b>"Communication for SIMATIC S7-300/400" manual</b> German English French Spanish Italian	<b>6ES7 398-8EA00-8AA0</b> <b>6ES7 398-8EA00-8BA0</b> <b>6ES7 398-8EA00-8CA0</b> <b>6ES7 398-8EA00-8DA0</b> <b>6ES7 398-8EA00-8EA0</b>	<b>PROFIBUS Fast Connect bus cable</b> Standard type specially designed for quick installation, 2-core, shielded, sold by the meter; Max. length supplied 1000 m, minimum order quantity 20 m  <b>Repeater RS 485 for PROFIBUS</b> Transmission rate of up to 12 Mbps; 24 V DC; IP20 casing  <b>PROFIBUS bus components</b> For establishing MPI/PROFIBUS communication	<b>6XV1 830-0EH10</b>  <b>6ES7 972-0AA01-0XA0</b>  <b>See Catalogs IK PI and CA 01</b>

### Overview



- Interface module with integrated CPU for SIMATIC ET 200S
- For high-performance control solutions in ET 200S
- Enhances the effective system availability of plants and machines
- Programming through PROFIBUS DP
- Features the new SIMATIC Micro Memory Card (MMC)
- Maintenance-free because no battery
- Integrated 12 Mbit/s PROFIBUS DP slave/MPI interface for Cu conductors
- Integrated CPU based on the CPU S7-314
- IM 151-7 CPU FO available
- Failsafe IM 151-7 F-CPU PROFIsafe available

### Technical specifications

MLFB	6ES7151-7AA10- . . . .
Associated programming package	STEP 7 V 5.1 + SP 6 and higher Optional: •S7-SCL •S7-GRAPH •STEP 7 V5.2 + SP1 and higher •Master functionality (with master interface 6ES7 138-4HA00-0AB0)
<b>Memory</b>	
Working memory	
•Integrated	48 kByte
•Expandable	No
Load memory	Plug-in through MMC (max. 8 MB)
Backup	Realized by MMC (maintenance-free)
<b>Execution times</b>	
Execution times for	
•Bit operation, min.	0.1 µs
•Word operation, min.	0.2 µs
•Fixed-point arithmetic, min.	2 µs
•Floating-point arithmetic, min.	6 µs
<b>Timers/counters and their retentivity</b>	
S7 counter	256
•Retentivity	Adjustable
•Preset	From Z 0 to Z 7
•Counting range	0 to 999
IEC counter	Yes
•Type	SFB
•Number	Unlimited (limited by working memory only)
S7 timers	256
•Retentivity	Adjustable
•Preset	No retentivity
•Range	10 ms to 9990 s
IEC timer	Yes
•Type	SFB
•Number	Unlimited (limited by working memory only)

<b>Data areas and their retentivity</b>	
Total retentive data area (incl. flags; timers; counters)	all
Bit memories	256 byte
•Retentivity	Yes
•Preset retentivity	MB0 to MB15
Clock memory	8 (1 memory byte)
Data blocks	
•Number	511
•Size	16 kbyte
Local data for each priority class, max.	510 byte
<b>Modules</b>	
Total	1024 (DBs, FCs, FBs)
OBs	See operation list
•Size	16 kbyte
Nesting depth	
•For each priority class	8
•Plus, within an error OB	4
FBs	See operation list
•Number	512
•Size	16 kbyte
FCs	See operation list
•Number	512
•Size	16 kbyte
<b>Address areas (inputs/outputs)</b>	
I/O address area, max.	2048 byte
I/O process image	128 byte/128 byte
Max. number of digital I/O channels	16136 bit
Of which centralized I/O max.	248 byte
Number of analog channels (distributed + centralized)	1024 (words)
Of which centralized I/O max.	124 words

# Component based Automation Controller / Distributed I/O for PROFIBUS

## IM 151-7 CPU interface modules

### Technical specifications (continued)

Configuring rules	<ul style="list-style-type: none"> <li>•Max. 63 I/O modules per station</li> <li>Station width &lt;1m or &lt;2m</li> <li>Max. 10 A per load group (power module)</li> <li>Master interface right alongside IM 151 CPU (X2 interface)</li> </ul>
<b>Time of day</b>	
Clock	Yes (HW clock)
•Battery-backed	Yes
•Back-up time	Typ. 6 weeks (at 40°C ambient air temperature)
•Accuracy	Deviation per day: < 10 s
Operating hours counter	1
•Number	0
•Range of values	2 <sup>31</sup> hours (when using the SFC 101)
•Selectivity	1 hour
•Retentive	Yes; must be restarted on every restart.
Clock synchronization	Yes
•Centrally in PLC	No
•On MPI	Master/slave
<b>S7 message function</b>	
Number of stations that can be registered for message functions (e.g. OS)	12 (depends on the links configured for PG/OP and S7 standard communication)
Process diagnostic alarms	Yes
•Simultaneously active alarm S blocks, max.	40
<b>Test and startup function</b>	
Status/modify variable	Yes
•Variable	Inputs, outputs, bit memories, DB, timers, counters
•Number of variables	30
- Of which status variables	30
- Of which modify variables	14
Forcing	Yes
•Variable	Inputs/outputs
•Number of variables, max.	10
Status module	Yes
Single step	Yes
Breakpoint	2
Diagnostic buffer	Yes
•Number of entries (not adjustable), max.	100

<b>Communication functions</b>	
PG/OP communication	Yes
Global data communication	Yes
•Number of GD packages, max.	4
- Transmitter, max.	4
- Receiver, max.	4
•Size of GD packages, max.	22 byte
- Of which consistent	22 byte
S7 standard communication	Yes
•Useful data per request, max.	76 byte
- Of which consistent	76 byte (for X_SEND or X_RCV) 64 byte (for X_PUT or X_GET as a server)
S7 communication	Yes
•As a server	Yes
•As a client	No
•Useful data per request, max.	180 byte
- Of which consistent	64 byte
S5-compatible communication	No
Standard communication	No
Number of connections	12
Can be used for	
•PG communication	
- Spare (default)	1
- Adjustable	1 to 11
•OP communication	
- Spare (default)	1
- Adjustable	1 to 11
•S7 standard communication	
- Spare (default)	0
- Adjustable	0 to 10
<b>Interfaces</b>	
1st (integrated) interface	
Type	Integrated, coexistent RS 485 interface
Physical characteristics	RS 485
Isolated	Yes
Power supply on interface (15 to 30 V DC), max.	80 mA
Functionality	
•MPI	Yes
•PROFIBUS DP	Yes, DP slave (active/passive)
•Point-to-point coupling	No

### Technical specifications (continued)

MPI mode	
Number of connections (also with DP master module plugged in)	12 (per CPU)
Utilities	
•PG/OP communication	Yes
•Routing	Yes (with master module)
•Global data communication	Yes
•S7 standard communication	Yes
•S7 communication	Yes
- As a server	Yes
- As a client	No
•Transmission rates	Max. 12 Mbit/s
DP slave mode	
Number of connections	12 (per CPU)
Utilities	
•PG/OP communication	Yes
•Routing	Yes (only with active interface and with master mode)
•Global data communication	No
•S7 standard communication	No
•S7 communication	No
•Transmission rate	Up to 12 Mbit/s
•Transfer memory	244 Byte I/244 Byte O
•Address area, max.	32 with max. 32 byte each
•DPV1	No
<b>2nd interface</b>	
Type	External interface over master module 6ES7 138-4HA00-0AB0
Physical characteristics	RS 485
Isolated	Yes
Power supply on interface (DC 15 to 30 V), max.	None
Functionality	
•MPI	No
•PROFIBUS DP	Yes, DP-Master
•Point-to-point coupling	No
Number of connections	12 (per CPU)
Utilities	
•PG/OP communication	Yes
•Routing	Yes
•Global data communication	No
•S7 standard communication	No
•S7 communication	Yes (server only)
•Direct data exchange	Yes
•Isochronicity	Yes
•Sync/Freeze	Yes
•Activate/disable DP slaves	Yes
•DPV1	Yes
Transmission rates	Up to 12 Mbaud
Number of DP slaves per station	32
Address area, max.	2 Kbyte I / 2 Kbyte O
Useful data per DP slave	Max. 244 byte I / 244 byte O

