

simatic



Products for
Totally Integrated Automation
and Micro Automation

SIEMENS

Related catalogs

SIMATIC

Products for
Totally Integrated Automation
and Micro Automation
Order No.:
E86060-K4670-A111-A9-7600

ST 70



SIMATIC

Control Systems

Order No.:
E86060-K4670-B201-A2-7600

ST DA



Industrial Communication

Industrial Communication
for Automation and Drives

Order No.:
E86060-K6710-A101-B4-7600

IK PI



SIMATIC sensors

Sensors for Factory Automation

Order No.:
E86060-K8310-A101-A2-7600

FS 10



Industrial Communication

Industrial Communication
for Automation and Drives

Order No.:
E86060-K6710-A121-A1-7600

IK PI
News



Information and Training

Training for Automation and
Industrial Solutions

Order No.:
Paper: E86060-K6850-A101-B6 (in German)
CD: E86060-D6850-A100-C4-7400¹⁾

ITC



SIMATIC HMI

Human Machine
Interface Systems

Order No.:
E86060-K4680-A101-B4-7600

ST 80



Catalog CA 01

The offline Mall of
Automation and Drives

Order No.:
CD: E86060-D4001-A100-C4-7600
DVD: E86060-D4001-A500-C4-7600

CA 01



PC-based Automation

Order No.:
E86060-K4670-B101-B4-7600

ST PC



A&D Mall

Internet:
www.siemens.com/automation/mall



1) Available in German and English.

For further information contact your nearest
Siemens branch office

Trademarks

All product designations may be trademarks or product names of Siemens AG or supplier companies whose use by third parties for their own purposes could violate the rights of the owners.

According to the German law on units in measuring technology, data in inches only apply to devices for export.

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.:
E86060-D4001-A100-C4-7600 (CD-ROM)
E86060-D4001-A500-C4-7600 (DVD)

Please contact your nearest
Siemens branch office.

© Siemens AG 2005



The products and systems described in this catalog are manufactured/distributed under application of a certified quality management system in accordance with DIN EN ISO 9001 (Certified Registration No. 1323-QM). The certificate is recognized by all IQNet countries.


SIEMENS

Introduction

1

LOGO! logic module

2

SIMATIC S7-200

3

SIMATIC S7-300

4

SIMATIC S7-400

5

SIMATIC C7

6

SIMATIC Industrial Software

7

SIMATIC Programming devices

8

SIMATIC PC-based Automation

9

Component based Automation

10

Overviews

11

Supplementary components

12

Appendix

13

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.

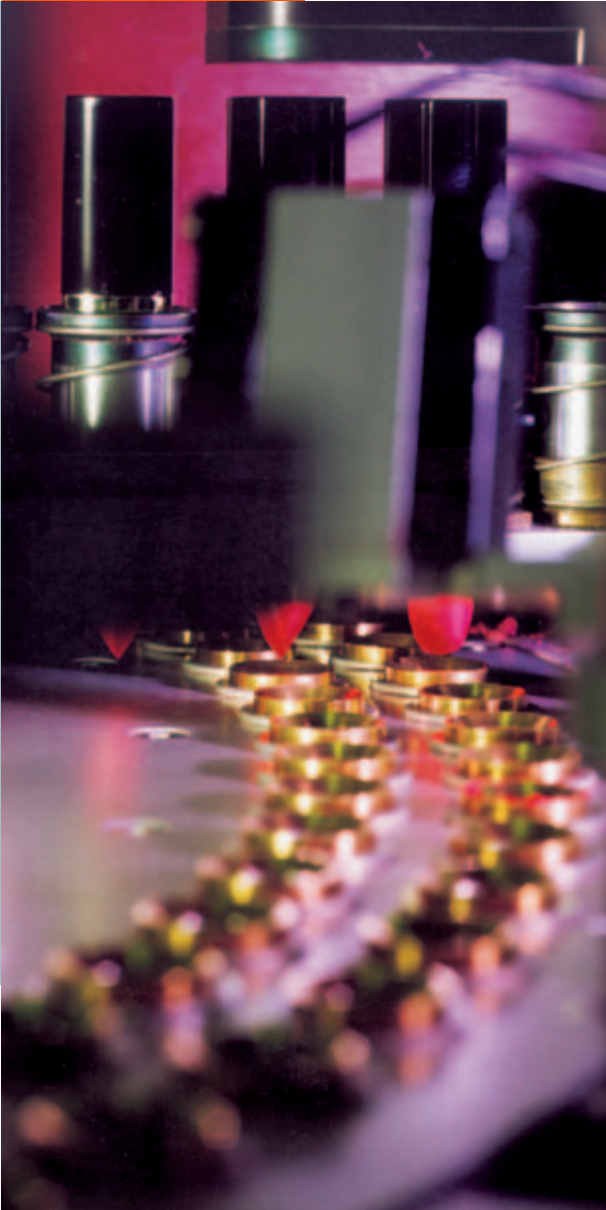
Welcome to Automation and Drives

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.



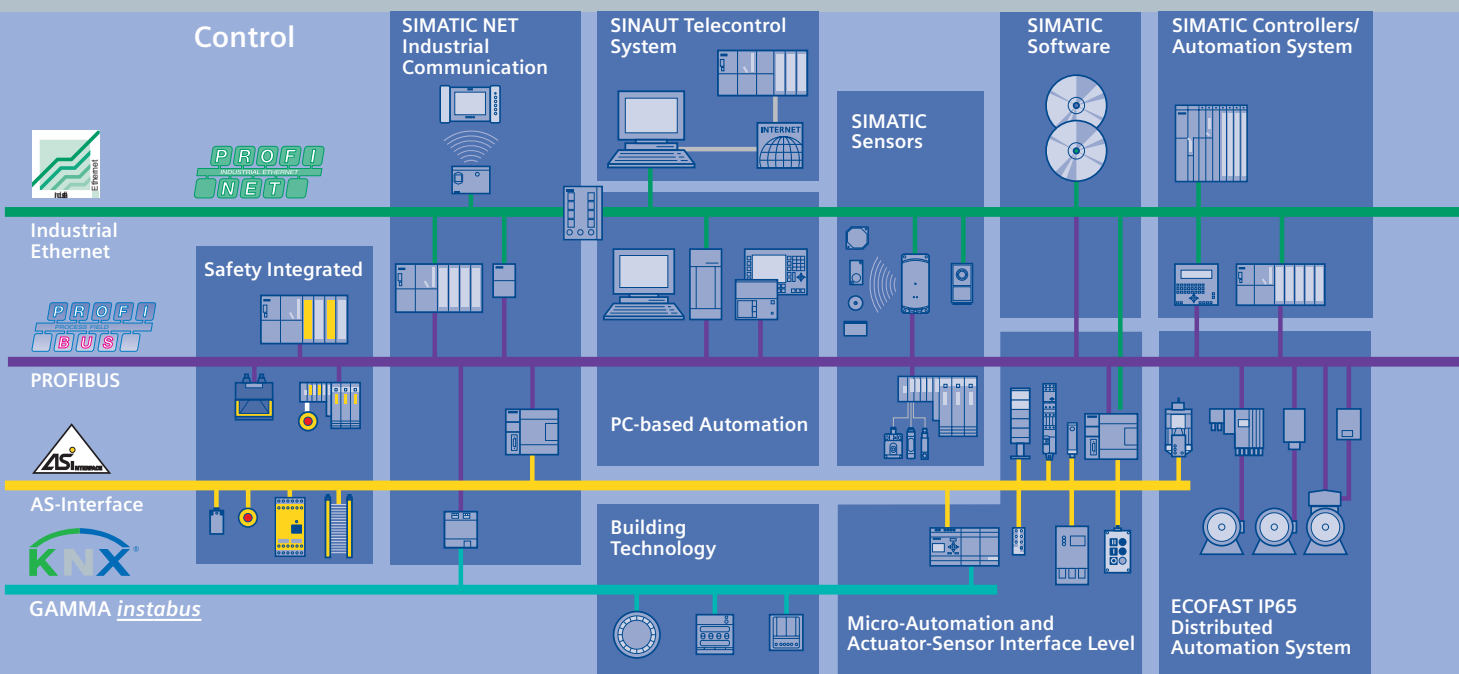
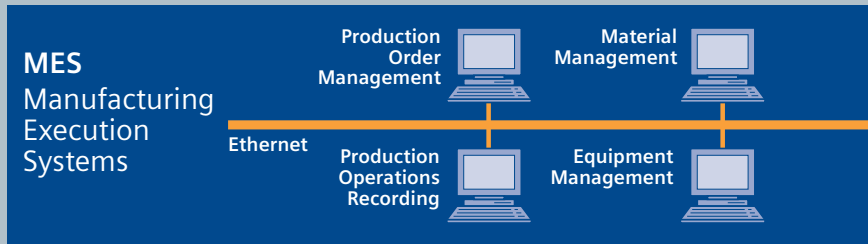


Totally Integrated Automation – innovations for more productivity

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.

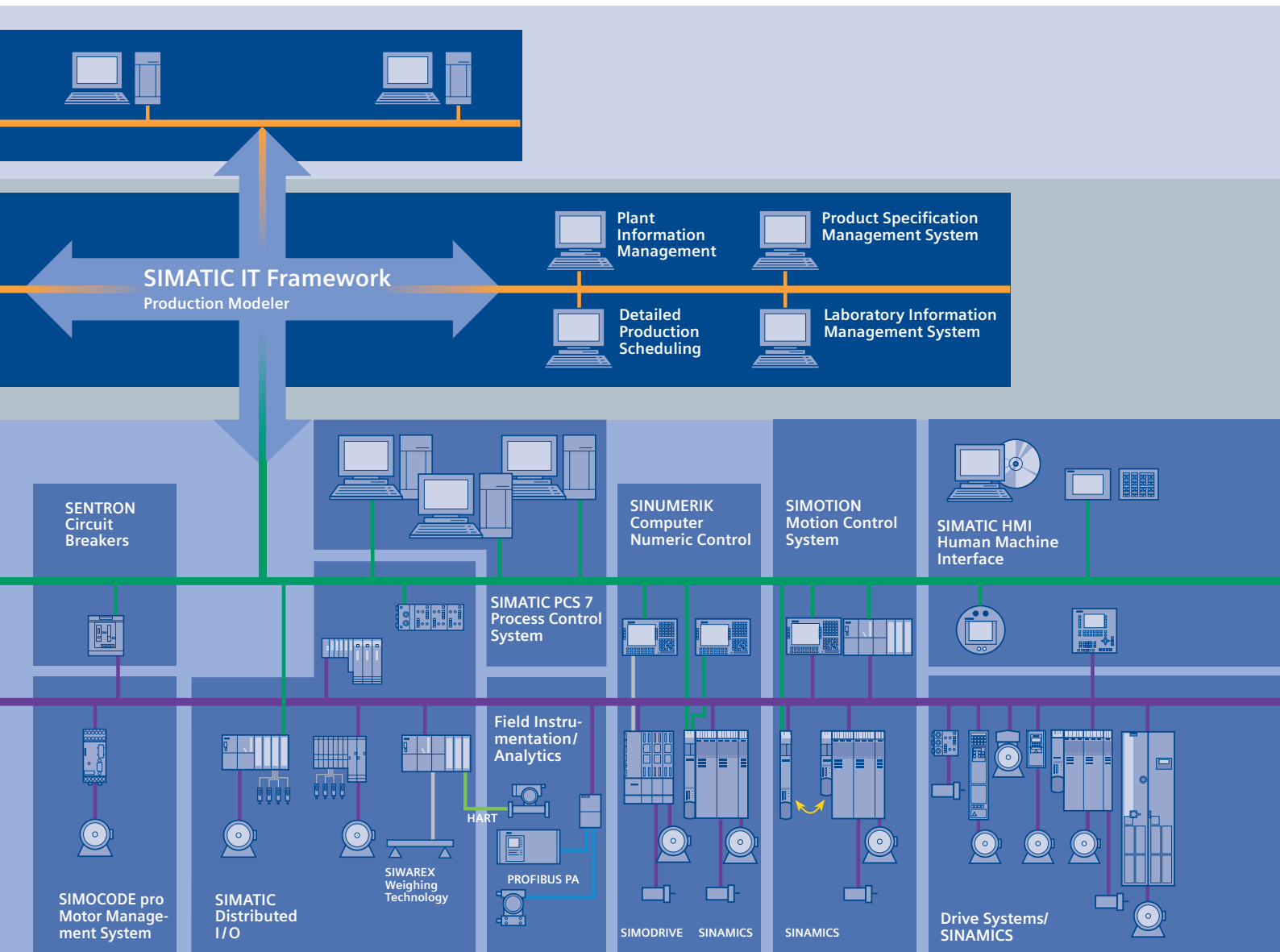
Whether your industry is process- and production-oriented or a hybrid, Totally Integrated Automation is a unique "common solution" platform that covers all the sectors.

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.

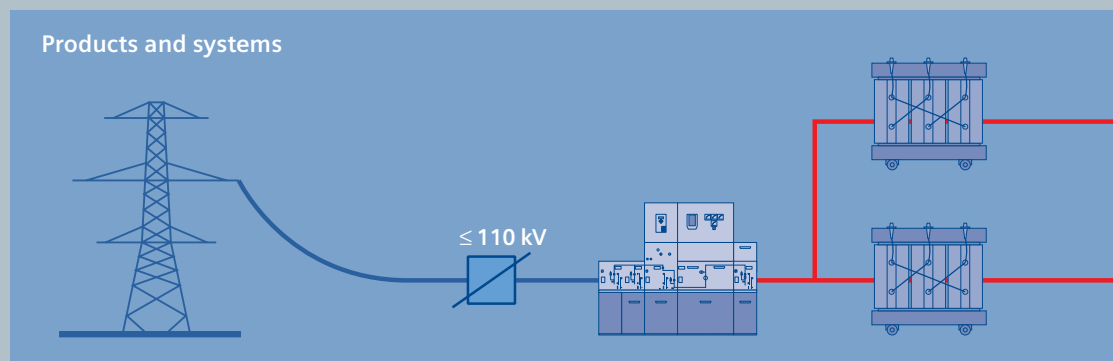
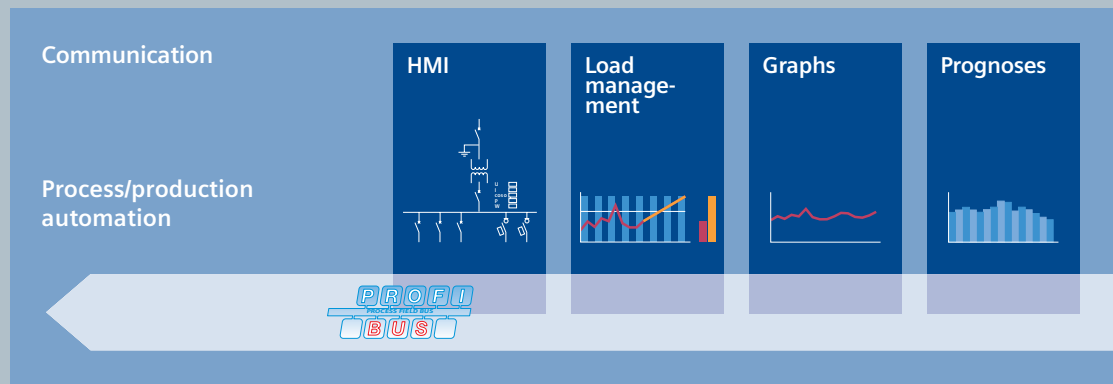
In fact, to this day we are the only company worldwide that can offer a control system based on an integrated platform for both the production and process industry.



Totally Integrated 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.



Maintenance

- Substation
- Distribution
- Maintenance task

Hall 1: Air conditioning system checkup
Distribution 3: Replacing circuit breaker contacts
Infeed 8: Replacing meters

Message/error management



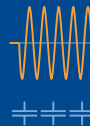
Selective protection



Protocols

Protocol	Device	Address	Function
...

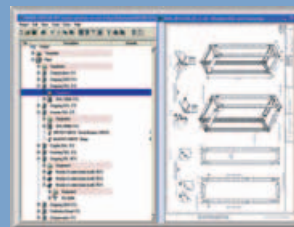
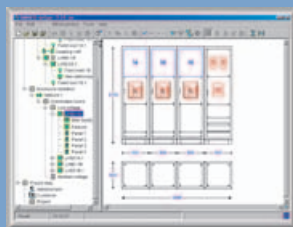
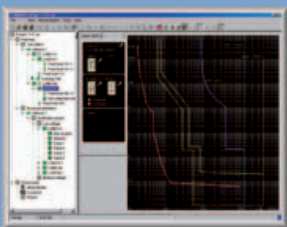
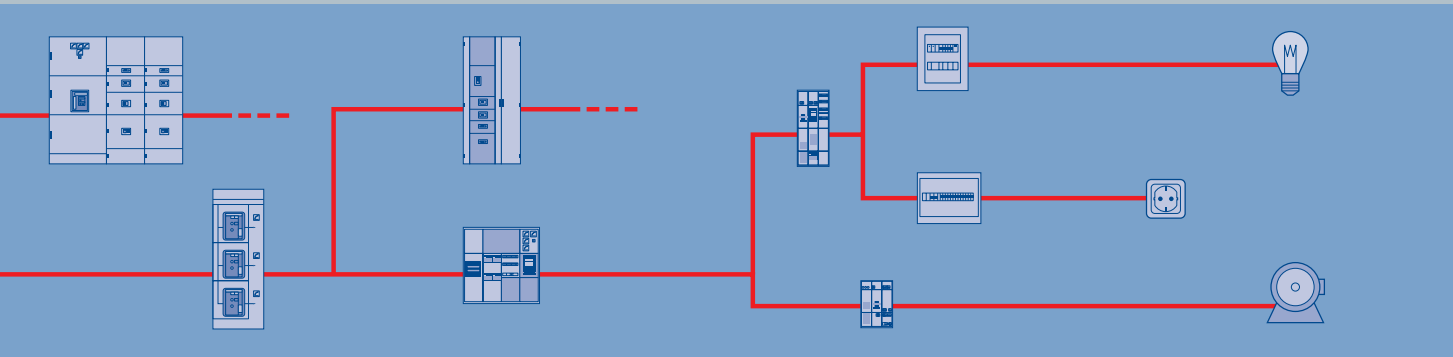
Power quality



Cost center



Building automation





LOGO! logic module



2/2	LOGO! modular
2/2	LOGO! modular basic variants
2/4	SIPLUS LOGO! modular basic variants
2/5	LOGO! modular pure variants
2/7	SIPLUS LOGO! modular pure variants
2/8	LOGO! modular expansion modules
2/11	SIPLUS LOGO! modular expansion modules



LOGO! logic module

LOGO! modular

2

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
Supply voltages				
Rated value		Yes		
- 12 V DC	Yes	Yes	Yes	
- 24 V DC				
- 115 V DC				Yes
- 230 V DC				Yes
- permissible range, lower limit (DC)	20.4 V	10.8 V	20.4 V	100 V
- permissible range, upper limit (DC)	28.8 V	28.8 V	28.8 V	253 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
Time				
Time switches				
- Reserve power		80 h	80 h	80 h
• Number of digital inputs	8	8	8	8
Digital outputs				
• Number of digital outputs	4	4	4	4
• Short-circuit protection of the output	Yes	No	No	No
Relay outputs				
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
EMC				
• Emission of radio interference to comply with EN 55 011 (limit class B)	Yes	Yes	Yes	Yes
Environmental requirements				
Operating temperature				
- min.	0 °C	0 °C	0 °C	0 °C
- max.	55 °C	55 °C	55 °C	55 °C
Degree of protection and class of protection				
- IP 20	Yes	Yes	Yes	Yes

Technical specifications (continued)

	6ED1 052-1CC00-0BA5	6ED1 052-1MD00-0BA5	6ED1 052-1HB00-0BA5	6ED1 052-1FB00-0BA5
Standards, approvals, certification				
• 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
Dimensions and weight				
• 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.
LOGO! logic module 24 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
LOGO! logic module 12/24RC 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
LOGO! logic module 24RC 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
LOGO! logic module 230RC 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

	Order No.
Accessories	
LOGO! manual	
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
LOGO! memory card	6ED1 056-5CA00-0BA0
For copying, with know-how protection	
LOGO!Soft Comfort V5.0^{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	
LOGO!Soft Comfort upgrade^{B)}	6ED1 058-0CA01-0YE0
From V1.0 and higher to V5.0	
LOGO! PC cable	6ED1 057-1AA00-0BA0
For transferring programs between LOGO! and the PC	
LOGO! News Box, 12/24 V	
Contains LOGO! 12/24RC, LOGO! PC cable, LOGO!Soft Comfort, Tips & Tricks manual, screwdriver, documentation	
German ^{C)}	6ED1 057-3BA00-0AA4
English ^{C)}	6ED1 057-3BA00-0BA4
LOGO! News Box, 230 V	
Contains LOGO! 230RC, LOGO! PC cable, LOGO!Soft Comfort, Tips & Tricks manual, screwdriver, documentation	
German ^{C)}	6ED1 057-3AA01-0AA0
English ^{C)}	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

6AG1 052-1CC00-2BA5	see 6ED1 052-1CC00-0BA5
6AG1 052-1MD00-2BA5	see 6ED1 052-1MD00-0BA5
6AG1 052-1HB00-2BA5	see 6ED1 052-1HB00-0BA5
6AG1 052-1FB00-2BA5	see 6ED1 052-1FB00-0BA5

Ordering Data

Order No.

SIPLUS LOGO! 24

(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

6AG1 052-1CC00-2BA5

SIPLUS LOGO! 12/24RC

(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

6AG1 052-1MD00-2BA5

SIPLUS LOGO! 24RC

(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

6AG1 052-1HB00-2BA5

SIPLUS LOGO! 230RC

(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

6AG1 052-1FB00-2BA5

Accessories

see ordering data for
LOGO! modular basic variants

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
Supply voltages				
Rated value		Yes		
- 12 V DC		Yes		
- 24 V DC	Yes	Yes	Yes	
- 115 V DC				Yes
- 230 V DC				Yes
- permissible range, lower limit (DC)	20.4 V	10.8 V	20.4 V	100 V
- permissible range, upper limit (DC)	28.8 V	28.8 V	28.8 V	253 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
Time				
Time switches				
- Number		8	8	8
- Reserve power		80 h	80 h	80 h
Digital inputs				
• Number of digital inputs	8	8	8	8
Digital outputs				
• Number of digital outputs	4	4	4	4
• Short-circuit protection of the output	Yes	No	No	No
Relay outputs				
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
EMC				
• Emission of radio interference to comply with EN 55 011 (limit class B)		Yes	Yes	Yes
Environmental requirements				
Operating temperature				
- min.	0 °C	0 °C	0 °C	0 °C
- max.	55 °C	55 °C	55 °C	55 °C
Degree of protection and class of protection				
- IP 20	Yes	Yes	Yes	Yes

Technical specifications (continued)

	6ED1 052-2CC00-0BA5	6ED1 052-2MD00-0BA5	6ED1 052-2HB00-0BA5	6ED1 052-2FB00-0BA5
Standards, approvals, certification				
• 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
Dimensions and weight				
• 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.
LOGO! logic module 24o 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
LOGO! logic module 12/24RCo 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
LOGO! logic module 24RCo 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
LOGO! logic module 230RCo 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

Order No.

	Order No.
Accessories	
LOGO! manual	
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
LOGO! Memory Card	6ED1 056-5CA00-0BA0
For copying, with know-how protection	
LOGO!Soft Comfort V5.0^{B)}	6ED1 058-0BA01-0YA0
For programming on the PC in LAD/FBD; executes on Windows 98 SE and higher, Linux, MAC OSX; on CD-ROM	
LOGO!Soft Comfort Upgrade^{B)}	6ED1 058-0CA01-0YE0
From V1.0 or higher to V5.0	
LOGO! PC cable	6ED1 057-1AA00-0BA0
For program transfer between LOGO! and the PC	

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

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

6AG1 052-2CC00-2BA5	see 6ED1 052-2CC00-0BA5
6AG1 052-2FB00-2BA5	see 6ED1 052-2FB00-0BA5
6AG1 052-2HB00-2BA5	see 6ED1 052-2HB00-0BA5
6AG1 052-2MD00-2BA5	see 6ED1 052-2MD00-0BA5

Ordering Data

Order No.

SIPLUS LOGO! 24o

(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

6AG1 052-2CC00-2BA5

SIPLUS LOGO! 12/24RCo

(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

6AG1 052-2MD00-2BA5

SIPLUS LOGO! 24RCo

(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

6AG1 052-2HB00-2BA5

SIPLUS LOGO! 230RCo

(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

6AG1 052-2FB00-2BA5

Accessories

see ordering data for
LOGO! modular pure variants

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
Supply voltages			
Rated value			
- 24 V DC	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
Digital inputs			
• 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

Technical specifications (continued)

	6ED1 055-1CB10-0BA0	6ED1 055-1NB10-0BA0	6ED1 055-1FB10-0BA0
Digital outputs			
• 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
Relay outputs			
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		
EMC			
• Emission of radio interference to comply with EN 55 011 (limit class B)	Yes	Yes	Yes
Environmental requirements			
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
Standards, approvals, certification			
• 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
Dimensions and weight			
• 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

Technical specifications (continued)

	6ED1 055-1MM00-0BA0
Supply voltages	
Rated value	
- 12 V DC	No
- 24 V DC	Yes
Analog outputs	
• Number of analog outputs	2
Output ranges, voltage	
- 0 to 10 V	Yes
EMC	
• Emission of radio interference to comply with EN 55 011 (limit class B)	Yes
Environmental requirements	
Operating temperature	
- min.	0 °C
- max.	55 °C
Degree of protection and class of protection	
- IP 20	Yes

	6ED1 055-1MM00-0BA0
Standards, approvals, certification	
• CSA approval	Yes
• Developed to comply with IEC1131	Yes
• FM approval	Yes
• To comply with VDE 0631	Yes
• Shipbuilding approval	Yes
• UL approval	Yes
Dimensions and weight	
• Width	36 mm
• Height	90 mm
• Depth	55 mm

Ordering Data

	Order No.
LOGO! DM16 24 24 V DC supply voltage, 8 digital inputs 24 V DC, 8 digital outputs 24 V DC, 0.3 A	6ED1 055-1CB10-0BA0
LOGO! DM16 24R 24 V DC supply voltage, 8 digital inputs 24 V DC, 8 relay outputs 5 A	6ED1 055-1NB10-0BA0
LOGO! DM16 230R 115/230 V AC/DC supply voltage, 8 digital inputs 115/230 V AC/DC, 8 relay outputs 5 A	6ED1 055-1FB10-0BA0
LOGO! AM2 AQ 24 V DC supply voltage, 2 analog outputs 0 to 10 V	6ED1 055-1MM00-0BA0

Accessories

	Order No.
LOGO! manual	
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
LOGO! memory card	
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

	Order No.
LOGO!Soft Comfort V5.0^{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
LOGO!Soft Comfort Upgrade^{B)} From V1.0 and higher to V5.0	6ED1 058-0CA01-0YE0
LOGO! PC cable For transferring programs between LOGO! and the PC	6ED1 057-1AA00-0BA0
LOGO! News Box, 12/24 V	
Contains LOGO! 12/24RC, LOGO! PC cable, LOGO!Soft Comfort, Tips & Tricks manual, screwdriver, documentation	
German ^{C)}	6ED1 057-3BA00-0AA4
English ^{C)}	6ED1 057-3BA00-0BA4
LOGO! News Box, 230 V	
Contains LOGO! 230RC, LOGO! PC cable, LOGO!Soft Comfort, Tips & Tricks manual, screwdriver, documentation	
German ^{C)}	6ED1 057-3AA01-0AA0
English ^{C)}	6ED1 057-3AA01-0BA0

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 DI				
Outputs	4 DO		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				

Technical specifications (continued)

SIPLUS LOGO! AM2	
Order No.	6AG1 055-1MA00-2XB0
Order No. based on	6ED1 055-1MA00-0BA0
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! DM8 24^{A)} (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	6AG1 055-1CB00-2XB0
SIPLUS LOGO! DM8 12/24 (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	6AG1 055-1PB00-2XB0
SIPLUS LOGO! DM8 24R^{D)} (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	6AG1 055-1HB00-2XB0
SIPLUS LOGO! DM8 12/24R^{A)} (extended temperature range and extraordinary medial load) 12/24 V DC supply voltage, 4 digital inputs 12/24 V DC, relay outputs 5 A	6AG1 055-1MB00-2XB1
SIPLUS LOGO! DM8 230R^{D)} (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	6AG1 055-1FB00-2XB1

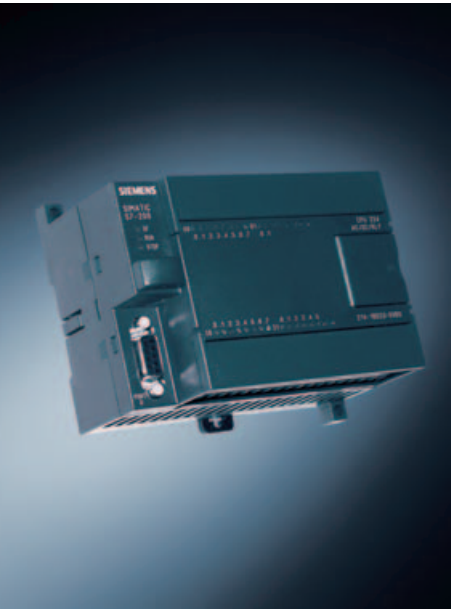
	Order No.
SIPLUS LOGO! AM2^{A)} (extended temperature range and extraordinary medial load) 12/24 V DC supply voltage, 2 analog inputs 0 to 10 V or 0 to 20 mA, 10-bit resolution	6AG1 055-1MA00-2XB0
Accessories	
LOGO! manual	
German	6ED1 050-1AA00-0AE6
English	6ED1 050-1AA00-0BE6
French	6ED1 050-1AA00-0CE6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

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



3/2 3/2	SIPLUS central processing units SIPLUS CPU 221, 222, 224, 224 XP, 226
3/4 3/4	SIPLUS analog modules SIPLUS RTD module EM 231
3/4 3/4	Function modules SIPLUS DCF 77 radio clock module
3/5 3/5	Communication SIPLUS EM 277 PROFIBUS DP module
3/6 3/6	Human Machine Interface 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)

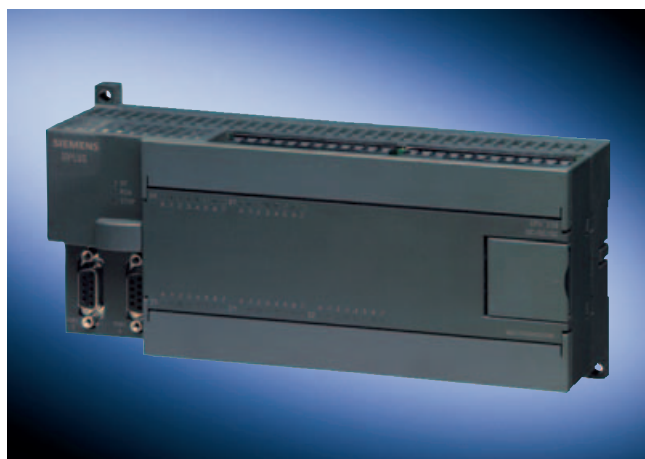
CPU 224 XP:

- 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.

