



Catalog ST 70 News · 2006

Catalog ST 70 News · 2006

Products for Totally Integrated Automation and Micro Automation

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Products for  
Totally Integrated Automation  
and Micro Automation

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CD: E86060-D6850-A100-C4-7400<sup>1)</sup>



**Catalog CA 01** CA 01  
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# Products for Totally Integrated Automation and Micro Automation

Catalog ST 70 News · 2006

The products contained in this catalog are also contained in the electronic catalog CA 01  
Order No.:  
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E86060-D4001-A500-C4-7600 (DVD)

Please contact your nearest Siemens branch office.

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**Notes on this Catalog:**

- The Catalog ST 70 News · 2006 is a supplement to the Catalog ST 70 · 2005. It contains new products as well as updated technical and ordering data.
- Catalog ST 70 · 2005 remains valid.



## Welcome to Automation and Drives

We would like to welcome you to Automation and Drives and our comprehensive range of products, systems, solutions and services for production and process automation and building technology worldwide.

With Totally Integrated Automation and Totally Integrated Power, we deliver solution platforms based on standards that offer you a considerable savings potential.

Discover the world of our technology now. If you need more detailed information, please contact one of your regional Siemens partners.

They will be glad to assist you.





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## Totally Integrated Automation – innovations for more productivity

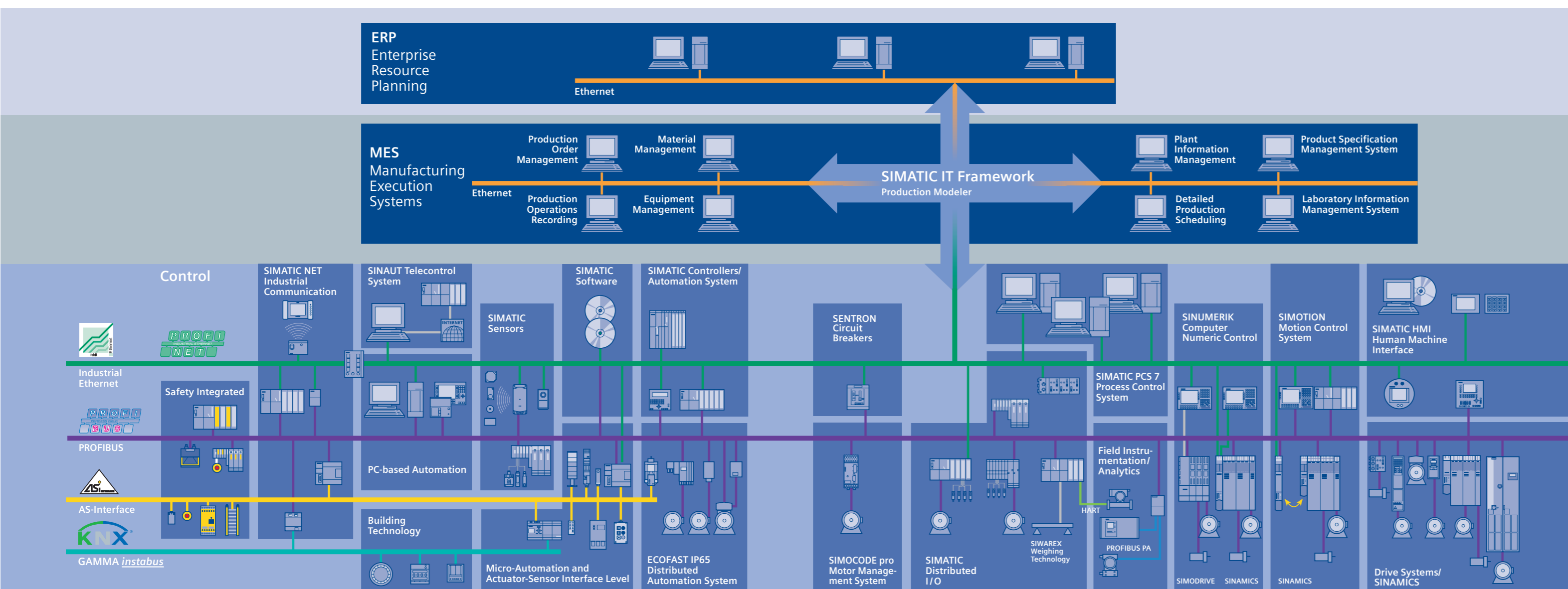
With the launch of Totally Integrated Automation, we were the first ones on the market to consistently implement the trend from equipment to an integrated automation solution, and have continuously improved the system ever since.

Whether your industry is process- and production-oriented or a hybrid, Totally Integrated Automation is a unique "common solution" platform that covers all the sectors.

Totally Integrated Automation is an integrated platform for the entire production line - from receiving to technical processing

and production areas to shipping. Thanks to the system-oriented engineering environment, integrated, open communications as well as intelligent diagnostics options, your plant now benefits in every phase of the life cycle.

In fact, to this day we are the only company worldwide that can offer a control system based on an integrated platform for both the production and process industry.



## Totally Integrated Automation – innovations for more productivity

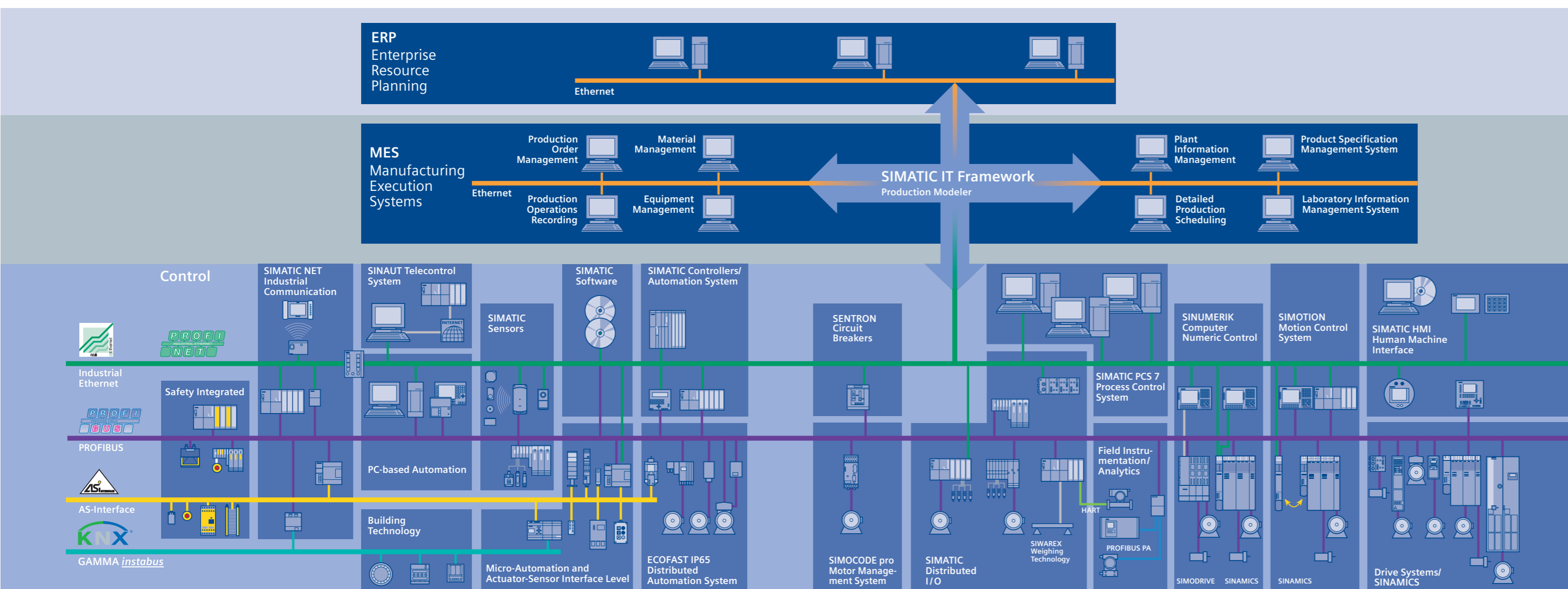
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In fact, to this day we are the only company worldwide that can offer a control system based on an integrated platform for both the production and process industry.

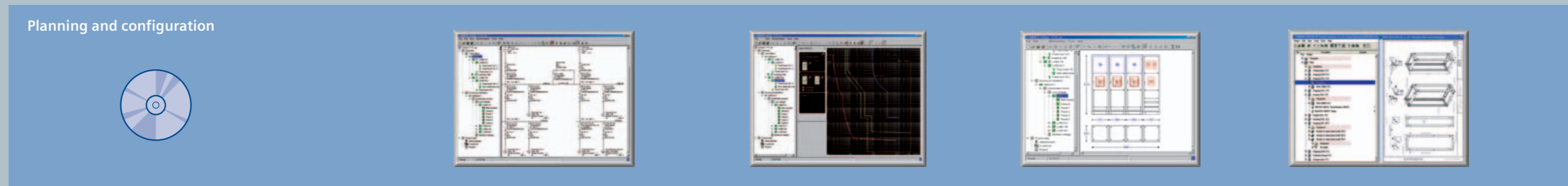
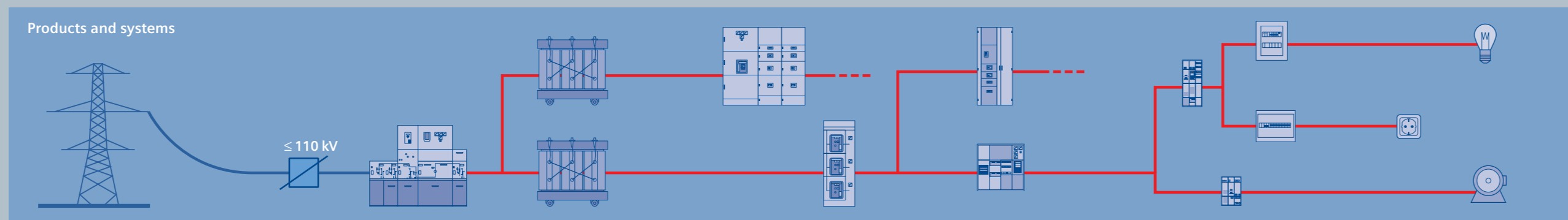
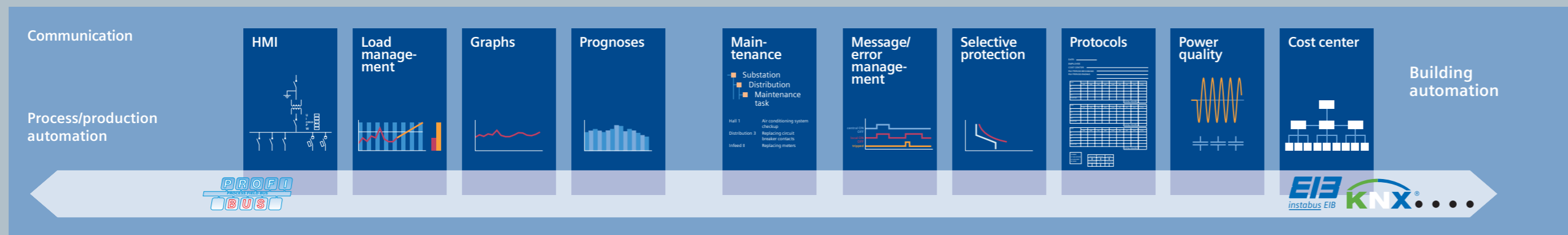
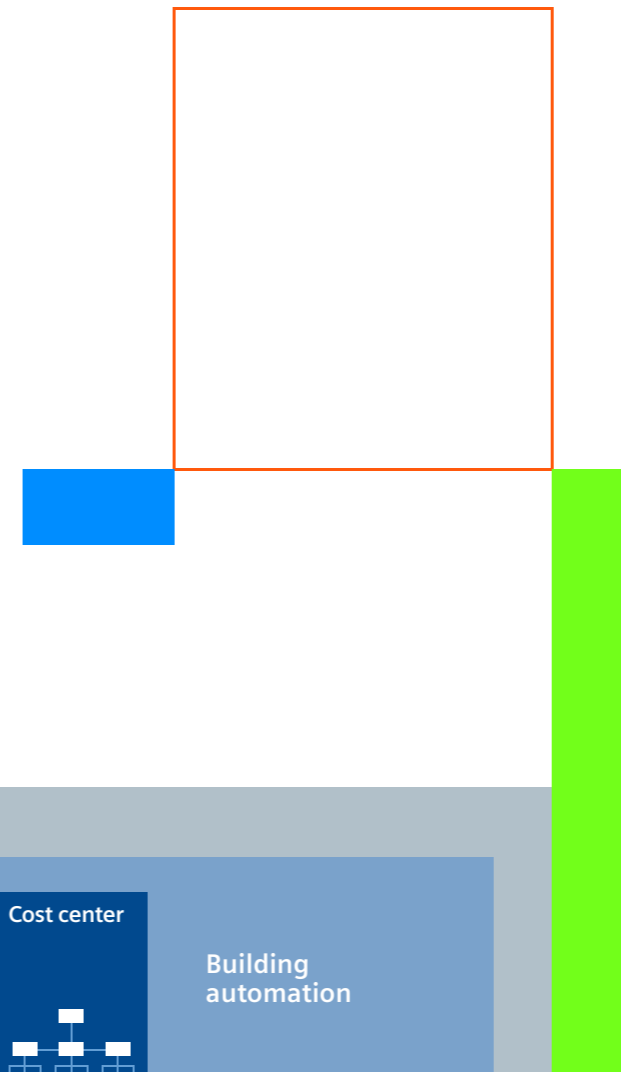




## Totally Integrated Power – energy distribution and management from one source

Totally Integrated Power™ by Siemens offers integrated solutions for energy distribution in functional and industrial buildings covering everything from medium-high voltage to power outlets.

Totally Integrated Power™ is based on integration in planning and configuration as well as coordinated products and systems. In addition, it features communications and software modules for connecting power distribution systems to industrial automation and building automation, thereby offering a substantial savings potential.

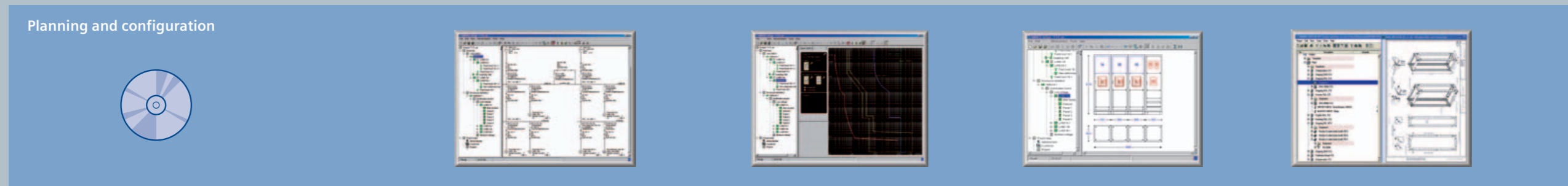
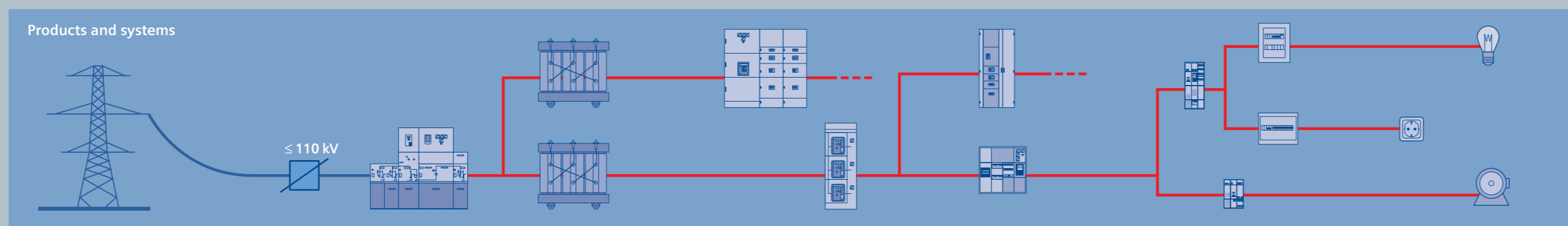
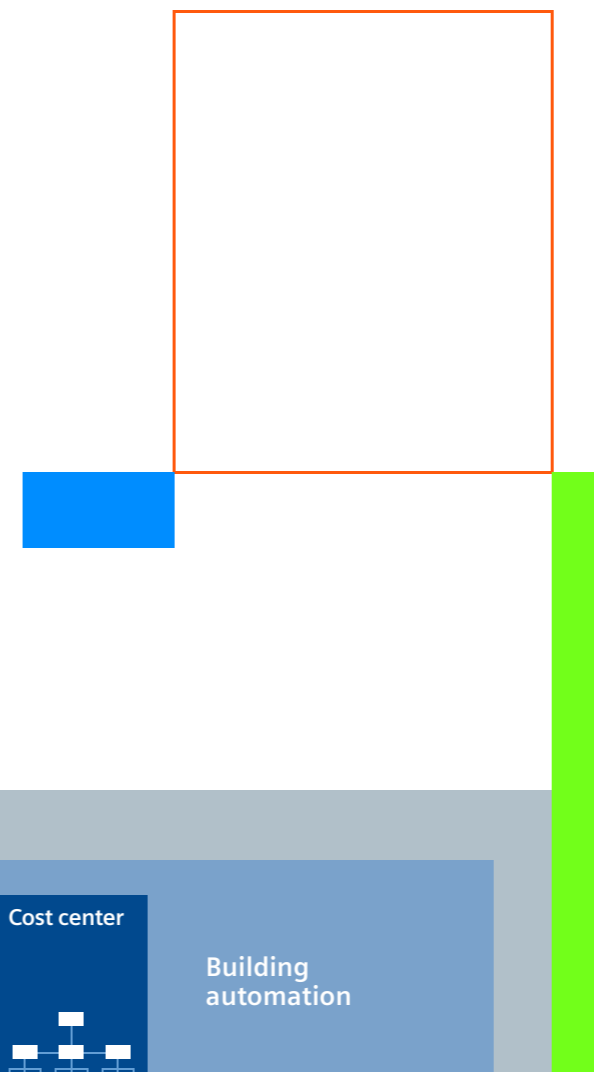




## Totally Integrated Power – energy distribution and management from one source

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## LOGO! logic module

# 2



<b>2/2</b>	<b>LOGO! modular</b>
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## LOGO! logic module LOGO! modular

### LOGO! modular basic variants

#### Overview



- The space-saving basic variants.
- Interface for the connection of expansion modules, up to 24 digital inputs, 16 digital outputs, 8 analog inputs and 2 analog outputs can be addressed.

#### Technical specifications

	6ED1 052-1CC00-0BA5	6ED1 052-1MD00-0BA5	6ED1 052-1HB00-0BA5	6ED1 052-1FB00-0BA5
<b>Supply voltages</b>				
Rated value		Yes		
- 12 V DC	Yes	Yes	Yes	Yes
- 24 V DC				Yes
- 115 V DC				Yes
- 230 V DC				100 V
- permissible range, lower limit (DC)	20.4 V	10.8 V	20.4 V	253 V
- permissible range, upper limit (DC)	28.8 V	28.8 V	28.8 V	
- 24 V AC			Yes	
- 115 V AC				Yes
- 230 V AC				Yes
- permissible range, lower limit (AC)			20.4 V	85 V
- permissible range, upper limit (AC)			26.4 V	265 V
<b>Time</b>				
Time switches				
- Reserve power		80 h	80 h	80 h
• Number of digital inputs	8	8	8	8
<b>Digital outputs</b>				
• Number of digital outputs	4	4	4	4
• Short-circuit protection of the output	Yes	No	No	No
<b>Relay outputs</b>				
Switching capacity of the contacts				
- at inductive load, max.		3 A	3 A	3 A
- at resistive load, max.	0.3 A	10 A	10 A	10 A
<b>EMC</b>				
• Emission of radio interference to comply with EN 55 011 (limit class B)	Yes	Yes	Yes	Yes
<b>Environmental requirements</b>				
Operating temperature				
- min.	0 °C	0 °C	0 °C	0 °C
- max.	55 °C	55 °C	55 °C	55 °C
<b>Degree of protection and class of protection</b>				
- IP 20	Yes	Yes	Yes	Yes

## LOGO! logic module LOGO! modular

### LOGO! modular basic variants

2

#### Technical specifications (continued)

	6ED1 052-1CC00-0BA5	6ED1 052-1MD00-0BA5	6ED1 052-1HB00-0BA5	6ED1 052-1FB00-0BA5
<b>Standards, approvals, certification</b>				
• CSA approval	Yes	Yes	Yes	Yes
• Developed to comply with IEC1131	Yes	Yes	Yes	Yes
• FM approval	Yes	Yes	Yes	Yes
• To comply with VDE 0631	Yes	Yes	Yes	Yes
• Shipbuilding approval	Yes	Yes	Yes	Yes
• UL approval	Yes	Yes	Yes	Yes
<b>Dimensions and weight</b>				
• Width	72 mm	72 mm	72 mm	72 mm
• Height	90 mm	90 mm	90 mm	90 mm
• Depth	55 mm	55 mm	55 mm	55 mm

Ordering Data	Order No.	Ordering Data	Order No.
<b>LOGO! logic module 24</b> 24 V DC supply voltage, 8 digital inputs 24 V DC, of which 2 can be used as analog inputs (0 to 10 V), 4 digital outputs 24 V DC, 0.3 A; 130 function blocks can be linked, with modular expansion capability	6ED1 052-1CC00-0BA5	<b>Accessories</b>	
<b>LOGO! logic module 12/24RC</b> 12/24 V DC supply voltage, 8 digital inputs 12/ 24 V DC, of which 2 can be used as analog inputs (0 to 10 V), 4 relay outputs 10 A, integral time switch; 130 function blocks can be linked, with modular expansion capability	6ED1 052-1MD00-0BA5	<b>LOGO! manual</b>	
<b>LOGO! logic module 24RC</b> 24 V AC/DC supply voltage, 8 digital inputs 24 V AC/DC, 4 relay outputs 10 A, integral time switch; 130 function blocks can be linked, with modular expansion capability	6ED1 052-1HB00-0BA5	German	6ED1 050-1AA00-0AE6
<b>LOGO! logic module 230RC</b> 115 /230 V AC/DC supply voltage, 8 digital inputs 115 /230 V AC/DC, 4 relay outputs 10 A, integral time switch; 130 function blocks can be linked, with modular expansion capability	6ED1 052-1FB00-0BA5	English	6ED1 050-1AA00-0BE6
		French	6ED1 050-1AA00-0CE6
		Spanish	6ED1 050-1AA00-0DE6
		Italian	6ED1 050-1AA00-0EE6
		<b>LOGO! memory card</b>	6ED1 056-5CA00-0BA0
		For copying, with know-how protection	
		<b>LOGO!Soft Comfort V5.0<sup>B)</sup></b>	6ED1 058-0BA01-0YA0
		For programming on the PC in LAD/FBD; executes under Windows 98 SE and higher, Linux, MAC OSX; on CD-ROM	
		<b>LOGO!Soft Comfort upgrade<sup>B)</sup></b>	6ED1 058-0CA01-0YE0
		From V1.0 and higher to V5.0	
		<b>LOGO! PC cable</b>	6ED1 057-1AA00-0BA0
		For transferring programs between LOGO! and the PC	
		<b>LOGO! News Box, 12/24 V</b>	
		Contains LOGO! 12/24RC, LOGO! PC cable, LOGO!Soft Comfort, Tips & Tricks manual, screwdriver, documentation	
		German <sup>C)</sup>	6ED1 057-3BA00-0AA4
		English <sup>C)</sup>	6ED1 057-3BA00-0BA4
		<b>LOGO! News Box, 230 V</b>	
		Contains LOGO! 230RC, LOGO! PC cable, LOGO!Soft Comfort, Tips & Tricks manual, screwdriver, documentation	
		German <sup>C)</sup>	6ED1 057-3AA01-0AA0
		English <sup>C)</sup>	6ED1 057-3AA01-0BA0

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

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

## LOGO! logic module LOGO! modular

### 2 SIPLUS LOGO! modular basis variants

#### Overview



- The space-saving basic variants.
- Interface for the connection of expansion modules, up to 24 digital inputs, 16 digital outputs, 8 analog inputs and 2 analog outputs can be addressed.
- CE, cUL certifications (available soon)

This module is designed for

- an ambient temperature range of  $-25$  to  $+70$  °C ( $-25$  to  $+55$  °C for applications with cUL certification); condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

#### Technical specifications

<b>6AG1 052-1CC00-2BA5</b>	see 6ED1 052-1CC00-0BA5
<b>6AG1 052-1MD00-2BA5</b>	see 6ED1 052-1MD00-0BA5
<b>6AG1 052-1HB00-2BA5</b>	see 6ED1 052-1HB00-0BA5
<b>6AG1 052-1FB00-2BA5</b>	see 6ED1 052-1FB00-0BA5

#### Ordering Data

	Order No.
<b>SIPLUS LOGO! 24</b> (extended temperature range and extraordinary medial load) 24 V DC supply voltage, 8 digital inputs 24 V DC, of which 2 can be used as analog inputs (0 to 10 V), 4 digital outputs 24 V DC, 0.3 A; 130 function blocks can be linked, with modular expansion capability	<b>6AG1 052-1CC00-2BA5</b>
<b>SIPLUS LOGO! 12/24RC</b> (extended temperature range and extraordinary medial load) 12/24 V DC supply voltage, 8 digital inputs 12/ 24 V DC, of which 2 can be used as analog inputs (0 to 10 V), 4 relay outputs 10 A, integral time switch; 130 function blocks can be linked, with modular expansion capability	<b>6AG1 052-1MD00-2BA5</b>
<b>SIPLUS LOGO! 24RC</b> (extended temperature range and extraordinary medial load) 24 V AC/DC supply voltage, 8 digital inputs 24 V AC/DC, 4 relay outputs 10 A, integral time switch; 130 function blocks can be linked, with modular expansion capability	<b>6AG1 052-1HB00-2BA5</b>
<b>SIPLUS LOGO! 230RC</b> (extended temperature range and extraordinary medial load) 115 /230 V AC/DC supply voltage, 8 digital inputs 115 /230 V AC/DC, 4 relay outputs 10 A, integral time switch; 130 function blocks can be linked, with modular expansion capability	<b>6AG1 052-1FB00-2BA5</b>
<b>Accessories</b>	see ordering data for LOGO! modular basic variants



## LOGO! logic module LOGO! modular

LOGO! modular pure variants

2

### Overview



- Basic variants optimized for costs
- Interface for the connection of expansion modules, up to 24 digital inputs, 16 digital outputs, 8 analog inputs and 2 analog outputs can be addressed.

### Technical specifications

	6ED1 052-2CC00-0BA5	6ED1 052-2MD00-0BA5	6ED1 052-2HB00-0BA5	6ED1 052-2FB00-0BA5
<b>Supply voltages</b>				
Rated value		Yes		
- 12 V DC		Yes		
- 24 V DC	Yes	Yes	Yes	Yes
- 115 V DC				Yes
- 230 V DC				100 V
- permissible range, lower limit (DC)	20.4 V	10.8 V	20.4 V	253 V
- permissible range, upper limit (DC)	28.8 V	28.8 V	28.8 V	
- 24 V AC			Yes	
- 115 V AC				Yes
- 230 V AC				Yes
- permissible range, lower limit (AC)			20.4 V	85 V
- permissible range, upper limit (AC)			26.4 V	265 V
<b>Time</b>				
Time switches				
- Number		8	8	8
- Reserve power		80 h	80 h	80 h
<b>Digital inputs</b>				
• Number of digital inputs	8	8	8	8
<b>Digital outputs</b>				
• Number of digital outputs	4	4	4	4
• Short-circuit protection of the output	Yes	No	No	No
<b>Relay outputs</b>				
Switching capacity of the contacts				
- at inductive load, max.		3 A	3 A	3 A
- at resistive load, max.	0.3 A	10 A	10 A	10 A
<b>EMC</b>				
• Emission of radio interference to comply with EN 55 011 (limit class B)		Yes	Yes	Yes
<b>Environmental requirements</b>				
Operating temperature				
- min.	0 °C	0 °C	0 °C	0 °C
- max.	55 °C	55 °C	55 °C	55 °C
<b>Degree of protection and class of protection</b>				
- IP 20	Yes	Yes	Yes	Yes

## LOGO! logic module LOGO! modular

### LOGO! modular pure variants

#### Technical specifications (continued)

	6ED1 052-2CC00-0BA5	6ED1 052-2MD00-0BA5	6ED1 052-2HB00-0BA5	6ED1 052-2FB00-0BA5
<b>Standards, approvals, certification</b>				
• CSA approval	Yes	Yes	Yes	Yes
• Developed to comply with IEC1131	Yes	Yes	Yes	Yes
• FM approval	Yes	Yes	Yes	Yes
• To comply with VDE 0631	Yes	Yes	Yes	Yes
• Shipbuilding approval	Yes	Yes	Yes	Yes
• UL approval	Yes	Yes	Yes	Yes
<b>Dimensions and weight</b>				
• Width	72 mm	72 mm	72 mm	72 mm
• Height	90 mm	90 mm	90 mm	90 mm
• Depth	55 mm	55 mm	55 mm	55 mm

Ordering Data	Order No.	Accessories	Order No.
<b>LOGO! logic module 24o</b> 24 V DC power supply, 8 digital inputs 24 V DC, of which 2 can be used in analog mode (0 to 10 V), 4 digital outputs 24 V DC, 0.3 A; without display and keyboard; 130 function blocks can be interlinked, modular expansion capability	6ED1 052-2CC00-0BA5	<b>LOGO! manual</b> German English French Spanish Italian	6ED1 050-1AA00-0AE6 6ED1 050-1AA00-0BE6 6ED1 050-1AA00-0CE6 6ED1 050-1AA00-0DE6 6ED1 050-1AA00-0EE6
<b>LOGO! logic module 12/24RCo</b> 12/24 V DC power supply, 8 digital inputs 12/24 V DC, of which 2 can be used in analog mode (0 to 10 V), 4 relay outputs 10 A, integral time switch; without display and keyboard; 130 function blocks can be interlinked, modular expansion capability	6ED1 052-2MD00-0BA5	<b>LOGO! Memory Card</b> For copying, with know-how protection	6ED1 056-5CA00-0BA0
<b>LOGO! logic module 24RCo</b> 24 V AC/DC power supply, 8 digital inputs 24 V AC/DC, 4 relay outputs 10 A, integral time switch; without display and keyboard; 130 function blocks can be interlinked, modular expansion capability	6ED1 052-2HB00-0BA5	<b>LOGO!Soft Comfort V5.0<sup>B)</sup></b> For programming on the PC in LAD/FBD; executes on Windows 98 SE and higher, Linux, MAC OSX; on CD-ROM	6ED1 058-0BA01-0YA0
<b>LOGO! logic module 230RCo</b> 115/230 V AC/DC power supply, 8 digital inputs 115/230 V AC/DC, 4 relay outputs 10 A, integral time clock; without display and keyboard; 130 function blocks can be interlinked, modular expansion capability	6ED1 052-2FB00-0BA5	<b>LOGO!Soft Comfort Upgrade<sup>B)</sup></b> From V1.0 or higher to V5.0	6ED1 058-0CA01-0YE0
		<b>LOGO! PC cable</b> For program transfer between LOGO! and the PC	6ED1 057-1AA00-0BA0

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

## LOGO! logic module LOGO! modular

### SIPLUS LOGO! modular pure variants

2

#### Overview



- Basic variants optimized for costs
- Interface for the connection of expansion modules, up to 24 digital inputs, 16 digital outputs, 8 analog inputs and 2 analog outputs can be addressed.
- CE, cUL certifications (available soon)

This module is designed for

- an ambient temperature range of  $-25$  to  $+70$  °C ( $-25$  to  $+55$  °C for applications with cUL certification); condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

#### Technical specifications

<b>6AG1 052-2CC00-2BA5</b>	see 6ED1 052-2CC00-0BA5
<b>6AG1 052-2FB00-2BA5</b>	see 6ED1 052-2FB00-0BA5
<b>6AG1 052-2HB00-2BA5</b>	see 6ED1 052-2HB00-0BA5
<b>6AG1 052-2MD00-2BA5</b>	see 6ED1 052-2MD00-0BA5

#### Ordering Data

	Order No.
<b>SIPLUS LOGO! 24o</b> (extended temperature range and extraordinary medial load) 24 V DC power supply, 8 digital inputs 24 V DC, of which 2 can be used in analog mode (0 to 10 V), 4 digital outputs 24 V DC, 0.3 A; without display and keyboard; 130 function blocks can be interlinked, modular expansion capability	<b>6AG1 052-2CC00-2BA5</b>
<b>SIPLUS LOGO! 12/24RCo</b> (extended temperature range and extraordinary medial load) 12/24 V DC power supply, 8 digital inputs 12/24 V DC, of which 2 can be used in analog mode (0 to 10 V), 4 relay outputs 10 A, integral time switch; without display and keyboard; 130 function blocks can be interlinked, modular expansion capability	<b>6AG1 052-2MD00-2BA5</b>
<b>SIPLUS LOGO! 24RCo</b> (extended temperature range and extraordinary medial load) 24 V AC/DC power supply, 8 digital inputs 24 V AC/DC, 4 relay outputs 10 A, integral time switch; without display and keyboard; 130 function blocks can be interlinked, modular expansion capability	<b>6AG1 052-2HB00-2BA5</b>
<b>SIPLUS LOGO! 230RCo</b> (extended temperature range and extraordinary medial load) 115/230 V AC/DC power supply, 8 digital inputs 115/230 V AC/DC, 4 relay outputs 10 A, integral time clock; without display and keyboard; 130 function blocks can be interlinked, modular expansion capability	<b>6AG1 052-2FB00-2BA5</b>
<b>Accessories</b>	see ordering data for LOGO! modular pure variants



## LOGO! logic module LOGO! modular

### 2 LOGO! modular expansion modules

#### Overview



- Expansion modules for the connection to LOGO! modular
- With digital inputs and outputs, analog inputs or analog outputs

#### Technical specifications

	6ED1 055-1CB10-0BA0	6ED1 055-1NB10-0BA0	6ED1 055-1FB10-0BA0
<b>Supply voltages</b>			
Rated value			
- 24 V DC	Yes	Yes	Yes
- 115 V DC			Yes
- 230 V DC			Yes
- permissible range, lower limit (DC)	20.4 V	20.4 V	100 V
- permissible range, upper limit (DC)	28.8 V	28.8 V	253 V
- 115 V AC			Yes
- 230 V AC			Yes
- permissible range, lower limit (AC)			85 V
- permissible range, upper limit (AC)			265 V
- permissible frequency range, lower limit			47 Hz
- permissible frequency range, upper limit			63 Hz
<b>Digital inputs</b>			
• Number of digital inputs	8	8	8
Input voltage			
- for signal "0"	< 5 V DC	< 5 V DC	< 40 V AC; < 30 V DC
- for signal "1"	> 12 V DC	> 12 V DC	> 79 V AC; > 79 V DC
Input current			
- for 0 signal, max (permissible closed-circuit current)	1 mA	1 mA	0.03 mA
- for 1 signal, typical	2 mA	2 mA	0.08 mA
Input delay (at rated value of the input voltage)			
• For standard inputs			
- at 0 to 1, max.	1.5 ms	1.5 ms	50 ms
- at 1 to 0, max.	1.5 ms	1.5 ms	50 ms

LOGO! logic module  
LOGO! modular

LOGO! modular expansion modules

2

Technical specifications (continued)

	6ED1 055-1CB10-0BA0	6ED1 055-1NB10-0BA0	6ED1 055-1FB10-0BA0
<b>Digital outputs</b>			
• Number of digital outputs	8	8; Relay	8; Relay
• Short-circuit protection of the output	Yes; electric (1 A)	No; external fusing required	external fusing required
• Lamp load, max.		1,000 W	1,000 W
• Driving a digital input	Yes	Yes	Yes
Parallel switching of 2 outputs - to increase power	No	No	No
Switching frequency			
- at resistive load, max.	10 Hz	2 Hz	2 Hz
- at inductive load, max.	0.5 Hz	0.5 Hz	0.5 Hz
- Mechanical, max.		10 Hz	10 Hz
<b>Relay outputs</b>			
Switching capacity of the contacts			
- at inductive load, max.		3 A	3 A
- at resistive load, max.		5 A	5 A
- Continuous thermal current, max.	0.3 A		
<b>EMC</b>			
• Emission of radio interference to comply with EN 55 011 (limit class B)	Yes	Yes	Yes
<b>Environmental requirements</b>			
Operating temperature			
- min.	0 °C	0 °C	0 °C
- max.	55 °C	55 °C	55 °C
Degree of protection and class of protection			
- IP 20	Yes	Yes	Yes
<b>Standards, approvals, certification</b>			
• CSA approval	Yes	Yes	Yes
• Developed to comply with IEC 1131	Yes	Yes	Yes
• FM approval	Yes	Yes	Yes
• To comply with VDE 0631	Yes	Yes	Yes
• Shipbuilding approval	Yes	Yes	Yes
• UL approval	Yes	Yes	Yes
<b>Dimensions and weight</b>			
• Installation	on 35 mm DIN rail 4 modules wide		on 35 mm DIN rail 4 modules wide
• Width	72 mm	72 mm; 4 TE	72 mm; 4 TE
• Height	90 mm	90 mm	90 mm
• Depth	53 mm	53 mm	53 mm

## LOGO! logic module LOGO! modular

### LOGO! modular expansion modules

#### Technical specifications (continued)

	6ED1 055-1MM00-0BA0	6ED1 055-1MM00-0BA0
<b>Supply voltages</b>		
Rated value - 12 V DC - 24 V DC	No Yes	
<b>Analog outputs</b>		
• Number of analog outputs	2	
Output ranges, voltage - 0 to 10 V	Yes	
<b>EMC</b>		
• Emission of radio interference to comply with EN 55 011 (limit class B)	Yes	
<b>Environmental requirements</b>		
Operating temperature - min. - max.	0 °C 55 °C	
Degree of protection and class of protection - IP 20	Yes	
<b>Standards, approvals, certification</b>		
• CSA approval	Yes	
• Developed to comply with IEC 1131	Yes	
• FM approval	Yes	
• To comply with VDE 0631	Yes	
• Shipbuilding approval	Yes	
• UL approval	Yes	
<b>Dimensions and weight</b>		
• Width	36 mm	
• Height	90 mm	
• Depth	55 mm	

Ordering Data	Order No.	Ordering Data	Order No.
<b>LOGO! DM16 24</b> 24 V DC supply voltage, 8 digital inputs 24 V DC, 8 digital outputs 24 V DC, 0.3 A	6ED1 055-1CB10-0BA0	<b>LOGO!Soft Comfort V5.0<sup>B)</sup></b> For programming on the PC in LAD/FDB; Executes under Windows 98 SE and higher, Linux, MAC OSX; on CD-ROM	6ED1 058-0BA01-0YA0
<b>LOGO! DM16 24R</b> 24 V DC supply voltage, 8 digital inputs 24V DC, 8 relay outputs 5 A	6ED1 055-1NB10-0BA0	<b>LOGO!Soft Comfort Upgrade<sup>B)</sup></b> From V1.0 and higher to V5.0	6ED1 058-0CA01-0YE0
<b>LOGO! DM16 230R</b> 115/230 V AC/DC supply voltage, 8 digital inputs 115/230 V AC/DC, 8 relay outputs 5 A	6ED1 055-1FB10-0BA0	<b>LOGO! PC cable</b> For transferring programs between LOGO! and the PC	6ED1 057-1AA00-0BA0
<b>LOGO! AM2 AQ</b> 24 V DC supply voltage, 2 analog outputs 0 to 10 V	6ED1 055-1MM00-0BA0	<b>LOGO! News Box, 12/24 V</b> Contains LOGO! 12/24RC, LOGO! PC cable, LOGO!Soft Comfort, Tips & Tricks manual, screwdriver, documentation German <sup>C)</sup> English <sup>C)</sup>	6ED1 057-3BA00-0AA4 6ED1 057-3BA00-0BA4
<b>Accessories</b>		<b>LOGO! News Box, 230 V</b> Contains LOGO! 230RC, LOGO! PC cable, LOGO!Soft Comfort, Tips & Tricks manual, screwdriver, documentation German <sup>C)</sup> English <sup>C)</sup>	6ED1 057-3AA01-0AA0 6ED1 057-3AA01-0BA0
<b>LOGO! manual</b>			
German	6ED1 050-1AA00-0AE6		
English	6ED1 050-1AA00-0BE6		
French	6ED1 050-1AA00-0CE6		
Spanish	6ED1 050-1AA00-0DE6		
Italian	6ED1 050-1AA00-0EE6		
<b>LOGO! memory card</b> For copying, with know-how protection	6ED1 056-5CA00-0BA0		

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

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

## LOGO! logic module LOGO! modular

### SIPLUS LOGO! modular expansion modules

2

#### Overview



- Expansion modules for the connection to LOGO! modular
- With digital inputs and outputs, analog inputs or analog outputs
- CE, cUL certifications (available soon)

This module is designed for

- an ambient temperature range of – 25 to + 70 °C (– 25 to +55 °C for applications with cUL certification); condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

#### Technical specifications

	SIPLUS LOGO! DM8 24	SIPLUS LOGO! DM8 12/24	SIPLUS LOGO! DM8 24R	SIPLUS LOGO! DM8 12/24R	SIPLUS LOGO! DM8 230R
Order No.	6AG1 055-1CB00-2XB0	6AG1 055-1PB00-2XB0	6AG1 055-1HB00-2XB0	6AG1 055-1MB00-2XB1	6AG1 055-1FB00-2XB1
Order No. based on	6ED1 055-1CB00-0BA0	6ED1 055-1CB00-0BA0	6ED1 055-1HB00-0BA0	6ED1 055-1MB00-0BA1	6ED1 055-1FB00-0BA1
Ambient temperature range	- 25 ... + 70 °C ( – 25 bis +55 °C for applications with cUL certification); moisture condensation permissible				
Ambient conditions	Suitable for extraordinary medial load (for example by chloric and sulphuric atmospheres)				
Supply voltage	24 V DC	12/24 DC	24 V AC/DC	12/24 DC	115/230 AC/DC
• Permissible range	20.4 - 28.8 V DC	10.8 - 28.8 V DC	20.4 - 26.4 V AC 20.4 - 28.8 V AC	10.8 - 28.8 V DC	85 - 265 V AC 100 - 253 V DC
Current consumption	30...45 mA 0.3 A per output	30...140 mA (12 V DC) 20...75 mA (24 V DV)	40...110 mA (24 V AC) 20...75 mA (24 V DC)	30...140 mA (12 V DC) 20...75 mA (24 V DC)	10...30 mA (115 V AC) 10...20 mA (240 V AC) 5...15 mA (115 V DC) 5...10 mA (240 V DC)
Inputs	4 Dis				
Outputs	4 DOs		4 DO relay		
Continuous current	0.3 A		5 A (in case of ohmic load) 3 A (in case of inductive load)		
Short-circuit protection	Electrical (1 A)		External fuse protection is required		
RI specification	To EN 55 011 (limit class B)				
Degree of protection	IP20				
Certification	To VDE 0631, IEC 1131, UL, FM, CSA, ship building authorizations				
Mounting	On DIN rail 35 mm, 2 module widths wide				
Dimensions (W x H x D) in mm	36 (2 MW) x 90 x 55				



## LOGO! logic module LOGO! modular

### 2 SIPLUS LOGO! modular expansion modules

#### Technical specifications (continued)

	SIPLUS LOGO! AM2
<b>Order No.</b>	<b>6AG1 055-1MA00-2XB0</b>
<b>Order No. based on</b>	<b>6ED1 055-1MA00-0BA0</b>
Ambient temperature range	- 25 ... + 70 °C ( - 25 bis + 55 °C for applications with cUL certification); moisture condensation permissible
Ambient conditions	Suitable for extraordinary medial load (for example by chloric and sulphuric atmospheres)
Supply voltage	12/24 V DC
Inputs	2 AIs
Outputs	-
Continuous current	-
Short-circuit protection	External fuse protection is required
RI specification	To EN 55 011 (limit class B)
Degree of protection	IP20
Certification	To VDE 0631, IEC 1131, UL, FM, CSA, ship building authorizations
Mounting	On DIN rail 35 mm, 2 module widths wide
Dimensions (W x H x D) in mm	36 (2 MW) x 90 x 55

Ordering Data	Order No.	SIPLUS LOGO! AM2 <sup>A)</sup>	Order No.
<b>SIPLUS LOGO! DM8 24<sup>A)</sup></b> (extended temperature range and extraordinary medial load) 24 V DC supply voltage, 4 digital inputs 24 V DC, 4 digital outputs 24 V DC, 0.3 A	<b>6AG1 055-1CB00-2XB0</b>	(extended temperature range and extraordinary medial load) 12/24 V DC supply voltage, 2 analog inputs 0 to 10 V or 0 to 20 mA, 10-bit resolution	<b>6AG1 055-1MA00-2XB0</b>
<b>SIPLUS LOGO! DM8 12/24</b> (extended temperature range and extraordinary medial load) 12/24 V DC supply voltage, 4 digital inputs 12/24 V DC, 4 digital outputs 24 V DC, 0.3 A	<b>6AG1 055-1PB00-2XB0</b>	<b>Accessories</b>	
<b>SIPLUS LOGO! DM8 24R<sup>B)</sup></b> (extended temperature range and extraordinary medial load) 24 V AC/DC supply voltage, 4 digital inputs 24 V AC/DC, 4 relay outputs 5 A	<b>6AG1 055-1HB00-2XB0</b>	<b>LOGO! manual</b> German English French Spanish Italian	<b>6ED1 050-1AA00-0AE6</b> <b>6ED1 050-1AA00-0BE6</b> <b>6ED1 050-1AA00-0CE6</b> <b>6ED1 050-1AA00-0DE6</b> <b>6ED1 050-1AA00-0EE6</b>
<b>SIPLUS LOGO! DM8 12/24R<sup>A)</sup></b> (extended temperature range and extraordinary medial load) 12/24 V DC supply voltage, 4 digital inputs 12/24 V DC, relay outputs 5 A	<b>6AG1 055-1MB00-2XB1</b>	<b>LOGO! memory card</b> For copying, with know-how protection	<b>6ED1 056-5CA00-0BA0</b>
<b>SIPLUS LOGO! DM8 230R<sup>B)</sup></b> (extended temperature range and extraordinary medial load) 115/230 V AC/DC supply voltage, 4 digital inputs 115/230 V AC/DC, 4 relay outputs 5 A	<b>6AG1 055-1FB00-2XB1</b>	<b>LOGO!Soft Comfort V5.0<sup>B)</sup></b> For programming on the PC in LAD/FDB; Executes under Windows 98 SE and higher, Linux, MAC OSX; on CD-ROM	<b>6ED1 058-0BA01-0YA0</b>
		<b>LOGO!Soft Comfort Upgrade<sup>B)</sup></b> From V1.0 and higher to V5.0	<b>6ED1 058-0CA01-0YE0</b>
		<b>LOGO! PC cable</b> For transferring programs between LOGO! and the PC	<b>6ED1 057-1AA00-0BA0</b>

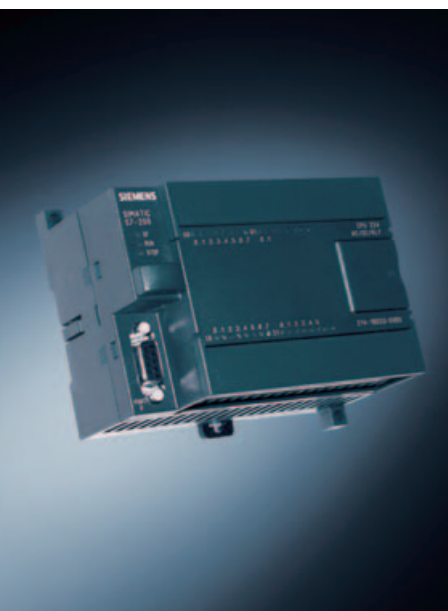
A) Subject to export regulations: AL: N and ECCN: EAR99H

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

D) Subject to export regulations: AL: N and ECCN: 4A994

## SIMATIC S7-200

# 3



### 3/2 SIPLUS central processing units

3/2 SIPLUS CPU 221, 222, 224, 224 XP, 226

### 3/4 SIPLUS analog modules

3/4 SIPLUS RTD module EM 231

### 3/4 Function modules

3/4 SIPLUS DCF 77 radio clock module

### 3/5 Communication

3/5 SIPLUS EM 277  
PROFIBUS DP module

### 3/6 Human Machine Interface

3/6 TD 100C text display



## SIMATIC S7-200 SIPLUS central processing units

SIPLUS CPU 221, 222, 224, 224 XP, 226

### Overview SIPLUS CPU 221



- The smart compact solution
- With 10 inputs/outputs on board
- Not expandable
- Conformity with standard for electronic devices on rail vehicles (EN 50155, temperature T1, category 1)
- CE, cUL certifications (available soon)

#### This module is designed for

- an ambient temperature range of  $-25$  to  $+70$  °C ( $-25$  to  $+55$  °C for applications with cUL certification); condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

### Overview SIPLUS CPU 222



- The superior compact solution
- With 14 inputs/outputs on board
- Expandable with up to 2 expansion modules
- Conformity with standard for electronic devices on rail vehicles (EN 50155, temperature T1, category 1)
- CE, cUL certifications (available soon)

#### This module is designed for

- an ambient temperature range of  $-25$  to  $+70$  °C ( $-25$  to  $+55$  °C for applications with cUL certification); condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

### Overview SIPLUS CPU 224, CPU 224 XP



#### CPU 224:

- The compact high-performance CPU
- With 24 inputs/outputs on board
- Expandable with up to 7 expansion modules
- Conformity with standard for electronic devices on rail vehicles (EN 50155, temperature T1, category 1)
- CE, cUL certifications (available soon)

#### CPU 224 XP:

- The power CPU
- With 24 digital and 3 analog inputs/outputs onboard
- Expandable with up to 7 expansion modules
- CE, cUL certifications (available soon)

#### These modules are designed for

- an ambient temperature range of  $-25$  to  $+70$  °C ( $-25$  to  $+55$  °C for applications with cUL certification); condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

### Overview SIPLUS CPU 226



- The high-performance package for complex technical tasks
- With additional PPI port for added flexibility and communication options
- With 40 inputs/outputs on board
- Up to 7 expansion modules.