### Ordering data

### Order No.

<b>Interface module IM 151/CPU (48 K)</b>	<b>6ES7 151-7AA10-0AB0</b>
Including termination module	
<b>Interface module IM 151/CPU FO (48 K)</b>	<b>6ES7 151-7AB00-0AB0</b>
Including termination module	
<b>Accessories</b>	
<b>MMC 64 KB <sup>1)</sup></b>	<b>6ES7 953-8LF11-0AA0</b>
For program backup	
<b>MMC 128 KB <sup>1)</sup></b>	<b>6ES7 953-8LG11-0AA0</b>
For program backup	
<b>MMC 512 KB <sup>1)</sup></b>	<b>6ES7 953-8LJ11-0AA0</b>
For program backup	
<b>MMC 2 MB <sup>1)</sup></b>	<b>6ES7 953-8LL11-0AA0</b>
For program backup and/or firmware update	
<b>MMC 4 MB <sup>1)</sup></b>	<b>6ES7 953-8LM11-0AA0</b>
For program backup	
<b>MMC 8 MB <sup>1)</sup></b>	<b>6ES7 953-8LP11-0AA0</b>
For program backup	
<b>MMC adapter</b>	<b>6ES7 798-0BA00-0AA0</b>
For PG memory card slot	
<b>External PROM programmer</b>	<b>6ES7 792-0AA00-0XA0</b>
For e.g. MMC with USB interface	
<b>PG</b>	On request
with integral MMC interface	
<b>DIN A4 sheets of labels</b>	
•Petrol	<b>6ES7 193-4BH00-0AA0</b>
•Red	<b>6ES7 193-4BD00-0AA0</b>
•Yellow	<b>6ES7 193-4BB00-0AA0</b>
•Light beige	<b>6ES7 193-4BA00-0AA0</b>
<b>Manual for ET 200S</b>	
•German	<b>6ES7 151-1AB00-8AA0</b>
•English	<b>6ES7 151-1AB00-8BA0</b>
<b>Terminating module</b>	<b>6ES7 193-4JA00-0AA0</b>
For ET 200S	
<b>SIMATIC S5, standard DIN rail 35 mm, length 483 mm for 19" cabinets</b>	<b>6ES5 710-8MA11</b>
<b>SIMATIC S5, standard DIN rail 35 mm, length 530 mm for 600 mm cabinets</b>	<b>6ES5 710-8MA21</b>
<b>SIMATIC S5, standard DIN rail 35 mm, length 830 mm for 900 mm cabinets</b>	<b>6ES5 710-8MA31</b>
<b>SIMATIC S5, standard DIN rail 35 mm, length 2 m</b>	<b>6ES5 710-8MA41</b>

1) An MMC is absolutely essential for operating the CPU

# Component based Automation Controller / Distributed I/O for PROFIBUS

## BM 147/CPU intelligent basic modules

### Overview



- Basic modules for exchanging preprocessed I/O data between an ET 200X and a higher level master through PROFIBUS DP
- Two versions:
  - BM147-1 with DP slave functionality and
  - BM147-2 with additional DP master functionality
- CPU for PLC functionality equivalent to S7-314, in other words, distributed intelligence for preprocessing
- For reducing the overhead on the central PLC and PROFIBUS
- With greatly reduced response times to critical signals locally
- Standalone operation, for example it is still possible to operate even if the DP master fails
- Fast, simple and integrated programming of a system with modular programs through STEP 7

### Technical specifications

Dimensions W x H x D (in mm)

- Individual device

MLFB

Associated programming package

#### Memory

Working memory

- Integrated
- Expandable

#### BM147-1 and BM 147-2 CPU

175 x 110 x 86

6ES7 147-2AA00-0XB0  
(BM 147-2)

6ES7 147-1AA10-0XB0  
(BM 147-1)

STEP 7 V5.2 + SP1

48 kByte

No

### Technical specifications (continued)

	BM147-1 and BM 147-2 CPU
Configuring rules	
<b>Time of day</b>	
Clock	Yes (HW clock)
•Battery-backed	Yes
•Back-up time	Typ. 6 weeks (at 40°C ambient air temperature)
•Accuracy	Deviation per day: < 10 s
Operating hours counter	1
•Number	0
•Range of values	2 <sup>31</sup> hours (when using the SFC 101)
•Selectivity	1 hour
•Retentive	Yes; must be restarted on every restart.
Clock synchronization	Yes
•In the PLC	Master/slave
•On MPI	Slave
<b>S7 message function</b>	
Number of stations that can be registered for message functions (e.g. OS)	12 (depends on the links configured for PG/OP and S7 basic communication)
Process diagnostic alarms	Yes
•Simultaneously active alarm S blocks, max.	40
<b>Test and startup function</b>	
Status/modify variable	Yes
•Variable	Inputs, outputs, bit memories, DB, timers, counters
•Number of variables	30
- Of which status variables	30
- Of which modify variables	14
Forcing	Yes
•Variable	Inputs/outputs
•Number of variables, max.	10
Status module	Yes
Single step	Yes
Breakpoint	2
Diagnostic buffer	Yes
•Number of entries (not adjustable), max.	100
<b>Communication functions</b>	
PG/OP communication	Yes
Global data communication	Yes
•Number of GD packages, max.	4
- Transmitter, max.	4
- Receiver, max.	4
•Size of GD packages, max.	22 byte
- Of which consistent	22 byte
S7 basic communication	Yes
•Useful data per request, max.	76 byte
- Of which consistent	76 byte (for X_SEND or X_RCV) 64 byte (for X_PUT or X_GET as a server)

	BM147-1 and BM 147-2 CPU
S7 communication	Yes
•As a server	Yes
•As a client	No
•Useful data per request, max.	180 (with PUT/GET)
- Of which consistent	64 byte
S5-compatible communication	No
Number of connections	12
Can be used for	
•PG communication	
- Spare (default)	1
- Adjustable	1 to 11
•OP communication	
- Spare (default)	1
- Adjustable	1 to 11
•S7 standard communication	
- Spare (default)	10
- Adjustable	0 to 10
<b>Interfaces</b>	
Slave interface	
•Type	Coexistent, integrated RS 485 interface
Master interface (BM147-2 only)	
•Type	Integrated RS 485 interface
Physical characteristics	RS 485
Isolated	Yes
<b>Functionality</b>	
Number of connections	12
•MPI	Yes
•PROFIBUS DP	DP slave active/passive
•Point-to-point coupling	No
<b>MPI mode</b>	
Utilities	
•PG/OP communication	Yes
•Routing (BM 147-2 only)	Yes
•Global data communication	Yes
•S7 standard communication	Yes
•S7 communication	Yes
- As a server	Yes
•Transmission rates	Max. 12 Mbit/s
<b>DP slave mode</b>	
Utilities	
•PG/OP communication	Yes
•Routing (BM 147-2 only)	Yes (server only)
•Global data communication	No
•S7 standard communication	No
•S7 communication	No
•Transmission rates	Up to 12 Mbaud
•Transfer memory	244 byte I/244 byte O
•Address area, max.	Max. 1 KB I/1 KB O
•DPV1	No



# Component based Automation Controller / Distributed I/O for PROFIBUS

## BM 147/CPU intelligent basic modules

### Technical specifications (continued)

#### DP master mode

##### Utilities

•PG/OP communication	Yes
•Routing	Yes
•Global data communication	No
•S7 basic communication	No
•S7 communication	Yes (server only)
•Direct data exchange	Yes
•Isochrone mode	No
•Isochronicity	Yes
•SYNC/FREEZE	Yes
•Activation/disabling of DP slaves	Yes
•Transmission rates	Up to 12 Mbaud
•Transfer memory	244 byte I/244 byte O
•Address area, max.	Max.1 KB I/1 KB O
•DPV1	Yes

### Ordering data

### Order No.

**BM 147-1 CPU basic module** <sup>A)</sup>  
With integral PLC functionality

**6ES7 147-1AA10-0XB0**

**BM 147-2 CPU basic module** <sup>A)</sup>  
With integral PLC functionality  
and additional PROFIBUS master  
interface

**6ES7 147-2AA00-0XB0**

#### Accessories

#### Manual for ET 200X distributed I/O station

- German
- English
- French

**6ES7 198-8FA01-8AA0**  
**6ES7 198-8FA01-8BA0**  
**6ES7 198-8FA01-8CA0**

#### Cover plates for ET 200X basic module

Protective cover for bus terminals  
and power supply terminals  
(pack of 10)