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

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

Ordering data

Ordering data	Order No.
SIPLUS CPU 221 (extended temperature range and extraordinary medial load) Compact CPU, main memory 4 KB, power supply 24 V DC, 6 DI/4 DO integrated ^{A)}	6AG1 211-0AA23-2XB0
Compact CPU, main memory 4 KB, power supply 100 V to 30 V AC, 6 DI/4 DO integrated, relay outputs ^{A)}	6AG1 211-0BA23-2XB0
SIPLUS CPU 222 (extended temperature range and extraordinary medial load) Compact CPU, expandable, main memory 4 KB, power supply 24 V DC, 8 DI/6 DO integrated ^{A)}	6AG1 212-1AB23-2XB0
Compact CPU, expandable, main memory 4 KB, power supply 100 V to 230 V AC, 8 DI/6 DO integrated, relay outputs ^{A)}	6AG1 212-1BB23-2XB0
SIPLUS CPU 224 (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 ^{A)}	6AG1 214-1AD23-2XB0
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 ^{A)}	6AG1 214-1BD23-2XB0

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

Order No.

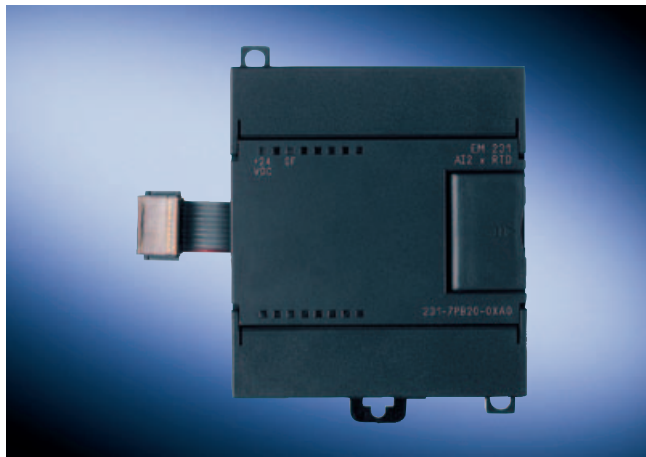
SIPLUS CPU 224 XP (extended temperature range and extraordinary medial load) Compact CPU, expandable, main memory 12/16 KB program, 10 KB data, power supply 24 V DC, 14 DI/10 DO/ 2 AI/1 AO integrated	6AG1 214-2AD23-2XB0
Compact CPU, expandable, main memory 12/16 KB program, 10 KB data, power supply 100 V to 230 V AC, 14 DI/10 DO (relay outputs)/ 2 AI/1 AO integrated ^{A)}	6AG1 214-2BD23-2XB0
SIPLUS CPU 226 (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 ^{A)}	6AG1 216-2AD23-2XB0
Compact CPU, expandable, main memory 16/24 KB program, 10 KB data, power supply 100 V to 230 V AC, 24 DI/16 DO integrated, relay outputs ^{A)}	6AG1 216-2BD23-2XB0
Accessories	see ordering data for S7-200 central processing units

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

6AG1 231-7PB22-2XA0	see 6ES7 231-7PB22-0XA0
6AG1 231-7PB22-2XY0	see 6ES7 231-7PB22-0XA0

Ordering data

Order No.

SIPLUS EM 231 RTD module^{A)} **6AG1 231-7PB22-2XA0**

(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

SIPLUS EM 231 RTD module^{A)} **6AG1 231-7PB22-2XY0**

(extended temperature range and extraordinary medial load)

With conformity to EN 50155;
otherwise similar to
6AG1 231-7PB22-2XA0

Accessories

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 ¹⁾ 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^{A)} **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

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-xxx**21**-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^{A)}**

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

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.

Text Display TD 100C

6ES7 272-1BA10-0YA0

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

Connecting cable^{A)}

6ES7 901-3EB10-0XA0

For connecting TD 100C or TD 200C to S7-200

Blank film

6ES7 272-1BF00-7AA0

For printing customized keyboard layouts;
6 perforated foils per sheet;
10 sheets per packing unit

PROFIBUS bus connector, IP 20 with 90° cable outlet

- Without PG connection
- With PG connection

6ES7 972-0BA12-0XA0
6ES7 972-0BB12-0XA0

PROFIBUS bus connector, IP 20 with 35° cable outlet

- Without PG connection
- With PG connection

6ES7 972-0BA41-0XA0
6ES7 972-0BB41-0XA0

PROFIBUS FC standard cable

6XV1 830-0EH10

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

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

Technical specifications

	6ES7 272-1BA10-0YA0
Power supply	
Input voltage	
- Rated value (DC)	24 V
Input current	
- Rated value at 24 V DC	25 mA
MPI	
• Transmission rate (PPI), max.	187.5 kBit/s
1st interface	
• Physical	RS 485
Functionality	
- PPI	Yes
PPI	
- Number of stations	126
Operator control and monitoring	
Display	
- Number of lines	4
- Number of characters per line	10
- Height of characters	3.34 mm
Environmental requirements	
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
Dimensions and weight	
• 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



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



SIMATIC S7-300

Central processing units

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

Overview CPU 314C-2 PtP



- 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.

Technical specifications

	6ES7 314-6BF02-0AB0	6ES7 314-6CF02-0AB0	6ES7 314-1AF11-0AB0
Product version			
• 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
Supply voltages			
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
Voltages and currents			
• External fusing for supply lines (recommendation)			Min. 2 A
Current consumption			
• Inrush current, typ.	11 A	11 A	2.5 A
• I ² t	0.7 A ² s	0.7 A ² s	0.5 A ² 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
Memory/backup			
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	
CPU/blocks			
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
CPU/processing times			
• 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

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
Timers/counters and their retentive characteristics			
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
Data areas and their retentive characteristics			
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
Address area			
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

4

Technical specifications (continued)

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

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
• 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
Communication functions			
• 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	
Connection system			
• Requisite front connector	2 x 40-pin	2 x 40-pin	
MPI			
• Length of cable, max.	50 m	50 m	
Point-to-point			
• 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		
1st interface			
• 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
MPI			
- Number of connections	12	12	12

Technical specifications (continued)

	6ES7 314-6BF02-0AB0	6ES7 314-6CF02-0AB0	6ES7 314-1AF11-0AB0
1st interface (continued)			
<ul style="list-style-type: none"> • Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server - Transmission rates, max. 	<ul style="list-style-type: none"> Yes No Yes Yes Yes No Yes 187.5 kBit/s 	<ul style="list-style-type: none"> Yes Yes Yes Yes Yes No Yes 187.5 kBit/s 	<ul style="list-style-type: none"> Yes No Yes Yes Yes No; via CP and loadable FB Yes 187.5 kBit/s
2nd interface			
<ul style="list-style-type: none"> • Type of interface • Physical • Isolated • Power supply to interface (15 to 30 V DC), max. 	<ul style="list-style-type: none"> integrated RS 422/485 interface RS422 / RS 485 (X.27) Yes 	<ul style="list-style-type: none"> integrated RS 485 interface RS 485 Yes 200 mA 	
Functionality			
<ul style="list-style-type: none"> - MPI - DP master - DP slave - Point-to-point connection 	<ul style="list-style-type: none"> No No No Yes 	<ul style="list-style-type: none"> No Yes Yes No 	
DP master			
<ul style="list-style-type: none"> - Number of connections, max. - Number of connections (of which reserved), max. • Services - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as server - Equidistance support - SYNC/FREEZE - Activate/deactivate DP slaves - Direct data exchange (lateral communication) - DPV1 - Transmission rates, max. - Number of DP slaves, max. • Address area - Inputs, max. - Outputs, max. • User data per DP Slave - Inputs, max. - Outputs, max. 		<ul style="list-style-type: none"> 12; for PG/OP communication 1 for PG, 1 for OP Yes Yes No No No No No Yes Yes Yes Yes Yes Yes 12 Mbit/s 32 1 KByte 1 KByte 244 Byte 244 Byte 	

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
2nd interface (continued)			
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: http://www.ad.siemens.de/support 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	
Point-to-point coupling			
- 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		
CPU/ programming			
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
Software library			
• 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

Technical specifications (continued)

	6ES7 314-6BF02-0AB0	6ES7 314-6CF02-0AB0	6ES7 314-1AF11-0AB0
Digital inputs			
• 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	
Digital outputs			
• 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	
Analog inputs			
• 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	

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
Input ranges (rated values), currents - 0 to 20 mA - -20 to +20 mA - 4 to 20 mA	Yes Yes Yes	Yes Yes Yes	
Input ranges (rated values), resistances - 0 to 600 ohms	Yes	Yes	
Input ranges (rated values), resistance thermometer - Pt 100	Yes	Yes	
Analog outputs			
• Number of analog outputs	2	2	
Output ranges, voltage - 0 to 10 V - -10 to +10 V	Yes Yes	Yes Yes	
Output ranges, current - 0 to 20 mA - -20 to +20 mA - 4 to 20 mA	Yes Yes Yes	Yes Yes Yes	
Analog value formation			
Integration and conversion time/triggering per channel - with over-range (bits incl. sign), max. - Integration time parameterizable - Conversion time (per channel)	12 Bit Yes; 2.5 / 16.6 / 20 ms 1 ms	12 Bit Yes; 2.5 / 16.6 / 20 ms 1 ms	
Sensor			
Connectable encoders - 2-wire BEROs - permissible closed-circuit current (2-wire BEROs), max.	Yes 1.5 mA	Yes 1.5 mA	
Error/accuracies			
Basic error limit (operational limit at 25 °C) - relative to the output range, voltage - relative to the output range, current - relative to the input range, voltage - relative to the input range, current - relative to the input range, resistance - relative to the input range, resistance thermometer	+/- 0,7 % +/- 0,7 % +/- 0,7 % +/- 0,7 % +/- 3 % +/- 3 %	+/- 0,7 % +/- 0,7 % +/- 0,7 % +/- 0,7 % +/- 3 % +/- 3 %	
Integral functions			
• 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	

4

Technical specifications (continued)

	6ES7 314-6BF02-0AB0	6ES7 314-6CF02-0AB0	6ES7 314-1AF11-0AB0
Potentials/ electrical isolation			
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	
Dimensions and weight			
• 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

Ordering data

	Order No.		Order No.
CPU 314 64 KB working memory, 24 V DC supply voltage, MPI MMC is necessary	6ES7 314-1AF11-0AB0	Micro Memory Card	
		64 KB	6ES7 953-8LF11-0AA0
		128 KB	6ES7 953-8LG11-0AA0
		512 KB	6ES7 953-8LJ11-0AA0
		2 MB	6ES7 953-8LL11-0AA0
		4 MB	6ES7 953-8LM11-0AA0
		8 MB	6ES7 953-8LP11-0AA0
CPU 314C-2 PtP 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	6ES7 314-6BF02-0AB0	MPI cable	6ES7 901-0BF00-0AA0
		For connecting SIMATIC S7 and the PG through MPI; length 5 m	
CPU 314C-2 DP 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	6ES7 314-6CF02-0AB0	Point-to-point link	
		For connection to CPU 31xC-2 PTP; length 5 m	
		5 m	6ES7 902-3AB00-0AA0
		10 m	6ES7 902-3AC00-0AA0
		50 m	6ES7 902-3AG00-0AA0
		SUB-D connector	6ES5 750-2AA21
		For connection to the second serial interface of CPU 31xC-2 PTP 15-pole, pins	

SIMATIC S7-300

Central processing units

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

4

Ordering data	Order No.	Order No.
Front connector (1 unit) For compact CPUs as well as CPU 315F-2 DP 40-pole, screw-type contacts <ul style="list-style-type: none"> • 1 item • 100 items 40-pole with cage clamp contacts	6ES7 392-1AM00-0AA0 6ES7 392-1AM00-1AB0 6ES7 392-1BM01-0AA0	
Mounting location number plates	6ES7 912-0AA00-0AA0	
S7-300 Manual Design, CPU data, module data, command list German English French Spanish Italian	6ES7 398-8FA10-8AA0 6ES7 398-8FA10-8BA0 6ES7 398-8FA10-8CA0 6ES7 398-8FA10-8DA0 6ES7 398-8FA10-8EA0	
SIMATIC Manual Collection^{E)} Electronic manuals on CD-ROM, 5 languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, Engineering Software, Runtime Software, PCS 7, SIMATIC HMI, SIMATIC NET	6ES7 998-8XC01-8YE0	
SIMATIC Manual Collection update service for 1 year^{E)} Up-to-date Manual Collection CD as well as the three subsequent updates	6ES7 998-8XC01-8YE2	
Power supply connector For compact CPUs, innovated standard CPUs and CPU 315F-2 DP (10 items, spare part)	6ES7 391-1AA00-0AA0	
Labeling strips For compact CPUs, standard CPUs as well as CPU 315F-2 DP (10 items, spare part)	6ES7 392-2XX00-0AA0	
Label cover For compact CPUs, standard CPUs as well as CPU 315F-2 DP (10 items, spare part)	6ES7 392-2XY00-0AA0	
S7 SmartLabel Software for labeling modules mechanically directly in the STEP 7 project	2XV9 450-1SL01-0YX0	
Sheets of labels for machine inscription For 16-channel signal modules, DIN A4, for printing using a laser printer; 10 items Petrol Light beige Yellow Red For 32-channel signal modules, DIN A4, for printing using a laser printer; 10 items Petrol Light beige Yellow Red	6ES7 392-2AX00-0AA0 6ES7 392-2BX00-0AA0 6ES7 392-2CX00-0AA0 6ES7 392-2DX00-0AA0 6ES7 392-2AX10-0AA0 6ES7 392-2BX10-0AA0 6ES7 392-2CX10-0AA0 6ES7 392-2DX10-0AA0	
PROFIBUS DP bus connector RS 485 <ul style="list-style-type: none"> • With 90° cable outlet, max. transmission rate 12 Mbit/s <ul style="list-style-type: none"> - Without PG interface - With PG interface • With 90° cable outlet for Fast-Connect connection technique, max. transmission rate 12 Mbit/s <ul style="list-style-type: none"> - Without PG interface - With PG interface • With axial cable outlet for SIMATIC OP, for connecting to PPI, MPI, PROFIBUS 	6ES7 972-0BA12-0XA0 6ES7 972-0BB12-0XA0 6ES7 972-0BA50-0XA0 6ES7 972-0BB50-0XA0 6GK1 500-0EA02	
PROFIBUS Fast Connect bus cable Standard type specially designed for quick installation, 2-core, shielded, sold by the meter; max. length supplied 1000 m, minimum order quantity 20 m	6XV1 830-0EH10	
Repeater RS 485 for PROFIBUS Transmission rate of up to 12 Mbit/s 24 V DC; IP20 casing	6ES7 972-0AA01-0XA0	
PROFIBUS bus components For establishing MPI/PROFIBUS communication	see catalogs IK PI, CA 01	

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 motional sequences such 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.

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



CPU 317F-2 PN/DP



4

- 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.

- 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
Product version				
• 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
Supply voltages				
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
Voltages and currents				
• External fusing for supply lines (recommendation)	Min. 2 A	Min. 2 A	Min. 2 A	Min. 2 A
Current consumption				
• Inrush current, max.		2.5 A		
• Inrush current, typ.	2.5 A		2.5 A	2.5 A
• I ² t	1 A ² s	1 A ² s	1 A ² s	1 A ² 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

Technical specifications (continued)

	6ES7 315-2EG10-0AB0	6ES7 315-6TG10-0AB0	6ES7 315-2FH10-0AB0	6ES7 317-2FJ10-0AB0
Memory/backup				
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
CPU/blocks				
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
CPU/processing times				
• 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
Timers/counters and their retentive characteristics				
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

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
Timers/counters and their retentive characteristics (continued)				
S7 times				
- 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
Data areas and their retentive characteristics				
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
Address area				
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

Technical specifications (continued)

	6ES7 315-2EG10-0AB0	6ES7 315-6TG10-0AB0	6ES7 315-2FH10-0AB0	6ES7 317-2FJ10-0AB0
Configuration				
• 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
Time				
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 ³¹ 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
S7 message functions				
• 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
Test and startup functions				
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

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
Test and startup functions (continued)				
Diagnostic buffer				
- available	Yes	Yes	Yes	Yes
- Number of inputs, max.	100	100	100	100
- adjustable	No	No	No	No
Communication functions				
• 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
PROFINET CBA (at 50 % Communication Load)				
- 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

Technical specifications (continued)

	6ES7 315-2EG10-0AB0	6ES7 315-6TG10-0AB0	6ES7 315-2FH10-0AB0	6ES7 317-2FJ10-0AB0
Communication functions (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
1st interface				
• 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

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
1st interface (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
2nd interface				
• 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

Technical specifications (continued)

	6ES7 315-2EG10-0AB0	6ES7 315-6TG10-0AB0	6ES7 315-2FH10-0AB0	6ES7 317-2FJ10-0AB0
2nd interface (continued)				
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
CPU/ programming				
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

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
CPU/ programming (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
Digital inputs				
• 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		
Digital outputs				
• 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)		

Technical specifications (continued)

	6ES7 315-2EG10-0AB0	6ES7 315-6TG10-0AB0	6ES7 315-2FH10-0AB0	6ES7 317-2FJ10-0AB0
Digital outputs (continued)				
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		
Sensor				
Connectable encoders				
- 2-wire BEROs		No		
Potentials/ electrical isolation				
Digital output functions				
- between the channels and the backplane bus		Yes		
Digital input functions				
- between the channels and the backplane bus		Yes		
Dimensions and weight				
• 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

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

4

Ordering data	Order No.	Order No.
CPU 315-2 PN/DP 128 KB main memory, 24 V DC supply voltage, combi- ned MPI/PROFIBUS DP-mas- ter/slave interface, Ethernet/PROFINET interface; MMC is necessary	6ES7 315-2EG10-0AB0	
CPU 315T-2 DP^{A)} 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	
CPU 315F-2 PN/DP^{A)} 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	
CPU 317F-2 PN/DP^{A)} 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	
S7 Technology V2.0 <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	
Option package S7 F Distributed Safety V5.4 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	
Micro Memory Card 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	
MPI cable For connecting SIMATIC S7 and the PG through MPI; length 5 m	6ES7 901-0BF00-0AA0	
		Front connector (1 unit) For compact CPUs as well as CPU 315F-2 DP 40-pole, screw-type contacts • 1 item 6ES7 392-1AM00-0AA0 • 100 items 6ES7 392-1AM00-1AB0 40-pole with cage clamp contacts 6ES7 392-1BM01-0AA0
		Mounting location number plates 6ES7 912-0AA00-0AA0
		S7-300 Manual Design, CPU data, module data, command list German 6ES7 398-8FA10-8AA0 English 6ES7 398-8FA10-8BA0 French 6ES7 398-8FA10-8CA0 Spanish 6ES7 398-8FA10-8DA0 Italian 6ES7 398-8FA10-8EA0
		SIMATIC Manual Collection^{E)} Electronic manuals on CD-ROM, 5 languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, Engineering Software, Runtime Software, PCS 7, SIMATIC HMI, SIMATIC NET 6ES7 998-8XC01-8YE0
		SIMATIC Manual Collection update service for 1 year^{E)} Up-to-date Manual Collection CD as well as the three subsequent updates 6ES7 998-8XC01-8YE2
		Power supply connector 6ES7 391-1AA00-0AA0 For compact CPUs, innovated standard CPUs and CPU 315F-2 DP (10 items, spare part)
		Labeling strips For compact CPUs, standard CPUs as well as CPU 315F-2 DP (10 items, spare part) 6ES7 392-2XX00-0AA0
		Label cover 6ES7 392-2XY00-0AA0 For compact CPUs, standard CPUs as well as CPU 315F-2 DP (10 items, spare part)
		S7 SmartLabel 2XV9 450-1SL01-0YX0 Software for labeling modules mechanically directly in the STEP 7 project
		Sheets of labels for machine inscription For 16-channel signal modules, DIN A4, for printing using a laser printer; 10 items Petrol 6ES7 392-2AX00-0AA0 Light beige 6ES7 392-2BX00-0AA0 Yellow 6ES7 392-2CX00-0AA0 Red 6ES7 392-2DX00-0AA0

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.		Order No.
<p>Sheets of labels for machine inscription (continued)</p> <p>For 32-channel signal modules, DIN A4, for printing using a laser printer;</p> <p>10 items</p> <p>Petrol</p> <p>Light beige</p> <p>Yellow</p> <p>Red</p>	<p>6ES7 392-2AX10-0AA0</p> <p>6ES7 392-2BX10-0AA0</p> <p>6ES7 392-2CX10-0AA0</p> <p>6ES7 392-2DX10-0AA0</p>	<p>PROFIBUS Fast Connect bus cable</p> <p>Standard type specially designed for quick installation, 2-core, shielded, sold by the meter; max. length supplied 1000 m, minimum order quantity 20 m</p>	<p>6XV1 830-0EH10</p>
<p>PROFIBUS DP bus connector RS 485</p> <ul style="list-style-type: none"> • With 90° cable outlet, max. transmission rate 12 Mbit/s <ul style="list-style-type: none"> - Without PG interface - With PG interface • With 90° cable outlet for Fast-Connect connection technique, max. transmission rate 12 Mbit/s <ul style="list-style-type: none"> - Without PG interface - With PG interface • With axial cable outlet for SIMATIC OP, for connecting to PPI, MPI, PROFIBUS 	<p>6ES7 972-0BA12-0XA0</p> <p>6ES7 972-0BB12-0XA0</p> <p>6ES7 972-0BA50-0XA0</p> <p>6ES7 972-0BB50-0XA0</p> <p>6GK1 500-0EA02</p>	<p>Repeater RS 485 for PROFIBUS</p> <p>Transmission rate of up to 12 Mbit/s 24 V DC; IP20 casing</p>	<p>6ES7 972-0AA01-0XA0</p>
		<p>PROFIBUS bus components</p> <p>For establishing MPI/PROFIBUS communication</p>	<p>see catalogs IK PI, CA 01</p>

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)

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)

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

6AG1 312-6CE01-2AB0	see 6ES7 312-6CE01-0AB0
6AG1 314-1AF11-2AB0	see 6ES7 314-1AF11-0AB0
6AG1 314-6CF02-2AB0	see 6ES7 314-6CF02-0AB0

6AG1 315-2EG10-2AB0	see 6ES7 315-2EG10-0AB0
6AG1 317-2EJ10-2AB0	see 6ES7 317-2EJ10-0AB0
6AG1 315-6FF01-2AB0	see 6ES7 315-6FF01-0AB0
6AG1 317-6FF00-2AB0	see 6ES7 317-6FF00-0AB0

SIMATIC S7-300 SIPLUS central processing units

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

4

Ordering data	Order No.	Ordering data	Order No.
SIPLUS CPU 313C-2 DP (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	6AG1 313-6CE01-2AB0	SIPLUS CPU 317-2 PN/DP (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	6AG1 317-2EJ10-2AB0
SIPLUS CPU 314^{A)} (extended temperature range and extraordinary medial load) 64 KB working memory, 24 V DC supply voltage, MPI, MMC is necessary	6AG1 314-1AF11-2AB0	SIPLUS CPU 315F-2 DP (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	6AG1 315-6FF01-2AB0
SIPLUS CPU 314C-2 DP (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	6AG1 314-6CF02-2AB0	SIPLUS CPU 317F-2 DP (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	6AG1 317-6FF00-2AB0
SIPLUS CPU 315-2 PN/DP (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	6AG1 315-2EG10-2AB0	Accessories see ordering data for central processing units S7-300	

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

6AG1 322-1BL00-2AA0	see 6ES7 322-1BL00-0AA0
6AG1 322-1HH01-2AA0	see 6ES7 322-1HH01-0AA0

Ordering data

Order No.

SIPLUS SM 322 digital output modules

(extended temperature range and extraordinary medial load)

32 outputs, 24 V DC, 0,5 A

16 outputs, relay contacts, 8 A

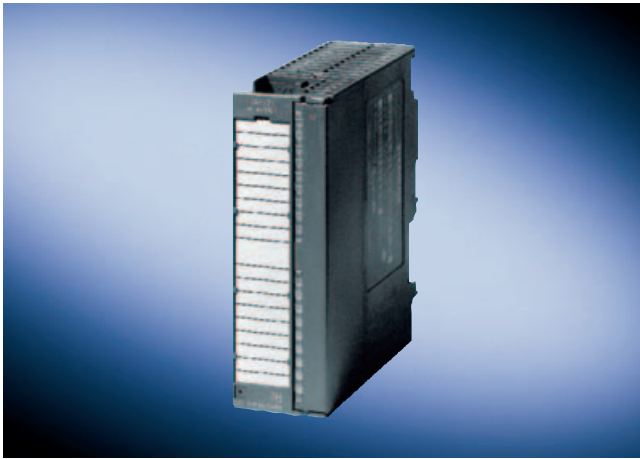
6AG1 322-1BL00-2AA0

6AG1 322-1HH01-2AA0

Accessories

see ordering data for S7-300 digital output modules

Overview



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

Technical specifications

	6ES7 331-7PF01-0AB0	6ES7 331-7PF11-0AB0
Voltages and currents		
Load voltage L+		
- Rated value (DC)	24 V	24 V
- Reverse polarity protection	Yes	Yes
Current consumption		
• from load voltage L+ (no load), max.	240 mA	200 mA
• from backplane bus 5 V DC, max.	100 mA	100 mA
• Power dissipation, typical	4.6 W	3 W
Connection system		
• Requisite front connector	40-pin	40-pin
Clock synchronism		
• Clock synchronous operation	No	No
Analog inputs		
• Number of analog inputs	8	8
• Number of analog inputs for resistance measurement	8	
• Length of cable shielded, max	200 m	100 m
• 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. 1s (pulse duty ratio 1:20)
Input ranges (rated values), thermocouples		
- Type B		Yes
- Type E		Yes
- Type J		Yes
- Type K		Yes
- Type L		Yes
- Type N		Yes
- Type R		Yes
- Type S		Yes
- Type T		Yes
- Type U		Yes

	6ES7 331-7PF01-0AB0	6ES7 331-7PF11-0AB0
Input ranges (rated values), resistances		
- 0 to 150 ohms	Yes	
- 0 to 300 ohms	Yes	
- 0 to 600 ohms	Yes	
Input ranges (rated values), resistance thermometer		
- Cu 10	Yes	
- Ni 100	Yes	
- Ni 1000	Yes	
- Ni 120	Yes	
- Ni 200	Yes	
- Ni 500	Yes	
- Pt 100	Yes	
- Pt 1000	Yes	
- Pt 200	Yes	
- Pt 500	Yes	
Characteristic curve linearization		
- parameterizable	Yes	
- for thermocouples		Yes Type B, E, J, K, L, N, R, S, T, U, C
- 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)	
Temperature compensation		
- parameterizable		Yes
- external temperature compensation with compensating box possible		Yes
- external temperature compensation with Pt100		Yes
- internal temperature compensation possible		Yes

SIMATIC S7-300

Analog modules

SM 331 analog input modules

Technical specifications (continued)

	6ES7 331-7PF01-0AB0	6ES7 331-7PF11-0AB0
Analog value formation		
• 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
Sensor		
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	
Error/accuracies		
Operational limit in the entire temperature range		
- relative to the input range, voltage		+/- 1 K
- relative to the input range, resistance	+/- 0,1 %	
- relative to the input range, resistance thermometer	+/- 1 K	

	6ES7 331-7PF01-0AB0	6ES7 331-7PF11-0AB0
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	
Status information/ interrupts/ diagnostics		
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
Insulation		
• Insulation tested with	500 V DC	500 V DC
Potentials/ electrical isolation		
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
Dimensions and weight		
• Weight, approx.	272 g	272 g
• Width	40 mm	40 mm
• Height	125 mm	125 mm
• Depth	120 mm	120 mm

Ordering data	Order No.	Order No.
SM 331 analog input modules Including labeling strips, bus connector, measuring range modules 8 inputs, for thermal sensors ^{A)} 8 inputs, for thermoelements ^{A)}	6ES7 331-7PF01-0AB0 6ES7 331-7PF11-0AB0	6ES7 392-2XY00-0AA0
Range card for analog inputs 1 card for 2 analog inputs; 2 items (spare part)	6ES7 974-0AA00-0AA0	
Front connector 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	6ES7 392-1AJ00-0AA0 6ES7 392-1AJ00-1AB0 6ES7 392-1BJ00-0AA0 6ES7 392-1AM00-0AA0 6ES7 392-1AM00-1AB0 6ES7 392-1BM01-0AA0	
Front door, elevated design^{A)} e.g. for 32-channel modules; for connecting 1.3 mm ² /16 AWG conductors	6ES7 328-0AA00-7AA0	
SIMATIC TOP connect	see catalog ST 70	
Bus connectors 1 unit (spare part)	6ES7 390-0AA00-0AA0	
Shield connecting element 80 mm wide, with 2 rows for 4 terminal elements each	6ES7 390-5AA00-0AA0	
Terminal elements 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	6ES7 390-5AB00-0AA0 6ES7 390-5BA00-0AA0 6ES7 390-5CA00-0AA0b	
		Label cover 10 units for signal modules (not 32-channel modules), function modules
		Labeling strips 10 units for signal modules (not 32-channel modules), function modules
		S7 SmartLabel Software for labeling modules mechanically directly in the STEP 7 project
		Labeling sheets for machine labeling 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
		6ES7 392-2AX00-0AA0 6ES7 392-2BX00-0AA0 6ES7 392-2CX00-0AA0 6ES7 392-2DX00-0AA0
		6ES7 392-2AX10-0AA0 6ES7 392-2BX10-0AA0 6ES7 392-2CX10-0AA0 6ES7 392-2DX10-0AA0
		SIMATIC Manual Collection^{E)} 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)
		6ES7 998-8XC01-8YE0
		SIMATIC Manual Collection update service for 1 year^{E)} Current "S7 Manual Collection" CD and the three subsequent updates
		6ES7 998-8XC01-8YE2
		S7-300 manual Design, CPU data, module data, operation list German English French Spanish Italian
		6ES7 398-8FA10-8AA0 6ES7 398-8FA10-8BA0 6ES7 398-8FA10-8CA0 6ES7 398-8FA10-8DA0 6ES7 398-8FA10-8EA0

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

6AG1 331-7KF02-4AB0	see 6ES7 331-7KF02-0AB0
6AG1 331-7NF00-2AB0	see 6ES7 331-7NF00-0AB0
6AG1 331-7NF10-2AB0	see 6ES7 331-7NF10-0AB0

Ordering data

Order No.