## SIMATIC S7-200 SIPLUS central processing units

SIPLUS CPU 221, 222, 224, 224 XP, 226

### Overview SIPLUS CPU 226 (continued)

- Conformity with standard for electronic devices on rail vehicles (EN 50155, temperature T1, category 1)
- CE, cUL certifications (available soon)

This module is designed for

- an ambient temperature range of – 25 to + 70 °C (– 25 to +55 °C for applications with cUL certification); condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

### Technical specifications

<b>6AG1 211-0AA23-2XB0</b>	see 6ES7 211-0AA23-0XB0
<b>6AG1 211-0BA23-2XB0</b>	see 6ES7 211-0BA23-0XB0
<b>6AG1 212-1AB23-2XB0</b>	see 6ES7 212-1AB23-0XB0
<b>6AG1 212-1BB23-2XB0</b>	see 6ES7 212-1BB23-0XB0
<b>6AG1 214-1AD23-2XB0</b>	see 6ES7 214-1AD23-0XB0
<b>6AG1 214-2AD23-2XB0</b>	see 6ES7 214-2AD23-0XB0
<b>6AG1 214-1BD23-2XB0</b>	see 6ES7 214-1BD23-0XB0
<b>6AG1 214-2BD23-2XB0</b>	see 6ES7 214-2BD23-0XB0
<b>6AG1 216-2AD23-2XB0</b>	see 6ES7 216-2AD23-0XB0
<b>6AG1 216-2BD23-2XB0</b>	see 6ES7 216-2BD23-0XB0

3

### Ordering data

Ordering data	Order No.	Ordering data	Order No.
<b>SIPLUS CPU 221</b> (extended temperature range and extraordinary medial load) Compact CPU, main memory 4 KB, power supply 24 V DC, 6 DI/4 DO integrated <sup>A)</sup> Compact CPU, main memory 4 KB, power supply 100 V to 230 V AC, 6 DI/4 DO integrated, relay outputs <sup>A)</sup>	<b>6AG1 211-0AA23-2XB0</b>  <b>6AG1 211-0BA23-2XB0</b>	<b>SIPLUS CPU 224 XP</b> (extended temperature range and extraordinary medial load) Compact CPU, expandable, main memory 12/16 KB program, 10 KB data, power supply 24 V DC, 14 DI/10 DO/2 AI/1 AO integrated Compact CPU, expandable, main memory 12/16 KB program, 10 KB data, power supply 100 V to 230 V AC, 14 DI/10 DO (relay outputs)/2 AI/1 AO integrated <sup>A)</sup>	<b>6AG1 214-2AD23-2XB0</b>  <b>6AG1 214-2BD23-2XB0</b>
<b>SIPLUS CPU 222</b> (extended temperature range and extraordinary medial load) Compact CPU, expandable, main memory 4 KB, power supply 24 V DC, 8 DI/6 DO integrated <sup>A)</sup> Compact CPU, expandable, main memory 4 KB, power supply 100 V to 230 V AC, 8 DI/6 DO integrated, relay outputs <sup>A)</sup>	<b>6AG1 212-1AB23-2XB0</b>  <b>6AG1 212-1BB23-2XB0</b>	<b>SIPLUS CPU 226</b> (extended temperature range and extraordinary medial load) Compact CPU, expandable, main memory 16/24 KB program, 10 KB data, power supply 24 V DC, 24 DI/16 DO integrated <sup>A)</sup>	<b>6AG1 216-2AD23-2XB0</b>  <b>6AG1 216-2BD23-2XB0</b>
<b>SIPLUS CPU 224</b> (extended temperature range and extraordinary medial load) Compact CPU, expandable, main memory 8/12 KB program, 8 KB data, power supply 24 V DC, 14 DI/10 DO integrated <sup>A)</sup> Compact CPU, expandable, main memory 8/12 KB program, 8 KB data, power supply 100 V to 230 V AC, 14 DI/10 DO integrated, relay outputs <sup>A)</sup>	<b>6AG1 214-1AD23-2XB0</b>  <b>6AG1 214-1BD23-2XB0</b>	<b>Accessories</b> see ordering data for S7-200 central processing units	

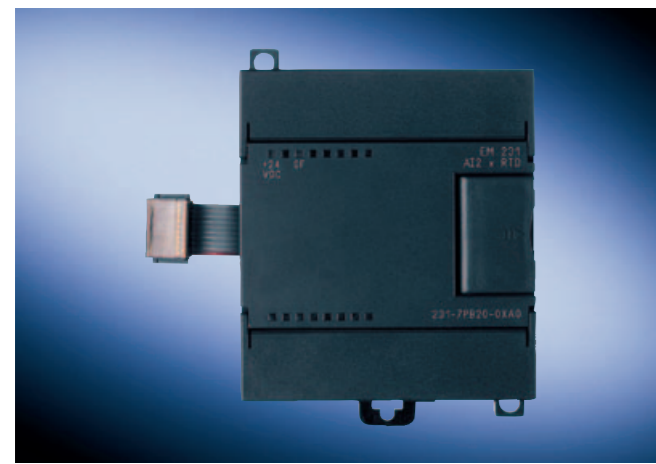
A) Subject to export regulations: AL: N and ECCN: EAR99H



## SIMATIC S7-200 SIPLUS analog modules, function modules

### SIPLUS EM 231 RTD module

#### Overview



- For user-friendly, high precision temperature detection
- Supports 31 standard resistance temperature sensors
- Easy to install in an existing system
- SIPLUS RTD module 6AG1 231-7PB22-2XY0:  
Conformity with standard for electronic devices on rail vehicles (EN 50155, temperature T1, category 1)
- CE, cUL certifications (available soon)

These modules are designed for

- an ambient temperature range of - 25 to + 70 °C  
(- 25 to +55 °C for applications with cUL certification);  
condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

#### Technical specifications

<b>6AG1 231-7PB22-2XA0</b>	see 6ES7 231-7PB22-0XA0
<b>6AG1 231-7PB22-2XY0</b>	see 6ES7 231-7PB22-0XA0

#### Ordering data

#### Order No.

<b>SIPLUS EM 231 RTD module<sup>A)</sup></b> (extended temperature range and extraordinary medial load)  2 inputs for thermistors Pt100/200/500/1000/10000, Ni100/120/1000, Cu10; resistance 150/300/600 Ohms, 15-bit resolution + sign	<b>6AG1 231-7PB22-2XA0</b>
<b>SIPLUS EM 231 RTD module<sup>A)</sup></b> (extended temperature range and extraordinary medial load)  With conformity to EN 50155; otherwise similar to 6AG1 231-7PB22-2XA0	<b>6AG1 231-7PB22-2XY0</b>
<b>Accessories</b>	see ordering data for RTD module EM 231

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

### SIPLUS DCF 77 radio clock module

#### Overview



The synchronisation of the real-time clock for the automation systems SIMATIC S7-200, S7-300 and S7-400 with the official time of day of the time signal transmitter DCF 77 of the Physikalisch-Technische Bundesanstalt Braunschweig is made by this module.

The time receipt occurs via a DCF transmitter (antenna with solid-state) which is connected to the the SIMATIC and SIPLUS PLC via two digital inputs and a software driver included in the scope of supply (function block FB). The function blocks can be downloaded under: <http://www.siemens.com/siplus> - Support - Tools & Downloads!

#### Technical specifications

##### SIPLUS DCF 77 radio clock module

Radio frequency	77,5 Hz
Power supply	24 V DC (20,4 ... 28, 8 V DC)
Power consumption, typ.	50 mA
Ambient temperature range	-25 ... +70 °C
Degree of protection	IP 65
Dimensions (W x H xDT) in mm	75 x 125 <sup>1)</sup> x 75

1) Additionally 25 mm (0.98 in) for heavy duty threaded joint and bending radius for cables

#### Ordering data

#### Order No.

<b>SIPLUS DCF 77 radio clock module<sup>A)</sup></b>  For synchronisation of SIMATIC S7-200, S7-300 and S7-400 with the official time of day of the time signal transmitter DCF 77 of the Physikalisch-Technische Bundesanstalt Braunschweig	<b>6AG1 057-1AA03-0AA0</b>
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A) Subject to export regulations: AL: N and ECCN: EAR99H

## SIMATIC S7-200 Communication

### SIPLUS EM 277 PROFIBUS DP module

#### Overview



- For connection of the S7-22x to PROFIBUS DP (as slave) and MPI
- Can be simultaneously operated as MPI slave and DP slave
- Transmission rate max. 12 Mbps
- Can be used with CPU from version 6AG1 22x-xxx21-xxxx
- Conformity with standard for electronic devices on rail vehicles (EN 50155, temperature T1, category 1)
- CE, cUL certifications (available soon)

#### This module is designed for

- an ambient temperature range of –25 to +70 °C (–25 to +55 °C for applications with cUL certification); condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

#### Technical specifications

6AG1 277-0AA22-2XA00 see 6ES7 277-0AA22-0XA0

#### Ordering data

#### Order No.

SIPLUS EM 277  
PROFIBUS DP module<sup>A)</sup>

6AG1 277-0AA22-2XA0

(extended temperature range and extraordinary medial load)

for CPU 222/224/224 XP/226,  
for connecting to PROFIBUS DP  
(slave) and MPI

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

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## SIMATIC S7-200 Human Machine Interface

### TD 100C text display

#### Overview



- The low-cost text display for the S7-200 with customized display
- For HMI functions: display of message texts, interventions in the control program, setting of inputs and outputs
- Direct connection to CPU interface
- No separate power supply required
- No separate parameterization software required
- Front design can be selected individually
- Addressing and setting of contrast in supplied menu

#### Ordering data

#### Order No.

Ordering data	Order No.
<b>Text Display TD 100C</b> With individually configurable control elements on the device front; for connecting to SIMATIC S7-200; for use with STEP 7 Micro/WIN V4 and higher	<b>6ES7 272-1BA10-0YA0</b>
<b>Connecting cable<sup>A)</sup></b> For connecting TD 100C or TD 200C to S7-200	<b>6ES7 901-3EB10-0XA0</b>
<b>Blank film</b> For printing customized keyboard layouts; 6 perforated foils per sheet; 10 sheets per packing unit	<b>6ES7 272-1BF00-7AA0</b>
<b>PROFIBUS bus connector, IP 20 with 90° cable outlet</b>	
• Without PG connection	<b>6ES7 972-0BA12-0XA0</b>
• With PG connection	<b>6ES7 972-0BB12-0XA0</b>
<b>PROFIBUS bus connector, IP 20 with 35° cable outlet</b>	
• Without PG connection	<b>6ES7 972-0BA41-0XA0</b>
• With PG connection	<b>6ES7 972-0BB41-0XA0</b>
<b>PROFIBUS FC standard cable</b> For connection to PPI; standard type with special design for quick mounting, 2-core, shielded, sold by the meter, max. delivery unit 1000 m, minimum ordering quantity 20 m	<b>6XV1 830-0EH10</b>

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

#### Technical specifications

6ES7 272-1BA10-0YA0	
<b>Power supply</b>	
Input voltage	24 V
- Rated value (DC)	
Input current	25 mA
- Rated value at 24 V DC	
<b>MPI</b>	
• Transmission rate (PPI), max.	187.5 kBit/s
<b>1st interface</b>	
• Physical	RS 485
Functionality	
- PPI	Yes
PPI	
- Number of stations	126
<b>Operator control and monitoring</b>	
Display	
- Number of lines	4
- Number of characters per line	10
- Height of characters	3.34 mm
<b>Environmental requirements</b>	
Operating temperature	
- min.	0 °C
- max.	60 °C
Storage/transportation temperature	
- min.	-20 °C
- max.	70 °C
Degree of protection and class of protection	
- IP 65	Yes
<b>Dimensions and weight</b>	
• Width	90 mm
• Height	76 mm
• Depth	36 mm
• Installation cutout, width	82 mm
• Installation cutout, height	69.5 mm
• Cabinet/control panel thickness	1.5 mm
• Weight, approx.	120 g



<b>4/2</b>	<b>Central processing units</b>
4/2	CPU 314C-2 PIP, CPU 314C-2 DP, CPU 314
4/13	CPU 315-2 PN/DP, CPU 315T-2 DP, CPU 315F-2 PN/DP, CPU 317F-2 PN/DP
<b>4/26</b>	<b>SIPLUS central processing units</b>
4/26	SIPLUS CPU 313C-2 DP to CPU 317F-2 DP
<b>4/30</b>	<b>SIPLUS digital modules</b>
4/30	SIPLUS SM 322 digital output modules
<b>4/31</b>	<b>Analog modules</b>
4/31	SM 331 analog input modules
<b>4/34</b>	<b>SIPLUS analog modules</b>
4/34	SIPLUS SM 331 analog input modules
4/35	SIPLUS SM 332 analog output module
<b>4/36</b>	<b>Function modules</b>
4/36	SIWAREX FTA
4/39	SIWAREX FTC
4/41	SIWAREX P
4/43	SIPLUS DCF 77 radio clock module
<b>4/44</b>	<b>Communication</b>
4/44	CP 340
4/46	SIPLUS CP 341
4/47	CP 343-1



## SIMATIC S7-300 Central processing units

CPU 314C-2 PiP, CPU 314C-2 DP, CPU 314

### Overview CPU 314C-2 PiP



- The compact CPU with integrated digital and analog I/Os, as well as a second serial interface
- For installations with high requirements in terms of processing power and response time
- With process-related functions

*Micro memory card required to operate the CPU.*

### Overview CPU 314



- For installations with medium requirements on program scope
- High processing performance in binary and floating-point arithmetic

*Micro memory card required to operate the CPU.*

### Overview 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.*

## SIMATIC S7-300 Central processing units

CPU 314C-2 PtP, CPU 314C-2 DP, CPU 314

### Technical specifications

	6ES7 314-6BF02-0AB0	6ES7 314-6CF02-0AB0	6ES7 314-1AF11-0AB0
<b>Product version</b>			
• Associated programming package	STEP 7 as of V 5.2 + SP 1 with HW update	STEP 7 as of V 5.2 + SP 1 with HW update	STEP 7 as of V 5.2 + SP 1 with HW update
<b>Supply voltages</b>			
Rated value			
- 24 V DC	Yes	Yes	Yes
- permissible range, lower limit (DC)	20.4 V	20.4 V	20.4 V
- permissible range, upper limit (DC)	28.8 V	28.8 V	28.8 V
<b>Voltages and currents</b>			
• External fusing for supply lines (recommendation)			Min. 2 A
<b>Current consumption</b>			
• Inrush current, typ.	11 A	11 A	2.5 A
• I <sub>t</sub>	0.7 A <sup>2</sup> s	0.7 A <sup>2</sup> s	0.5 A <sup>2</sup> s
• Current consumption (idling), type	150 mA	150 mA	60 mA
• Current consumption (rated value)	800 mA	1,000 mA	0.6 A
• from supply voltage L+, max.	800 mA	1,000 mA	600 mA
• Power dissipation, typical	14 W	14 W	2.5 W
<b>Memory/backup</b>			
Memory			
• Working memory			
- integral	64 KByte; for program and data	64 KByte; for program and data	64 KByte
- expandable	No	No	No
• Load memory			
- pluggable (MMC)	Yes	Yes	Yes
- pluggable (MMC), max.	8 MByte	8 MByte	8 MByte
Backup			
- available	Yes	Yes	Yes
- without battery	Yes	Yes	Yes
<b>CPU/blocks</b>			
DB			
- Number, max.	511	511	511
- Size, max.	16 KByte	16 KByte	16 KByte
FB			
- Number, max.	512	512	512
- Size, max.	16 KByte	16 KByte	16 KByte
FC			
- Number, max.	512	512	512
- Size, max.	16 KByte	16 KByte	16 KByte
OB			
- Size, max.	16 KByte	16 KByte	16 KByte
Nesting depth			
- per priority class	8	8	8
- additional levels within an error OB	4	4	4
<b>CPU/processing times</b>			
• for bit instruction, min.	0.1 μs	0.1 μs	0.1 μs
• for word instruction, min.	0.2 μs	0.2 μs	0.2 μs
• for integer math, min.	2 μs	2 μs	2 μs
• for floating-point math, min.	3 μs	3 μs	3 μs

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## SIMATIC S7-300 Central processing units

CPU 314C-2 PiP, CPU 314C-2 DP, CPU 314

### Technical specifications (continued)

	6ES7 314-6BF02-0AB0	6ES7 314-6CF02-0AB0	6ES7 314-1AF11-0AB0
<b>Timers/counters and their retentive characteristics</b>			
S7 counter			
- Number	256	256	256
• of which retentive without battery			
- adjustable	Yes	Yes	Yes
- lower limit	0	0	
- upper limit	256	256	
• Retentivity			
- adjustable	Yes		Yes
• Counting range			
- adjustable			Yes
- lower limit	0	0	0
- upper limit	999	999	999
IEC counter			
- available	Yes	Yes	Yes
- Type	SFB	SFB	SFB
S7 times			
- Number	256	256	256
• Retentivity			
- adjustable	Yes	Yes	Yes
- lower limit	0	0	
- upper limit	256	256	
- preset	No retention	No retention	No retention
• Timing range			
- lower limit	10 ms	10 ms	10 ms
- upper limit	9,990 s	9,990 s	9,990 s
IEC timer			
- available	Yes	Yes	Yes
- Type	SFB	SFB	SFB
<b>Data areas and their retentive characteristics</b>			
Flags			
- Number	256 Byte	256 Byte	256 Byte
- adjustable retentivity	Yes	Yes	Yes
- Number of clock memories	8	8	8
Data blocks			
- Number, max.	511	511	511
- Size, max.	16 KByte	16 KByte	16 KByte
Local data			
- per priority class, max.	510 Byte	510 Byte	510 Byte
<b>Address area</b>			
I/O address area			
- Inputs	1 KByte	1 KByte	1 KByte
- Outputs	1 KByte	1 KByte	1 KByte
Process image			
- Inputs	128 Byte	128 Byte	128 Byte
- Outputs	128 Byte	128 Byte	128 Byte
Digital channels			
- Inputs	992	992	1,024
- Outputs	992	992	1,024
- Inputs, of which central	992	992	1,024
- Outputs, of which central	992	992	1,024

## SIMATIC S7-300 Central processing units

CPU 314C-2 PtP, CPU 314C-2 DP, CPU 314

### Technical specifications (continued)

	6ES7 314-1AF11-0AB0	6ES7 314-6BF02-0AB0	6ES7 314-6CF02-0AB0
Analog channels			
- Inputs	253	512	256
- Outputs	124	124	256
- Inputs, of which central	248	248	256
- Outputs, of which central	248	248	256
<b>Configuration</b>			
• Central units, max.	1	1	
• Expansion units, max.	3	3	
• Racks, max.	4	4	4
• Modules per rack, max.	8	8	8
Number of DP masters			
- integral		1	0
- via CP	4	4	4
Number of FMs and CPs that can be operated (recommendation)			
- FM	8	8	8
- CP, point-to-point	8	8	8
- CP, LAN	10	10	10
<b>Time</b>			
Clock			
- Hardware clock (realtime clock)	Yes	Yes	Yes
- buffered	Yes	Yes	Yes
- Deviation per day, max.	10 s	10 s	10 s
Run-time meter			
- Quantity	1	1	1
- Number	0	0	0
- Range of values	2 <sup>31</sup> hours (when using SFC 101)	2 <sup>31</sup> hours (when using SFC 101)	0 to 2 <sup>31</sup> hours (when using SFC 101)
- Granularity	1 hour	1 hour	1 hour
- retentive	Yes	Yes	Yes
Time synchronization			
- supported	Yes	Yes	Yes
- on MPI, master	Yes	Yes	Yes
- on MPI, slave	Yes	Yes	Yes
- in AS, master	Yes	Yes	Yes
<b>S7 message functions</b>			
• Number of stations that can log on for message functions, max.	12	12	12
• Process diagnostic messages	Yes	Yes	Yes
• simultaneously active Alarm-S blocks, max.	40	40	40
<b>Test and startup functions</b>			
Status/modify			
- Variable	Yes	Yes	Yes
- Variables	Inputs, outputs, flags, DB, timers, counters	Inputs, outputs, flags, DB, timers, counters	Inputs, outputs, flags, DB, timers, counters
- Number of variables, max.	30	30	30
- of which status variables, max.	30	30	30
- of which modify variables, max.	14	14	14
Forcing			
- Forcing	Yes	Yes	Yes
- Forcing, variables	Inputs, outputs	Inputs, outputs	Inputs, outputs
- Forcing, number of variables, max.	10	10	10

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## SIMATIC S7-300 Central processing units

CPU 314C-2 PiP, CPU 314C-2 DP, CPU 314

### Technical specifications (continued)

	6ES7 314-6BF02-0AB0	6ES7 314-6CF02-0AB0	6ES7 314-1AF11-0AB0
• Status block	Yes	Yes	Yes
• Single step	Yes	Yes	Yes
• Number of breakpoints	2	2	2
Diagnostic buffer			
- available	Yes	Yes	Yes
- Number of inputs, max.	100	100	100
- adjustable			No
<b>Communication functions</b>			
• PG/OP communication	Yes	Yes	Yes
• Routing		Yes	No
Global data communication			
- supported	Yes	Yes	Yes
- Size of GD packets, max.	22 Byte	22 Byte	22 Byte
S7 basic communication			
- supported	Yes	Yes	Yes
S7 communication			
- supported	Yes	Yes	Yes
S5 compatible communication			
- supported	Yes	Yes	Yes
Number of connections			
- overall	12	12	12
- usable for PG communication	11	11	11
- usable for OP communication	11	11	11
- usable for S7 basic communication	8	8	8
- usable for routing		4	
<b>Connection system</b>			
• Requisite front connector	2 x 40-pin	2 x 40-pin	
<b>MPI</b>			
• Length of cable, max.	50 m	50 m	
<b>Point-to-point</b>			
• Length of cable, max.	1,200 m		
Integral protocol driver			
- 3964 (R)	Yes		
- ASCII	Yes		
- RK512	Yes		
Transmission rate, RS 422/485			
- with 3964 (R) protocol, max.	19.2 kBit/s		
- with ASCII protocol, max.	19.2 kBit/s		
- with RK 512 protocol, max.	19.2 kBit/s		
<b>1st interface</b>			
• Type of interface	integrated RS 485 interface	integrated RS 485 interface	integrated RS 485 interface
• Physical	RS 485	RS 485	RS 485
• Isolated	No	No	No
• Power supply to interface (15 to 30 V DC), max.	200 mA	200 mA	200 mA
Functionality			
- MPI	Yes	Yes	Yes
- DP master	No	No	No
- DP slave	No	No	No
- Point-to-point connection	No	No	No
<b>MPI</b>			
- Number of connections	12	12	12



## SIMATIC S7-300 Central processing units

CPU 314C-2 PtP, CPU 314C-2 DP, CPU 314

### Technical specifications (continued)

	6ES7 314-6BF02-0AB0	6ES7 314-6CF02-0AB0	6ES7 314-1AF11-0AB0
<b>1st interface</b> (continued)			
• Services			
- PG/OP communication	Yes	Yes	Yes
- Routing	No	Yes	No
- Global data communication	Yes	Yes	Yes
- S7 basic communication	Yes	Yes	Yes
- S7 communication	Yes	Yes	Yes
- S7 communication, as client	No	No	No; via CP and loadable FB
- S7 communication, as server	Yes	Yes	Yes
- Transmission rates, max.	187.5 kBit/s	187.5 kBit/s	187.5 kBit/s
<b>2nd interface</b>			
• Type of interface	integrated RS 422/485 interface	integrated RS 485 interface	
• Physical	RS422 / RS 485 (X.27)	RS 485	
• Isolated	Yes	Yes	
• Power supply to interface (15 to 30 V DC), max.		200 mA	
Functionality			
- MPI	No	No	
- DP master	No	Yes	
- DP slave	No	Yes	
- Point-to-point connection	Yes	No	
DP master			
- Number of connections, max.		12; 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	
- DPV1		Yes	
- Transmission rates, max.		12 Mbit/s	
- Number of DP slaves, max.		32	
• Address area			
- Inputs, max.		1 KByte	
- Outputs, max.		1 KByte	
• User data per DP Slave			
- Inputs, max.		244 Byte	
- Outputs, max.		244 Byte	

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## SIMATIC S7-300 Central processing units

CPU 314C-2 PiP, CPU 314C-2 DP, CPU 314

### Technical specifications (continued)

	6ES7 314-6BF02-0AB0	6ES7 314-6CF02-0AB0	6ES7 314-1AF11-0AB0
<b>2nd interface (continued)</b>			
DP slave			
- Number of connections		12	
• Services			
- PG/OP communication		Yes	
- Routing		Yes	
- Global data communication		No	
- S7 basic communication		No	
- Direct data exchange (lateral communication)		Yes	
- DPV1		No	
- GSD file	-	You can find the current device master file at: <a href="http://www.ad.siemens.de/support">http://www.ad.siemens.de/support</a> under the Product Support link	
- Transmission rates, max.		12 kBit/s	
- Automatic baud rates search		Yes	
• Intermediate memory			
- Inputs		244 Byte	
- Outputs		244 Byte	
- Address areas, max.		32	
- User data per address area, max.		32 Byte	
<b>Point-to-point coupling</b>			
- Transmission rates, max.	38.4 kBit/s		
- Length of cable, max.	1,200 m		
- Controllable interface from the user program	Yes		
- Interface can activate alarm/interrupt in the user program	Yes		
- Protocol driver	3964 (R); ASCII and RK 512		
<b>CPU programming</b>			
Programming language			
- STEP 7	Yes; V5.2 SP1 with HW update	Yes; V5.2 SP1 with HW update	Yes; as of V 5.2 SP 1 with HW update
- KOP	Yes	Yes	Yes
- FUP	Yes	Yes	Yes
- AWL	Yes	Yes	Yes
- SCL	Yes	Yes	Yes
- CFC	Yes	Yes	Yes
- GRAPH	Yes	Yes	Yes
- HiGraph	Yes	Yes	Yes
<b>Software library</b>			
• Instruction set	See instruction list	See instruction list	see instruction list
• Bracket levels	8	8	8
• User program protection/password protection	Yes	Yes	Yes
• System functions (SFC)	See instruction list	See instruction list	see instruction list
• System function blocks (SFB)	See instruction list	See instruction list	see instruction list

## SIMATIC S7-300 Central processing units

CPU 314C-2 PtP, CPU 314C-2 DP, CPU 314

### Technical specifications (continued)

	6ES7 314-6BF02-0AB0	6ES7 314-6CF02-0AB0	6ES7 314-1AF11-0AB0
<b>Digital inputs</b>			
• Number of digital inputs	24	24	
Length of cable			
- Length of cable shielded, max.	1,000 m	1,000 m	
- Length of cable unshielded, max.	600 m	600 m	
Input voltage			
- Rated value, DC	24 V	24 V	
- for signal "0"	-3 to 5 V	-3 to 5 V	
- for signal "1"	15 to 30 V	15 to 30 V	
Input current			
- for 1 signal, typical	8 mA	8 mA	
Input delay (at rated value of the input voltage)			
• For standard inputs			
- Parameterizable	Yes	Yes	
• for counters/technological functions			
- at 0 to 1, max.	8 μs	8 μs	
<b>Digital outputs</b>			
• Number of digital outputs	16	16	
• Length of cable shielded, max.	1,000 m	1,000 m	
• Length of cable unshielded, max.	600 m	600 m	
• Short-circuit protection of the output	Yes; clocking electronically	Yes; clocking electronically	
• Limitation of voltage induced on circuit interruption to	L+ (-48 V)	L+ (-48 V)	
Output voltage			
- for 1 signal	L+ (-0.8 V)	L+ (-0.8 V)	
Output current			
- for 1 signal permissible range for 0 to 40 °C, max.	500 mA	500 mA	
- for 1 signal permissible range for 0 to 60 °C, max.	500 mA	500 mA	
- for 1 signal minimum load current	5 mA	5 mA	
- for 0 signal residual current, max.	0.5 mA	0.5 mA	
Switching frequency			
- at resistive load, max.	100 Hz	100 Hz	
- at inductive load, max.	0.5 Hz	0.5 Hz	
Summation current of the outputs (per group)			
• all other mounting positions			
- up to 40 °C, max.	8 A	8 A	
- up to 60 °C, max.	4 A	4 A	
<b>Analog inputs</b>			
• Number of analog inputs for voltage/current measurement	4	4	
• Number of analog inputs for resistance/temperature measurement	1	1	
• Technical unit for temperature measurement, adjustable	Yes	Yes	
Input ranges (rated values), voltages			
- 0 to +10 V	Yes	Yes	
- -10 V to +10 V	Yes	Yes	

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## SIMATIC S7-300 Central processing units

CPU 314C-2 PiP, CPU 314C-2 DP, CPU 314

### Technical specifications (continued)

	6ES7 314-6BF02-0AB0	6ES7 314-6CF02-0AB0	6ES7 314-1AF11-0AB0
Input ranges (rated values), currents			
- 0 to 20 mA	Yes	Yes	
- -20 to +20 mA	Yes	Yes	
- 4 to 20 mA	Yes	Yes	
Input ranges (rated values), resistances			
- 0 to 600 ohms	Yes	Yes	
Input ranges (rated values), resistance thermometer			
- Pt 100	Yes	Yes	
<b>Analog outputs</b>			
• Number of analog outputs	2	2	
Output ranges, voltage			
- 0 to 10 V	Yes	Yes	
- -10 to +10 V	Yes	Yes	
Output ranges, current			
- 0 to 20 mA	Yes	Yes	
- -20 to +20 mA	Yes	Yes	
- 4 to 20 mA	Yes	Yes	
<b>Analog value formation</b>			
Integration and conversion time/triggering per channel			
- with over-range (bits incl. sign), max.	12 Bit	12 Bit	
- Integration time parameterizable	Yes; 2.5 / 16.6 / 20 ms	Yes; 2.5 / 16.6 / 20 ms	
- Conversion time (per channel)	1 ms	1 ms	
<b>Sensor</b>			
Connectable encoders			
- 2-wire BEROs	Yes	Yes	
- permissible closed-circuit current (2-wire BEROs), max.	1.5 mA	1.5 mA	
<b>Error/accuracies</b>			
Basic error limit (operational limit at 25 °C)			
- relative to the output range, voltage	+/- 0,7 %	+/- 0,7 %	
- relative to the output range, current	+/- 0,7 %	+/- 0,7 %	
- relative to the input range, voltage	+/- 0,7 %	+/- 0,7 %	
- relative to the input range, current	+/- 0,7 %	+/- 0,7 %	
- relative to the input range, resistance	+/- 3 %	+/- 3 %	
- relative to the input range, resistance thermometer	+/- 3 %	+/- 3 %	
<b>Integral functions</b>			
• Number of counters	4	4	
• Count frequency (counters) max.	60 kHz	60 kHz	
• Frequency measurement	Yes	Yes	
• Controlled positioning	Yes	Yes	
• PID controller	Yes	Yes	
• Number of pulse outputs	4	4	
• Cut-off frequency (pulse)	2.5 kHz	2.5 kHz	

## SIMATIC S7-300 Central processing units

CPU 314C-2 PtP, CPU 314C-2 DP, CPU 314

### Technical specifications (continued)

	6ES7 314-6BF02-0AB0	6ES7 314-6CF02-0AB0	6ES7 314-1AF11-0AB0
<b>Potentials/ electrical isolation</b>			
Analog output functions			
- Electrical isolation, analog output functions	Yes	Yes	
- between the channels and the backplane bus	Yes	Yes	
Analog input functions			
- Electrical isolation, analog inputs	Yes	Yes	
- between the channels and the backplane bus	Yes	Yes	
Digital output functions			
- Electrical isolation, digital output functions	Yes	Yes	
- between the channels, in groups of	8	8	
- between the channels and the backplane bus	Yes	Yes	
Digital input functions			
- Electrical isolation, digital input functions	Yes	Yes	
- between the channels, in groups of	16	16	
- between the channels and the backplane bus	Yes	Yes	
<b>Dimensions and weight</b>			
• Width	120 mm	120 mm	40 mm
• Height	125 mm	125 mm	125 mm
• Depth	130 mm	130 mm	130 mm
• Weight, approx.	676 g	676 g	280 g

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### Ordering data

Order No.	Order No.
<b>CPU 314</b> 64 KB working memory, 24 V DC supply voltage, MPI MMC is necessary	<b>6ES7 314-1AF11-0AB0</b>
<b>CPU 314C-2 PtP</b> Compact CPU, 64 KB working memory, 24 V DC supply voltage, 24DI/16DO/4AI/2AO integrated, integrated functions, MPI, RS 422/485 interface, MMC is necessary	<b>6ES7 314-6BF02-0AB0</b>
<b>CPU 314C-2 DP</b> Compact CPU, 64 KB working memory, 24 V DC supply voltage, 24DI/16DO/4AI/2AO integrated, integrated functions, MPI, PROFIBUS DP master/slave interface, MMC is necessary	<b>6ES7 314-6CF02-0AB0</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>MPI cable</b> For connecting SIMATIC S7 and the PG through MPI; length 5 m	<b>6ES7 901-0BF00-0AA0</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>SUB-D connector</b> For connection to the second serial interface of CPU 31xC-2 PTP 15-pole, pins	<b>6ES5 750-2AA21</b>



## SIMATIC S7-300 Central processing units

CPU 314C-2 PtP, CPU 314C-2 DP, CPU 314

Ordering data	Order No.	Ordering data	Order No.
<b>Front connector (1 unit)</b> For compact CPUs as well as CPU 315F-2 DP 40-pole, screw-type contacts <ul style="list-style-type: none"> <li>• 1 item</li> <li>• 100 items</li> </ul> 40-pole with cage clamp contacts	<b>6ES7 392-1AM00-0AA0</b> <b>6ES7 392-1AM00-1AB0</b> <b>6ES7 392-1BM01-0AA0</b>	<b>Sheets of labels for machine inscription</b> For 16-channel signal modules, DIN A4, for printing using a laser printer; <ul style="list-style-type: none"> <li>10 items</li> <li>Petrol</li> <li>Light beige</li> <li>Yellow</li> <li>Red</li> </ul> For 32-channel signal modules, DIN A4, for printing using a laser printer; <ul style="list-style-type: none"> <li>10 items</li> <li>Petrol</li> <li>Light beige</li> <li>Yellow</li> <li>Red</li> </ul>	<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>Mounting location number plates</b> <b>S7-300 Manual</b> Design, CPU data, module data, command list <ul style="list-style-type: none"> <li>German</li> <li>English</li> <li>French</li> <li>Spanish</li> <li>Italian</li> </ul>	<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>PROFIBUS DP bus connector RS 485</b> <ul style="list-style-type: none"> <li>• With 90° cable outlet, max. transmission rate 12 Mbit/s               <ul style="list-style-type: none"> <li>- Without PG interface</li> <li>- With PG interface</li> </ul> </li> <li>• With 90° cable outlet for Fast-Connect connection technique, max. transmission rate 12 Mbit/s               <ul style="list-style-type: none"> <li>- Without PG interface</li> <li>- With PG interface</li> </ul> </li> <li>• With axial cable outlet for SIMATIC OP for connecting to PPI, MPI, PROFIBUS</li> </ul>	<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>SIMATIC Manual Collection<sup>E)</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>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>6XV1 830-0EH10</b>
<b>SIMATIC Manual Collection update service for 1 year<sup>E)</sup></b> Up-to-date Manual Collection CD as well as the three subsequent updates	<b>6ES7 998-8XC01-8YE2</b>	<b>Repeater RS 485 for PROFIBUS</b> Transmission rate of up to 12 Mbit/s 24 V DC; IP20 casing	<b>6ES7 972-0AA01-0XA0</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>PROFIBUS bus components</b> For establishing MPI/PROFIBUS communication	see catalogs IK PI, CA 01
<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>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>S7 SmartLabel</b> Software for labeling modules mechanically directly in the STEP 7 project	<b>2XV9 450-1SL01-0YX0</b>		

E) Subject to export regulations: AL: N and ECCN: E5D992B1

## SIMATIC S7-300 Central processing units

CPU 315-2 PN/DP, CPU 315T-2 DP,  
CPU 315F-2 PN/DP, CPU 317F-2 PN/DP

### CPU 315-2 PN/DP



- The CPU with a medium program memory and quantity framework
- High processing performance in binary and floating-point arithmetic
- Used as a central controller on production lines with central and distributed I/O
- Integral PROFINET interface
- Combined MPI / PROFIBUS DP-master/slave interface
- Component Based Automation (CBA) on PROFINET
- PROFINET proxy for intelligent devices on PROFIBUS DP in Component Based Automation (CBA)
- PROFINET IO Controller for operating distributed I/O on PROFINET

*Micro Memory Card required for operation of CPU.*

### CPU 315T-2 DP



- SIMATIC CPU with integrated technology/motion control functionality
- With the full functionality of the standard CPU 315-2 DP
- For multi-sector automation tasks in the construction of series machines, special machines and plants
- Ideal for synchronized motion sequences such as a coupling to a virtual/real master, electronic gearbox, cam disc or print-mark correction.
- Used as a central controller on production lines with central and distributed I/O
- With integrated I/O for fast technological functions (e.g. cam switching, reference point detection)
- PROFIBUS DP (DRIVE) interface for the isochronous connection of drive components.
- A common S7 application program for control and motion control tasks (no additional programming language for motion control required)
- Optional "S7 Technology" package required

*Micro Memory Card required for operation of CPU.*

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## SIMATIC S7-300 Central processing units

CPU 315-2 PN/DP, CPU 315T-2 DP,  
CPU 315F-2 PN/DP, CPU 317F-2 PN/DP

### CPU 315F-2 PN/DP



- For design of a fail-safe automation system for plants with increased safety requirements
- Complies with safety requirements up to SIL 3 to IEC 61508 and up to Cat. 4 according to EN 954-1
- Fail-safe I/O modules in distributed stations can be connected through the integrated PROFINET interface (PROFIsafe) and/or through the integrated PROFIBUS DP interface (PROFIsafe)
- Fail-safe I/O modules of the ET 200M range can also be centrally connected
- Central and distributed use of standard modules for non safety-relevant applications
- Component Based Automation (CBA) on PROFINET
- PROFINET proxy for intelligent devices on PROFIBUS DP in Component Based Automation (CBA)

*Micro Memory Card required for operation of CPU.*

### CPU 317F-2 PN/DP



- The fail-safe CPU with a large program memory and quantity framework for demanding applications
- For design of a fail-safe automation system for plants with increased safety requirements
- Complies with safety requirements up to SIL 3 to IEC 61508 and up to Cat. 4 according to EN 954-1
- Fail-safe I/O modules in distributed stations can be connected through the integrated PROFINET interface (PROFIsafe) and/or through the integrated PROFIBUS DP interface (PROFIsafe)
- Fail-safe I/O modules of the ET 200M range can also be centrally connected
- Central and distributed use of standard modules for non safety-relevant applications
- Component based Automation (CBA) on PROFINET
- PROFINET proxy for intelligent devices on PROFIBUS DP in Component Based Automation (CBA)

*Micro Memory Card required for operation of CPU.*

### Technical specifications

	6ES7 315-2EG10-0AB0	6ES7 315-6TG10-0AB0	6ES7 315-2FH10-0AB0	6ES7 317-2FJ10-0AB0
<b>Product version</b>				
• Associated programming package	STEP 7 V5.3 SP1	STEP 7 from V 5.3 + SP1 and option package S7-Technology V2.0	STEP 7 from V 5.3 SP3 S7 Distributed Safety from V5.4	STEP 7 from V 5.3 SP3 S7 Distributed Safety from V5.4
<b>Supply voltages</b>				
Rated value				
- 24 V DC	Yes	Yes	Yes	Yes
- permissible range, lower limit (DC)	20.4 V	20.4 V	20.4 V	20.4 V
- permissible range, upper limit (DC)	28.8 V	28.8 V	28.8 V	28.8 V
<b>Voltages and currents</b>				
• External fusing for supply lines (recommendation)	Min. 2 A	Min. 2 A	Min. 2 A	Min. 2 A
<b>Current consumption</b>				
• Inrush current, max.		2.5 A		
• Inrush current, typ.	2.5 A		2.5 A	2.5 A
• I <sup>2</sup> t	1 A <sup>2</sup> s	1 A <sup>2</sup> s	1 A <sup>2</sup> s	1 A <sup>2</sup> s
• Current consumption (idling), type	100 mA	200 mA	100 mA	100 mA
• Power dissipation, typical	3.5 W	6 W	3.5 W	3.5 W

## SIMATIC S7-300 Central processing units

CPU 315-2 PN/DP, CPU 315T-2 DP,  
CPU 315F-2 PN/DP, CPU 317F-2 PN/DP

### Technical specifications (continued)

	6ES7 315-2EG10-0AB0	6ES7 315-6TG10-0AB0	6ES7 315-2FH10-0AB0	6ES7 317-2FJ10-0AB0
<b>Memory/backup</b>				
Memory				
• Working memory				
- integral	128 KByte	128 KByte	192 KByte	512 KByte
- expandable	No	No	No	No
• Load memory				
- pluggable (MMC)	Yes	Yes	Yes	Yes
- pluggable (MMC), max.	8 MByte	8 MByte	8 MByte	8 MByte
Backup				
- available	Yes	Yes	Yes	Yes
<b>CPU/blocks</b>				
DB				
- Number, max.	1,023	1,023	1,023	2,047
- Size, max.	16 KByte	16 KByte	16 KByte	64 KByte
FB				
- Number, max.	2,048	2,048	2,048	2,048
- Size, max.	16 KByte	16 KByte	16 KByte	64 KByte
FC				
- Number, max.	2,048	2,048	2,048	2,048
- Size, max.	16 KByte	16 KByte	16 KByte	64 KByte
OB				
- Size, max.	16 KByte	16 KByte	16 KByte	64 KByte
Nesting depth				
- per priority class	8	8	8	16
- additional levels within an error OB	4	4	4	4
<b>CPU/processing times</b>				
• for bit instruction, min.	0.1 µs	0.1 µs	0.1 µs	0.05 µs
• for word instruction, min.	0.2 µs	0.2 µs	0.2 µs	0.2 µs
• for integer math, min.	2 µs	2 µs	2 µs	0.2 µs
• for floating-point math, min.	3 µs	3 µs	3 µs	1 µs
<b>Timers/counters and their retentive characteristics</b>				
S7 counter				
- Number	256	256	256	512
• of which retentive without battery				
- adjustable	Yes	Yes	Yes	Yes
• Retentivity				
- adjustable	Yes		Yes	
• Counting range				
- adjustable	Yes	Yes	Yes	Yes
- lower limit	0	0	0	0
- upper limit	999	999	999	999
IEC counter				
- available	Yes	Yes	Yes	Yes
- Type	SDB	SFB	SDB	SFB

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## SIMATIC S7-300

### Central processing units

CPU 315-2 PN/DP, CPU 315T-2 DP,  
CPU 315F-2 PN/DP, CPU 317F-2 PN/DP

#### Technical specifications (continued)

	6ES7 315-2EG10-0AB0	6ES7 315-6TG10-0AB0	6ES7 315-2FH10-0AB0	6ES7 317-2FJ10-0AB0
<b>Timers/counters and their retentive characteristics (continued)</b>				
S7 timer				
- Number	256	256	256	512
• Retentivity				
- adjustable	Yes	Yes	Yes	Yes
- preset	No retention	No retention	No retention	No retention
• Timing range				
- lower limit	10 ms	10 ms	10 ms	10 ms
- upper limit	9,990 s	9,990 s	9,990 s	9,990 s
IEC timer				
- available	Yes	Yes	Yes	Yes
- Type	SFB	SFB	SFB	SFB
<b>Data areas and their retentive characteristics</b>				
Flags				
- Number	2,048 Byte	2,048 Byte	2,048 Byte	4,096 Byte
- adjustable retentivity	Yes	Yes	Yes	Yes
- Number of clock memories	8	8	8	8
Data blocks				
- Number, max.	1,023	1,023	1,023	2,047
- Size, max.	16 KByte	16 KByte	16 KByte	64 KByte
- adjustable retentivity		Yes		Yes
Local data				
- per priority class, max.	128 Byte	1,024 Byte	128 Byte	1,024 Byte
<b>Address area</b>				
I/O address area				
- Inputs	2,048 Byte	2 KByte	2,048 Byte	8 KByte
- Outputs	2,048 Byte	2 KByte	2,048 Byte	8 KByte
• of which distributed				
- Inputs	2 KByte	2 KByte	2 KByte	8 KByte
- Outputs	2 KByte	2 KByte	2 KByte	8 KByte
Process image				
- Inputs	128 Byte	128 Byte	384 Byte	256 Byte
- Outputs	128 Byte	128 Byte	384 Byte	256 Byte
- Inputs, adjustable				2,048 KByte
- Outputs, adjustable				2,048 KByte
- Inputs, preset				256 Byte
- Outputs, preset				256 Byte
Digital channels				
- Inputs	16,384	16,384	16,384	65,536
- Outputs	16,384	16,384	16,384	65,536
- Inputs, of which central	1,024	256	1,024	1,024
- Outputs, of which central	1,024	256	1,024	1,024
Analog channels				
- Inputs	1,024	1,024	1,024	4,096
- Outputs	1,024	1,024	1,024	4,096
- Inputs, of which central	256	64	256	256
- Outputs, of which central	256	64	256	256



## SIMATIC S7-300 Central processing units

CPU 315-2 PN/DP, CPU 315T-2 DP,  
CPU 315F-2 PN/DP, CPU 317F-2 PN/DP

### Technical specifications (continued)

	6ES7 315-2EG10-0AB0	6ES7 315-6TG10-0AB0	6ES7 315-2FH10-0AB0	6ES7 317-2FJ10-0AB0
<b>Configuration</b>				
• Racks, max.	4	1	4	4
• Modules per rack, max.	8	8	8	8
Number of DP masters				
- integral	1	2	1	1
- via CP	4	2	4	4
Number of FMs and CPs that can be operated (recommendation)				
- FM	8	8	8	8
- CP, point-to-point	8	8	8	8
- CP, LAN	10	10	10	10
<b>Time</b>				
Clock				
- Hardware clock (realtime clock)	Yes	Yes	Yes	Yes
- buffered	Yes	Yes	Yes	Yes
- Deviation per day, max.	10 s	10 s	10 s	10 s
Run-time meter				
- Quantity	1	1	1	4
- Number	0		0	0 to 3
- Range of values	2 to 31 hours (when using SFC 101)		2 to 31 hours (when using SFC 101)	0 to 2 <sup>31</sup> hours (when using SFC 101)
- Granularity	1 hour		1 hour	1 hour
- retentive	Yes	Yes	Yes	Yes
Time synchronization				
- supported	Yes	Yes	Yes	Yes
- on MPI, master	Yes	Yes	Yes	Yes
- on MPI, slave	Yes	Yes	Yes	Yes
- in AS, master	Yes	Yes	Yes	Yes
- in AS, slave	Yes	Yes	Yes	Yes
<b>S7 message functions</b>				
• Number of stations that can log on for message functions, max.	16	16	16	32
• Process diagnostic messages	Yes	Yes	Yes	Yes
• simultaneously active Alarm-S blocks, max.	40	40	40	60
<b>Test and startup functions</b>				
Status/modify				
- Variable	Yes	Yes	Yes	Yes
- Variables	Inputs, outputs, flags, DB, timers, counters	Inputs, outputs, flags, DB, timers, counters	Inputs, outputs, flags, DB, timers, counters	Inputs, outputs, flags, DB, timers, counters
- Number of variables, max.	30	30	30	30
- of which status variables, max.	30	30	30	30
- of which modify variables, max.	14	14	14	14
Forcing				
- Forcing	Yes	Yes	Yes	Yes
- Forcing, variables	Inputs, outputs	Inputs, outputs	Inputs, outputs	Inputs, outputs
- Forcing, number of variables, max.	10	10	10	10
• Status block	Yes	Yes	Yes	Yes
• Single step	Yes	Yes	Yes	Yes
• Number of breakpoints	2	2	2	2

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## SIMATIC S7-300

### Central processing units

CPU 315-2 PN/DP, CPU 315T-2 DP,  
CPU 315F-2 PN/DP, CPU 317F-2 PN/DP

#### Technical specifications (continued)

	6ES7 315-2EG10-0AB0	6ES7 315-6TG10-0AB0	6ES7 315-2FH10-0AB0	6ES7 317-2FJ10-0AB0
<b>Test and startup functions (continued)</b>				
Diagnostic buffer				
- available	Yes	Yes	Yes	Yes
- Number of inputs, max.	100	100	100	100
- adjustable	No	No	No	No
<b>Communication functions</b>				
• PG/OP communication	Yes	Yes	Yes	Yes
• Routing	Yes	Yes	Yes	Yes
Global data communication				
- supported	Yes	Yes	Yes	Yes
- Size of GD packets, max.	22 Byte	22 Byte	22 Byte	22 Byte
S7 basic communication				
- supported	Yes	Yes	Yes	Yes
S7 communication				
- supported	Yes	Yes	Yes	Yes
S5 compatible communication				
- supported	Yes	Yes	Yes	Yes
Open IE Communication				
- TCP/IP	Yes; via integrated PROFINET interfaces and loadable FBs		Yes; via integrated PROFINET interfaces and loadable FBs	Yes; via integrated PROFINET interfaces and loadable FBs
- Number of connections, max.	8		8	8
- Data length, max.	1,460 Byte		1,460 Byte	1,460 Byte
Number of connections				
- overall	16	16	16	32
- usable for PG communication	15	15	15	31
- usable for OP communication	15	15	15	31
- usable for S7 basic communication	14	12	14	30
<b>PROFINET CBA (at 50 % Communication Load)</b>				
- Number of remote interconnection nodes	32		32	32
- Sum of all Master/Slave connectors	1,000		1,000	1,000
- Data length of all input Master/Slave connectors	4,000 Byte		4,000 Byte	4,000 Byte
- Data length of all output Master/Slave connectors	4,000 Byte		4,000 Byte	4,000 Byte
- Data length for arrays and structures (acyclic interconn.), max.	1,400 Byte		1,400 Byte	1,400 Byte
- Data length for arrays and structures (cyclic interconn.), max.	450 Byte		450 Byte	450 Byte
- Data length for arrays and structures (local interconn.), max.	128 Byte		128 Byte	128 Byte
• Remote interconnections with acyclic transmission				
- Sample frequency: sample interval, min.	500 ms		500 ms	500 ms
- Number of input interconnections	100		100	100
- Number of output interconnections	100		100	100
- Data length of all input interconnections	2,000 Byte		2,000 Byte	2,000 Byte
- Data length of all output interconnections	2,000 Byte		2,000 Byte	2,000 Byte

## SIMATIC S7-300 Central processing units

CPU 315-2 PN/DP, CPU 315T-2 DP,  
CPU 315F-2 PN/DP, CPU 317F-2 PN/DP

### Technical specifications (continued)

	6ES7 315-2EG10-0AB0	6ES7 315-6TG10-0AB0	6ES7 315-2FH10-0AB0	6ES7 317-2FJ10-0AB0
<b>Communication functions</b> (continued)				
• Remote interconnections with cyclic transmission				
- Transmission frequency: transmission interval, min.	10 ms		10 ms	10 ms
- Number of input interconnections	200		200	200
- Number of output interconnections	200		200	200
- Data length of all input interconnections	2,000 Byte		2,000 Byte	2,000 Byte
- Data length of all output interconnections	2,000 Byte		2,000 Byte	2,000 Byte
• HMI variables via PROFINET (acyclic)				
- No. of stations that can log on simultaneously for HMI variables	3		3	3
- Update HMI variables	500 ms		500 ms	500 ms
- Number of HMI variables	200		200	200
- Data length of all HMI variables	2,000 Byte		2,000 Byte	2,000 Byte
• PROFIBUS Proxy Functionality				
- supports	Yes		Yes	Yes
- Number of coupled PROFIBUS devices	16		16	16
- Number of device internals and PROFIBUS interconnections	500		500	500
- Data length of all device internals and PROFIBUS interconnections	4,000 Byte		4,000 Byte	4,000 Byte
<b>1st interface</b>				
• Type of interface				
	integrated RS 485 interface	integrated RS 485 interface	integrated RS 485 interface	integrated RS 485 interface
• Physical				
	RS 485	RS 485	RS 485	RS 485
• Isolated				
	Yes	Yes	Yes	Yes
• Power supply to interface (15 to 30 V DC), max.				
	200 mA	200 mA	200 mA	200 mA
Functionality				
- MPI	Yes	Yes	Yes	Yes
- DP master	Yes	Yes	Yes	Yes
- DP slave	Yes	Yes	Yes	Yes
- Point-to-point connection	No	No	No	No
MPI				
- Number of connections	16		16	16
• Services				
- PG/OP communication	Yes	Yes	Yes	Yes
- Routing	Yes	Yes	Yes	Yes
- Global data communication	Yes	Yes	Yes	Yes
- S7 basic communication	Yes	Yes	Yes	Yes
- S7 communication	Yes	Yes	Yes	Yes
- S7 communication, as client	Yes; (via CP and loadable FB)	Yes	Yes; (via CP and loadable FB)	No; via CP and loadable FB
- S7 communication, as server	Yes	Yes	Yes	Yes
- Transmission rates, max.	12 Mbit/s	12 Mbit/s	12 Mbit/s	12 Mbit/s