**6ES7 194-1JB00-0XA0**

#### Simple mounting rails for SIMATIC ET 200X (narrow)

- 400 mm long for basic module  
+ 3 expansion modules (60 mm)
- 640 mm long for basic module  
+ 7 expansion modules (60 mm)
- 2000 mm long for customized  
lengths

**6ES7 194-1GA00-0XA0**

**6ES7 194-1GA10-0XA0**

**6ES7 194-1GA20-0XA0**

#### Double mounting rails for SIMATIC ET 200X (wide)

- 520 mm long for basic module  
+ 1 expansion module (60 mm)  
+ 2 motor starter/frequency  
converter/pneumatic interfaces
- 1000 mm long for basic module  
+ 1 expansion module (60 mm)  
+ 6 motor starter/frequency  
converter

**6ES7 194-1GB00-0XA0**

**6ES7 194-1GB10-0XA0**

#### Fixing screws

M5 x 20, 1 package = 100 parts

**6ES7 194-1KC00-0XA0**

#### Connecting cable for PROFIBUS

12 Mbaud, for PG connection to  
PROFIBUS DP, assembled with  
2 x 9-pin Sub-D connector, 3.0 m

**6ES7 901-4BD00-0XA0**

#### ECOFAS hybrid cable

Assembled with ECOFAST  
connector plugs

- 1.5
- 3.0
- 5.0
- 10.0
- 15.0

**6XV1 830-7BH15**  
**6XV1 830-7BH30**  
**6XV1 830-7BH50**  
**6XV1 830-7BN10**  
**6XV1 830-7BN15**

#### ECOFAS terminating resistor

- Ordering quantity 1 part
- Ordering quantity 5 parts

**6GK1 905-0DA10**

**6GK1 905-0DA00**

#### ECOFAS plug connector, can be prepared

Male contacts;  
ordering quantity 5 parts

**6GK1 905-0CA00**

#### ECOFAS plug connector, can be prepared

Female contacts;  
ordering quantity 5 parts  
MMC memory cards up to 8 MB  
(as for S7-314)

**6GK1 905-0CB00**

A) Subject to export regulations: AL: N and ECCN: EAR99H



#### Overview



- Compact network transition between Industrial Ethernet and PROFIBUS
- Connection to Industrial Ethernet at 10/100 Mbit/s full/half duplex with autosensing for automatic switchover
- Connection to PROFIBUS with transmission speeds of 9.6 kbit/s to 12 Mbit/s incl. 45.45 kbit/s for PROFIBUS PA
- PROFINET standard Version V1.0
- The IE/PB link supports the PROFINET communications services for data exchange between PROFINET devices and is proxy for PROFIBUS field devices
- PROFINET defines an engineering model for distributed automation solutions and a model for system-wide communication through PROFIBUS and Industrial Ethernet with IT standards
- Cross-network PG/OP communication through S7 routing, i.e. all S7 stations can be remotely programmed on Industrial Ethernet or PROFIBUS using the PG

#### Technical specifications

Data transmission rates	
• Industrial Ethernet	10/100 Mbit/s autosensing
• PROFIBUS	9.6 kbit/s to 12 Mbit/s including 45.45 kbit/s (PROFIBUS PA)
Interfaces	
• Connection to Industrial Ethernet	
- AUI (10 Mbit/s)	15-pin Sub-D connector
- 10BaseT/100BaseT	RJ45
• Connection to PROFIBUS	9-pin Sub-D connector
• Connection for power supply	4-pin terminal block
Supply voltage	24 V DC (+/- 5%)
Current consumption (at rated voltage)	
• Externally from 24 V DC, max.	600 mA

Power loss	Approx. 10 W
Permissible ambient conditions	
• Operating temperature	0 °C to + 60 °C
• Transport/storage temperature	- 40 °C to + 70 °C
• Relative humidity, max.	95 % at + 25 °C
Design	
• Module format	S7-300 design
• Dimensions (W x H x D) in mm	80 x 125 x 120
• Weight	Approx. 600 g
Degree of protection	IP20
Configuration	
• Configuring software for PROFINET	Option package SIMATIC iMAP
• Configuring software for additional services	NCM S7 in STEP 7 Version V5.1 SP2 and higher

#### Ordering data

Order No.	Order No.
<b>IE/PB Link</b>	<b>6GK1 411-5AA00</b>
Network transition between Industrial Ethernet and PROFIBUS including electrical manual on CD-ROM German, English, French, Spanish, Italian	
<b>S7-300 DIN rail</b>	<b>6ES7 390-1AB60-0AA0</b>
<b>S7-300 power supply PS 307</b> 24 V DC	<b>6ES7 307-1BA00-0AA0</b>
<b>NCM S7 configuration software for Industrial Ethernet</b>	Included in STEP 7 V5 scope of supply
<b>Manual for TP and fiber-optic networks</b>	
Paper version Network architecture, components, configurations, mounting guidelines	
• German	<b>6GK1 970-1BA10-0AA0</b>
• English	<b>6GK1 970-1BA10-0AA1</b>

#### Manual for PROFIBUS networks

Paper version Network architecture, project management, network components, mounting	
• German	<b>6GK1 970-5CA20-0AA0</b>
• English	<b>6GK1 970-5CA20-0AA1</b>
<b>Software iMap V2.0</b>	
For configuring: SIMATIC WinAC PN, SIMATIC NET IE/PB Link, SIMATIC NET CP 343-1 PN, SIMATIC NET CP 443-1 Advanced, distributed I/O with a separate CPU, PN OPC server, SIMATIC ProTool/Pro	
Requirement: Windows 2000 SP4 or Windows XP Prof. SP1; on programming devices or PC with Pentium processor, 500 MHz or faster; STEP 7 V5.2 SP1 incl. NCM, SIMATIC NET IE SOFTNET-PG V6.2 and higher, PN OPC server V6.2 and higher	
Type of supply: German, English, with electronic documentation	
Single license	<b>6ES7 820-0CC03-0YX0</b>
Software update service	<b>6ES7 820-0CC01-0YX2</b>
Upgrade iMap to V2.0 single license	<b>6ES7 820-0CC03-0YX4</b>



## Overviews



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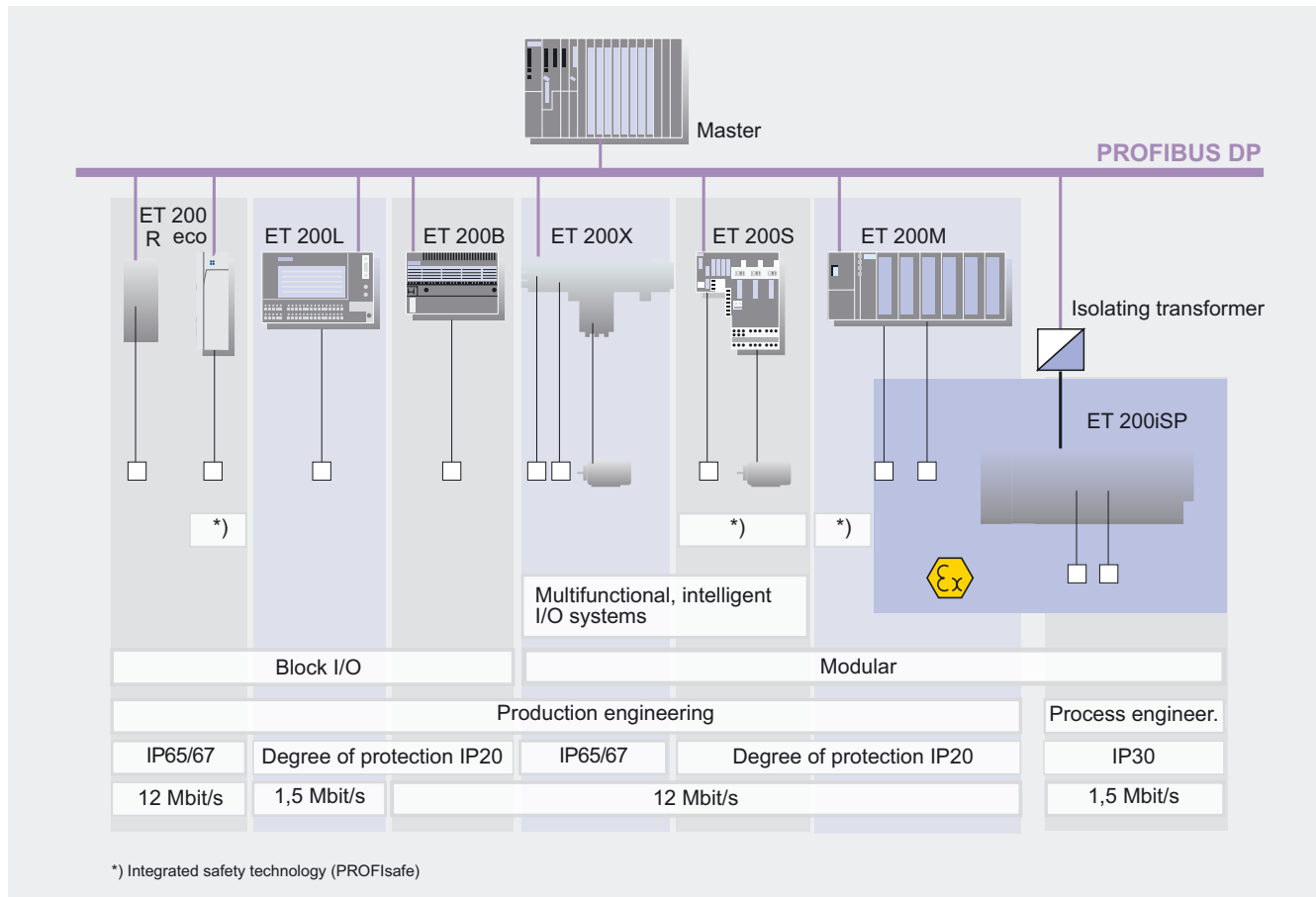
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- SIMATIC ET 200 distributed I/O devices:  
For direct local connection of sensors and actuators.
- Signal transmission to higher-level control or master system via PROFIBUS DP fieldbus;  
significantly reducing the wiring overhead.
- Optimum integration of SIMATIC ET 200 devices in Totally Integrated Automation.
- Fully compatible for operation with non-Siemens masters.