SIPLUS SM 331 analog input modules

(extended temperature range and extraordinary medial load)

8 inputs, resolution 9/12/14 bits^{A)}

6AG1 331-7KF02-4AB0

8 inputs, enhanced resolution 16 bits^{A)}

6AG1 331-7NF00-2AB0

8 inputs, enhanced resolution 16 bits, 4-channel mode^{A)}

6AG1 331-7NF10-2AB0

Accessories

see ordering data for S7-300 analog input modules

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

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

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	
Use in automation systems	
• S7-300	Directly or via ET 200M
• S7-400 (H)	Via ET 200M
• PCS 7 (H)	Via ET 200M
Communication interfaces	SIMATIC S7, RS 232, RS 485
Module parameterization	Using SIMATIC S7 Using SIWATOOL FTA software (RS 232)
Measuring properties	
• EC type approval as non-automatic weighing machine, trade class III	3 x 6000 d ≥ 0.5 μV/e
• Internal resolution	16 million parts
• Internal/external updating rate	400/100 Hz
Several parameterizable digital filters	Critically damped, Bessel, Butterworth (0.05 ... 20 Hz), mean value filter
Weighing functions	
• Non-automatic weighing machine	OIML R76
• Automatic weighing machine	OIML R51, R61, R107
Load cells	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
Load cell powering	
• 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	
Max. distance of load cells	
When using the recommended cable:	
• Standard	1000 m (500 m legal-for-trade)
• In hazardous area ¹⁾	
- For gases of group IIC	300 m
- For gases of group IIB	1000 m
Connection to load cells in Ex zone 1	Optionally via SIWAREX IS Ex interface
Ex approvals zone 2 and safety	ATEX 100a, FM, UL, cUL _{US} Haz. Loc.
Power supply	
• Rated voltage	24 V DC
• Max. current consumption	500 mA
• Current consumption from backplane bus	Typ. 55 mA
Inputs/outputs	
• 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
Approvals	EC type approval (CE, OIML R76) OIML R51, R61, R107
Degree of protection to DIN EN 60529; IEC 60529	IP20
Climatic requirements	(T_{min} (IND) ... T_{max} (IND)) (operating temperature)
• Vertical installation	-10 ... 60 °C
• Horizontal installation	-10 ... 40 °C
EMC requirements	EN 61326, EN 45501, NAMUR NE21, Part 1
Dimensions in mm	80 x 125 x 130
Weight	600 g

¹⁾ For details, refer to SIWAREX IS data sheet

Ordering data	Order No.	Order No.	
SIWAREX FTA 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	SIWAREX Multiscale 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
SIWAREX FTA Manual <ul style="list-style-type: none"> • German • English • Italian • Spanish • French Free download from the Internet at: www.siemens.com/weighing-technology		SIWAREX Multifill 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
SIWAREX FTA "Getting started" Example software for easy acquaintance with scale programming in STEP 7. Free download from the Internet at: www.siemens.com/weighing-technology		SIWATOOL cable from SIWAREX FTA with serial PC interface, for 9-pin PC interfaces (RS 232) <ul style="list-style-type: none"> • 2 m long • 5 m long 	7MH4 702-8CA 7MH4 702-8CB
SIWAREX FTA configuration package for SIMATIC S7 on CD-ROM <ul style="list-style-type: none"> • SETUP for S7 link with STEP 7 V5.2 or later • S7 function block • SIWATOOL FTA commissioning software • Manual 	7MH4 900-2AK01	40-pin front plug with screw contacts (required for each SIWAREX module), alternatively with spring-loaded contacts	6ES7 392-1AM00-0AA0
SIWAREX FTA configuration package for PCS 7 V6.0 and V6.1 on CD-ROM <ul style="list-style-type: none"> • SETUP for S7 link • Function block for CFC • Faceplate • SIWATOOL FTA commissioning software • Manual 	7MH4 900-2AK61	40-pin front plug with spring-loaded contacts (required for each SIWAREX module), alternatively with screw contacts	6ES7 392-1BM00-0AA0
SIWAREX FTA configuration package for PCS 7 V5.1 and V5.2 On request		Shield contact element Sufficient for one SIWAREX FTA module	6ES7 390-5AA00-0AA0
Calibration set for SIWAREX FTA For verification of up to 5 scales comprising: <ul style="list-style-type: none"> • 1x inscription foil for labeling • 1x protection foil • 10x EC verification marks (black M on green background) • Guidelines for verification, verification certificates and approvals, adaptable label • SIWAREX FTA Manual 	7MH4 900-2AY10	Shield connection terminal 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"> • Scale connection • RS 485 interface • RS 232 interface 	6ES7 390-5CA00-0AA0
		S7 DIN rail <ul style="list-style-type: none"> • 160 mm • 480 mm • 530 mm • 830 mm • 2000 mm 	6ES7 390-1AB60-0AA0 6ES7 390-1AE80-0AA0 6ES7 390-1AF30-0AA0 6ES7 390-1AJ30-0AA0 6ES7 390-1BC00-0AA0
		PS 307 load power supply (only required if 24 V DC is not available) 120/230 V AC; 24 V DC <ul style="list-style-type: none"> • PS 307-1B; 2 A • PS 307-1E; 5 A • PS 307-1K; 10 A 	6ES7 307-1BA00-0AA0 6ES7 307-1EA00-0AA0 6ES7 307-1KA00-0AA0
		MMC memory for data recording up to 16 MB	6ES7 953-8LF11-0AA0

Ordering data (continued)

Remote display (option)

The Siebert S102 and S302 remote digital display can be directly connected to the SIWAREX FTA via an RS 485 interface.

Siebert Industrieelektronik GmbH
P.O. Box 1180
D-66565 Eppelborn
Tel.: +49 6806/980-0
Fax: +49 6806/980-999
Internet: <http://www.siebert.de>

Detailed information available from manufacturer.

SIWAREX JB junction box, aluminium housing

7MH4 710-1BA

for connecting up to 4 load cells in parallel, and for connecting several junction boxes

SIWAREX JB junction box, stainless steel housing

7MH4 710-1EA

for connecting up to 4 load cells in parallel

Ex interface, type SIWAREX Pi

7MH4 710-5AA

With UL and FM approvals, but **without ATEX approval** 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.

Manual for Ex interface type SIWAREX Pi

C71000-T5974-C29

Ex interface, type SIWAREX IS

With ATEX approval, but **without UL and FM approvals** 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.

- With short-circuit current < 199 mA DC
- With short-circuit current < 137 mA DC

7MH4 710-5BA

7MH4 710-5CA

Cable (optional)

Cable Li2Y 1 x 2 x 0.75 ST + 2 x (2 x 0.34 ST) - CY, orange sheath

7MH4 702-8AG

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 JB's, for fixed laying, occasional bending is possible, 10.8 mm outer diameter, for ambient temperature -40 to +80 °C

Cable Li2Y 1 x 2 x 0.75 ST + 2 x (2 x 0.34 ST) - CY, blue sheath

7MH4 702-8AF

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

Cable LiYCY 4 x 2 x 0.25 mm^{2A}

7MH4 407-8BD0

for TTY (connect 2 pairs of conductors in parallel), for connection of a remote indicator

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

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.

Technical specifications

SIWAREX FTC	
Use in automation systems	
• S7-300	Directly or via ET 200M
• S7-400 (H)	Via ET 200M
• PCS 7 (H)	Via ET 200M
Communications interfaces	SIMATIC S7, RS 232, RS 485
Module parameterization	Using SIMATIC S7
	Using SIWATOOL FTC software (RS 232)
Measuring properties	
• EC type approval as non-automatic weighing machine, trade class III	3 x 6000 d ≥ 0.5 μV/e
• Internal resolution	+/- 8 million parts
• Internal/external updating rate	400/100 Hz
Several parameterizable digital filters	Critically damped, Bessel, Butterworth (0.05 ... 20 Hz), mean value filter
Weighing functions	
• Non-automatic weighing machine, force measurement	
• Conveyor scale	
Load cells	Strain gages in 4-wire or 6-wire system
• 3 characteristic value ranges	1, 2 or 4 mV/V
Load cell powering	
• 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 FTC	
Max. distance of load cells	
When using the recommended cable:	
• Standard	1000 m (500 m legal-for-trade)
• In hazardous area ¹⁾	
- For gases of group IIC	300 m
- For gases of group IIB	1000 m
Connection to load cells in Ex zone 1	Optionally via SIWAREX IS Ex interface
Ex approvals zone 2 and safety	ATEX 100a, FM, UL, cUL _{US} Haz. Loc. (all available soon)
Power supply	
• Rated voltage	24 V DC
• Max. current consumption	500 mA
• Current consumption from backplane bus	Typ. 55 mA
Inputs/outputs	
• 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
Approvals	
For NAWI mode	EC type approval, OIML-R76
Degree of protection to DIN EN 60529; IEC 60529	IP20
Climatic requirements (T_{min} (IND) ... T_{max} (IND)) (operating temperature)	
• Vertical installation	-10 ... 60 °C
• Horizontal installation	-10 ... 40 °C
EMC requirements	EN 61326, EN 45501, NAMUR NE21, Part 1
Dimensions in mm	80 x 125 x 130
Weight	600 g

¹⁾ For details, refer to SIWAREX IS data sheet

SIMATIC S7-300

Function modules

SIWAREX FTC

4

Ordering data	Order No.	Order No.
SIWAREX FTC Weighing electronics for conveyor scales for S7-300 and ET 200M. Applications: Force measurement, conveyor scales	7MH4 900-3AA01	S7 DIN rail <ul style="list-style-type: none"> • 160 mm • 480 mm • 530 mm • 830 mm • 2000 mm
SIWAREX FTC Manual German, English, Italian, Spanish, French Free download from the Internet at: www.siemens.com/weighing-technology SIWAREX FTC "Getting started" Example software for easy acquaintance with scale programming in STEP 7. Free download from the Internet at: www.siemens.com/weighing-technology		PS 307 load power supply (only required if DC 24 V is not available) 120/230 V AC; 24 V DC <ul style="list-style-type: none"> • PS 307-1B; 2 A • PS 307-1E; 5 A • PS 307-1K; 10 A
SIWAREX FTC configuration package for SIMATIC S7 on CD-ROM <ul style="list-style-type: none"> • SETUP for S7 link with STEP 7 V5.2 • S7 function block • SIWATOOL FTC commissioning software • Manual 	7MH4 900-3AK01	MMC memory for data recording up to 16 MB
SIWAREX FTC configuration package for PCS 7 V6.0 and V6.1 on CD-ROM <ul style="list-style-type: none"> • SETUP for S7 link • Function block for CFC • Faceplate • SIWATOOL FTC commissioning software • Manual 	7MH4 900-3AK61	Remote display (option) 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: http://www.siebert.de Detailed information available from manufacturer.
SIWATOOL cable from SIWAREX FTC with serial PC interface, for 9-pin PC interfaces (RS 232) <ul style="list-style-type: none"> • 2 m long • 5 m long 	7MH4 702-8CA 7MH4 702-8CB	SIWAREX JB junction box, aluminium housing for connecting up to 4 load cells in parallel, and for connecting several junction boxes
40-pin front plug with screw contacts (required for each SIWAREX module), alternatively with spring-loaded contacts	6ES7 392-1AM00-0AA0	SIWAREX JB junction box, stainless steel housing for connecting up to 4 load cells in parallel
40-pin front plug with spring-loaded contacts (required for each SIWAREX module), alternatively with screw contacts	6ES7 392-1BM00-0AA0	Ex interface, type SIWAREX Pi With UL and FM approvals, but without ATEX approval 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.
Shield contact element Sufficient for one SIWAREX FTC module	6ES7 390-5AA00-0AA0	Manual for Ex interface type SIWAREX Pi C71000-T5974-C29
Shield connection terminal 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"> • Scale connection • RS 485 interface • RS 232 interface 	6ES7 390-5CA00-0AA0	SIWAREX IS Ex interface With ATEX approval, but without UL and FM approvals 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"> • With short-circuit current < 199 mA DC • With short-circuit current < 137 mA DC
		Cable (optional) see SIWAREX FTA

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.

Technical specifications

SIWAREX P	
Main applications	<ul style="list-style-type: none"> • Load measurement on cranes • Overload protection • Belt tensioning devices • Platform scales • Fill level (containers/bins)
Intrinsically-safe load cell powering	Optional (Ex-I)
Stand-alone (without SIMATIC)	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
Communication interfaces	SIMATIC S5 bus TTY
Process interfaces	
• Digital outputs	2 limits/fault
• Analog output/analog input	Yes / No
Remote display connection (via serial interface)	Yes Gross
Measuring properties	
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)
Number of measurements/second	10
Filter	0.0625 -2 Hz
Weighing functions	
• Weight values	Gross
• Limits	2 (min./max.)

SIWAREX P	
Integral display and operator panel	Yes
Module parameterization	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
Permissible load cell characteristic	Up to 3 mV/V
Permissible range of measuring signal (at greatest set characteristic)	0 to 33 mV
Max. distance of load cells	500 m (300 m in Ex area)
Supply voltage 24 V DC	
• Rated voltage	24 V DC
• Max. current consumption	300 mA
Serial port 1	TTY (serial 20 mA):
• 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)
Binary outputs	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	
Analog output	
• Output range	0/4 ... 20 mA
• Total error at 25°C	0,45 %
• Updating rate	100 ms
• Resolution	10 bits (0 ... 20 mA)
• Burden including line resistance	≤ 500 Ω

SIWAREX P	
Climatic requirements	0 ... +55 °C
Tmin(IND) to Tmax(IND) (operating temperature)	in wall housing: 0 ... +45 °C
EMC requirements according to	EN 50081-2 EN 50082-2

Ordering data

	Order No.
SIWAREX P	
• For stand-alone operation without SIMATIC	7MH4 205-1AB01
• For operation within a SIMATIC S5-90U/-95U/-100U and ET 200U programmable controller	7MH4 205-1AC01
SIWAREX P Manual (the Manual must be ordered separately)	
• German	C71000-B5900-C44
• English	C71000-B5976-C44
Data handling block 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	7MH4 811-5AP41
Bus module Terminal block for screw connection (required for each SIWAREX P)	6ES5 700-8MA11
SITOP POWER 2 power supply for 115/230 V AC, 24 V DC; 2 A	6EP1 331-2BA00
Wall housing for max. two SIWAREX P weighing and force measuring systems and one PS931 power supply module	7MH4 215-8AA
S102 remote display	
The digital remote display can be connected directly to the SIWAREX P through the TTY interface.	
The following remote displays can be connected:	
S102-05/25/OR-000/0B-TM	
Siebert Industrieelektronik GmbH P.O. Box 1180 D-66565 Eppelborn Tel.: +49 6806/980-0 Fax: +49 6806/980-999 Internet: http://www.siebert.de	
Detailed information available from manufacturer.	

Order No.

	Order No.
Accessories	
SIWAREX JB junction box, aluminium housing for connecting up to 4 load cells in parallel, and for connecting several junction boxes	7MH4 710-1BA
SIWAREX JB junction box, stainless steel housing for connecting up to 4 load cells in parallel	7MH4 710-1EA
Ex interface, type SIWAREX Pi With UL and FM approvals, but without ATEX approval , 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.	7MH4 710-5AA
Manual for Ex interface type SIWAREX Pi	C71000-T5974-C29
SIWAREX IS Ex interface With ATEX approval, but without UL and FM approvals , 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.	
• With short-circuit current < 199 mA DC	7MH4 710-5BA
• With short-circuit current < 137 mA DC	7MH4 710-5CA
Cable (optional)	see SIWAREX FTA

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 ¹⁾ 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^{A)}

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

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
Supply voltages			
Rated value - 24 V DC	No	No	No
Current consumption			
• 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
Interfaces			
• 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
Point-to-point			
• Length of cable, max.	15 m	1,000 m	1,200 m
Integral protocol driver			
- 3964 (R)	Yes	Yes	Yes
- ASCII	Yes	Yes	Yes
- Customer-specific drivers for later loading	No	No	No
- RK512	No	No	No
Frame length, max.			
- 3964 (R)	1,024 Byte	1,024 Byte	1,024 Byte
- ASCII	1,024 Byte	1,024 Byte	1,024 Byte

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		
Dimensions and weight			
• Weight, approx.	300 g	300 g	300 g
• Width	40 mm	40 mm	40 mm
• Height	125 mm	125 mm	125 mm
• Depth	120 mm	120 mm	120 mm
Software			
Block			
- FB length in working memory, max.	2,700 Byte	2,700 Byte	2,700 Byte

Ordering data

	Order No.		Order No.
CP 340 communications module With one RS 232 C (V.24) interface	6ES7 340-1AH02-0AE0	CP 340 communications module With one RS 422/485 (X.27) interface	6ES7 340-1CH02-0AE0
RS 232 connecting cable For linking to SIMATIC S7		RS 422/485 connecting cable 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
CP 340 communications module With one 20 mA (TTY) interface	6ES7 340-1BH02-0AE0		
20 mA (TTY) connecting cable 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

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

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
Performance data	
S5-compatible communication (SEND/RECEIVE)	
• Sum of all simultaneously operable TCP/UDP connections	Max. 16
• Useful data	
- TCP	8 KB
- UDP	2 KB

	CP 343-1
S7 communication	
• Number of connections	Max. 16
PG/OP communication	
• Number of operable OP connections (non-isochrone services)	16
Multi-protocol operation	
• Sum of all simultaneously operable connections	Max. 48
Multicast	
	16
PROFINET communication	
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

4

Ordering data	Order No.	Order No.
<p>CP 343-1 communications processor</p> <p>For connection of SIMATIC S7-300 to Industrial Ethernet; PROFINET IO-Controller, TCP/IP and UDP, S7 communication, S5-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</p>	<p>6GK7 343-1EX21-0XE0</p>	<p>IE FC RJ45 Plug 180</p> <p>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</p> <ul style="list-style-type: none"> • 1 pack = 1 unit • 1 pack = 10 units • 1 pack = 50 units <p>Documentation S7-CPs/NCM for Industrial Ethernet and PROFIBUS</p> <p>for V5.x (STEP 7 V5.x); paper version</p> <ul style="list-style-type: none"> • German • English
<p>NCM S7 configuration software for Industrial Ethernet</p> <p>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</p>	<p>Included in the STEP 7 V5.3 package</p>	<p>6GK1 901-1BB10-2AA0</p> <p>6GK1 901-1BB10-2AB0</p> <p>6GK1 901-1BB10-2AE0</p> <p>6GK7 080-0AA01-8AA0</p> <p>6GK7 080-0AA01-8BA0</p>

SIMATIC S7-400

5



5/2	Central processing units
5/2	CPU 416F-2
5/7	Function modules
5/7	SIPLUS DCF 77 radio clock module
5/8	Communication
5/8	CP 443-5 Basic
5/10	CP 443-5 Extended
5/12	Racks
5/14	Power supplies
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
Product version	
• Firmware version	V4.0
• Associated programming package	as of STEP7 V 5.2 SP1 HF3 with HW-Update
Supply voltages	
Rated value	
- 24 V DC	Yes
Voltages and currents	
• Incoming supply of external backup voltage to the CPU	5 to 15 V DC
Current consumption	
• from backplane bus 5 V DC, max.	1.6 A
• Power dissipation, typical	4.5 W
Back-up battery	
- Backup current, max.	1,539 µA
- Backup current, typical	550 µA
Memory/backup	
Memory	
• 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
Backup	
- available	Yes
- with battery	Yes; all data
- without battery	No
CPU/blocks	
DB	
- Number, max.	4,095; DB 0 reserved
- Size, max.	64 KByte

	6ES7 416-2FK04-0AB0
FB	
- Number, max.	2,048
- Size, max.	64 KByte
FC	
- Number, max.	2,048
- Size, max.	64 KByte
OB	
- Number, max.	See instruction list
- Size, max.	64 KByte
Nesting depth	
- per priority class	24
- additional levels within an error OB	2
CPU/processing times	
• 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
Timers/counters and their retentive characteristics	
S7 counter	
- 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
IEC counter	
- available	Yes
- Type	SFB

Technical specifications (continued)

	6ES7 416-2FK04-0AB0
S7 times	
- 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
IEC timer	
- available	Yes
- Type	SFB
Data areas and their retentive characteristics	
• Retentive data area as a whole	total working and load memory (with backup battery)
Flags	
- Number	16 KByte
- adjustable retentivity	Yes; MB 0 to MB 16383
- Number of clock memories	8; (1 memory byte)
Address area	
I/O address area	
- 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
Process image	
- 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
Digital channels	
- Inputs	131,072
- Outputs	131,072
- Inputs, of which central	131,072
- Outputs, of which central	131,072
Analog channels	
- Inputs	8,192
- Outputs	8,192
- Inputs, of which central	8,192
- Outputs, of which central	8,192

	6ES7 416-2FK04-0AB0
Configuration	
• 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)
IM	
- Number of pluggable IMs (overall), max.	6
- Number of pluggable IM 460s, max.	6
- Number of pluggable IM 463s, max.	4; IM 463-2
Number of DP masters	
- 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
Number of FMs and CPs that can be operated (recommendation)	
- FM	limited by the number of slots and by the number of connections CP 440: limited by the number of slots CP 441: limited by the number of connections
- CP, point-to-point	limited by the number of connections
- CP, LAN	14; incl. CP 443-5 Ext. and IM 467
- PROFIBUS and Ethernet CPs	
Time	
Clock	
- Hardware clock (realtime clock)	Yes
- buffered	Yes
- Triggering	1 ms
Run-time meter	
- Quantity	8
Time synchronization	
- 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
S7 message functions	
• Number of stations that can log on for message functions, max.	12
• Symbol-related messages	Yes
Number of messages	
- total, max.	1,024
• Block-related messages	Yes
• Alarm 8 blocks	Yes
• Statuses	Yes
Test and startup functions	
Status/modify	
- Variable	Yes

SIMATIC S7-400

Central processing units

CPU 416F-2

Technical specifications (continued)

	6ES7 416-2FK04-0AB0
Forcing	
- Forcing	Yes
• Status block	Yes
• Single step	Yes
• Number of breakpoints	4
Diagnostic buffer	
- available	Yes
- Number of inputs, max.	3,200
- adjustable	Yes
- preset	120
Communication functions	
• PG/OP communication	Yes
Global data communication	
- supported	Yes
- Size of GD packets, max.	64 Byte
S7 basic communication	
- supported	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
- User data per job	76 Byte
S7 communication	
- supported	Yes
- as server	Yes
- as client	Yes
- User data per job, max.	64 KByte
S5 compatible communication	
- supported	Yes; via FC AG_SEND and AG_RECV, via a maximum of 10 CP 443-1 or 443-5
- User data per job, max.	8 KByte
Standard communication	
- Supported	Yes; via CP and loadable FB
Number of connections	
- overall	64
1st interface	
• 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
2nd interface	
• 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

Technical specifications (continued)

	6ES7 416-2FK04-0AB0
• 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
Clock synchronism	
• User data per clock synchronous slave, max.	244 Byte
• Equidistance	Yes
• Shortest clock pulse	1 ms; 0.5 ms without using SFC 126, 127
CiR configuration in RUN	
• CiR synchronization time, base load	100 ms
• CiR synchronization time, time per I/O slave	40 µs

	6ES7 416-2FK04-0AB0
CPU/ programming	
Programming language	
- STEP 7	Yes
- KOP	Yes
- FUP	Yes
- AWL	Yes
- SCL	Yes
- CFC	Yes
- GRAPH	Yes
- HiGraph	Yes
• Bracket levels	8
• User program protection/ password protection	Yes
Dimensions and weight	
• Weight, approx.	720 g
• Width	25 mm
• Height	290 mm
• Depth	219 mm
• Required slots	1

Ordering data

	Order No.
CPU 416-2F	6ES7 416-2FK04-0AB0
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	
Option package	
S7 F Distributed Safety V5.4	
for generating fail-safe programs for the S7-300F	
Floating license	6ES7 833-1FC02-0YA5
Upgrade from V5.x to V5.4	6ES7 833-1FC02-0YE5
Software Update Service	6ES7 833-1FC00-0YX2
Memory Card RAM	
64 KB	6ES7 952-0AF00-0AA0
256 KB	6ES7 952-1AH00-0AA0
1 MB	6ES7 952-1AK00-0AA0
2 MB	6ES7 952-1AL00-0AA0
4 MB	6ES7 952-1AM00-0AA0
8 MB	6ES7 952-1AP00-0AA0
16 MB	6ES7 952-1AS00-0AA0
64 MB	6ES7 952-1AY00-0AA0

	Order No.
Memory Card FEPR0M	
64 KB	6ES7952-0KF00-0AA0
256 KB	6ES7952-0KH00-0AA0
1 MB	6ES7 952-1KK00-0AA0
2 MB	6ES7 952-1KL00-0AA0
4 MB	6ES7 952-1KM00-0AA0
8 MB	6ES7 952-1KP00-0AA0
16 MB	6ES7 952-1KS00-0AA0
32 MB ^{A)}	6ES7 952-1KT00-0AA0
64 MB ^{A)}	6ES7 952-1KY00-0AA0
MPI cable	6ES7 901-0BF00-0AA0
For connecting SIMATIC S7 and the PG through MPI; 5 m in length	
IF 964-DP interface module	6ES7 964-2AA04-0AB0
For connecting an additional DP line	
Slot number plates	6ES7 912-0AA00-0AA0
1 set (spare part)	

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

SIMATIC S7-400

Central processing units

CPU 416F-2

5

Ordering data	Order No.	Ordering data	Order No.
Manual "SIMATIC S7-400 programmable controller" incl. operation list		Brochure "SIMATIC S7-400 programmable controller - Design and application"	
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
S7-400 operation list		RS 485 bus connector with 90° cable outlet	
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	RS 485 bus connector with angled cable outlet	
Italian	6ES7 498-8AA03-8EN0	Max. transmission rate 12 Mbit/s	
Manual "Communication for SIMATIC S7-300/-400"		Without PG interface	6ES7 972-0BA41-0XA0
German	6ES7 398-8EA00-8AA0	With PG interface	6ES7 972-0BB41-0XA0
English	6ES7 398-8EA00-8BA0	RS 485 bus connector with 90° cable outlet for Fast Connect system	
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
SIMATIC Manual Collection^{E)}	6ES7 998-8XC01-8YE0	RS 485 bus connector with axial cable outlet	
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
SIMATIC Manual Collection update service for 1 year^{E)}	6ES7 998-8XC01-8YE2	PROFIBUS FastConnect bus cable	
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

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 ¹⁾ 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^{A)}

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

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
Performance data for S7 communication	
• Number of connections that can be used	16 to 48 ¹⁾

1) Dependent on CPU type

Performance data for S5-compatible communication (SEND/RECEIVE)	
• Number of connections that can be used	Max. 32
• Useful data / connection	max. 240 byte (SEND and RECEIVE)
Performance data for FMS function	
• 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
Multi-protocol operation	
• Number of connections that can be used (2 of which are reserved for PG/OP communication)	Max. 59