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## SIMATIC S7-300

### Central processing units

CPU 315-2 PN/DP, CPU 315T-2 DP,  
CPU 315F-2 PN/DP, CPU 317F-2 PN/DP

#### Technical specifications (continued)

	6ES7 315-2EG10-0AB0	6ES7 315-6TG10-0AB0	6ES7 315-2FH10-0AB0	6ES7 317-2FJ10-0AB0
<b>1st interface</b> (continued)				
DP master				
• Services				
- PG/OP communication	Yes	Yes	Yes	Yes
- Routing	Yes	Yes	Yes	Yes
- Global data communication	No	No	No	No
- S7 basic communication	No	No	No	No
- S7 communication	No	No	No	No
- Equidistance support	Yes	Yes	Yes	Yes
- SYNC/FREEZE	Yes	Yes	Yes	Yes
- DPV1	Yes	Yes	Yes	Yes
- Transmission rates, max.	12 Mbit/s	12 Mbit/s	12 Mbit/s	12 Mbit/s
- Number of DP slaves, max.	124	124	124	124
• Address area				
- Inputs, max.		244 KByte		244 KByte
- Outputs, max.		244 KByte		244 KByte
DP slave				
• Services				
- Routing	Yes; only for an active interface	Yes	Yes; only for an active interface	Yes; with active interface
- Global data communication	No	No	No	No
- S7 Basic communication	No	No	No	No
- S7 communication	No	No	No	No
- Direct data exchange (lateral communication)	Yes	Yes	Yes	Yes
- DPV1	No	No	No	No
- Transmission rates, max.	12 Mbit/s	12 Mbit/s	12 Mbit/s	12 Mbit/s
• Intermediate memory				
- Inputs	244 Byte	244 Byte	244 Byte	244 Byte
- Outputs	244 Byte	244 Byte	244 Byte	244 Byte
- Address areas, max.	32; with max. 32 bytes each	32	32; with max. 32 bytes each	32
- User data per address area, max.		32 Byte		32 Byte
<b>2nd interface</b>				
• Type of interface				
	PROFINET	integrated RS 485 interface	PROFINET	PROFINET
• Physical				
	RJ45	RS 485	RJ45	RJ45
• Isolated				
	Yes	Yes	Yes	Yes
• Power supply to interface (15 to 30 V DC), max.				
	0 mA	200 mA	0 mA	0 mA
• Automatic transmission speed detection				
	Yes		Yes	Yes
Functionality				
- MPI	No	No	No	No
- DP master	No	Yes	No	No
- DP slave	No	No	No	No
- Point-to-point connection	No	No	No	No
- PROFINET CBA	Yes		Yes	Yes
- PROFINET IO-Controller	Yes		Yes	Yes; as of firmware version V2.3

## SIMATIC S7-300 Central processing units

CPU 315-2 PN/DP, CPU 315T-2 DP,  
CPU 315F-2 PN/DP, CPU 317F-2 PN/DP

### Technical specifications (continued)

	6ES7 315-2EG10-0AB0	6ES7 315-6TG10-0AB0	6ES7 315-2FH10-0AB0	6ES7 317-2FJ10-0AB0
<b>2nd interface (continued)</b>				
DP master				
• Services				
- PG/OP communication		No		
- Routing		No		
- Global data communication		No		
- S7 basic communication		No		
- S7 communication		No		
- Equidistance support		Yes		
- SYNC/FREEZE		No		
- Activate/deactivate DP slaves		No		
- DPV1		No		
- Transmission rates, max.		12 Mbit/s		
- Number of DP slaves, max.		32		
• Address area				
- Inputs, max.		244 KByte		
- Outputs, max.		244 KByte		
PROFINET CBA				
- acyclic transmission	Yes		Yes	Yes
- cyclic transmission	Yes		Yes	Yes
PROFINET IO-Controller				
• Services				
- PG/OP communication	Yes		Yes	Yes
- Routing	Yes		Yes	Yes
- S7 communication	Yes; with loadable FBs, max. configurable connections: 16		Yes; with loadable FBs, max. configurable connections: 16	Yes; with loadable FBs, max. configurable connections: 16
- Open IE Communication	Yes; via TCP/IP		Yes; via TCP/IP	Yes; via TCP/IP
- Transmission rates, max.	100 Mbit/s		100 Mbit/s	100 Mbit/s
- Number connectable IO devices, max.	128		128	128
• Address area				
- Inputs, max.	8 KByte		8 KByte	8 KByte
- Outputs, max.	8 KByte		8 KByte	8 KByte
- User data consistency, max.	256 Byte		256 Byte	256 Byte
<b>CPU programming</b>				
Configuration software				
- STEP 7		Yes		
Programming language				
- STEP 7	Yes; as of V 5.3 SP1	Yes	Yes; as of V 5.3 SP3	Yes; as of V 5.3 SP3
- KOP	Yes	Yes	Yes	Yes
- FUP	Yes	Yes	Yes	Yes
- AWL	Yes	Yes	Yes	Yes
- SCL	Yes	Yes	Yes	Yes
- CFC	Yes	Yes	Yes	Yes
- GRAPH	Yes	Yes	Yes	Yes
- HiGraph	Yes	Yes	Yes	Yes

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## SIMATIC S7-300 Central processing units

CPU 315-2 PN/DP, CPU 315T-2 DP,  
CPU 315F-2 PN/DP, CPU 317F-2 PN/DP

### Technical specifications (continued)

	6ES7 315-2EG10-0AB0	6ES7 315-6TG10-0AB0	6ES7 315-2FH10-0AB0	6ES7 317-2FJ10-0AB0
<b>CPU/ programming</b> (continued)				
Software library				
• Instruction set	see instruction list		see instruction list	See instruction list
• Bracket levels	8	8	8	8
• User program protection/password protection	Yes	Yes	Yes	Yes
• System functions (SFC)	see instruction list		see instruction list	See instruction list
• System function blocks (SFB)	see instruction list		see instruction list	see instruction list
<b>Digital inputs</b>				
• Number of digital inputs		4		
• Functions		Technological functions, e.g. recording of reference point (BERO), digital inputs can also be used (to limited extent) in the STEP 7 user program.		
Number of inputs that can be driven in parallel				
- Number of inputs that can be driven in parallel, up to 40 °C		4		
- Number of inputs that can be driven in parallel, up to 60 °C		4		
Length of cable				
- Length of cable shielded, max		1,000 m		
- Length of cable unshielded, max		600 m		
• Standard DI				
• Input characteristic to comply with IEC 1131, Type 1		Yes		
Input voltage				
- Rated value, DC		24 V		
Input current				
- for 1 signal, typical		7 mA		
Input delay (at rated value of the input voltage)				
• for counters/technological functions				
- at 0 to 1, max.		10 µs		
- at 1 to 0, max.		10 µs		
<b>Digital outputs</b>				
• Number of digital outputs		8		
• Functions		for technological functions, e.g. fast cam switching signals.		
• Length of cable shielded, max.		1,000 m		
• Length of cable unshielded, max.		600 m		
• Short-circuit protection of the output		Yes		
- Response threshold, type.		1.0 A		
• Lamp load, max.		5 W		
• Driving a digital input		No		
Output voltage				
- for 0 signal (DC), max.		3 V		
- for 1 signal		2L+ (-2,5 V)		

## SIMATIC S7-300 Central processing units

CPU 315-2 PN/DP, CPU 315T-2 DP,  
CPU 315F-2 PN/DP, CPU 317F-2 PN/DP

### Technical specifications (continued)

	6ES7 315-2EG10-0AB0	6ES7 315-6TG10-0AB0	6ES7 315-2FH10-0AB0	6ES7 317-2FJ10-0AB0
<b>Digital outputs (continued)</b>				
Output current				
- for 1 signal rated value		0.5 A		
- for 1 signal permissible range for 0 to 60 °C, min.		5 mA		
- for 1 signal permissible range for 0 to 60 °C, max.		0.6 A		
- for 0 signal residual current, max.		0.3 mA		
Parallel switching of 2 outputs				
- to increase power		No		
- to redundantly drive a load		No		
Switching frequency				
- at resistive load, max.		100 Hz		
- at inductive load, max.		0.2 Hz		
- at lamp load, max.		100 Hz		
Summation current of the outputs (per group)				
• horizontal mounting positions				
- up to 40°C, max.		4 A		
- up to 60°C, max.		3 A		
• all other mounting positions				
- up to 40°C, max.		3 A		
Load impedance range				
- lower limit		48 Ω		
- upper limit		4 kΩ		
<b>Sensor</b>				
Connectable encoders				
- 2-wire BEROs		No		
<b>Potentials/ electrical isolation</b>				
Digital output functions				
- between the channels and the backplane bus		Yes		
Digital input functions				
- between the channels and the backplane bus		Yes		
<b>Dimensions and weight</b>				
• Width	80 mm	160 mm	80 mm	80 mm
• Height	125 mm	125 mm	125 mm	125 mm
• Depth	130 mm	130 mm	130 mm	130 mm
• Weight, approx.	460 g	750 g	460 g	460 g

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## SIMATIC S7-300

### Central processing units

CPU 315-2 PN/DP, CPU 315T-2 DP,  
CPU 315F-2 PN/DP, CPU 317F-2 PN/DP

Ordering data	Order No.	Order No.
<b>CPU 315-2 PN/DP</b> 128 KB main memory, 24 V DC supply voltage, combin- ed MPI/PROFIBUS DP-master/ slave interface, Ethernet/PROFINET interface; MMC is necessary	6ES7 315-2EG10-0AB0	<b>Front connector (1 unit)</b> For compact CPUs as well as CPU 315F-2 DP 40-pole, screw-type contacts <ul style="list-style-type: none"> <li>• 1 item</li> <li>• 100 items</li> </ul> 40-pole with cage clamp contacts
<b>CPU 315T-2 DP<sup>A)</sup></b> 128 KB working memory, 24 V DC supply voltage, MPI, PROFIBUS DP master/slave interface, PROFIBUS DP (DRIVE) interface, with technology/motion control functions; MMC is necessary	6ES7 315-6TG10-0AB0	<b>Mounting location number plates</b> 6ES7 392-1AM00-0AA0 6ES7 392-1AM00-1AB0 6ES7 392-1BM01-0AA0 6ES7 912-0AA00-0AA0
<b>CPU 315F-2 PN/DP<sup>A)</sup></b> CPU for SIMATIC S7-300F; main memory 192 KB, power supply 24 V DC, MPI/PROFIBUS DP master/slave interface, Industrial Ethernet/ PROFINET interface; incl. single location number labels	6ES7 315-2FH10-0AB0	<b>S7-300 Manual</b> Design, CPU data, module data, command list German English French Spanish Italian
<b>CPU 317F-2 PN/DP<sup>A)</sup></b> Main memory 512 KB, power supply 24 V DC, MPI/PROFIBUS DP master/slave interface, Industrial Ethernet/ PROFINET interface; MMC required	6ES7 317-2FJ10-0AB0	<b>SIMATIC Manual Collection<sup>E)</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>S7 Technology V2.0</b> <i>Task:</i> Options package for configuring and programming technological tasks with the SIMATIC S7 CPU 31xT-2 DP <i>Prerequisite:</i> STEP 7 V5.3 or higher <i>Delivery type:</i> on CD; incl. documentation for CPU 31xT-2 DP (included on CD)	6ES7 864-1CC20-0YX0	<b>SIMATIC Manual Collection update service for 1 year<sup>E)</sup></b> Up-to-date Manual Collection CD as well as the three subsequent updates
<b>Option package S7 F Distributed Safety V5.4</b> for generating fail-safe programs for the S7-300F Floating License Upgrade from V5.x to V5.4 Software Update Service	6ES7 833-1FC02-0YA5 6ES7 833-1FC02-0YE5 6ES7 833-1FC00-0YX2	<b>Power supply connector</b> For compact CPUs, innovated standard CPUs and CPU 315F-2 DP (10 items, spare part)
<b>Micro Memory Card</b> 64 KB 128 KB 512 KB 2 MB 4 MB 8 MB	6ES7 953-8LF11-0AA0 6ES7 953-8LG11-0AA0 6ES7 953-8LJ11-0AA0 6ES7 953-8LL11-0AA0 6ES7 953-8LM11-0AA0 6ES7 953-8LP11-0AA0	<b>Labeling strips</b> For compact CPUs, standard CPUs as well as CPU 315F-2 DP (10 items, spare part)
<b>MPI cable</b> For connecting SIMATIC S7 and the PG through MPI; length 5 m	6ES7 901-0BF00-0AA0	<b>Label cover</b> For compact CPUs, standard CPUs as well as CPU 315F-2 DP (10 items, spare part)
		<b>S7 SmartLabel</b> Software for labeling modules mechanically directly in the STEP 7 project
		<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

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

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

## SIMATIC S7-300 Central processing units

CPU 315-2 PN/DP, CPU 315T-2 DP,  
CPU 315F-2 PN/DP, CPU 317F-2 PN/DP

Ordering data	Order No.	Ordering data	Order No.
<b>Sheets of labels for machine inscription</b> (continued) For 32-channel signal modules, DIN A4, for printing using a laser printer; 10 items Petrol Light beige Yellow Red	<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 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>6XV1 830-0EH10</b>
<b>PROFIBUS DP bus connector RS 485</b> <ul style="list-style-type: none"> <li>With 90° cable outlet, max. transmission rate 12 Mbit/s               <ul style="list-style-type: none"> <li>Without PG interface</li> <li>With PG interface</li> </ul> </li> <li>With 90° cable outlet for Fast-Connect connection technique, max. transmission rate 12 Mbit/s               <ul style="list-style-type: none"> <li>Without PG interface</li> <li>With PG interface</li> </ul> </li> <li>With axial cable outlet for SIMATIC CP, for connecting to PPI, MPI, PROFIBUS</li> </ul>	<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>Repeater RS 485 for PROFIBUS</b> Transmission rate of up to 12 Mbit/s 24 V DC; IP20 casing	<b>6ES7 972-0AA01-0XA0</b>
		<b>PROFIBUS bus components</b> For establishing MPI/PROFIBUS communication	see catalogs IK PI, CA 01

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## SIMATIC S7-300 SIPLUS central processing units

### SIPLUS CPU 313C-2 DP to CPU 317F-2 DP

#### Overview SIPLUS CPU 313C-2 DP



- The compact CPU with integrated digital 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
- Conformity with standard for electronic devices on rail vehicles (EN 50155, temperature T1, category 1)

*Micro Memory Card required for operation of CPU.*

This module is designed for

- an ambient temperature range of  $-25$  to  $+70$  °C; condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

#### Overview SIPLUS 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 for operation of CPU.*

This module is designed for

- an ambient temperature range of  $-25$  to  $+70$  °C; condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

#### Overview SIPLUS CPU 314



- For installations with medium requirements on program scope
- High processing performance in binary and floating-point arithmetic
- Conformity with standard for electronic devices on rail vehicles (EN 50155, temperature T1, category 1)

*Micro Memory Card required for operation of CPU.*

This module is designed for

- an ambient temperature range of  $-25$  to  $+70$  °C; condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

## SIMATIC S7-300 SIPLUS central processing units

SIPLUS CPU 313C-2 DP to CPU 317F-2 DP

### Overview SIPLUS CPU 315-2 PN/DP



- The CPU with a medium program memory and quantity framework
- High processing performance in binary and floating-point arithmetic
- Used as a central controller on production lines with central and distributed I/O
- Integral PROFINET interface
- Combined MPI / PROFIBUS DP-master/slave interface
- Component Based Automation (CBA) on PROFINET
- PROFINet proxy for intelligent devices on PROFIBUS DP in Component Based Automation (CBA)
- PROFINET IO Controller for operating distributed I/O on PROFINET

*Micro Memory Card required for operation of CPU.*

This module is designed for

- an ambient temperature range of  $-25$  to  $+70$  °C; condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

### Overview SIPLUS CPU 317-2 PN/DP



- 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.*

This module is designed for

- an ambient temperature range of  $-25$  to  $+70$  °C; condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

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## SIMATIC S7-300 SIPLUS central processing units

### SIPLUS CPU 313C-2 DP to CPU 317F-2 DP

#### Overview SIPLUS CPU 315F-2 DP



- For design of a fail-safe automation system for plants with increased safety requirements
- Based on the SIMATIC CPU 315-2 DP
- Complies with safety requirements up to SIL 3 to IEC 61508 and up to Cat. 4 according to EN 954-1
- Distributed fail-safe I/O modules can be connected through the integral PROFIBUS DP interface (PROFIsafe).
- Fail-safe I/O modules of the ET 200M range can also be centrally connected
- Central and distributed use of standard modules for non-safety-relevant applications
- Conformity with standard for electronic devices on rail vehicles (EN 50155, temperature T1, category 1)

*Micro Memory Card required for operation of CPU.*

This module is designed for

- an ambient temperature range of – 25 to + 70 °C; condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

#### Overview SIPLUS CPU 317F-2 DP



- The fail-safe CPU with a large program memory and quantity framework for demanding applications
- For design of a fail-safe automation system for plants with increased safety requirements
- Complies with safety requirements up to SIL 3 to IEC 61508 and up to Cat. 4 according to EN 954-1
- Distributed fail-safe I/O modules can be connected through the two integral PROFIBUS DP interfaces (PROFIsafe).
- Fail-safe I/O modules of the ET 200M range can also be centrally connected
- Central and distributed use of standard modules for non-safety-relevant applications
- Conformity with standard for electronic devices on rail vehicles (EN 50155, temperature T1, category 1)

*Micro Memory Card required for operation of CPU.*

This module is designed for

- an ambient temperature range of – 25 to + 70 °C; condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

#### Technical specifications

<b>6AG1 312-6CE01-2AB0</b>	see 6ES7 312-6CE01-0AB0
<b>6AG1 314-1AF11-2AB0</b>	see 6ES7 314-1AF11-0AB0
<b>6AG1 314-6CF02-2AB0</b>	see 6ES7 314-6CF02-0AB0

<b>6AG1 315-2EG10-2AB0</b>	see 6ES7 315-2EG10-0AB0
<b>6AG1 317-2EJ10-2AB0</b>	see 6ES7 317-2EJ10-0AB0
<b>6AG1 315-6FF01-2AB0</b>	see 6ES7 315-6FF01-0AB0
<b>6AG1 317-6FF00-2AB0</b>	see 6ES7 317-6FF00-0AB0

## SIMATIC S7-300 SIPLUS central processing units

### SIPLUS CPU 313C-2 DP to CPU 317F-2 DP

Ordering data	Order No.	Ordering data	Order No.
<b>SIPLUS CPU 313C-2 DP</b> (extended temperature range and extraordinary medial load) Compact CPU, 32 KB working memory, 24 V DC supply voltage, 16 DI/16 DO integrated, integrated functions, MPI, PROFIBUS DP master/slave interface; MMC is necessary	<b>6AG1 313-6CE01-2AB0</b>	<b>SIPLUS CPU 317-2 PN/DP</b> (extended temperature range and extraordinary medial load) 512 KB main memory, DC 24 V supply voltage, combined MPI/PROFIBUS DP-master/slave interface, Ethernet/PROFINet interface; MMC is necessary	<b>6AG1 317-2EJ10-2AB0</b>
<b>SIPLUS CPU 314<sup>A)</sup></b> (extended temperature range and extraordinary medial load) 64 KB working memory, 24 V DC supply voltage, MPI, MMC is necessary	<b>6AG1 314-1AF11-2AB0</b>	<b>SIPLUS CPU 315F-2 DP</b> (extended temperature range and extraordinary medial load) CPU for SIMATIC S7-300F; 192 KB working memory, 24 V DC supply voltage, MPI, PROFIBUS DP master/slave interface; MMC is necessary	<b>6AG1 315-6FF01-2AB0</b>
<b>SIPLUS CPU 314C-2 DP</b> (extended temperature range and extraordinary medial load) Compact CPU, 64 KB working memory, 24 V DC supply voltage, 24DI/16DO/4AI/2AO integrated, integrated functions, MPI, PROFIBUS DP master/slave interface; MMC is necessary	<b>6AG1 314-6CF02-2AB0</b>	<b>SIPLUS CPU 317F-2 DP</b> (extended temperature range and extraordinary medial load) CPU for SIMATIC S7-300F; main memory 512 KB, power supply 24 V DC, MPI/PROFIBUS DP master/slave interface; MMC is necessary	<b>6AG1 317-6FF00-2AB0</b>
<b>SIPLUS CPU 315-2 PN/DP</b> (extended temperature range and extraordinary medial load) 128 KB main memory, 24 V DC supply voltage, combined MPI/PROFIBUS DP-master/slave interface, Ethernet/Profinet interface; MMC is necessary	<b>6AG1 315-2EG10-2AB0</b>	<b>Accessories</b> see ordering data for central processing units S7-300	

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

## SIMATIC S7-300 SIPLUS digital modules

### SIPLUS SM 322 digital output modules

#### Overview



- Digital outputs
- For connecting solenoid valves, contactors, low-power motors, lamps and motor starters
- Conformity with standard for electronic devices on rail vehicles (EN 50155, temperature T1, category 1)

#### This module is designed for

- an ambient temperature range of  $-25$  to  $+70$  °C; condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

#### Technical specifications

<b>6AG1 322-1BL00-2AA0</b>	see 6ES7 322-1BL00-0AA0
<b>6AG1 322-1HH01-2AA0</b>	see 6ES7 322-1HH01-0AA0

#### Ordering data

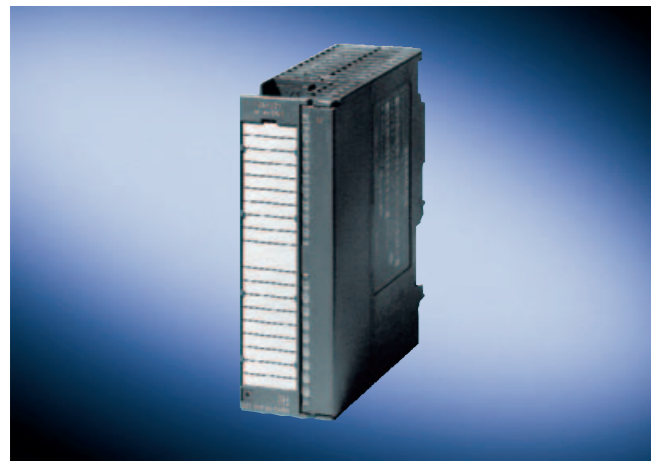
#### Order No.

<b>SIPLUS SM 322 digital output modules</b> (extended temperature range and extraordinary medial load)	
32 outputs, 24 V DC, 0,5 A	<b>6AG1 322-1BL00-2AA0</b>
16 outputs, relay contacts, 8 A	<b>6AG1 322-1HH01-2AA0</b>
<b>Accessories</b>	see ordering data for S7-300 digital output modules

## SIMATIC S7-300 Analog modules

### SM 331 analog input modules

#### Overview



- Analog inputs
- For connection of voltage and current sensors, thermocouples, resistors and resistance thermometers

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#### Technical specifications

	6ES7 331-7PF01-0AB0	6ES7 331-7PF11-0AB0		6ES7 331-7PF01-0AB0	6ES7 331-7PF11-0AB0
<b>Voltages and currents</b>			Input ranges (rated values), resistances		
Load voltage L+			- 0 to 150 ohms	Yes	
- Rated value (DC)	24 V	24 V	- 0 to 300 ohms	Yes	
- Reverse polarity protection	Yes	Yes	- 0 to 600 ohms	Yes	
<b>Current consumption</b>			Input ranges (rated values), resistance thermometer		
• from load voltage L+ (no load), max.	240 mA	200 mA	- Cu 10	Yes	
• from backplane bus 5 V DC, max.	100 mA	100 mA	- Ni 100	Yes	
• Power dissipation, typical	4.6 W	3 W	- Ni 1000	Yes	
<b>Connection system</b>			- Ni 120	Yes	
• Requisite front connector	40-pin	40-pin	- Ni 200	Yes	
<b>Clock synchronism</b>			- Ni 500	Yes	
• Clock synchronous operation	No	No	- Pt 100	Yes	
<b>Analog inputs</b>			- Pt 1000	Yes	
• Number of analog inputs	8	8	- Pt 200	Yes	
• Number of analog inputs for resistance measurement	8	8	- Pt 500	Yes	
• Length of cable shielded, max	200 m	100 m	Characteristic curve linearization		
• Permiss. input voltage for voltage input (destr. limit), max.	75 V, 35 V permanent, 75 V for max. 1 s (cycle factor 1:20)	75 V, 20 V DC continuous; 75 V DC for max. 1 s (pulse duty ratio 1:20)	- parameterizable	Yes	Yes
Input ranges (rated values), thermocouples			- for thermocouples		Type B, E, J, K, L, N, R, S, T, U, C
- Type B		Yes	- for resistance thermometer	Pt 100, Pt 200, Pt 500, Pt 1000, Ni 100, Ni 120, Ni 200, Ni 500, Ni 1000, Cu 10 (standard/ climatic)	
- Type E		Yes	Temperature compensation		
- Type J		Yes	- parameterizable		Yes
- Type K		Yes	- external temperature compensation with compensating box possible		Yes
- Type L		Yes	- external temperature compensation with Pt100		Yes
- Type N		Yes	- internal temperature compensation possible		Yes
- Type R		Yes			
- Type S		Yes			
- Type T		Yes			
- Type U		Yes			

## SIMATIC S7-300 Analog modules

### SM 331 analog input modules

#### Technical specifications (continued)

	6ES7 331-7PF01-0AB0	6ES7 331-7PF11-0AB0
<b>Analog value formation</b>		
• Measuring principle	integrating	integrating
Integration and conversion time/ triggering per channel		
- with over-range (bits incl. sign), max	16 Bit; Two's complement	16 Bit; Two's complement
- Integration time parameterizable	Yes	Yes
- Basic conversion time, ms	up to 4 channels: 10 ms per module, as of 5 channels: 190 ms per module, 8 channels: 80 ms	up to 4 channels: 10 ms per module, as of 5 channels: 190 ms per module
- Interference voltage suppr. for interference frequency f1 in Hz	400 / 60 / 50 Hz	400 / 60 / 50 Hz
<b>Sensor</b>		
Sensing element connection		
- for resistance measurement, with 2-wire connection	Yes; without resistance correction	
- for resistance measurement, with 3-wire connection	Yes	
- for resistance measurement, with 4-wire connection	Yes	
<b>Error/accuracies</b>		
Operational limit in the entire temperature range		+/- 1 K
- relative to the input range, voltage		
- relative to the input range, resistance	+/- 0,1 %	
- relative to the input range, resistance thermometer	+/- 1 K	
Basic error limit (operational limit at 25 °C)		
- relative to the input range, resistance	+/- 0,05 %	
- relative to the input range, resistance thermometer	+/- 0.5 K	
<b>Status information/ interrupts/ diagnostics</b>		
Interrupts		
- Diagnostic interrupt	Yes; parameterizable per group	Yes; parameterizable per group
- Limit value interrupt	Yes; parameterizable	Yes; parameterizable
Diagnostics		
- Diagnostic information can be read out	Yes	Yes
<b>Insulation</b>		
• Insulation tested with	500 V DC	500 V DC
<b>Potentials/ electrical isolation</b>		
Analog output functions		
- between the channels	Yes	Yes
- between the channels, in groups of	2	2
- between the channels and the backplane bus	Yes	Yes
<b>Dimensions and weight</b>		
• Weight, approx.	272 g	272 g
• Width	40 mm	40 mm
• Height	125 mm	125 mm
• Depth	120 mm	120 mm

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## SIMATIC S7-300 Analog modules

### SM 331 analog input modules

Ordering data	Order No.	Ordering data	Order No.
<b>SM 331 analog input modules</b> Including labeling strips, bus connector, measuring range modules 8 inputs, for thermal sensors <sup>A)</sup> 8 inputs, for thermoelements <sup>A)</sup>	<b>6ES7 331-7PF01-0AB0</b> <b>6ES7 331-7PF11-0AB0</b>	<b>Label cover</b> 10 units for signal modules (not 32-channel modules), function modules	<b>6ES7 392-2XY00-0AA0</b>
<b>Range card for analog inputs</b> 1 card for 2 analog inputs; 2 items (spare part)	<b>6ES7 974-0AA00-0AA0</b>	<b>Labeling strips</b> 10 units for signal modules (not 32-channel modules), function modules	<b>6ES7 392-2XX00-0AA0</b>
<b>Front connector</b> 1 unit 20-pin, with screw contacts • 1 unit • 100 units 20-pin, with spring-loaded terminals 40-pin, with screw contacts • 1 unit • 100 units 40-pin, with spring-loaded terminals	<b>6ES7 392-1AJ00-0AA0</b> <b>6ES7 392-1AJ00-1AB0</b> <b>6ES7 392-1BJ00-0AA0</b> <b>6ES7 392-1AM00-0AA0</b> <b>6ES7 392-1AM00-1AB0</b> <b>6ES7 392-1BM01-0AA0</b>	<b>S7 SmartLabel</b> Software for labeling modules mechanically directly in the STEP 7 project	<b>2XV9 450-1SL01-0YX0</b>
<b>Front door, elevated design<sup>A)</sup></b> e.g. for 32-channel modules; for connecting 1.3 mm <sup>2</sup> /16 AWG conductors	<b>6ES7 328-0AA00-7AA0</b>	<b>Labeling sheets for machine labeling</b> For 16-channel signal modules, DIN A4, for printing with laser printer; 10 units Petrol Light-beige Yellow Red For 32-channel signal modules, DIN A4, for printing with laser printer; 10 units 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>SIMATIC TOP connect</b>	see catalog ST 70	<b>SIMATIC Manual Collection<sup>E)</sup></b> Electronic manuals on CD-ROM, multilingual: S7-200, TD 200, S7-300, C7, S7-400, STEP 7, engineering tools, runtime software, SIMATIC DP (distributed I/O), SIMATIC HMI (Human Machine Interface), SIMATIC NET (Industrial Communication)	<b>6ES7 998-8XC01-8YE0</b>
<b>Bus connectors</b> 1 unit (spare part)	<b>6ES7 390-0AA00-0AA0</b>	<b>SIMATIC Manual Collection update service for 1 year<sup>E)</sup></b> Current "S7 Manual Collection" CD and the three subsequent updates	<b>6ES7 998-8XC01-8YE2</b>
<b>Shield connecting element</b> 80 mm wide, with 2 rows for 4 terminal elements each	<b>6ES7 390-5AA00-0AA0</b>	<b>S7-300 manual</b> Design, CPU data, module data, operation list German English French Spanish Italian	<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>Terminal elements</b> 2 units For 2 cables with 2 mm to 6 mm diameter For 1 cable with 3 mm to 8 mm diameter For 1 cable with 4 mm to 13 mm diameter	<b>6ES7 390-5AB00-0AA0</b> <b>6ES7 390-5BA00-0AA0</b> <b>6ES7 390-5CA00-0AA0b</b>		

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

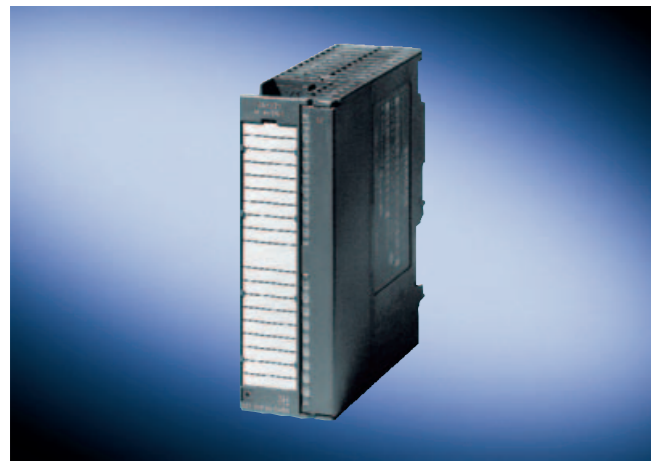
E) Subject to export regulations: AL: N and ECCN: 5D992B1



## SIMATIC S7-300 SIPLUS analog modules

### SIPLUS SM 331 analog input modules

#### Overview



- Analog inputs
- For connection of voltage and current sensors, thermocouples, resistors and resistance thermometers
- 6AG1 331-7NF00-2AB0: Conformity with standard for electronic devices on rail vehicles (EN 50155, temperature T1, category 1)

This module is designed for

- an ambient temperature range of  $-25$  to  $+70$  °C; condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

#### Technical specifications

<b>6AG1 331-7KF02-4AB0</b>	see 6ES7 331-7KF02-0AB0
<b>6AG1 331-7NF00-2AB0</b>	see 6ES7 331-7NF00-0AB0
<b>6AG1 331-7NF10-2AB0</b>	see 6ES7 331-7NF10-0AB0

#### Ordering data

#### Order No.

Ordering data	Order No.
<b>SIPLUS SM 331 analog input modules</b> (extended temperature range and extraordinary medial load)	
8 inputs, resolution 9/12/14 bits <sup>A)</sup>	<b>6AG1 331-7KF02-4AB0</b>
8 inputs, enhanced resolution 16 bits <sup>A)</sup>	<b>6AG1 331-7NF00-2AB0</b>
8 inputs, enhanced resolution 16 bits, 4-channel mode <sup>A)</sup>	<b>6AG1 331-7NF10-2AB0</b>
<b>Accessories</b>	see ordering data for S7-300 analog input modules

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

## SIMATIC S7-300 SIPLUS analog modules

### SIPLUS SM 332 analog output module

#### Overview



- Analog outputs
- For the connection of analog actuators

This module is designed for

- an ambient temperature range of -25 to +70 °C; condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

#### Technical specifications

**6AG1 332-5HF00-2AB0** see 6ES7 332-5HF00-0AB0

#### Ordering data

#### Order No.

**SIPLUS SM 332  
analog output module**  
(extended temperature range and  
extraordinary medial load)

8 outputs

**6AG1 332-5HF00-2AB0**

#### Accessories

see ordering data for  
S7-300 analog output modules

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## SIMATIC S7-300 Function modules

### SIWAREX FTA

#### Overview



The SIWAREX FTA (Flexible Technology, Automatic Weighing Instrument) is a versatile and flexible weighing module for industrial use. It can be used for automatic and non-automatic weighing, e.g. for the production of mixtures, filling, loading, monitoring and bagging.

It has been assigned appropriate scale approvals and is also suitable for calibration plants.

The SIWAREX FTA function module is integrated in SIMATIC S7/PCS7, and uses the features of this modern automation system, such as integral communication, diagnostics and configuration tools.

#### Technical specifications

SIWAREX FTA	
<b>Use in automation systems</b>	<ul style="list-style-type: none"> <li>• S7-300: Directly or via ET 200M</li> <li>• S7-400 (H): Via ET 200M</li> <li>• PCS 7 (H): Via ET 200M</li> </ul>
<b>Communication interfaces</b>	SIMATIC S7, RS 232, RS 485
<b>Module parameterization</b>	Using SIMATIC S7 Using SIWATOOL FTA software (RS 232)
<b>Measuring properties</b>	<ul style="list-style-type: none"> <li>• EC type approval as non-automatic weighing machine, trade class III: 3 x 6000 d ≥ 0.5 µV/e</li> <li>• Internal resolution: 16 million parts</li> <li>• Internal/external updating rate: 400/100 Hz</li> </ul>
<b>Several parameterizable digital filters</b>	Critically damped, Bessel, Butterworth (0.05 ... 20 Hz), mean value filter
<b>Weighing functions</b>	<ul style="list-style-type: none"> <li>• Non-automatic weighing machine: OIML R76</li> <li>• Automatic weighing machine: OIML R51, R61, R107</li> </ul>
<b>Load cells</b>	Strain gauges in 4-wire or 6-wire system
Load cells and mounting accessories see catalog WT 01	
• 3 characteristic value ranges	1, 2 or 4 mV/V
<b>Load cell powering</b>	
• Supply voltage $U_S$ (rated value)	10.3 V DC
• Max. supply current	184 mA
• Permissible load cell resistance	
- $R_{Lmin}$	> 56 Ω > 87 Ω with Ex interface
- $R_{Lmax}$	≤ 4010 Ω

SIWAREX FTA	
<b>Max. distance of load cells</b>	
When using the recommended cable:	
• Standard	1000 m (500 m legal-for-trade)
• In hazardous area <sup>1)</sup>	
- For gases of group IIC	300 m
- For gases of group IIB	1000 m
<b>Connection to load cells in Ex zone 1</b>	Optionally via SIWAREX IS Ex interface
<b>Ex approvals zone 2 and safety</b>	ATEX 100a, FM, UL, cUL <sub>US</sub> Haz. Loc.
<b>Power supply</b>	
• Rated voltage	24 V DC
• Max. current consumption	500 mA
• Current consumption from backplane bus	Typ. 55 mA
<b>Inputs/outputs</b>	
• Digital inputs	7 DI electrically isolated
• Digital outputs	8 DO electrically isolated
• Counter input	Up to 10 kHz
• Analog output	
- Current range	0/4 to 20 mA
- Updating rate	100 Hz
<b>Approvals</b>	EC type approval (CE, OIML R76)
	OIML R51, R61, R107
<b>Degree of protection to DIN EN 60529; IEC 60529</b>	IP20
<b>Climatic requirements</b>	( $T_{min}$ (IND) ... $T_{max}$ (IND)) (operating temperature)
• Vertical installation	-10 ... 60 °C
• Horizontal installation	-10 ... 40 °C
<b>EMC requirements</b>	EN 61326, EN 45501, NAMUR NE21, Part 1
<b>Dimensions in mm</b>	80 x 125 x 130
<b>Weight</b>	600 g

<sup>1)</sup> For details, refer to SIWAREX IS data sheet

## SIMATIC S7-300 Function modules

### SIWAREX FTA

Ordering data	Order No.	Ordering data	Order No.
<b>SIWAREX FTA</b> Legal-for-trade weighing electronics for automatic scales for S7-300 and ET 200M. EC type approval 3 x 6000 d Applications: dosing, filling, bagging, loading. Note: observe approval conditions for applications with obligation of verification. It is recommendable to use the calibration set and contact the SIWAREX hotline.	7MH4 900-2AA01	<b>SIWAREX Multiscale</b> STEP 7 software for SIWAREX FTA. Control of one or more scales for a scalable number of components and any number of recipes. Applications: batching plants, mixers in production process, CD-ROM	7MH4 900-2AL01
<b>SIWAREX FTA Manual</b> <ul style="list-style-type: none"> <li>• German</li> <li>• English</li> <li>• Italian</li> <li>• Spanish</li> <li>• French</li> </ul> Free download from the Internet at: <a href="http://www.siemens.com/weighing-technology">www.siemens.com/weighing-technology</a>		<b>SIWAREX Multifill</b> STEP 7 software for SIWAREX FTA. Control of filling and bagging processes for one or more filling stations and any number of materials, CD-ROM	7MH4 900-2AM01
<b>SIWAREX FTA "Getting started"</b> Example software for easy acquaintance with scale programming in STEP 7. Free download from the Internet at: <a href="http://www.siemens.com/weighing-technology">www.siemens.com/weighing-technology</a>		<b>SIWATOOL cable</b> from SIWAREX FTA with serial PC interface, for 9-pin PC interfaces (RS 232) <ul style="list-style-type: none"> <li>• 2 m long</li> <li>• 5 m long</li> </ul>	7MH4 702-8CA 7MH4 702-8CB
<b>SIWAREX FTA configuration package for SIMATIC S7 on CD-ROM</b> <ul style="list-style-type: none"> <li>• SETUP for S7 link with STEP 7 V5.2 or later</li> <li>• S7 function block</li> <li>• SIWATOOL FTA commissioning software</li> <li>• Manual</li> </ul>	7MH4 900-2AK01	<b>40-pin front plug with screw contacts</b> (required for each SIWAREX module), alternatively with spring-loaded contacts	6ES7 392-1AM00-0AA0
<b>SIWAREX FTA configuration package for PCS 7 V6.0 and V6.1 on CD-ROM</b> <ul style="list-style-type: none"> <li>• SETUP for S7 link</li> <li>• Function block for CFC</li> <li>• Faceplate</li> <li>• SIWATOOL FTA commissioning software</li> <li>• Manual</li> </ul>	7MH4 900-2AK61	<b>40-pin front plug with spring-loaded contacts</b> (required for each SIWAREX module), alternatively with screw contacts	6ES7 392-1BM00-0AA0
<b>SIWAREX FTA configuration package for PCS 7 V5.1 and V5.2</b> On request		<b>Shield contact element</b> Sufficient for one SIWAREX FTA module	6ES7 390-5AA00-0AA0
<b>Calibration set for SIWAREX FTA</b> For verification of up to 5 scales comprising: <ul style="list-style-type: none"> <li>• 1x inscription foil for labeling</li> <li>• 1x protection foil</li> <li>• 10x EC verification marks (black M on green background)</li> <li>• Guidelines for verification, verification certificates and approvals, adaptable label</li> <li>• SIWAREX FTA Manual</li> </ul>	7MH4 900-2AY10	<b>Shield connection terminal</b> Contents: 2 units (suitable for cable with diameter 4 ... 13 mm) Note: one shield connection terminal is required each for: <ul style="list-style-type: none"> <li>• Scale connection</li> <li>• RS 485 interface</li> <li>• RS 232 interface</li> </ul>	6ES7 390-5CA00-0AA0
		<b>S7 DIN rail</b> <ul style="list-style-type: none"> <li>• 160 mm</li> <li>• 480 mm</li> <li>• 530 mm</li> <li>• 830 mm</li> <li>• 2000 mm</li> </ul>	6ES7 390-1AB60-0AA0 6ES7 390-1AE80-0AA0 6ES7 390-1AF30-0AA0 6ES7 390-1AJ30-0AA0 6ES7 390-1BC00-0AA0
		<b>PS 307 load power supply</b> (only required if 24 V DC is not available) 120/230 V AC; 24 V DC <ul style="list-style-type: none"> <li>• PS 307-1B; 2 A</li> <li>• PS 307-1E; 5 A</li> <li>• PS 307-1K; 10 A</li> </ul>	6ES7 307-1BA00-0AA0 6ES7 307-1EA00-0AA0 6ES7 307-1KA00-0AA0
		<b>MMC memory</b> for data recording up to 16 MB	6ES7 953-8LF11-0AA0

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## SIMATIC S7-300 Function modules

### SIWAREX FTA

Ordering data (continued)	Order No.	Ordering data (continued)	Order No.
<p><b>Remote display (option)</b> The Siebert S102 and S302 remote digital display can be directly connected to the SIWAREX FTA via an RS 485 interface.</p> <p>Siebert Industrieelektronik GmbH P.O. Box 1180 D-66565 Eppelborn Tel.: +49 6806/980-0 Fax: +49 6806/980-999 Internet: <a href="http://www.siebert.de">http://www.siebert.de</a></p> <p>Detailed information available from manufacturer.</p>		<p><b>Cable (optional)</b> <b>Cable Li2Y 1 x 2 x 0.75 ST + 2 x (2 x 0.34 ST) - CY, orange sheath</b></p> <p>to connect SIWAREX U, M, P, FTA, FTC and CS to the junction box (JB), extension box (EB) or Ex interface (Ex-I) or between two JBs, for fixed laying, occasional bending is possible, 10.8 mm outer diameter, for ambient temperature -40 to +80 °C</p>	<b>7MH4 702-8AG</b>
<p><b>SIWAREX JB junction box, aluminium housing</b></p> <p>for connecting up to 4 load cells in parallel, and for connecting several junction boxes</p>	<b>7MH4 710-1BA</b>	<p><b>Cable Li2Y 1 x 2 x 0.75 ST + 2 x (2 x 0.34 ST) - CY, blue sheath</b></p> <p>to connect the junction box (JB) or extension box (EB) in a potentially explosive atmosphere to the Ex interface (Ex-I), for fixed laying, occasional bending is possible, blue PVC insulating sheath, approx. 10.8 mm outer diameter, for ambient temperature -40 to +80 °C</p>	<b>7MH4 702-8AF</b>
<p><b>SIWAREX JB junction box, stainless steel housing</b></p> <p>for connecting up to 4 load cells in parallel</p>	<b>7MH4 710-1EA</b>		
<p><b>Ex interface, type SIWAREX Pi</b></p> <p>With UL and FM approvals, but <b>without ATEX approval</b> for intrinsically-safe connection of load cells, suitable for the SIWAREX U, M, FTA, FTC, CS and P weighing modules. Use in the EC is not possible.</p>	<b>7MH4 710-5AA</b>	<p><b>Cable LiYCY 4 x 2 x 0.25 mm<sup>A)</sup></b></p> <p>for TTY (connect 2 pairs of conductors in parallel), for connection of a remote indicator</p>	<b>7MH4 407-8BD0</b>
<p><b>Manual for Ex interface type SIWAREX Pi</b></p>	<b>C71000-T5974-C29</b>		
<p><b>Ex interface, type SIWAREX IS</b></p> <p>With ATEX approval, but <b>without UL and FM approvals</b> for intrinsically-safe connection of load cells, including Manual, suitable for the SIWAREX U, M, FTA, FTC, CS and P weighing modules. Use in the EC is possible.</p> <ul style="list-style-type: none"> <li>• With short-circuit current &lt; 199 mA DC</li> <li>• With short-circuit current &lt; 137 mA DC</li> </ul>	<p><b>7MH4 710-5BA</b></p> <p><b>7MH4 710-5CA</b></p>		

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

## SIMATIC S7-300 Function modules

### SIWAREX FTC

#### Overview



The SIWAREX FTC (Flexible Technology for Continuous Weighing) is a versatile and flexible weighing module for conveyor scales. It can also be used to record weights and measure force. The SIWAREX FTC function module is integrated in SIMATIC S7/PCS7, and uses the features of this modern automation system, such as integral communication, diagnostics and configuration tools.