### Scope of application

SIMATIC ET 200 can provide the ideal distributed solution for all industries and applications:

- It can be used in production technology as well as in process engineering.
- IP20 degree of protection (with control cabinet) or IP65/67 (without control cabinet).
- Low-cost to high-feature.
- Compact to highly-modular design.
- Integrated fiber optic interfaces.
- From simple I/O modules to multifunctional systems.
- Motor starters, frequency converters, pneumatic components, technology modules, safety functions or even distributed intelligence (CPU) can be integrated (depending on the device).

### Function

#### Configuration, parameter assignment

SIMATIC ET 200 I/O devices are configured/set up using STEP 7 or COM PROFIBUS. However, as standard PROFIBUS slaves, they are also compatible for use with non-Siemens master devices and their configuration tools via the GSD file.

In order to meet process engineering requirements, the relevant devices are also integrated into SIMATIC PDM, which supports user-friendly parameter assignment and diagnosis. Communication also takes place via the same bus line.

#### Diagnostics

ET 200 I/O devices provide a variety of diagnostic information to the higher-level control via the bus line, e.g., device diagnostics and error messages in plain text. LEDs for the device, module or even channel complement this information. This speeds up debugging and increases system and machine availability.

Other components such as the BT 200 test device and the diagnostic repeater support system diagnostics on PROFIBUS DP during commissioning and/or active operation.

### Overview



- Intrinsically-safe distributed I/O device for use in hazardous areas (Zones 1, 2, 21 and 22) with IP30 degree of protection.
- Sensors and actuators can also be located in Zone 0 or 20.
- Modular design for adaptation to the automation task in hand.

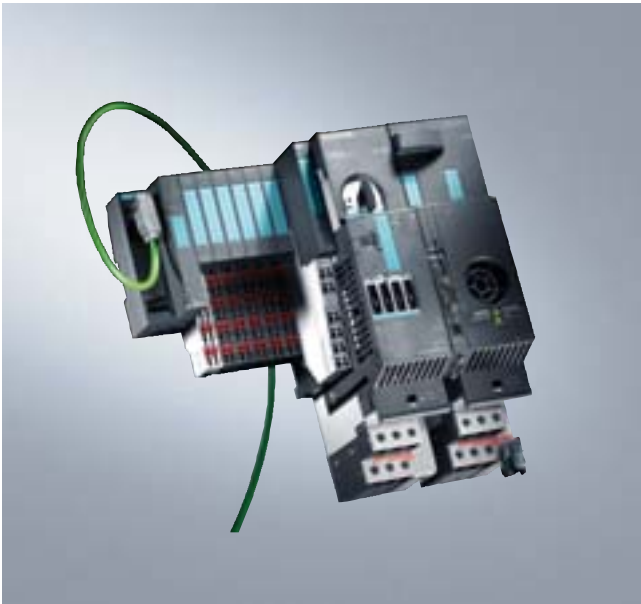
- Independent wiring enables pre-wiring without the electronics connected.
- Optimized for integration into I&C systems such as SIMATIC PCS 7 and others.
- Connection of:
  - HART process devices
  - EEx i valves
- Connection to PROFIBUS DP via isolating transformers.
- Baud rate 1.5 Mbps.
- Module replacement during operation (hot swapping).
- Channel-specific diagnostics for high availability.
- Screw/spring-loaded terminal connections.
- Approvals:
  - CENELEC 94/9/EG
  - CE

#### Further information

- Catalogs IK PI, CA 01
- Internet: <http://www.siemens.com/simatic-dp>

## SIMATIC ET 200S

### Overview



- Particularly compact distributed I/O system with IP20 degree of protection, which requires little wiring.
- Bit-modular design for exact adaptation to the automation task in hand.

- Use of digital and analog I/O modules, technology modules, motor starters and frequency converters.
- Use as mini PLC on PROFIBUS DP when the integrated CPU is used.
- Module replacement during operation (hot swapping).
- Channel-specific diagnostics for high availability.
- Can be supplied with integrated fiber optic interface if required.
- Can be supplied with PROFINET interface for direct connection to Industrial Ethernet.
- Baud rate 12 Mbps.
- FAST CONNECT thanks to insulation-piercing quick-connect terminals.
- Ex approval for Zone 2/22.
- Permanent wiring.
- Integration of safety technology:
  - Failsafe digital modules
  - Failsafe motor starters
  - Failsafe frequency converters

#### Further information

- Catalogs IK PI, CA 01
- Internet: <http://www.siemens.com/simatic-dp>

# Overview SIMATIC DP

## SIMATIC ET 200eco

### Overview



- Compact, cost-effective I/O devices for processing digital signals.
- Design without control cabinet with IP65/67 degree of protection with flexible and fast connections.
- Comprises a basic module and various connection blocks for application-specific implementation options:
  - ECOFAST
  - M12
- Connection block contains T-functionality for PROFIBUS DP and power supply so that during commissioning and service, the modules can be disconnected from and reconnected to the PROFIBUS without interruption.
- Digital input/output modules, also failsafe.

#### Further information

- Catalogs IK PI, CA 01
- Internet:  
<http://www.siemens.com/simatic-dp>

## SIMATIC ET 200X

### Overview



- Use of digital and analog input or output modules, motor starters, frequency converters, pneumatic components and integrated CPU.
- Connection of AS-Interface slaves.
- DESINA-compliant modules available (parameterizable I/O).
- Can be supplied with integrated fiber optic interface if required.
- Baud rate 12 Mbps.
- Basic module with ECOFAST connection (RS 485, FO).
- MOBY expansion modules available.

#### Further information

- Catalogs IK PI, CA 01
- Internet:  
<http://www.siemens.com/simatic-dp>

- Distributed I/O device with IP 65/67 degree of protection for complete solutions without control cabinets on the machine level.
- Modular design for adaptation to the automation task in hand.

### Overview



- Distributed I/O with IP65 degree of protection, specifically for robot applications.
- Aluminum die-cast housing.
- Integrated repeater.
- Parameterizable inputs/outputs: 8DI/8DO to 16DI.
- Terminal strip on rear for the connection of analog signals for welding transformers.
- Connection via hybrid line to 17-pin M23 connector.

#### Further information

- Catalogs IK PI, CA 01
- Internet:  
<http://www.siemens.com/simatic-dp>

## SIMATIC ET 200L

### Overview



- Small, cost-effective I/O device with IP20 degree of protection for the lower performance range.
- Comprises a terminal block and an electronics block.
- Available in 2 versions:
  - ET 200L block I/O (cannot be expanded).
  - ET 200L-SC modular I/O, can be expanded with a SIMATIC Smart Connect (SC) TB 16 SC terminal block. This block supports the addition of up to 16 digital and analog input/output channels for high modularity.
- Baud rate 1.5 Mbps.

