Overview

SIMATIC WinCC

SIMATIC WinCC V7 SCADA system

The scalable and open SCADA system for maximum plant transparency and productivity

- Efficiency:
  As a key to greater productivity, SIMATIC WinCC combines efficient engineering with high-performance archiving and maximum data security. With integrated diagnostics functions and flexible production analysis, you shorten the time-to-market and also reduce your plant standstill times.
  SIMATIC WinCC is the basis for efficient operations management and intelligent production analyses, so it offers a secure basis for deciding on optimization measures, and thus more productivity at lower cost.
- Scalability:
  With SIMATIC WinCC, it is possible to implement plants in all industrial sectors and technologies, and easily expand or modernize them by means of options or add-ons, in functional terms or sector-specifically.
  You can benefit from the redundancy concepts for enhanced availability, or decide on centralized archiving and analysis of plant information. SIMATIC WinCC offers stationary and mobile solutions to cover increasing demands.
- Innovation:
  With innovative technology, you have all the important information in view at all times. In this way, SIMATIC WinCC simplifies intuitive operation and monitoring of the production plant – even remotely. Stay informed with mobile SCADA solutions anywhere and at any time – including with existing tablet and smartphone hardware.
  The use of multi-touch gestures in the industrial environment opens the door to modern operator concepts.
- Openness:
  Since international standards and system-internal script and programming interfaces are supported, special requests can also be easily implemented.
  SIMATIC WinCC backs cross-vendor communication for integrating existing hardware, as well as for simple integration into the IT world. WinCC Specialists are available worldwide as qualified solution providers. These certified and centrally audited partners are ready to implement your individual SCADA project even in diversified client-server architectures with redundancy, or in applications with energy data management systems.
  SIMATIC WinCC is designed to be independent of any specific technology or industrial sector, modular in structure, and easy to expand. It is used worldwide in single-user applications in mechanical engineering, as well as in complex multi-user solutions with redundant servers or Web-based client access. References from many industries prove the versatility and performance capability.

http://www.siemens.com/wincc-v7

Overview

- PC-based operator control and monitoring system for visualizing and operating processes, production flows, machines and plants in all sectors – from 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. Based on the open programming interfaces, a wide range of WinCC options (from Siemens Industry Automation) and WinCC add-ons have been developed (by Siemens-internal and external partners).
- WinCC can be operated with every PC that meets the given HW requirements. The SIMATIC IPC product range is available in particular for the industrial use of WinCC systems. SIMATIC IPCs impress with their powerful PC technology, are designed for round-the-clock operation, and can be operated in both office areas and harsh industrial environments.

Current versions:

SIMATIC WinCC V7.4 SP1

Executable with:

- Windows 7 Professional, Enterprise, Ultimate (32-/64-bit)
- Windows 8.1 Professional, Enterprise (32-/64-bit)
- Windows 10 Professional, Enterprise, LTSB 2015, LTSB 2016 (64-bit)
- Windows 2008 Server R2 SP1 (64-bit)
- Windows 2012 Server R2 (64-bit)
- Windows 2016 Server (64-bit)
- Includes Microsoft SQL Server 2014 SP1 (32-bit)

SIMATIC WinCC V7.3

Executable with

- Windows 7 SP1 Professional, Enterprise, Ultimate (32-/64-bit)
- Windows 8.1 Professional, Enterprise (32-/64-bit)
- Windows 2008 Server SP2 Standard (32-bit)
- Windows 2008 Server R2 SP1 Standard (64-bit)
- Windows 2012 Server R2 Standard (64-bit)
- Includes Microsoft SQL Server 2008 R2 SP2 (32-bit)

Use in virtual environments – for more information see:

http://support.automation.siemens.com/WW/view/en/49370459

SIMATIC SCADA and SIMATIC IPCs

Perfect interaction for optimum productivity.

- Price advantage as "Package" comprising hardware and software
- System-tested solutions reduce testing overhead
- Simple ordering and synchronized logistics

Only if ordered together with the SIMATIC IPC.