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#### Technical specifications

SIWAREX FTC	
<b>Use in automation systems</b>	<ul style="list-style-type: none"> <li>S7-300: Directly or via ET 200M</li> <li>S7-400 (H): Via ET 200M</li> <li>PCS 7 (H): Via ET 200M</li> </ul>
<b>Communications interfaces</b>	SIMATIC S7, RS 232, RS 485
<b>Module parameterization</b>	Using SIMATIC S7
	Using SIWATOOL FTC software (RS 232)
<b>Measuring properties</b>	<ul style="list-style-type: none"> <li>EC type approval as non-automatic weighing machine, trade class III: <math>3 \times 6000 d \geq 0.5 \mu V/e</math></li> <li>Internal resolution: +/- 8 million parts</li> <li>Internal/external updating rate: 400/100 Hz</li> </ul>
<b>Several parameterizable digital filters</b>	Critically damped, Bessel, Butterworth (0.05 ... 20 Hz), mean value filter
<b>Weighing functions</b>	<ul style="list-style-type: none"> <li>Non-automatic weighing machine, force measurement</li> <li>Conveyor scale</li> </ul>
<b>Load cells</b>	Strain gages in 4-wire or 6-wire system
<ul style="list-style-type: none"> <li>3 characteristic value ranges</li> </ul>	1, 2 or 4 mV/V
<b>Load cell powering</b>	<ul style="list-style-type: none"> <li>Supply voltage <math>U_S</math> (rated value): 10.3 V DC</li> <li>Max. supply current: 184 mA</li> <li>Permissible load cell resistance: <ul style="list-style-type: none"> <li>- <math>R_{Lmin}</math>: <math>&gt; 56 \Omega</math></li> <li>- <math>R_{Lmax}</math>: <math>&gt; 87 \Omega</math> with Ex interface</li> <li>- <math>R_{Lmax}</math>: <math>\leq 4010 \Omega</math></li> </ul> </li> </ul>
<b>SIWAREX FTC</b>	
<b>Max. distance of load cells</b>	When using the recommended cable: <ul style="list-style-type: none"> <li>Standard: 1000 m (500 m legal-for-trade)</li> <li>In hazardous area <sup>1)</sup> <ul style="list-style-type: none"> <li>- For gases of group IIC: 300 m</li> <li>- For gases of group IIB: 1000 m</li> </ul> </li> </ul>
<b>Connection to load cells in Ex zone 1</b>	Optionally via SIWAREX IS Ex interface
<b>Ex approvals zone 2 and safety</b>	ATEX 100a, FM, UL, cUL <sub>US</sub> Haz. Loc. (all available soon)
<b>Power supply</b>	<ul style="list-style-type: none"> <li>Rated voltage: 24 V DC</li> <li>Max. current consumption: 500 mA</li> <li>Current consumption from backplane bus: Typ. 55 mA</li> </ul>
<b>Inputs/outputs</b>	<ul style="list-style-type: none"> <li>Digital inputs: 7 DI electrically isolated</li> <li>Digital outputs: 8 DO electrically isolated</li> <li>Counter input: Up to 10 kHz</li> <li>Analog output: <ul style="list-style-type: none"> <li>- Current range: 0/4 to 20 mA</li> <li>- Updating rate: 100 Hz</li> </ul> </li> </ul>
<b>Approvals</b>	<ul style="list-style-type: none"> <li>For NAWI mode: EC type approval, OIML-R76</li> <li>Degree of protection to DIN EN 60529; IEC 60529: IP20</li> </ul>
<b>Climatic requirements</b>	<ul style="list-style-type: none"> <li>(<math>T_{min}</math> (IND) ... <math>T_{max}</math> (IND)) (operating temperature) <ul style="list-style-type: none"> <li>Vertical installation: -10 ... 60 °C</li> <li>Horizontal installation: -10 ... 40 °C</li> </ul> </li> </ul>
<b>EMC requirements</b>	EN 61326, EN 45501, NAMUR NE21, Part 1
<b>Dimensions in mm</b>	80 x 125 x 130
<b>Weight</b>	600 g

<sup>1)</sup> For details, refer to SIWAREX IS data sheet



## SIMATIC S7-300 Function modules

### SIWAREX FTC

Ordering data	Order No.	Ordering data	Order No.
<b>SIWAREX FTC</b> Weighing electronics for conveyor scales for S7-300 and ET 200M. Applications: Force measurement, conveyor scales	<b>7MH4 900-3AA01</b>	<b>S7 DIN rail</b> <ul style="list-style-type: none"> <li>• 160 mm</li> <li>• 480 mm</li> <li>• 530 mm</li> <li>• 830 mm</li> <li>• 2000 mm</li> </ul>	<b>6ES7 390-1AB60-0AA0</b> <b>6ES7 390-1AE80-0AA0</b> <b>6ES7 390-1AF30-0AA0</b> <b>6ES7 390-1AJ30-0AA0</b> <b>6ES7 390-1BC00-0AA0</b>
<b>SIWAREX FTC Manual</b> German, English, Italian, Spanish, French Free download from the Internet at: <a href="http://www.siemens.com/weighing-technology">www.siemens.com/weighing-technology</a> SIWAREX FTC "Getting started" Example software for easy acquaintance with scale programming in STEP 7. Free download from the Internet at: <a href="http://www.siemens.com/weighing-technology">www.siemens.com/weighing-technology</a>		<b>PS 307 load power supply</b> (only required if DC 24 V is not available) 120/230 V AC; 24 V DC <ul style="list-style-type: none"> <li>• PS 307-1B; 2 A</li> <li>• PS 307-1E; 5 A</li> <li>• PS 307-1K; 10 A</li> </ul>	<b>6ES7 307-1BA00-0AA0</b> <b>6ES7 307-1EA00-0AA0</b> <b>6ES7 307-1KA00-0AA0</b>
<b>SIWAREX FTC configuration package for SIMATIC S7</b> on CD-ROM <ul style="list-style-type: none"> <li>• SETUP for S7 link with STEP 7 V5.2</li> <li>• S7 function block</li> <li>• SIWATOOL FTC commissioning software</li> <li>• Manual</li> </ul>	<b>7MH4 900-3AK01</b>	<b>MMC memory</b> for data recording up to 16 MB	<b>6ES7 953-8LF11-0AA0</b>
<b>SIWAREX FTC configuration package for PCS 7 V6.0 and V6.1</b> on CD-ROM <ul style="list-style-type: none"> <li>• SETUP for S7 link</li> <li>• Function block for CFC</li> <li>• Faceplate</li> <li>• SIWATOOL FTC commissioning software</li> <li>• Manual</li> </ul>	<b>7MH4 900-3AK61</b>	<b>Remote display (option)</b> The Siebert S102 and S302 remote digital display can be directly connected to the SIWAREX FTC via an RS 485 interface. (not suitable for mode "Conveyor scale") Siebert Industrieelektronik GmbH P.O. Box 1180 D-66565 Eppelborn Tel.: +49 6806/980-0 Fax: +49 6806/980-999 Internet: <a href="http://www.siebert.de">http://www.siebert.de</a> Detailed information available from manufacturer.	
<b>SIWATOOL cable</b> from SIWAREX FTC with serial PC interface, for 9-pin PC interfaces (RS 232) <ul style="list-style-type: none"> <li>• 2 m long</li> <li>• 5 m long</li> </ul>	<b>7MH4 702-8CA</b> <b>7MH4 702-8CB</b>	<b>SIWAREX JB junction box, aluminium housing</b> for connecting up to 4 load cells in parallel, and for connecting several junction boxes	<b>7MH4 710-1BA</b>
<b>40-pin front plug with screw contacts</b> (required for each SIWAREX module), alternatively with spring-loaded contacts	<b>6ES7 392-1AM00-0AA0</b>	<b>SIWAREX JB junction box, stainless steel housing</b> for connecting up to 4 load cells in parallel	<b>7MH4 710-1EA</b>
<b>40-pin front plug with spring-loaded contacts</b> (required for each SIWAREX module), alternatively with screw contacts	<b>6ES7 392-1BM00-0AA0</b>	<b>Ex interface, type SIWAREX PI</b> With UL and FM approvals, but <b>without ATEX approval</b> for intrinsically-safe connection of load cells, suitable for the SIWAREX U, M, FTA, FTC, CS and P weighing modules. Use in the EC is not possible.	<b>7MH4 710-5AA</b>
<b>Shield contact element</b> Sufficient for one SIWAREX FTC module	<b>6ES7 390-5AA00-0AA0</b>	<b>Manual for Ex interface type SIWAREX PI</b>	<b>C71000-T5974-C29</b>
<b>Shield connection terminal</b> Contents: 2 units (suitable for cable with diameter 4 ... 13 mm) Note: one shield connection terminal is required each for: <ul style="list-style-type: none"> <li>• Scale connection</li> <li>• RS 485 interface</li> <li>• RS 232 interface</li> </ul>	<b>6ES7 390-5CA00-0AA0</b>	<b>SIWAREX IS Ex interface</b> With ATEX approval, but <b>without UL and FM approvals</b> for intrinsically-safe connection of load cells, including Manual, suitable for the SIWAREX U, M, FTA, FTC, CS and P weighing modules. Use in the EC is possible. <ul style="list-style-type: none"> <li>• With short-circuit current &lt; 199 mA DC</li> <li>• With short-circuit current &lt; 137 mA DC</li> </ul>	<b>7MH4 710-5BA</b> <b>7MH4 710-5CA</b>
		<b>Cable (optional)</b>	see SIWAREX FTA

## SIMATIC S7-300 Function modules

### SIWAREX P

#### Overview



SIWAREX P is a weighing and force measuring system for simple tasks. It can be used for all kinds of industrial measurements. SIWAREX P has the design of the SIMATIC S5-100U programmable controllers and can be used as a stand-alone device or also integrated directly in a SIMATIC S5-90U, -95U or -100U programmable controller.

#### Note:

Bus module available as spare part; see I-button with the accessories ordering data.

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#### Technical specifications

SIWAREX P	
<b>Main applications</b>	<ul style="list-style-type: none"> <li>• Load measurement on cranes</li> <li>• Overload protection</li> <li>• Belt tensioning devices</li> <li>• Platform scales</li> <li>• Fill level (containers/bins)</li> </ul> Optional (Ex-I)
<b>Intrinsically-safe load cell powering</b>	
<b>Stand-alone (without SIMATIC)</b>	Yes
Integration in:	
• S5-90/-95U/-100U	Direct integration
• S5-95U/DP (PROFIBUS master)	Through ET 200U
• S5-115U/-135U/-155U	Through ET 200U
• S7-300	Through ET 200U
• S7-400	Through ET 200U
• M7-300	Through ET 200U
• M7-400	Through ET 200U
• C7	Through ET 200U
<b>Communication interfaces</b>	SIMATIC S5 bus TTY
<b>Process interfaces</b>	
• Digital outputs	2 limits/fault
• Analog output/analog input	Yes / No
<b>Remote display connection</b> (via serial interface)	Yes Gross
<b>Measuring properties</b>	
Error limit according to DIN 1319-1 of full-scale value at 20 °C ± 10 K	0,1 %
Internal resolution	20.000
Data format for weight values	2 byte (fixed-point)
<b>Number of measurements/second</b>	10
<b>Filter</b>	0.0625 -2 Hz
<b>Weighing functions</b>	
• Weight values	Gross
• Limits	2 (min./max.)

SIWAREX P	
<b>Integral display and operator panel</b>	Yes
<b>Module parameterization</b>	Built-in LCD + Membrane keyboard
IP degree of protection to DIN 60 529; IEC 60 529	IP20
Load cell powering	
• Supply voltage $U_s$ (rated value)	10 V ± 0.5 V DC
• Max. supply current	≤ 160 mA or ≤ 115 mA (Ex area)
• Permissible load resistance:	
- $R_{Lmin}$	> 60 Ω
- $R_{Lmax}$	< 4010 Ω
	<u>With Ex(I) interface:</u>
- $R_{Lmin}$	> 87 Ω
- $R_{Lmax}$	< 4010 Ω
<b>Permissible load cell characteristic</b>	Up to 3 mV/V
<b>Permissible range of measuring signal (at greatest set characteristic)</b>	0 to 33 mV
<b>Max. distance of load cells</b>	500 m (300 m in Ex area)
<b>Supply voltage 24 V DC</b>	
• Rated voltage	24 V DC
• Max. current consumption	300 mA
<b>Serial port 1</b>	TTY (serial 20 mA): 9600 baud
• Baud rate	9600 baud
• Parity	straight
• No. of data bits/stop bits	8/1
• Signal level	Passive, floating
• Protocols	3964R / RK512 (send only on request)
<b>Binary outputs</b>	Number: 2 (relay) Max. switching voltage: 120 V DC 50 V AC Max. current: 1 A (resistive load)

## SIMATIC S7-300 Function modules

### SIWAREX P

#### Technical specifications (continued)

SIWAREX P		SIWAREX P	
<b>Analog output</b>		Climatic requirements	0 ... +55 °C
• Output range	0/4 ... 20 mA	Tmin(IND) to Tmax(IND)	in wall housing: 0 ... +45 °C
• Total error at 25°C	0,45 %	(operating temperature)	
• Updating rate	100 ms	EMC requirements according to	EN 50081-2
• Resolution	10 bits (0 ... 20 mA)		EN 50082-2
• Burden including line resistance	≤ 500 Ω		

#### Ordering data

Ordering data	Order No.	Ordering data	Order No.
<b>SIWAREX P</b>		<b>Accessories</b>	
• For stand-alone operation without SIMATIC	<b>7MH4 205-1AB01</b>	<b>SIWAREX JB junction box, aluminium housing</b>	<b>7MH4 710-1BA</b>
• For operation within a SIMATIC S5-90U/-95U/-100U and ET 200U programmable controller	<b>7MH4 205-1AC01</b>	for connecting up to 4 load cells in parallel, and for connecting several junction boxes	
<b>SIWAREX P Manual</b> (the Manual must be ordered separately)		<b>SIWAREX JB junction box, stainless steel housing</b>	<b>7MH4 710-1EA</b>
• German	<b>C71000-B5900-C44</b>	for connecting up to 4 load cells in parallel	
• English	<b>C71000-B5976-C44</b>	<b>Ex interface, type SIWAREX PI</b>	<b>7MH4 710-5AA</b>
<b>Data handling block</b> for communication between the SIWAREX P weighing and force measuring system and a SIMATIC S5-90U/-95U/-100U programmable controller, including description in German and English	<b>7MH4 811-5AP41</b>	With UL and FM approvals, but <b>without ATEX approval</b> , for intrinsically-safe connection of load cells, suitable for the SIWAREX U, M, FTA, FTC, CS and P weighing modules. Use in the EC is not possible.	
<b>Bus module</b> Terminal block for screw connection (required for each SIWAREX P)	<b>6ES5 700-8MA11</b>	<b>Manual for Ex interface type SIWAREX PI</b>	<b>C71000-T5974-C29</b>
<b>SITOP POWER 2 power supply</b> for 115/230 V AC, 24 V DC; 2 A	<b>6EP1 331-2BA00</b>	<b>SIWAREX IS Ex interface</b> With ATEX approval, but <b>without UL and FM approvals</b> , for intrinsically-safe connection of load cells, including Manual, suitable for the SIWAREX U, M, FTA, FTC, CS and P weighing modules. Use in the EC is possible.	
<b>Wall housing</b> for max. two SIWAREX P weighing and force measuring systems and one PS931 power supply module	<b>7MH4 215-8AA</b>	• With short-circuit current < 199 mA DC	<b>7MH4 710-5BA</b>
<b>S102 remote display</b> The digital remote display can be connected directly to the SIWAREX P through the TTY interface. The following remote displays can be connected: <b>S102-05/25/0R-000/0B-TM</b> Siebert Industrieelektronik GmbH P.O. Box 1180 D-66565 Eppelborn Tel.: +49 6806/980-0 Fax: +49 6806/980-999 Internet: <a href="http://www.siebert.de">http://www.siebert.de</a> Detailed information available from manufacturer.		• With short-circuit current < 137 mA DC	<b>7MH4 710-5CA</b>
		<b>Cable (optional)</b>	see SIWAREX FTA

## SIMATIC S7-300 Function modules

### SIPLUS DCF 77 radio clock module

#### Overview



The synchronisation of the real-time clock for the automation systems SIMATIC S7-200, S7-300 and S7-400 with the official time of day of the time signal transmitter DCF 77 of the Physikalisch-Technische Bundesanstalt Braunschweig is made by this module.

The time receipt occurs via a DCF transmitter (antenna with solid-state) which is connected to the the SIMATIC and SIPLUS PLC via two digital inputs and a software driver included in the scope of supply (function block FB). The function blocks can be downloaded under: <http://www.siemens.com/siplus> - Support - Tools & Downloads!

#### Technical specifications

##### SIPLUS DCF 77 radio clock module

Radio frequency	77,5 Hz
Power supply	24 V DC (20,4 ... 28, 8 V DC)
Power consumption, typ.	50 mA
Ambient temperature range	-25 ... +70 °C
Degree of protection	IP 65
Dimensions (W x H xDT) in mm	75 x 125 <sup>1)</sup> x 75

1) Additionally 25 mm (0.98 in) for heavy duty threaded joint and bending radius for cables

#### Ordering data

#### Order No.

##### SIPLUS DCF 77 radio clock module<sup>A)</sup>

**6AG1 057-1AA03-0AA0**

For synchronisation of SIMATIC S7-200, S7-300 and S7-400 with the official time of day of the time signal transmitter DCF 77 of the Physikalisch-Technische Bundesanstalt Braunschweig

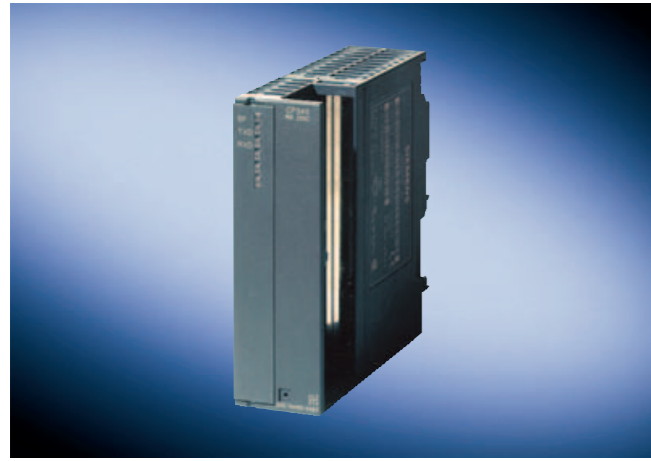
A) Subject to export regulations: AL: N and ECCN: EAR99H

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## SIMATIC S7-300 Communication

### CP 340

#### Overview



- The economical complete solution for serial communication via point-to-point links.
- 3 versions with different transmission interfaces:
  - RS 232C (V.24)
  - 20 mA (TTY)
  - RS 422/RS 485 (X.27)
- Implemented protocols:
  - ASCII
  - 3964 (R) (not for RS 485)
  - Printer driver
- Simple parameterization via a parameterization tool integrated into STEP 7

#### Technical specifications

	6ES7 340-1AH02-0AE0	6ES7 340-1BH02-0AE0	6ES7 340-1CH02-0AE0
<b>Supply voltages</b>			
Rated value			
- 24 V DC	No	No	No
<b>Current consumption</b>			
• from backplane bus 5 V DC, max.	165 mA	190 mA	165 mA
• Power dissipation, max.	0.85 W	0.95 W	0.85 W
• Power dissipation, typical	0.6 W	0.85 W	0.6 W
<b>Interfaces</b>			
• Number	1	1	1
• Physical interface, 20mA (TTY)		Yes	
• Physical interface, RS 232C (V.24)	Yes		
• Physical interface, RS422/RS485 (X.27)			Yes
• Transmission rate, max.	19.2 kBit/s	19.2 kBit/s	19.2 kBit/s
• Transmission rate, min.	2.4 kBit/s	2.4 kBit/s	2.4 kBit/s
<b>Point-to-point</b>			
• Length of cable, max.	15 m	1,000 m	1,200 m
<b>Integral protocol driver</b>			
- 3964 (R)	Yes	Yes	Yes
- ASCII	Yes	Yes	Yes
- Customer-specific drivers for later loading	No	No	No
- RK512	No	No	No
<b>Frame length, max.</b>			
- 3964 (R)	1,024 Byte	1,024 Byte	1,024 Byte
- ASCII	1,024 Byte	1,024 Byte	1,024 Byte

## SIMATIC S7-300 Communication

CP 340

### Technical specifications (continued)

	6ES7 340-1AH02-0AE0	6ES7 340-1BH02-0AE0	6ES7 340-1CH02-0AE0
Transmission rate, 20 mA (TTY) - with 3964 (R) protocol, max. - with ASCII protocol, max. - with printer driver, max.		19.2 kBit/s 9.6 kBit/s 9.6 kBit/s	
Transmission rate, RS 422/485 - with 3964 (R) protocol, max. - with ASCII protocol, max. - with printer driver, max.			19.2 kBit/s 9.6 kBit/s 9.6 kBit/s
Transmission rate, RS232 - with 3964 (R) protocol, max. - with ASCII protocol, max. - with printer driver, max.	19.2 kBit/s 9.6 kBit/s 9.6 kBit/s		
<b>Dimensions and weight</b> • Weight, approx. • Width • Height • Depth	300 g 40 mm 125 mm 120 mm	300 g 40 mm 125 mm 120 mm	300 g 40 mm 125 mm 120 mm
<b>Software</b> Block - FB length in working memory, max.	2,700 Byte	2,700 Byte	2,700 Byte

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### Ordering data

Ordering data	Order No.	Ordering data	Order No.
<b>CP 340 communications module</b> With one RS 232 C (V.24) interface	6ES7 340-1AH02-0AE0	<b>CP 340 communications module</b> With one RS 422/485 (X.27) interface	6ES7 340-1CH02-0AE0
<b>RS 232 connecting cable</b> For linking to SIMATIC S7		<b>RS 422/485 connecting cable</b> For linking to SIMATIC S7	
5 m	6ES7 902-1AB00-0AA0	5 m	6ES7 902-3AB00-0AA0
10 m	6ES7 902-1AC00-0AA0	10 m	6ES7 902-3AC00-0AA0
15 m	6ES7 902-1AD00-0AA0	50 m	6ES7 902-3AG00-0AA0
<b>CP 340 communications module</b> With one 20 mA (TTY) interface	6ES7 340-1BH02-0AE0		
<b>20 mA (TTY) connecting cable</b> For linking to SIMATIC S7			
5 m	6ES7 902-2AB00-0AA0		
10 m	6ES7 902-2AC00-0AA0		
50 m	6ES7 902-2AG00-0AA0		



## SIMATIC S7-300 Communication

### SIPLUS CP 341

#### Overview



- For powerful, high-speed serial communication via point-to-point links
- Physical properties RS 422/RS 485 (X.27)
- Implemented protocols: ASCII, 3964 (R), RK 512, customer-specific protocols (reloadable)
- Simple parameterization via a parameterization tool integrated into STEP 7

This module is designed for

- an ambient temperature range of  $-25$  to  $+70$  °C; condensation permissible
- extraordinary medial load (for example by chloric and sulphuric atmospheres)

#### Technical specifications

**6AG1 341-1CH01-2AE0** see 6ES7 341-1CH01-0AE0

#### Ordering data

#### Order No.

#### SIPLUS CP 341

(extended temperature range and extraordinary medial load)

with 1 RS 422/485 (X.27) interface

**6AG1 341-1CH01-2AE0**

#### Accessories

see ordering data for CP 341 communications processor

## SIMATIC S7-300 Communication

CP 343-1

### Overview



- Connection of SIMATIC S7-300 to Industrial Ethernet
  - 10/100 Mbit/s full/half duplex connection with autosensing
  - Connection for RJ45
  - Multi-protocol operation with TCP and UDP transport protocol
  - Adjustable Keep Alive function
- Communication services:
  - PROFINET IO Controller
  - TCP/IP und UDP transport protocol
  - Programming device/operator panel communication: Cross-network by means of S7 routing
  - S7 communication (client, server, multiplexing)
  - S5-compatible communication
- Multicast for UDP
- IP address assignment via DHCP, simple PC tool or via the user program (e.g. HMI)
- Access protection by means of configurable access list
- Remote programming and initial startup via the network
- Automatic setting of the CPU clock via Ethernet with NTP or SIMATIC procedure
- SNMP MIB2 diagnostics information for network management systems

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### Technical specifications

	CP 343-1
Transmission rate	10/100 Mbit/s autosensing
Interfaces	
• 10BaseT, 100BaseTX	RJ45
• Connection for power supply	2-pin plug-in terminal strip
Power supply	+5 V DC (±5%) and +24 V DC (±5%)
Current consumption	
• From backplane bus	200 mA
• From 24 V DC external	typ. 160 mA max. 200 mA
Power loss	5.8 W
Perm. ambient conditions	
• Operating temperature	0 °C to +60 °C
• Transport/storage temperature	-40 °C to +70 °C
• Relative humidity	Max. 95% at +25 °C
Construction	
• Module format	Compact module S7-300, double width
• Dimensions (W x H x D) in mm	80 x 125 x 120
• Weight	Approx. 600 g
Configuring software	STEP 7 V5.3 SP2 and higher
<b>Performance data</b>	
<b>S5-compatible communication (SEND/RECEIVE)</b>	
• Sum of all simultaneously operable TCP/UDP connections	Max. 16
• Useful data	
- TCP	8 KB
- UDP	2 KB

	CP 343-1
<b>S7 communication</b>	
• Number of connections	Max. 16
<b>PG/OP communication</b>	
• Number of operable OP connections (non-isochrone services)	16
<b>Multi-protocol operation</b>	
• Sum of all simultaneously operable connections	Max. 48
<b>Multicast</b>	16
<b>PROFINET communication</b>	
PN IO-Controller	
• Number of operable PN IO-Devices	125
• Size of IO data areas overall	
- I/O input area	2160 byte
- I/O output area	2160 byte
• Size of I/O data areas per connected PN IO-Device	
- I/O input area	Max. 128 byte
- I/O output area	Max. 128 byte

## SIMATIC S7-300 Communication

CP 343-1

Ordering data	Order No.		Order No.
<b>CP 343-1 communications processor</b> For connection of SIMATIC S7-300 to Industrial Ethernet; PROFINET IO-Controller, TCP/IP and UDP, S7 communication, SS-compatible communication (SEND/RECEIVE), FETCH/WRITE, with and without RFC 1006, diagnostic expansions, multicast, CPU clock synchronization via SIMATIC procedure and NTP, access protection through IP access list, SNMP, DHCP, initialization over LAN 10/100 Mbit/s; with electronic manual on CD-ROM	6GK7 343-1EX21-0XE0	<b>IE FC RJ45 Plug 180</b> RJ45 plug-in connector for Industrial Ethernet with a rugged metal housing and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 180° cable outlet; for network components and CPs/CPUs with Industrial Ethernet interface <ul style="list-style-type: none"> <li>• 1 pack = 1 unit</li> <li>• 1 pack = 10 units</li> <li>• 1 pack = 50 units</li> </ul>	6GK1 901-1BB10-2AA0 6GK1 901-1BB10-2AB0 6GK1 901-1BB10-2AE0
<b>NCM S7 configuration software for Industrial Ethernet</b> for Industrial Ethernet CPs for SIMATIC S7 V5.3 SP2, operating under STEP 7 V5.3; on CD-ROM with electronic manual in German, English, French, Spanish, Italian	Included in the STEP 7 V5.3 package	<b>Documentation S7-CPs/NCM for Industrial Ethernet and PROFIBUS</b> for V5.x (STEP 7 V5.x); paper version <ul style="list-style-type: none"> <li>• German</li> <li>• English</li> </ul>	6GK7 080-0AA01-8AA0 6GK7 080-0AA01-8BA0

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## SIMATIC S7-400

# 5



<b>5/2</b>	<b>Central processing units</b>
5/2	CPU 416F-2
<b>5/7</b>	<b>Function modules</b>
5/7	SIPLUS DCF 77 radio clock module
<b>5/8</b>	<b>Communication</b>
5/8	CP 443-5 Basic
5/10	CP 443-5 Extended
<b>5/12</b>	<b>Racks</b>
<b>5/14</b>	<b>Power supplies</b>
5/14	Power supplies PS 405/PS 407



# SIMATIC S7-400

## Central processing units

### CPU 416F-2

#### Overview



- For design of a fail-safe automation system for plants with increased safety requirements
- High-performance CPU in the high-end performance range
- With 2 interfaces (1x DP/MPI, 1x DP)
- Complies with safety requirements up to SIL 3 to IEC 61508 and Cat. 4 according to EN 954-1
- Standard as well as safety-relevant tasks can be solved with just one CPU
- Multi-processor mode is possible
- Safety-related communication with distributed I/O stations over PROFIBUS DP with the *PROFIsafe* profile
- Distributed fail-safe I/O modules can be connected over the integral PROFIBUS DP interfaces and/or over communications modules (CP443-5 Ext. and CP443-1 Adv.)
- Central and distributed use of standard modules for non-safety-relevant applications

#### Technical specifications

	6ES7 416-2FK04-0AB0
<b>Product version</b>	
• Firmware version	V4.0
• Associated programming package	as of STEP7 V 5.2 SP1 HF3 with HW-Update
<b>Supply voltages</b>	
Rated value	Yes
- 24 V DC	
<b>Voltages and currents</b>	
• Incoming supply of external backup voltage to the CPU	5 to 15 V DC
<b>Current consumption</b>	
• from backplane bus 5 V DC, max.	1.6 A
• Power dissipation, typical	4.5 W
<b>Back-up battery</b>	
- Backup current, max.	1,539 µA
- Backup current, typical	550 µA
<b>Memory/backup</b>	
<b>Memory</b>	
• Working memory	
- integrated (for program)	1,400 KByte
- integrated (for data)	1,400 KByte
- expandable	No
• Load memory	
- expandable FEPRM	Yes; with Memory Card (FLASH)
- expandable FEPRM, max.	64 MByte
- integral RAM, max.	256 KByte
- expandable RAM	Yes; with Memory Card (RAM)
- expandable RAM, max.	64 MByte
<b>Backup</b>	
- available	Yes
- with battery	Yes; all data
- without battery	No
<b>CPU/blocks</b>	
<b>DB</b>	
- Number, max.	4,095; DB 0 reserved
- Size, max.	64 KByte

	6ES7 416-2FK04-0AB0
<b>FB</b>	
- Number, max.	2,048
- Size, max.	64 KByte
<b>FC</b>	
- Number, max.	2,048
- Size, max.	64 KByte
<b>OB</b>	
- Number, max.	See instruction list
- Size, max.	64 KByte
<b>Nesting depth</b>	
- per priority class	24
- additional levels within an error OB	2
<b>CPU/processing times</b>	
• for bit instruction, min.	0.04 µs
• for word instruction, min.	0.04 µs
• for integer math, min.	0.04 µs
• for floating-point math, min.	0.12 µs
<b>Timers/counters and their retentive characteristics</b>	
<b>S7 counter</b>	
- Number	2,048
• Retentivity	
- adjustable	Yes
- lower limit	0
- upper limit	2,047
- preset	from Z 0 to Z 7
• Counting range	
- lower limit	0
- upper limit	999
<b>IEC counter</b>	
- available	Yes
- Type	SFB

## SIMATIC S7-400 Central processing units

CPU 416F-2

### Technical specifications (continued)

	6ES7 416-2FK04-0AB0	6ES7 416-2FK04-0AB0
<b>S7 times</b>		
- Number	2,048	
• Retentivity		
- adjustable	Yes	
- lower limit	0	
- upper limit	2,047	
- preset	no timers retentive	
• Timing range		
- lower limit	10 ms	
- upper limit	9,990 s	
<b>IEC timer</b>		
- available	Yes	
- Type	SFB	
<b>Data areas and their retentive characteristics</b>		
• Retentive data area as a whole	total working and load memory (with backup battery)	
<b>Flags</b>		
- Number	16 KByte	
- adjustable retentivity	Yes; MB 0 to MB 16383	
- Number of clock memories	8; (1 memory byte)	
<b>Address area</b>		
<b>I/O address area</b>		
- Inputs	16 KByte	
- Outputs	16 KByte	
• of which distributed		
- MPI/DP interface, inputs	2 KByte	
- MPI/DP interface, outputs	2 KByte	
- DP interface, inputs	8 KByte	
- DP interface, outputs	8 KByte	
<b>Process image</b>		
- Inputs, adjustable	16 KByte	
- Outputs, adjustable	16 KByte	
- Inputs, preset	512 Byte	
- Outputs, preset	512 Byte	
- Number of component process images, max.	15	
- Access to consistent data in the process image	Yes	
- Consistent data, max.	244 Byte	
<b>Digital channels</b>		
- Inputs	131,072	
- Outputs	131,072	
- Inputs, of which central	131,072	
- Outputs, of which central	131,072	
<b>Analog channels</b>		
- Inputs	8,192	
- Outputs	8,192	
- Inputs, of which central	8,192	
- Outputs, of which central	8,192	
<b>Configuration</b>		
• connectable OP	63 without event processing, 12 with event processing	
• Central units, max.	1	
• Expansion units, max.	21	
• Multi-computing	Yes; max. 4 CPUs (with UR1 or UR2)	
<b>IM</b>		
- Number of pluggable IMs (overall), max.	6	
- Number of pluggable IM 460s, max.	6	
- Number of pluggable IM 463s, max.	4; IM 463-2	
<b>Number of DP masters</b>		
- integral	2	
- via IM 467	4	
- via CP	10; CP 443-5 Ext.	
- Mixed mode of IM + CP permitted	No; IM467 cannot be used externally together with CP443-5	
- No. pluggable S5 modules (via adapter casing in centr. unit) max.	6	
<b>Number of FMs and CPs that can be operated (recommendation)</b>		
- FM	limited by the number of slots and by the number of connections	
- CP, point-to-point	CP 440: limited by the number of slots CP 441: limited by the number of connections	
- CP, LAN	limited by the number of connections	
- PROFIBUS and Ethernet CPs	14; incl. CP 443-5 Ext. and IM 467	
<b>Time</b>		
<b>Clock</b>		
- Hardware clock (realtime clock)	Yes	
- buffered	Yes	
- Triggering	1 ms	
<b>Run-time meter</b>		
- Quantity	8	
<b>Time synchronization</b>		
- supported	Yes	
- on MPI, master	Yes	
- on MPI, slave	Yes	
- on DP, master	Yes	
- on DP, slave	Yes	
- in AS, master	Yes	
- in AS, slave	Yes	
<b>S7 message functions</b>		
• Number of stations that can log on for message functions, max.	12	
• Symbol-related messages	Yes	
<b>Number of messages</b>		
- total, max.	1,024	
• Block-related messages	Yes	
• Alarm 8 blocks	Yes	
• Statuses	Yes	
<b>Test and startup functions</b>		
Status/modify		
- Variable	Yes	

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# SIMATIC S7-400

## Central processing units

### CPU 416F-2

#### Technical specifications (continued)

	6ES7 416-2FK04-0AB0
Forcing	Yes
- Forcing	Yes
• Status block	Yes
• Single step	Yes
• Number of breakpoints	4
Diagnostics buffer	Yes
- available	3,200
- Number of inputs, max.	Yes
- adjustable	120
- preset	
<b>Communication functions</b>	
• PG/OP communication	Yes
Global data communication	Yes
- supported	64 Byte
- Size of GD packets, max.	
S7 basic communication	Yes; in MPI mode: via SFC X_SEND, X_RCV, X_GET and X_PUT in DP master mode: via SFC I_GET and I_PUT
- supported	76 Byte
- User data per job	
S7 communication	Yes
- supported	Yes
- as server	Yes
- as client	Yes
- User data per job, max.	64 KByte
S5 compatible communication	Yes; via FC AG_SEND and AG_RECV, via a maximum of 10 CP 443-1 or 443-5
- supported	8 KByte
- User data per job, max.	
Standard communication	Yes; via CP and loadable FB
- Supported	
Number of connections	64
- overall	
<b>1st interface</b>	
• Physical	RS 485 / PROFIBUS
• Isolated	Yes
Functionality	
- MPI	Yes
- DP master	Yes
- DP slave	Yes
MPI	
- Number of connections	44
• Services	
- PG/OP communication	Yes
- Routing	Yes
- Global data communication	Yes
- S7 basic communication	Yes
- S7 communication	Yes
- Transmission rates, max.	12 Mbit/s
DP master	
- Number of connections, max.	32; if a diagnostic repeater is used in the chain, this reduces the number of connection resources in the chain by 1
• Services	
- PG/OP communication	Yes
- Routing	Yes
- S7 basic communication	Yes
- S7 communication	Yes
- Equidistance support	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.	8 KByte
- Outputs, max.	8 KByte
• User data per DP Slave	
- Inputs, max.	244 Byte
- Outputs, max.	244 Byte
DP slave	
• Services	
- Routing	Yes
- Status/modify	Yes
- Programming	Yes
- Transmission rates, max.	12 Mbit/s

	6ES7 416-2FK04-0AB0
- S7 communication	Yes
- Equidistance support	Yes
- Activate/deactivate DP slaves	Yes
- Direct data exchange (lateral communication)	Yes
- Transmission rates, max.	12 Mbit/s
- Number of DP slaves, max.	32
• Address area	
- Inputs, max.	2 KByte
- Outputs, max.	2 KByte
• User data per DP Slave	
- Inputs, max.	244 Byte
- Outputs, max.	244 Byte
DP slave	
• Services	
- Routing	Yes
- Status/modify	Yes
- Programming	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
- User data per address area, of which consistent, max.	32 Byte
<b>2nd interface</b>	
• Physical	RS 485 / PROFIBUS
• Isolated	Yes
Functionality	
- DP master	Yes
- DP slave	Yes
DP master	
- Number of connections, max.	32; if a diagnostic repeater is used in the chain, this reduces the number of connection resources in the chain by 1
• Services	
- PG/OP communication	Yes
- Routing	Yes
- S7 basic communication	Yes
- S7 communication	Yes
- Equidistance support	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.	8 KByte
- Outputs, max.	8 KByte
• User data per DP Slave	
- Inputs, max.	244 Byte
- Outputs, max.	244 Byte
DP slave	
• Services	
- Routing	Yes
- Status/modify	Yes
- Programming	Yes
- Transmission rates, max.	12 Mbit/s

## SIMATIC S7-400 Central processing units

CPU 416F-2

### Technical specifications (continued)

	6ES7 416-2FK04-0AB0		6ES7 416-2FK04-0AB0
<b>Intermediate memory</b>		<b>CPU/ programming</b>	
- Inputs	244 Byte	Programming language	
- Outputs	244 Byte	- STEP 7	Yes
- Address areas, max.	32	- KOP	Yes
- User data per address area, max.	32 Byte	- FUP	Yes
- User data per address area, of which consistent, max.	32 Byte	- AWL	Yes
		- SCL	Yes
		- CFC	Yes
		- GRAPH	Yes
		- HiGraph	Yes
<b>Clock synchronism</b>		<b>Bracket levels</b>	8
• User data per clock synchronous slave, max.	244 Byte	• User program protection/ password protection	Yes
• Equidistance	Yes		
• Shortest clock pulse	1 ms; 0.5 ms without using SFC 126, 127	<b>Dimensions and weight</b>	
		• Weight, approx.	720 g
<b>CIR configuration in RUN</b>		• Width	25 mm
• CIR synchronization time, base load	100 ms	• Height	290 mm
• CIR synchronization time, time per I/O slave	40 µs	• Depth	219 mm
		• Required slots	1

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### Ordering data

	Order No.		Order No.
<b>CPU 416-2F</b>	6ES7 416-2FK04-0AB0	<b>Memory Card FEPR0M</b>	
For configuring safety-related automation systems: main memory 2.8 MB, 24 V DC power supply, MPI/PROFIBUS DP master interface, PROFIBUS DP master/slave interface, slot for memory card, incl. slot number labels, 2 keys		64 KB	6ES7952-0KF00-0AA0
<b>Option package</b>		256 KB	6ES7952-0KH00-0AA0
<b>S7 F Distributed Safety V5.4</b>		1 MB	6ES7 952-1KK00-0AA0
for generating fail-safe programs for the S7-300F		2 MB	6ES7 952-1KL00-0AA0
Floating license	6ES7 833-1FC02-0YA5	4 MB	6ES7 952-1KM00-0AA0
Upgrade from V5.x to V5.4	6ES7 833-1FC02-0YE5	8 MB	6ES7 952-1KP00-0AA0
Software Update Service	6ES7 833-1FC00-0YX2	16 MB	6ES7 952-1KS00-0AA0
<b>Memory Card RAM</b>		32 MB <sup>A)</sup>	6ES7 952-1KT00-0AA0
64 KB	6ES7 952-0AF00-0AA0	64 MB <sup>A)</sup>	6ES7 952-1KY00-0AA0
256 KB	6ES7 952-1AH00-0AA0	<b>MPI cable</b>	6ES7 901-0BF00-0AA0
1 MB	6ES7 952-1AK00-0AA0	For connecting SIMATIC S7 and the PG through MPI; 5 m in length	
2 MB	6ES7 952-1AL00-0AA0	<b>IF 964-DP interface module</b>	6ES7 964-2AA04-0AB0
4 MB	6ES7 952-1AM00-0AA0	For connecting an additional DP line	
8 MB	6ES7 952-1AP00-0AA0	<b>Slot number plates</b>	6ES7 912-0AA00-0AA0
16 MB	6ES7 952-1AS00-0AA0	1 set (spare part)	
64 MB	6ES7 952-1AY00-0AA0		

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

## SIMATIC S7-400 Central processing units

### CPU 416F-2

Ordering data	Order No.	Ordering data	Order No.
<b>Manual "SIMATIC S7-400 programmable controller"</b> incl. operation list		<b>Brochure "SIMATIC S7-400 programmable controller - Design and application"</b>	
German	6ES7 498-8AA03-8AA0	German	6ES7 498-8AA00-8AB0
English	6ES7 498-8AA03-8BA0	English	6ES7 498-8AA00-8BB0
French	6ES7 498-8AA03-8CA0	French	6ES7 498-8AA00-8CB0
Spanish	6ES7 498-8AA03-8DA0	Spanish	6ES7 498-8AA00-8DB0
Italian	6ES7 498-8AA03-8EA0	Italian	6ES7 498-8AA00-8EB0
<b>S7-400 operation list</b>		<b>RS 485 bus connector with 90° cable outlet</b>	
German	6ES7 498-8AA03-8AN0	Max. transmission rate 12 Mbit/s	
English	6ES7 498-8AA03-8BN0	Without PG interface	6ES7 972-0BA12-0XA0
French	6ES7 498-8AA03-8CN0	With PG interface	6ES7 972-0BB12-0XA0
Spanish	6ES7 498-8AA03-8DN0	<b>RS 485 bus connector with angled cable outlet</b>	
Italian	6ES7 498-8AA03-8EN0	Max. transmission rate 12 Mbit/s	
<b>Manual "Communication for SIMATIC S7-300/-400"</b>		Without PG interface	6ES7 972-0BA41-0XA0
German	6ES7 398-8EA00-8AA0	With PG interface	6ES7 972-0BB41-0XA0
English	6ES7 398-8EA00-8BA0	<b>RS 485 bus connector with 90° cable outlet for Fast Connect system</b>	
French	6ES7 398-8EA00-8CA0	Max. transmission rate 12 Mbit/s	
Spanish	6ES7 398-8EA00-8DA0	Without PG interface	6ES7 972-0BA50-0XA0
Italian	6ES7 398-8EA00-8EA0	With PG interface	6ES7 972-0BB50-0XA0
<b>SIMATIC Manual Collection<sup>E)</sup></b>	6ES7 998-8XC01-8YE0	<b>RS 485 bus connector with axial cable outlet</b>	
Electronic manuals on CD-ROM, five languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, engineering software, runtime software, PCS 7, SIMATIC HMI, SIMATIC NET		For SIMATIC OP, for connection to PPI, MPI, PROFIBUS	6GK1 500-0EA02
<b>SIMATIC Manual Collection update service for 1 year<sup>E)</sup></b>	6ES7 998-8XC01-8YE2	<b>PROFIBUS FastConnect bus cable</b>	
Current "Manual Collection" CD and the three subsequent updates		Standard type with special design for quick mounting, 2-core, shielded, sold by the meter, max. delivery unit 1000 m, minimum ordering quantity 20 m	6XV1 830-0EH10

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

## SIMATIC S7-400 Function modules

### SIPLUS DCF 77 radio clock module

#### Overview



The synchronisation of the real-time clock for the automation systems SIMATIC S7-200, S7-300 and S7-400 with the official time of day of the time signal transmitter DCF 77 of the Physikalisch-Technische Bundesanstalt Braunschweig is made by this module.

The time receipt occurs via a DCF transmitter (antenna with solid-state) which is connected to the SIMATIC and SIPLUS PLC via two digital inputs and a software driver included in the scope of supply (function block FB). The function blocks can be downloaded under: <http://www.siemens.com/siplus> - Support - Tools & Downloads!

#### Technical specifications

##### SIPLUS DCF 77 radio clock module

Radio frequency	77,5 Hz
Power supply	24 V DC (20,4 ... 28, 8 V DC)
Power consumption, typ.	50 mA
Ambient temperature range	-25 ... +70 °C
Degree of protection	IP 65
Dimensions (W x H xDT) in mm	75 x 125 <sup>1)</sup> x 75

1) Additionally 25 mm (0.98 in) for heavy duty threaded joint and bending radius for cables

#### Ordering data

#### Order No.

##### SIPLUS DCF 77 radio clock module<sup>A)</sup>

6AG1 057-1AA03-0AA0

For synchronisation of SIMATIC S7-200, S7-300 and S7-400 with the official time of day of the time signal transmitter DCF 77 of the Physikalisch-Technische Bundesanstalt Braunschweig

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

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## SIMATIC S7-400 Communication

### CP 443-5 Basic

#### Overview



- Master connection of the S7-400 to PROFIBUS
- Communication services:
  - PG/OP communication
  - S7 communication
  - S5-compatible communication (SEND/RECEIVE)
  - PROFIBUS FMS
- Time synchronization
- Easy programming and configuration over PROFIBUS
- Cross-network programming device communication through S7 routing
- Can be easily integrated into the SIMATIC S7-400 system
- Modules can be replaced without the need for a PG
- SIMATIC H system operation for redundant S7 communication

#### Technical specifications

Data transmission rate	9.6 kbit/s to 12 Mbit/s
Interface	• Connection to PROFIBUS 9-pin Sub-D socket (RS 485)
Power supply	5 V DC $\pm$ 5%
Current input from 5 V DC	1.2 A
Power loss	6.5 W
Perm. ambient conditions	• Operating temperature 0 °C to +60 °C
	• Transport/storage temperature -40 °C to +70 °C
	• Relative humidity Max. 95% at +25°C
Construction	• Dimensions (WxHxD) in mm 25 x 290 x 210
	• Weight Approx. 700 g
<b>Performance data for S7 communication</b>	
• Number of connections that can be used	16 to 48 <sup>1)</sup>

<b>Performance data for S5-compatible communication (SEND/RECEIVE)</b>	
• Number of connections that can be used	Max. 32
• Useful data / connection	max. 240 byte (SEND and RECEIVE)
<b>Performance data for FMS function</b>	
• Number of connections that can be used	Max. 48
• Variable length READ	Max. 237 byte
• Variable length WRITE	Max. 233 byte
• Configurable server variables	512
• Variables that can be loaded from partners	2640
<b>Multi-protocol operation</b>	
• Number of connections that can be used (2 of which are reserved for PG/OP communication)	Max. 59

1) Dependent on CPU type

## SIMATIC S7-400 Communication

CP 443-5 Basic

Ordering data	Order No.		Order No.
<b>CP 443-5 communications processor</b> Communications processor for connecting S7-300 to PROFIBUS, FMS, S5-compatible communication, PG/OP and S7 communication; with electronic manual on CD-ROM	6GK7 443-5FX01-0XE0	<b>PROFIBUS FastConnect RS 485 bus connector</b> With 90° cable outlet; With insulation displacement method, max. data transmission rate 12 Mbit/s • without PG interface • with PG interface	6ES7 972-0BA50-0XA0 6ES7 972-0BB50-0XA0
<b>NCM S7 configuration software for PROFIBUS</b> Configuration software for PROFIBUS CPs for SIMATIC S7 V5.x; executable under STEP 7 V5.x; with electronic manual on CD-ROM English, French, German, Italian and Spanish	Delivered with STEP 7 Version 5	<b>PROFIBUS bus connector IP20</b> For connection to PPI, MPI, PROFIBUS • without PG interface • with PG interface	6ES7 972-0BA12-0XA0 6ES7 972-0BB12-0XA0
<b>"NCM S7 for PROFIBUS" manual</b> Paper version for V5.x (STEP 7 V5.x) • German • English • French • Spanish • Italian	6GK7 080-5AA04-8AA0 6GK7 080-5AA04-8BA0 6GK7 080-5AA04-8CA0 6GK7 080-5AA04-8DA0 6GK7 080-5AA04-8EA0	<b>PROFIBUS 12M bus terminal</b> Bus terminal for connecting PROFIBUS stations up to 12 Mbit/s with connecting cable <b>"Communication with SIMATIC" manual</b> • German • English • French • Spanish • Italian	6GK1 500-0AA10 6ES7 398-8EA00-8AA0 6ES7 398-8EA00-8BA0 6ES7 398-8EA00-8CA0 6ES7 398-8EA00-8DA0 6ES7 398-8EA00-8EA0

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## SIMATIC S7-400 Communication

### CP 443-5 Extended

#### Overview



- DP-V1 master connection of the S7-400 on PROFIBUS
- For setting up additional PROFIBUS DP lines
- Communication services:
  - PROFIBUS DP
  - PG/OP communication
  - S7 communication
  - S5-compatible communication (SEND/RECEIVE)
- Time synchronization
- Easy programming and configuration over PROFIBUS
- Cross-network programming device communication through S7 routing
- Can be easily integrated into the SIMATIC S7-400 system
- Module replacement without PG
- SIMATIC H system operation for redundant S7 communication or DP master communication
- Data record routing (PROFIBUS DP)
- Adding or modifying distributed I/O during operation

#### Technical specifications

Data transmission rate	9.6 kbit/s to 12 Mbit/s
Interfaces	
• Ports	9-pin Sub-D socket (RS 485)
Power supply	5 V DC $\pm$ 5% 24 V DC $\pm$ 5%
Current input from 5 V DC	1.3 A
Power loss	6.5 W
Perm. ambient conditions	
• Operating temperature	0 °C to +60 °C
• Transport/storage temperature	-40 °C to +70 °C
• Relative humidity	Max. 95% at +25°C
Construction	
• Dimensions (WxHxD) in mm	25 x 290 x 210
• Weight	Approx. 700 g
Number of external DP-lines in one central rack	10
<b>Performance data for DP master function</b>	
• DP master	DP-V1
• Number of operable DP slaves	Max. 125
• Size of DP data areas overall	
- DP input area	Max. 4 KB
- DP output range	Max. 4 KB
• Size of DP data areas per connected DP slave	
- DP input area	Max. 244 byte
- DP output range	Max. 244 byte

1) Dependent on CPU type

<b>Performance data for S7 communication</b>	
• Number of connections that can be used	16 to 48 <sup>1)</sup>
<b>Performance data for S5-compatible communication (SEND/RECEIVE)</b>	
• Number of connections that can be used	Max. 32
• Useful data / connection	max. 240 byte (SEND and RECEIVE)
<b>Multi-protocol operation</b>	
• Number of connections that can be used (2 of which are reserved for PG/OP communication)	
- Without DP	Max. 59
- With DP	Max. 55

## SIMATIC S7-400 Communication

CP 443-5 Extended

Ordering data	Order No.		Order No.
<b>CP 443-5 Extended communications processor<sup>F)</sup></b> For connecting SIMATIC S7-400 to PROFIBUS  Extended version for PROFIBUS DP; with electronic manual, on CD-ROM	<b>6GK7 443-5DX04-0XE0</b>	<b>PROFIBUS FastConnect bus connector RS 485</b> With 90° cable outlet; insulation displacement technology, max. transmission rate 12 Mbit/s • Without PG interface • With PG interface	<b>6ES7 972-0BA50-0XA0</b> <b>6ES7 972-0BB50-0XA0</b>
<b>Configuring software NCM S7 for PROFIBUS</b> Configuring software for PROFIBUS-CPs for SIMATIC S7  V5.1, runs under STEP 7 V5.1; with electronic manual on CD-ROM. German, English, French, Spanish, Italian	Delivered with STEP 7 Version 5	<b>PROFIBUS bus connector IP20</b> With connection to PPI, MPI, PROFIBUS • Without PG interface • With PG interface	<b>6ES7 972-0BA12-0XA0</b> <b>6ES7 972-0BB12-0XA0</b>
<b>Manual NCM S7 for PROFIBUS</b> Paper version  for V5.x (STEP 7 V5.x) • German • English • French • Spanish • Italian	<b>6GK7 080-5AA04-8AA0</b> <b>6GK7 080-5AA04-8BA0</b> <b>6GK7 080-5AA04-8CA0</b> <b>6GK7 080-5AA04-8DA0</b> <b>6GK7 080-5AA04-8EA0</b>	<b>PROFIBUS bus terminal 12M</b> Bus terminal for connection of PROFIBUS stations up to 12 Mbit/s with plug-in cable  <b>„Communication with SIMATIC“ Manual</b> • German • English • French • Spanish • Italian	<b>6GK1 500-0AA10</b>   <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>

F) Subject to export regulations: AL: N and ECCN: 5A991

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# SIMATIC S7-400

## Racks

### Racks

#### Overview



- The basic mechanical framework of the SIMATIC S7-400/S7-400H
- For accommodating the modules, supplying them with operating voltage and connecting them via the backplane bus
- Several versions for configuring central controllers and expansion racks

#### UR1 (universal rack)

- For configuring central controllers and expansion units
- For up to 18 modules
- Also suitable for S7-400H

#### UR2 (universal rack)

- For configuring central controllers and expansion units
- For up to 9 modules
- Also suitable for S7-400H
- Also available in aluminum

#### CR2 (central rack)

- For configuring central controllers
- For up to 18 modules
- Segmented racks:  
For operating two independent S7-400 CPUs without S7-400 Multicomputing, but with communication between the CPUs via the backplane bus (C bus). Both CPUs can address local, separate I/O modules (segmented P bus).