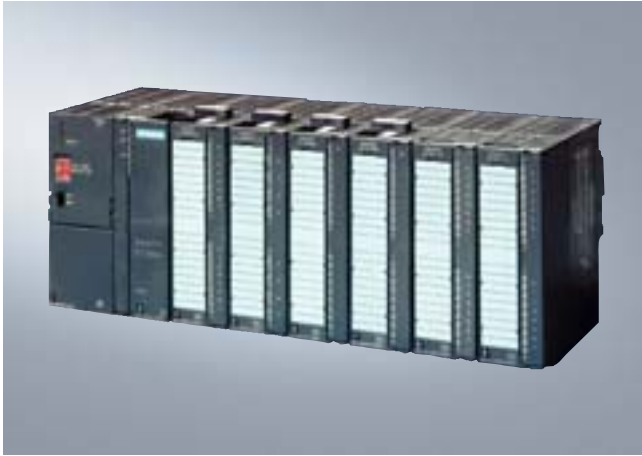
#### Further information

- Catalogs IK PI, CA 01
- Internet:  
<http://www.siemens.com/simatic-dp>



## SIMATIC ET 200M

### Overview



- Modular I/O device with IP20 degree of protection, particularly suitable for individual and complex automation tasks.

- Can be expanded with S7-300 automation system signal and function modules (incl. failsafe modules).
- Compatible Ex analog input and output modules with HART optimize the ET 200M for use in process engineering.
- Can be used in redundant and safety-related systems (S7-400H, S7-400F/FH).
- Can be used in hazardous areas, Zone 2/22.
- Comprises a PROFIBUS DP interface with IM 153, up to 8 S7-300 I/O modules (set up with bus connectors or active bus modules) and, if applicable, a power supply unit.
- Modules can be replaced during operation with active bus modules.
- Can be supplied with integrated fiber optic interface if required.
- Baud rate 12 Mbps.

#### Further information

- Catalogs IK PI, CA 01
- Internet:  
<http://www.siemens.com/simatic-dp>

## SIMATIC ET 200B

### Overview



- Small, compact I/O device with low mounting depth and IP20 degree of protection. It can be installed in even the smallest of spaces.
- Comprises a terminal block and an electronics block with integrated PROFIBUS DP interface.
- Numerous analog and digital electronics blocks are available.
- Baud rate up to 12 Mbps.

#### Further information

- Catalogs IK PI, CA 01
- Internet:  
<http://www.siemens.com/simatic-dp>



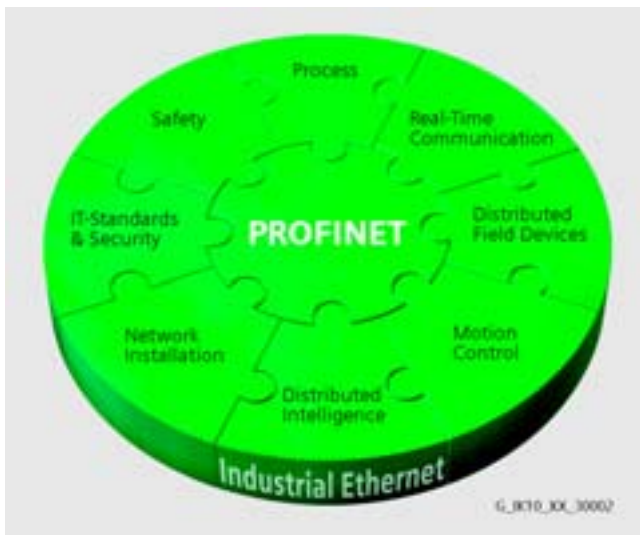
### Overview

#### **PROFINET – The open standard for automation**

PROFINET is the innovative and open Industrial Ethernet standard (IEC 61158) for industrial automation. With PROFINET, devices can be linked up from the field level through to the management level.

PROFINET enables system-wide communication, supports plant-wide engineering and uses the IT standards right down to the field level. Solutions for implementation in process automation are currently under development. PROFINET is already well-proven in the automobile industry, food, beverages and tobacco industries and in logistics in a wide range of different applications. Existing fieldbus systems such as PROFIBUS can be easily integrated without any modification of existing devices.

PROFINET is a comprehensive standard that meets all the requirements for using Ethernet in automation.



#### **Network components for Industrial Ethernet – optimized for use with PROFINET**

##### **Active network components**

The industrial switches of the SCALANCE X product family are optimized for use at the field level through:

- A cost-optimized number of optical and electrical interfaces
- Seamless integration into the PROFINET diagnostics concept
- Optimized support of RT technology through prioritizing.
- Integral retaining collars for stress relief and bending stress relief of the plug-in connection

Wireless transmission is also no problem for PROFINET with the SCALANCE W Industrial Wireless LAN components

##### **Passive network components**

With the fast installation system Industrial Ethernet FastConnect (IE FC) from SIMATIC NET, structured cabling from the office environment becomes industry-compatible for installation in the production hall. FastConnect cables can also be assembled extremely quickly and easily on site. FastConnect offers a complete system. Apart from the FastConnect system that is based on copper cables –with a wide range of industrial installation cables, socket outlets, connectors and patch cables –a comprehensive range of optical transmission media is also available.

##### **Industrial Security – the security solution**

specially designed for industrial automation technology; the SCALANCE S product family is offered for this purpose including SOFTNET Security; in the form of a software module or a hardware module.

##### **PROFINET technology components**

The openness of this standard is emphasized by the marketing of PROFINET technology. It is offered in the form development kits as is the case for PROFIBUS. Device manufacturers are supported with implementation by worldwide competence centers.

### Overview (continued)

#### PROFINET: distributed field devices to Industrial Ethernet

With PROFINET, distributed field devices (so-called IO devices, e.g. signal modules) can be directly connected to Industrial Ethernet. During configuration with STEP 7, these field devices are assigned to a central controller (so-called IO Controller).

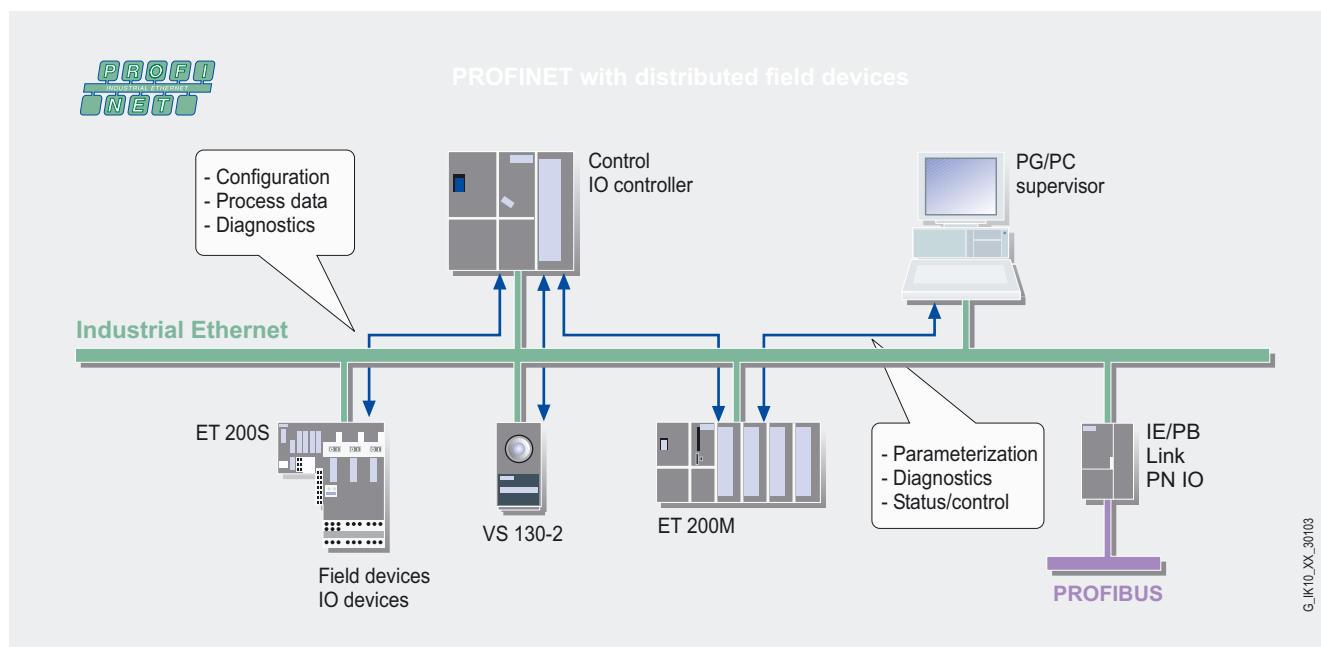
Existing modules or devices can continue to be used with PROFINET-capable interfaces or links, thus safeguarding the investment of PROFIBUS users.