Benefits

- All-purpose
  - Solutions for all sectors
  - Multilingual for worldwide usage
  - Can be integrated into all automation solutions
- All operator control & monitoring functions on board
  - User administration
  - Operator control and monitoring
  - Reporting, acknowledging, and archiving of events
  - Collecting, consolidating and archiving measured values (including long-term backup)
  - Logging and documenting of process and configuration data
- Can be configured simply and efficiently
  - Configuration wizards let the user focus on the essentials
  - In the picture by means of cross-reference lists and screen property displays
  - Configuration of multilingual applications
  - Configuring tool for configuring bulk data
- Universally scalable
  - Expandable from single station to client-server configurations
  - Increased availability by means of redundant servers
  - Process visualization via the Web with the WinCC WebNavigator or WebUX
- Open standards for simple integration
  - Powerful real-time database Microsoft SQL Server 2008 R2 SP2 (32-bit)
  - Open for application modules with ActiveX controls
  - Visual Basic for Applications for individual expansions
  - OPC for cross-vendor communication
- Process visualization with Plant Intelligence
  - Integrated evaluation functions for the online analysis (statistical process control)
  - Production optimization with the help of diverse options
- Expandable using options and add-ons
  - Options for scalable configurations
  - Options for increasing the availability
  - Options for IT & business integration
  - Options for SCADA expansions
  - Options for validation in accordance with FDA 21 CFR Part 11
  - Options for the use of telecontrol protocols
- Part of Totally Integrated Automation
  - Direct access to the tag and message configuration of the SIMATIC control system
  - Integrated diagnostic functions for increasing productivity

News V7.4/V7.4 SP1

- Supports Windows 10 Professional and Enterprise (64-bit)
- Extended functionality for WinCC WebUX
  - Expansion to include additional controls
  - Dynamization can be implemented with VB script and dynamic response dialog
- Expansion of the SIMATIC S7-1200 and S7-1500 communication channels
  - Increased number of connections (S7-1500 with up to 128 connections)
  - Transmission of byte data blocks
- Easier configuration with WinCC Configuration Studio
  - Efficient engineering with "drag-and-drop"
  - VBA in the WinCC Configuration Studio
- Simplified runtime operation
  - Touch operation in runtime (zoom and pan within "right click" controls)
  - Adapt "Favorites" system dialog in Runtime
  - Control toolbar size is configurable
- Uniform license model for WinCC DataMonitor, WinCC WebNavigator and WinCC WebUX. Version-independent packages can be cumulated, and WebNavigator and WebUX licenses can be combined
- Extended functionality for the WinCC Graphics Designer
- Introduction of new controls (BarChartControl for displaying archive tags in a bar chart, and SysDiagControl for system diagnostics of S7-1200/1500 controllers)
- New "OPC UA WinCC Channel" communication channel
- Remote maintenance via Remote Desktop Protocol
- and more ...

Application

SIMATIC WinCC is designed for visualization and operation of processes, manufacturing cycles, machines and plants. With its powerful process interface, especially to the SIMATIC family, and the secure data archiving, WinCC enables highly available solutions for the process control.

The sector-neutral basic system enables universal usage in all automation applications. Sector-specific solutions can, for example, be implemented using WinCC options (e.g. FDA options for the pharmaceutical industry) and sector-specific add-ons (e.g. for the water industry).

Design

SIMATIC WinCC is available as a complete package and as a runtime package with 128, 512, 2 048, 8 192, 65 536, 102 400, 153 600, 262 144 PowerTags.
PowerTags are data points that are connected to controllers or other data sources over a WinCC channel. Up to 32 alarms can be obtained from one data point. Moreover, internal tags without coupling are available for additional system performance.
In addition WinCC also contains 512 archive tags.
Additional archive licenses can be obtained for larger quantity structures.

Licenses for a multi-user configuration

The system software with the required number of PowerTags and additionally the option WinCC/Server must be installed on the WinCC server. In the basic configuration, one RT Client License is sufficient for the WinCC Clients [1].
An RC Client License is required to configure on clients [1].
Remote configuration is possible if WinCC Clients without their own project (Uni Client) are configured on the server project.