#### CR3 (central rack)

- For configuring central controllers
- Optimized for decentralized automation tasks thanks to support of up to 4 modules

#### UR2-H

- For setting up a complete S7-400H system in a single mounting rack
- Also suitable for S7-400H:  
Operation of 2 separate CPUs with their own I/O (own P and C bus)
- Can also be used as expansion unit
- For up to 18 modules
- Also available in aluminum

#### ER1 (expansion rack)

- For cost-effective configuration of expansion units
- For up to 18 modules with restricted functionality
- Also suitable for S7-400H

#### ER2 (expansion rack)

- For cost-effective configuration of expansion units
- For up to 9 modules with restricted functionality
- Also suitable for S7-400H

#### Technical specifications

	6ES7 400-1TA01-0AA0	6ES7 400-1JA01-0AA0	6ES7 400-1JA11-0AA0	6ES7 401-2TA01-0AA0	6ES7 401-1DA01-0AA0
<b>Configuration</b>					
• Number of single-width slots, max.	18	9	9	18; 2 segments with 8 and 10 slots	4
<b>Racks</b>					
- C bus	Yes	Yes	Yes	Yes	Yes
- P bus	Yes	Yes	Yes	Yes	Yes
<b>Dimensions and weight</b>					
• Width	482.5 mm	257.5 mm	257.5 mm	482.5 mm	130 mm
• Height	290 mm	290 mm	290 mm	290 mm	290 mm
• Depth	27.5 mm	27.5 mm	27.5 mm	27.5 mm	27.5 mm
• Weight, approx.	4,200 g	2,200 g	1,500 g	4,200 g	750 g

## SIMATIC S7-400 Racks

Racks

### Technical specifications (continued)

	6ES7 400-2JA00-0AA0	6ES7 400-2JA10-0AA0	6ES7 403-1TA01-0AA0	6ES7 403-1JA01-0AA0
<b>Configuration</b>				
• Number of single-width slots, max.	18	18	18	9
<b>Racks</b>				
- C bus	Yes	Yes		
- P bus	Yes	Yes	Yes	Yes
<b>Dimensions and weight</b>				
• Width	482.5 mm	482.5 mm	482.5 mm	257.5 mm
• Height	290 mm	290 mm	290 mm	290 mm
• Depth	27.5 mm	27.5 mm	27.5 mm	27.5 mm
• Weight, approx.	4,200 g	3,000 g	4,200 g	2,200 g

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### Ordering data

Order No.	Order No.	Order No.
<b>UR1 rack</b> For central and expansion units, 18 slots	6ES7 400-1TA01-0AA0	<b>UR2-H rack</b> for segmented central units, 18 slots
<b>UR2 rack</b> For central and expansion units, 9 slots	6ES7 400-1JA01-0AA0	<b>UR2-H rack, aluminum version</b> for segmented central units, 18 slots
<b>UR2 rack, aluminum version</b> For central and expansion units, 9 slots	6ES7 400-1JA11-0AA0	<b>ER1 rack</b> for expansion units, I/O bus only, 18 slots
<b>CR1 rack</b> for segmented central units, 18 slots, 2 local segments	6ES7 401-2TA01-0AA0	<b>ER2 rack</b> for expansion units, I/O bus only, 9 slots
<b>CR3 rack</b> For central and expansion units, 4 slots; optimized for distributed automation solutions	6ES7 401-1DA01-0AA0	<b>Slot cover</b> 10 units (spare part)
		6ES7 400-2JA00-0AA0
		6ES7 400-2JA10-0AA0
		6ES7 403-1TA01-0AA0
		6ES7 403-1JA01-0AA0
		6ES7 490-1AA00-0AA0

## SIMATIC S7-400 Power supplies

### Power supplies PS 405/PS 407

#### Overview



- Power supplies for the SIMATIC S7-400
- For conversion of AC or DC network voltages into the required 5 V and 24 V DC operating voltages
- Output current 4 A, 10 A and 20 A

#### Technical specifications

	6ES7 405-0DA01-0AA0	6ES7 405-0KA02-0AA0	6ES7 405-0KR00-0AA0	6ES7 405-0RA01-0AA0
<b>Power supply</b>				
• Line supply/voltage failure buffering	4.5 ms	20 ms	20 ms	20 ms
• Line supply/voltage failure buffering to comply with the NAMUR	No	Yes	Yes	Yes
Input voltage				
- Rated value, 24 V DC	Yes	Yes	Yes	Yes
- Rated value, 48 V DC		Yes	Yes	Yes
- Rated value, 60 V DC		Yes	Yes	Yes
- permissible range, lower limit (DC)	static 19.2 V dynamic 18.5 V		static 19.2 V dynamic 18.5 V	static 19.2 V dynamic 18.5 V
- permissible range, upper limit (DC)	static 30 V dynamic 30.2 V		static: 72 V dynamic 75.5 V	static: 72 V dynamic 75.5 V
Input current				
- Rated value at 24 V DC	2 A	4 A	4.5 A	7.3 A
- Rated value at 48 V DC		2 A	2.1 A	3.45 A
- Rated value at 60 V DC		1.6 A	1.7 A	2.75 A
- Inrush current, max.	27 A	18 A	18 A	56 A
Output voltage				
- Rated value, 5 V DC	Yes	Yes	Yes	Yes
- Rated value, 24 V DC	Yes	Yes	Yes	Yes
Output current				
- for backplane bus (5 V DC), max.	4 A	10 A	10 A	20 A
- for backplane bus (24 V DC), max.	0.5 A	1 A	1 A	1 A
- Short-circuit protection	Yes	Yes	Yes	Yes
<b>Voltages and currents</b>				
• Power consumption, typical	48 W	95 W	104 W	175 W
<b>Current consumption</b>				
• Power dissipation, typical	16 W	20 W	29 W	51 W
Back-up battery				
- Backup battery (optional)	Yes	Yes	Yes	Yes
<b>Connection system</b>				
• Connecting cables/ cross-sections	3 x 1.5 mm <sup>2</sup> , solid or stranded wire, outer diameter 3 to 9 mm	3 x 1.5 mm <sup>2</sup> , solid or stranded wire, outer diameter 3 to 9 mm	3 x 1.5 mm <sup>2</sup> , solid or stranded wire, outer diameter 3 to 9 mm	3 x 1.5 mm <sup>2</sup> , solid or stranded wire, outer diameter 3 to 9 mm

## SIMATIC S7-400 Power supplies

### Power supplies PS 405/PS 407

#### Technical specifications (continued)

	6ES7 405-0DA01-0AA0	6ES7 405-0KA02-0AA0	6ES7 405-0KR00-0AA0	6ES7 405-0RA01-0AA0
<b>Potentials/ electrical isolation</b>				
• primary/secondary	Yes	Yes	Yes	Yes
<b>Environmental requirements</b>				
Degree of protection and class of protection				
- Protection class	1	1	1	1
<b>Standards, approvals, certification</b>				
• FM approval	Yes	Yes	Yes	Yes
<b>Dimensions and weight</b>				
• Width	25 mm	50 mm	50 mm	75 mm
• Height	290 mm	290 mm	290 mm	290 mm
• Depth	217 mm	217 mm	217 mm	217 mm
• Required slots	1	2	2	3
• Weight, approx.	800 g	1,200 g	1,360 g	2,200 g
	6ES7 407-0DA01-0AA0	6ES7 407-0KA01-0AA0	6ES7 407-0KR00-0AA0	6ES7 407-0RA01-0AA0
<b>Power supply</b>				
• Line supply/voltage failure buffering	4.5 ms; +/- 0.5 ms	20 ms	20 ms	20 ms
• Line supply/voltage failure buffering to comply with the NAMUR	No	Yes	Yes	Yes
<b>Input voltage</b>				
- Rated value, 110 V DC		Yes	Yes	Yes
- Rated value, 230 V DC		Yes	Yes	Yes
- permissible range, lower limit (DC)		88 V	88 V	88 V
- permissible range, upper limit (DC)		300 V	300 V	300 V
- Rated value, 120 V AC	Yes	Yes	Yes	Yes
- Rated value, 230 V AC	Yes	Yes	Yes	Yes
- permissible range, lower limit (AC)	85 to 170 V AC	85 V	85 V	85 V
- permissible range, upper limit (AC)	132 V AC and 264 V AC	264 V	264 V	264 V
• Line frequency				
- Rated value 50 Hz	Yes	Yes	Yes	Yes
- Rated value 60 Hz	Yes	Yes	Yes	Yes
- permissible range, lower limit	47 Hz	47 Hz	47 Hz	47 Hz
- permissible range, upper limit	63 Hz	63 Hz	63 Hz	63 Hz
<b>Input current</b>				
- Rated value at 110 V DC		1.2 A	1.2 A	1.5 A
- Rated value at 230 V DC		0.6 A	0.6 A	0.8 A
- Rated value at 120 V AC	0.55 A	1.2 A	1.2 A	1.5 A
- Rated value at 230 V AC	0.31 A	0.6 A	0.6 A	0.8 A
- Inrush current, max.	8.25 A; 15 x rated value input current	18 A; 15 x rated value input current	18 A; 15 x rated value input current	48 A; Half-value width 1.5 ms
<b>Output voltage</b>				
- Rated value, 5 V DC	Yes	Yes	Yes	Yes
- Rated value, 24 V DC	Yes	Yes	Yes	Yes
<b>Output current</b>				
- for backplane bus (5 V DC), max.	4 A; 100 mA base load required	10 A; 200 mA base load required	10 A; 200 mA base load required	20 A; 200 mA base load required
- for backplane bus (24 V DC), max.	0.5 A; idling-proof	1 A; idling-proof	1 A; idling-proof	1 A; idling-proof
- Short-circuit protection	Yes	Yes	Yes	Yes

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## SIMATIC S7-400 Power supplies

### Power supplies PS 405/PS 407

#### Technical specifications (continued)

	6ES7 407-0DA01-0AA0	6ES7 407-0KA01-0AA0	6ES7 407-0KR00-0AA0	6ES7 407-0RA01-0AA0
<b>Voltages and currents</b>				
• Power consumption, typical	46.5 W	105 W	97.5 W	168 W
<b>Current consumption</b>				
• Power dissipation, typical	13.9 W	29.7 W	22.4 W	44 W
Back-up battery				
- Backup battery (optional)	Yes; 1 x lithium AA; 3.6 V/1.9 Ah	Yes; 2 x lithium AA; 3.6 V/1.9 Ah	Yes; 2 x lithium AA; 3.6 V/1.9 Ah	Yes; 2 x lithium AA; 3.6 V/1.9 Ah
<b>Connection system</b>				
• Connecting cables/ cross-sections	3 x 1.5 mm <sup>2</sup> , solid or stranded wire, outer diameter 3 to 9 mm	3 x 1.5 mm <sup>2</sup> , solid or stranded wire, outer diameter 3 to 9 mm	3 x 1.5 mm <sup>2</sup> , solid or stranded wire, outer diameter 3 to 9 mm	3 x 1.5 mm <sup>2</sup> , solid or stranded wire, outer diameter 3 to 9 mm
<b>Potentials/ electrical isolation</b>				
• primary/secondary	Yes	Yes	Yes	Yes
<b>EMC</b>				
• Conform to syst. react. to IEC 61000-3-2, IEC 61000-3-3	No	Yes	Yes	Yes
<b>Environmental requirements</b>				
Degree of protection and class of protection				
- Protection class	1; with protective conductor	1; with protective conductor	1; with protective conductor	1; with protective conductor
<b>Standards, approvals, certification</b>				
• FM approval	Yes; up to 40°C: T4; up to 60°C: T3C	Yes; up to 40°C: T4	Yes; up to 40°C: T4	Yes; up to 40°C: T4
<b>Dimensions and weight</b>				
• Weight, approx.	800 g	1,360 g	1,360 g	2,200 g
• Width	25 mm	50 mm	50 mm	75 mm
• Height	290 mm	290 mm	290 mm	290 mm
• Depth	217 mm	217 mm	217 mm	217 mm
• Required slots	1	2	2	3

Ordering data	Order No.	Ordering data	Order No.
<b>PS 405 power supply modules</b> 24 V DC; 5 V DC, 24 V DC		<b>PS 407 power supply modules</b> 120/230 V AC; 5 V DC, 24 V DC	
4 A	6ES7 405-0DA01-0AA0	4 A	6ES7 407-0DA01-0AA0
10 A, wide range	6ES7 405-0KA02-0AA0	10 A	6ES7 407-0KA01-0AA0
10 A, redundant, wide range	6ES7 405-0KR00-0AA0	10 A, redundant	6ES7 407-0KR00-0AA0
20 A, wide range	6ES7 405-0RA01-0AA0	20 A	6ES7 407-0RA01-0AA0
<b>Power plug for PS 405</b>	6ES7 490-0AA00-0AA0	<b>Power plug for PS 407</b>	6ES7 490-0AB00-0AA0
Spare part		Spare part	
<b>Backup battery</b> Type AA, 1.9 Ah	6ES7 971-0BA00	<b>Backup battery</b> Type AA, 1.9 Ah	6ES7 971-0BA00

SIMATIC C7

# 6



6/2 **Control systems**  
6/2 C7-613  
6/7 C7-636 Touch



## SIMATIC C7 Control systems

C7-613

### Overview



- The low-cost entry point in the world of SIMATIC C7 control systems
- For all applications which require fast PLC performance and easy to use human-machine interface functionality
- With user-friendly, onboard I/O for space-saving implementation at the machine level
- Integrated technology functions for counting, frequency measurement and closed-loop control

*A micro memory card and connector set are required for C7 operation.*

### Technical specifications

	6ES7 613-1CA01-0AE3	6ES7 613-1CA01-0AE3
<b>Supply voltages</b>		
Rated value		
- 24 V DC	Yes	
- permissible range, lower limit (DC)	20.4 V	
- permissible range, upper limit (DC)	28.8 V	
<b>Current consumption</b>		
• Inrush current, max.	2 A	
• Current consumption, typical	350 mA	
Digital outputs		
• Power dissipation, typical	11 W	
<b>Memory/backup</b>		
Memory		
- Micro memory card	Yes	
• Working memory		
- integral	32 KByte; for program and data, less the display data	
- expandable	No	
• Load memory		
- pluggable (MMC)	Yes	
- pluggable (MMC), max.	8 MByte	
- expandable FEPRM	with Micro Memory Card (MMC)	
Backup		
- available	Yes	
- without battery	Yes	
<b>CPU/blocks</b>		
DB		
- Number, max.	127	
- Size, max.	16 KByte	
FB		
- Number, max.	128	
- Size, max.	16 KByte	
FC		
- Number, max.	128	
- Size, max.	16 KByte	
OB		
- Size, max.	16 KByte	
Nesting depth		
- per priority class	6	
- additional levels within an error OB	4	
<b>CPU/processing times</b>		
• for bit instruction, min.	0.1 µs	
• for bit instruction, max.	0.2 µs	
• for word instruction, min.	0.2 µs	
• for integer math, min.	2 µs	
• for floating-point math, min.	3 µs	
<b>Timers/counters and their retentive characteristics</b>		
S7 counter		
- Number	256	
• of which retentive without battery		
- adjustable	Yes	
- lower limit	0	
- upper limit	256	
• Counting range		
- lower limit	0	
- upper limit	999	
IEC counter		
- available	Yes	
- Type	SFB	
S7 timer		
- Number	256	
• of which retentive without battery		
- adjustable	Yes	
- lower limit	0	
- upper limit	256	
• Timing range		
- lower limit	10 ms	
- upper limit	9,990 s	
IEC timer		
- available	Yes	
- Type	SFB	

## SIMATIC C7 Control systems

C7-613

### Technical specifications (continued)

	6ES7 613-1CA01-0AE3	6ES7 613-1CA01-0AE3
<b>Data areas and their retentive characteristics</b>		
Flags		
- Number	256 Byte	
- adjustable retentivity	Yes	
<b>Address area</b>		
I/O address area		
- Inputs	1 KByte	
- Outputs	1 KByte	
Process image		
- Inputs	128 Byte	
- Outputs	128 Byte	
Digital channels		
- Inputs	992	
- Outputs	992	
Analog channels		
- Inputs	248	
- Outputs	124	
<b>Configuration</b>		
• Number of modules per system, max.	4	
Number of DP masters		
- integral	0	
- via CP	1	
Number of FMs and CPs that can be operated (recommendation)		
- FM	8	
- CP, point-to-point	4	
- CP, LAN	2	
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	
Run-time meter		
- Quantity	1	
Time synchronization		
- supported	Yes	
<b>S7 message functions</b>		
• Number of stations that can log on for message functions, max.	5	
<b>Communication functions</b>		
• Number of logical connections (including the network), max.	1	
• PG/OP communication	Yes	
Global data communication		
- Number of send GD packets, max.	4	
- Number of receive GD packets, max.	4	
- Size of GD packets, max.	22 Byte	
S7 basic communication		
- supported	Yes	
- User data per job	76 Byte	
S7 communication		
- supported	Yes	
- User data per job, max.	64 KByte	
Number of connections		
- overall	8	
- reserved for PG communication	1	
- customizable for PG communication, max.	7	
- reserved for OP communication	1	
- customizable for OP communication, max.	7	
- reserved for S7 basic communication	4	
- customizable for S7 basic communication, max.	4	
<b>Ist interface</b>		
• Isolated	No	
Functionality		
- MPI	Yes	
- DP master	No	
- DP slave	No	
MPI		
- Number of connections	8	
• Services		
- PG/OP communication	Yes	
- Global data communication	Yes	
- S7 basic communication	Yes	
- S7 communication	Yes	
- S7 communication, as client	No	
- S7 communication, as server	Yes	
- Transmission rates, max.	187.5 kBit/s	
<b>CPU/ programming</b>		
Programming language		
- KOP	Yes	
- FUP	Yes	
- AWL	Yes	
- SCL	Yes	
- CFC	Yes	
- GRAPH	Yes	
- HiGraph	Yes	
Software library		
• Bracket levels	8	
• User program protection/ password protection	Yes	

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# SIMATIC C7 Control systems

C7-613

## Technical specifications (continued)

	6ES7 613-1CA01-0AE3	6ES7 613-1CA01-0AE3
<b>Digital inputs</b>		
• Number of digital inputs	24	
Length of cable		
- Length of cable shielded, max.	1,000 m	
- Length of cable unshielded, max.	600 m	
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	8 mA	
Input delay (at rated value of the input voltage)		
• For standard inputs		
- Parameterizable	Yes	
• for counters/technological functions		
- at 0 to 1, max.	16 µs	
<b>Digital outputs</b>		
• Number of digital outputs	16	
• Length of cable shielded, max.	1,000 m	
• Length of cable unshielded, max.	600 m	
• Short-circuit protection of the output	Yes; clocking electronically	
• Limitation of voltage induced on circuit interruption to	L+ (-48 V)	
Output voltage		
- for 1 signal	L+ (-0.8 V)	
Output current		
- 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	
- for 1 signal minimum load current	5 mA	
- for 0 signal residual current, max.	0.5 mA	
Switching frequency		
- at resistive load, max.	100 Hz	
- at inductive load, max.	0.5 Hz	
Summation current of the outputs (per group)		
• horizontal mounting positions		
- up to 40 °C, max.	4,000 mA	
- up to 60 °C, max.	2,000 mA	
<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	
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		
- 0 to 600 ohms	Yes	
Input ranges (rated values), resistance thermometer		
- Pt 100	Yes	
<b>Analog outputs</b>		
• Number of analog outputs	2	
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	
<b>Analog value formation</b>		
Integration and conversion time/triggering per channel		
- with over-range (bits incl. sign), max	12 Bit	
- Integration time parameterizable	Yes; 2.5 / 16.6 / 20 ms	
- Conversion time (per channel)	1 ms	
<b>Sensor</b>		
Connectable encoders		
- 2-wire BEROs	Yes	
- permissible closed-circuit current (2-wire BEROs), max.	1.5 mA	
<b>Error/accuracies</b>		
Basic error limit (operational limit at 25 °C)		
- relative to the output range, voltage	+/- 0.7 %	
- relative to the output range, current	+/- 0.7 %	
- relative to the input range, voltage	+/- 0.7 %	
- relative to the input range, current	+/- 0.7 %	
- relative to the input range, resistance	+/- 3 %	
- relative to the input range, resistance thermometer	+/- 3 %	
<b>Integral functions</b>		
• Number of counters	3	
• Count frequency (counters) max.	30 kHz	
• Frequency measurement	Yes	
• PID controller	Yes	
• Number of pulse outputs	3	
• Cut-off frequency (pulse)	2.5 kHz	

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## SIMATIC C7 Control systems

C7-613

### Technical specifications (continued)

	6ES7 613-1CA01-0AE3		6ES7 613-1CA01-0AE3
<b>Operator control and monitoring</b>		<b>Environmental requirements</b>	
• Graphic objects	Yes	• Environmental conditions	Not suitable for outdoor use
• Info texts	Yes	Operating temperature	
• Messages	Yes	- 45 degree mounting, min.	0 °C
• Number of process pictures	128	- 45 degree mounting, max.	45 °C
• Number of variables per picture, max.	8	- vertical mounting, min.	0 °C
• Password protection	Yes	- vertical mounting, max.	50 °C
Keyboard		- horizontal mounting, min.	0 °C
- Number of operating cycle keys	1,000,000	- horizontal mounting, max.	40 °C
- Number of function keys	10	Air pressure	
- Number of softkey keys	4	- permissible range, min	795 hPa
Display		- permissible range, max	1,080 hPa
- Type	LCD backlit	Relative humidity	
- Number of lines	4	- Operation, min.	5%
- Number of characters per line	20	- Operation, max.	95%
- Background lighting MTBF (at 20°C)	100,000 h	Degree of protection and class of protection	
<b>Potentials/ electrical isolation</b>		- IP 20	Yes
Analog output functions		- IP 65	Yes
- Electrical isolation, analog output functions	Yes	<b>Dimensions and weight</b>	
Analog output functions		• Width	215 mm
- Electrical isolation, analog inputs	Yes	• Height	165 mm
Digital output functions		• Depth	79 mm
- between the channels	Yes	• Installation cutout, width	202 mm
- between the channels, in groups of	8	• Installation cutout, height	152 mm
Digital input functions		• Weight, approx.	1,350 g
- between the channels	Yes	<b>Online languages</b>	
- between the channels, in groups of	8; 16 and 8	• Number	3

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## SIMATIC C7 Control systems

C7-613

Ordering data	Order No.	Ordering data	Order No.
<b>C7-613 compact control unit</b> 32 KB working memory (PLC), 24 DI, 16 DO, 5 AI, 2 AO, integrated; backlit LC display (4-line, 20 chars/line; with mounting accessories	6ES7 613-1CA01-0AE3	<b>Accessories</b> <b>SIMATIC C7 Simulator</b> With integral 16 DI and 16 DO; with switches and LEDs for simulating 16 DIs and 16 DOs	6ES7 620-0AA00-4AA0
<b>Micro Memory Card</b> Essential for operation		<b>I/O set</b> For expanding the C7-613/ C7-635/C7-636 with max. 4 modules; mounted at rear of device	
64 KB	6ES7 953-8LF11-0AA0	For 2 modules, installed flat	6ES7 635-0AA00-6AA0
128 KB	6ES7 953-8LG11-0AA0	For 4 modules, installed vertically	6ES7 635-0AA00-6BA0
512 KB	6ES7 953-8LJ11-0AA0	<b>I/O expansion cable</b>	6ES7 635-0AA00-6CA0
2 MB	6ES7 953-8LL11-0AA0	For external expansion of the SIMATIC C7-613/C7-635/C7-636 with max. 4 modules; length 1,5 m	
4 MB	6ES7 953-8LM11-0AA0	<b>SIMATIC Manual Collection<sup>E)</sup></b>	6ES7 998-8XC01-8YE0
8 MB	6ES7 953-8LP11-0AA0	Electronic manuals on CD-ROM, multiple languages	
<b>Connector set</b> For I/O and power supply; Essential for operation		<b>SIMATIC Manual Collection update service for 1 year<sup>E)</sup></b>	6ES7 998-8XC01-8YE2
With screw-type terminals	6ES7 635-0AA00-4AA0	Up-to-date S7 Manual Collection CD as well as the three subsequent updates	
With spring-loaded terminals	6ES7 635-0AA00-4BA0	<b>Spare parts</b>	
<b>Configuration Tools for C7-613</b>	6ES7 613-0CA00-7AA0	<b>Service package</b>	6ES7 635-0AA00-3AA0
Standard function blocks for configuring the HMI functions; on CD-ROM		3 seals, 10 brackets, for all SIMATIC C7-613, C7-635 and C7-636	
<b>Manual package for C7-613</b>		<b>Ground rail</b>	6ES7 635-0AA00-6EA0
<b>C7-613 manual and S7-300 manual</b>		With shield terminals for analog I/O	
German	6ES7 613-1CA00-8AA0		
English	6ES7 613-1CA00-8BA0		
French	6ES7 613-1CA00-8CA0		
Spanish	6ES7 613-1CA00-8DA0		
Italian	6ES7 613-1CA00-8EA0		
<b>C7-613 manual</b>			
German	6ES7 613-1CA00-8AB0		
English	6ES7 613-1CA00-8BB0		
French	6ES7 613-1CA00-8CB0		
Spanish	6ES7 613-1CA00-8DB0		
Italian	6ES7 613-1CA00-8EB0		

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

## SIMATIC C7 Control systems

C7-636 Touch

### Overview



- Compact units for comprehensive applications
- 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
- C7-636 Touch: Pixel graphics 10" STN display, color (256 colors) with context-sensitive touch capability
- With integral I/O for use at machine level
- With integral PROFIBUS DP connection for distributed structures
- Graphical and color visualization and operator support for particularly user-friendly use

*For operation of the C7, a micro memory card and connector set are necessary.*

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### Technical specifications

	6ES7 636-2EB00-0AE3	6ES7 636-2EB00-0AE3
<b>Supply voltages</b>		
Rated value		
- 24 V DC	Yes	
- permissible range, lower limit (DC)	20.4 V	
- permissible range, upper limit (DC)	28.8 V	
<b>Current consumption</b>		
• Inrush current, max.	3 A	
• Current consumption, max.	1.5 A	
• Current consumption, typical	650 mA	
<b>Digital input</b>		
- from load voltage L+ (without load), max.	70 mA	
<b>Digital outputs</b>		
- from load voltage L+, max.	20 mA	
• Power dissipation, typical	24 W	
<b>Back-up battery</b>		
- Backup battery (optional)	Yes	
<b>Memory/backup</b>		
<b>Memory</b>		
- Micro memory card	Yes	
• Working memory		
- integral	128 KByte	
- expandable	No	
• Load memory		
- pluggable (MMC)	Yes	
- pluggable (MMC), max.	8 MByte	
• User memory		
- integral	2 MByte	
<b>Backup</b>		
- available	Yes	
- with battery	Yes	
- without battery	Yes	
<b>CPU/blocks</b>		
<b>DB</b>		
- Number, max.	1,023	
- Size, max.	16 KByte	
<b>FB</b>		
- Number, max.	2,048	
- Size, max.	16 KByte	
<b>FC</b>		
- Number, max.	2,048	
- Size, max.	16 KByte	
<b>OB</b>		
- Size, max.	16 KByte	
<b>Nesting depth</b>		
- per priority class	8	
- additional levels within an error OB	4	
<b>CPU/processing times</b>		
• for bit instruction, min.	0.1 µs	
• for word instruction, min.	0.2 µs	
• for integer math, min.	2 µs	
• for floating-point math, min.	3 µs	

## SIMATIC C7 Control systems

### C7-636 Touch

#### Technical specifications (continued)

	6ES7 636-2EB00-0AE3	6ES7 636-2EB00-0AE3
<b>Timers/counters and their retentive characteristics</b>		
S7 counter		Process image
- Number	256	- Inputs
• of which retentive without battery		- Outputs
- adjustable	Yes	128 Byte
- lower limit	0	128 Byte
- upper limit	256	Digital channels
• Retentivity		- integrated channels (DI)
- adjustable	Yes	- integrated channels (DO)
- preset	Z 0 to Z 7	- Inputs
• Counting range		- Outputs
- lower limit	0	- Inputs, of which central
- upper limit	999	- Outputs, of which central
IEC counter		992
- available	Yes	992
- Type	SFB	Analog channels
S7 times		- integrated channels (AI)
- Number	256	- integrated channels (AO)
• of which retentive without battery		- Inputs
- adjustable	Yes	- Outputs
- lower limit	0	- Inputs, of which central
- upper limit	256	- Outputs, of which central
• Retentivity		248
- adjustable	Yes	248
- preset	No retention	<b>Configuration</b>
• Timing range		• Number of modules per system, max.
- lower limit	10 ms	23
- upper limit	9,990 s	• Racks, max.
IEC timer		4
- available	Yes	• Modules per rack, max.
- Type	SFB	8
<b>Data areas and their retentive characteristics</b>		• Number of rows, max.
Flags		4
- Number	2,048 Byte	Number of DP masters
- adjustable retentivity	Yes	- integral
- preset retentivity	MB 0 to MB 15	- via CP
- Number of clock memories	8	1
Data blocks		1
- Number, max.	1,023	Number of FMs and CPs that can be operated (recommendation)
- Size, max.	16 KByte	- FM
Local data		- CP, point-to-point
- per priority class, max.	1,024 Byte	- CP, LAN
<b>Address area</b>		8
I/O address area		8
- Inputs	2 KByte	10
- Outputs	2 KByte	Expansion modules
		- Number of expansion modules, max.
		4
		<b>Time</b>
		Clock
		- Hardware clock (realtime clock)
		Yes
		- buffered
		Yes
		- Backup duration
		6 w
		- Deviation per day, max
		10 s
		Run-time meter
		- Quantity
		1
		- Granularity
		- retentive
		Yes
		Time synchronization
		- supported
		Yes
		- on MPI, master
		Yes
		- on MPI, slave
		Yes
		- in AS, master
		Yes

## SIMATIC C7 Control systems

C7-636 Touch

### Technical specifications (continued)

	6ES7 636-2EB00-0AE3	6ES7 636-2EB00-0AE3		
<b>S7 message functions</b>				
• Number of stations that can log on for message functions, max.	16	Number of connections		
• Process diagnostic messages	Yes	- overall		
• simultaneously active Alarm-S blocks, max.	40	- usable for PG communication		
<b>Test and startup functions</b>				
Status/modify		- reserved for PG communication		
- Variable	Yes	- Customizable for PG communication, min.		
- Variables	Inputs, outputs, flags, DB, timers, counters	- customizable for PG communication, max.		
- Number of variables, max.	30	- usable for OP communication		
- of which status variables, max.	30	- reserved for OP communication		
- of which modify variables, max.	14	- Customizable for OP communication, min.		
Forcing		- customizable for OP communication, max.		
- Forcing	Yes	- usable for S7 basic communication		
- Forcing, variables	Inputs, outputs	- reserved for S7 basic communication		
- Forcing, number of variables, max.	10	- Customizable for S7 basic communication, min.		
• Status block	Yes	- customizable for S7 basic communication, max.		
• Single step	Yes	<b>Interfaces</b>		
• Number of breakpoints	2	• Number of printer interfaces	1	
Diagnostic buffer		<b>1st interface</b>		
- available	Yes	• Type of interface	integrated RS 485 interface	
- Number of inputs, max.	100	• Physical	RS 485	
- adjustable	No	• Isolated	No	
<b>Communication functions</b>			• Power supply to interface (15 to 30 V DC), max.	200 mA
• PG/OP communication	Yes	Functionality		
Global data communication		- MPI	Yes	
- supported	Yes	- DP master	No	
- Number of GD packets, max.	8	- DP slave	No	
- Number of send GD packets, max.	8	MPI		
- Number of receive GD packets, max.	8	- Number of connections	16	
- Size of GD packets, max.	22 Byte	• Services		
- Size of GD packets (of which consistent), max.	22 Byte	- PG/OP communication	Yes	
S7 basic communication			- Routing	Yes
- supported	Yes	- Global data communication	Yes	
- User data per job	76 Byte	- S7 basic communication	Yes	
- User data per job (of which consistent), max.	76 Byte	- S7 communication	Yes	
S7 communication			- S7 communication, as client	Yes
- supported	Yes	- S7 communication, as server	Yes	
- as server	Yes	- Transmission rates, max.	187,5 kBit/s	
- as client	Yes	<b>2nd interface</b>		
- User data per job, max.	180 Byte	• Type of interface	integrated RS 485 interface	
- User data per job (of which consistent), max.	64 Byte	• Physical	RS 485	
S5 compatible communication			• Isolated	Yes
- supported	Yes	• Power supply to interface (15 to 30 V DC), max.	200 mA	
Standard communication			• Number of connection resources	16
- Supported	No			

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# SIMATIC C7 Control systems

## C7-636 Touch

### Technical specifications (continued)

	6ES7 636-2EB00-0AE3	6ES7 636-2EB00-0AE3
<b>Functionality</b>		
- MPI	No	Yes
- DP master	Yes	Yes
- DP slave	Yes	Yes
<b>DP master</b>		
- Number of connections, max.	16	Yes
- Number of connections (of which reserved), max.	1 for PG, 1 for OP	Yes
<b>Services</b>		
- PG/OP communication	Yes	Yes
- Routing	Yes	Yes
- Global data communication	No	Yes
- S7 basic communication	No	Yes
- S7 communication	No	Yes
- S7 communication, as client	No	Yes
- S7 communication, as server	No	Yes
- Equidistance support	Yes	Yes
- SYNC/FREEZE	Yes	Yes
- Activate/deactivate DP slaves	Yes	Yes
- Direct data exchange (lateral communication)	Yes	Yes
- Transmission rates, max.	12 Mbit/s	Yes
- Number of DP slaves, max.	125	Yes
<b>Address area</b>		
- Inputs, max.	244 Byte	Yes
- Outputs, max.	244 Byte	Yes
<b>DP slave</b>		
- Number of connections	16	Yes
<b>Services</b>		
- PG/OP communication	Yes	Yes
- Routing	Yes	Yes
- Global data communication	No	Yes
- S7 basic communication	No	Yes
- S7 communication	No	Yes
- Direct data exchange (lateral communication)	Yes	Yes
- DPV1	Yes	Yes
- Transmission rates, max.	12 Mbit/s	Yes
<b>Intermediate memory</b>		
- Inputs	244 Byte	Yes
- Outputs	244 Byte	Yes
- Address areas, max.	32	Yes
- User data per address area, max.	32 Byte	Yes
<b>CPU programming</b>		
<b>Configuration software</b>		
- STEP 7	Yes	Yes
- ProTool	Yes	Yes
- ProTool/Lite	Yes	Yes
- ProTool/Pro	Yes	Yes
<b>Programming language</b>		
- KOP	Yes	Yes
- FUP	Yes	Yes
- AWL	Yes	Yes
- SCL	Yes	Yes
- CFC	Yes	Yes
- GRAPH	Yes	Yes
- HiGraph	Yes	Yes
<b>Software library</b>		
• Bracket levels	8	Yes
• User program protection/ password protection	Yes	Yes
<b>Integrated inputs/outputs</b>		
<b>Default addresses of the integral</b>		
- Digital input	124.0 to 126.7	Yes
- Digital outputs	124.0 to 125.7	Yes
- Analog inputs	752	Yes
- Analog outputs	761	Yes
<b>Digital inputs</b>		
• Number of digital inputs	24	Yes
- which can be used as inputs for technological functions	16	Yes
<b>Number of inputs that can be driven in parallel</b>		
• vertical mounting positions	18	Yes
- up to 40°C		
• horizontal mounting positions	12	Yes
- up to 40°C		
<b>Length of cable</b>		
- Length of cable shielded, max	1,000 m	Yes
- Length of cable unshielded, max	600 m	Yes
• Technological function		
- shielded, max.	50 m	Yes
• Standard DI		
- shielded, max.	1,000 m	Yes
- unshielded, max.	600 m	Yes
• Input characteristic to comply with IEC 1131, Type 1	Yes	Yes
<b>Input voltage</b>		
- Rated value, DC	24 V	Yes
- for signal "1"	15 to 30 V	Yes
<b>Input current</b>		
- for 1 signal, typical	7 mA	Yes

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## SIMATIC C7 Control systems

C7-636 Touch

### Technical specifications (continued)

	6ES7 636-2EB00-0AE3	6ES7 636-2EB00-0AE3
Input delay (at rated value of the input voltage)		Load impedance range
• For standard inputs		- lower limit
- Parameterizable	Yes	48 Ω
- Rated value	3 ms	- upper limit
• for counters/technological functions		4 kΩ
- at 0 to 1, max.	8 μs	<b>Analog inputs</b>
<b>Digital outputs</b>		• Number of analog inputs
• Number of digital outputs	16	4
- of which fast outputs	4	• Number of analog inputs for voltage/current measurement
• Length of cable shielded, max.	1,000 m	4
• Length of cable unshielded, max.	600 m	• Number of analog inputs for resistance/temperature measurement
• Short-circuit protection of the output	Yes	1
- Response threshold, type.	1 A	• Length of cable shielded, max
• Lamp load, max.	5 W	100 m
• Driving a digital input	Yes	• Permiss. input voltage for voltage input (destr. limit), max.
Output voltage		30 V
- for 1 signal	L+ (-0.8 V)	• Permissible input voltage for the current input (destruction limit), max.
Output current		2.5 V
- for 1 signal rated value	0.5 A	• Perm. input voltage for the voltage input (destr. limit), max.
- permissible range for signal *1*, min.	5 mA	0.5 mA
- permissible range for signal *1*, max.	0.6 A	• Perm. input volt. for the current input (destr. lim.), max.
- for 1 signal permissible range for 0 to 40 °C, max.	0.5 A	50 mA
- for 1 signal permissible range for 40 to 60 °C, max.	0.5 A	• Technical unit for temperature measurement, adjustable
- for 1 signal minimum load current	5 mA	Yes
- for 0 signal residual current, max.	0.5 mA	Input ranges (rated values), voltages
Parallel switching of 2 outputs		- 0 to +10 V
- to increase power	No	Yes
- to redundantly drive a load	Yes	- -10 V to +10 V
Switching frequency		Yes
- at resistive load, max.	100 Hz	Input ranges (rated values), currents
- at inductive load, max.	0.5 Hz	- 0 to 20 mA
- at lamp load, max.	100 Hz	Yes
- of pulse outputs, at resistive load, max.	2.5 kHz	- -20 to +20 mA
Summation current of the outputs (per group)		Yes
• vertical mounting positions		Input ranges (rated values), resistances
- up to 40°C, max.	3 A	- Open-circuit voltage (DC), type
• horizontal mounting positions		2.5 V
- up to 40°C, max.	2 A	- Current measurement, type.
- up to 40 °C, max.	3 A	1.8 mA to 3.3 mA
- up to 60 °C, max.	2 A	- 0 to 600 ohms
		Yes
		Input ranges (rated values), resistance thermometer
		- Pt 100
		Yes
		Characteristic curve linearization
		- parameterizable
		Yes
		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

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# SIMATIC C7 Control systems

## C7-636 Touch

### Technical specifications (continued)

	6ES7 636-2EB00-0AE3	6ES7 636-2EB00-0AE3
<b>Output ranges, voltage</b>		<b>Error/accuracies</b>
- 0 to 10 V	Yes	Operational limit in the entire temperature range
- -10 to +10 V	Yes	- relative to the output range, voltage
<b>Output ranges, current</b>		- relative to the output range, current
- 0 to 20 mA	Yes	- relative to the input range, voltage
- -20 to +20 mA	Yes	- relative to the input range, current
- 4 to 20 mA	Yes	- relative to the input range, resistance
<b>Actuator connection</b>		<b>Basic error limit (operational limit at 25 °C)</b>
- for voltage output 2-wire connection	Yes	- relative to the output range, voltage
- for voltage output 4-wire connection	No	- relative to the output range, current
- for current output 2-wire connection	Yes	- relative to the input range, voltage
<b>Burden resistance (in the nominal output range)</b>		- relative to the input range, current
- at voltage outputs, min.	1 kΩ	- relative to the input range, resistance
- at voltage outputs, capacitive load, max.	0.1 μF	- relative to the input range, thermometer
- at current outputs, max.	300 Ω	Interference voltage suppression for $f = n \times (f_l \pm 1 \%)$
- at current outputs, inductive load, max.	0.1 mH	- Series-mode interference (peak value of interference < rated value)
<b>Dest. limit against voltages and currents applied from outside</b>		- Common-mode interference, min.
- Voltages at the outputs against $M_{ANA}$	16 V	<b>Integral functions</b>
- Current (DC), max.	50 mA	• Number of counters
<b>Analog value formation</b>		• Count frequency (counters) max.
<b>Integration and conversion time/trigging per channel</b>		• Frequency sensor
- with over-range (bits incl. sign), max	12 Bit	• Frequency measurement
- Integration time parameterizable	Yes	• Number of frequency sensors
- Permissible input frequency, max.	400 Hz	• Controlled positioning
- Conversion time (per channel)	1 ms	• Integrated function blocks (control)
- Response time of the input filter	0.38 ms	• PID controller
- Basic execution time of the module (all channels enabled)	1 ms	• Pulse outputs
<b>Settling time</b>		• Number of pulse outputs
- for resistive load	0.6 ms	• Cut-off frequency (pulse)
- for capacitive load	1 ms	<b>Status information/ interrupts/ diagnostics</b>
- for inductive load	0.5 ms	Interrupts
<b>Sensor</b>		- Interrupts
<b>Connectable encoders</b>		
- 2-wire Beros	Yes	
- permissible closed-circuit current (2-wire Beros), max.	1.5 mA	

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## SIMATIC C7 Control systems

C7-636 Touch

### Technical specifications (continued)

	6ES7 636-2EB00-0AE3	6ES7 636-2EB00-0AE3
Diagnostics		Digital input functions
- Diagnostic functions	No	- Electrical isolation, digital input functions
<b>Operator control and monitoring</b>		- between the channels
• Process pictures	Yes	- between the channels and the backplane bus
• Graphic objects	Yes	<b>Permissible potential difference</b>
• Text elements	Yes	• between different circuits
• Info texts	Yes	75 V DC / 60 V AC
• Messages	Yes	<b>Environmental requirements</b>
• Number of process pictures	300	• Environmental conditions
• Number of variables per picture, max.	200	Not suitable for outdoor use
• Number of variables in message text, max.	8	Operating temperature
• Password protection	Yes	- 45 degree mounting, min.
• Password levels	10	- 45 degree mounting, max.
Display		- vertical mounting, min.
- Background lighting MTBF (at 20°C)	60,000 h	- vertical mounting, max.
Resolution (pixels)		- horizontal mounting, min.
- Width	640	- horizontal mounting, max.
- Height	480	Air pressure
Event/alarm messages		- Operation, min.
- Event messages	Yes	- Operation, max.
- Alarm messages	Yes	- Storage/transportation, min.
Recipes		- Storage/transportation, max.
- Number, max.	300	- permissible range, min.
- Data records per recipe, max.	500	- permissible range, max.
- Entries per data record, max.	1,000	Relative humidity
<b>Insulation</b>		- Operation, min.
• Insulation tested with	500 V DC	- Operation, max.
<b>Potentials/ electrical isolation</b>		- Storage/transportation, max.
Analog output functions		Degree of protection and class of protection
- Electrical isolation, analog output functions	Yes	- IP 20
- between the channels	No	- IP 65
- between the channels and the backplane bus	Yes	<b>Dimensions and weight</b>
Analog input functions		• Width
- Electrical isolation, analog inputs	Yes	• Height
- between the channels	No	• Depth
- between the channels and the backplane bus	Yes	• Installation cutout, width
Digital output functions		• Installation cutout, height
- Electrical isolation, digital output functions	Yes	• Weight, approx.
- between the channels	Yes	<b>Software requirements</b>
- between the channels, in groups of	8	Operating system
- between the channels and the backplane bus	Yes	- Windows CE
		<b>Online languages</b>
		• Number

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## SIMATIC C7 Control systems

### C7-636 Touch

Ordering data	Order No.	Ordering data	Order No.
<b>Compact control system C7-636 Touch<sup>E)</sup></b> 128 KB RAM (PLC) 24 DI, 16 DO, 5 AI, 2 AO integrated; with integral touch panel; 2048 KB Flash EPROM for HMI data; 10" STN color display (320 x 240 pixels); with analog resistive touch; with mounting accessories	<b>6ES7 636-2EB00-0AE3</b>	<b>Accessories</b> <b>I/O set</b> For expanding the C7-613/ C7-635/ C7-636 with max. 4 modules; mounted on rear of device  For 2 modules, flat mounting For 4 modules, deep mounting  <b>I/O expansion cable</b> For external expansion of SIMATIC C7-613/-635/-636 by max. 4 modules; 1.5 m in length  <b>SIMATIC Manual Collection<sup>E)</sup></b> Electronic manuals on CD-ROM, multilingual  <b>SIMATIC Manual Collection update service for 1 year<sup>E)</sup></b> Current "S7 Manual Collection" CD and the three subsequent updates  <b>Protective film</b> To protect the touch screen against dirt and scratches; 10 items in packet; for SIMATIC C7-636 Touch	<b>6ES7 635-0AA00-6AA0</b> <b>6ES7 635-0AA00-6BA0</b> <b>6ES7 635-0AA00-6CA0</b> <b>6ES7 998-8XC01-8YE0</b> <b>6ES7 998-8XC01-8YE2</b> <b>6AV6 574-1AD00-4CX0</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>Spare parts</b> <b>Service pack</b> 3 seals, 10 holders and label strips for all SIMATIC C7-613, C7-635 Key, C7-635 Touch and C7-636 Key  <b>Service pack</b> Seal, 10 holders, for SIMATIC C7-636 Touch  <b>Grounding bar</b> with shield terminals for analog I/O	<b>6ES7 635-0AA00-3AA0</b> <b>6AV6 574-1AA00-2CX0</b> <b>6ES7 635-0AA00-6EA0</b>
<b>Connector set</b> For I/O and power supply; essential for operation  with screw terminals With spring clamps	<b>6ES7 635-0AA00-4AA0</b> <b>6ES7 635-0AA00-4BA0</b>		
<b>CF card, 16 MB<sup>A)</sup></b>	<b>6AV6 574-2AC00-2AA0</b>		
<b>Manual pack for C7-636</b> C7-636 manual, S7-300 documentation pack and OP 270B equipment 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>		

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

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

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

## SIMATIC Industrial Software

# 7



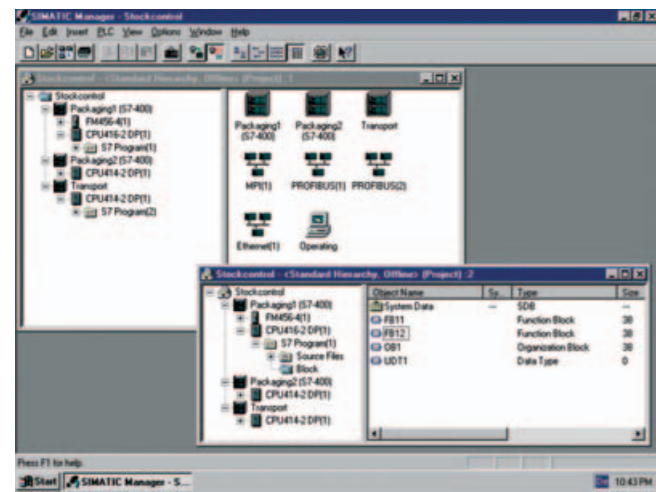
<b>7/2</b>	<b>Standard Tools</b>
7/2	STEP 7
7/4	STEP 7 Professional
<b>7/5</b>	<b>Engineering Tools</b>
7/5	CFC
7/6	S7-PDIAG
7/7	D7-SYS
7/8	Engineering package Drive ES
7/9	Distributed Safety Software
7/10	Version cross-checker
7/11	SIMATIC PDM
<b>7/13</b>	<b>Runtime Software</b>
7/13	PRODAVE MPI
<b>7/14</b>	<b>HMI software</b>
7/14	SIMATIC ProTool/Lite and SIMATIC ProTool
7/16	SIMATIC ProTool/Pro
7/19	SIMATIC WinCC flexible ES
7/21	WinCC flexible /ChangeControl
7/22	SIMATIC WinCC flexible RT
7/24	SIMATIC WinCC
<b>7/29</b>	<b>Supplementary Components</b>
7/29	ADDM – Data Management



## SIMATIC Industrial Software Standard Tools

### STEP 7

#### 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 functions

#### Ordering data

Ordering data	Order No.	Ordering data	Order No.
<b>STEP 7 Version 5.3</b> <i>Target system:</i> SIMATIC S7-300/400, SIMATIC C7, SIMATIC WinAC <i>Requirements:</i> Windows 2000 Prof./XP Prof. <i>Delivery package:</i> German, English, French, Spanish, Italian; incl. 3.5" authorization diskette, without documentation Floating license on CD Rental license for 50 hours Software Update Service on CD Upgrade Floating License from 3.x/4.x/5.x to V5.3; on CD Powerpack STEP 7 Lite V2.0 to STEP 7 V5.3; Floating license on CD Trial License STEP 7 V5.3; on CD, runs for 14 days	<b>6ES7 810-4CC07-0YA5</b> <b>6ES7 810-4CC07-0YA6</b> <b>6ES7 810-4BC01-0YX2</b> <b>6ES7 810-4CC07-0YE5</b> <b>6ES7 810-4CC07-0YC5</b> <b>6ES7 810-4CC07-0YA7</b>	<b>STEP 7 Version 5.3, Chinese</b> <i>Target system:</i> SIMATIC S7-300/400, SIMATIC C7, SIMATIC WinAC <i>Requirements:</i> Windows XP Professional Chinese <i>Delivery package:</i> English, Chinese; incl. 3.5" authorization disk, without documentation Floating license, Chinese, on CD Rental license for 50 hours Upgrade Floating License Chinese from 3.x/4.x/5.x to V5.3; on CD <b>Documentation package</b> <b>STEP 7 basic information</b> Comprising Getting Started, hardware configuration manual, programming manual, migration manual German English French Spanish Italian <b>STEP 7 reference manual</b> Consisting of STL, LAD and FBD manuals as well as a reference manual for standard and system functions for SIMATIC S7-300/400 German English French Spanish Italian	<b>6ES7 810-4CC07-0KA5</b> <b>6ES7 810-4CC07-0KA6</b> <b>6ES7 810-4CC07-0KE5</b> <b>6ES7 810-4CA07-8AW0</b> <b>6ES7 810-4CA07-8BW0</b> <b>6ES7 810-4CA07-8CW0</b> <b>6ES7 810-4CA07-8DW0</b> <b>6ES7 810-4CA07-8EW0</b> <b>6ES7 810-4CA07-8AW1</b> <b>6ES7 810-4CA07-8BW1</b> <b>6ES7 810-4CA07-8CW1</b> <b>6ES7 810-4CA07-8DW1</b> <b>6ES7 810-4CA07-8EW1</b>
<b>STEP 7 Version 5.3 Japanese</b> <i>Target system:</i> SIMATIC S7-300/400, SIMATIC C7, SIMATIC WinAC <i>Requirements:</i> Windows XP Professional Japanese <i>Delivery package:</i> English, Japanese; incl. 3.5" automation disk, without documentation Floating license, Japanese, on CD Rental license for 50 hours Upgrade Floating License, Japanese, from 3.x/4.x/5.x to V5.3; on CD	<b>6ES7 810-4CC07-0JA5</b> <b>6ES7 810-4CC07-0JA6</b> <b>6ES7 810-4CC07-0JE5</b>		