An IO Supervisor is used for HMI and diagnostic functions, as for PROFIBUS, using hierarchic diagnostic screens (overview and detailed diagnostics).

The following SIMATIC products are available for PROFINET for integrating distributed field devices:

- IM 151-3 PN;  
interface module for direct connection of the ET 200S as an IO device
- CPU 317-2 PN/DP;  
CPU module as an IO Controller for processing the process signals and for directly connecting field devices to Industrial Ethernet
- IE/PB Link PN IO;  
PROFINET proxy for transparent interfacing of existing PROFIBUS devices as IO devices
- IWLAN/PB Link PN IO;  
PROFINET proxy for wireless, transparent interfacing of existing PROFIBUS devices as IO devices

- CP 343-1;  
communications processor for connecting the S7-300 to Industrial Ethernet, to connect field devices as IO devices
- CP 343-1 Advanced;  
communications processor with integral Web server for connecting the S7-300 to Industrial Ethernet and to connect field devices as IO devices
- CP 443-1 Advanced;  
communications processor with integral Web server and integral switch for connecting the S7-400 to Industrial Ethernet and to connect field devices as IO devices
- CP 1616;  
communications processor with integral switch for connecting programmable controllers and PCs to Industrial Ethernet to connect field devices as IO devices
- VS 130-2;  
vision sensor as IO device for reading 2D code
- SOFTNET PN IO;  
communications software that makes it possible to operate a PG or PC as an IO Controller
- STEP 7;  
for configuring in the tried and tested PROFIBUS manner



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### Overview (continued)

#### PROFINET: Modularization and distributed intelligence

PROFINET supports distributed automation on the basis of Component based Automation - the modular solution for machine and plant construction within the context of Totally Integrated Automation. Alongside PROFINET, PROFIBUS is also integrated into this solution.

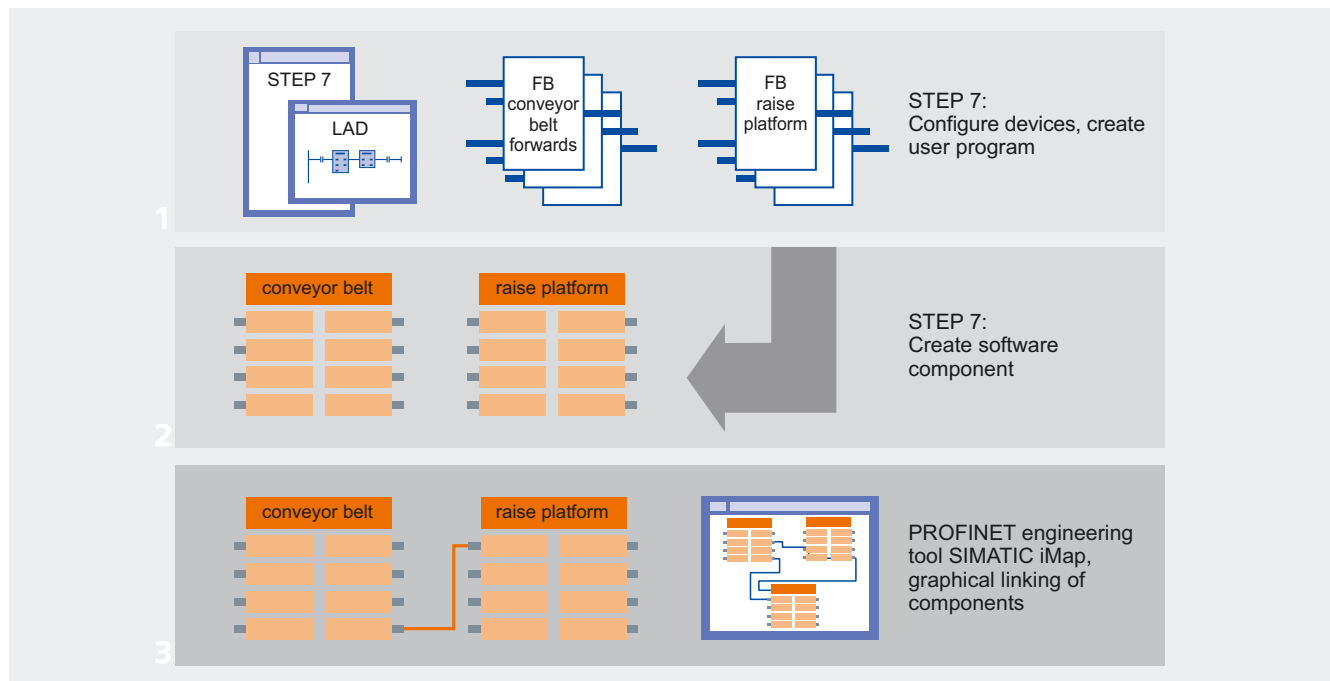
PROFINET defines the engineering model (design and construction of the PROFINET components) and communication between components.

With STEP 7, reusable, intelligent technology modules are created including the definition of their interfaces for exchanging data with other modules. SIMATIC iMap is used for configuration of the complete system by graphically linking the individual modules as well as simple diagnostics.

The following SIMATIC products are available for PROFINET and distributed intelligence:

- IE/PB Link PN CBA;  
CBA proxy for integrating existing PROFIBUS devices in a component-based automation application.  
The IE/PB Link PN CBA also offers S7 and dataset routing

- CPU 317-2 PN/DP;  
central module within a CBA component that allows data to be exchanged with other components over PROFINET and with the proxy over PROFIBUS
- CP 343-1;  
communications processor that makes it possible to integrate an existing S7-300 into a component-based automation application
- CP 443-1 Advanced;  
communications processor with integrated Web server and integral switch that makes it possible to integrate an existing S7-400 into a component-based automation application
- WinAC PN;  
the software PLC based on WinAC. WinAC PN acts as a proxy for PROFIBUS devices
- PN CBA OPC-Server;  
provides access to data of PROFINET CBA components directly from PC applications



## IE FC RJ45 Plug

### Overview



- Implementation of direct device connections over distances of up to 100 m with Industrial Ethernet FC installation cable 2 x 2 without patching
- Easy connection (insulation displacement contacts) for 4-core Twisted Pair installation cables (100 Mbit/s) without the need for special tools
- Failsafe connection technique thanks to visible connection area as well as color-coded blade terminals
- Industry-compatible design (rugged metal housing, no easily lost small parts)
- Excellent EMC shielding and deflection (metal housing)
- Integrated strain-relief for installation cables
- Compatible to the EN 50173 (RJ45)
- Additional strain and bending relief of plug-in connection possible by latching connector to device housing, e.g. for SCALANCE X, SCALANCE S, ET 200S.

## IE FC Cable 2x2

### Overview



- For structured cabling in the factory hall; specially designed for fast assembly
- Easy stripping with the FastConnect Stripping Tool; the outer sheath and the braided shield are stripped accurately in one step
- Connection to FastConnect products using insulation displacement
- Exceeds Category 5 (Cat5e) of the international cabling standards ISO/IEC 11801 and EN 50173
- PROFINET-compatible
- UL approval and China Compulsory Certificate (ccc)
- Different variants for different applications
  - IE FC Standard Cable
  - IE FC Flexible Cable
  - IE FC Trailing Cable
  - IE FC Torsion Cable
  - IE FC Marine Cable
- High interference immunity thanks to double shielding
- Easy length measurement thanks to printed meter markings

### Overview



- Simple connection technology (insulation displacement contacts) for 8-core Industrial Ethernet FC twisted pair installation cables (Cat6)
- Safe connection technology thanks to visible connection area
- Industry-standard design
  - robust metal housing
  - Dust covers
- Wall and DIN rail mounting inside or outside control cubicles thanks to IP40 protection
- Good electromagnetic shielding and conduction due to metal housing
- Integral strain relief for 8-core installation cables
- Replaceable inserts for
  - 2 x Fast Ethernet connection  
**IE FC RJ45 modular outlet insert 2FE**
  - 1 x Gigabit Ethernet connection  
**IE FC RJ45 modular outlet insert 1GE**
  - 1 x Fast Ethernet connection, 1 x DC 24 V connection  
**IE FC RJ45 Modular Outlet Power Insert**

## SCALANCE X-200 managed

### Overview



- The managed Industrial Ethernet switches of the SCALANCE X-200 product line are optimized for installing Industrial Ethernet networks with 10/100 Mbit/s in a line, star and ring topology
- Electrical or optical connection to stations or network in accordance with the port type of the devices
- Rugged metal housing in S7-300 format for mounting on standard rail, S7 rail or for direct wall mounting in various positions
- Rugged, industry-standard station connections with PROFINET-compatible plug-in connectors that offer additional strain relief and bending strain relief thanks to latching on the housing
- Redundant power supply
- Diagnostics on the device by means of LEDs (power, link status, data communication)
- Error signaling contact with easy adjustment using the SET button
- The devices feature PROFINET diagnostics, SNMP access, integral Web server and automatic e-mail sending function for remote diagnosis and signaling over the network.