Ordering data	Order No.	Order No.
CP 443-5 communications processor 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	
NCM S7 configuration software for PROFIBUS 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	
"NCM S7 for PROFIBUS" manual Paper version for V5.x (STEP 7 V5.x) <ul style="list-style-type: none"> • 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	
		PROFIBUS FastConnect RS 485 bus connector With 90° cable outlet; With insulation displacement method, max. data transmission rate 12 Mbit/s <ul style="list-style-type: none"> • without PG interface • with PG interface
		6ES7 972-0BA50-0XA0 6ES7 972-0BB50-0XA0
		PROFIBUS bus connector IP20 For connection to PPI, MPI, PROFIBUS <ul style="list-style-type: none"> • without PG interface • with PG interface
		6ES7 972-0BA12-0XA0 6ES7 972-0BB12-0XA0
		PROFIBUS 12M bus terminal Bus terminal for connecting PROFIBUS stations up to 12 Mbit/s with connecting cable
		6GK1 500-0AA10
		"Communication with SIMATIC" manual <ul style="list-style-type: none"> • German • English • French • Spanish • Italian
		6ES7 398-8EA00-8AA0 6ES7 398-8EA00-8BA0 6ES7 398-8EA00-8CA0 6ES7 398-8EA00-8DA0 6ES7 398-8EA00-8EA0

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 ± 5% 24 V DC ± 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
Performance data for DP master function	
• 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

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

1) Dependent on CPU type

Ordering data	Order No.	Order No.
CP 443-5 Extended communications processor^{F)} For connecting SIMATIC S7-400 to PROFIBUS Extended version for PROFIBUS DP; with electronic manual, on CD-ROM	6GK7 443-5DX04-0XE0	PROFIBUS FastConnect bus connector RS 485 With 90° cable outlet; insulation displacement technology, max. transmission rate 12 Mbit/s • Without PG interface • With PG interface
Configuring software NCM S7 for PROFIBUS 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	PROFIBUS bus connector IP20 With connection to PPI, MPI, PROFIBUS • Without PG interface • With PG interface
Manual NCM S7 for PROFIBUS Paper version for V5.x (STEP 7 V5.x)		PROFIBUS bus terminal 12M Bus terminal for connection of PROFIBUS stations up to 12 Mbit/s with plug-in cable
<ul style="list-style-type: none"> • 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	„Communication with SIMATIC“ Manual <ul style="list-style-type: none"> • German • English • French • Spanish • Italian
		6ES7 972-0BA50-0XA0 6ES7 972-0BB50-0XA0 6ES7 972-0BA12-0XA0 6ES7 972-0BB12-0XA0 6GK1 500-0AA10
		6ES7 398-8EA00-8AA0 6ES7 398-8EA00-8BA0 6ES7 398-8EA00-8CA0 6ES7 398-8EA00-8DA0 6ES7 398-8EA00-8EA0

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

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
Configuration					
• Number of single-width slots, max.	18	9	9	18; 2 segments with 8 and 10 slots	4
Racks					
- C bus	Yes	Yes	Yes	Yes	Yes
- P bus	Yes	Yes	Yes	Yes	Yes
Dimensions and weight					
• 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

Technical specifications (continued)

	6ES7 400-2JA00-0AA0	6ES7 400-2JA10-0AA0	6ES7 403-1TA01-0AA0	6ES7 403-1JA01-0AA0
Configuration				
• Number of single-width slots, max.	18	18	18	9
Racks				
- C bus	Yes	Yes		
- P bus	Yes	Yes	Yes	Yes
Dimensions and weight				
• 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

Ordering data

Ordering data	Order No.
UR1 rack For central and expansion units, 18 slots	6ES7 400-1TA01-0AA0
UR2 rack For central and expansion units, 9 slots	6ES7 400-1JA01-0AA0
UR2 rack, aluminum version For central and expansion units, 9 slots	6ES7 400-1JA11-0AA0
CR1 rack for segmented central units, 18 slots, 2 local segments	6ES7 401-2TA01-0AA0
CR3 rack For central and expansion units, 4 slots; optimized for distributed automation solutions	6ES7 401-1DA01-0AA0

Ordering data	Order No.
UR2-H rack for segmented central units, 18 slots	6ES7 400-2JA00-0AA0
UR2-H rack, aluminum version for segmented central units, 18 slots	6ES7 400-2JA10-0AA0
ER1 rack for expansion units, I/O bus only, 18 slots	6ES7 403-1TA01-0AA0
ER2 rack for expansion units, I/O bus only, 9 slots	6ES7 403-1JA01-0AA0
Slot cover 10 units (spare part)	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
Power supply				
• 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
Voltages and currents				
• Power consumption, typical	48 W	95 W	104 W	175 W
Current consumption				
• Power dissipation, typical	16 W	20 W	29 W	51 W
Back-up battery				
- Backup battery (optional)	Yes	Yes	Yes	Yes
Connection system				
• Connecting cables/ cross-sections	3 x 1.5 mm ² , solid or stranded wire, outer diameter 3 to 9 mm	3 x 1.5 mm ² , solid or stranded wire, outer diameter 3 to 9 mm	3 x 1.5 mm ² , solid or stranded wire, outer diameter 3 to 9 mm	3 x 1.5 mm ² , solid or stranded wire, outer diameter 3 to 9 mm

Technical specifications (continued)

	6ES7 405-0DA01-0AA0	6ES7 405-0KA02-0AA0	6ES7 405-0KR00-0AA0	6ES7 405-0RA01-0AA0
Potentials/ electrical isolation				
• primary/secondary	Yes	Yes	Yes	Yes
Environmental requirements				
Degree of protection and class of protection				
- Protection class	1	1	1	1
Standards, approvals, certification				
• FM approval	Yes	Yes	Yes	Yes
Dimensions and weight				
• 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
Power supply				
• 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
Input voltage				
- 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
Input current				
- 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
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; 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

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
Voltages and currents				
• Power consumption, typical	46.5 W	105 W	97.5 W	168 W
Current consumption				
• 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
Connection system				
• Connecting cables/ cross-sections	3 x 1.5 mm ² , solid or stranded wire, outer diameter 3 to 9 mm	3 x 1.5 mm ² , solid or stranded wire, outer diameter 3 to 9 mm	3 x 1.5 mm ² , solid or stranded wire, outer diameter 3 to 9 mm	3 x 1.5 mm ² , solid or stranded wire, outer diameter 3 to 9 mm
Potentials/ electrical isolation				
• primary/secondary	Yes	Yes	Yes	Yes
EMC				
• Conform to syst. react. to IEC 61000-3-2, IEC 61000-3-3	No	Yes	Yes	Yes
Environmental requirements				
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
Standards, approvals, certification				
• 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
Dimensions and weight				
• 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

PS 405 power supply modules

24 V DC; 5 V DC, 24 V DC

4 A

10 A, wide range

10 A, redundant, wide range

20 A, wide range

Power plug for PS 405

Spare part

Backup battery

Type AA, 1.9 Ah

Order No.

6ES7 405-0DA01-0AA0

6ES7 405-0KA02-0AA0

6ES7 405-0KR00-0AA0

6ES7 405-0RA01-0AA0

6ES7 490-0AA00-0AA0

6ES7 971-0BA00

PS 407 power supply modules

120/230 V AC; 5 V DC, 24 V DC

4 A

10 A

10 A, redundant

20 A

Power plug for PS 407

Spare part

Backup battery

Type AA, 1.9 Ah

Order No.

6ES7 407-0DA01-0AA0

6ES7 407-0KA01-0AA0

6ES7 407-0KR00-0AA0

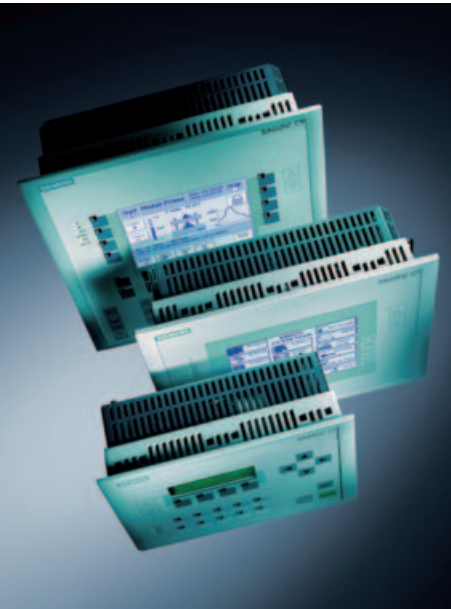
6ES7 407-0RA01-0AA0

6ES7 490-0AB00-0AA0

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.

6

Technical specifications

	6ES7 613-1CA01-0AE3
Supply voltages	
Rated value	
- 24 V DC	Yes
- permissible range, lower limit (DC)	20.4 V
- permissible range, upper limit (DC)	28.8 V
Current consumption	
• Inrush current, max.	2 A
• Current consumption, typical	350 mA
Digital outputs	
• Power dissipation, typical	11 W
Memory/backup	
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
CPU/blocks	
DB	
- Number, max.	127
- Size, max.	16 KByte
FB	
- Number, max.	128
- Size, max.	16 KByte
FC	
- Number, max.	128
- Size, max.	16 KByte

	6ES7 613-1CA01-0AE3
OB	
- Size, max.	16 KByte
Nesting depth	
- per priority class	6
- additional levels within an error OB	4
CPU/processing times	
• for bit instruction, min.	0.1 μ s
• for bit instruction, max.	0.2 μ s
• for word instruction, min.	0.2 μ s
• for integer math, min.	2 μ s
• for floating-point math, min.	3 μ s
Timers/counters and their retentive characteristics	
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 times	
- 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

Technical specifications (continued)

	6ES7 613-1CA01-0AE3
Data areas and their retentive characteristics	
Flags	
- Number	256 Byte
- adjustable retentivity	Yes
Address area	
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
Configuration	
• 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
Time	
Clock	
- Hardware clock (realtime clock)	Yes
- buffered	Yes
Run-time meter	
- Quantity	1
Time synchronization	
- supported	Yes
S7 message functions	
• Number of stations that can log on for message functions, max.	5

	6ES7 613-1CA01-0AE3
Communication functions	
• 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
1st interface	
• 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
CPU/ programming	
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

Technical specifications (continued)

	6ES7 613-1CA01-0AE3
Digital inputs	
• 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
Digital outputs	
• 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
Analog inputs	
• 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

	6ES7 613-1CA01-0AE3
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
Analog outputs	
• 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
Analog value formation	
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
Sensor	
Connectable encoders	
- 2-wire BEROS	Yes
- permissible closed-circuit current (2-wire BEROS), max.	1.5 mA
Error/accuracies	
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 %
Integral functions	
• 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

Technical specifications (continued)

6ES7 613-1CA01-0AE3	
Operator control and monitoring	
• Graphic objects	Yes
• Info texts	Yes
• Messages	Yes
• Number of process pictures	128
• Number of variables per picture, max.	8
• Password protection	Yes
Keyboard	
- Number of operating cycle keys	1,000,000
- Number of function keys	10
- Number of softkey keys	4
Display	
- Type	LCD backlit
- Number of lines	4
- Number of characters per line	20
- Background lighting MTBF (at 20°C)	100,000 h
Potentials/ electrical isolation	
Analog output functions	
- Electrical isolation, analog output functions	Yes
Analog output functions	
- Electrical isolation, analog inputs	Yes
Digital output functions	
- between the channels	Yes
- between the channels, in groups of	8
Digital input functions	
- between the channels	Yes
- between the channels, in groups of	8; 16 and 8

6ES7 613-1CA01-0AE3	
Environmental requirements	
• Environmental conditions	Not suitable for outdoor use
Operating temperature	
- 45 degree mounting, min.	0 °C
- 45 degree mounting, max.	45 °C
- vertical mounting, min.	0 °C
- vertical mounting, max.	50 °C
- horizontal mounting, min.	0 °C
- horizontal mounting, max.	40 °C
Air pressure	
- permissible range, min	795 hPa
- permissible range, max	1,080 hPa
Relative humidity	
- Operation, min.	5%
- Operation, max.	95%
Degree of protection and class of protection	
- IP 20	Yes
- IP 65	Yes
Dimensions and weight	
• Width	215 mm
• Height	165 mm
• Depth	79 mm
• Installation cutout, width	202 mm
• Installation cutout, height	152 mm
• Weight, approx.	1,350 g
Online languages	
• Number	3

SIMATIC C7

Control systems

C7-613

6

Ordering data	Order No.	Order No.
C7-613 compact control unit 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	
Micro Memory Card Essential for operation		
64 KB	6ES7 953-8LF11-0AA0	
128 KB	6ES7 953-8LG11-0AA0	
512 KB	6ES7 953-8LJ11-0AA0	
2 MB	6ES7 953-8LL11-0AA0	
4 MB	6ES7 953-8LM11-0AA0	
8 MB	6ES7 953-8LP11-0AA0	
Connector set For I/O and power supply; Essential for operation		
With screw-type terminals	6ES7 635-0AA00-4AA0	
With spring-loaded terminals	6ES7 635-0AA00-4BA0	
Configuration Tools for C7-613 Standard function blocks for configuring the HMI functions; on CD-ROM	6ES7 613-0CA00-7AA0	
Manual package for C7-613		
C7-613 manual and S7-300 manual		
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	
C7-613 manual		
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	
Accessories		
SIMATIC C7 Simulator With integral 16 DI and 16 DO; with switches and LEDs for simulating 16 DIs and 16 DOs		6ES7 620-0AA00-4AA0
I/O set For expanding the C7-613/ C7-635/C7-636 with max. 4 modules; mounted at rear of device		
For 2 modules, installed flat		6ES7 635-0AA00-6AA0
For 4 modules, installed vertically		6ES7 635-0AA00-6BA0
I/O expansion cable For external expansion of the SIMATIC C7-613/C7-635/C7-636 with max. 4 modules; length 1,5 m		6ES7 635-0AA00-6CA0
SIMATIC Manual Collection^{E)} Electronic manuals on CD-ROM, multiple languages		6ES7 998-8XC01-8YE0
SIMATIC Manual Collection update service for 1 year^{E)} Up-to-date S7 Manual Collection CD as well as the three subsequent updates		6ES7 998-8XC01-8YE2
Spare parts		
Service package 3 seals, 10 brackets, for all SIMATIC C7-613, C7-635 and C7-636		6ES7 635-0AA00-3AA0
Ground rail With shield terminals for analog I/O		6ES7 635-0AA00-6EA0

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

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.

Technical specifications

	6ES7 636-2EB00-0AE3
Supply voltages	
Rated value	
- 24 V DC	Yes
- permissible range, lower limit (DC)	20.4 V
- permissible range, upper limit (DC)	28.8 V
Current consumption	
• Inrush current, max.	3 A
• Current consumption, max.	1.5 A
• Current consumption, typical	650 mA
Digital input	
- from load voltage L+ (without load), max.	70 mA
Digital outputs	
- from load voltage L+, max.	20 mA
• Power dissipation, typical	24 W
Back-up battery	
- Backup battery (optional)	Yes
Memory/backup	
Memory	
- 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

	6ES7 636-2EB00-0AE3
Backup	
- available	Yes
- with battery	Yes
- without battery	Yes
CPU/blocks	
DB	
- Number, max.	1,023
- Size, max.	16 KByte
FB	
- Number, max.	2,048
- Size, max.	16 KByte
FC	
- Number, max.	2,048
- Size, max.	16 KByte
OB	
- Size, max.	16 KByte
Nesting depth	
- per priority class	8
- additional levels within an error OB	4
CPU/processing times	
• 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

Technical specifications (continued)

	6ES7 636-2EB00-0AE3
Timers/counters and their retentive characteristics	
S7 counter	
- Number	256
• of which retentive without battery	
- adjustable	Yes
- lower limit	0
- upper limit	256
• Retentivity	
- adjustable	Yes
- preset	Z 0 to Z 7
• Counting range	
- lower limit	0
- upper limit	999
IEC counter	
- available	Yes
- Type	SFB
S7 times	
- Number	256
• of which retentive without battery	
- adjustable	Yes
- lower limit	0
- upper limit	256
• Retentivity	
- adjustable	Yes
- preset	No retention
• Timing range	
- lower limit	10 ms
- upper limit	9,990 s
IEC timer	
- available	Yes
- Type	SFB
Data areas and their retentive characteristics	
Flags	
- Number	2,048 Byte
- adjustable retentivity	Yes
- preset retentivity	MB 0 to MB 15
- Number of clock memories	8
Data blocks	
- Number, max.	1,023
- Size, max.	16 KByte
Local data	
- per priority class, max.	1,024 Byte
Address area	
I/O address area	
- Inputs	2 KByte
- Outputs	2 KByte

	6ES7 636-2EB00-0AE3
Process image	
- Inputs	128 Byte
- Outputs	128 Byte
Digital channels	
- integrated channels (DI)	24
- integrated channels (DO)	16
- Inputs	16,384
- Outputs	16,384
- Inputs, of which central	992
- Outputs, of which central	992
Analog channels	
- integrated channels (AI)	4
- integrated channels (AO)	2
- Inputs	1,024
- Outputs	1,024
- Inputs, of which central	248
- Outputs, of which central	248
Configuration	
• Number of modules per system, max.	23
• Racks, max.	4
• Modules per rack, max.	8
• Number of rows, max.	4
Number of DP masters	
- integral	1
- via CP	1
Number of FMs and CPs that can be operated (recommendation)	
- FM	8
- CP, point-to-point	8
- CP, LAN	10
Expansion modules	
- Number of expansion modules, max.	4
Time	
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

Technical specifications (continued)

	6ES7 636-2EB00-0AE3
S7 message functions	
• Number of stations that can log on for message functions, max.	16
• Process diagnostic messages	Yes
• simultaneously active Alarm-S blocks, max.	40
Test and startup functions	
Status/modify	
- Variable	Yes
- Variables	Inputs, outputs, flags, DB, timers, counters
- Number of variables, max.	30
- of which status variables, max.	30
- of which modify variables, max.	14
Forcing	
- Forcing	Yes
- Forcing, variables	Inputs, outputs
- Forcing, number of variables, max.	10
• Status block	Yes
• Single step	Yes
• Number of breakpoints	2
Diagnostic buffer	
- available	Yes
- Number of inputs, max.	100
- adjustable	No
Communication functions	
• PG/OP communication	Yes
Global data communication	
- supported	Yes
- Number of GD packets, max.	8
- Number of send GD packets, max.	8
- Number of receive GD packets, max.	8
- Size of GD packets, max.	22 Byte
- Size of GD packets (of which consistent), max.	22 Byte
S7 basic communication	
- supported	Yes
- User data per job	76 Byte
- User data per job (of which consistent), max.	76 Byte
S7 communication	
- supported	Yes
- as server	Yes
- as client	Yes
- User data per job, max.	180 Byte
- User data per job (of which consistent), max.	64 Byte
S5 compatible communication	
- supported	Yes
Standard communication	
- Supported	No

	6ES7 636-2EB00-0AE3
Number of connections	
- overall	16
- usable for PG communication	15
- reserved for PG communication	1
- Customizable for PG communication, min.	1
- customizable for PG communication, max.	15
- usable for OP communication	15
- reserved for OP communication	1
- Customizable for OP communication, min.	1
- customizable for OP communication, max.	15
- usable for S7 basic communication	12
- reserved for S7 basic communication	12
- Customizable for S7 basic communication, min.	0
- customizable for S7 basic communication, max.	12
Interfaces	
• Number of printer interfaces	1
1st interface	
• Type of interface	integrated RS 485 interface
• Physical	RS 485
• Isolated	No
• Power supply to interface (15 to 30 V DC), max.	200 mA
Functionality	
- MPI	Yes
- DP master	No
- DP slave	No
MPI	
- Number of connections	16
• Services	
- PG/OP communication	Yes
- Routing	Yes
- Global data communication	Yes
- S7 basic communication	Yes
- S7 communication	Yes
- S7 communication, as client	Yes
- S7 communication, as server	Yes
- Transmission rates, max.	187.5 kBit/s
2nd interface	
• Type of interface	integrated RS 485 interface
• Physical	RS 485
• Isolated	Yes
• Power supply to interface (15 to 30 V DC), max.	200 mA
• Number of connection resources	16

Technical specifications (continued)

	6ES7 636-2EB00-0AE3
Functionality	
- MPI	No
- DP master	Yes
- DP slave	Yes
DP master	
- Number of connections, max.	16
- Number of connections (of which reserved), max.	1 for PG, 1 for OP
• Services	
- PG/OP communication	Yes
- Routing	Yes
- Global data communication	No
- S7 basic communication	No
- S7 communication	No
- S7 communication, as client	No
- S7 communication, as server	No
- Equidistance support	Yes
- SYNC/FREEZE	Yes
- Activate/deactivate DP slaves	Yes
- Direct data exchange (lateral communication)	Yes
- Transmission rates, max.	12 Mbit/s
- Number of DP slaves, max.	125
• Address area	
- Inputs, max.	244 Byte
- Outputs, max.	244 Byte
DP slave	
- Number of connections	16
• Services	
- PG/OP communication	Yes
- Routing	Yes
- Global data communication	No
- S7 basic communication	No
- S7 communication	No
- Direct data exchange (lateral communication)	Yes
- DPV1	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
CPU/ programming	
Configuration software	
- STEP 7	Yes
- ProTool	Yes
- ProTool/Lite	Yes
- ProTool/Pro	Yes

	6ES7 636-2EB00-0AE3
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
Integrated inputs/outputs	
Default addresses of the integral	
- Digital input	124.0 to 126.7
- Digital outputs	124.0 to 125.7
- Analog inputs	752
- Analog outputs	761
Digital inputs	
• Number of digital inputs	24
- which can be used as inputs for technological functions	16
Number of inputs that can be driven in parallel	
• vertical mounting positions	
- up to 40°C	18
• horizontal mounting positions	
- up to 40°C	12
Length of cable	
- Length of cable shielded, max	1,000 m
- Length of cable unshielded, max	600 m
• Technological function	
- shielded, max.	50 m
• Standard DI	
- shielded, max.	1,000 m
- unshielded, max.	600 m
• Input characteristic to comply with IEC 1131, Type 1	Yes
Input voltage	
- Rated value, DC	24 V
- for signal "1"	15 to 30 V
Input current	
- for 1 signal, typical	7 mA

Technical specifications (continued)

	6ES7 636-2EB00-0AE3
Input delay (at rated value of the input voltage)	
• For standard inputs	
- Parameterizable	Yes
- Rated value	3 ms
• for counters/technological functions	
- at 0 to 1, max.	8 μs
Digital outputs	
• Number of digital outputs	16
- of which fast outputs	4
• Length of cable shielded, max.	1,000 m
• Length of cable unshielded, max.	600 m
• Short-circuit protection of the output	Yes
- Response threshold, type.	1 A
• Lamp load, max.	5 W
• Driving a digital input	Yes
Output voltage	
- for 1 signal	L+ (-0.8 V)
Output current	
- for 1 signal rated value	0.5 A
- permissible range for signal "1", min.	5 mA
- permissible range for signal "1", max.	0.6 A
- for 1 signal permissible range for 0 to 40 °C, max.	0.5 A
- for 1 signal permissible range for 40 to 60 °C, max.	0.5 A
- for 1 signal minimum load current	5 mA
- for 0 signal residual current, max.	0.5 mA
Parallel switching of 2 outputs	
- to increase power	No
- to redundantly drive a load	Yes
Switching frequency	
- at resistive load, max.	100 Hz
- at inductive load, max.	0.5 Hz
- at lamp load, max.	100 Hz
- of pulse outputs, at resistive load, max.	2.5 kHz
Summation current of the outputs (per group)	
• vertical mounting positions	
- up to 40°C., max.	3 A
• horizontal mounting positions	
- up to 40°C, max.	2 A
- up to 40 °C, max.	3 A
- up to 60 °C, max.	2 A

	6ES7 636-2EB00-0AE3
Load impedance range	
- lower limit	48 Ω
- upper limit	4 kΩ
Analog inputs	
• Number of analog inputs	4
• Number of analog inputs for voltage/current measurement	4
• Number of analog inputs for resistance/temperature measurement	1
• Length of cable shielded, max	100 m
• Permiss. input voltage for voltage input (destr. limit), max.	30 V
• Permissible input voltage for the current input (destruction limit), max.	2.5 V
• Perm. input voltage for the voltage input (destr. limit), max.	0.5 mA
• Perm. input volt. for the current input (destr. lim.), max.	50 mA
• Technical unit for temperature measurement, adjustable	Yes
Input ranges (rated values), voltages	
- 0 to +10 V	Yes
- -10 V to +10 V	Yes
Input ranges (rated values), currents	
- 0 to 20 mA	Yes
- -20 to +20 mA	Yes
- 4 to 20 mA	Yes
Input ranges (rated values), resistances	
- Open-circuit voltage (DC), type	2.5 V
- Current measurement, type.	1.8 mA to 3.3 mA
- 0 to 600 ohms	Yes
Input ranges (rated values), resistance thermometer	
- Pt 100	Yes
Characteristic curve linearization	
- parameterizable	Yes
Temperature compensation	
- parameterizable	No
Analog outputs	
• 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

Technical specifications (continued)

	6ES7 636-2EB00-0AE3
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
Actuator connection	
- for voltage output 2-wire connection	Yes
- for voltage output 4-wire connection	No
- for current output 2-wire connection	Yes
Burden resistance (in the nominal output range)	
- at voltage outputs, min.	1 k Ω
- at voltage outputs, capacitive load, max.	0.1 μ F
- at current outputs, max.	300 Ω
- at current outputs, inductive load, max.	0.1 mH
Dest. limit against voltages and currents applied from outside	
- Voltages at the outputs against M _{ANA}	16 V
- Current (DC), max.	50 mA
Analog value formation	
Integration and conversion time/triggering per channel	
- with over-range (bits incl. sign), max	12 Bit
- Integration time parameterizable	Yes
- Permissible input frequency, max.	400 Hz
- Conversion time (per channel)	1 ms
- Response time of the input filter	0.38 ms
- Basic execution time of the module (all channels enabled)	1 ms
Settling time	
- for resistive load	0.6 ms
- for capacitive load	1 ms
- for inductive load	0.5 ms
Sensor	
Connectable encoders	
- 2-wire BEROs	Yes
- permissible closed-circuit current (2-wire BEROs), max.	1.5 mA

	6ES7 636-2EB00-0AE3
Error/accuracies	
Operational limit in the entire temperature range	
- relative to the output range, voltage	+/- 1 %
- relative to the output range, current	+/- 1 %
- relative to the input range, voltage	+/- 1 %
- relative to the input range, current	+/- 1 %
- relative to the input range, resistance	+/- 5 %
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 %
Interference voltage suppression for f = n x (fl +/- 1 %)	
- Series-mode interference (peak value of interference < rated value)	30 dB
- Common-mode interference, min.	40 dB
Integral functions	
• Number of counters	4
• Count frequency (counters) max.	60 kHz
• Frequency sensor	Yes
• Frequency measurement	Yes
• Number of frequency sensors	4
• Controlled positioning	Yes
• Integrated function blocks (control)	Yes
• PID controller	Yes
• Pulse outputs	Yes
• Number of pulse outputs	4
• Cut-off frequency (pulse)	2.5 kHz
Status information/ interrupts/ diagnostics	
Interrupts	
- Interrupts	Yes

Technical specifications (continued)

	6ES7 636-2EB00-0AE3
Diagnostics	
- Diagnostic functions	No
Operator control and monitoring	
• Process pictures	Yes
• Graphic objects	Yes
• Text elements	Yes
• Info texts	Yes
• Messages	Yes
• Number of process pictures	300
• Number of variables per picture, max.	200
• Number of variables in message text, max.	8
• Password protection	Yes
• Password levels	10
Display	
- Background lighting MTBF (at 20°C)	60,000 h
Resolution (pixels)	
- Width	640
- Height	480
Event/alarm messages	
- Event messages	Yes
- Alarm messages	Yes
Recipes	
- Number, max.	300
- Data records per recipe, max.	500
- Entries per data record, max.	1,000
Insulation	
• Insulation tested with	500 V DC
Potentials/ electrical isolation	
Analog output functions	
- Electrical isolation, analog output functions	Yes
- between the channels	No
- between the channels and the backplane bus	Yes
Analog input functions	
- Electrical isolation, analog inputs	Yes
- between the channels	No
- between the channels and the backplane bus	Yes
Digital output functions	
- Electrical isolation, digital output functions	Yes
- between the channels	Yes
- between the channels, in groups of	8
- between the channels and the backplane bus	Yes

	6ES7 636-2EB00-0AE3
Digital input functions	
- Electrical isolation, digital input functions	Yes
- between the channels	No
- between the channels and the backplane bus	Yes
Permissible potential difference	
• between different circuits	75 V DC / 60 V AC
Environmental requirements	
• Environmental conditions	Not suitable for outdoor use
Operating temperature	
- 45 degree mounting, min.	0 °C
- 45 degree mounting, max.	45 °C
- vertical mounting, min.	0 °C
- vertical mounting, max.	50 °C
- horizontal mounting, min.	0 °C
- horizontal mounting, max.	40 °C
Air pressure	
- Operation, min.	795 hPa
- Operation, max.	1,080 hPa
- Storage/transportation, min.	660 hPa
- Storage/transportation, max.	1,080 hPa
- permissible range, min	795 hPa
- permissible range, max	1,080 hPa
Relative humidity	
- Operation, min.	5%
- Operation, max.	85%
- Storage/transportation, max.	85%
Degree of protection and class of protection	
- IP 20	Yes
- IP 65	Yes
Dimensions and weight	
• Width	335 mm
• Height	275 mm
• Depth	100 mm
• Installation cutout, width	310 mm
• Installation cutout, height	248 mm
• Weight, approx.	3,980 g
Software requirements	
Operating system	
- Windows CE	Yes
Online languages	
• Number	5

SIMATIC C7

Control systems

C7-636 Touch

6

Ordering data	Order No.	Order No.
Compact control system C7-636 Touch^{G)} 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	6ES7 636-2EB00-0AE3	
Micro Memory Card essential for operation		
64 KB	6ES7 953-8LF11-0AA0	
128 KB	6ES7 953-8LG11-0AA0	
512 KB	6ES7 953-8LJ11-0AA0	
2 MB	6ES7 953-8LL11-0AA0	
4 MB	6ES7 953-8LM11-0AA0	
8 MB	6ES7 953-8LP11-0AA0	
Connector set For I/O and power supply; essential for operation		
with screw terminals	6ES7 635-0AA00-4AA0	
With spring clamps	6ES7 635-0AA00-4BA0	
CF card, 16 MB^{A)}	6AV6 574-2AC00-2AA0	
Manual pack for C7-636 C7-636 manual, S7-300 documentation pack and OP 270B equipment manual		
German	6ES7 636-1EA00-8AA0	
English	6ES7 636-1EA00-8BA0	
French	6ES7 636-1EA00-8CA0	
Spanish	6ES7 636-1EA00-8DA0	
Italian	6ES7 636-1EA00-8EA0	
C7-636 manual		
German	6ES7 636-1AA00-8AA0	
English	6ES7 636-1AA00-8BA0	
French	6ES7 636-1AA00-8CA0	
Spanish	6ES7 636-1AA00-8DA0	
Italian	6ES7 636-1AA00-8EA0	
Accessories		
I/O set For expanding the C7-613/ C7-635/C7-636 with max. 4 modules; mounted on rear of device		
For 2 modules, flat mounting		6ES7 635-0AA00-6AA0
For 4 modules, deep mounting		6ES7 635-0AA00-6BA0
I/O expansion cable For external expansion of SIMATIC C7-613/-635/-636 by max. 4 modules; 1.5 m in length		6ES7 635-0AA00-6CA0
SIMATIC Manual Collection^{E)} Electronic manuals on CD-ROM, multilingual		6ES7 998-8XC01-8YE0
SIMATIC Manual Collection update service for 1 year^{E)} Current "S7 Manual Collection" CD and the three subsequent updates		6ES7 998-8XC01-8YE2
Protective film To protect the touch screen against dirt and scratches; 10 items in packet; for SIMATIC C7-636 Touch		6AV6 574-1AD00-4CX0
Spare parts		
Service pack 3 seals, 10 holders and label strips for all SIMATIC C7-613, C7-635 Key, C7-635 Touch and C7-636 Key		6ES7 635-0AA00-3AA0
Service pack Seal, 10 holders, for SIMATIC C7-636 Touch		6AV6 574-1AA00-2CX0
Grounding bar with shield terminals for analog I/O		6ES7 635-0AA00-6EA0

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

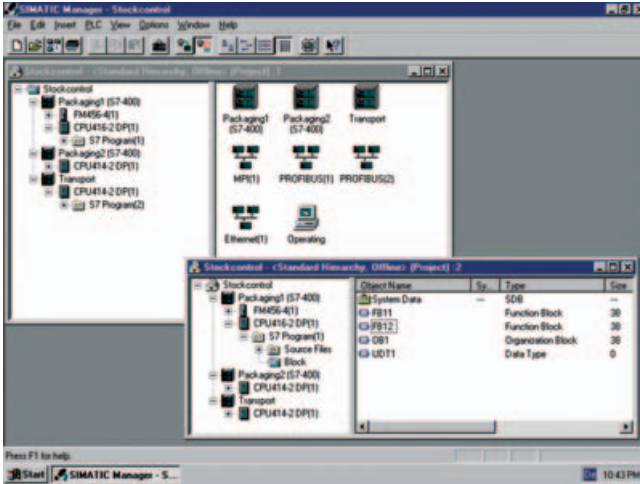


7/2	Standard Tools
7/2	STEP 7
7/4	STEP 7 Professional
7/5	Engineering Tools
7/5	CFC
7/6	S7-PDIAG
7/7	D7-SYS
7/8	Engineering package Drive ES
7/9	Distributed Safety Software
7/10	Version cross-checker
7/11	SIMATIC PDM
7/13	Runtime Software
7/13	PRODAVE MPI
7/14	HMI software
7/14	SIMATIC ProTool/Lite and 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
7/29	Supplementary Components
7/29	ADDM – Data Management



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

STEP 7 Version 5.3

Target system:
SIMATIC S7-300/400,
SIMATIC C7, SIMATIC WinAC

Requirements:
Windows 2000 Prof./XP Prof.