## SIMATIC Industrial Software Standard Tools

STEP 7

Ordering data	Order No.	Ordering data	Order No.
<b>SIMATIC Manual Collection<sup>E)</sup></b> Electronic manuals on CD-ROM, five 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	<b>Components for connecting a PC to MPI and PROFIBUS</b> • For PCs with a free PCI slot: <b>CP 5611<sup>A)</sup></b> <b>CP 5611 MPI<sup>A)</sup></b> incl. MPI cable (5 m)	<b>6GK1 561-1AA01</b> <b>6GK1 561-1AM01</b>
<b>SIMATIC Manual Collection update service for 1 year<sup>A)</sup></b> Current "Manual Collection" CD and the three subsequent updates	6ES7 998-8XC01-8YE2	• For PCs with a free PCMCIA slot: <b>CP 5512</b> For Windows XP Professional	6GK1 551-2AA00
<b>EPROM programming device, USB prommer</b> For programming SIMATIC memory cards and EPROM modules	6ES7 792-0AA00-0XA0	• For PCs without a free PCI slot: <b>PC adapter USB</b> For connecting a PC to S7-300/S7-400/C7 through a USB interface; with USB cable (5 m)	6ES7 972-0CB20-0XA0
<b>MPI cable</b> For linking SIMATIC S7 and CP through MPI (5 m)	6ES7 901-0BF00-0AA0	<b>Components for connecting the PC to Industrial Ethernet</b> • For PCs with a free PCI slot: <b>CP 1612<sup>A)</sup></b> • For PCs with a free PCMCIA slot: <b>SOFTNET-PG V6.2</b>	<b>6GK1 161-2AA00</b> <b>6GK1 704-1PW62-3AA0</b>

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

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

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# SIMATIC Industrial Software Standard Tools

## 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-GRAPH, 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.	Ordering data	Order No.
<b>STEP 7 Professional Edition 2004</b> <i>Target system:</i> SIMATIC S7-300/-400, SIMATIC C7, SIMATIC WinAC <i>Prerequisite:</i> Windows 2000 Prof./XP Prof. <i>Type of delivery:</i> German, English, French, Spanish, Italian; incl. 3.5" automation disk, without documentation  Floating license Rental license for 50 hours Software update service Upgrade floating license on Edition 2004  Powerpack floating license for migrating from STEP 7 to STEP 7 Professional  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 810-5CC08-0YA6 6ES7 810-5CC04-0YE2 6ES7 810-5CC08-0YE5 6ES7 810-5CC08-0YC5 6ES7 810-5CC08-0YC5 6ES7 810-5CC08-0YA7	<b>SIMATIC Manual Collection<sup>E)</sup></b> Electronic manuals on CD-ROM, five 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>E)</sup></b> Current "Manual Collection" CD and the three subsequent updates  <b>EPROM programming device,                      USB prommer</b> For programming SIMATIC memory cards and EPROM modules  <b>MPI cable</b> For linking SIMATIC S7 and CP through MPI (5 m)  <b>Components for connecting a PC to MPI and PROFIBUS</b> • For PCs with a free PCI slot:  <b>CP 5611<sup>A)</sup></b> <b>CP 5611 MPI<sup>A)</sup></b> incl. MPI cable (5 m) • For PCs with a free PCMCIA slot:  <b>CP 5512</b> For Windows XP Professional • For PCs without a free PCI slot:  <b>PC adapter USB</b> For connecting a PC to S7-300/S7-400/C7 through a USB interface, with USB cable (5 m)	6ES7 998-8XC01-8YE0  6ES7 998-8XC01-8YE2  6ES7 792-0AA00-0XA0  6ES7 901-0BF00-0AA0  6GK1 561-1AA01 6GK1 561-1AM01  6GK1 551-2AA00  6ES7 972-0CB20-0XA0
<b>STEP 7 Basic Knowledge documentation package</b> consisting of Getting Started, Hardware Configuration Manual, Programming Manual, Conversion Manual  German English French Spanish Italian	6ES7 810-4CA07-8AW0 6ES7 810-4CA07-8BW0 6ES7 810-4CA07-8CW0 6ES7 810-4CA07-8DW0 6ES7 810-4CA07-8EW0	• For PCs with a free PCI slot:  <b>CP 1612<sup>A)</sup></b> • For PCs with a free PCMCIA slot:  <b>SOFTNET-PG V6.2</b>	6GK1 161-2AA00  6GK1 704-1PW62-3AA0
<b>STEP 7 reference manuals</b> consisting of STL, LAD and CSF manuals as well as a reference manual for standard and system functions for SIMATIC S7-300/ -400  German English French Spanish Italian	6ES7 810-4CA07-8AW1 6ES7 810-4CA07-8BW1 6ES7 810-4CA07-8CW1 6ES7 810-4CA07-8DW1 6ES7 810-4CA07-8EW1		

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

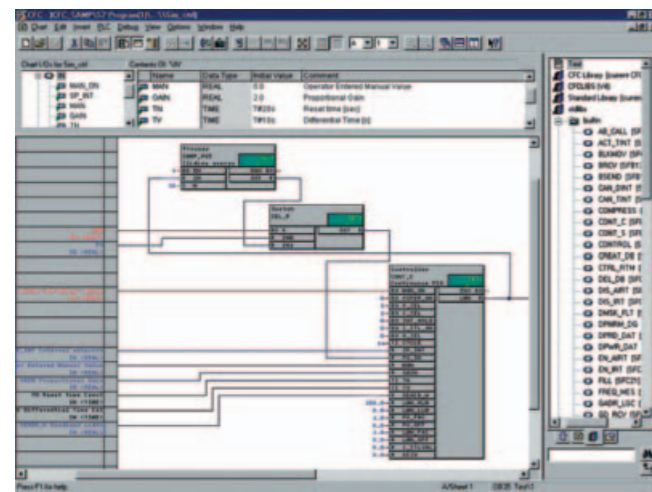
E) Subject to export regulations: AL: N and ECCN: 5D992B1



## SIMATIC Industrial Software Engineering Tools

CFC

### Overview



- 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

### Ordering data

Order No.
<b>SIMATIC S7 CFC, Version 6.1</b> <i>Task:</i> Graphic configuring and programming of automation applications in the form of technology-oriented diagrams <i>Target system:</i> SIMATIC S7-300/400, SIMATIC WinAC, D7-SYS <i>Requirements:</i> STEP 7 V5.3 and higher, also S7-SCL V5.1 SP3 and higher <i>Delivery form:</i> Engineering software and electronic documentation on CD-ROM, License Key Disk, Emergency Key Disk, Certificate of License, Terms and Conditions  Floating license Upgrade to floating license V6.1 Software Update Service
<b>6ES7 658-1EX16-2YA5</b>
<b>6ES7 658-1EX16-2YE5</b>
<b>6ES7 658-1EX00-2YL8</b>

Order No.
<b>SIMATIC Manual Collection<sup>E)</sup></b> Electronic manuals on CD-ROM, five 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>E)</sup></b> Current "Manual Collection" CD and the three subsequent updates
<b>6ES7 998-8XC01-8YE2</b>

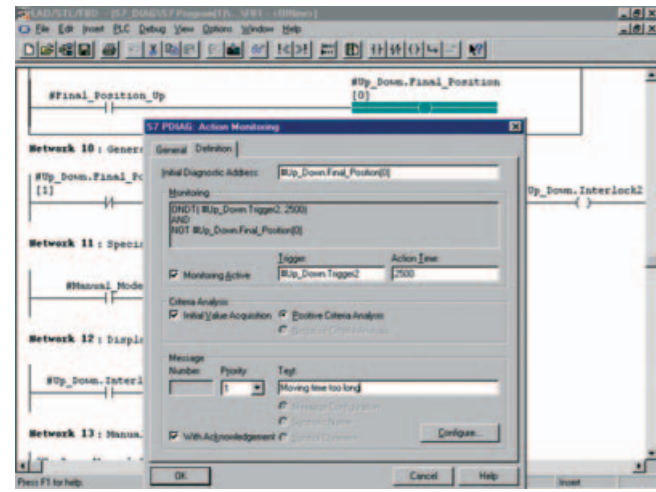
E) Subject to export regulations: AL: N and ECCN: 5D992B1

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# SIMATIC Industrial Software Engineering Tools

## S7-PDIAG

### 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

#### S7-PDIAG, Version 5.3

**Task:** Configuring of process diagnostics for LAD/FBD/STL  
**Target system:** SIMATIC S7-300 (CPU 314 and higher); SIMATIC S7-400

**Requirement:** STEP 7 V5.3 SP3 and higher

**Delivery package:** on CD; German, English, French, Spanish, Italian; incl. authorization diskette, with electronic documentation

Floating license **6ES7 840-0CC04-0YA5**

Software Update Service **6ES7 840-0CA01-0YX2**

Upgrade to V5.3 **6ES7 840-0CC04-0YE5**

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

### Order No.

### Order No.

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

Electronic manuals on CD-ROM, five 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>E)</sup>

Current "Manual Collection" CD and the three subsequent updates

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

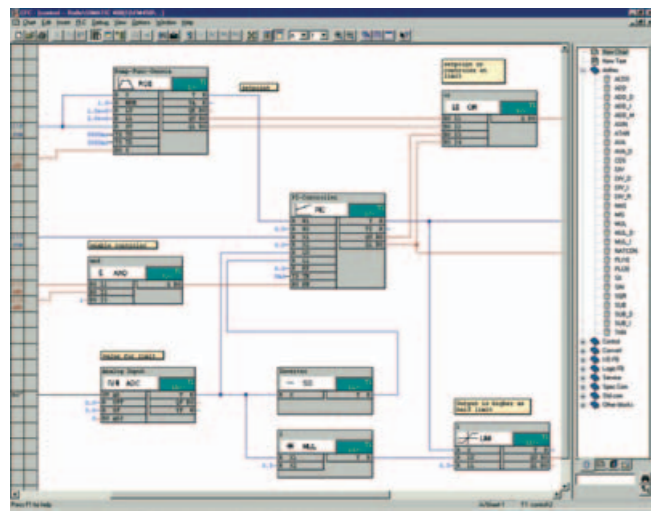
**6ES7 998-8XC01-8YE2**

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## SIMATIC Industrial Software Engineering Tools

D7-SYS

### 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

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Ordering data	Order No.	Ordering data	Order No.
<b>SIMATIC D7-SYS V6.2</b> <i>Task:</i> Function block library for configuring control and automation tasks <i>Target system:</i> SIMATIC S7-400/FM 458 <i>Requirements:</i> Windows 2000/XP <i>Delivery form:</i> On CD, English, German, with electronic documentation Floating license <sup>B)</sup> Upgrade license V5.x and higher <sup>B)</sup>	6ES7 852-0CC00-0YA5 6ES7 852-0CC00-0YE5	<b>SIMATIC D7 ES V6.2</b> Complete package comprising STEP 7, CFC and D7-SYS; executes under Windows 2000/XP Floating License <sup>B)</sup>	6ES7 852-2CC00-0YA5
<b>SIMATIC D7 SYS SFC V6.2</b> <i>Task:</i> Function block library for configuring control and automation tasks; incl. sequence generator <i>Target system:</i> SIMATIC S7-400/FM 458 <i>Requirements:</i> Windows 2000/XP <i>Delivery form:</i> On CD, English, German, with electronic documentation Floating License <sup>B)</sup> Upgrade license V6.x and higher <sup>B)</sup>	6ES7 852-1CC00-0YA5 6ES7 852-1CC00-0YE5	<b>SIMATIC D7 ES SFC V6.2</b> Complete package comprising STEP 7, CFC, D7-SYS and SFC; executes under Windows 2000/XP Floating License <sup>B)</sup>	6ES7 852-3CC00-0YA5
		<b>SIMATIC Manual Collection<sup>E)</sup></b> Electronic manuals on CD-ROM, five 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
		<b>SIMATIC Manual Collection update service for 1 year<sup>E)</sup></b> Current "Manual Collection" CD and the three subsequent updates	6ES7 998-8XC01-8YE2

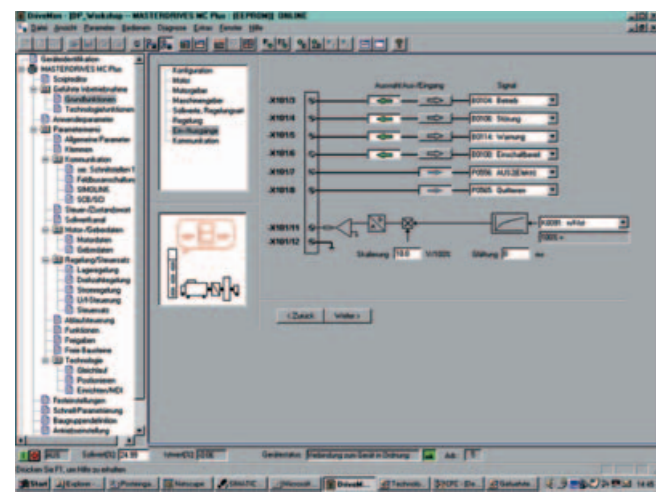
B) Subject to export regulations: AL: N and ECCN: EAR99S

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

# SIMATIC Industrial Software Engineering Tools

## Engineering package Drive ES

### 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 PCS 7 process control system.

### Ordering data

### Order No.

#### Drive ES Basic V5.3

- 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 V6.0

- 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 V6.0

**6SW1 700-6JB00-0AA0**

Upgrade from V5.x to V6.0

**6SW1 700-6JB00-0AA4**

#### Drive ES Basic V5.3

- 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 PCS7 V6.0

- Block library for PCS 7 for integration of drives

- Requirement: PCS 7 from V 6.0

- 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 700-6JD00-1AC0**

Update service for single license

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

Upgrade from V5.x to V6.x

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

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## SIMATIC Industrial Software Engineering Tools

### 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

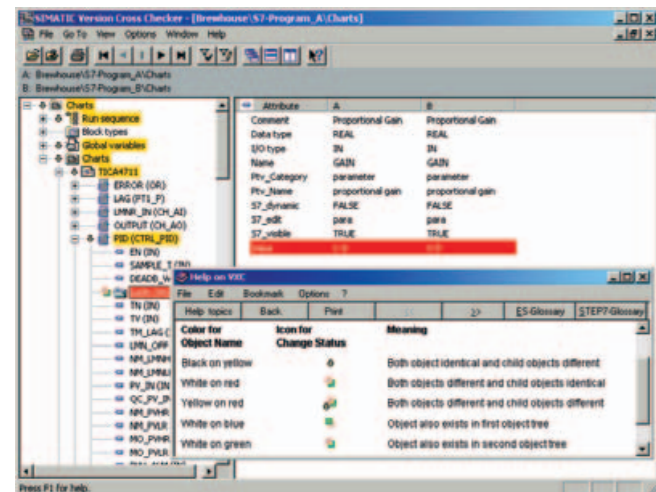
Order No.	Order No.
<b>Distributed Safety V5.3 programming tool</b> <i>Task:</i> Software for configuring fail-safe user programs for SIMATIC S7-300F, S7-400F, ET 200S <i>Requirement:</i> STEP 7 V5.3 SP1 or higher Floating license Software Update Service	<b>Distributed Safety V5.4 programming tool</b> <i>Task:</i> Software for configuring fail-safe user programs for SIMATIC S7-300F, S7-400F, ET 200S <i>Requirement:</i> STEP 7 V5.3 SP3 or higher Floating license Software Update Service
<b>6ES7 833-1FC01-0YA5</b> <b>6ES7 833-1FC00-0YX2</b>	<b>6ES7 833-1FC02-0YA5</b> <b>6ES7 833-1FC00-0YX2</b>
	<b>Distributed Safety Upgrade</b> From V5.x to V5.3: Floating license for 1 user From V5.x to V5.4: Floating license for 1 user
	<b>6ES7 833-1FC01-0YE5</b> <b>6ES7 833-1FC02-0YE5</b>

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# SIMATIC Industrial Software Engineering Tools

## Version cross-checker

### Overview



The version cross-checker tool determines the differences between various versions of a project by:

- Comparison of CFCs/SFCs, block types, signals and sequences in order to determine additional, missing or different objects
- Graphic display of comparison results in a combination of tree and tabular formats
- Color-coded identification of objects and attribute values

#### Upgrade from V6.0

For SIMATIC PCS 7 users, the engineering software upgrade package already includes an upgrade of the version cross-checker from V6.0 to V6.1.

A separate upgrade can be purchased for applications in which the version cross-checker is used outside SIMATIC PCS 7.

### Ordering data

**SIMATIC version cross-checker V6.1**  
3 languages (German, English, French), executes with Windows 2000 Professional or Windows XP Professional, floating license for 1 user  
Type of delivery: License key disk, certificate of license, terms and conditions

### Order No.

6ES7 658-1CX16-2YB5

**Upgrade of version cross-checker from V6.0 to V6.1**  
3 languages (German, English, French), executes with Windows 2000 Professional or Windows XP Professional, floating license for 1 user

### Order No.

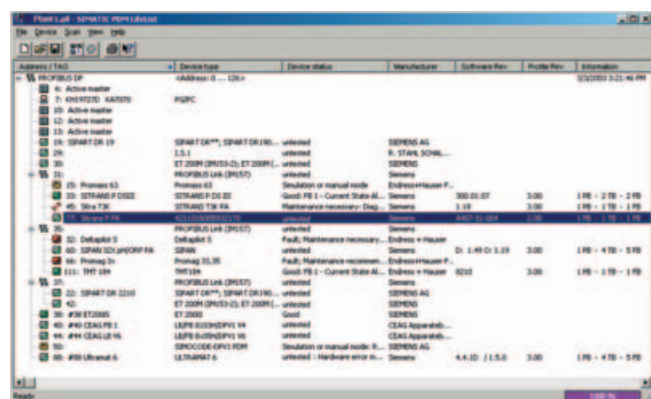
6ES7 658-1CX16-2YF5



## SIMATIC Industrial Software Engineering Tools

### SIMATIC PDM

#### Overview



PDM lifelist with status and diagnostics display

SIMATIC PDM (Process Device Manager) is a universal, vendor-independent tool for the configuration, parameterization, commissioning, diagnosis and servicing of intelligent field devices (sensors and actuators) and field components (remote I/Os, multiplexers, control-room devices, compact controllers), which in the following sections will be referred to simply as devices. Using one software, SIMATIC PDM enables the processing of more than 1,000 devices from Siemens and over 100 vendors worldwide on one homogeneous user interface.

With respect to device integration, SIMATIC PDM is the most powerful device manager available on the world market. Devices which previously were not supported can be easily integrated in SIMATIC PDM at any time by importing their device descriptions (EDD). This provides security for your investment and saves you investment costs, training expenses and consequential costs.

Parameters and functions for all supported devices are displayed in a consistent and uniform fashion independent of their communications interface.

SIMATIC PDM is integrated in the asset management of SIMATIC PCS 7. The Process Device Manager provides wider information for all devices described by the Electronic Device Description (EDD), e.g. detailed diagnostics information (vendor information, information on fault diagnostics and troubleshooting, further documentation), modification logbook (audit trail), parameter information. You can change directly to SIMATIC PDM from the diagnostics faceplates in the maintenance station.

SIMATIC PDM can be used either integrated in a SIMATIC PCS 7/S7 configuration environment, as a mobile servicing tool on a computer with connection to PROFIBUS, or directly on the device.

#### Technical specifications

Requirements for stand-alone operation	
Hardware	<ul style="list-style-type: none"> <li>• PG/PC/notebook with processor in accordance with the operating system requirements</li> <li>• 256 MB main memory or more</li> <li>• 210 MB free memory on hard disk or more</li> </ul>
Operating system (alternative)	<ul style="list-style-type: none"> <li>• Microsoft Windows 2000 Professional with SP1 or higher</li> <li>• Microsoft Windows XP Professional SP1</li> </ul>
Further software components	<ul style="list-style-type: none"> <li>• SIMATIC PDM integrated in STEP 7</li> </ul>
	STEP 7 V5.1 or higher with Service Pack 6 or higher, to be ordered separately

#### Ordering data

#### Order No.

##### *SIMATIC PDM Single Point*

**SIMATIC PDM Single Point V6.0**  
For operation and parameterization of one field device, communication using PROFIBUS DP/PA or HART modem, incl. 1 TAG  
Cannot be expanded by further functions or TAG option/Power-Pack

5 languages (German, English, French, Spanish, Italian), executes with Windows 2000 Professional or Windows XP Professional  
Floating license for 1 user

**6ES7 658-3HX06-0YA5**

##### *SIMATIC PDM Basic*

**SIMATIC PDM Basic V6.0**  
For operation and parameterization of field devices and components, communication using PROFIBUS DP/PA, HART modem/interface, RS 232, Modbus, SIREC bus, SIPART DR, incl. 4 TAGs

5 languages (German, English, French, Spanish, Italian), executes with Windows 2000 Professional or Windows XP Professional

- Floating license for 1 user
- Rental license for 50 hours

**6ES7 658-3AX06-0YA5**

**6ES7 658-3AX06-0YA6**

##### *Functional options for SIMATIC PDM V6.0*

##### **Integration in STEP 7 / SIMATIC PCS 7**

Only required if it is intended to use the integration of SIMATIC PDM in HW Config

5 languages (German, English, French, Spanish, Italian), executes with Windows 2000 Professional or Windows XP Professional

- Floating license for 1 user
- Rental license for 50 hours

**6ES7 658-3BX06-2YB5**

**6ES7 658-3BX06-2YB6**

##### **Routing through S7-400**

5 languages (German, English, French, Spanish, Italian), executes with Windows 2000 Professional or Windows XP Professional

- Floating license for 1 user
- Rental license for 50 hours

**6ES7 658-3CX06-2YB5**

**6ES7 658-3CX06-2YB6**

##### **Communication through standard HART multiplexer**

5 languages (German, English, French, Spanish, Italian), executes with Windows 2000 Professional or Windows XP Professional

- Floating license for 1 user
- Rental license for 50 hours

**6ES7 658-3EX06-2YB5**

**6ES7 658-3EX06-2YB6**

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# SIMATIC Industrial Software Engineering Tools

## SIMATIC PDM

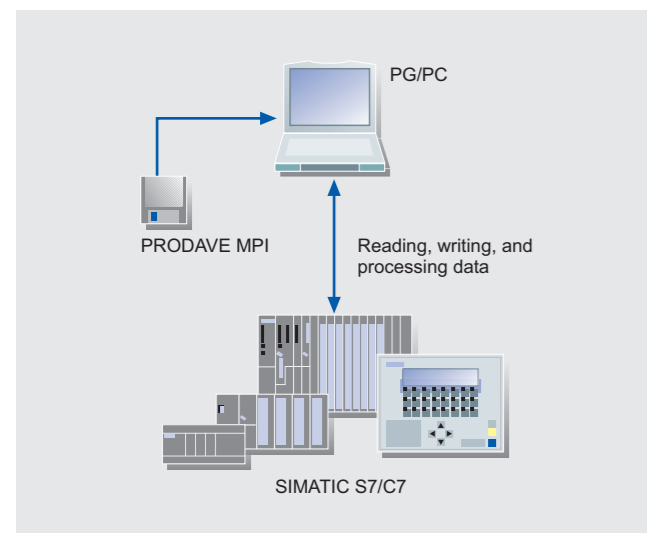
Ordering data	Order No.	Ordering data	Order No.
<p><b>TAG options/PowerPacks</b></p> <p><b>SIMATIC PDM TAG option</b> For TAG expansion, additive to SIMATIC PDM Basic V6.0</p> <p>5 languages (German, English, French, Spanish, Italian), executes with Windows 2000 Professional or Windows XP Professional Floating license for 1 user</p> <ul style="list-style-type: none"> <li>• Up to 128 TAGs</li> <li>• Up to 512 TAGs</li> <li>• Up to 1,024 TAGs</li> <li>• Up to 2,048 TAGs</li> </ul> <p>Rental license for 50 hours</p> <ul style="list-style-type: none"> <li>• Up to 512 TAGs</li> </ul>	<p><b>6ES7 658-3XA06-2YB5</b></p> <p><b>6ES7 658-3XB06-2YB5</b></p> <p><b>6ES7 658-3XC06-2YB5</b></p> <p><b>6ES7 658-3XD06-2YB5</b></p> <p><b>6ES7 658-3XB06-2YB6</b></p>	<p><b>SIMATIC PDM S7 V6.0</b> Complete package for use in a SIMATIC S7 configuration environment, with</p> <ul style="list-style-type: none"> <li>• SIMATIC PDM Basic V6.0</li> <li>• Option "Integration in STEP 7/PCS 7"</li> <li>• Option "128 TAGs"</li> </ul> <p>5 languages (German, English, French, Italian and Spanish), executes with Windows 2000 Professional or Windows XP Professional, floating license for 1 user</p>	<p><b>6ES7 658-3KX06-0YA5</b></p>
<p><b>SIMATIC PDM PowerPack</b> For subsequent TAG expansion of all SIMATIC PDM product configurations V6.0</p> <p>5 languages (German, English, French, Spanish, Italian), executes with Windows 2000 Professional or Windows XP Professional Floating license for 1 user</p> <ul style="list-style-type: none"> <li>• From 128 TAGs to 512 TAGs</li> <li>• From 512 TAGs to 1,024 TAGs</li> <li>• From 1,024 TAGs to 2,048 TAGs</li> <li>• From 2,048 TAGs to TAGs unlimited</li> </ul>	<p><b>6ES7 658-3XB06-2YD5</b></p> <p><b>6ES7 658-3XC06-2YD5</b></p> <p><b>6ES7 658-3XD06-2YD5</b></p> <p><b>6ES7 658-3XH06-2YD5</b></p>	<p><b>SIMATIC PDM PCS 7 V6.0</b> Complete package for integration in the engineering toolset of the SIMATIC PCS 7 engineering system</p> <p>Floating license for 1 user, with</p> <ul style="list-style-type: none"> <li>• SIMATIC PDM Basic</li> <li>• Option "Integration in STEP 7/PCS 7"</li> <li>• Option "Routing through S7-400"</li> <li>• Option "128 TAGs"</li> </ul> <p>5 languages (German, English, French, Spanish, Italian), executes with Windows 2000 Professional or Windows XP Professional</p>	<p><b>6ES7 658-3LX06-0YA5</b></p>
<p><b>Predefined SIMATIC PDM V6.0 product configurations for special applications</b></p> <p><b>SIMATIC PDM Service V6.0</b> Complete package for stand-alone users in servicing, with</p> <ul style="list-style-type: none"> <li>• SIMATIC PDM Basic V6.0</li> <li>• Option "128 TAGs"</li> </ul> <p>5 languages (German, English, French, Italian and Spanish), executes with Windows 2000 Professional or Windows XP Professional, floating license for 1 user</p>	<p><b>6ES7 658-3JX06-0YA5</b></p>	<p><b>Demo software</b></p> <p><b>SIMATIC PDM Demo V6.0</b> Without online communication and save functionality</p> <p>5 languages (German, English, French, Spanish, Italian), executes with Windows 2000 Professional or Windows XP Professional</p>	<p><b>6ES7 658-3GX06-0YC8</b></p>
		<p><b>SIMATIC PDM upgrade/update service</b></p> <p><b>SIMATIC PDM Upgrade from V5.x to V6.0</b> For all product versions and combinations</p> <p>5 languages (German, English, French, Italian and Spanish), executes with Windows 2000 Professional or Windows XP Professional, floating license for 1 user</p>	<p><b>6ES7 651-5CX06-0YE5</b></p>
		<p><b>SIMATIC PDM Software Update Service</b> Subscription for 1 year with automatic extension</p> <p>Requirement: current software version</p>	<p><b>6ES7 658-3XX00-0YL8</b></p>

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# SIMATIC Industrial Software Runtime Software

## PRODAVE MPI

### 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

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Ordering data	Order No.	Ordering data	Order No.
<b>PRODAVE MPI/IE V6.0 for Windows 95/98/ME/NT 4.0/2000 Prof./XP Prof.</b> <i>Task:</i> Data link between PG/PC and SIMATIC S7/C7 with MPI (S7-200 with PPI) <i>Requirements:</i> Windows 2000 Prof./XP Prof.; CP 5611, integrated MPI or PC adapter <i>Delivery package:</i> CD incl. electr. documentation (German, English) Single license <sup>B)</sup>	<b>6ES7 807-4BA01-0YA0</b> <b>6ES7 807-4BA01-0YA1</b>	<b>SIMATIC Manual Collection<sup>E)</sup></b> Electronic manuals on CD-ROM, five 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>E)</sup></b> Current "Manual Collection" CD and the three subsequent updates	<b>6ES7 998-8XC01-8YE0</b> <b>6ES7 998-8XC01-8YE2</b>
<b>PRODAVE MPI Mini V6.0 for Windows 95/98/ME/NT 4.0/2000 Prof./XP Prof.</b> <i>Task:</i> Data link between PG/PC and SIMATIC S7/C7 over MPI (S7-200 over PPI); with reduced functional scope) <i>Requirements:</i> Windows 95/98/ME/NT 4.0/2000 Prof./XP Prof.; CP 5611, integrated MPI or PC adapter <i>Delivery package:</i> CD incl. electr. documentation (German, English) Single license <sup>B)</sup>	<b>6ES7 807-3BA01-0YA0</b> <b>6ES7 807-3BA01-0YA1</b>		

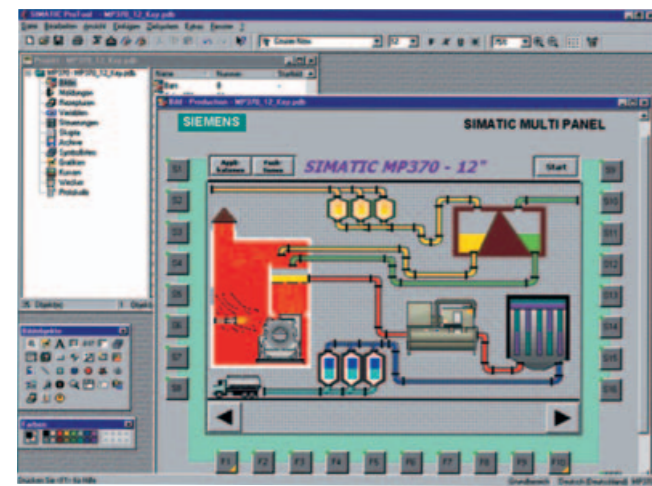
B) Subject to export regulations: AL: N and ECCN: EAR99S

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

# SIMATIC Industrial Software HMI software

## SIMATIC ProTool/Lite and SIMATIC ProTool

### Overview



- Uniform **configuring software** for SIMATIC Operator Panels as well as for the HMI part of SIMATIC C7
- Executable under Windows 98 SE/ME and Windows NT 4.0/2000/XP Professional
- Current versions:
  - SIMATIC ProTool/Lite V6.0 + SP3
  - SIMATIC ProTool V6.0 + SP3

Ordering data	Order No.
<b>Configuring software</b> <b>SIMATIC ProTool V6.0 + SP3</b> including ProAgent V6.0 + SP3 <sup>1)E)</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 581-3BX06-0DX0
<b>Configuring software</b> <b>SIMATIC ProTool/Lite V6.0 + SP3<sup>E)</sup></b>  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 580-3BX06-0DX0
<b>Powerpack</b> • ProTool/Lite to ProTool V6.0 + SP3 <sup>E)</sup>	6AV6 571-3AB06-0DX0
<b>Upgrade</b> • ProTool/Lite to ProTool/Lite V6.0 + SP3 <sup>E)</sup> • ProTool to ProTool V6.0 + SP3 <sup>E)</sup>	6AV6 580-3BX06-0DX4 6AV6 581-3BX06-0DX4

Documentation	Order No.
<b>ProTool user manual, configuring line-oriented displays</b> • 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
<b>ProTool user manual, configuring graphic displays</b> • 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
<b>ProTool user manual, configuring Windows-based systems</b> • 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

1) Runtime licenses for ProAgent must be ordered separately  
 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/Lite package.  
 The contract is automatically extended by a further year unless canceled up to 12 weeks prior to expiry.

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

## SIMATIC Industrial Software HMI software

### SIMATIC ProTool/Lite and SIMATIC ProTool

Ordering data	Order No.	Ordering data	Order No.
<i>Dokumentation</i>			
<b>Communication manual</b> Description of TD/OP/TP connection to the controller <ul style="list-style-type: none"> <li>• German</li> <li>• English</li> <li>• French</li> <li>• Italian</li> <li>• Spanish</li> </ul>	6AV3 991-1BC05-1AA0 6AV3 991-1BC05-1AB0 6AV3 991-1BC05-1AC0 6AV3 991-1BC05-1AD0 6AV3 991-1BC05-1AE0	<b>SIMATIC HMI Manual Collection<sup>B)</sup></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
<b>Communication manual</b> Description of connection of Windows-based systems to the controller <ul style="list-style-type: none"> <li>• German</li> <li>• English</li> <li>• French</li> <li>• Italian</li> <li>• Spanish</li> </ul>	6AV6 596-1MA06-0AA0 6AV6 596-1MA06-0AB0 6AV6 596-1MA06-0AC0 6AV6 596-1MA06-0AD0 6AV6 596-1MA06-0AE0		

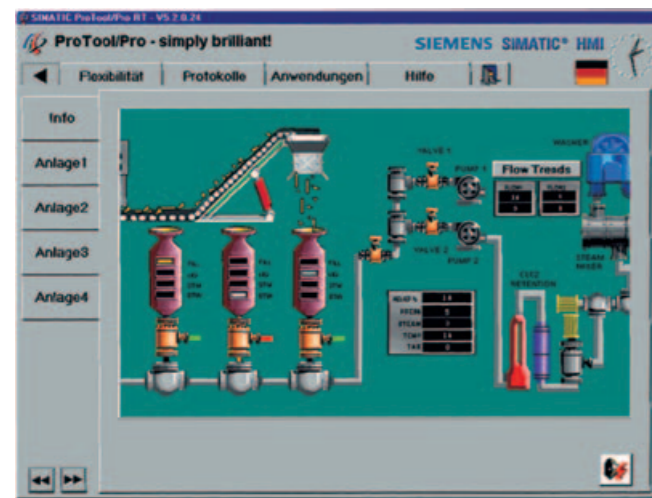
B) Subject to export regulations: AL: N and ECCN: EAR99S

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# SIMATIC Industrial Software HMI software

## SIMATIC ProTool/Pro

### Overview



- **PC-based HMI solution** for single-user systems directly at the machine
- SIMATIC ProTool/Pro comprises:
  - SIMATIC ProTool/Pro RT runtime software for PC-based systems
  - SIMATIC ProTool/Pro Configuration (CS) configuration software for configuring PC-based systems as well as for configuring SIMATIC Operator Panels
- Executable under Windows 98 SE/ME and Windows NT4.0/2000/XP Professional
- **Current version:**
  - SIMATIC ProTool/Pro Configuration V6.0 + SP3
  - SIMATIC ProTool/Pro Runtime V6.0 + SP3

### Technical specifications

Type	SIMATIC ProTool/Pro Runtime	Type	SIMATIC ProTool/Pro Runtime
<b>Operating system</b>	The specifications are maximum values MS Windows 98 SE/ME (ME not for ASIA version), MS Windows NT 4.0/2000/XP Professional	<b>Variables</b>	2048 <sup>3)</sup>
<b>Messages</b>	4000	<b>Password protection</b>	
• Message text (number of characters)	70	• Password levels	10 (0 ... 9)
• Message buffer size	1024	• Number of passwords	50
• Pending message events	500	<b>Visual Basic scripts</b>	50
<b>Archives (number)</b>	100	• Number of lines	100
• Archivable data	Process values (max. 100), messages	<b>Online languages, max.</b>	5
• Max. number of entries per archive (incl. sequential archive)	500,000	<b>Communication</b>	
• Archive types	Short-term archives, sequential archives (max. 40 per archive)	SIMATIC S7 MPI interface/ PROFIBUS DP interface	
• Data storage format	CSV (Comma Separated Variable) and interfacing to ODBC database (database not included in scope of supply)	• Number of connectable partners, max.	ProTool/Pro permits up to 8 connections, depending on the scope of configuration (communication)
<b>Recipes</b>	1000	SIMATIC S7 PPI interface	
• Entries per recipe	2000 <sup>3)</sup>	• Number of connectable partners, max.	1 for ProTool/Pro
• Data records	5000 <sup>2)</sup>	SIMATIC S5 loop-through arrangement	No
<b>Diagrams</b>	300	SIMATIC S5 PROFIBUS DP interface,	
• Fields per diagram	400	• Number of connectable partners, max.	1 for ProTool/Pro
• 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

# SIMATIC Industrial Software

## HMI software

### SIMATIC ProTool/Pro

Ordering data	Order No.	Order No.
<b>SIMATIC ProTool/Pro Configuration V6.0 + SP3 incl. ProAgent V6.0 + SP3<sup>3)</sup></b> Language versions: G/E/F/I/S on CD-ROM, containing: • ProTool/Pro Configuration (CS) V6.0 + SP3 • 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 • Native drivers • Electronic documentation (.pdf/.chm) in German, English, French, Spanish, Italian	<b>6AV6 582-2BX06-0DX0</b>	<b>SIMATIC ProTool/Pro Runtime V6.0 + SP2 ASIA for PC systems</b> on CD-ROM with license (single license) for • 128 PowerTags (RT 128) <sup>E)</sup> • 256 PowerTags (RT 256) <sup>E)</sup> • 512 PowerTags (RT 512) <sup>E)</sup> • 2048 PowerTags (RT 2048) <sup>E)</sup> <b>Communication via Industrial Ethernet</b> <b>CP 1613 A2<sup>A)</sup></b> PCI card (32-bit; 33 MHz/66 MHz; 3.3 V / 5 V Universal Key) for connecting to Industrial Ethernet (10/100 Mbit/s) with ITP and RJ 45 connection over S7-1613 and S7-REDCONNECT. Incl. driver for Windows (32-bit) 2000 Professional Server/XP Professional/2003 Server <b>S7-1613 Edition 2005<sup>E)</sup></b> Software for S7 and S5 communication, incl. OPC server, PG/OP communication and NCM PC, for up to 120 connections; for Windows XP Professional, 2003 Server, Windows 2000 Professional/Server <b>CP 1612<sup>A)</sup></b> PCI card (32-bit) for connecting a PG/PC to Industrial Ethernet (SOFTNET S7 must be ordered separately) <b>SOFTNET-S7 Edition 2005 for Industrial Ethernet<sup>E)</sup></b> Software for S7 and S5-compatible communication, incl. OPC server, PG/OP communication and NCM PC, for up to 64 connections; for Windows XP Professional, 2003 Server, Windows 2000 Professional/Server <b>SOFTNET-S7 Lean Edition 2005 for Industrial Ethernet<sup>E)</sup></b> Software for S7 and S5-compatible communication, incl. OPC server, PG/OP communication and NCM PC, for up to 8 connections; for Windows XP Professional, 2003 Server, Windows 2000 Professional/Server
<b>SIMATIC ProTool/Pro Runtime V6.0 + SP3 for PC systems incl. ProAgent V6.0 + SP3<sup>3)</sup></b> on CD-ROM with license (single license) for • 128 PowerTags (RT 128) <sup>E)</sup> • 256 PowerTags (RT 256) <sup>E)</sup> • 512 PowerTags (RT 512) <sup>E)</sup> • 2048 PowerTags (RT 2048) <sup>E)</sup> <b>Upgrade</b> • ProTool/Pro to ProTool/Pro V6.0 + SP3 <sup>1)E)</sup> • ProTool/Pro RT to ProTool/Pro RT V6.0 + SP3 <sup>E)</sup> <b>Powerpacks</b> <b>SIMATIC ProTool/Pro RT PowerTags from</b> • 128 to 256 PowerTags <sup>E)</sup> • 128 to 512 PowerTags <sup>E)</sup> • 128 to 2048 PowerTags <sup>E)</sup> • 256 to 512 PowerTags <sup>E)</sup> • 256 to 2048 PowerTags <sup>E)</sup> • 512 to 2048 PowerTags <sup>E)</sup> • SIMATIC ProTool/Lite to ProTool/Pro V6.0 + SP3 <sup>E)</sup> • SIMATIC ProTool to ProTool/Pro V6.0 + SP3 <sup>E)</sup>	<b>6AV6 584-1AB06-0DX0</b> <b>6AV6 584-1AC06-0DX0</b> <b>6AV6 584-1AD06-0DX0</b> <b>6AV6 584-1AF06-0DX0</b> <b>6AV6 582-2BX06-0DX4</b> <b>6AV6 584-3AX06-0DX4</b>	<b>6GK1 161-3AA01</b> <b>6GK1 716-1CB63-3AA0</b> <b>6GK1 161-2AA00</b> <b>6GK1 704-1CW63-3AA0</b> <b>6GK1 704-1LW63-3AA0</b>
<b>Versions for China/Taiwan/Korea/Japan</b> <b>SIMATIC ProTool/Pro Configuration V6.0 + SP2 ASIA<sup>E)</sup></b> Language/script versions: 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	<b>6AV6 582-2BX06-0CV0</b>	

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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 up to 12 weeks prior to expiry.  
 3) The runtime licenses for ProAgent/PC must be purchased separately for each target system  
 A) Subject to export regulations: AL: N and ECCN: EAR99H  
 E) Subject to export regulations: AL: N and ECCN: 5D992B1



## SIMATIC Industrial Software HMI software

### SIMATIC ProTool/Pro

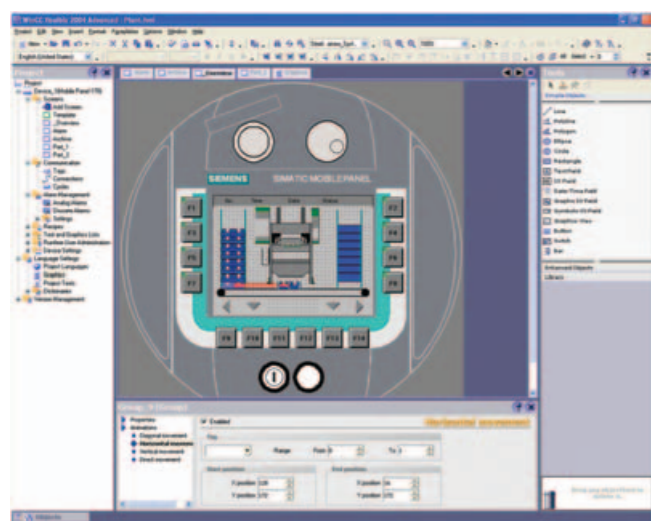
Ordering data	Order No.	Order No.
<i>Communication via PROFIBUS</i>		<i>Documentation (must be ordered separately)</i>
<b>CP 5613 A2<sup>E)</sup></b> PCI card (32 bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)	<b>6GK1 561-3AA01</b>	<b>ProTool/Pro Runtime user manual</b> • German <b>6AV6 594-1CA06-0AA0</b> • English <b>6AV6 594-1CA06-0AB0</b> • French <b>6AV6 594-1CA06-0AC0</b> • Italian <b>6AV6 594-1CA06-0AD0</b> • Spanish <b>6AV6 594-1CA06-0AE0</b>
<b>CP 5614 A2<sup>E)</sup></b> PCI card (32 bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)	<b>6GK1 561-4AA01</b>	<b>ProTool user manual, configuring Windows-based systems</b> • German <b>6AV6 594-1MA06-1AA0</b> • English <b>6AV6 594-1MA06-1AB0</b> • French <b>6AV6 594-1MA06-1AC0</b> • Italian <b>6AV6 594-1MA06-1AD0</b> • Spanish <b>6AV6 594-1MA06-1AE0</b>
<b>S7-5613 Edition 2005<sup>E)</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 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 713-5CB63-3AA0</b>	<b>ProTool user manual for configuring line-oriented displays</b> • German <b>6AV6 594-1AA06-0AA0</b> • English <b>6AV6 594-1AA06-0AB0</b> • French <b>6AV6 594-1AA06-0AC0</b> • Italian <b>6AV6 594-1AA06-0AD0</b> • Spanish <b>6AV6 594-1AA06-0AE0</b>
<b>CP 5512</b> PCMCIA card (CARDBUS 32 bit) for connecting a PG/notebook computer to PROFIBUS or MPI (communication software included in ProTool/Pro)	<b>6GK1 551-2AA00</b>	<b>ProTool user manual for configuring graphic displays</b> • German <b>6AV6 594-1BA06-0AA0</b> • English <b>6AV6 594-1BA06-0AB0</b> • French <b>6AV6 594-1BA06-0AC0</b> • Italian <b>6AV6 594-1BA06-0AD0</b> • Spanish <b>6AV6 594-1BA06-0AE0</b>
<b>CP 5611<sup>A)</sup></b> PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communication software included in ProTool/Pro)	<b>6GK1 561-1AA01</b>	<b>Communications manual for Windows-based systems</b> • German <b>6AV6 596-1MA06-0AA0</b> • English <b>6AV6 596-1MA06-0AB0</b> • French <b>6AV6 596-1MA06-0AC0</b> • Italian <b>6AV6 596-1MA06-0AD0</b> • Spanish <b>6AV6 596-1MA06-0AE0</b>
<b>CP 5611 MPI<sup>A)</sup></b> Comprising PCI card CP 5611 (32-bit) and MPI cable, 5 m	<b>6GK1 561-1AM01</b>	<b>SIMATIC HMI Manual Collection<sup>B)</sup></b> Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); comprising: all available user manuals, product manuals and communication manuals for SIMATIC HMI
<b>PC/PPI adapter</b> RS 232, 9-pin, male with RS 232/PPI converter, max. 19.2 Kbit/s	<b>6ES7 901-3CB30-0XA0</b>	
<b>PC adapter USB</b> For Windows 2000/XP	<b>6ES7 972-0CB20-0XA0</b>	

A) Subject to export regulations: AL: N and ECCN: EAR99H  
 B) Subject to export regulations: AL: N and ECCN: EAR99S  
 E) Subject to export regulations: AL: N and ECCN: 5D992B1

## SIMATIC Industrial Software HMI software

### SIMATIC WinCC flexible ES

#### Overview



- Integrated family of engineering tools for configuring SIMATIC HMI operator units, the operator control part of SIMATIC C7 systems, SIMOTION/SINUMERIK Panel PCs as well as the PC-based visualization software WinCC flexible Runtime
- Executable under Windows 2000 / XP Professional
- **Current version:**
  - SIMATIC WinCC flexible 2005 Advanced
  - SIMATIC WinCC flexible 2005 Standard
  - SIMATIC WinCC flexible 2005 Compact
  - SIMATIC WinCC flexible 2005 Micro

#### Ordering data

#### Order No.

<b>WinCC flexible 2005 Advanced<sup>E)</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>	<b>6AV6 613-0AA01-1CA5</b>
<b>WinCC flexible 2005 Standard<sup>E)</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>• SW for WinCC flexible /Change-Control engineering option <sup>1)</sup></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>	<b>6AV6 612-0AA01-1CA5</b>
<b>WinCC flexible 2005 Compact<sup>E)</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>• SW for WinCC flexible /Change-Control engineering option <sup>1)</sup></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>	<b>6AV6 611-0AA01-1CA5</b>
<b>WinCC flexible 2005 Micro<sup>E)</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>	<b>6AV6 610-0AA01-1CA8</b>

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

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

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# SIMATIC Industrial Software HMI software

## SIMATIC WinCC flexible ES

Ordering data	Order No.	Order No.	
<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 2005 Advanced<sup>E)</sup></li> <li>WinCC flexible Compact to WinCC flexible 2005 Advanced<sup>E)</sup></li> <li>WinCC flexible Compact to WinCC flexible 2005 Standard<sup>E)</sup></li> </ul>	<b>6AV6 613-2CD01-1AD5</b>  <b>6AV6 613-2BD01-1AD5</b>  <b>6AV6 612-2BC01-1AD5</b>	<b>WinCC flexible 2005 ASIA Standard<sup>E)</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, simplified Chinese, traditional Chinese, Korean, Japanese</li> </ul>	<b>6AV6 612-0AA11-1CA5</b>
<b>Software update service</b> <b>Software Update Service SIMATIC WinCC flexible 2)</b> <ul style="list-style-type: none"> <li>WinCC flexible Advanced<sup>E)</sup></li> <li>WinCC flexible Standard<sup>E)</sup></li> <li>WinCC flexible Compact<sup>E)</sup></li> </ul>	<b>6AV6 613-0AA00-0AL0</b> <b>6AV6 612-0AA00-0AL0</b> <b>6AV6 611-0AA00-0AL0</b>	<b>Documentation (must be ordered separately)</b> <b>User manual WinCC flexible Compact/Standard/Advanced</b> <ul style="list-style-type: none"> <li>German</li> <li>English</li> <li>French</li> <li>Italian</li> <li>Spanish</li> </ul>	
<b>Upgrades</b> <b>SIMATIC ProTool to SIMATIC WinCC flexible 2005</b> <ul style="list-style-type: none"> <li>ProTool/Lite to WinCC flexible 2005 Compact<sup>E)</sup></li> <li>ProTool to WinCC flexible 2005 Standard<sup>E)</sup></li> <li>ProTool to WinCC flexible 2005 Advanced<sup>E)</sup></li> </ul>	<b>6AV6 611-3AA01-1CE5</b>  <b>6AV6 612-3AA01-1CE5</b>  <b>6AV6 613-3AA01-1CE5</b>	<b>User manual WinCC flexible Micro</b> <ul style="list-style-type: none"> <li>German</li> <li>English</li> <li>French</li> <li>Italian</li> <li>Spanish</li> </ul>	<b>6AV6 691-1AB01-0AA0</b> <b>6AV6 691-1AB01-0AB0</b> <b>6AV6 691-1AB01-0AC0</b> <b>6AV6 691-1AB01-0AD0</b> <b>6AV6 691-1AB01-0AE0</b>
<b>SIMATIC WinCC flexible 2004 to SIMATIC WinCC flexible 2005</b> <ul style="list-style-type: none"> <li>WinCC flexible 2004 Compact to WinCC flexible 2005 Compact<sup>E)</sup></li> <li>WinCC flexible 2004 Standard to WinCC flexible 2005 Standard<sup>E)</sup></li> <li>WinCC flexible 2004 Advanced to WinCC flexible 2005 Advanced<sup>E)</sup></li> </ul>	<b>6AV6 611-0AA01-1CE5</b>  <b>6AV6 612-0AA01-1CE5</b>  <b>6AV6 613-0AA01-1CE5</b>	<b>User manual WinCC flexible Communication</b> <ul style="list-style-type: none"> <li>German</li> <li>English</li> </ul>	<b>6AV6 691-1CA01-0AA0</b> <b>6AV6 691-1CA01-0AB0</b>
<b>Versions for China/Taiwan/Korea/Japan</b> <b>WinCC flexible 2005 ASIA Advanced<sup>E)</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 /ChangeControl engineering option 1)</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, simplified Chinese, traditional Chinese, Korean, Japanese</li> </ul>	<b>6AV6 613-0AA11-1CA5</b>	<b>SIMATIC HMI Manual Collection<sup>E)</sup></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>

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

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

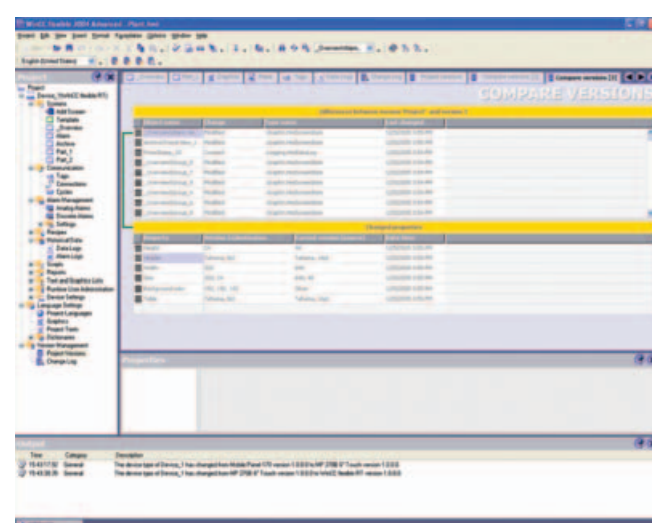
E) Subject to export regulations: AL: N and ECCN: 5D992B1

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 WinCC flexible engineering system or option. The contract is automatically extended by a further year unless canceled up to 12 weeks prior to expiry.