## SCALANCE X-200IRT Isochronous Real-Time

### Overview



- Specially designed for configuring isochrone real-time Industrial Ethernet networks in line, star and ring topologies for 10/100 Mbit/s
- Combination of the switching mechanisms "Cut Through"; and "Store and Forward"; for optimized performance
- Electrical or optical connection to stations or network in accordance with the port type of the devices
- Rugged metal housing for space-saving cabinet mounting on standard rails, S7-300 DIN rail or for wall mounting
- Industry-standard compatible station connections with PROFINET-compatible plug-in connectors that offer additional strain relief and bending strain relief thanks to latching on the housing
- Redundant power supply
- Can be used for fault-tolerant applications and can be replaced during normal operation thanks to redundant transmission characteristics
- Diagnostics on the device by means of LEDs (power, link status, data communication)
- Error signaling contact with easy adjustment using the SET button
- The devices feature PROFINET diagnostics, SNMP access, integral Web server and automatic e-mail sending function for remote diagnosis and signaling over the network

## CPU 317-2 PN/DP

### Overview



- The CPU with a large program memory and quantity framework for demanding requirements
- Distributed intelligence in Component based Automation (CBA) on PROFINET
- PROFINET proxy for intelligent devices on PROFIBUS DP in Component based Automation (CBA)
- PROFINET I/O controller for operating distributed I/O on PROFINET
- For multisector automation tasks in the construction of series machines, special machines and plants
- Used as a central controller on production lines with central and distributed I/O
- For extensive I/O configurations
- For setting up distributed I/O structures
- High processing performance in binary and floating-point arithmetic
- Combined MPI/PROFIBUS DP-master/slave interface
- Supports as an option the use of SIMATIC Engineering Tools

*Micro memory card required for operation of CPU.*



### Overview



- Optimized for applications that demand high flexibility and integration capability.
- SIMATIC WinAC software PLCs comprise the following products
  - WinAC Basis
  - WinAC RTX
- WinAC Basis:
  - The low-cost solution for PC-based control tasks
  - For data-intensive processes in connection with extensive PC tasks
- WinAC RTX:
  - The software solution for tasks which demand hard deterministics
  - With real-time extension to provide deterministic behavior for the control unit

### CP 343-1

### Overview



- Connection of SIMATIC S7-300 to Industrial Ethernet
  - 10/100 Mbit/s full/half duplex connection with Autosensing for automatic switchover
  - Connection for RJ45
  - Multi-protocol operation with TCP and UDP transport protocol
  - Adjustable Keep Alive function
- Communication services:
  - TCP/IP und UDP transport protocol
  - PG/OP communication
  - S7 communication (client, server, multiplexing)
  - S5-compatible communication
- Multicast for UDP
- Remote programming and initial startup via the network
- SNMP-supported diagnostics
- Configuration of CP 343-1 with the NCM S7 options package for Industrial Ethernet (integrated into STEP 7)
- Cross-network programming device/operator panel communication through S7 routing

## CP 343-1 IT

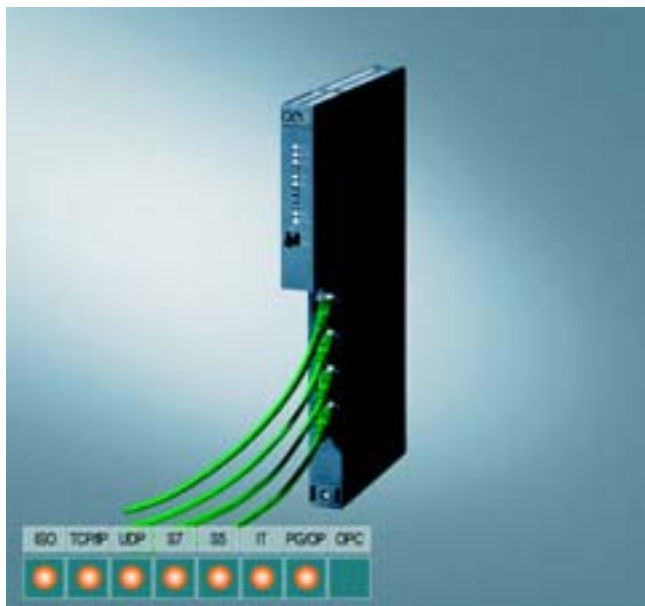
### Overview



- Connection of SIMATIC S7-300 to Industrial Ethernet
  - 10/100 Mbit/s full/half duplex connection with autosensing
  - Connection via RJ45
  - Multi-protocol operation for TCP/IP and UDP
  - Adjustable Keep Alive function
- Communication services:
  - TCP/IP and UDP transport protocol: Multicast for UDP
  - Programming device/operator panel communication: Network-wide PG/OP communication through S7 Routing
  - S7 communication
  - S5-compatible communication
  - IT communication:
    - HTTP communication supports access to process data through Web browsers;
    - FTP communication supports program-controlled FTP client communication,
    - Access to data blocks through FTP server,
    - Data handling for own file system through FTP,
    - E-mail
- IP address assignment via DHCP, simple PC tool or via program block per HMI (in exclusive server mode)
- IP address-based access protection
- Remote programming and initial startup via the network
- Clock synchronization of the CPU via NTP or SIMATIC procedure
- Integration into network management systems through the support of SNMP V1 MIB-II

## CP 443-1 Advanced

### Overview



- Connection of SIMATIC S7-400 to Industrial Ethernet
  - 10/100 Mbit/s full/half duplex connection with autosensing
  - Connection via RJ45
  - Multi-protocol operation for ISO, TCP/IP and UDP
  - Adjustable Keep Alive function

- Communication services:
  - PROFINET IO Controller
  - PROFINET CBA
  - ISO, TCP/IP and UDP transport protocols: Multicast for UDP
  - Programming device/operator panel communication: Cross-network by means of S7 routing
  - S7 communication
  - S5-compatible communication
  - IT communication:
    - HTTP communication supports access to process data through Web browsers;
    - FTP communication supports program-controlled FTP client communication,
    - Access to data blocks through FTP server,
    - Data handling for own file system through FTP, E-mail
- IP address assignment via DHCP, simple PC tool or via the user program (e.g. HMI)
- Access protection by means of configurable access list
- Single-width module with integrated 4-port switch saves space in the rack and control cabinet. Thanks to the integrated autocrossing function, the CP 443-1 Advanced is very well suited for establishing small local networks.
- Module replacement without programming device; all information is stored on the C-PLUG (also file system for IT functions).
- Extensive diagnostic functions for all modules in the rack