Delivery package: 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

Order No.

6ES7 810-4CC07-0YA5

6ES7 810-4CC07-0YA6

6ES7 810-4BC01-0YX2

6ES7 810-4CC07-0YE5

6ES7 810-4CC07-0YC5

6ES7 810-4CC07-0YA7

STEP 7 Version 5.3 Japanese

Target system:
SIMATIC S7-300/400,
SIMATIC C7, SIMATIC WinAC

Requirements: Windows XP
Professional Japanese

Delivery package: 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

6ES7 810-4CC07-0JA5

6ES7 810-4CC07-0JA6

6ES7 810-4CC07-0JE5

Order No.

STEP 7 Version 5.3, Chinese

Target system:
SIMATIC S7-300/400,
SIMATIC C7, SIMATIC WinAC

Requirements: Windows XP
Professional Chinese

Delivery package: 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

6ES7 810-4CC07-0KA5

6ES7 810-4CC07-0KA6

6ES7 810-4CC07-0KE5

Documentation package STEP 7 basic information

Comprising Getting Started,
hardware configuration manual,
programming manual, migration
manual

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

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

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

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

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

STEP 7 reference manual

Consisting of STL, LAD and FBD
manuals as well as a reference
manual for standard and system
functions for SIMATIC S7-300/400

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

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

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

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

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

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

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

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.

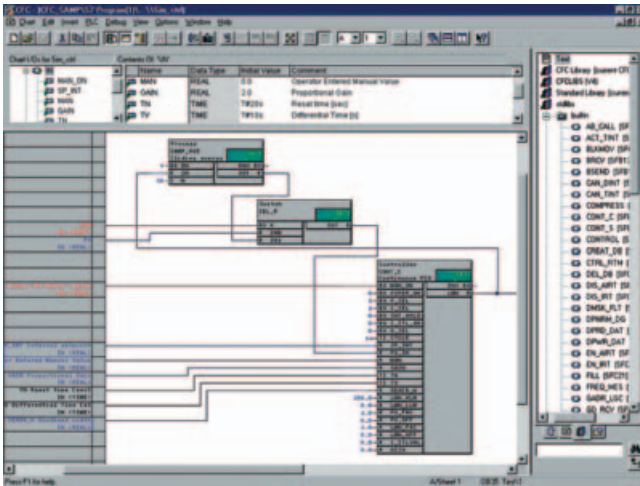
A POWERPACK is offered to customers who use STEP 7 already and wish to change. A valid STEP 7 license is required for purchasing the POWERPACK. A separate update service is available for STEP 7 Professional.

Ordering data	Order No.	Order No.
STEP 7 Professional Edition 2004 <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 810-5CC08-0YA7	SIMATIC Manual Collection^{E)} 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 SIMATIC Manual Collection update service for 1 year^{E)} Current "Manual Collection" CD and the three subsequent updates 6ES7 998-8XC01-8YE2 EPROM programming device, USB prommer For programming SIMATIC memory cards and EPROM modules 6ES7 792-0AA00-0XA0 MPI cable For linking SIMATIC S7 and CP through MPI (5 m) 6ES7 901-0BF00-0AA0 Components for connecting a PC to MPI and PROFIBUS • For PCs with a free PCI slot: CP 5611^{A)} 6GK1 561-1AA01 CP 5611 MPI^{A)} 6GK1 561-1AM01 incl. MPI cable (5 m) • For PCs with a free PCMCIA slot: CP 5512 6GK1 551-2AA00 For Windows XP Professional • For PCs without a free PCI slot: PC adapter USB 6ES7 972-0CB20-0XA0 For connecting a PC to S7-300/S7-400/C7 through a USB interface; with USB cable (5 m) Components for connecting the PC to Industrial Ethernet • For PCs with a free PCI slot: CP 1612^{A)} 6GK1 161-2AA00 • For PCs with a free PCMCIA slot: SOFTNET-PG V6.2 6GK1 704-1PW62-3AA0
STEP 7 Basic Knowledge documentation package 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	
STEP 7 reference manuals 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

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

SIMATIC S7 CFC, Version 6.1

Task:

Graphic configuring and programming of automation applications in the form of technology-oriented diagrams

Target system:

SIMATIC S7-300/400,
SIMATIC WinAC, D7-SYS

Requirements:

STEP 7 V5.3 and higher, also
S7-SCL V5.1 SP3 and higher

Delivery form:

Engineering software and electronic documentation on CD-ROM, License Key Disk, Emergency Key Disk, Certificate of License, Terms and Conditions

Floating license

6ES7 658-1EX16-2YA5

Upgrade to floating license V6.1

6ES7 658-1EX16-2YE5

Software Update Service

6ES7 658-1EX00-2YL8

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

Order No.

Order No.

SIMATIC Manual Collection^{E)}

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

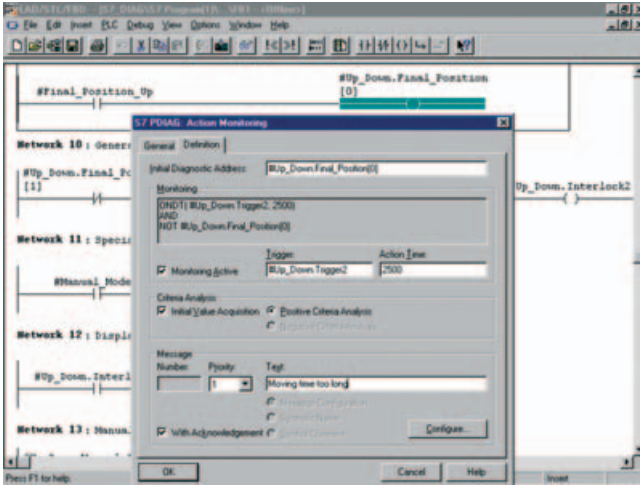
6ES7 998-8XC01-8YE0

SIMATIC Manual Collection update service for 1 year^{E)}

Current "Manual Collection" CD and the three subsequent updates

6ES7 998-8XC01-8YE2

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

7

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

Software Update Service

Upgrade to V5.3

Order No.

6ES7 840-0CC04-0YA5

6ES7 840-0CA01-0YX2

6ES7 840-0CC04-0YE5

Order No.

SIMATIC Manual Collection^{E)}

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

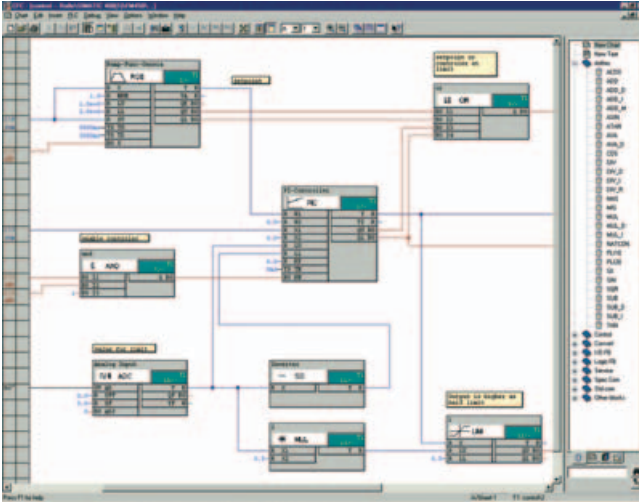
SIMATIC Manual Collection update service for 1 year^{E)}

Current "Manual Collection" CD and the three subsequent updates

6ES7 998-8XC01-8YE2

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

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

7

Ordering data

Order No.

SIMATIC D7-SYS V6.2

Task: Function block library for configuring control and automation tasks

Target system:

SIMATIC S7-400/FM 458

Requirements: Windows 2000/XP

Delivery form:

On CD, English, German, with electronic documentation

Floating license^{B)}

6ES7 852-0CC00-0YA5

Upgrade license V5.x and higher^{B)}

6ES7 852-0CC00-0YE5

SIMATIC D7 SYS SFC V6.2

Task: Function block library for configuring control and automation tasks; incl. sequence generator

Target system:

SIMATIC S7-400/FM 458

Requirements: Windows 2000/XP

Delivery form:

On CD, English, German, with electronic documentation

Floating License^{B)}

6ES7 852-1CC00-0YA5

Upgrade license V6.x and higher^{B)}

6ES7 852-1CC00-0YE5

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

Order No.

SIMATIC D7 ES V6.2

Complete package comprising STEP 7, CFC and D7-SYS; executes under Windows 2000/XP

Floating License^{B)}

6ES7 852-2CC00-0YA5

SIMATIC D7 ES SFC V6.2

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

Floating License^{B)}

6ES7 852-3CC00-0YA5

SIMATIC Manual Collection^{E)}

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

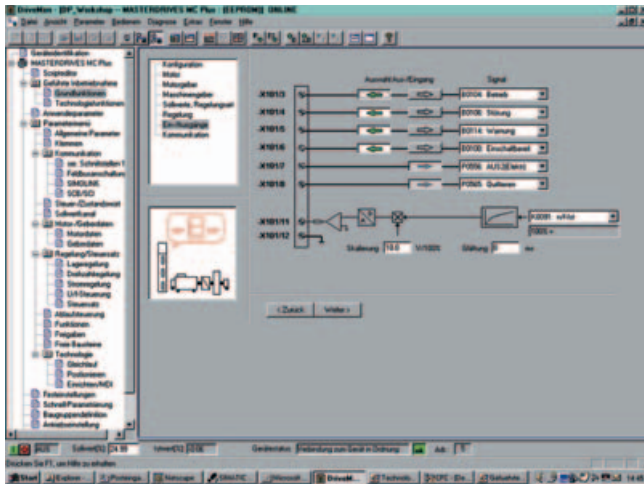
SIMATIC Manual Collection update service for 1 year^{E)}

Current "Manual Collection" CD and the three subsequent updates

6ES7 998-8XC01-8YE2

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

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 700-5JD00-1AC0

Update service for single license

6SW1 700-0JD00-0AB2

Upgrade from V5.x to V6.x

6SW1 700-6JD00-0AA4

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

Distributed Safety V5.3 programming tool

Task:
Software for configuring fail-safe user programs for SIMATIC S7-300F, S7-400F, ET 200S

Requirement:
STEP 7 V5.3 SP1 or higher

Floating license

Software Update Service

Order No.

6ES7 833-1FC01-0YA5

6ES7 833-1FC00-0YX2

Distributed Safety V5.4 programming tool

Task:
Software for configuring fail-safe user programs for SIMATIC S7-300F, S7-400F, ET 200S

Requirement:
STEP 7 V5.3 SP3 or higher

Floating license

Software Update Service

Order No.

6ES7 833-1FC02-0YA5

6ES7 833-1FC00-0YX2

Distributed Safety Upgrade

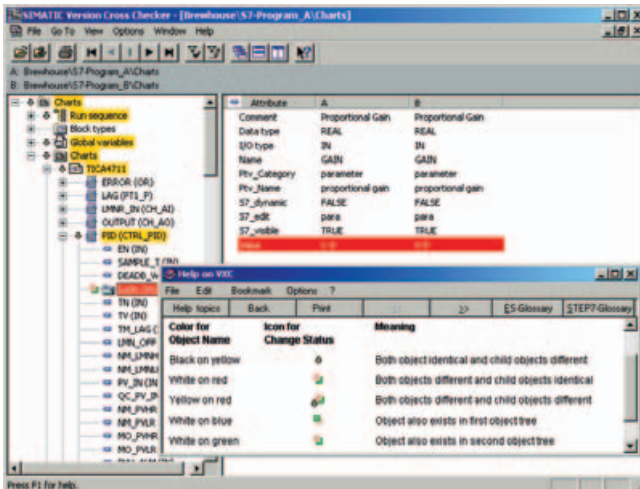
From V5.x to V5.3;
Floating license for 1 user

From V5.x to V5.4;
Floating license for 1 user

6ES7 833-1FC01-0YE5

6ES7 833-1FC02-0YE5

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.

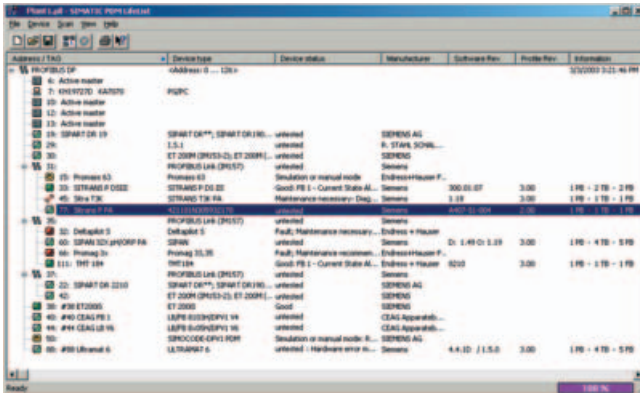
6ES7 658-1CX16-2YB5

Order No.

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

6ES7 658-1CX16-2YF5

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"> PG/PC/notebook with processor in accordance with the operating system requirements 256 MB main memory or more 210 MB free memory on hard disk or more
Operating system (alternative)	<ul style="list-style-type: none"> Microsoft Windows 2000 Professional with SP1 or higher Microsoft Windows XP Professional SP1

Further software components

- SIMATIC PDM integrated in STEP 7
- 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



Ordering data

Order No.

Order No.

TAG options/PowerPacks

SIMATIC PDM TAG option

For TAG expansion, additive to SIMATIC PDM Basic V6.0

5 languages (German, English, French, Spanish, Italian), executes with

Windows 2000 Professional or Windows XP Professional

Floating license for 1 user

- Up to 128 TAGs
- Up to 512 TAGs
- Up to 1,024 TAGs
- Up to 2,048 TAGs

Rental license for 50 hours

- Up to 512 TAGs

6ES7 658-3XA06-2YB5

6ES7 658-3XB06-2YB5

6ES7 658-3XC06-2YB5

6ES7 658-3XD06-2YB5

6ES7 658-3XB06-2YB6

SIMATIC PDM PowerPack

For subsequent TAG expansion of all SIMATIC PDM product configurations V6.0

5 languages (German, English, French, Spanish, Italian), executes with

Windows 2000 Professional or Windows XP Professional

Floating license for 1 user

- From 128 TAGs to 512 TAGs
- From 512 TAGs to 1,024 TAGs
- From 1,024 TAGs to 2,048 TAGs
- From 2,048 TAGs to TAGs unlimited

6ES7 658-3XB06-2YD5

6ES7 658-3XC06-2YD5

6ES7 658-3XD06-2YD5

6ES7 658-3XH06-2YD5

Predefined SIMATIC PDM V6.0 product configurations for special applications

SIMATIC PDM Service V6.0

Complete package for stand-alone users in servicing, with

- SIMATIC PDM Basic V6.0
- Option "128 TAGs"

5 languages (German, English, French, Italian and Spanish), executes with

Windows 2000 Professional or Windows XP Professional, floating license for 1 user

6ES7 658-3JX06-0YA5

SIMATIC PDM S7 V6.0

Complete package for use in a SIMATIC S7 configuration environment, with

- SIMATIC PDM Basic V6.0
- Option "Integration in STEP 7/PCS 7"
- Option "128 TAGs"

5 languages (German, English, French, Italian and Spanish), executes with

Windows 2000 Professional or Windows XP Professional, floating license for 1 user

6ES7 658-3KX06-0YA5

SIMATIC PDM PCS 7 V6.0

Complete package for integration in the engineering toolset of the SIMATIC PCS 7 engineering system

Floating license for 1 user, with

- SIMATIC PDM Basic
- Option "Integration in STEP 7/PCS 7"
- Option "Routing through S7-400"
- Option "128 TAGs"

5 languages (German, English, French, Spanish, Italian), executes with

Windows 2000 Professional or Windows XP Professional

6ES7 658-3LX06-0YA5

Demo software

SIMATIC PDM Demo V6.0

Without online communication and save functionality

5 languages (German, English, French, Spanish, Italian), executes with

Windows 2000 Professional or Windows XP Professional

6ES7 658-3GX06-0YC8

SIMATIC PDM upgrade/update service

SIMATIC PDM Upgrade from V5.x to V6.0

For all product versions and combinations

5 languages (German, English, French, Italian and Spanish), executes with

Windows 2000 Professional or Windows XP Professional, floating license for 1 user

6ES7 651-5CX06-0YE5

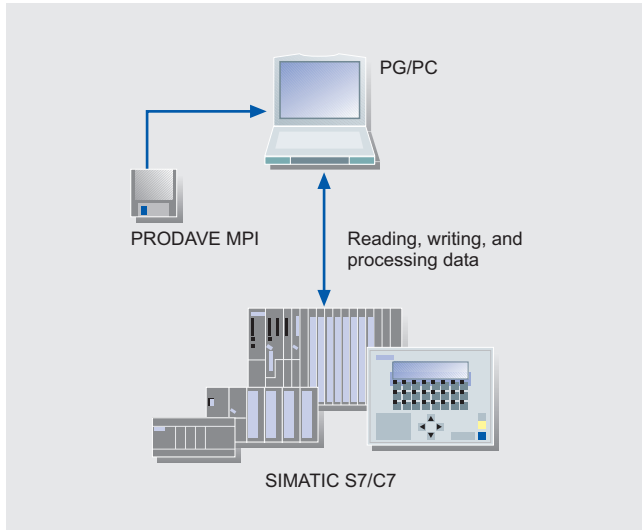
SIMATIC PDM Software Update Service

Subscription for 1 year with automatic extension

Requirement:
current software version

6ES7 658-3XX00-0YL8

Overview



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

Ordering data

Order No.

Order No.

PRODAVE MPI/IE V6.0 for Windows 95/98/ME/NT 4.0/2000 Prof./XP Prof.

Task: Data link between PG/PC and SIMATIC S7/C7 with MPI (S7-200 with PPI)

Requirements:

Windows 2000 Prof./XP Prof.; CP 5611, integrated MPI or PC adapter

Delivery package: CD incl. electr. documentation (German, English)

Single license^{B)}

6ES7 807-4BA01-0YA0

Copy license, without software and documentation^{B)}

6ES7 807-4BA01-0YA1

PRODAVE MPI Mini V6.0 for Windows 95/98/ME/NT 4.0/2000 Prof./XP Prof.

Task: Data link between PG/PC and SIMATIC S7/C7 over MPI (S7-200 over PPI); with reduced functional scope)

Requirements:

Windows 95/98/ME/NT 4.0/2000 Prof./XP Prof.; CP 5611, integrated MPI or PC adapter

Delivery package: CD incl. electr. documentation (German, English)

Single license^{B)}

6ES7 807-3BA01-0YA0

Copy license, without software and documentation^{B)}

6ES7 807-3BA01-0YA1

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

SIMATIC Manual Collection^{E)}

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

SIMATIC Manual Collection update service for 1 year^{E)}

Current "Manual Collection" CD and the three subsequent updates

6ES7 998-8XC01-8YE2

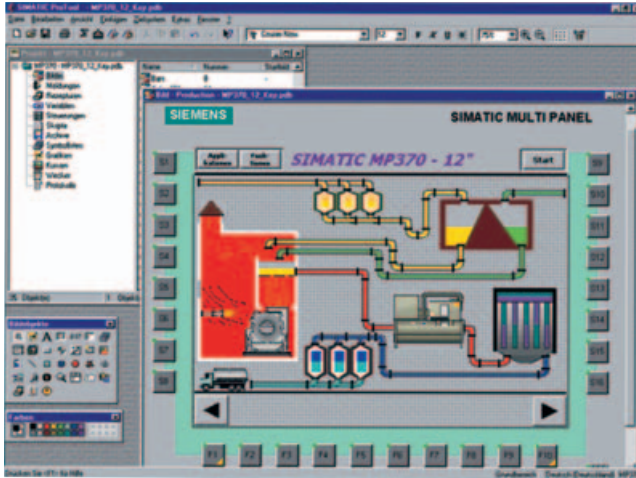
E) Subject to export regulations: AL: N and ECCN: 5D992B1

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

7

Ordering data	Order No.
Configuring software SIMATIC ProTool V6.0 + SP3 including ProAgent V6.0 + SP3¹⁾E) (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
Configuring software SIMATIC ProTool/Lite V6.0 + SP3^{E)} 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
Powerpack	
• ProTool/Lite to ProTool V6.0 + SP3 ^{E)}	6AV6 571-3AB06-0DX0
Upgrade	
• ProTool/Lite to ProTool/Lite V6.0 + SP3 ^{E)}	6AV6 580-3BX06-0DX4
• ProTool to ProTool V6.0 + SP3 ^{E)}	6AV6 581-3BX06-0DX4

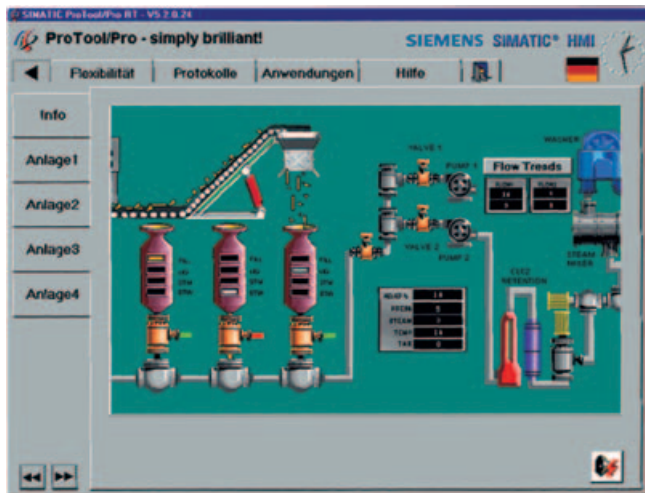
- 1) Runtime licenses for ProAgent must be ordered separately
- 2) For a period of 12 months and for a fixed price, the customer is automatically provided with all upgrades and service packs per installed ProTool/Lite package. The contract is automatically extended by a further year unless canceled up to 12 weeks prior to expiry.

	Order No.
Documentation	
ProTool user manual, configuring line-oriented displays	
• German	6AV6 594-1AA06-0AA0
• English	6AV6 594-1AA06-0AB0
• French	6AV6 594-1AA06-0AC0
• Italian	6AV6 594-1AA06-0AD0
• Spanish	6AV6 594-1AA06-0AE0
ProTool user manual, configuring graphic displays	
• German	6AV6 594-1BA06-0AA0
• English	6AV6 594-1BA06-0AB0
• French	6AV6 594-1BA06-0AC0
• Italian	6AV6 594-1BA06-0AD0
• Spanish	6AV6 594-1BA06-0AE0
ProTool user manual, configuring Windows-based systems	
• German	6AV6 594-1MA06-1AA0
• English	6AV6 594-1MA06-1AB0
• French	6AV6 594-1MA06-1AC0
• Italian	6AV6 594-1MA06-1AD0
• Spanish	6AV6 594-1MA06-1AE0

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

Ordering data	Order No.		Order No.
<i>Dokumentation</i>		<i>Dokumentation</i>	
Communication manual Description of TD/OP/TP connection to the controller <ul style="list-style-type: none"> • German • English • French • Italian • Spanish 	6AV3 991-1BC05-1AA0 6AV3 991-1BC05-1AB0 6AV3 991-1BC05-1AC0 6AV3 991-1BC05-1AD0 6AV3 991-1BC05-1AE0	SIMATIC HMI Manual Collection^{B)} Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); comprising: all currently available user manuals, product manuals and communication manuals for SIMATIC HMI	6AV6 691-1SA01-0AX0
Communication manual Description of connection of Windows-based systems to the controller <ul style="list-style-type: none"> • German • English • French • Italian • Spanish 	6AV6 596-1MA06-0AA0 6AV6 596-1MA06-0AB0 6AV6 596-1MA06-0AC0 6AV6 596-1MA06-0AD0 6AV6 596-1MA06-0AE0		
B) Subject to export regulations: AL: N and ECCN: EAR99S			

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

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

3) Depends on the number of licensed PowerTags

Ordering data	Order No.	Order No.	
SIMATIC ProTool/Pro Configuration V6.0 + SP3 incl. ProAgent V6.0 + SP3 ^{3)E)} Language versions: G/E/F/I/S on CD-ROM, containing: <ul style="list-style-type: none"> • 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 	6AV6 582-2BX06-0DX0	SIMATIC ProTool/Pro Runtime V6.0 + SP2 ASIA for PC systems on CD-ROM with license (single license) for <ul style="list-style-type: none"> • 128 PowerTags (RT 128)^{E)} • 256 PowerTags (RT 256)^{E)} • 512 PowerTags (RT 512)^{E)} • 2048 PowerTags (RT 2048)^{E)} 	6AV6 584-1AB06-0CV0 6AV6 584-1AC06-0CV0 6AV6 584-1AD06-0CV0 6AV6 584-1AF06-0CV0
SIMATIC ProTool/Pro Runtime V6.0 + SP3 for PC systems incl. ProAgent V6.0 + SP3 ³⁾ on CD-ROM with license (single license) for <ul style="list-style-type: none"> • 128 PowerTags (RT 128)^{E)} • 256 PowerTags (RT 256)^{E)} • 512 PowerTags (RT 512)^{E)} • 2048 PowerTags (RT 2048)^{E)} 	6AV6 584-1AB06-0DX0 6AV6 584-1AC06-0DX0 6AV6 584-1AD06-0DX0 6AV6 584-1AF06-0DX0	Communication via Industrial Ethernet CP 1613 A2^{A)} 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 S7-1613 Edition 2005^{E)} 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 CP 1612^{A)} PCI card (32-bit) for connecting a PG/PC to Industrial Ethernet (SOFTNET S7 must be ordered separately) SOFTNET-S7 Edition 2005 for Industrial Ethernet^{E)} 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 SOFTNET-S7 Lean Edition 2005 for Industrial Ethernet^{E)} 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	6GK1 161-3AA01 6GK1 716-1CB63-3AA0 6GK1 161-2AA00 6GK1 704-1CW63-3AA0 6GK1 704-1LW63-3AA0
Upgrade <ul style="list-style-type: none"> • ProTool/Pro to ProTool/Pro V6.0 + SP3^{1)E)} • ProTool/Pro RT to ProTool/Pro RT V6.0 + SP3^{E)} 	6AV6 582-2BX06-0DX4 6AV6 584-3AX06-0DX4		
Powerpacks SIMATIC ProTool/Pro RT PowerTags from <ul style="list-style-type: none"> • 128 to 256 PowerTags^{E)} • 128 to 512 PowerTags^{E)} • 128 to 2048 PowerTags^{E)} • 256 to 512 PowerTags^{E)} • 256 to 2048 PowerTags^{E)} • 512 to 2048 PowerTags^{E)} • SIMATIC ProTool/Lite to ProTool/Pro V6.0 + SP3^{E)} • SIMATIC ProTool to ProTool/Pro V6.0 + SP3^{E)} 	6AV6 570-1BC00-0AX0 6AV6 570-1BD00-0AX0 6AV6 570-1BF00-0AX0 6AV6 570-1CD00-0AX0 6AV6 570-1CF00-0AX0 6AV6 570-1DF00-0AX0 6AV6 571-2AC06-0DX0 6AV6 571-2BC06-0DX0		
Versions for China/Taiwan/Korea/Japan SIMATIC ProTool/Pro Configuration V6.0 + SP2 ASIA ^{E)} Language/script versions: English/Chinese traditional and simplified/Korean/Japanese; comprising: <ul style="list-style-type: none"> • ProTool/Pro Configuration (CS) V6.0 + SP2 ASIA • Simulation software for Mobile Panel 170, TP 170A/B, OP 170B, TP 270, OP 270, MP 270, MP 270B 10", MP 370 and ProTool/Pro Runtime • Electronic documentation (.pdf/.chm) in: English, Chinese (traditional and simplified), Korean and Japanese 	6AV6 582-2BX06-0CV0		

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

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



Ordering data

Order No.