## SIMATIC Industrial Software HMI software

### WinCC flexible /ChangeControl

#### Overview



#### Ordering data

#### Order No.

**WinCC flexible /ChangeControl  
for WinCC flexible 2005  
Compact/Standard/Advanced <sup>1)</sup>**

Floating license\_option,  
only license key<sup>E)</sup>

**6AV6 613-6AA01-1AB5**

- 1) Use of the ChangeControl option for integral operation with STEP 7 has not been released.  
E) Subject to export regulations: AL: N and ECCN: 5D992B1

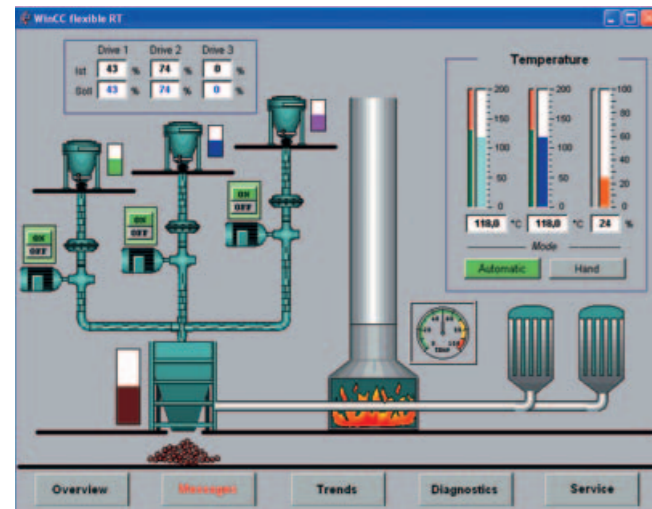
- Options for the versioning of configuration data and for tracing configuration changes (e.g. as verification in regulated sectors)
- For the engineering tool SIMATIC WinCC flexible Compact/Standard/Advanced
- One license is required for each configuration computer

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# SIMATIC Industrial Software HMI software

## SIMATIC WinCC flexible RT

### Overview



- **PC-based visualization software** for single-user systems at the machine
- Executable under Windows 2000/XP Professional
- **Current version:**  
- SIMATIC WinCC flexible 2005 Runtime with 128, 512 or 2048 PowerTags

### Technical specifications

Type	SIMATIC WinCC flexible Runtime
<b>Operating system</b>	The specifications are maximum values MS Windows 2000 / XP Professional
<b>Diagrams</b>	500
• Fields per diagram	400
• Variables per diagram	400
• Static text	30000
• 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	3500
<b>Variables</b>	2048 <sup>3)</sup>
<b>Messages bit-triggered/analog</b>	4000 / 500
• Message text (number of characters)	80
• Number of process values per message	8
• Message buffer size	1024
• Pending message events	500
<b>Archive <sup>4)</sup></b>	Process values (max. 100), messages 500000
• Archivable data	500000
• Max. number of entries per archive (incl. sequential archive)	Short-term archives, sequential archives (max. 400 per archive)
• Archive types	CSV (Comma Separated Variable) and interfacing to ODBC database (database not included in scope of supply)
• Data storage format	Process values (max. 100), messages

Type	SIMATIC WinCC flexible Runtime
<b>Recipes <sup>4)</sup></b>	1000
• Elements per recipe	2000 <sup>3)</sup>
• Records per recipe	5000 <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; OPCclient 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 Industrial Software HMI software

## SIMATIC WinCC flexible RT

Ordering data	Order No.	Order No.
<b>SIMATIC WinCC flexible 2005 Runtime</b> <b>for PC systems; incl. SW for the options for PC systems<sup>1)</sup></b> Single license, on CD-ROM incl. authorization, for: • 128 PowerTags (RT 128) <sup>E)</sup> • 512 PowerTags (RT 512) <sup>E)</sup> • 2048 PowerTags (RT 2048) <sup>E)</sup>	<b>6AV6 613-1BA01-1CA0</b> <b>6AV6 613-1DA01-1CA0</b> <b>6AV6 613-1FA01-1CA0</b>	• Panel options <sup>E)</sup> : SIMATIC WinCC flexible 2004 to WinCC flexible 2005 SIMATIC Panel options for WinCC flexible 2005: WinCC flexible /Sm@rtAccess for SIMATIC Panel WinCC flexible /Sm@rtService for SIMATIC Panel WinCC flexible OPC-Server for SIMATIC Multi Panel WinCC flexible ProAgent for SIMATIC Panel <b>6AV6 618-7XX01-1AF0</b>
<b>Powerpacks</b> <b>SIMATIC WinCC flexible 2005 Runtime</b> Single license, only authorization for PowerTags, from • 128 to 512 PowerTags <sup>E)</sup> • 128 to 2048 PowerTags <sup>E)</sup> • 512 to 2048 PowerTags <sup>E)</sup>	<b>6AV6 613-4BD01-1AD0</b> <b>6AV6 613-4BF01-1AD0</b> <b>6AV6 613-4DF01-1AD0</b>	<b>Versions for China/Taiwan/Korea/Japan</b> <b>SIMATIC WinCC flexible 2005 ASIA Runtime</b> for PC systems; incl. SW for the options for PC systems <sup>1)</sup> Single license, on CD-ROM incl. authorization, for: • 128 PowerTags (RT 128) <sup>E)</sup> • 512 PowerTags (RT 512) <sup>E)</sup> • 2048 Power Tags (RT 2048) <sup>E)</sup>
<b>Upgrade</b> • ProTool/Pro Runtime 128 PowerTags to WinCC flexible 2005 Runtime 128 PowerTags <sup>E)</sup> • ProTool/Pro Runtime 256 PowerTags to WinCC flexible 2005 Runtime 512 PowerTags <sup>E)</sup> • ProTool/Pro Runtime 512 PowerTags to WinCC flexible 2005 Runtime 512 PowerTags <sup>E)</sup> • ProTool/Pro Runtime 2048 PowerTags to WinCC flexible 2005 Runtime 2048 PowerTags <sup>E)</sup> • SIMATIC WinCC flexible RT 2004 to WinCC flexible RT 2005 128 PowerTags incl. Runtime Options for: WinCC flexible /Sm@rtAccess Sm@rtService OPC-Server Archives Recipes ProAgent <sup>E)</sup>	<b>6AV6 613-3BB01-1CE0</b> <b>6AV6 613-3CD01-1CE0</b> <b>6AV6 613-3DD01-1CE0</b> <b>6AV6 613-3FF01-1CE0</b> <b>6AV6 613-1XA01-1CE0</b>	<b>Documentation (must be ordered separately)</b> <b>User manual WinCC flexible Runtime</b> • German • English • French • Italian • Spanish <b>User manual WinCC flexible Communication</b> • German • English <b>SIMATIC HMI Manual Collection<sup>B)</sup></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 691-1BA01-0AA0</b> <b>6AV6 691-1BA01-0AB0</b> <b>6AV6 691-1BA01-0AC0</b> <b>6AV6 691-1BA01-0AD0</b> <b>6AV6 691-1BA01-0AE0</b> <b>6AV6 691-1CA01-0AA0</b> <b>6AV6 691-1CA01-0AB0</b> <b>6AV6 691-1SA01-0AX0</b>
		see SIMATIC ProTool/Pro, p. 7/17

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

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

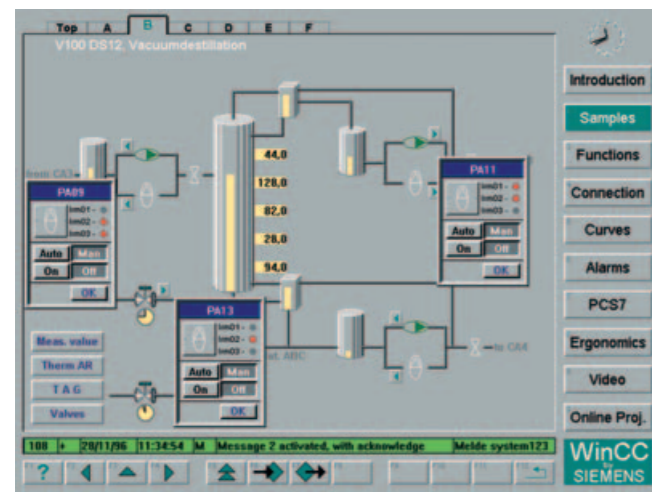
E) Subject to export regulations: AL: N and ECCN: 5D992B1



# SIMATIC Industrial Software HMI software

## SIMATIC WinCC

### Overview



- PC-based operator control and monitoring system for visualizing and operating processes, production flows, machines and plants in all sectors - with the simple single-user station through to distributed multi-user systems with redundant servers and cross-location solutions with Web clients. WinCC is the information hub for corporation-wide vertical integration.
- The basic system configuration (WinCC basic software) includes industry-standard functions 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 SP3:**  
Executes under Windows XP Professional/ Windows 2003 Server and Windows 2000
  - **SIMATIC WinCC V5.1 SP2:**  
Executes under Windows NT 4.0 / 2000

### Technical specifications

Type	SIMATIC WinCC V5.1 SP2	SIMATIC WinCC V6.0 SP3
<b>Operating system</b>	Windows NT4.0/ Windows 2000  WebClient, additionally: Windows 98, Windows ME, Windows 2000 terminal services	Windows XP Professional/ Windows 2000 Professional, Windows 2000 Server and Windows 2003 Server  WebClient/Dat@Monitor Client, additionally: Windows NT4.0/ Windows XP Home, Windows 2000 terminal services
<b>Hardware requirements for PC CPU <sup>1)</sup></b>		
• 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

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

2) At least 32 MB more when using online configuration

## SIMATIC Industrial Software HMI software

SIMATIC WinCC

### Technical specifications (continued)

Type	SIMATIC WinCC V5.1 SP2	SIMATIC WinCC V6.0 SP3
<b>Graphics card</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
• Recommended	> 3 GB	WebClient/Dat@Monitor client: 5 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
<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
Archive		
• Archive data points	Max. 30,000 per server	Max. 80,000 per server <sup>2)</sup>
• Archive types	Short-term 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
User archives		
• 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>
Graphics system		
• 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>
Process variables	64 K <sup>5)</sup>	64 K <sup>5)</sup>
Trend curves		
• Curve windows per display	8	25
• Curves per curve window	15	80

1) Dependent on available memory  
2) Dependent 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) Depends on the number of licensed PowerTags.

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# SIMATIC Industrial Software

## HMI software

### SIMATIC WinCC

#### Technical specifications (continued)

Type	SIMATIC WinCC V5.1 SP2	SIMATIC WinCC V6.0 SP3
User administration		
• User groups	28	128
• No. of users	128	128
• Authorization groups	999	999
Runtime languages	> 9 per project	> 9 per project
Configuration languages	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)
Protocols		
• Message sequence reports (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>
Multi-user system		
• 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) Dependent on available memory

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

Ordering data	Order No.	Ordering data	Order No.
<b>SIMATIC WinCC system software V5.1 SP2</b>		<b>Complete packages on CD-ROM</b>	
<b>Runtime packages on CD-ROM</b>		Language/script versions: English/Chinese traditional and simplified/Korean/Japanese; with license for:	
Language versions: G/E/F/I/S; with license for:		• 128 PowerTags (RC 128)	<b>6AV6 381-1BM05-1AV0</b>
• 128 PowerTags (RT 128)	<b>6AV6 381-1BC05-1CX0</b>	• 256 PowerTags (RC 256)	<b>6AV6 381-1BN05-1AV0</b>
• 256 PowerTags (RT 256)	<b>6AV6 381-1BD05-1CX0</b>	• 1024 PowerTags (RC 1024)	<b>6AV6 381-1BP05-1AV0</b>
• 1024 PowerTags (RT 1024)	<b>6AV6 381-1BE05-1CX0</b>	• 64 K PowerTags (RC Max)	<b>6AV6 381-1BQ05-1AV0</b>
• 64k PowerTags (RT Max)	<b>6AV6 381-1BF05-1CX0</b>		
<b>Complete packages on CD-ROM</b>		<b>SIMATIC WinCC V5.1 Powerpacks</b>	
Language versions: G/E/F/I/S; with license for:		For upgrading from:	
• 128 PowerTags (RC 128)	<b>6AV6 381-1BM05-1CX0</b>	<b>Runtime packages</b>	
• 256 PowerTags (RC 256)	<b>6AV6 381-1BN05-1CX0</b>	• 128 to 256 PowerTags	<b>6AV6 371-1BD05-0AX0</b>
• 1024 PowerTags (RC 1024)	<b>6AV6 381-1BP05-1CX0</b>	• 128 to 1024 PowerTags	<b>6AV6 371-1BE05-0AX0</b>
• 64 K PowerTags (RC Max)	<b>6AV6 381-1BQ05-1CX0</b>	• 128 to 64 K PowerTags	<b>6AV6 371-1BF05-0AX0</b>
		• 256 to 1024 PowerTags	<b>6AV6 371-1BG05-0AX0</b>
		• 256 to 64 K PowerTags	<b>6AV6 371-1BH05-0AX0</b>
		• 1024 to 64 K PowerTags	<b>6AV6 371-1BJ05-0AX0</b>
<b>SIMATIC WinCC system software V5.1 ASIA</b>		<b>Complete packages</b>	
<b>Runtime packages on CD-ROM</b>		• 128 to 256 PowerTags	<b>6AV6 371-1BD15-0AX0</b>
Language/script versions: English/Chinese traditional and simplified/Korean/Japanese; with license for:		• 128 to 1024 PowerTags	<b>6AV6 371-1BE15-0AX0</b>
• 128 PowerTags (RT 128)	<b>6AV6 381-1BC05-1AV0</b>	• 128 to 64 K PowerTags	<b>6AV6 371-1BF15-0AX0</b>
• 256 PowerTags (RT 256)	<b>6AV6 381-1BD05-1AV0</b>	• 256 to 1024 PowerTags	<b>6AV6 371-1BG15-0AX0</b>
• 1024 PowerTags (RT 1024)	<b>6AV6 381-1BE05-1AV0</b>	• 256 to 64 K PowerTags	<b>6AV6 371-1BH15-0AX0</b>
• 64k PowerTags (RT Max)	<b>6AV6 381-1BF05-1AV0</b>	• 1024 to 64 K PowerTags	<b>6AV6 371-1BJ15-0AX0</b>

# SIMATIC Industrial Software

## HMI software

SIMATIC WinCC

Ordering data	Order No.	Order No.
<b>SIMATIC WinCC system software V6.0 SP3</b>		
<b>Runtime packages on CD-ROM</b> Language/script versions: G/E/F/I/S; with license for: <ul style="list-style-type: none"> <li>• 128 PowerTags (RT 128)</li> <li>• 256 PowerTags (RT 256)</li> <li>• 1024 PowerTags (RT 1024)</li> <li>• 8 K PowerTags (RT 8K)</li> <li>• 64k PowerTags (RT Max)</li> </ul> Incl. 512 archive variables each	<b>6AV6 381-1BC06-0DX0</b> <b>6AV6 381-1BD06-0DX0</b> <b>6AV6 381-1BE06-0DX0</b> <b>6AV6 381-1BH06-0DX0</b> <b>6AV6 381-1BF06-0DX0</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 8 K PowerTags</li> <li>• 128 to 64 K PowerTags</li> <li>• 256 to 1024 PowerTags</li> <li>• 256 to 8 K PowerTags</li> <li>• 256 to 64 K PowerTags</li> <li>• 1024 to 8 K PowerTags</li> <li>• 1024 to 64 K PowerTags</li> <li>• 8 K to 64 K PowerTags</li> </ul>
<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)</li> <li>• 256 PowerTags (RC 256)</li> <li>• 1024 PowerTags (RC 1024)</li> <li>• 8 K PowerTags (RC 8K)</li> <li>• 64 K PowerTags (RC Max)</li> </ul> Incl. 512 archive variables each	<b>6AV6 381-1BM06-0DX0</b> <b>6AV6 381-1BN06-0DX0</b> <b>6AV6 381-1BP06-0DX0</b> <b>6AV6 381-1BS06-0DX0</b> <b>6AV6 381-1BQ06-0DX0</b>	<b>6AV6 371-1BD16-0DX0</b> <b>6AV6 371-1BE16-0DX0</b> <b>6AV6 371-1BK16-0DX0</b> <b>6AV6 371-1BF16-0DX0</b> <b>6AV6 371-1BG16-0DX0</b> <b>6AV6 371-1BL16-0DX0</b> <b>6AV6 371-1BH16-0DX0</b> <b>6AV6 371-1BM16-0DX0</b> <b>6AV6 371-1BJ16-0DX0</b> <b>6AV6 371-1BN16-0DX0</b>
<b>SIMATIC WinCC system software V6.0 SP3 ASIA</b>		
<b>Runtime packages on CD-ROM</b> Language versions: English/Chinese simplified and traditional/Korean/Taiwanese/Japanese; with license for: <ul style="list-style-type: none"> <li>• 128 PowerTags (RT 128)</li> <li>• 256 PowerTags (RT 256)</li> <li>• 1024 PowerTags (RT 1024)</li> <li>• 8 K PowerTags (RT 8K)</li> <li>• 64k PowerTags (RT Max)</li> </ul> Incl. 512 archive variables each	<b>6AV6 381-1BC06-0DV0</b> <b>6AV6 381-1BD06-0DV0</b> <b>6AV6 381-1BE06-0DV0</b> <b>6AV6 381-1BH06-0DV0</b> <b>6AV6 381-1BF06-0DV0</b>	<b>SIMATIC WinCC V6.0 SP3 Archiv Powerpacks</b> For upgrading the archiving from <ul style="list-style-type: none"> <li>• 512 to 1500 archive variables</li> <li>• 512 to 5000 archive variables</li> <li>• 512 to 30000 archive variables</li> <li>• 512 to 80000 archive variables</li> <li>• 1500 to 5000 archive variables</li> <li>• 1500 to 30000 archive variables</li> <li>• 1500 to 80000 archive variables</li> <li>• 5000 to 30000 archive variables</li> <li>• 5000 to 80000 archive variables</li> <li>• 30000 to 80000 arch. variables</li> </ul>
<b>Complete packages on CD-ROM</b> Language versions: English/Chinese simplified and traditional/Korean/Taiwanese/Japanese; with license for: <ul style="list-style-type: none"> <li>• 128 PowerTags (RC 128)</li> <li>• 256 PowerTags (RC 256)</li> <li>• 1024 PowerTags (RC 1024)</li> <li>• 8 K PowerTags (RC 8K)</li> <li>• 64 K PowerTags (RC Max)</li> </ul> Incl. 512 archive variables each	<b>6AV6 381-1BM06-0DV0</b> <b>6AV6 381-1BN06-0DV0</b> <b>6AV6 381-1BP06-0DV0</b> <b>6AV6 381-1BS06-0DV0</b> <b>6AV6 381-1BQ06-0DV0</b>	<b>SIMATIC WinCC Upgrade / Comprehensive Support</b> <b>WinCC V5 Upgrade <sup>1)</sup></b> For upgrading of RT and RC software packages and stations to the newest version <ul style="list-style-type: none"> <li>• from V4.x to V5.1 SP2</li> <li>• from V5.x to V5.1 SP2</li> <li>• from V4.x /V5.x ASIA to V5.1 ASIA</li> </ul>
<b>Complete packages on CD-ROM</b> Language versions: English/Chinese simplified and traditional/Korean/Taiwanese/Japanese; with license for: <ul style="list-style-type: none"> <li>• 128 PowerTags (RC 128)</li> <li>• 256 PowerTags (RC 256)</li> <li>• 1024 PowerTags (RC 1024)</li> <li>• 8 K PowerTags (RC 8K)</li> <li>• 64 K PowerTags (RC Max)</li> </ul> Incl. 512 archive variables each	<b>6AV6 381-1BM06-0DV0</b> <b>6AV6 381-1BN06-0DV0</b> <b>6AV6 381-1BP06-0DV0</b> <b>6AV6 381-1BS06-0DV0</b> <b>6AV6 381-1BQ06-0DV0</b>	<b>WinCC V6 Upgrade <sup>1)</sup></b> For upgrading the RT version <ul style="list-style-type: none"> <li>• from V5.x to V6.0 SP3</li> <li>• from V5.x ASIA to V6.0 SP2 ASIA</li> </ul> For upgrading the RC version <ul style="list-style-type: none"> <li>• from V5.x to V6.0 SP3</li> <li>• from V5.x ASIA to V6.0 SP2 ASIA</li> </ul>
<b>SIMATIC WinCC V6.0 SP3 Powerpacks</b> For upgrading from:	<b>6AV6 371-1BD06-0DX0</b> <b>6AV6 371-1BE06-0DX0</b> <b>6AV6 371-1BK06-0DX0</b> <b>6AV6 371-1BF06-0DX0</b> <b>6AV6 371-1BG06-0DX0</b> <b>6AV6 371-1BL06-0DX0</b> <b>6AV6 371-1BH06-0DX0</b> <b>6AV6 371-1BM06-0DX0</b> <b>6AV6 371-1BJ06-0DX0</b> <b>6AV6 371-1BN06-0DX0</b>	<b>WinCC Comprehensive Support <sup>2)</sup></b> Contains current updates/upgrades for WinCC Basic software and options and the WinCC Knowledge Base CD <ul style="list-style-type: none"> <li>• 1 license</li> <li>• 3 licenses</li> <li>• 10 licenses</li> </ul>

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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 expiration. In accordance with license stipulations, 1 Comprehensive Support Package must be ordered for each WinCC station.

# SIMATIC Industrial Software

## HMI software

### SIMATIC WinCC

Ordering data	Order No.	Order No.
<i>SIMATIC WinCC documentation (to be ordered separately)</i>		
<b>SIMATIC WinCC V5 basic documentation in a slipcase</b> Includes the WinCC Manual and software protection description • German • English • French	6AV6 392-1XA05-0AA0 6AV6 392-1XA05-0AB0 6AV6 392-1XA05-0AC0	<b>S7-1613 2005<sup>E1</sup></b> Software for S7 and S5 communication, incl. OPC server, PG/OP communication and NCM PC, for up to 120 connections; for Windows XP Professional, 2003 Server, Windows 2000 Professional/Server
<b>SIMATIC WinCC V5 Configuration &amp; Communication Manual</b> 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	<b>Channel DLL SIMATIC S5 PMC Ethernet Layer 4</b> (for WinCC V5.1 only) Additional software packages required for S5-PMC • PMC/LS-B message functions • PMC/LS-B Status, standard displays from V4.3 upwards • Parameterization software PMC Pro from V2.2 upwards, German • Parameterization software PMC Pro from V2.2 upwards, English
<b>Communication Manual SIMATIC WinCC V6</b> Communication manual for process communication and OPC communication from WinCC V6 • German • English	6AV6 392-1CA06-0AA0 6AV6 392-1CA06-0AB0	<b>Communication via PROFIBUS</b> <b>CP 5611<sup>A)</sup></b> PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communication software included in ProTool/Pro)
<b>SIMATIC WinCC V6 basic documentation</b> Includes the 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	<b>CP 5611 MPI<sup>A)</sup></b> Comprising PCI card CP 5611 (32-bit) and MPI cable, 5 m <b>CP 5512</b> PCMCIA card (CARDBUS 32 bit) for connecting a PG/notebook computer to PROFIBUS or MPI (communication software included in ProTool/Pro)
<i>Communication via Industrial Ethernet</i>		
<b>CP 1612<sup>A)</sup></b> PCI card (32-bit) for connecting a PG/PC to Industrial Ethernet (SOFTNET-S7 must be ordered separately)	6GK1 161-2AA00	<b>CP 5613 A2<sup>E)</sup></b> PCI card (32 bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)
<b>SOFTNET S7 2005<sup>E1)</sup></b> Software for S5-compatible communication (SEND/RECEIVE) and S7 communication for Windows 2000/XP/2003 server (max. 64 connections)	6GK1 704-1CW63-3AA0	<b>S7-5613 2005<sup>E1)</sup></b> Software for S7 communication incl. PG- and FDL protocol, OPC server and NCM PC, for 32 Bit Windows XP Professional; 2003 Server, 2000 Professional/Server
<b>SOFTNET S7 Lean 2005<sup>E1)</sup></b> Software for S5-compatible communication (SEND/RECEIVE) and S7 communication for Windows 2000/XP/2003 server (max. 8 connections)	6GK1 704-1LW63-3AA0	<b>DP-5613 2005<sup>E1)</sup></b> Software for DP protocol incl. PG/OP communication, FDL, DP-OPC server, for Windows 2000 / XP/ 2003 Server
<b>CP 1613 A2<sup>A)</sup></b> PCI card for connection 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 (communication software must be ordered separately)	6GK1 161-3AA01	<b>FMS-5613 2005<sup>E1)</sup></b> Software for FMS protocol incl. PG/OP communication, FDL, FMS-OPC server, for Windows 2000 / XP/ 2003 Server
		<b>Channel DLL SIMATIC S5 PMC PROFIBUS</b> (for WinCC V5.1 only) Additional software packages required for S5-PMC • PMC/LS-B message functions • PMC/LS-B Status, standard displays from V4.3 upwards • Parameterization software PMC Pro from V2.2 upwards, German • Parameterization software PMC Pro from V2.2 upwards, English

A) Subject to export regulations: AL: N and ECCN: EAR99H  
 E) Subject to export regulations: AL: N and ECCN: 5D992B1



## SIMATIC Industrial Software Supplementary Components

### ADDM – Data Management

#### Overview



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

Ordering data	Order No.
<b>ADDM</b> software package Languages: English, German <b>ADDM Single User</b> <ul style="list-style-type: none"> <li>• Single license with CD-ROM of current software version<sup>H)</sup></li> <li>• Trial license with CD-ROM of current software version<sup>B)</sup></li> </ul>	   <b>6BQ3030-1AA30-3AB0</b>  <b>6BQ3030-1AA70-3AB0</b>
<b>ADDM Client</b> <ul style="list-style-type: none"> <li>• Single license without data carrier<sup>H)</sup></li> <li>• Single license with CD-ROM of current software version<sup>H)</sup></li> <li>• Software update service</li> </ul>	   <b>6BQ3030-1AA20-1AB0</b> <b>6BQ3030-1AA10-0AB0</b> <b>6BQ3030-1AB10-8AB0</b>
<b>ADDM server</b> <ul style="list-style-type: none"> <li>• Single license with CD-ROM of current software version<sup>H)</sup></li> <li>• Software update service<sup>H)</sup></li> </ul>	  <b>6BQ3030-1AA00-3AB0</b> <b>6BQ3030-1AB00-8AB0</b>
<b>ADDM Agent</b> <ul style="list-style-type: none"> <li>• Single license with CD-ROM of current software version<sup>H)</sup></li> <li>• Software update service</li> </ul>	 <b>6BQ3030-3AA00-0AA0</b> <b>6BQ3030-3AA10-0AA0</b>

B) Subject to export regulations: AL: N and ECCN: EAR99S  
 H) Subject to export regulations: AL: N and ECCN: 5D992B2

7



SIMATIC Industrial Software



7

## Programming devices

# 8



<b>8/2</b>	<b>Programming devices</b>
8/2	Field PG M
<b>8/5</b>	<b>Communications software</b>
8/5	SOFTNET for PROFIBUS
8/6	S7-REDCONNECT
8/7	SOFTNET for Industrial Ethernet Edition 2005
8/8	SOFTNET PN IO
8/9	OPC server for Industrial Ethernet
8/11	PN CBA OPC server
8/12	SNMP OPC server



## Programming devices

### Programming devices

#### Field PG M

#### Overview



- The mobile, industry-compatible programming device with the powerful Intel Pentium M processor.
- It is ideal for start-up, servicing and maintaining automation systems.
- Industrial notebook with wireless technology, large display, slow battery discharge, high-speed RAM and integrated data backup concept.
- With all the usual interfaces for industrial applications.

#### Technical specifications

	SIMATIC Field PG M
<b>General features</b>	
Design	Notebook
Processor	Pentium Mobile 1.6 GHz or 2.0 GHz Dothan processor; Intel Mobile chip set 915 GM
Main memory	512 MB or 1 GB DDR2 memory with 533 MHz Frontsidebus
Free expansion slots	PC card/PCMCIA: 1 x Type III or 2 x Type I
Graphic	Intel GMA 900 with DualView (e.g. desktop across 2 screens)
Display	15" display; XGA resolution (1024 x 768) or SXGA+ (1400 x 1050)
Loudspeaker	Integrated stereo loudspeakers
Pointing device	Touch pad
Operating system	Windows XP SP2 MUI (Eng., Ger., Fr., It., Sp.; further languages can be installed separately)
Power supply	Wide-range power supply unit 100 to 240 V, 50 to 60 Hz, high-performance lithium ion rechargeable battery 73 Wh (runtime over 4 hours)
Guarantee	24 months on hardware components (battery 6 months)
<b>Drives</b>	
Hard disk	Serial ATA with 60 GB or 80 GB; for easy swapping
DVD/CD	DVD ROM /CD RW or multi-standard DVD RW / CD RW
Floppy disk	1.44 MB; 3.5"

	SIMATIC Field PG M
<b>Ports</b>	
PROFIBUS DP/MPI	CP 5611-compatible
COM 1	V.24/TTY (for SIMATIC S5)
Programming interface	For memory cards, micro memory cards and S5 EPROM modules (using an adapter)
Ethernet	10/100 Mbit/s Fast Ethernet
USB 2.0	2 x 2 (1 A / pair)
PC card (PCMCIA)	1 x Type III or 2 x Type II
VGA	1 x (for connecting an external monitor)
COM 2 (serial)	9-pin Sub-D male; V.24; over I-Cable
Parallel (LPT )	ECP
WLAN <sup>1)</sup>	Integrated, IEEE802.11 a,b,g
Modem	Analog, V.92-compatible
Headphones	1 x (stereo)
Microphone	1 x (stereo)
<b>Ambient conditions</b>	
Degree of protection EN 60529	IP30 at the front with unit closed
Vibrations	Tested to DIN IEC 68-2-6
• Operation	10 to 58 Hz: 0.01875 mm <sub>rms</sub> 58 Hz to 500 Hz: 4.9 m/s <sup>2</sup>
• Transport	5 to 9 Hz: 3.5 mm; 9 Hz 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

1) The integrated wireless LAN (2.4 GHz band) and modem is approved for operation in Europe. In the 5 GHz band, the wireless LAN is approved for operation in Germany, France, Italy, Spain, UK and Austria. Please adhere to the relevant local regulations when operating the device outside these countries.

## Programming devices Programming devices

Field PG M

### Technical specifications (continued)

	SIMATIC Field PG M		SIMATIC Field PG M
Electromagnetic compatibility (EMC)		Temperature	Tested to DIN EN 60068-2-2: 1994, DIN IEC 68-2-1, DIN IEC 68-2-14
• Emitted interference	EN 55022 Class B	• Operation <sup>2)</sup>	+ 5 to + 40 °C
• Immunity to conducted interference on the supply lines	± 2 kV (according to IEC 1000-4-4; 1995; Burst) ± 1 kV (according to IEC 1000-4-5; 1995; Surge sym) ± 2 kV (according to IEC 1000-4-5; 1995; Surge asym)	• Storage/transport	- 20 to + 60 °C
• Immunity to interference on signal lines	± 1 kV (according to IEC 1000-4-4; 1995; Burst; length < 3 m) ± 2 kV (according to IEC 1000-4-4; 1995; Burst; length > 3 m) ± 1 kV (according to IEC 1000-4-4; 1995; Surge sym; length > 3 m) ± 2 kV (according to IEC 1000-4-4; 1995; Surge asym; length > 3 m))	• Max. gradient	10 °C/h (no condensation)
• Immunity to static discharge	± 4 kV contact discharge (according to IEC 1000-4-2: 1995) ± 8 kV air discharge (according to IEC 1000-4-2: 1995)	Relative humidity	Tested to DIN IEC 68-2-3, DIN IEC 68-2-30, DIN IEC 68-2-56
• Immunity to radio frequency emission	10 V/m; 80 MHz to 1000 MHz, 80% AM (according to ENV 50140: 1993) 10 V/m; 900 MHz; 50% load factor (according to ENV 50204: 1995)	• Operation	5% to 80% at 25° C (no condensation)
• Immunity to high-frequency current feed	10 V; 9 kHz to 80 MHz	• Storage/transport	5% to 95% at 25° C (no condensation)
• Immunity to magnetic fields	30 A/m; 50 Hz	<i>Dimensions and weights</i>	
		Dimensions (W x H x D) in mm	330 x 300 x 52
		Weight, approx.	3,9 kg

2) Battery recharging and CD/DVD writing is only possible up to a temperature of 35 °C

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# Programming devices

## Programming devices

### Field PG M

Ordering data	Order No.	Order No.	
<b>Field PG M programming device<sup>E)</sup></b> Field PG Standard: 1.6 GHz Pentium M processor (730), DVD ROM/CD-RW combined drive, 15" XGA display (1024x768), 60 GB S-ATA hard disk, 512 MB DDR2 RAM  Field PG Premium: 2 GHz Pentium M processor (760), Dual Layer Multi Standard DVD-RW, 15" SXGA+ display (1400x1050), 80 GB S-ATA hard disk, 2 x 512 MB DDR2 RAM  Power cable (required) <ul style="list-style-type: none"> <li>• for Germany, France, the Netherlands, Spain, Belgium, Austria, Sweden, Finland</li> <li>• For Great Britain</li> <li>• For Switzerland</li> <li>• for the USA, Japan</li> <li>• For Italy</li> <li>• for Germany, France, the Netherlands, Spain, Belgium, Austria, Sweden, Finland: Keyboard with country-specific labeling for France, Belgium and Switzerland</li> <li>• For Switzerland: Keyboard with country-specific labeling for France, Belgium, Switzerland</li> </ul> Operating system <ul style="list-style-type: none"> <li>• Windows XP MUI Ger, En, Fr, Sp, It</li> <li>• Windows 2000 English MUI (Fr, Sp, It, Ger stored on HD as image)</li> <li>• Windows 2000 German (Fr, Sp, It, En stored on HD as image)</li> </ul> Licenses for the SIMATIC software <ul style="list-style-type: none"> <li>• Trial License for STEP 7 Professional</li> <li>• Upgrade license for STEP 7, STEP 5 (requires STEP 7/STEP 5 license (V3.0 or higher))</li> <li>• Upgrade license for STEP 7 Professional, STEP 5 (requires license for STEP 7 Professional / STEP 5 (1/2000 or later))</li> <li>• License for STEP 7, STEP 7 Micro/WIN</li> <li>• License for STEP 7, STEP 5, STEP 7 Micro/WIN</li> <li>• License for STEP 7 Professional, STEP 7 Micro/WIN</li> <li>• License for STEP 7 Professional, STEP 5, STEP 7 Micro/WIN</li> </ul>	6ES7 712-0AA0 ■-0 ■■ 1  6ES7 712-1BB1 ■-0 ■■ 1  0 1 2 3 4 5 6  A B C  A B C  D E F G	<b>Memory expansion<sup>A)</sup></b> 512 MB DDR2-RAM 533 <b>USB mouse (PS/2-compatible<sup>A)</sup>)</b> <b>AC/DC power supply unit</b> <b>Power supply cable</b> for Germany, France, the Netherlands, Spain, Belgium, Austria, Sweden, Finland For Great Britain For Switzerland for the USA, Japan For Italy <b>Spare battery (lithium ion, 6.6 Ah)<sup>1)</sup></b> <b>MPI cable</b> for connecting a PG and SIMATIC S7 via MPI; 5 m <b>EPROM programming adapter</b> for SIMATIC S5 EPROM programming using the Field PG <b>Rucksack for Field PG</b> <b>Trolley for Field PG</b> Rucksack with wheels and telescopic handle	6ES7 648-2AG30-0GA0 6ES7 790-0AA01-0XA0 6ES7 798-0GA00-0XA0 6ES7 900-5AA00-0XA0 6ES7 900-5BA00-0XA0 6ES7 900-5CA00-0XA0 6ES7 900-5DA00-0XA0 6ES7 900-5EA00-0XA0 6ES7 798-0AA05-0XA0 6ES7 901-0BF00-0AA0 6ES7 798-0CA00-0XA0 6ES7 798-0DA00-0XA0 6ES7 798-0FA00-0XA0

1) The capacity of the battery decreases for technological reasons with each charging/discharging operation and also as the result of being stored at excessively high or low temperatures. The running time per charge decreases therefore in the course of time. In normal use the battery can be charged and discharged over a period of six months from when the field PG is purchased.  
Capacity loss is not covered by the warranty. For the battery's operation we grant a warranty of six months. We recommend replacing the battery with an original Siemens battery at the end of these six months if there is a significant drop in performance.

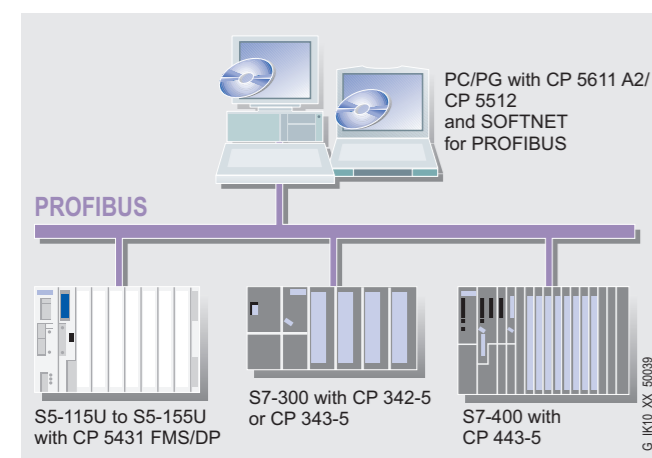
A) Subject to export regulations: AL: N and ECCN: EAR99H

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

## Programming devices Communications software

### SOFTNET for PROFIBUS

#### Overview



- Software for coupling PCs/programming devices and notebooks to programmable controllers
- Can be used together with CP 5512 (PC card, CardBus 32 bit), CP 5611 A2 (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 for mono-protocol operation	CP 5511	CP 5611 A2/CP 5512
Number of connectable DP slaves	≤ 32 <sup>1)</sup>	Max. 60
Number of FDL tasks waiting	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) Depends on memory available in the adapter area of the notebook

#### Ordering data

#### Order No.

<b>SOFTNET-S7 Edition 2005<sup>E)</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 A2 German/English	<b>6GK1 704-5CW63-3AA0</b>
<b>SOFTNET-DP Edition 2005<sup>E)</sup></b> Software for DP protocol (Master Classes 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 704-5DW63-3AA0</b>
<b>SOFTNET-DP Slave Edition 2005<sup>E)</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 A2 German/English	<b>6GK1 704-5SW63-3AA0</b>
<b>SIMATIC NET Software Update Service<sup>E)</sup></b> For Industrial Ethernet, PROFIBUS, OPC server, for one year warranty incl. manuals on CD-ROM  Prerequisite: SIMATIC NET PC/Windows products German/English	<b>6GK1 704-0AA00-3AA2</b>

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

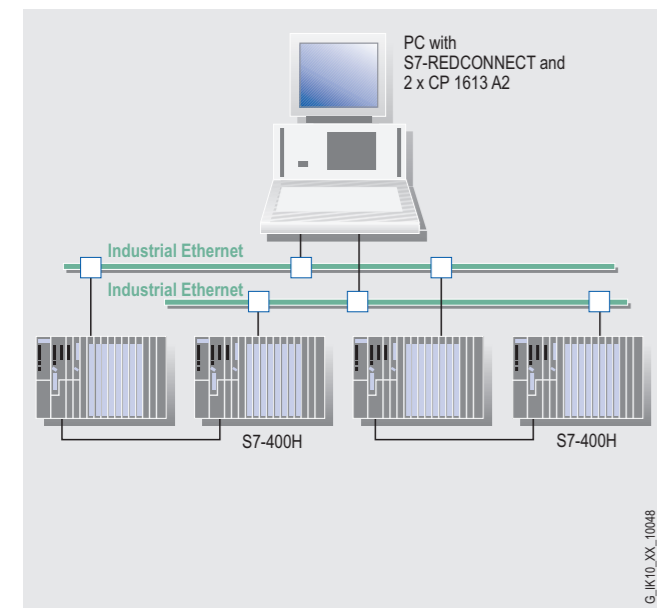


## Programming devices Communications software

### 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

##### S7-REDCONNECT Edition 2005<sup>E)</sup>

Software for failsafe S7 communication over redundant networks incl. S7-OPC server, S7-1613 2005, 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/CP 1613 A2 German/English

##### Upgrade S7-REDCONNECT Edition 2005<sup>E)</sup>

For expanding S7-1613 2005 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, Windows 2000 Professional/Server; for CP 1613/CP 1613 A2 German/English

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

#### Order No.

6GK1 716-0HB63-3AA0

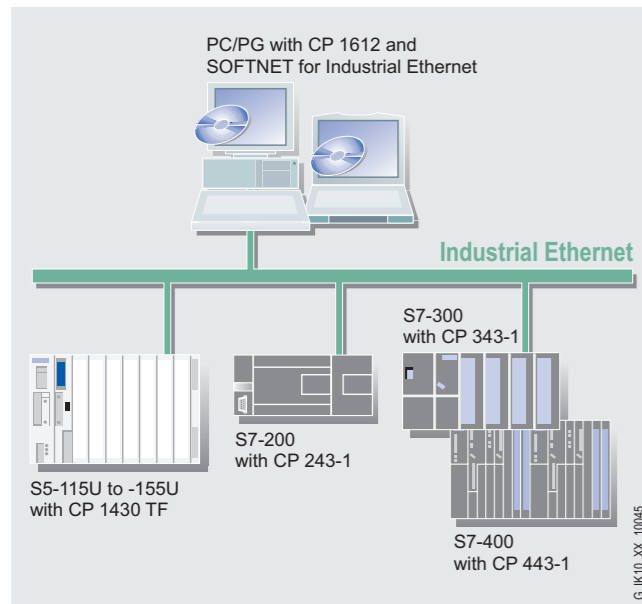
6GK1 716-0HB63-3AA4

## Programming devices Communications software

### SOFTNET for Industrial Ethernet Edition 2005

#### 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 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



System configuration SOFTNET for Industrial Ethernet

#### Technical specifications

##### Performance data

S7 and PG/OP communication  
(number of operable connections)

- SOFTNET-S7 Max. 64
- SOFTNET-S7 Lean Max. 8

#### Ordering data

#### Order No.

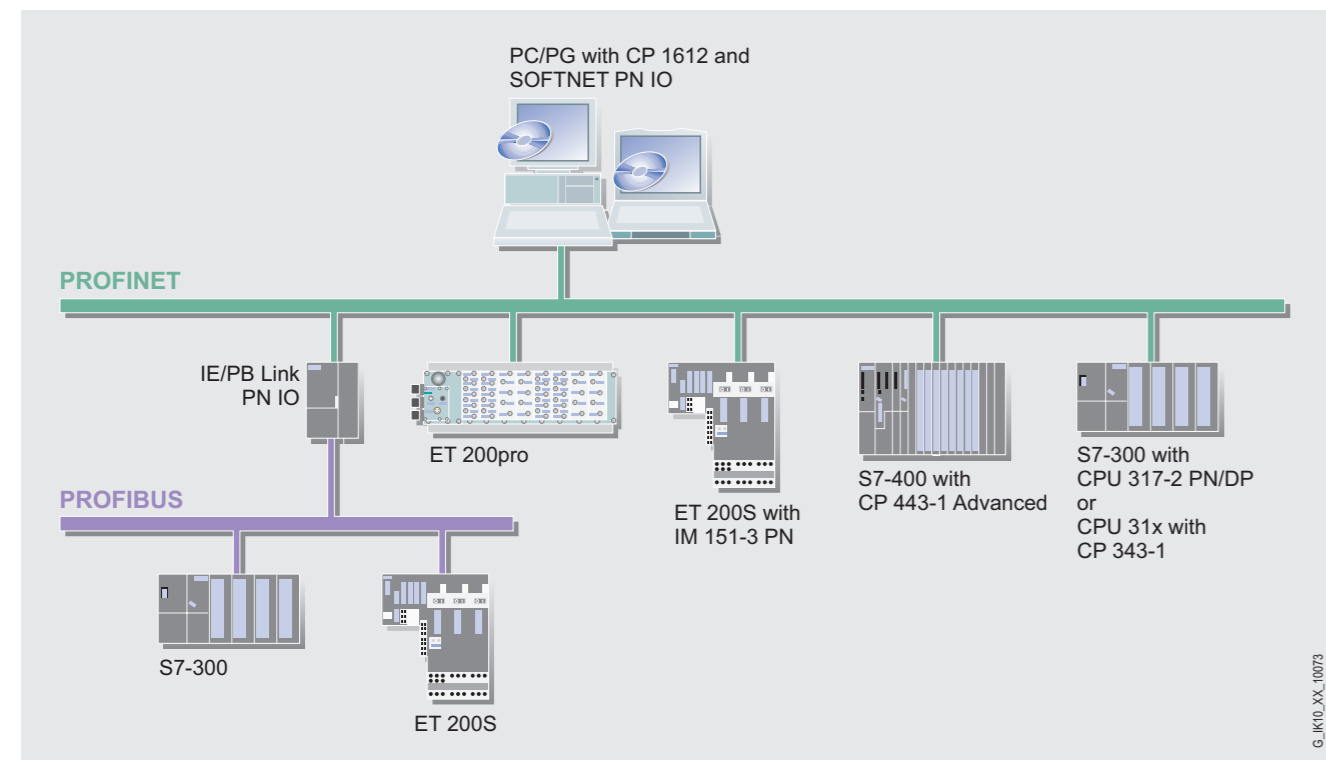
<b>SOFTNET-S7 Edition 2005 for Industrial Ethernet<sup>E)</sup></b> Software for S7 and S5-compatible communication, incl. OPC server, PG/OP communication and NCM PC; up to 64 connections, single license for 1 installation, runtime software, software and electronic manual on CD-ROM, license key on diskette, Class A, for 32-bit Windows XP Professional, 2003 Server, 2000 Professional/Server; for CP 1512 and CP 1612 German/English	<b>6GK1 704-1CW63-3AA0</b>
<b>SOFTNET-PG Edition 2005 for Industrial Ethernet<sup>E)</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 704-1PW63-3AA0</b>
<b>SOFTNET-S7 Lean Edition 2005 for Industrial Ethernet<sup>E)</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 704-1LW63-3AA0</b>
<b>SOFTNET-S7 with CP 1612<sup>E)</sup></b> Bundle of SOFTNET-S7 and CP 1612 products	<b>6GK1 950-1AB00</b>
<b>SIMATIC NET Software Update Service<sup>E)</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>

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

## Programming devices Communications software

### SOFTNET PN IO

#### Overview



PC with SOFTNET PN IO as PROFINET IO-Controller

- Software with PROFINET IO-Controller function for coupling PG/PC and IPC with 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)
  - Integrated interfaces of SIMATIC PG/PC
- Cost-effective solution for the low-end performance range
- OPC server for I/O interfacing over PROFINET included in scope of supply

#### Technical specifications

	SOFTNET PN IO
<b>Performance data IO controller</b>	
• Number of operable IO devices	Max. 64
• Number of external IO-lines in one central rack	Max. 1
• Size of IO data areas overall	
- I/O input area	Max. 32 KB
- I/O output area	Max. 32 KB
• Size of I/O data area per connected I/O device	
- I/O input area	Max. 1472 bytes
- I/O output area	Max. 1472 bytes

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

#### Ordering data

Order No.	
<b>SOFTNET PN IO Edition 2005<sup>E)</sup></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 704-1HW63-3AA0</b>
<b>CP 1612 communications processor<sup>A)</sup></b> 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>

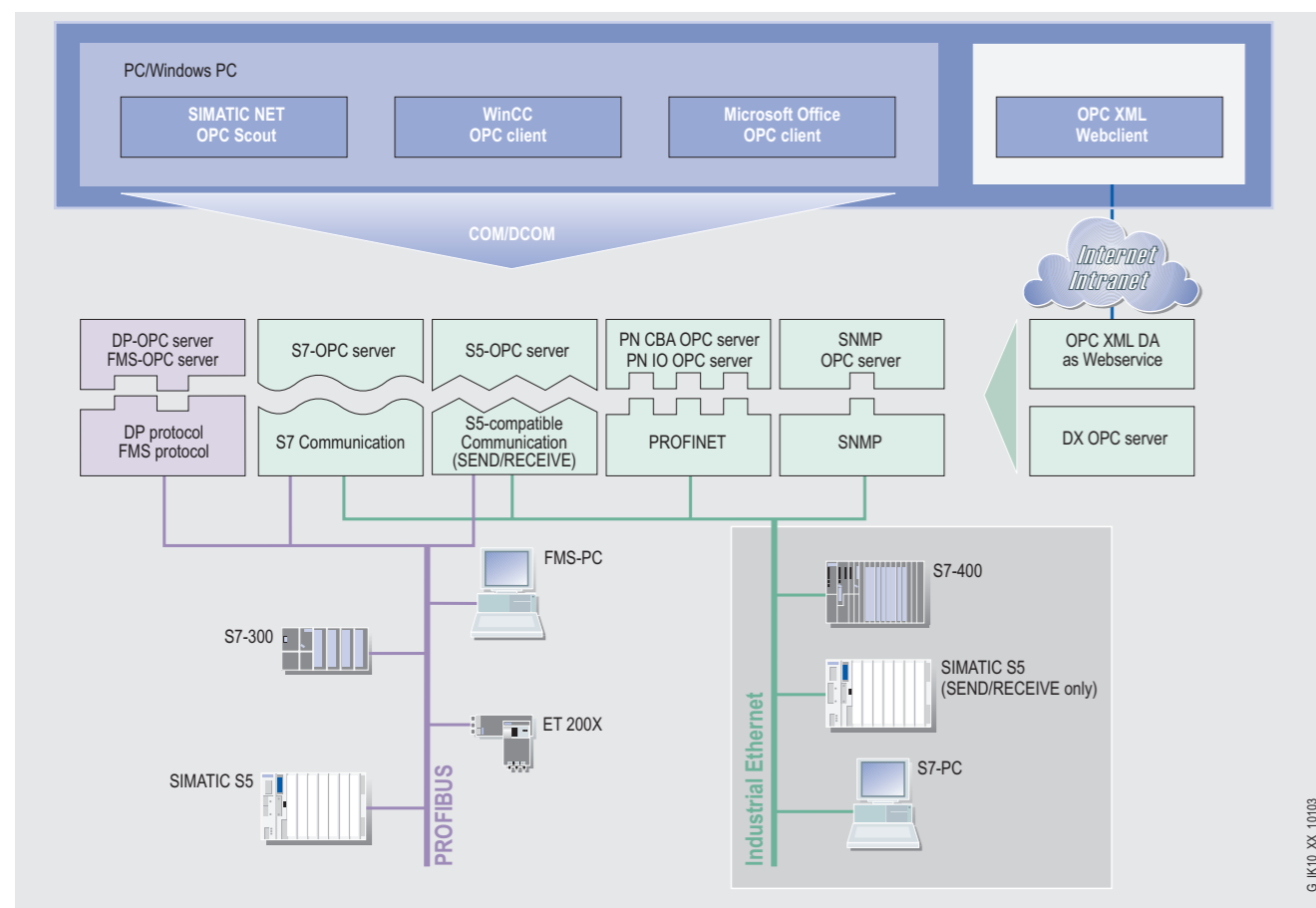
E) Subject to export regulations: AL: N and ECCN: 5D992B1