## Overview

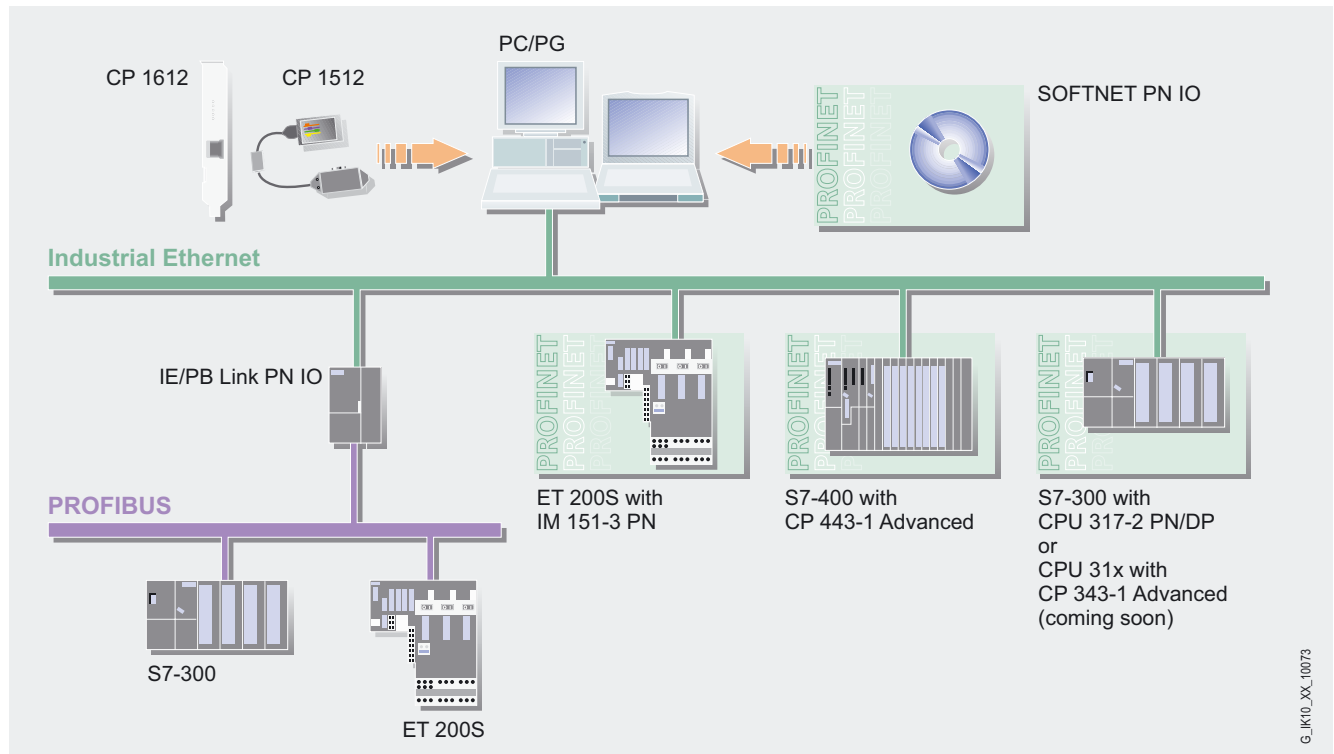


- PCI module for connecting PCs and SIMATIC PG/PC to Industrial Ethernet with 10/100 Mbit/s, full/half duplex with Autosensing (Universal Key 3.3 V and 5 V; 33MHz/66MHz; 32-bit, executable in 64-bit PCI X systems)
- With Ethernet realtime ASIC ERTEC 400
- Integrated 4-port realtime switch
- Communication services:
  - PROFINET Controller
  - Support of IRT in Motion Control applications (available soon)
  - S7 communication
  - S5-compatible communication (SEND/RECEIVE)
  - PG/OP communication
- High performance through direct memory access
- Integration in network management systems through the support of SNMP
- Comprehensive diagnostics possibilities for installation, start-up and operation of the module
- High-performance OPC server and configuration tools are included in the scope of supply of the module or the respective communication software

# Overview PROFINET

## SOFTNET PN IO

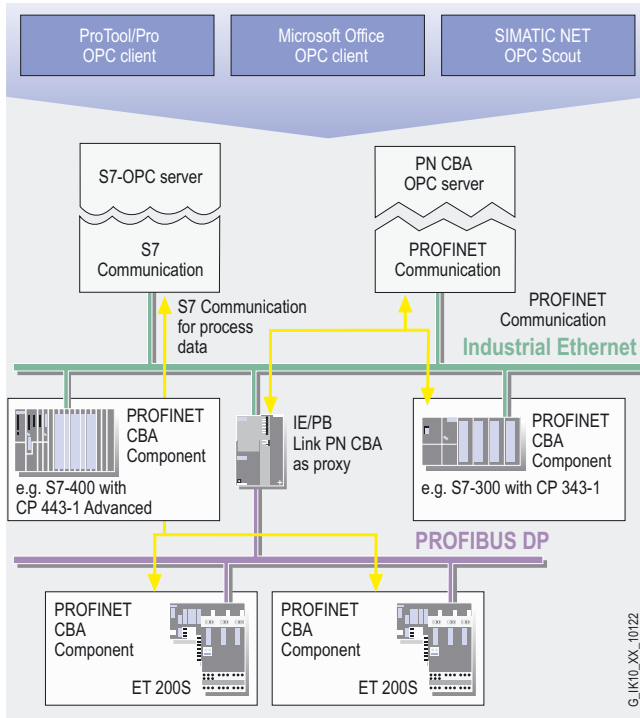
### Overview



- Software for coupling PCs/ programming devices and notebooks to PROFINET IO devices
- Possible applications:
  - PC-based control systems
  - HMI systems
  - Test applications
- Communication services:
  - PROFINET IO Controller
- Can be used with
  - CP 1612 (PCI)
  - CP 1512 (PC card)
  - Integrated interfaces of SIMATIC PGs/PCs
- Cost-effective solution for the low-end performance range
- OPC server for I/O interfacing over PROFINET included in scope of supply

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### Overview

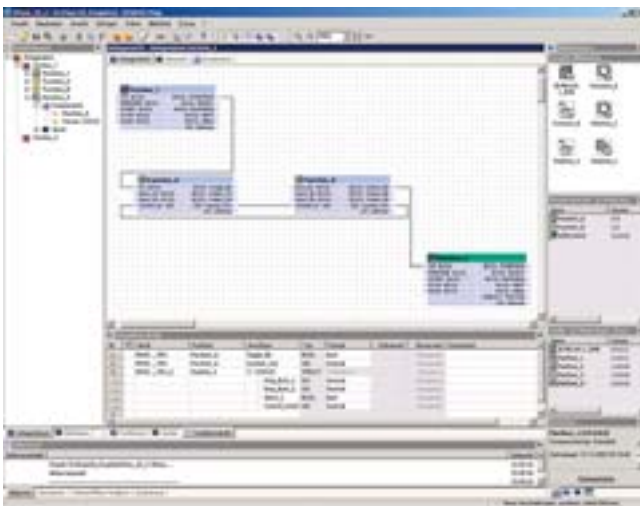


System integration with the PN CBA OPC server

- Access to variables in PROFINET CBA components over the OPC interface
- Use of the objects and symbols defined using the PROFINET engineering tool SIMATIC iMap and STEP 7
- Adding PROFINET functionality to existing installations. This enables it to be used in parallel with other communication protocols such as S7 communication with SOFTNET-S7 for Industrial Ethernet.
- OPC Scout as an OPC client with browser functions for the variables of the PROFINET CBA components

## SIMATIC iMap

### Overview



- Component-based software tool for configuration of communication in distributed automation solutions
- Based on PROFINET standard
- For simple graphic configuring of communication between system modules and machine-machine on the production line
- Open for PROFINET devices from different vendors on Industrial Ethernet
- Runs on Windows 2000 and Windows XP

# Overview PROFINET

## Interface modules IM 151-3PN

### Overview



- Interface module for connecting the ET 200S to PROFINET
- Performs all data communication with the PROFINET I/O Controller

## SIMATIC VS 130-2

### Overview



- Vision sensor for decoding Data Matrix Code (DMC) as defined in ECC200. Other codes (QR, PDF417) available soon (delivery stage 2). 2D code types, e.g. customer-specific codes, can be added.

- Recognizes codes on a wide variety of components and surfaces, e.g. on
  - Paper or plastic labels
  - Plastic parts
  - PCBs
  - Metal objects
- Recognizes codes marked in a wide variety of ways, e.g.
  - Printed
  - Punched
  - Laser-etched
  - Drilled
- No parameter settings are required to adjust the sensor to different surfaces and marking types. The vision sensor is "trained" automatically with a sample of the code to be read. This eliminates the need for programming and parameter definition.
- Can be used for the following applications:
  - complete or partial reading of coded information
  - complete or partial comparison of coded information with a defined sequence of characters
- Web-based user interface can run on various platforms (e.g. browser, WinCC, etc.) for visualization and input.
- Remote maintenance via web-based user interface.
- Remote control via integral digital inputs, PROFIBUS or PROFINET (available soon).
- Supplied as a complete package in various versions for different code sizes.