Communication via PROFIBUS

CP 5613 A2^{E)} PCI card (32 bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)	6GK1 561-3AA01
CP 5614 A2^{E)} PCI card (32 bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)	6GK1 561-4AA01
S7-5613 Edition 2005^{E)} 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	6GK1 713-5CB63-3AA0
CP 5512 PCMCIA card (CARDBUS 32 bit) for connecting a PG/notebook computer to PROFIBUS or MPI (communication software included in ProTool/Pro)	6GK1 551-2AA00
CP 5611^{A)} PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communication software included in ProTool/Pro)	6GK1 561-1AA01
CP 5611 MPI^{A)} Comprising PCI card CP 5611 (32-bit) and MPI cable, 5 m	6GK1 561-1AM01
PC/PPI adapter RS 232, 9-pin; male with RS 232/PPI converter, max. 19.2 Kbit/s	6ES7 901-3CB30-0XA0
PC adapter USB For Windows 2000/XP	6ES7 972-0CB20-0XA0

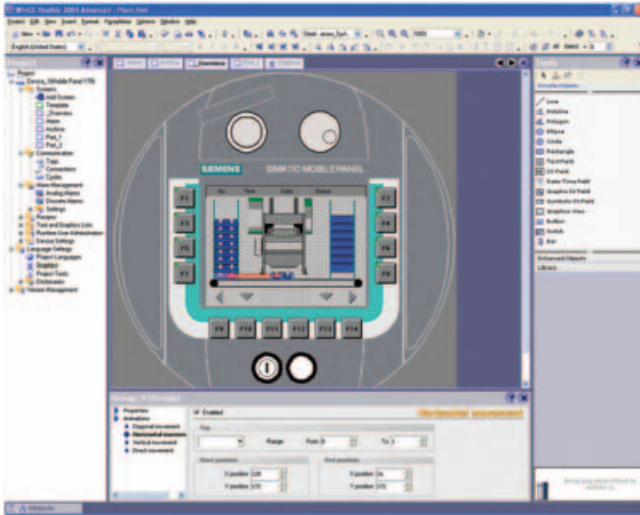
- A) Subject to export regulations: AL: N and ECCN: EAR99H
 B) Subject to export regulations: AL: N and ECCN: EAR99S
 E) Subject to export regulations: AL: N and ECCN: 5D992B1

Order No.

Documentation (must be ordered separately)

ProTool/Pro Runtime user manual	
• German	6AV6 594-1CA06-0AA0
• English	6AV6 594-1CA06-0AB0
• French	6AV6 594-1CA06-0AC0
• Italian	6AV6 594-1CA06-0AD0
• Spanish	6AV6 594-1CA06-0AE0
ProTool user manual, configuring Windows-based systems	
• German	6AV6 594-1MA06-1AA0
• English	6AV6 594-1MA06-1AB0
• French	6AV6 594-1MA06-1AC0
• Italian	6AV6 594-1MA06-1AD0
• Spanish	6AV6 594-1MA06-1AE0
ProTool user manual for configuring line-oriented displays	
• German	6AV6 594-1AA06-0AA0
• English	6AV6 594-1AA06-0AB0
• French	6AV6 594-1AA06-0AC0
• Italian	6AV6 594-1AA06-0AD0
• Spanish	6AV6 594-1AA06-0AE0
ProTool user manual for configuring graphic displays	
• German	6AV6 594-1BA06-0AA0
• English	6AV6 594-1BA06-0AB0
• French	6AV6 594-1BA06-0AC0
• Italian	6AV6 594-1BA06-0AD0
• Spanish	6AV6 594-1BA06-0AE0
Communications manual for Windows-based systems	
• German	6AV6 596-1MA06-0AA0
• English	6AV6 596-1MA06-0AB0
• French	6AV6 596-1MA06-0AC0
• Italian	6AV6 596-1MA06-0AD0
• Spanish	6AV6 596-1MA06-0AE0
SIMATIC HMI Manual Collection^{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	6AV6 691-1SA01-0AX0

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.

WinCC flexible 2005 Advanced^{E)}

6AV6 613-0AA01-1CA5

Single license, on CD-ROM incl. authorization, includes:

- 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
- SW for WinCC flexible /ChangeControl engineering option ¹⁾
- 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
- Native drivers
- Electronic documentation (.pdf) in English, German, French, Italian, Spanish

WinCC flexible 2005 Standard^{E)}

6AV6 612-0AA01-1CA5

Single license, on CD-ROM incl. authorization, includes:

- Engineering software for configuring the micro panels and the panels of the 70/170/270/370 series incl. C7-635/636
- SW for WinCC flexible /ChangeControl engineering option ¹⁾
- Simulation software for the micro panels and the panels of the 70/170/270/370 series incl. C7-635/636
- Native drivers
- Electronic documentation (.pdf) in English, German, French, Italian, Spanish

WinCC flexible 2005 Compact^{E)}

6AV6 611-0AA01-1CA5

Single license, on CD-ROM incl. authorization, includes:

- Engineering software for configuring the micro panels and the panels of the 70/170 series incl. C7-635/636
- SW for WinCC flexible /ChangeControl engineering option ¹⁾
- Simulation software for the micro panels and the panels of the 70/170 series incl. C7-635/636
- Native drivers
- Electronic documentation (.pdf) in English, German, French, Italian, Spanish

WinCC flexible 2005 Micro^{E)}

6AV6 610-0AA01-1CA8

Single license, on CD-ROM without authorization, includes:

- Engineering software for configuring the micro panels
- Electronic documentation (.pdf) in English, German, French, Italian, Spanish

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

SIMATIC Industrial Software

HMI software

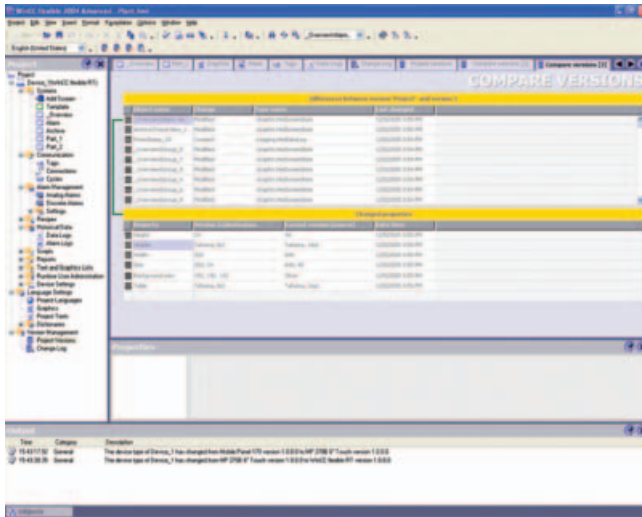
SIMATIC WinCC flexible ES

Ordering data	Order No.	Order No.
Powerpacks		
SIMATIC WinCC flexible Powerpacks Single license, only authorization <ul style="list-style-type: none"> WinCC flexible Standard to WinCC flexible 2005 Advanced^{E)} WinCC flexible Compact to WinCC flexible 2005 Advanced^{E)} WinCC flexible Compact to WinCC flexible 2005 Standard^{E)} 	6AV6 613-2CD01-1AD5 6AV6 613-2BD01-1AD5 6AV6 612-2BC01-1AD5	WinCC flexible 2005 ASIA Standard^{E)} Single license, on CD-ROM incl. authorization, includes: <ul style="list-style-type: none"> Engineering software for configuring the micro panels and the panels of the 70/170/270/370 series incl. C7-635/636 Simulation software for the micro panels and the panels of the 70/170/270/370 series incl. C7-635/636 Native drivers Electronic documentation (.pdf) in English, simplified Chinese, traditional Chinese, Korean, Japanese
Software update service		
Software Update Service SIMATIC WinCC flexible²⁾ <ul style="list-style-type: none"> WinCC flexible Advanced^{E)} WinCC flexible Standard^{E)} WinCC flexible Compact^{E)} 	6AV6 613-0AA00-0AL0 6AV6 612-0AA00-0AL0 6AV6 611-0AA00-0AL0	Documentation (must be ordered separately) User manual WinCC flexible Compact/Standard/Advanced <ul style="list-style-type: none"> German 6AV6 691-1AB01-0AA0 English 6AV6 691-1AB01-0AB0 French 6AV6 691-1AB01-0AC0 Italian 6AV6 691-1AB01-0AD0 Spanish 6AV6 691-1AB01-0AE0 User manual WinCC flexible Micro <ul style="list-style-type: none"> German 6AV6 691-1AA01-0AA0 English 6AV6 691-1AA01-0AB0 French 6AV6 691-1AA01-0AC0 Italian 6AV6 691-1AA01-0AD0 Spanish 6AV6 691-1AA01-0AE0 User manual WinCC flexible Communication <ul style="list-style-type: none"> German 6AV6 691-1CA01-0AA0 English 6AV6 691-1CA01-0AB0 SIMATIC HMI Manual Collection^{B)} Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); comprising: all currently available user manuals, product manuals and communication manuals for SIMATIC HMI
Upgrades		
SIMATIC ProTool to SIMATIC WinCC flexible 2005 <ul style="list-style-type: none"> ProTool/Lite to WinCC flexible 2005 Compact^{E)} ProTool to WinCC flexible 2005 Standard^{E)} ProTool to WinCC flexible 2005 Advanced^{E)} 	6AV6 611-3AA01-1CE5 6AV6 612-3AA01-1CE5 6AV6 613-3AA01-1CE5	
SIMATIC WinCC flexible 2004 to SIMATIC WinCC flexible 2005 <ul style="list-style-type: none"> WinCC flexible 2004 Compact to WinCC flexible 2005 Compact^{E)} WinCC flexible 2004 Standard to WinCC flexible 2005 Standard^{E)} WinCC flexible 2004 Advanced to WinCC flexible 2005 Advanced^{E)} 	6AV6 611-0AA01-1CE5 6AV6 612-0AA01-1CE5 6AV6 613-0AA01-1CE5	
Versions for China/Taiwan/Korea/Japan		
WinCC flexible 2005 ASIA Advanced^{E)} Single license, on CD-ROM without authorization, includes: <ul style="list-style-type: none"> 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 SW for WinCC flexible /Change-Control engineering option¹⁾ 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 Native drivers Electronic documentation (.pdf) in English, simplified Chinese, traditional Chinese, Korean, Japanese 	6AV6 613-0AA11-1CA5	

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.

Overview



- 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

Ordering data

Order No.

WinCC flexible /ChangeControl for WinCC flexible 2005 Compact/Standard/Advanced ¹⁾

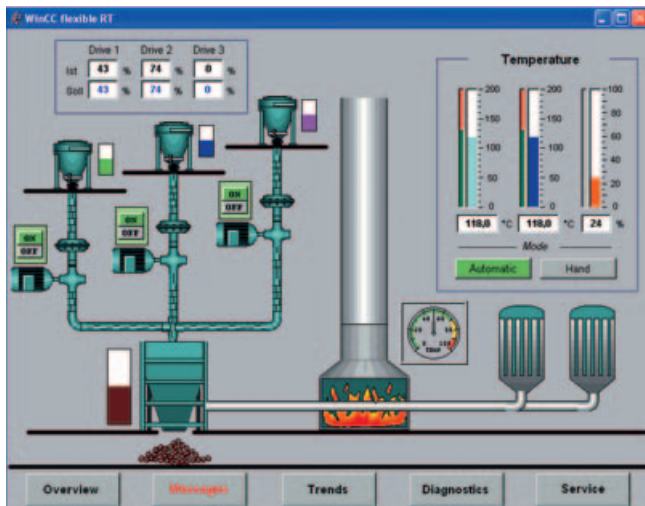
Floating license option, only license key^{E)}

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

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
	The specifications are maximum values
Operating system	MS Windows 2000 / XP Professional
Diagrams	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 ¹⁾	500
• Text lists ¹⁾	500
• Number of entries in symbol lists	3500
Variables	2048 ³⁾
Messages bit-triggered/analog	4000 / 500
• Message text (number of characters)	80
• Number of process values per message	8
• Message buffer size	1024
• Pending message events	500
Archive ⁴⁾	Process values (max. 100), messages
• Archivable data	500000
• Max. number of entries per archive (incl. sequential archive)	Short-term archives, sequential archives (max. 400 per archive)
• Archive types	CSV (C omma S eparated V ariable) 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
Recipes ⁴⁾	1000
• Elements per recipe	2000 ³⁾
• Records per recipe	5000 ²⁾
Password protection	
• User privileges	32
• No. of user groups	10
Visual Basic scripts	200
Online languages, max.	16
Communication	
SIMATIC S7 MPI interface/ PROFIBUS DP interface	WinCC flexible Runtime permits up to 8 connections, depending on the scope of configuration (communication)
• Number of connectable partners, max.	
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

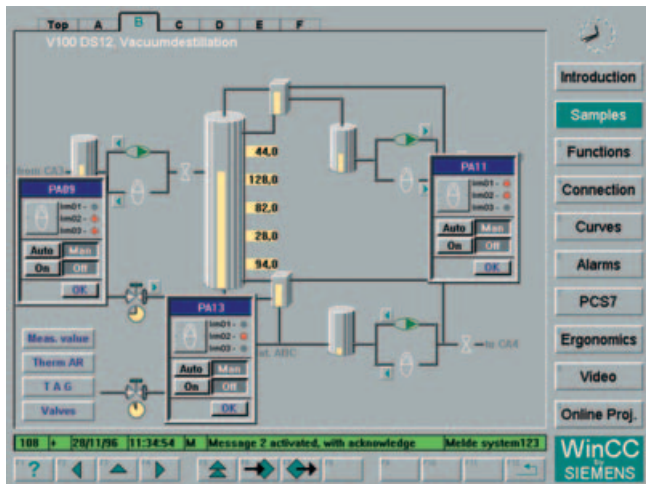
Ordering data	Order No.	Order No.
SIMATIC WinCC flexible 2005 Runtime for PC systems; incl. SW for the options for PC systems¹⁾ Single license, on CD-ROM incl. authorization, for: <ul style="list-style-type: none"> • 128 PowerTags (RT 128)^{E)} • 512 PowerTags (RT 512)^{E)} • 2048 PowerTags (RT 2048)^{E)} 	6AV6 613-1BA01-1CA0 6AV6 613-1DA01-1CA0 6AV6 613-1FA01-1CA0	6AV6 618-7XX01-1AF0 • Panel options ^{E)} : 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
Powerpacks SIMATIC WinCC flexible 2005 Runtime Single license, only authorization for PowerTags, from <ul style="list-style-type: none"> • 128 to 512 PowerTags^{E)} • 128 to 2048 PowerTags^{E)} • 512 to 2048 PowerTags^{E)} 	6AV6 613-4BD01-1AD0 6AV6 613-4BF01-1AD0 6AV6 613-4DF01-1AD0	Versions for China/Taiwan/Korea/Japan SIMATIC WinCC flexible 2005 ASIA Runtime for PC systems; incl. SW for the options for PC systems ¹⁾ Single license, on CD-ROM incl. authorization, for: <ul style="list-style-type: none"> • 128 PowerTags (RT 128)^{E)} • 512 PowerTags (RT 512)^{E)} • 2048 Pwer Tags (RT 2048)^{E)}
Upgrade <ul style="list-style-type: none"> • ProTool/Pro Runtime 128 PowerTags to WinCC flexible 2005 Runtime 128 PowerTags^{E)} • ProTool/Pro Runtime 256 PowerTags to WinCC flexible 2005 Runtime 512 PowerTags^{E)} • ProTool/Pro Runtime 512 PowerTags to WinCC flexible 2005 Runtime 512 PowerTags^{E)} • ProTool/Pro Runtime 2048 PowerTags to WinCC flexible 2005 Runtime 2048 PowerTags^{E)} • 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^{E)} 	6AV6 613-3BB01-1CE0 6AV6 613-3CD01-1CE0 6AV6 613-3DD01-1CE0 6AV6 613-3FF01-1CE0 6AV6 613-1XA01-1CE0	Documentation (must be ordered separately) User manual WinCC flexible Runtime <ul style="list-style-type: none"> • German • English • French • Italian • Spanish User manual WinCC flexible Communication <ul style="list-style-type: none"> • German • English SIMATIC HMI Manual Collection^{B)} Electronic documentation, on CD-ROM 5 languages (English, French, German, Italian and Spanish); comprising: all currently available user manuals, product manuals and communication manuals for SIMATIC HMI
		6AV6 691-1BA01-0AA0 6AV6 691-1BA01-0AB0 6AV6 691-1BA01-0AC0 6AV6 691-1BA01-0AD0 6AV6 691-1BA01-0AE0 6AV6 691-1CA01-0AA0 6AV6 691-1CA01-0AB0 6AV6 691-1SA01-0AX0 see SIMATIC ProTool/Pro, p. 7/17

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



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
Operating system	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
Hardware requirements for PC		
CPU ¹⁾		
• 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
RAM (main memory)		
• Minimum	≥ 128/256 MB (single-user station/server), ≥ 128 MB (client) ²⁾	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) ²⁾	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

Technical specifications (continued)

Type	SIMATIC WinCC V5.1 SP2	SIMATIC WinCC V6.0 SP3
Graphics card		
• 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
Hard disk		
• 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
CD-ROM/DVD-ROM/diskette drive	For software installation	For software installation
Functionality/quantity framework		
Messages (number)	50,000	50,000
• Message text (number of characters)	10 x 256	10 x 256
• Message archive	> 500,000 messages ¹⁾	> 500,000 messages ¹⁾
• 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 ²⁾
• 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 ³⁾	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 ¹⁾
• Data records per user archive	65,536 ⁴⁾	65,536 ⁴⁾
• No. of fields per user archive	500 ⁴⁾	500 ⁴⁾
Graphics system		
• No. of diagrams	Determined by system ¹⁾	Determined by system ¹⁾
• No. of objects per picture	Determined by system ¹⁾	Determined by system ¹⁾
• No. of operator-controllable fields per picture	Determined by system ¹⁾	Determined by system ¹⁾
Process variables	64 K ⁵⁾	64 K ⁵⁾
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.

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 ¹⁾	Determined by system ¹⁾
• Report lines per body	66	66
• Variables per report	300 ⁶⁾	300 ⁶⁾
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.

Order No.

SIMATIC WinCC system software V5.1 SP2

Runtime packages on CD-ROM

Language versions: G/E/F/I/S;
with license for:

- 128 PowerTags (RT 128) **6AV6 381-1BC05-1CX0**
- 256 PowerTags (RT 256) **6AV6 381-1BD05-1CX0**
- 1024 PowerTags (RT 1024) **6AV6 381-1BE05-1CX0**
- 64k PowerTags (RT Max) **6AV6 381-1BF05-1CX0**

Complete packages on CD-ROM

Language versions: G/E/F/I/S;
with license for:

- 128 PowerTags (RC 128) **6AV6 381-1BM05-1CX0**
- 256 PowerTags (RC 256) **6AV6 381-1BN05-1CX0**
- 1024 PowerTags (RC 1024) **6AV6 381-1BP05-1CX0**
- 64 K PowerTags (RC Max) **6AV6 381-1BQ05-1CX0**

SIMATIC WinCC system software V5.1 ASIA

Runtime packages on CD-ROM

Language/script versions:
English/Chinese traditional and
simplified/Korean/Japanese;
with license for:

- 128 PowerTags (RT 128) **6AV6 381-1BC05-1AV0**
- 256 PowerTags (RT 256) **6AV6 381-1BD05-1AV0**
- 1024 PowerTags (RT 1024) **6AV6 381-1BE05-1AV0**
- 64k PowerTags (RT Max) **6AV6 381-1BF05-1AV0**

Complete packages on CD-ROM

Language/script versions:
English/Chinese traditional and
simplified/Korean/Japanese; with
license for:

- 128 PowerTags (RC 128) **6AV6 381-1BM05-1AV0**
- 256 PowerTags (RC 256) **6AV6 381-1BN05-1AV0**
- 1024 PowerTags (RC 1024) **6AV6 381-1BP05-1AV0**
- 64 K PowerTags (RC Max) **6AV6 381-1BQ05-1AV0**

SIMATIC WinCC V5.1 Powerpacks

For upgrading from:

Runtime packages

- 128 to 256 PowerTags **6AV6 371-1BD05-0AX0**
- 128 to 1024 PowerTags **6AV6 371-1BE05-0AX0**
- 128 to 64 K PowerTags **6AV6 371-1BF05-0AX0**
- 256 to 1024 PowerTags **6AV6 371-1BG05-0AX0**
- 256 to 64 K PowerTags **6AV6 371-1BH05-0AX0**
- 1024 to 64 K PowerTags **6AV6 371-1BJ05-0AX0**

Complete packages

- 128 to 256 PowerTags **6AV6 371-1BD15-0AX0**
- 128 to 1024 PowerTags **6AV6 371-1BE15-0AX0**
- 128 to 64 K PowerTags **6AV6 371-1BF15-0AX0**
- 256 to 1024 PowerTags **6AV6 371-1BG15-0AX0**
- 256 to 64 K PowerTags **6AV6 371-1BH15-0AX0**
- 1024 to 64 K PowerTags **6AV6 371-1BJ15-0AX0**

Ordering data	Order No.	Order No.
SIMATIC WinCC system software V6.0 SP3		
Runtime packages on CD-ROM Language/script versions: G/E/F/I/S; with license for: <ul style="list-style-type: none"> • 128 PowerTags (RT 128) • 256 PowerTags (RT 256) • 1024 PowerTags (RT 1024) • 8 K PowerTags (RT 8K) • 64k PowerTags (RT Max) Incl. 512 archive variables each	6AV6 381-1BC06-0DX0 6AV6 381-1BD06-0DX0 6AV6 381-1BE06-0DX0 6AV6 381-1BH06-0DX0 6AV6 381-1BF06-0DX0	Complete packages <ul style="list-style-type: none"> • 128 to 256 PowerTags • 128 to 1024 PowerTags • 128 to 8 K PowerTags • 128 to 64 K PowerTags • 256 to 1024 PowerTags • 256 to 8 K PowerTags • 256 to 64 K PowerTags • 1024 to 8 K PowerTags • 1024 to 64 K PowerTags • 8 K to 64 K PowerTags
Complete packages on CD-ROM Language versions: G/E/F/I/S; with license for: <ul style="list-style-type: none"> • 128 PowerTags (RC 128) • 256 PowerTags (RC 256) • 1024 PowerTags (RC 1024) • 8 K PowerTags (RC 8K) • 64 K PowerTags (RC Max) Incl. 512 archive variables each	6AV6 371-1BD16-0DX0 6AV6 371-1BE16-0DX0 6AV6 371-1BK16-0DX0 6AV6 371-1BF16-0DX0 6AV6 371-1BG16-0DX0 6AV6 371-1BL16-0DX0 6AV6 371-1BH16-0DX0 6AV6 371-1BM16-0DX0 6AV6 371-1BJ16-0DX0 6AV6 371-1BN16-0DX0	SIMATIC WinCC V6.0 SP3 Archiv Powerpacks For upgrading the archiving from <ul style="list-style-type: none"> • 512 to 1500 archive variables • 512 to 5000 archive variables • 512 to 30000 archive variables • 512 to 80000 archive variables • 1500 to 5000 archive variables • 1500 to 30000 archive variables • 1500 to 80000 archive variables • 5000 to 30000 archive variables • 5000 to 80000 archive variables • 30000 to 80000 arch. variables
SIMATIC WinCC system software V6.0 SP3 ASIA		
Runtime packages on CD-ROM Language versions: English/Chinese simplified and traditional/Korean/Taiwanese/Japanese; with license for: <ul style="list-style-type: none"> • 128 PowerTags (RT 128) • 256 PowerTags (RT 256) • 1024 PowerTags (RT 1024) • 8 K PowerTags (RT 8K) • 64k PowerTags (RT Max) Incl. 512 archive variables each	6AV6 381-1BM06-0DX0 6AV6 381-1BN06-0DX0 6AV6 381-1BP06-0DX0 6AV6 381-1BS06-0DX0 6AV6 381-1BQ06-0DX0	
Complete packages on CD-ROM Language versions: English/Chinese simplified and traditional/Korean/Taiwanese/Japanese; with license for: <ul style="list-style-type: none"> • 128 PowerTags (RC 128) • 256 PowerTags (RC 256) • 1024 PowerTags (RC 1024) • 8 K PowerTags (RC 8K) • 64 K PowerTags (RC Max) Incl. 512 archive variables each	6AV6 381-1BC06-0DV0 6AV6 381-1BD06-0DV0 6AV6 381-1BE06-0DV0 6AV6 381-1BH06-0DV0 6AV6 381-1BF06-0DV0	
SIMATIC WinCC V6.0 SP3 Powerpacks		
For upgrading from:		
Runtime packages <ul style="list-style-type: none"> • 128 to 256 PowerTags • 128 to 1024 PowerTags • 128 to 8 K PowerTags • 128 to 64 K PowerTags • 256 to 1024 PowerTags • 256 to 8 K PowerTags • 256 to 64 K PowerTags • 1024 to 8 K PowerTags • 1024 to 64 K PowerTags • 8 K to 64 K PowerTags 	6AV6 371-1BD06-0DX0 6AV6 371-1BE06-0DX0 6AV6 371-1BK06-0DX0 6AV6 371-1BF06-0DX0 6AV6 371-1BG06-0DX0 6AV6 371-1BL06-0DX0 6AV6 371-1BH06-0DX0 6AV6 371-1BM06-0DX0 6AV6 371-1BJ06-0DX0 6AV6 371-1BN06-0DX0	WinCC V5 Upgrade ¹⁾ For upgrading of RT and RC software packages and stations to the newest version <ul style="list-style-type: none"> • from V4.x to V5.1 SP2 • from V5.x to V5.1 SP2 • from V4.x /V5.x ASIA to V5.1 ASIA
		6AV6 381-1AA05-1CX4 6AV6 381-1AA05-1CX3 6AV6 381-1AA05-1AV3
		WinCC V6 Upgrade ¹⁾ For upgrading the RT version <ul style="list-style-type: none"> • from V5.x to V6.0 SP3 • from V5.x ASIA to V6.0 SP2 ASIA For upgrading the RC version <ul style="list-style-type: none"> • from V5.x to V6.0 SP3 • from V5.x ASIA to V6.0 SP2 ASIA
		6AV6 381-1AA06-0DX4 6AV6 381-1AA06-0DV4 6AV6 381-1AB06-0DX4 6AV6 381-1AB06-0DV4
		WinCC Comprehensive Support ²⁾ Contains current updates/upgrades for WinCC Basic software and options and the WinCC Knowledge Base CD <ul style="list-style-type: none"> • 1 license • 3 licenses • 10 licenses
		6AV6 381-1AA00-0AX5 6AV6 381-1AA00-0BX5 6AV6 381-1AA00-0CX5

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.