## Programming devices Communications software

### OPC server for Industrial Ethernet

#### 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

8

## Programming devices Communications software

### OPC server for Industrial Ethernet

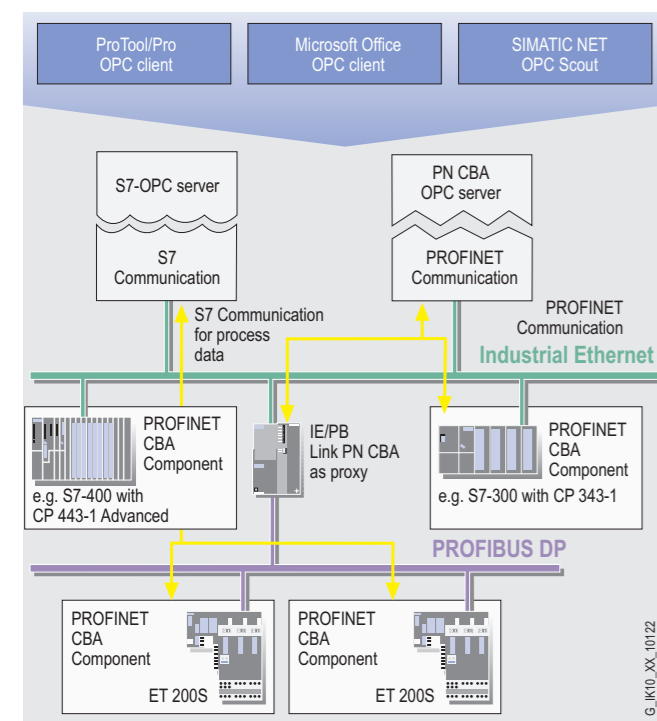
Technical specifications	Ordering data	Order No.
<p><b>Programming</b></p> <ul style="list-style-type: none"> <li>• Synchronous and asynchronous reading and writing of variables</li> <li>• Monitoring of variables using the OPC server with a signal to the client when a change occurs</li> <li>• Use of quantity operations; so a large amount of data can be processed in a short time.</li> </ul>	<p><b>DX OPC server Edition 2005<sup>E)</sup></b></p> <p>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 und CP 1612; requirement: SIMATIC NET IE PC / Windows product V6.2 with OPC interface; German/English</p>	<p><b>6GK1 706-0XW63-3AA0</b></p>
<p><b>Interfaces</b></p> <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 OXC for configuring instead of programming</li> <li>• OPC XML-Interface for Data Access</li> </ul>	<p><b>PN CBA OPC server Edition 2005<sup>E)</sup></b></p> <p>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</p>	<p><b>6GK1 706-0HB63-3AA0</b></p>
<p><b>Protocols</b></p> <ul style="list-style-type: none"> <li>• S5-compatible communication (SEND/RECEIVE)</li> <li>• S7 communication</li> <li>• PROFINET</li> </ul>	<p><b>SNMP OPC server Edition 2005</b></p> <p>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</p> <ul style="list-style-type: none"> <li>• <b>Basic<sup>E)</sup></b> Administration of up to 20 IP addresses</li> <li>• <b>Extended<sup>E)</sup></b> Administration of up to 200 IP addresses</li> <li>• <b>Power Pack<sup>E)</sup></b> Upgrade from SNM OPC Server Basic to SNM OPC Server Extended</li> </ul>	<p><b>6GK1 706-1NW63-3AA0</b></p> <p><b>6GK1 706-1NX63-3AA0</b></p> <p><b>6GK1 706-1NW63-3AA4</b></p>
<p><b>Product variants</b></p> <p><b>include OPC servers for:</b></p> <p>S7-1613 S7 communication, XML-DA S5-compatible communication</p> <p>SOFTNET-S7 for Industrial Ethernet S7 communication, XML-DA S5-compatible communication</p> <p>SOFTNET-S7 Lean for Industrial Ethernet S7 communication, XML-DA S5-compatible communication</p> <p>PN CBA OPC server PROFINET CBA, XML-DA</p> <p>SOFTNET PN IO PROFINET IO, XML-DA</p> <p>SNMP OPC server SNMP protocol access</p> <p>DX OPC server horizontal communication between OPC servers</p>		

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

## Programming devices Communications software

### PN CBA OPC server

#### 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

#### Technical specifications

PN CBA OPC Server	
Programming	<ul style="list-style-type: none"> <li>• Open and standardized</li> <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>
Interfaces	<ul style="list-style-type: none"> <li>• Custom Interface (C++, .NET)</li> <li>• Automation Interface (Visual Basic, Excel, Access,...)</li> <li>• OPC Data Control</li> <li>• OPC XML-Interface for Data Access</li> </ul>
Protocols	<ul style="list-style-type: none"> <li>• DCOM protocol</li> </ul>
Configuring	Configuring software for PROFINET SIMATIC iMap
<b>PROFINET communication (CBA)</b>	
• Number of communication partners	Max. 288
• Number of interconnections	Max. 10.000

#### Ordering data

Order No.	Order No.
<b>PN CBA OPC server Edition 2005<sup>E)</sup></b>	<b>6GK1 706-0HB63-3AA0</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>Software iMap V2.0</b>	
for configuring PROFINET CBA, Requirement: Windows 2000 Prof. SP4 or Windows XP Prof. SP1; on PG or PC with Pentium processor, min. 500 MHz; STEP 7, V5.2 SP1 and higher incl. NCM, SIMATIC NET IE SOFTNET-PG, V6.2 and higher; PN OPC server, V6.2 and higher	
Type of delivery: German, English with electronic documentation;	
• Single license	<b>6ES7 820-0CC03-0YX0</b>
• Software Update Service	<b>6ES7 820-0CC01-0YX2</b>
• Upgrade iMap V2.0 single license	<b>6ES7 820-0CC03-0YX4</b>
<b>SIMATIC NET Software Update Service<sup>E)</sup></b>	<b>6GK1 704-0AA00-3AA2</b>
For Industrial Ethernet, PROFIBUS, OPC server, for one year service incl. manuals on CD-ROM; prerequisite: SIMATIC NET PC/Windows products German/English	

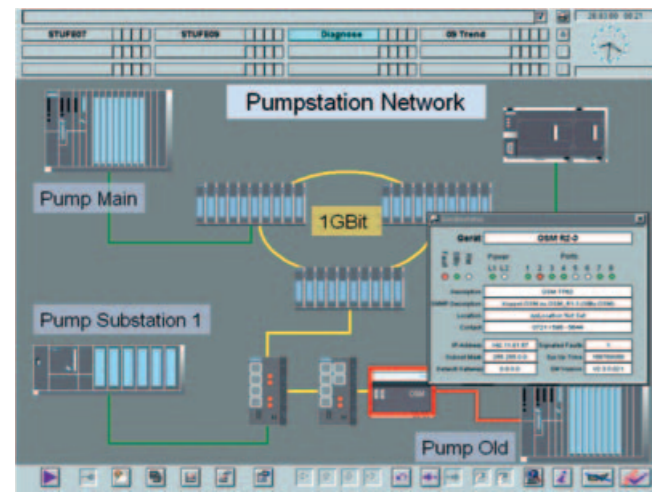
E) Subject to export regulations: AL: N and ECCN: 5D992B1



## Programming devices Communications software

### SNMP OPC server

#### 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 Edition 2005

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 WServer; for CP 15.12/CP 16.12/CP 16.13 German/English

##### • Basic<sup>E)</sup>

Administration of up to 20 IP addresses

**6GK1 706-1NW63-3AA0**

##### • Extended<sup>E)</sup>

Administration of up to 200 IP addresses

**6GK1 706-1NX63-3AA0**

##### • Power Pack<sup>E)</sup>

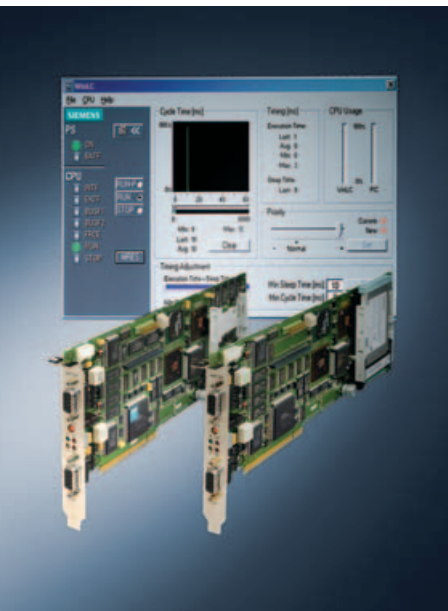
Upgrade from SNM OPC Server Basic to SNM OPC Server Extended

**6GK1 706-1NW63-3AA4**

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

## PC-based Automation

# 9



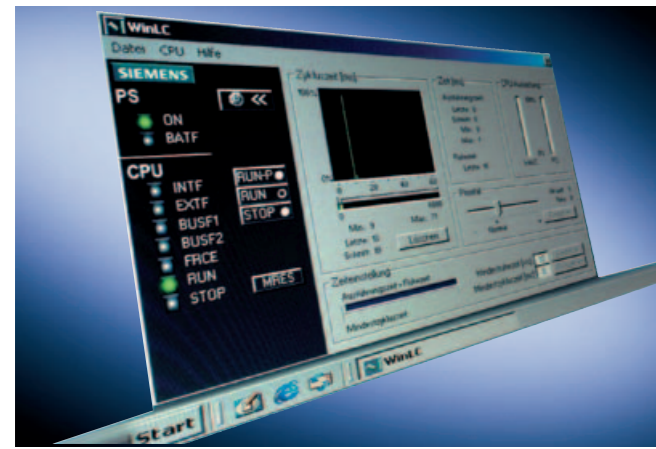
9/2 **PC-based Control**  
9/2 SIMATIC WinAC Software PLC



## 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 RTX:
  - The software solution for tasks that demand a highly deterministic response and high performance.
  - With real-time extension to provide deterministic behavior for the control unit.
- WinAC Basis:
  - The low-cost solution for PC-based control tasks.
  - For data-intensive processes in connection with extensive PC tasks.

#### Technical specifications

	6ES7 671-0CC03-0YA0	6ES7 671-0RC05-0YA0		6ES7 671-0CC03-0YA0	6ES7 671-0RC05-0YA0
<b>Memory/backup</b>			<b>CPU/processing times</b>		
Memory			• for bit instruction, min.	0.013 µs; typ.	0.004 µs
• Working memory			• for integer math, min.	0.025 µs; typ.	0.003 µs
- integral	PC working memory usable	PC working memory usable	• for floating-point math, min.	0.025 µs; typ.	0.004 µs
• Load memory			• Reference platform	Pentium IV, 2.4 GHz	Pentium IV, 2.4 GHz
- integral RAM, max.	PC working memory usable	PC working memory usable	<b>Timers/counters and their retentive characteristics</b>		
<b>CPU/blocks</b>			<b>S7 counter</b>		
DB			- Number	512	512
- Number, max.	Limited only by the amount of available PC working memory	Limited only by the amount of available PC working memory	• Retentivity		
- Size, max.	64 KByte	64 KByte	- adjustable	Yes	Yes
FB			- lower limit	0	0
- Number, max.	Limited only by the amount of available PC working memory	Limited only by the amount of available PC working memory	- upper limit	511	511
- Size, max.	64 KByte	64 KByte	- preset	8	8
FC			• Counting range		
- Number, max.	Limited only by the amount of available PC working memory	Limited only by the amount of available PC working memory	- adjustable	Yes	Yes
- Size, max.	64 KByte	64 KByte	- lower limit	0	0
OB			- upper limit	999	999
- Size, max.	64 KByte	64 KByte	IEC counter		
Nesting depth			- available	Yes	Yes
- per priority class	24	24	- Type	SFB	SFB
- additional levels within an error OB	24	24	<b>S7 times</b>		
			- 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	SFB

## PC-based Automation PC-based Control

SIMATIC WinAC Software PLC

### Technical specifications (continued)

	6ES7 671-0CC03-0YA0	6ES7 671-0RC05-0YA0
<b>Data areas and their retentive characteristics</b>		
• Retentivity without UPS and PS extension board	none	none
• Retentivity with UPS	all data	all data
<b>Flags</b>		
- Number	2 KByte	16 KByte
- of which retentive	MB 0 - MB 2048	MB 0 - 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	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
<b>Process image</b>		
- 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
<b>Digital channels</b>		
- Inputs	131,072	131,072
- Outputs	131,072	131,072
<b>Analog channels</b>		
- Inputs	8,192	8,192
- Outputs	8,192	8,192
<b>Configuration</b>		
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: FM350-1/350-2, 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>		
<b>Clock</b>		
- Hardware clock (realtime clock)	Yes	Yes
- buffered	Yes	Yes
<b>Time synchronization</b>		
- supported	No	Yes
- on PC-CP, slave		Yes

	6ES7 671-0CC03-0YA0	6ES7 671-0RC05-0YA0
<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	Yes
• Alarm 8 blocks	No	Yes
• Statuses	No	No
<b>Test and startup functions</b>		
Status/modify		
- Variable	Yes	Yes
<b>Forcing</b>		
- Forcing	No	No
• Status block	Yes	Yes
• Single step	Yes	Yes
<b>Diagnostic buffer</b>		
- available	Yes	Yes
- Number of inputs, max.	3,200	3,200
- preset	120	120
<b>Communication functions</b>		
• PG/OP communication	Yes	Yes
<b>Global data communication</b>		
- supported	No	No
<b>S7 basic communication</b>		
- supported	No	No
<b>S7 communication</b>		
- as server	Yes	Yes
- as client	Yes	Yes
<b>Number of connections</b>		
- overall	64	64
- reserved for PG communication	1	1
- reserved for OP communication	1	1
<b>1st interface</b>		
• Type of interface	CP5611, SIMATIC PC integral	CP5611, SIMATIC PC integral
• Number of simultaneous operable CPs, max.	1	1
• Physical	RS 485 / PROFIBUS	RS 485 / PROFIBUS
• Isolated	Yes	Yes
<b>Functionality</b>		
- MPI	No	No
- DP master	Yes	Yes
- DP slave	No	No
<b>DP master</b>		
- Number of connections, max.	8	8

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## PC-based Automation PC-based Control

### SIMATIC WinAC Software PLC

#### Technical specifications (continued)

	6ES7 671-0CC03-0YA0	6ES7 671-0RC05-0YA0
<ul style="list-style-type: none"> <li>Services           <ul style="list-style-type: none"> <li>- PG/OP communication</li> <li>- Routing</li> <li>- Global data communication</li> <li>- S7 basic communication</li> <li>- S7 communication</li> <li>- Equidistance support</li> <li>- SYNC/FREEZE</li> <li>- Activate/deactivate DP slaves</li> <li>- Direct data exchange (lateral communication)</li> <li>- DPV0</li> <li>- DPV1</li> <li>- Transmission rates, max.</li> <li>- Number of DP slaves, max.</li> </ul> </li> <li>Address area           <ul style="list-style-type: none"> <li>- Inputs, max.</li> <li>- Outputs, max.</li> </ul> </li> <li>User data per DP Slave           <ul style="list-style-type: none"> <li>- Inputs, max.</li> <li>- Outputs, max.</li> </ul> </li> </ul>	Yes Yes No No Yes No Yes Yes Yes Yes No 12 Mbit/s 32 16 KByte 16 KByte 244 Byte 244 Byte	Yes Yes No No Yes No Yes Yes Yes Yes Yes 12 Mbit/s 64 16 KByte 16 KByte 244 Byte 244 Byte
<b>2nd interface</b> <ul style="list-style-type: none"> <li>Type of interface</li> <li>Number of simultaneous operable CPs, max.</li> <li>Physical</li> <li>Isolated</li> </ul>	CP5613, CP 5613-A2 4 RS 485 / PROFIBUS Yes	CP 5613, CP 5613-A2 4 RS 485 / PROFIBUS Yes
<b>Functionality</b> <ul style="list-style-type: none"> <li>- MPI</li> <li>- DP master</li> <li>- DP slave</li> <li>- PROFINET CBA</li> <li>- PROFINET CBA-SRT</li> <li>- PROFINET IO-Controller</li> </ul>	No Yes No No No No	No Yes No No No No
<b>DP master</b> <ul style="list-style-type: none"> <li>- Number of connections, max.</li> </ul>	50	50
<ul style="list-style-type: none"> <li>Services           <ul style="list-style-type: none"> <li>- PG/OP communication</li> <li>- Routing</li> <li>- Global data communication</li> <li>- S7 basic communication</li> <li>- S7 communication</li> <li>- Equidistance support</li> <li>- SYNC/FREEZE</li> <li>- Activate/deactivate DP slaves</li> <li>- Direct data exchange (lateral communication)</li> <li>- DPV0</li> <li>- DPV1</li> <li>- Transmission rates, max.</li> <li>- Number of DP slaves, max.</li> </ul> </li> </ul>	Yes Yes No No Yes Yes Yes Yes Yes Yes Yes 12 Mbit/s 125	Yes Yes No No Yes Yes Yes Yes Yes Yes Yes 12 Mbit/s 125
<ul style="list-style-type: none"> <li>Address area           <ul style="list-style-type: none"> <li>- Inputs, max.</li> <li>- Outputs, max.</li> </ul> </li> <li>User data per DP Slave           <ul style="list-style-type: none"> <li>- Inputs, max.</li> <li>- Outputs, max.</li> </ul> </li> </ul>	16 KByte 16 KByte 244 Byte 244 Byte	16 KByte 16 KByte 244 Byte 244 Byte
<b>PROFINET CBA</b> <ul style="list-style-type: none"> <li>Type of interface</li> </ul>		Onboard Ethernet interface of SIMATIC PC
<b>Clock synchronism</b> <ul style="list-style-type: none"> <li>Clock synchronous operation</li> <li>Number of DP masters with clock synchronism</li> <li>User data per clock synchronous slave, max.</li> <li>Equidistance</li> <li>Shortest clock pulse</li> </ul>	No	Yes 2 128 Byte Yes 2.2 ms
<b>CPU/ programming</b> <ul style="list-style-type: none"> <li>Programming language           <ul style="list-style-type: none"> <li>- STEP 7</li> </ul> </li> <li>- KOP</li> <li>- FUP</li> <li>- AWL</li> <li>- SCL</li> <li>- CFC</li> <li>- GRAPH</li> <li>- HiGraph</li> </ul>	Yes; as of V5.2, engineering tools (optional) Yes Yes Yes Yes Yes Yes Yes	Yes Yes Yes Yes Yes Yes Yes
<b>Software library</b> <ul style="list-style-type: none"> <li>- Easy Motion Control</li> <li>Bracket levels</li> <li>User program protection/ password protection</li> </ul>	Yes 8 No	Yes 8 No
<b>Open development interfaces</b> <ul style="list-style-type: none"> <li>- CCX (Custom Code Extension)</li> <li>- SMX (Shared Memory Extension)</li> <li>- Inputs</li> <li>- Outputs</li> <li>- CMI (Controller Management Interface)</li> </ul>	Yes Yes 4 KByte 4 KByte Yes	Yes Yes 4 KByte 4 KByte Yes

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## PC-based Automation PC-based Control

### SIMATIC WinAC Software PLC

#### Technical specifications (continued)

	6ES7 671-0CC03-0YA0	6ES7 671-0RC05-0YA0													
<b>Hardware requirements</b>			<b>Software 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	Operating system												
• Required memory on hard disk, min.	100 MByte	100 MByte	- Windows NT 4.0												
• Main memory, min.	128 MByte	256 MByte	- Windows 2000												
• Processor	Intel Pentium 800 MHz	Intel Pentium 400 MHz	- Windows XP												
			<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"></td> <td style="width: 20%; text-align: center;">6ES7 671-0CC03-0YA0</td> <td style="width: 20%; text-align: center;">6ES7 671-0RC05-0YA0</td> </tr> <tr> <td></td> <td style="text-align: center;">No</td> <td style="text-align: center;">No</td> </tr> <tr> <td></td> <td style="text-align: center;">Yes; Professional, &gt;=SP3</td> <td style="text-align: center;">Yes; Professional, &gt;=SP3</td> </tr> <tr> <td></td> <td style="text-align: center;">Yes; Professional, SP1</td> <td style="text-align: center;">Yes; Professional, SP1 and SP2</td> </tr> </table>		6ES7 671-0CC03-0YA0	6ES7 671-0RC05-0YA0		No	No		Yes; Professional, >=SP3	Yes; Professional, >=SP3		Yes; Professional, SP1	Yes; Professional, SP1 and SP2
	6ES7 671-0CC03-0YA0	6ES7 671-0RC05-0YA0													
	No	No													
	Yes; Professional, >=SP3	Yes; Professional, >=SP3													
	Yes; Professional, SP1	Yes; Professional, SP1 and SP2													

#### Ordering data

	Order No.		Order No.
<b>SIMATIC WinAC RTX 2005<sup>B)</sup></b> Software-based PC-based control system for applications requiring a strictly deterministic response; CD-ROM with electronic documentation in English, French and German; Single license, for Windows 2000/XP	<b>6ES7 671-0RC05-0YA0</b>	<b>SIMATIC WinAC PN Option V4.1<sup>B)</sup></b> For using WinAC Basis with Component based Automation, based on the PROFINET communications standard; single license, for Windows 2000/XP	<b>6ES7 671-0CC03-2YA0</b>
<b>SIMATIC WinAC RTX 2005 Upgrade<sup>B)</sup></b> For upgrading from V4.0, V4.1 to 2005; single license, for Windows 2000/XP	<b>6ES7 671-0RC05-0YE0</b>	<b>CP 5613 A2 communications processor<sup>E)</sup></b> 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, German/English	<b>6GK1 561-3AA01</b>
<b>SIMATIC WinAC Basis V4.1<sup>B)</sup></b> Software-based PC-based control system; CD-ROM with electronic documentation in English, French and German; Single license, for Windows 2000/XP	<b>6ES7 671-0CC03-0YA0</b>		
<b>SIMATIC WinAC Basis Upgrade<sup>B)</sup></b> For upgrading from V4.0 to V4.1; single license, for Windows 2000/XP	<b>6ES7 671-0CC03-0YE0</b>		

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

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

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PC-based Automation



<b>13/2</b>	<b>Training</b>
13/3	SIMATIC S7 Training Cases S7-300 TIA, S7-300
13/4	SIMATIC S7 Training Cases S7-300F, S7-400F/H
<b>13/5</b>	<b>Additional documentation, standards and approbations</b>
13/5	SIMATIC Manual Collection
13/5	CE marking
<b>13/6</b>	<b>Quality management</b>
<b>13/7</b>	<b>Siemens contact partners</b>
13/7	Siemens contacts worldwide
13/8	Partner
<b>13/9</b>	<b>Service &amp; Support</b>
13/9	Information and Ordering in the Internet and on CD-ROM
<b>13/10</b>	<b>Customer Support</b>
13/10	Our Services for Every Phase of Your Project
13/11	Knowledge Base on CD-ROM
13/11	Automation Value Card
<b>13/12</b>	<b>Software Licenses</b>
<b>13/13</b>	<b>Index</b>
<b>13/14</b>	<b>Ordering data summary</b>
<b>13/15</b>	<b>Fax order form</b>
<b>13/16</b>	<b>Conditions of sale and delivery, Export regulations</b>

## Appendix Training

### Training is decisive for your success

**SITRAIN®** - the Siemens Training for Automation and Industrial Solutions - provides you with comprehensive support when solving your tasks.

Training by the market leader in automation, plant installation and support permits you to make your decisions with certainty and full command. Especially where the optimum and efficient use of products and plants are concerned. You can eliminate deficiencies in existing plants, and exclude expensive faulty planning right from the beginning.

**All in all, this represent an enormous gain for your company: shortened startup times, optimized plant components, faster troubleshooting, reduced down times. In other words, increased profits and lower costs.**



### Top trainers

Our trainers know their topics in practice, and possess comprehensive didactic experience. Course developers have a direct wire to product development, and directly pass on their knowledge to the trainers.

### Practical experience

The practical experience of our trainers makes it possible for them to pass on theoretical matter in a plausible manner. But since it is known that all theory is drab, we attach great importance to practical exercises which can comprise up to half of the course time. You can therefore immediately implement your new knowledge in practice. We train you on state-of-the-art methodically/didactically designed training equipment. You feel absolutely certain when trained in this manner.

### Wide variety

With a total of approx. 300 local attendance courses, we train the complete range of A&D products and a large portion of the system solutions from I&S. Telecourses, teach-yourself software and seminars presented on the Web supplement our classical range of courses.

### Close to our customers

The distance is short. You can find us approx. 60 times in Germany, and worldwide in 62 countries. You wish to have individual training instead of one of our 300 courses? No problem: we will provide a program tailored exactly to your personal requirements. Training can be carried out in our Training Centers or at your company.

### The right mixture: blended learning

Blended learning is understood to be the combination of various training media and sequences. For example, a local attendance course in a Training Center can be optimally supplemented by a teach-yourself program as preparation or follow-up. Furthermore, SITRAIN utilizes supported online training for live instruction on the Internet at agreed times.

**The right mixture is the solution. Therefore blended learning can convey complex topics well, and train networked thinking. Additional effect: reduced travelling costs and periods of absence through training sequences independent of location and time.**

### The international training portal

[www.siemens.com/sitrain](http://www.siemens.com/sitrain)

All training facilities at a glance: search in the worldwide range of courses at leisure, call up all course dates online, utilize the daily updated display of vacant course spaces - and register directly.

### Customer comments on Sitrain

*"... the good course documents, competence and flexibility convinced me."*

[Manfred Riek from Festo Systemtechnik, responsible for planning the basic and further training of project engineers]

*"... represents effective training, constructive dialogs, and solutions which provide great help."*

[Günter Niedermaier, electrical design manager at AMT, Aalen]

### Contact

Visit us on the Internet at:

[www.siemens.com/sitrain](http://www.siemens.com/sitrain)

or let us advise you personally. You can request our latest training catalog from:

Course office, Infoline Germany:  
Tel.: 01805 / 23 56 11 (0.12 €/Min)  
Fax: 01805 / 23 56 12

## Appendix Training

### SIMATIC S7 Training Cases S7-300 TIA, S7-300

#### Application range of training case S7-300 TIA



The training case is used for practicing the programming, operation and commissioning of programmable logic controllers in the context of Totally Integrated Automation.

#### Application range of training case S7-300



The training case is used for practicing the programming, operation and commissioning of programmable logic controllers.

#### Design

The training case consists of a SIMATIC S7-300 automation system, a TP 170B operation and monitoring system, and a simulator. The automation system is fitted in a case for transport. This comprises:

- Mounting rail
- PS 307 load power supply
- CPU 315-2DP
- SM 321 digital input module, DI 32 x 24 V DC
- SM 323 digital input/output module, DI 8, DO 8
- SM 322 digital output module, DO 32 x 24 V DC/0.5 A
- SM 331 analog input module, AI 2 x 12 bit plus sign
- Terminal blocks for digital signals
- Terminal/plug block for analog signals
- SIMATIC S7 simulator
- 1 ET 200S with
  - 1 IM151 interface module
  - 1 TM-P 15S23-A1 terminal block
  - 1 PM-E DC 24 V power module
  - 4 TM-E 15S24-A1 terminal blocks
  - 2 digital input modules 4 x 24 V DC
  - 2 digital output modules
  - 1 DI/DO terminal block, 37-contact
- TP170B color
- PROFIBUS DP connection cable for TIA training system

#### Design

The training case consists of a SIMATIC S7-300 automation system including simulator. The automation system is fitted in a case for transport. This comprises:

- Mounting rail
- PS 307 load power supply
- CPU 314
- SM 321 digital input module, DI 32 x 24 V DC
- SM 323 digital input/output module, DI 8, DO 8
- SM 322 digital output module, DO 32 x 24 V DC/0.5 A
- SM 331 analog input module, AI 2 x 12 bit plus sign
- Terminal blocks for digital signals
- Terminal/plug block for analog signals
- SIMATIC S7 simulator

#### Technical specifications

Degree of protection to DIN VDE 0470 Part 1/EN 60529/IEC 529	IP00
Permissible ambient temperature	0 ... +60 °C
Dimensions in mm (W x H x D)	520 x 410 x 350
Weight	Approx. 15 kg

#### Technical specifications

Degree of protection to DIN VDE 0470 Part 1/EN 60529/IEC 529	IP00
Permissible ambient temperature	0 ... +50 °C
Dimensions in mm (W x H x D)	520 x 410 x 350
Weight	Approx. 18 kg

#### Ordering data

Ordering data	Order No.
S7-300 training case with CPU 315-2DP complete with ET 200S, TP 170B and simulator <sup>G)</sup> Abbreviated name: TG-S7-315TIA	6ZB2 310-0BW00

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

#### Ordering data

Ordering data	Order No.
S7-300 training case with CPU 314 complete with simulator <sup>D)</sup> Abbreviated name: TG-S7-314	6ZB2 310-0BF01
S7-300 training case with CPU 315-2DP complete with simulator <sup>H)</sup> Abbreviated name: TG-S7-315 Equipment as above except: • 1 CPU 315-2DP (instead of CPU 314)	6ZB2 310-0BM01

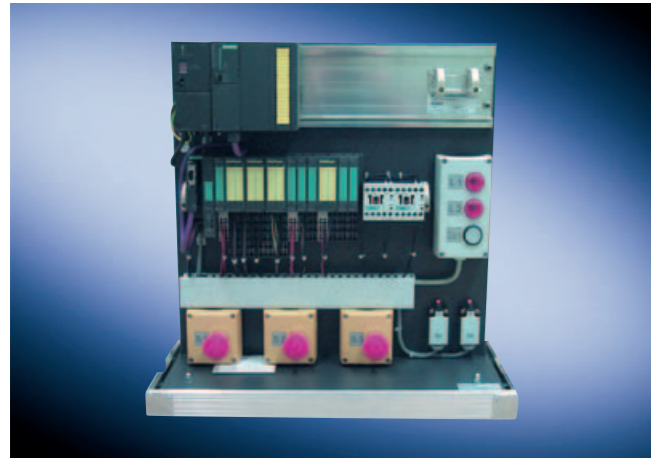
D) Subject to export regulations: AL: N and ECCN: 4A994

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

## Appendix Training

### SIMATIC S7 Training Cases S7-300F, S7-400F/H

#### Application range of training case S7-300F



The training case is used for practicing the programming, operation and commissioning of fail-safe programmable logic controllers.

#### Design

The training case consists of a SIMATIC S7-300F automation system, emergency stop buttons, contactors, door switches and signal annunciators. The automation system is fitted in a case for transport. This comprises:

- SIMATIC S7 mounting rail
- PS 307 power supply
- CPU 315F
- Bus connector
- IM 151 interface module
- Power module including terminal module
- F-DI modules including terminal modules
- F-DO module including terminal module
- F power module
- DI module including terminal module
- DO module including terminal module
- Emergency stop buttons
- Reset
- Contactors
- Mechanical components

#### Technical specifications

Degree of protection to DIN VDE 0470 Part 1/EN 60529/IEC 529	IP00
Permissible ambient temperature	0 ... +60 °C
Dimensions in mm (W x H x D)	520 x 410 x 350
Weight	Approx. 15 kg

#### Ordering data

Ordering data	Order No.
S7-300F training case with CPU 315F complete with emergency stop buttons, contactors, door switches and signal annunciators <sup>H)</sup>	6ZB2 310-0CA00
Abbreviated name: TG-S7-315F	

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

#### Application range of training case S7-400F/H



The training case is used for practicing the programming, operation and commissioning of fail-safe and fault-tolerant programmable logic controllers.

#### Design

The training case consists of a SIMATIC S7-400F/H automation system with 2 CPUs. The automation system is fitted in a case for transport. This comprises:

- PS 307 power supplies
- IM 153 interface modules
- DI module including bus module
- DO module including bus module
- F-DI module including bus module
- F-DO module including bus module
- Rack
- PS 407 power supplies
- S7-400 CPUs 417H
- Communications processors
- Communications modules including fiber-optic cables

#### Technical specifications

Degree of protection to DIN VDE 0470 Part 1/EN 60529/IEC 529	IP00
Permissible ambient temperature	0 ... +60 °C
Dimensions in mm (W x H x D)	665 x 565 x 385
Weight	Approx. 30 kg

#### Ordering data

Ordering data	Order No.
S7-400F/H training case with 2 x CPU 417H complete <sup>H)</sup>	6ZB2 310-0CB00
Abbreviated name: TG-S7-417H	

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



## Appendix

### Additional documentation, standards and approbations

#### SIMATIC Manual Collection

##### SIMATIC Manual Collection

The SIMATIC manual collection brings together the manuals of Totally Integrated Automation in the smallest possible package. It is eminently suitable for startup and service, replaces the space-consuming paper version in the office and provides fast access to the information.

The manual collection contains manuals in 5 languages for

- LOGO!
- SIMATIC S7-200, TD 200
- SIMATIC S7-300, C7
- SIMATIC S7-400
- STEP 7, Engineering Tools, Runtime Software
- SIMATIC DP (Distributed I/O)
- SIMATIC HMI (Human Machine Interface)
- SIMATIC NET (Industrial Communication)
- Machine Vision
- PCS 7 Process Control System

Manuals that are not yet available in all 5 languages will at least be included in English and German.

There is an update contract for the SIMATIC Manual Collection that encompasses supply of the up-to-date collection and three subsequent updates which is valid for one year. If the update contract is not cancelled, it is automatically extended and the list price will be charged to the customer.

Ordering data	Order No.
<b>SIMATIC Manual Collection</b> <sup>E)</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	<b>6ES7 998-8XC01-8YE0</b>
<b>SIMATIC Manual Collection update service for 1 year</b> <sup>E)</sup> Current Manual Collection CD as well as the three following updates	<b>6ES7 998-8XC01-8YE2</b>

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

#### CE marking

##### CE marking

The electronic products described in this catalog comply with the requirements and protection objectives of the following EU guidelines and with the harmonized European standards (EN) which have been published for programmable controllers in the official Journal of the European Union:

- 89/336/EEG "Electromagnetic Compatibility" (EMC guideline).
- 73/23/EEG "Electrical Equipment for Use Within Specific Voltage Limits" (low voltage guideline).

We have declarations of conformity available for the responsible authorities.

The SIMATIC products are designed for operation in industrial environments and comply with the following requirements:

Noise emissions: EN 50081-2: 1993  
 Noise immunity: EN 50082-2: 1995

The products can also be used in the domestic environment (household, business and trade area, small plants) with individual approval:

Emitted interference: Individual approval  
 Immunity: EN 50082-1: 1992

For household use an individual approval from the respective national authority or testing body is required as far as emitted-interference is concerned. In Germany this approval is issued by the Federal Post and Telecommunications Office and its subsidiaries.

For the installation and operation of the products described in this catalog, the installation guidelines described in the manuals and the important notes concerning installation in cabinets and concerning the use of shielded cable must be complied with.

##### Notes for machine manufacturers

The SIMATIC automation system is not a machine within the context of the EU machine guidelines. For SIMATIC, a conformity declaration with respect to the EU machine guidelines 89/392/EEC is not available.

The EU guideline for machines 89/392/EEC specifies the requirements for a machine. A machine is understood for the purposes of this guideline to be a combination of interconnected parts or mechanisms (see also EN 292-1, Paragraph 3.1).

SIMATIC is part of the electrical equipment of a machine and must therefore be included in the conformity declaration procedure by the machine manufacturer.

The EN 60204-1 standard (safety of machines, general requirements for the electrical equipment of machines) is applicable to the electrical equipment of machines.

The following table should be of assistance with the conformity declaration and shows which criteria of EN 60204-1 (as of June 1993) apply for SIMATIC:

EN 60204-1	Topic/criterion	Notes
Paragraph 4	General requirements	The requirements are met when the equipment is assembled/installed in accordance with the installation guidelines. Please note the relevant information in the manuals.
Paragraph 11.2	Digital input/output interfaces	The requirements are met
Paragraph 12.3	Programmable equipment	The requirements are met when the equipment is installed in lockable cabinets to protect against alteration of the memory contents by unauthorized persons
Paragraph 20.4	Voltage tests	The requirements are met





## Appendix Siemens contact partners

Siemens contacts worldwide

### Overview



At [www.siemens.com/automation/partner](http://www.siemens.com/automation/partner) you can find details of Siemens contact partners worldwide responsible for particular technologies.

You can obtain in most cases a contact partner for

- Technical Support,
- Spare parts/repairs,
- Service,
- Training,
- Sales or
- Consultation/engineering.

You start by selecting a

- Country,
- Product or
- Sector.

By further specifying the remaining criteria you will find exactly the right contact partner with his/her respective expertise.



## Appendix Siemens contact partners

### Partner

#### Siemens Automation Solution Provider



Automation solutions are becoming more and more complex, requirements are continuously increasing.

We help you find competent partners to provide you with an excellent and reliable solution. Your partner combines sector-specific competence and experience with comprehensive expertise for automation solutions.

The Siemens Automation Solution Provider program sets high standards with regard to expert competencies of the participating companies and the worldwide network of partners. Thanks to the careful selection of our Solution Providers and constant training, you will find a competent contact partner who is close-by and is always working with state-of-the-art technology.

#### The program

- Are you looking for automation solutions for very specific tasks?
- Do you want professional advice and support?
- Are you looking for sector experts?
- Do you want to have the competitive edge?

If yes, then our Siemens Automation Solution Providers are exactly what you need!

Our partner companies have the expertise to develop safe, economical and future-oriented solutions - for all sectors and all automation components: from all SIMATIC component, SIMATIC control systems, SIMATIC HMI visualization systems, communication networks via SIMATIC PCS 7, microsystems and Motion Control systems right up to products for the vertical integration of industrial automation and office systems.

#### Your benefits

- Tailor-made, attractively priced and future-oriented solutions.
- Considerable advantages with regard to speed, efficiency, and closeness to your location.
- Sector-specific expertise of the Solution Provider.
- We guarantee that the most current state of the art is used and our Solutions Providers are aware of the latest developments.

#### Certification

Our Solution Providers are permanently trained to ensure that they are always kept up to date on the state of the art. They must participate in a special certification program where they have to proof their high competency in dealing with Siemens automation tools. Thus we can guarantee a particularly high quality standard, which is ensured by consecutive training sessions with new components and special Solution Provider workshops.



Internet:  
<http://www.siemens.com/automation/solution-provider>  
E-Mail:  
SSPinfo@nbgm.siemens.de

## Appendix Service & Support

### Information and Ordering in the Internet and on CD-ROM

#### A&D in the WWW



A detailed knowledge of the range of products and services available is essential when planning and configuring automation systems. It goes without saying that this information must always be fully up-to-date.

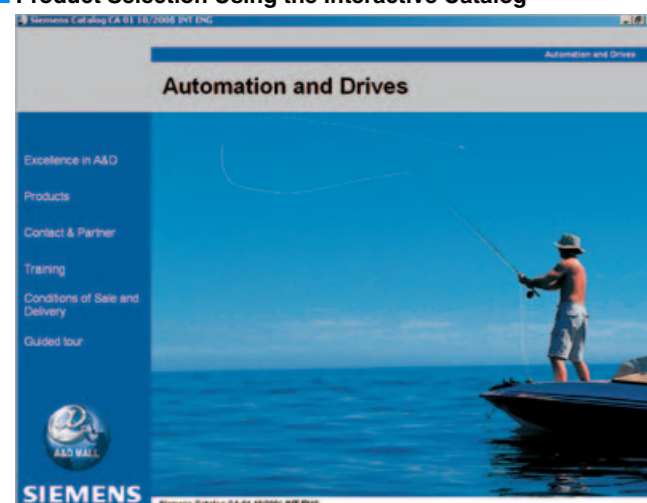
The Siemens Automation and Drives Group (A&D) has therefore built up a comprehensive range of information in the World Wide Web, which offers quick and easy access to all data required.

Under the address

<http://www.siemens.com/automation>

you will find everything you need to know about products, systems and services.

#### Product Selection Using the Interactive Catalog



Detailed information together with convenient interactive functions: The interactive catalog CA 01 covers more than 80,000 products and thus provides a full summary of the Siemens Automation and Drives product base.

Here you will find everything that you need to solve tasks in the fields of automation, switchgear, installation and drives. All information is linked into a user interface which is easy to work with and intuitive.

After selecting the product of your choice you can order at the press of a button, by fax or by online link.

Information on the interactive catalog CA 01 can be found in the Internet under

<http://www.siemens.com/automation/ca01>

or on CD-ROM or DVD.

#### Easy Shopping with the A&D Mall



The A&D Mall is the virtual department store of Siemens AG in the Internet. Here you have access to a huge range of products presented in electronic catalogs in an informative and attractive way.

Data transfer via EDIFACT allows the whole procedure from selection through ordering to tracking of the order to be carried out online via the Internet.

Numerous functions are available to support you.

For example, powerful search functions make it easy to find the required products, which can be immediately checked for availability. Customer-specific discounts and preparation of quotes can be carried out online as well as order tracking and tracing.

Please visit the A&D Mall on the Internet under:

<http://www.siemens.com/automation/mall>



## Appendix Customer Support

### Our Services for Every Phase of Your Project



In the face of harsh competition you need optimum conditions to keep ahead all the time:  
A strong starting position. A sophisticated strategy and team for the necessary support - in every phase.  
Service & Support from Siemens provides this support with a complete range of different services for automation and drives.

In every phase: from planning and startup to maintenance and upgrading.

Our specialists know when and where to act to keep the productivity and cost-effectiveness of your system running in top form.

#### Online Support



The comprehensive information system available round the clock via Internet ranging from Product Support and Service & Support services to Support Tools in the Shop.

<http://www.siemens.com/automation/service&support>

#### Technical Support



Competent consulting in technical questions covering a wide range of customer-oriented services for all our products and systems.

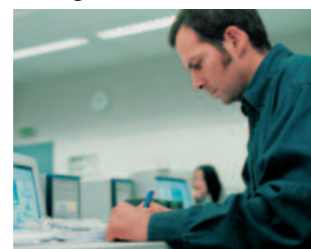
**Tel.: +49 (0)180 50 50 222**  
**Fax: +49 (0)180 50 50 223**  
<http://www.siemens.com/automation/support-request>

#### Technical Consulting



Support in the planning and designing of your project from detailed actual-state analysis, target definition and consulting on product and system questions right to the creation of the automation solution. <sup>1)</sup>

#### Configuration and Software Engineering



Support in configuring and developing with customer-oriented services from actual configuration to implementation of the automation project. <sup>1)</sup>

#### Service On Site



With Service On Site we offer services for startup and maintenance, essential for ensuring system availability.  
In Germany  
**0180 50 50 444 <sup>1)</sup>**

#### Repairs and Spare Parts



In the operating phase of a machine or automation system we provide a comprehensive repair and spare parts service ensuring the highest degree of operating safety and reliability.  
In Germany  
**0180 50 50 446 <sup>1)</sup>**

#### Optimization and Upgrading



To enhance productivity and save costs in your project we offer high-quality services in optimization and upgrading. <sup>1)</sup>

<sup>1)</sup> For country-specific telephone numbers go to our Internet site at:  
<http://www.siemens.com/automation/service&support>

## Appendix Customer Support

### Knowledge Base on CD-ROM Automation Value Card

#### Knowledge Base on CD-ROM



For locations without online connections to the Internet there are excerpts of the free part of the information sources available on CD-ROM (Service & Support Knowledge Base). This CD-ROM contains all the latest product information at the time of production (FAQs, Downloads, Tips and Tricks, Updates) as well as general information on Service and Technical Support.

The CD-ROM also includes a full-text search and our

Knowledge Manager for targeted searches for solutions. The CD-ROM will be updated every 4 months.

Just the same as our online offer in the Internet, the Service & Support Knowledge Base on CD comes complete in 5 languages (German, English, French, Italian, Spanish).

You can order the **Service & Support Knowledge Base CD** from your Siemens contact.

Order no. **6ZB5310-0EP30-0BA2**

Orders via the Internet (with Automation Value Card or credit card) at:

<http://www.siemens.com/automation/service&support>

in the Shop domain.

#### Automation Value Card



#### Small card - great support

The Automation Value Card is an integral component of the comprehensive service concept with which Siemens Automation and Drives will accompany you in each phase of your automation project.

It doesn't matter whether you want just specific services from our Technical Support or want to purchase high-quality Support Tools in our Online Shop, you can always pay with your Automation Value Card. No invoicing, transparent and safe. With your personal card number and associated PIN you can view the state of your account and all transactions at any time.

Services on card. This is how it's done.

Card number and PIN are on the back of the Automation Value Card. When delivered, the PIN is covered by a scratch field, guaranteeing that the full credit is on the card.

By entering the card number and PIN you have full access to the Service & Support services being offered. The charge for the services procured is debited from the credits on your Automation Value Card.

All the services offered are marked in currency-neutral credits, so you can use the Automation Value Card worldwide.

#### Automation Value Card order numbers

Credits	Order no.
200	<b>6ES7 997-0BA00-0XA0</b>
500	<b>6ES7 997-0BB00-0XA0</b>
1000	<b>6ES7 997-0BC00-0XA0</b>
10000	<b>6ES7 997-0BG00-0XA0</b>

Detailed information on the services offered is available on our Internet site at:

<http://www.siemens.com/automation/service&support>

Service & Support à la Card: Examples

#### Technical Support

"Priority"	Priority processing for urgent cases
"24 h"	Availability round the clock
".Extended"	Technical consulting for complex questions

#### Support Tools in the Support Shop

"System Utilities"	Tools that can be used directly for configuration, analysis and testing
"Applications"	Complete topic solutions including ready-tested software
"Functions & Samples"	Adaptable blocks for accelerating your developments



## Appendix Software Licenses

### Overview

#### Software types

Software requiring a license is categorized into types. The following software types have been defined.

- Engineering software
- Runtime software

#### Engineering software

This includes all software products for creating (engineering) user software, e.g. for configuring, programming, parameterizing, testing, commissioning or servicing.

Data generated with engineering software and executable programs can be duplicated for your own use or for use by third-parties free-of-charge.

#### Runtime software

This includes all software products required for plant/machine operation, e.g. operating system, basic system, system expansions, drivers, etc.

The duplication of the runtime software and executable programs created with the runtime software for your own use or for use by third-parties is subject to a charge.

You can find information about license fees according to use in the ordering data (e.g. in the catalog). Examples of categories of use include per CPU, per installation, per channel, per instance, per axis, per control loop, per variable, etc.

Information about extended rights of use for parameterization/configuration tools supplied as integral components of the scope of delivery can be found in the readme file supplied with the relevant product(s).

#### License types

Siemens Automation & Drives offers various types of software license:

- Floating license
- Single license
- Rental license
- Trial license

#### Floating license

The software may be installed for internal use on any number of devices by the licensee. Only the concurrent user is licensed. The concurrent user is the person using the program. Use begins when the software is started. A license is required for each concurrent user.

#### Single license

Unlike the floating license, a single license permits only one installation of the software.

The type of use licensed is specified in the ordering data and in the Certificate of License (CoL). Types of use include for example per device, per axis, per channel, etc.

One single license is required for each type of use defined.

#### Rental license

A rental license supports the "sporadic use" of engineering software. Once the license key has been installed, the software can be used for a specific number of hours (the operating hours do not have to be consecutive).

One license is required for each installation of the software.

#### Trial license

A trial license supports "short-term use" of the software in a non-productive context, e.g. for testing and evaluation purposes. It can be transferred to another license.

#### Certificate of license

The Certificate of License (CoL) is the licensee's proof that the use of the software has been licensed by Siemens. A CoL is required for every type of use and must be kept in a safe place.

#### Downgrading

The licensee is permitted to use the software or an earlier version/release of the software, provided that the licensee owns such a version/release and its use is technically feasible.

#### Delivery versions

Software is constantly being updated.

The following delivery versions

- PowerPack
- Upgrade

can be used to access updates.

Existing bug fixes are supplied with the ServicePack version.

#### PowerPack

PowerPacks can be used to upgrade to more powerful software. The licensee receives a new license agreement and CoL (Certificate of License) with the PowerPack. This CoL, together with the CoL for the original product, proves that the new software is licensed.

A separate PowerPack must be purchased for each original license of the software to be replaced.

#### Upgrade

An upgrade permits the use of a new version of the software on the condition that a license for a previous version of the product is already held.

The licensee receives a new license agreement and CoL with the upgrade. This CoL, together with the CoL for the previous product, proves that the new version is licensed.

A separate upgrade must be purchased for each original license of the software to be upgraded.

#### ServicePack


ServicePacks are used to debug existing products. ServicePacks may be duplicated for use as prescribed according to the number of existing original licenses.

#### License key

Siemens Automation & Drives supplies software products with and without license keys.

The license key serves as an electronic license stamp and is also the "switch" for activating the software (floating license, rental license, etc.).

The complete installation of software products requiring license keys includes the program to be licensed (the software) and the license key (which represents the license).

 Detailed explanations concerning license conditions can be found in the "Terms and Conditions of Siemens AG" or under <http://www.siemens.com/automation/mail> (A&D Mail Online-Help System)

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## Appendix

### Conditions of sale and delivery, Export regulations

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Further information can be obtained from our branch offices listed  
in the appendix or at [www.siemens.com/automation/partner](http://www.siemens.com/automation/partner)

<b>Automation and Drives</b>	<i>Catalog</i>	<b>Industrial Communication for Automation and Drives</b>	<i>Catalog</i> IK PI
Interactive catalog on CD-ROM			
• The Offline Mall of Automation and Drives	CA 01		
<b>Automation Systems for Machine Tools</b>		<b>Low-Voltage Controls and Distribution</b>	
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SINUMERIK & SINAMICS	NC 61	Power Distribution – Products and Systems for Low-Voltage Power Distribution	LV 30
<b>Drive Systems</b>		SIDAC reactors and filters	LV 60
<i>Variable-Speed Drives</i>		SIVACON 8PS Busbar trunking systems CD, BD01, BD2 up to 1250 A	LV 70
SINAMICS G130 Drive Converter Chassis Units, SINAMICS G150 Drive Converter Cabinet Units	D 11	Low-Voltage Controlgear, Switchgear and Systems	LV 90
SINAMICS G110 Inverter Chassis Units	D 11.1		
SINAMICS S120 Servo Control Drive System	D 21.2	<b>Motion Control System SIMOTION</b>	PM 10
SINAMICS S150 Drive Converter Cabinet Units	D 21.3		
DC Motors	DA 12	<b>Process Instrumentation and Analytics</b>	
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SIMOREG K 6RA22 Analog Chassis Converters	DA 21.2	<i>PDF: Indicators for panel mounting</i>	MP 12
SIMOREG DC MASTER 6RM70 Digital Converter Cabinet Units	DA 22	SIREC Recorders and Accessories	MP 20
SIMOVERT PM Modular Converter Systems	DA 45	SIPART, Controllers and Software	MP 31
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