SIMATIC WinCC documentation (to be ordered separately)

SIMATIC WinCC V5 basic documentation in a slipcase

Includes the WinCC Manual and software protection description

- German
- English
- French

6AV6 392-1XA05-0AA0

6AV6 392-1XA05-0AB0

6AV6 392-1XA05-0AC0

SIMATIC WinCC V5 Configuration & Communication Manual

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

- German
- English
- French

6AV6 392-1CA05-0AA0

6AV6 392-1CA05-0AB0

6AV6 392-1CA05-0AC0

Communication Manual SIMATIC WinCC V6

Communication manual for process communication and OPC communication from WinCC V6

- German
- English

6AV6 392-1CA06-0AA0

6AV6 392-1CA06-0AB0

SIMATIC WinCC V6 basic documentation

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

Communication via Industrial Ethernet

CP 1612^{A)}

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

6GK1 161-2AA00

SOFTNET S7 2005^{E)}

Software for S5-compatible communication (SEND/RECEIVE) and S7 communication for Windows 2000/XP/2003 server (max. 64 connections)

6GK1 704-1CW63-3AA0

SOFTNET S7 Lean 2005^{E)}

Software for S5-compatible communication (SEND/RECEIVE) and S7 communication for Windows 2000/XP/2003 server (max. 8 connections)

6GK1 704-1LW63-3AA0

CP 1613 A2^{A)}

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

S7-1613 2005^{E)}

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

6GK1 716-1CB63-3AA0

Channel DLL SIMATIC S5 PMC Ethernet Layer 4

(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

6AV6 371-1CD05-0PX0

Communication via PROFIBUS

CP 5611^{A)}

PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communication software included in ProTool/Pro)

6GK1 561-1AA01

CP 5611 MPI^{A)}

Comprising PCI card CP 5611 (32-bit) and MPI cable, 5 m

6GK1 561-1AM01

CP 5512

PCMCIA card (CARDBUS 32 bit) for connecting a PG/notebook computer to PROFIBUS or MPI (communication software included in ProTool/Pro)

6GK1 551-2AA00

CP 5613 A2^{E)}

PCI card (32 bit) for connecting a PC to PROFIBUS (communications software must be ordered separately)

6GK1 561-3AA01

S7-5613 2005^{E)}

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

6GK1 713-5CB63-3AA0

DP-5613 2005^{E)}

Software for DP protocol incl. PG/OP communication, FDL, DP-OPC server, for Windows 2000 / XP/ 2003 Server

6GK1 713-5DB63-3AA0

FMS-5613 2005^{E)}

Software for FMS protocol incl. PG/OP communication, FDL, FMS-OPC server, for Windows 2000 / XP/ 2003 Server

6GK1 713-5FB63-3AA0

Channel DLL SIMATIC S5 PMC PROFIBUS

(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

6AV6 371-1CD05-0NX0

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

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

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.

ADDM

software package

Languages: English, German

ADDM Single User

- Single license with CD-ROM of current software version^{H)}
- Trial license with CD-ROM of current software version^{B)}

6BQ3030-1AA30-3AB0

6BQ3030-1AA70-3AB0

ADDM Client

- Single license without data carrier^{H)}
- Single license with CD-ROM of current software version^{H)}
- Software update service

6BQ3030-1AA20-1AB0

6BQ3030-1AA10-0AB0

6BQ3030-1AB10-8AB0

ADDM server

- Single license with CD-ROM of current software version^{H)}
- Software update service^{H)}

6BQ3030-1AA00-3AB0

6BQ3030-1AB00-8AB0

ADDM Agent

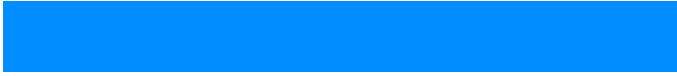
- Single license with CD-ROM of current software version^{H)}
- Software update service

6BQ3030-3AA00-0AA0

6BQ3030-3AA10-0AA0

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

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



7

Programming devices



8/2	Programming devices
8/2	Field PG M
8/5	Communications software
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
General features	
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)
Drives	
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
Ports	
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 ¹⁾	Integrated, IEEE802.11 a,b,g
Modem	Analog, V.92-compatible
Headphones	1 x (stereo)
Microphone	1 x (stereo)
Ambient conditions	
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 _{rms} 58 Hz to 500 Hz: 4.9 m/s ²
• Transport	5 to 9 Hz: 3,5 mm; 9 Hz to 500 Hz: 9.8 m/s ²
Resistance to shock	tested to DIN IEC 68-2-29
• Operation	50 m/s ² , 30 ms, 100 shocks
• Storage/transport	250 m/s ² , 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.

Technical specifications (continued)

	SIMATIC Field PG M
Electromagnetic compatibility (EMC)	
• Emitted interference	EN 55022 Class B
• 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)
• 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))
• 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)
• 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)
• Immunity to high-frequency current feed	10 V; 9 kHz to 80 MHz
• Immunity to magnetic fields	30 A/m; 50 Hz

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

	SIMATIC Field PG M
Temperature	Tested to DIN EN 60068-2-2: 1994, DIN IEC 68-2-1, DIN IEC 68-2-14 • Operation ²⁾ + 5 to + 40 °C • Storage/transport - 20 to + 60 °C • Max. gradient 10 °C/h (no condensation)
Relative humidity	Tested to DIN IEC 68-2-3, DIN IEC 68-2-30, DIN IEC 68-2-56 • Operation 5% to 80% at 25° C (no condensation) • Storage/transport 5% to 95% at 25° C (no condensation)
<i>Dimensions and weights</i>	
Dimensions (W x H x D) in mm	330 x 300 x 52
Weight, approx.	3.9 kg

Programming devices

Programming devices

Field PG M

Ordering data

Order No.

Field PG M programming device^{E)}

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)

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

Operating system

- Windows XP MUI
Ger, En, Fr, Sp, It
- Windows 2000 English MUI
(Fr, Sp, It, Ger stored on HD as image)
- Windows 2000 German
(Fr, Sp, It, En stored on HD as image)

Licenses for the SIMATIC software

- Trial License for STEP 7 Professional
- Upgrade license for STEP 7, STEP 5 (requires STEP 7/STEP 5 license (V3.0 or higher))
- Upgrade license for STEP 7 Professional, STEP 5 (requires license for STEP 7 Professional / STEP 5 (1/2000 or later))
- License for STEP 7, STEP 7 Micro/WIN
- License for STEP 7; STEP 5, STEP 7 Micro/WIN
- License for STEP 7 Professional, STEP 7 Micro/WIN
- License for STEP 7 Professional, STEP 5, STEP 7 Micro/WIN

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

Order No.

Memory expansion^{A)}

512 MB DDR2-RAM 533

6ES7 648-2AG30-0GA0

USB mouse (PS/2-compatible)^{A)}

6ES7 790-0AA01-0XA0

AC/DC power supply unit

6ES7 798-0GA00-0XA0

Power supply cable

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

6ES7 900-5AA00-0XA0

For Great Britain

6ES7 900-5BA00-0XA0

For Switzerland

6ES7 900-5CA00-0XA0

for the USA, Japan

6ES7 900-5DA00-0XA0

For Italy

6ES7 900-5EA00-0XA0

Spare battery (lithium ion, 6.6 Ah)¹⁾

6ES7 798-0AA05-0XA0

MPI cable

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

6ES7 901-0BF00-0AA0

EPROM programming adapter

for SIMATIC S5 EPROM programming using the Field PG

6ES7 798-0CA00-0XA0

Rucksack for Field PG

6ES7 798-0DA00-0XA0

Trolley for Field PG

Rucksack with wheels and telescopic handle

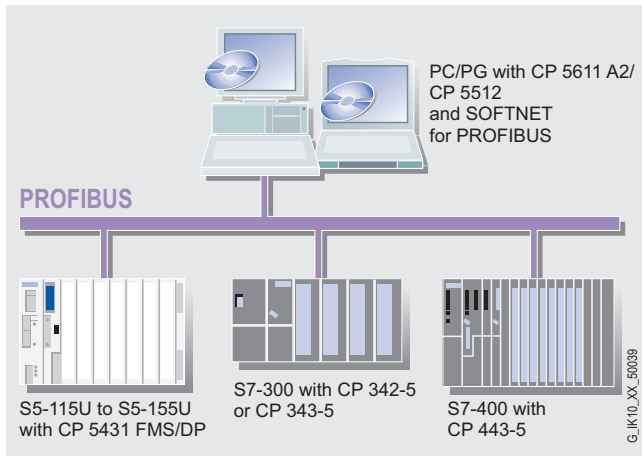
6ES7 798-0FA00-0XA0

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

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 ¹⁾	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 OFTNET-DP Slave	

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

Ordering data

Order No.

SOFTNET-S7 Edition 2005^{E)}

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

6GK1 704-5CW63-3AA0

SOFTNET-DP Edition 2005^{E)}

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

6GK1 704-5DW63-3AA0

SOFTNET-DP Slave Edition 2005^{E)}

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

6GK1 704-5SW63-3AA0

SIMATIC NET Software Update Service^{E)}

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

Prerequisite: SIMATIC NET PC/Windows products German/English

6GK1 704-0AA00-3AA2

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

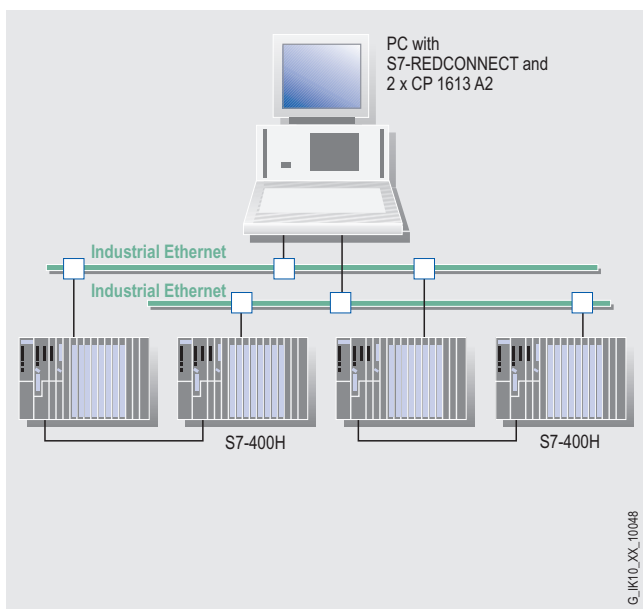
Programming devices

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

Order No.

S7-REDCONNECT Edition 2005^{E)}

6GK1 716-0HB63-3AA0

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^{E)}

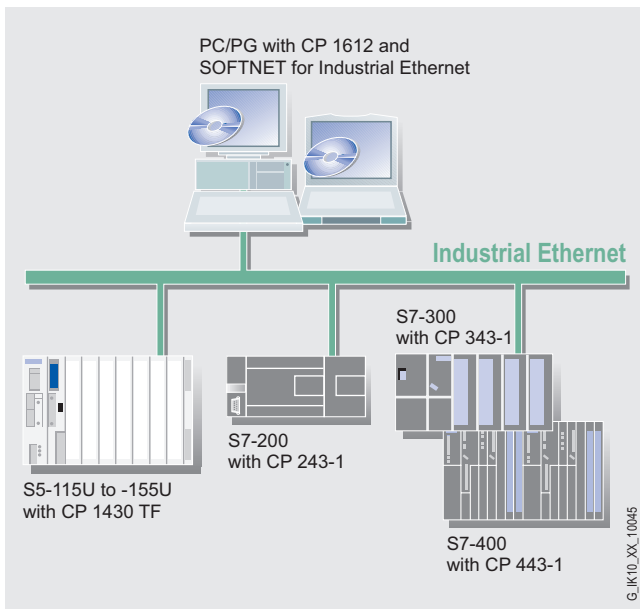
6GK1 716-0HB63-3AA4

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

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.

SOFTNET-S7 Edition 2005 for Industrial Ethernet^{E)}

6GK1 704-1CW63-3AA0

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

SOFTNET-PG Edition 2005 for Industrial Ethernet^{E)}

6GK1 704-1PW63-3AA0

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

SOFTNET-S7 Lean Edition 2005 for Industrial Ethernet^{E)}

6GK1 704-1LW63-3AA0

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

SOFTNET-S7 with CP 1612^{E)}

6GK1 950-1AB00

Bundle of SOFTNET-S7 and CP 1612 products

SIMATIC NET Software Update Service^{E)}

6GK1 704-0AA00-3AA2

For Industrial Ethernet, PROFIBUS, OPC server, for one year service incl. manuals on CD-ROM; prerequisite: SIMATIC NET PC/Windows products German/English

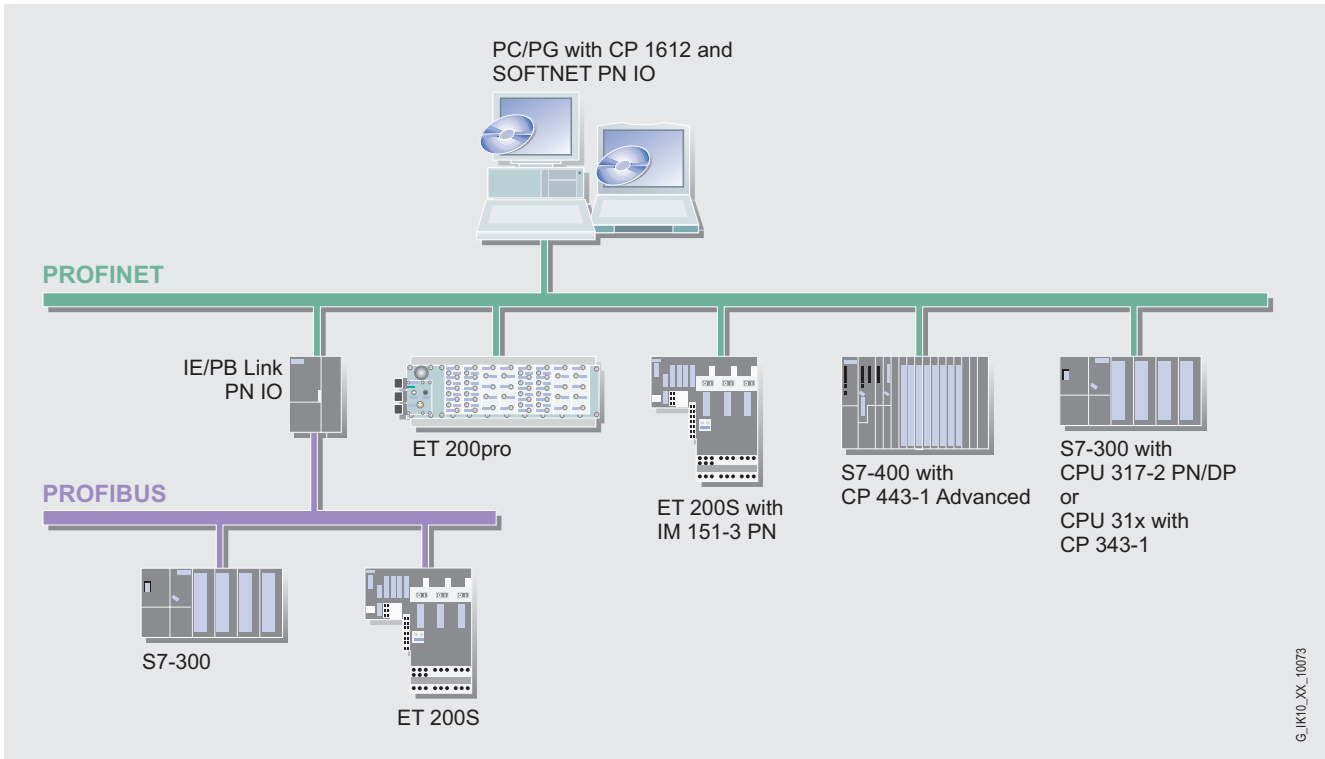
E) Subject to export regulations: AL: N and ECCN: 5D992B1

Programming devices

Communications software

SOFTNET PN IO

Overview



8

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

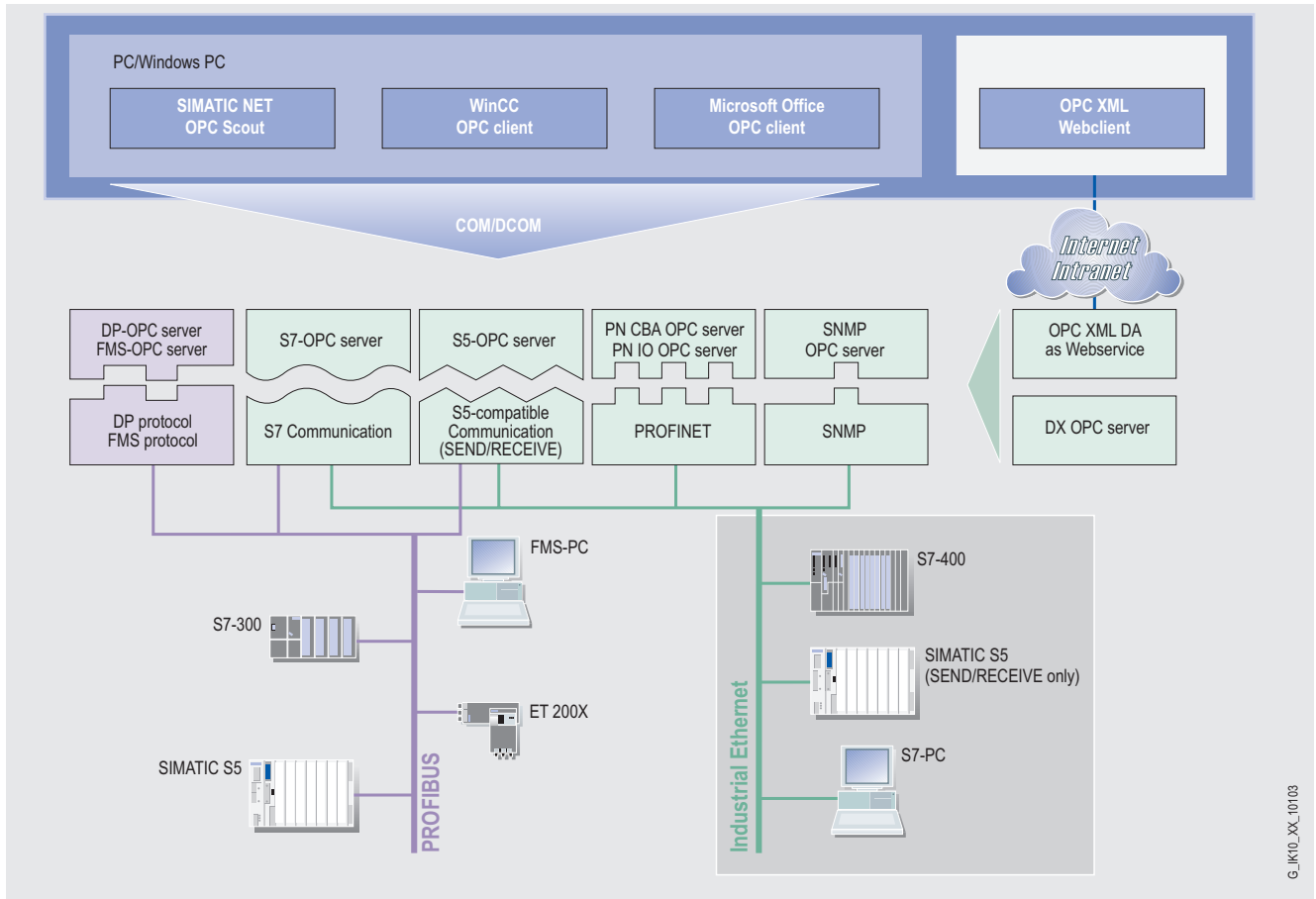
Technical specifications		Ordering data	Order No.
	SOFTNET PN IO	SOFTNET PN IO Edition 2005^{E)}	6GK1 704-1HW63-3AA0
Performance data IO controller		Software for PROFINET I/O controller with OPC server and NCM PC single license for 1 installation, runtime software, software and electronic manual on CD-ROM, 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	
• 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	CP 1612 communications processor^{A)}	6GK1 161-2AA00
- I/O output area	Max. 1472 bytes	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	

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

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

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

Programming devices

Communications software

OPC server for Industrial Ethernet

Technical specifications

Programming	<ul style="list-style-type: none"> • Synchronous and asynchronous reading and writing of variables • Monitoring of variables using the OPC server with a signal to the client when a change occurs • Use of quantity operations; so a large amount of data can be processed in a short time.
Interfaces	<ul style="list-style-type: none"> • Custom Interface (C++, NET) for high OPC performance • Automation Interface (VB, Excel, Access, Delphi, ...) for ease-of-use • Graphics with OCX for configuring instead of programming • OPC XML-Interface for Data Access
Protocols	<ul style="list-style-type: none"> • S5-compatible communication (SEND/RECEIVE) • S7 communication • PROFINET

Product variants

	include OPC servers for:
S7-1613	S7 communication, XML-DA S5-compatible communication
SOFTNET-S7 for Industrial Ethernet	S7 communication, XML-DA S5-compatible communication
SOFTNET-S7 Lean for Industrial Ethernet	S7 communication, XML-DA S5-compatible communication
PN CBA OPC server	PROFINET CBA, XML-DA
SOFTNET PN IO	PROFINET IO, XML-DA
SNMP OPC server	SNMP protocol access
DX OPC server	horizontal communication between OPC servers

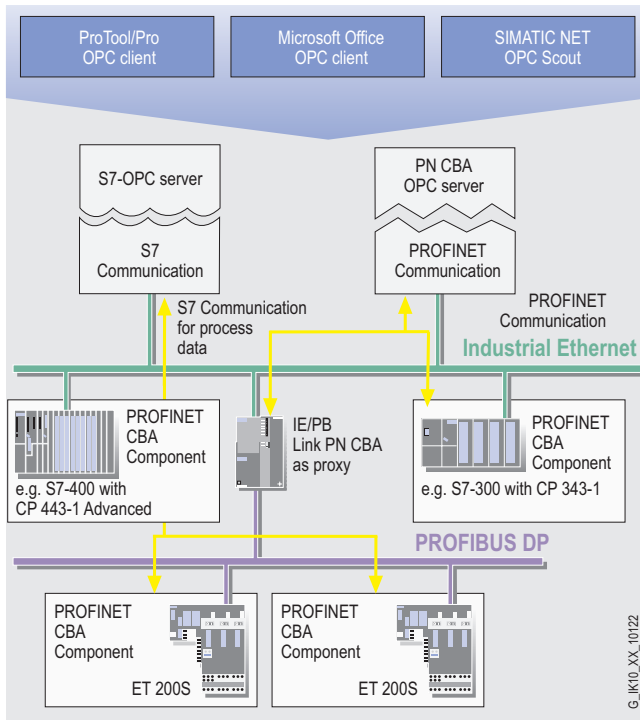
Ordering data

Order No.

DX OPC server Edition 2005^{E)} 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	6GK1 706-0XW63-3AA0
PN CBA OPC server Edition 2005^{E)} 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	6GK1 706-0HB63-3AA0
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 WS/Server; for CP 1512/CP 1612/CP 1613 German/English	
<ul style="list-style-type: none"> • Basic^{E)} Administration of up to 20 IP addresses • Extended^{E)} Administration of up to 200 IP addresses • Power Pack^{E)} Upgrade from SNM OPC Server Basic to SNM OPC Server Extended 	6GK1 706-1NW63-3AA0 6GK1 706-1NX63-3AA0 6GK1 706-1NW63-3AA4

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

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"> • Open and standardized • Synchronous and asynchronous reading and writing of variables • Monitoring of variables using the OPC server with a signal to the client when a change occurs • Use of quantity operations; so a large amount of data can be processed in a short time.
Interfaces	<ul style="list-style-type: none"> • Custom Interface (C++, .NET) • Automation Interface (Visual Basic, Excel, Access,...) • OPC Data Control • OPC XML-Interface for Data Access
Protocols	<ul style="list-style-type: none"> • DCOM protocol
Configuring	Configuring software for PROFINET SIMATIC iMap
PROFINET communication (CBA)	
<ul style="list-style-type: none"> • Number of communication partners 	Max. 288
<ul style="list-style-type: none"> • Number of interconnections 	Max. 10.000

Ordering data

Ordering data	Order No.
PN CBA OPC server Edition 2005^{E)} 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	6GK1 706-0HB63-3AA0
Software iMap V2.0 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 SP 1 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;	6ES7 820-0CC03-0YX0 6ES7 820-0CC01-0YX2 6ES7 820-0CC03-0YX4
SIMATIC NET Software Update Service^{E)} For Industrial Ethernet, PROFIBUS, OPC server, for one year service incl. manuals on CD-ROM; prerequisite: SIMATIC NET PC/Windows products German/English	6GK1 704-0AA00-3AA2

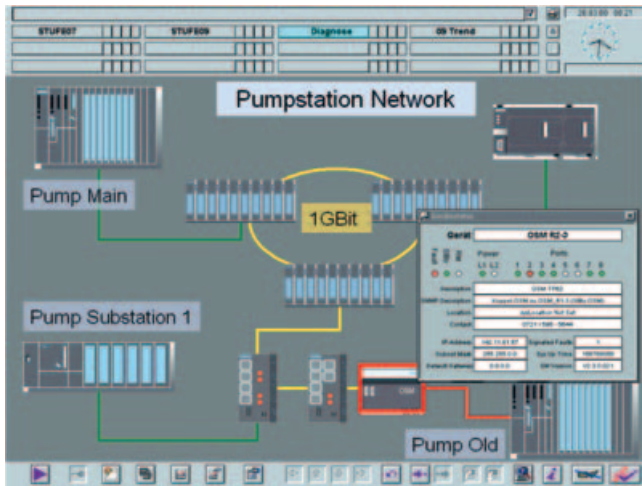
E) Subject to export regulations: AL: N and ECCN: 5D992B1

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 WS/Server; for CP 1512/CP 1612/CP 1613 German/English

- **Basic^{E)}**
Administration of up to 20 IP addresses
- **Extended^{E)}**
Administration of up to 200 IP addresses
- **Power Pack^{E)}**
Upgrade from SNMP OPC Server Basic to SNMP OPC Server Extended

6GK1 706-1NW63-3AA0

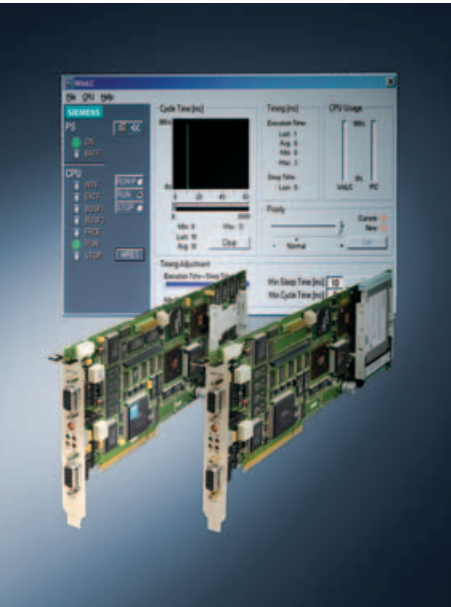
6GK1 706-1NX63-3AA0

6GK1 706-1NW63-3AA4

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

9

PC-based Automation



9/2
9/2

PC-based Control
SIMATIC WinAC Software PLC

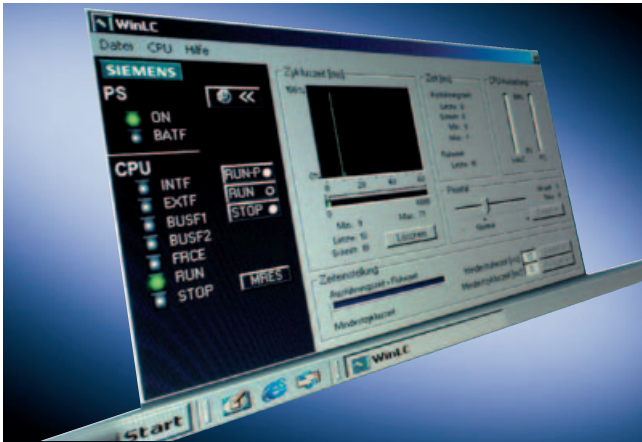


PC-based Automation

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
Memory/backup		
Memory		
• Working memory	PC working memory usable	PC working memory usable
- integral		
• Load memory	PC working memory usable	PC working memory usable
- integral RAM, max.		
CPU/blocks		
DB		
- Number, max.	Limited only by the amount of available PC working memory	Limited only by the amount of available PC working memory
- Size, max.	64 KByte	64 KByte
FB		
- Number, max.	Limited only by the amount of available PC working memory	Limited only by the amount of available PC working memory
- Size, max.	64 KByte	64 KByte
FC		
- Number, max.	Limited only by the amount of available PC working memory	Limited only by the amount of available PC working memory
- Size, max.	64 KByte	64 KByte
OB		
- Size, max.	64 KByte	64 KByte
Nesting depth		
- per priority class	24	24
- additional levels within an error OB	24	24

	6ES7 671-0CC03-0YA0	6ES7 671-0RC05-0YA0
CPU/processing times		
• for bit instruction, min.	0.013 µs; typ.	0.004 µs
• for integer math, min.	0.025 µs; typ.	0.003 µs
• for floating-point math, min.	0.025 µs; typ.	0.004 µs
• Reference platform	Pentium IV, 2.4 GHz	Pentium IV, 2.4 GHz
Timers/counters and their retentive characteristics		
S7 counter		
- Number	512	512
• Retentivity		
- adjustable	Yes	Yes
- lower limit	0	0
- upper limit	511	511
- preset	8	8
• Counting range		
- adjustable	Yes	Yes
- lower limit	0	0
- upper limit	999	999
IEC counter		
- available	Yes	Yes
- Type	SFB	SFB
S7 times		
- Number	512	512
• Retentivity		
- lower limit	0	0
- upper limit	511	511
- preset	0	0
• Timing range		
- lower limit	10 ms	10 ms
- upper limit	9,990 s	9,990 s
IEC timer		
- available	Yes	Yes
- Type	SFB	SFB

Technical specifications (continued)

	6ES7 671-0CC03-0YA0	6ES7 671-0RC05-0YA0
Data areas and their retentive characteristics		
• Retentivity without UPS and PS extension board	none	none
• Retentivity with UPS	all data	all data
Flags		
- 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
Address area		
I/O address area		
- Inputs	16 KByte	16 KByte
- Outputs	16 KByte	16 KByte
• of which distributed		
- DP interface, inputs	16 KByte	16 KByte
- DP interface, outputs	16 KByte	16 KByte
Process image		
- Inputs, adjustable	8 KByte	8 KByte
- Outputs, adjustable	8 KByte	8 KByte
- Inputs, preset	512 Byte	512 Byte
- Outputs, preset	512 Byte	512 Byte
- Number of component process images, max.	15	15
Digital channels		
- Inputs	131,072	131,072
- Outputs	131,072	131,072
Analog channels		
- Inputs	8,192	8,192
- Outputs	8,192	8,192
Configuration		
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
Time		
Clock		
- Hardware clock (realtime clock)	Yes	Yes
- buffered	Yes	Yes
Time synchronization		
- supported	No	Yes
- on PC-CP, slave		Yes

	6ES7 671-0CC03-0YA0	6ES7 671-0RC05-0YA0
S7 message functions		
• 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
Test and startup functions		
Status/modify		
- Variable	Yes	Yes
Forcing		
- Forcing	No	No
• Status block	Yes	Yes
• Single step	Yes	Yes
Diagnostic buffer		
- available	Yes	Yes
- Number of inputs, max.	3,200	3,200
- preset	120	120
Communication functions		
• PG/OP communication	Yes	Yes
Global data communication		
- supported	No	No
S7 basic communication		
- supported	No	No
S7 communication		
- as server	Yes	Yes
- as client	Yes	Yes
Number of connections		
- overall	64	64
- reserved for PG communication	1	1
- reserved for OP communication	1	1
1st interface		
• 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
Functionality		
- MPI	No	No
- DP master	Yes	Yes
- DP slave	No	No
DP master		
- Number of connections, max.	8	8

Technical specifications (continued)

	6ES7 671-0CC03-0YA0	6ES7 671-0RC05-0YA0
<ul style="list-style-type: none"> Services <ul style="list-style-type: none"> - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - Equidistance support - SYNC/FREEZE - Activate/deactivate DP slaves - Direct data exchange (lateral communication) - DPV0 - DPV1 - Transmission rates, max. - Number of DP slaves, max. Address area <ul style="list-style-type: none"> - Inputs, max. - Outputs, max. User data per DP Slave <ul style="list-style-type: none"> - Inputs, max. - Outputs, max. 	Yes Yes No No Yes No Yes Yes Yes Yes Yes 12 Mbit/s 32	Yes Yes No No Yes No Yes Yes Yes Yes Yes 12 Mbit/s 64
2nd interface <ul style="list-style-type: none"> Type of interface Number of simultaneous operable CPs, max. Physical Isolated 	CP5613, CP 5613-A2 4 RS 485 / PROFIBUS Yes	CP 5613, CP 5613-A2 4 RS 485 / PROFIBUS Yes
Functionality <ul style="list-style-type: none"> - MPI - DP master - DP slave - PROFINET CBA - PROFINET CBA-SRT - PROFINET IO-Controller 	No Yes No	No Yes No No No No
DP master <ul style="list-style-type: none"> - Number of connections, max. 	50	50
<ul style="list-style-type: none"> Services <ul style="list-style-type: none"> - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication - Equidistance support - SYNC/FREEZE - Activate/deactivate DP slaves - Direct data exchange (lateral communication) - DPV0 - DPV1 - Transmission rates, max. - Number of DP slaves, max. 	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

	6ES7 671-0CC03-0YA0	6ES7 671-0RC05-0YA0
<ul style="list-style-type: none"> Address area <ul style="list-style-type: none"> - Inputs, max. - Outputs, max. User data per DP Slave <ul style="list-style-type: none"> - Inputs, max. - Outputs, max. 	16 KByte 16 KByte 244 Byte 244 Byte	16 KByte 16 KByte 244 Byte 244 Byte
PROFINET CBA <ul style="list-style-type: none"> Type of interface 		Onboard Ethernet interface of SIMATIC PC
Clock synchronism <ul style="list-style-type: none"> Clock synchronous operation Number of DP masters with clock synchronism User data per clock synchronous slave, max. Equidistance Shortest clock pulse 	No	Yes 2 128 Byte Yes 2.2 ms
CPU/ programming <ul style="list-style-type: none"> Programming language <ul style="list-style-type: none"> - STEP 7 - KOP - FUP - AWL - SCL - CFC - GRAPH - HiGraph Software library <ul style="list-style-type: none"> - Easy Motion Control Bracket levels User program protection/ password protection 	Yes; as of V5.2, engineering tools (optional) Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes 8 No	Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes 8 No
Open development interfaces <ul style="list-style-type: none"> - CCX (Custom Code Extension) - SMX (Shared Memory Extension) - Inputs - Outputs - CMI (Controller Management Interface) 	Yes Yes 4 KByte 4 KByte Yes	Yes Yes 4 KByte 4 KByte Yes

Technical specifications (continued)

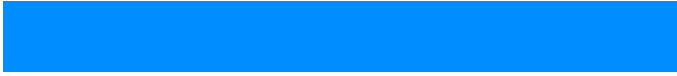
	6ES7 671-0CC03-0YA0	6ES7 671-0RC05-0YA0		6ES7 671-0CC03-0YA0	6ES7 671-0RC05-0YA0
Hardware requirements			Software requirements		
• Required hardware	PC with color monitor, keyboard, mouse or pointing device for Windows	PC with color monitor, keyboard, mouse or pointing device for Windows	Operating system	No	No
• Required memory on hard disk, min.	100 MByte	100 MByte	- Windows NT 4.0	Yes; Professional, >=SP3	Yes; Professional, >=SP3
• Main memory, min.	128 MByte	256 MByte	- Windows 2000	Yes; Professional, SP1	Yes; Professional, SP1 and SP2
• Processor	Intel Pentium 800 MHz	Intel Pentium 400 MHz	- Windows XP		

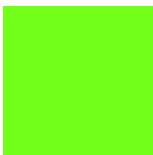
Ordering data

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

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

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





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

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

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

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

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

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^{G)} Abbreviated name: TG-S7-315TIA	6ZB2 310-0BW00

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

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

Ordering data

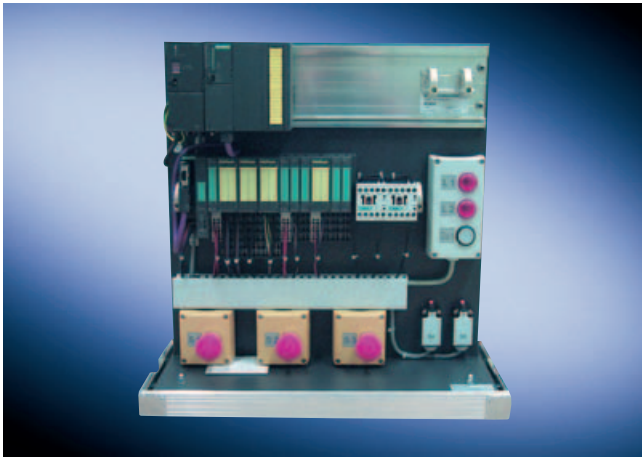
Ordering data	Order No.
S7-300 training case with CPU 314 complete with simulator^{D)} Abbreviated name: TG-S7-314	6ZB2 310-0BF01
S7-300 training case with CPU 315-2DP complete with simulator^{H)} Abbreviated name: TG-S7-315 Equipment as above except: • 1 CPU 315-2DP (instead of CPU 314)	6ZB2 310-0BM01

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

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

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

S7-300F training case with CPU 315F complete with emergency stop buttons, contactors, door switches and signal annunciators^{H)}

Abbreviated name: TG-S7-315F

Order No.

6ZB2 310-0CA00

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

S7-400F/H training case with 2 x CPU 417H complete^{H)}
Abbreviated name: TG-S7-417H

Order No.

6ZB2 310-0CB00

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

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.
SIMATIC Manual Collection^{E)} Electronic manuals on CD-ROM, in 5 languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, engineering software, runtime software, PCS 7, SIMATIC HMI, SIMATIC NET	6ES7 998-8XC01-8YE0
SIMATIC Manual Collection update service for 1 year^{E)} Current Manual Collection CD as well as the three following updates	6ES7 998-8XC01-8YE2

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

Quality management

The quality management system of our A&D division complies with the international standard ISO 9001.

The products and systems described in this catalog are manufactured under application of a quality management system certified by DQS in accordance with DIN EN ISO 9001.

The DQS certificate is recognized in all EQ Net countries.

DQS certificate nos.:

- Siemens AG
Automation and Drives
- Industrial Automation Systems
Reg. No: 001323 QM

Certificates, authorizations, approbations, declarations of conformity

An overview of the certificates available for SIMATIC products (CE, UL, CSA, FM, shipping authorizations) can be found in the internet at

<http://www.siemens.com/simatic/certificates>

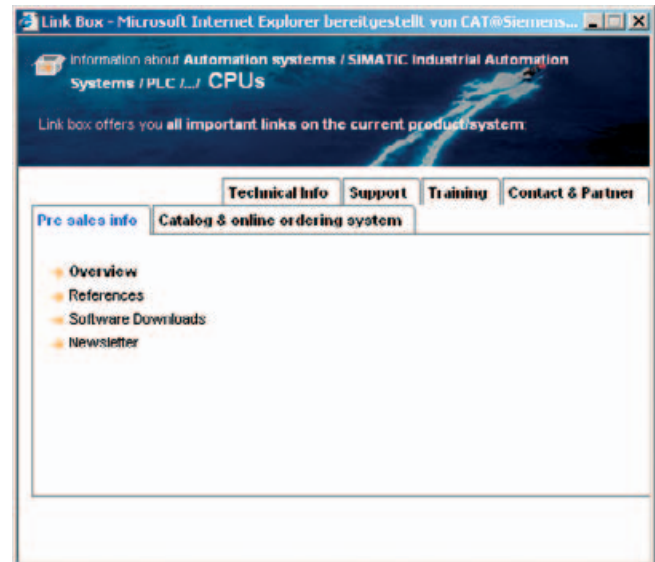
The lists are continuously updated. The data for products which have not yet been included in the overview is continuously collected and prepared for the subsequent edition.

You can find certificates, approbations, verification certificates or characteristic curves under:

Index\certificates



or by going directly to the Link Box:



Overview



At

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 prove 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

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.

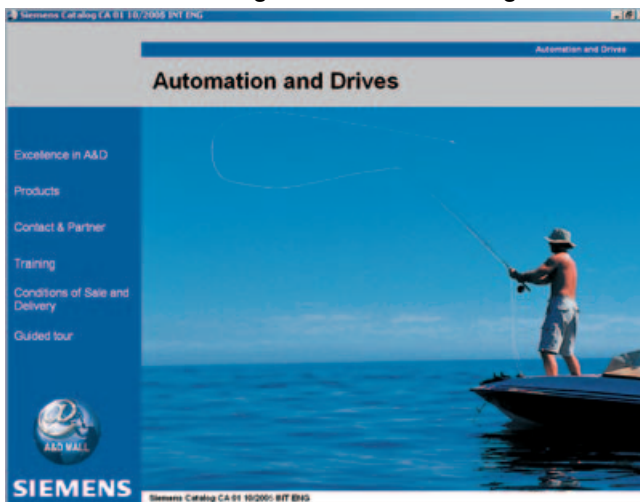
The Siemens Automation and Drives Group (A&D) has therefore built up a comprehensive range of information in the World Wide Web, which offers quick and easy access to all data required.

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. ¹⁾

Configuration and Software Engineering



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

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 ¹⁾

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 ¹⁾

Optimization and Upgrading



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

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

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	6ES7 997-0BA00-0XA0
500	6ES7 997-0BB00-0XA0
1000	6ES7 997-0BC00-0XA0
10000	6ES7 997-0BG00-0XA0

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

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/mall> (A&D Mall Online-Help System)

Page		Page		Page		
A						
7/29	ADDM – Data Management	13/13	Index	3/2, 4/26	SIPLUS central processing units	
4/31	Analog modules	13/11	Information and Ordering in the Internet and on CD-ROM	4/46	SIPLUS CP 341	
13/11	Automation Value Card					SIPLUS CPU 221
C						
6/2	C7-613	13/11	Knowledge Base on CD-ROM	3/2	SIPLUS CPU 222	
6/7	C7-636 Touch					SIPLUS CPU 224
13/5	CE Marks	2/2	LOGO! modular	3/2	SIPLUS CPU 224 XP	
4/2, 5/2	Central processing units	2/2	LOGO! modular basic variants	3/2	SIPLUS CPU 226	
7/5	CFC	2/8	LOGO! modular expansion modules	4/26	SIPLUS CPU 313C-2 DP	
3/5, 4/44, 5/8	Communication	2/5	LOGO! modular pure variants	4/26	SIPLUS CPU 314	
8/5	Communications software					SIPLUS CPU 314C-2 DP
13/16	Conditions of sale and delivery	8/9	OPC server for Industrial Ethernet	4/26	SIPLUS CPU 315-2 DP	
6/2	Control systems	13/14	Ordering data summary	4/27	SIPLUS CPU 315-2 PN/DP	
4/44	CP 340					SIPLUS CPU 315F-2 DP
4/47	CP 343-1	13/10	Our Services for Every Phase of Your Project	4/28	SIPLUS CPU 317-2 DP	
5/8	CP 443-5 Basic					SIPLUS CPU 317-2 PN/DP
5/10	CP 443-5 Extended					SIPLUS CPU 317F-2 DP
4/2	CPU 314C-2 PtP, CPU 314C-2 DP, CPU 314					SIPLUS DCF 77 radio clock module
4/13	CPU 315-2 PN/DP	13/8	Partner	3/4, 4/43, 5/7	SIPLUS digital modules	
4/13	CPU 315F-2 PN/DP	9/2	PC-based Control	4/30	SIPLUS EM 277 PROFIBUS DP module	
4/13	CPU 315T-2 DP	8/11	PN CBA OPC server	3/5	SIPLUS function modules	
4/13	CPU 317F-2 PN/DP	5/14	Power supplies	3/4	SIPLUS LOGO! modular basis variants	
5/2	CPU 416F-2	5/14	Power supplies PS 405/PS 407	2/4	SIPLUS LOGO! modular expansion modules	
13/10	Customer Support	7/13	PRODAVE MPI	2/7	SIPLUS LOGO! modular pure variants	
D						
7/7	D7-SYS	8/2	Programming devices	3/4	SIPLUS EM 231 RTD module	
7/9	Distributed Safety Software	13/6	Quality	4/30	SIPLUS SM 322 digital output modules	
E						
7/8	Engineering package Drive ES	13/6	Quality management	4/34	SIPLUS SM 331 analog input modules	
7/5	Engineering Tools					SIPLUS SM 332 analog output module
13/16	Export regulations	5/12	Racks	4/35	SIWAREX FTA	
F						
13/15	Fax order form	7/13	Runtime Software	4/36	SIWAREX FTC	
8/2	Field PG M					SIWAREX P
3/4, 4/36, 5/7	Function modules					SM 331 analog input modules
H						
7/14	HMI software	7/6	S7-PDIAG	4/31	SNMP OPC server	
3/6	Human Machine Interface	8/6	S7-REDCONNECT	8/12	SOFTNET for Industrial Ethernet Edition 2005	
I						
J						
K						
L						
M						
N						
O						
P						
Q						
R						
S						
T						
U						
V						
W						
X						
Y						
Z						
SIPLUS analog modules						
SIPLUS digital modules						
SIPLUS EM 277 PROFIBUS DP module						
SIPLUS function modules						
SIPLUS LOGO! modular basis variants						
SIPLUS LOGO! modular expansion modules						
SIPLUS LOGO! modular pure variants						
SIPLUS EM 231 RTD module						
SIPLUS SM 322						
SIPLUS SM 331						
SIPLUS SM 332						
SIWAREX FTA						
SIWAREX FTC						
SIWAREX P						
SM 331 analog input modules						
SNMP OPC server						
SOFTNET for Industrial Ethernet						
SOFTNET for PROFIBUS						
SOFTNET PN IO						
Software Licenses						
Standard Tools						
STEP 7						
STEP 7 Professional						
Supplementary Components						
TD 100C text display						
Training						
Version cross-checker						
WinCC flexible /ChangeControl						

Appendix

Ordering data summary

Order No.	Page
2XV9	
2XV9 450	4/12, 4/24, 4/33
6AG1	
6AG1 052	2/4, 2/7
6AG1 055	2/12
6AG1 057	3/4, 4/43, 5/7
6AG1 211	3/3
6AG1 212	3/3
6AG1 214	3/3
6AG1 216	3/3
6AG1 277	3/5
6AG1 313	4/29
6AG1 314	4/29
6AG1 315	4/29
6AG1 317	4/29
6AG1 322	4/30
6AG1 331	4/34
6AG1 332	4/35
6AG1 341	4/46
6AV3	
6AV3 991	7/14, 7/15
6AV6	
6AV6 371	7/26, 7/27, 7/28
6AV6 381	7/26, 7/27
6AV6 392	7/28
6AV6 570	7/17
6AV6 571	7/14, 7/17
6AV6 574	6/14
6AV6 580	7/14
6AV6 581	7/14
6AV6 582	7/17
6AV6 584	7/17
6AV6 594	7/14, 7/18
6AV6 596	7/157/18
6AV6 610	7/19
6AV6 611	7/19, 7/20
6AV6 612	7/19, 7/20
6AV6 613	7/19, 7/20, 7/21, 7/23
6AV6 618	7/23
6AV6 691	7/15, 7/18, 7/20, 7/23
6BQ3	
6BQ3030	7/29
6ED1	
6ED1 050	2/3, 2/10, 2/12
6ED1 052	2/3, 2/6
6ED1 055	2/10
6ED1 056	2/3, 2/6, 2/10, 2/12
6ED1 057	2/3, 2/6, 2/10, 2/12
6ED1 058	2/3, 2/6, 2/10, 2/12
6EP1	
6EP1 331	4/42
6ES5	
6ES5 750	4/11
6ES5700	4/42

Order No.	Page
6ES7	
6ES7 272	3/6
6ES7 307	4/37, 4/40
6ES7 314	4/11
6ES7 315	4/24
6ES7 317	4/24
6ES7 328	4/33
6ES7 331	4/33
6ES7 340	4/45
6ES7 390	4/33, 4/37, 4/40
6ES7 391	4/12, 4/24
6ES7 392	4/12, 4/24, 4/25, 4/33, 4/37, 4/40
6ES7 398	4/12, 4/24, 4/33, 5/6, 5/9, 5/11
6ES7 400	5/13
6ES7 401	5/13
6ES7 403	5/13
6ES7 405	5/15
6ES7 416	5/5
6ES7 490	5/13, 5/15
6ES7 498	5/6
6ES7 613	6/6
6ES7 620	6/6
6ES7 635	6/6, 6/14
6ES7 636	6/14
6ES7 648	8/4
6ES7 651	7/12
6ES7 658	7/5, 7/10, 7/11, 7/12
6ES7 671	9/5
6ES7 712	8/4
6ES7 790	8/4
6ES7 792	7/2, 7/4
6ES7 798	8/4
6ES7 807	7/13
6ES7 810	7/2, 7/4
6ES7 820	8/11
6ES7 833	4/24, 5/5, 5/6, 7/9
6ES7 840	7/6
6ES7 852	7/7
6ES7 864	4/24
6ES7 900	8/4
6ES7 901	3/6, 4/11, 5/5, 7/2, 7/4, 7/18, 8/4
6ES7 902	4/11, 4/45
6ES7 911	5/5
6ES7 912	4/12, 4/24, 5/5
6ES7 952	5/5
6ES7 953	4/11, 4/24, 4/37, 4/40, 6/6, 6/14
6ES7 964	5/5
6ES7 971	5/15
6ES7 972	3/6, 4/12, 4/25, 5/6, 5/9, 5/11, 7/3, 7/4, 7/18
6ES7 974	4/33
6ES7 997	13/11
6ES7 998	4/12, 4/24, 4/33, 5/6, 6/6, 6/14, 7/2, 7/4, 7/5, 7/6, 7/7, 7/13, 13/5

Order No.	Page
6GK1	
6GK1 161	7/3, 7/4, 7/17, 7/28, 8/8
6GK1 500	4/12, 4/25, 5/6, 5/9, 5/11
6GK1 551	7/3, 7/4, 7/18, 7/28
6GK1 561	7/3, 7/4, 7/18, 7/28, 9/5
6GK1 704	7/3, 7/4, 7/17, 7/28, 8/5, 8/7, 8/8, 8/11
6GK1 706	8/10, 8/11, 8/12
6GK1 713	7/18, 7/28
6GK1 716	7/17, 7/28, 8/6
6GK1 901	4/48
6GK1 950	8/7
6GK7	
6GK7 080	4/48, 5/9, 5/11
6GK7 343	4/48
6GK7 443	5/9, 5/11
6SW1	
6SW1700	7/8
6XV1	
6XV1 830	3/6, 4/12, 4/25, 5/6
6ZB2	
6ZB2 310	13/3, 13/4
7MH4	
7MH4205	4/42
7MH4215	4/42
7MH4407	4/38
7MH4702	4/37, 4/38, 4/40
7MH4710	4/38, 4/40, 4/42
7MH4811	4/42
7MH4900	4/374/40
C	
C71000	4/38, 4/40, 4/42

Just copy this form, fill it in and fax it to us. We will deliver right away!

Fax order form

To:

 Fax No.

(For address, see „Siemens contact partners“)

 Contact person

Item	Order No.	Description	Qty.	Price	Total price

Subject to the General Conditions of Supply and Delivery specified in your sales partner's catalog and/or price list.

Company address (company stamp) **Shipping address (if different)**

Customer No. (if known) Company/Department

Company/Department Street/No.

Street/No. Postal code/City

Postal code/City

Contact person

Tel. No./Fax Remarks

Customer Order No.: **Deliver by**

Date Signature

Terms and Conditions of Sale and Delivery

By using this catalog you can acquire hardware and software products described therein from the Siemens AG subject to the following terms. Please note! The scope, the quality and the conditions for supplies and services, including software products, by any Siemens entity having a registered office outside of Germany, shall be subject exclusively to the General Terms and Conditions of the respective Siemens entity.

For customers with a seat or registered office in the Federal Republic of Germany

The „General Terms of Payment“ as well as the „General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry“ shall apply.

For software products, the „General License Conditions for Software Products for Automation and Drives for Customers with a Seat or registered Office in Germany“ shall apply.

For customers with a seat or registered office outside of Germany

The „General Terms of Payment“ as well as the „General Conditions for Supplies of Siemens Automation and Drives for Customers with a Seat or registered Office outside of Germany“ shall apply.

For software products, the „General License Conditions for Software Products for Automation and Drives for Customers with a Seat or registered Office outside of Germany“ shall apply.

General

The prices are in € (Euro) ex works, exclusive packaging.

The sales tax (value added tax) is not included in the prices. It shall be debited separately at the respective rate according to the applicable legal regulations.

In addition to the prices of products which include silver, plump, aluminum and/or copper, surcharges may be calculated if the respective limits of the notes are exceeded. The respective note (e.g. source: German newspaper „Handesblatt“ in category „deutsche Edelmetalle“ and „Metallverarbeiter“) for silver („verarbeitetes Silber“), plump („Blei in Kabeln“), aluminum („Aluminium in Kabeln“) and copper („Elektrolytkupfer“, „DEL-Notiz“) respectively, of the day the order or rather the on call order is received, is decisive for the calculation of the surcharges.

Surcharges of copper shall be calculated for Drives at a note („DEL-Notiz“) above EUR 225,00 / 100 Kg and for chokes / transformers above EUR 150,00 / 100 kg.

Surcharges shall be charged based on the quantities of the materials which are contained in the relevant products.

Prices are subject to change without prior notice. We will debit the prices valid at the time of delivery.

The dimensions are in mm. Illustrations are not binding.

Insofar as there are no remarks on the corresponding pages, - especially with regard to data, dimensions and weights given - these are subject to change without prior notice.

Comprehensive Terms and Conditions of Sale and Delivery are available free of charge from your local Siemens business office under the following Order Nos.:

- 6ZB5310-0KR30-0BA0
(for customers based in the Federal Republic of Germany)
- 6ZB5310-0KS53-0BA0
(for customers based outside of the Federal Republic of Germany)

or download them from the Internet:

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

(Germany: A&D Mall Online-Help System)

Export regulations

The products listed in this catalog / price list may be subject to European / German and/or US export regulations.

Therefore, any export requiring a license is subject to approval by the competent authorities.

According to current provisions, the following export regulations must be observed with respect to the products featured in this catalog / price list:

AL	Number of the <u>German Export List</u> . Products marked other than “N” require an export license. In the case of software products, the export designations of the relevant data medium must also be generally adhered to. Goods labeled with an “ <u>AL not equal to N</u> ” are subject to a European or German export authorization when being exported out of the EU.
ECCN	<u>Export Control Classification Number</u> . Products marked other than “N” are subject to a reexport license to specific countries. In the case of software products, the export designations of the relevant data medium must also be generally adhered to. Goods labeled with an “ <u>ECCN not equal to N</u> ” are subject to a US re-export authorization.

Even without a label or with an “AL: N” or “ECCN: N”, authorization may be required due to the final destination and purpose for which the goods are to be used.

The deciding factors are the AL or ECCN export authorization indicated on order confirmations, delivery notes and invoices.

Errors excepted and subject to change without prior notice.

A&D/VuL/En 17.03.05

Further information can be obtained from our branch offices listed in the appendix or at www.siemens.com/automation/partner

Automation and Drives	<i>Catalog</i>	Industrial Communication for Automation and Drives	<i>Catalog</i> IK PI
Interactive catalog on CD-ROM			
• The Offline Mall of Automation and Drives	CA 01		
Automation Systems for Machine Tools		Low-Voltage Controls and Distribution	
SINUMERIK & SIMODRIVE	NC 60	Low-Voltage Switchgear – Controlgear for Industry	LV 10
SINUMERIK & SINAMICS	NC 61	Power Distribution – Products and Systems for Low-Voltage Power Distribution	LV 30
		SIDAC reactors and filters	LV 60
Drive Systems		SIVACON 8PS Busbar trunking systems	LV 70
<u>Variable-Speed Drives</u>		CD, BD01, BD2 up to 1250 A	
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	Motion Control System SIMOTION	PM 10
SINAMICS S150 Drive Converter Cabinet Units	D 21.3		
DC Motors	DA 12	Process Instrumentation and Analytics	
SIMOREG DC MASTER 6RA70 Digital Chassis Converters	DA 21.1	Field Instruments for Process Automation	FI 01
SIMOREG K 6RA22 Analog Chassis Converters	DA 21.2	Measuring Instruments for Pressure, Differential Pressure, Flow, Level and Temperature, Positioners and Liquid Meters	
SIMOREG DC MASTER 6RM70 Digital Converter Cabinet Units	DA 22	<i>PDF: Indicators for panel mounting</i>	MP 12
SIMOVERT PM Modular Converter Systems	DA 45	SIREC Recorders and Accessories	MP 20
SIEMOSYN Motors	DA 48	SIPART, Controllers and Software	MP 31
MICROMASTER 410/420/430/440 Inverters	DA 51.2	SIWAREX Weighing Systems	WT 01
MICROMASTER 411/COMBIMASTER 411	DA 51.3	Continuous Weighing and Process Protection	WT 02
SIMOVERT MV Medium-Voltage Drives	DA 63	Gas Analysis Equipment for the Process Industry	PA 10
SIMOVERT MASTERDRIVES Vector Control	DA 65.10	<i>PDF: Process Analytics, Components for the System Integration</i>	PA 11
SIMOVERT MASTERDRIVES Motion Control	DA 65.11	SIPAN Liquid Analysis	PA 20
Synchronous and asynchronous servomotors for SIMOVERT MASTERDRIVES	DA 65.3		
SIMODRIVE 611 universal and POSMO	DA 65.4	SIMATIC Industrial Automation Systems	
<u>Low-Voltage Three-Phase-Motors</u>		SIMATIC PCS Process Control System	ST 45
Squirrel-Cage Motors, Totally Enclosed, Fan-Cooled	M 11	Products for Totally Integrated Automation and Micro Automation	ST 70
<u>Automation Systems for Machine Tools SIMODRIVE</u>	NC 60	SIMATIC PCS 7 Process Control System	ST PCS 7
• Main Spindle/Feed Motors		<i>PDF: Add-ons for the SIMATIC PCS 7 Process Control System</i>	ST PCS 7.A
• Converter Systems SIMODRIVE 611/POSMO		pc-based Automation	ST PC
<u>Automation Systems for Machine Tools SINAMICS</u>	NC 61	SIMATIC Control Systems	ST DA
• Main Spindle/Feed Motors			
• Drive System SINAMICS S120		SIPOS Electric Actuators	
<u>Drive and Control Components for Hoisting Equipment</u>	HE 1	Electric Rotary, Linear and Part-turn Actuators	MP 35
		Electric Rotary Actuators for Nuclear Plants	MP 35.1/2
Electrical Installation Technology		Systems Engineering	
ALPHA Small Distribution Boards and Distribution Boards	ET A1	Power supplies SITOP power	KT 10.1
<i>PDF: ALPHA 8HP Molded-Plastic Distribution System</i>	ET A3	System cabling SIMATIC TOP connect	KT 10.2
ALPHA FIX Terminal Blocks	ET A5		
BETA Modular Installation Devices	ET B1	System Solutions	
DELTA Switches and Outlets	ET D1	Applications and Products for Industry are part of the interactive catalog CA 01	
GAMMA Building Management Systems	ET G1		
Sensors for Factory Automation	FS 10	TELEPERM M Process Control System	
		<i>PDF: AS 488/TM automation systems</i>	PLT 112
Human Machine Interface Systems SIMATIC HMI	ST 80		

www.siemens.com/simatic

Siemens AG

Automation and Drives
Industrial Automation Systems
Postfach 4848
90327 NÜRNBERG
Germany

www.siemens.com/automation

The information provided in this catalog contains descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract. Availability and technical specifications are subject to change without notice.

All product designations may be trademarks or product names of Siemens AG or supplier companies whose use by third parties for their own purposes could violate the rights of the owners.

Order No. E86060-K4670-A151-A2-7600