[1] The SQL Server Express is installed for RT / RC Clients.

Function

The powerful configuration functions of SIMATIC WinCC contribute to a reduced engineering and training overhead and lead to a more flexible use of personnel and greater operational reliability.

Anyone familiar with Microsoft Windows can also operate the WinCC Explorer, the central switching point of WinCC.
Even large quantities of data can be processed intuitively and efficiently with the WinCC Configuration Studio.

In combination with other SIMATIC components, the system is also equipped with auxiliary functions, such as process diagnostics and maintenance. All SIMATIC engineering tools work together in the configuration of the functions.

SIMATIC WinCC offers a complete basic functionality for process visualization and operation. To this end WinCC has a number of editors and interfaces that can be used to individually configure this functionality according to the respective application. Expansions of a WinCC station for control tasks are also possible with minimal engineering effort.

WinCC editors	Task or configurable runtime functionality
WinCC Explorer	Central project management for the quick access to all project data and central settings
WinCC Graphics Designer	Graphics system for user-defined visualization and operation via pixel-graphic objects
WinCC Configuration Studio	Alarm Logging Signaling system for detecting and archiving events with display and control options based on DIN 19235; freely selectable message classes, message display and logging WinCC Tag Logging Process archiving for the acquisition, compression and storage of measured values, e.g., presentation in trend and table format as well as further processing WinCC User Administrator For managing users and authorizations
WinCC Report Designer	Reporting and logging system for time and event-controlled documentation of messages, operator inputs and current process data in the form of user reports or project documentation in an arbitrary layout
WinCC Global Script	Processing functions with limitless functionality by means of the use of VBScript and ANSI-C

Interfaces

	Task or configurable runtime functionality
Communication channels	For communication with subordinate controls (SIMATIC protocols, PROFIBUS DP, PROFIBUS FMS, DDE and OPC server included in the scope of delivery)
Standard interfaces	For the open integration of other Windows applications via WinCC, WinCC-OLE-DB, ActiveX, OLE, DDE, OPC, etc.)
Programming interfaces	For the individual access to data and functions of WinCC and for the integration in user programs with VBA, VB Script, C-API (ODK), C-Script (ANSI-C)

Integration

Integration in company-wide solutions (IT and business integration)

WinCC is based on Microsoft technology, which ensures openness and integration capability. ActiveX and .net controls facilitate technology-specific and industry-specific expansions. Cross-manufacturer communication is also possible since WinCC can be used as an OPC client and server in addition to accessing current process values and supporting standards such as OPC HDA (Historical Data Access), OPC Alarm & Events, OPC XML Data Access, and OPC UA.

Just as important: Visual Basic for Applications (VBA) is available for user-specific expansions in engineering and Visual Basic Scripting (VBS) as an easy-to-learn, open, runtime language. If desired, professional application developers can also use ANSI-C.
The Open Development Kit (ODK) simplifies access to the API programming interfaces.

WinCC integrates a powerful and scalable archiving functionality based on Microsoft SQL Server 2014 SP1 into the basic system.

This gives the user multiple and varied options: from high-performance archiving of current process data, to long-term archiving with high data compression, through to a connection to the central information hub in the form of a company-wide Process Historian. Versatile clients and tools for evaluation, the open interfaces, and special options (Connectivity Pack, Connectivity Station, IndustrialDataBridge) provide the basis for effective IT and business integration.

WinCC offers various security mechanisms, such as encrypted communication, to ensure secure operation of the plant. If external networks are accessed, for example, suitable protective measures (incl. IT security measures, such as network segmentation) should still also be taken.

You can find more information on the topic of Industrial Security on the Internet at:

http://www.siemens.com/industrialsecurity

Integration in automation solutions

WinCC is an open process visualization system and provides the option to connect the most diverse control systems.

Approved communication software

Use communication software with the listed product versions (or higher). Corresponding SIMATIC NET upgrades are available for upgrading older versions.

Number of connectable controllers

For the number of controllers which can be connected via Industrial Ethernet CP 1613, the following applies to a message frame length of 512 bytes:

Type of connection	Number of nodes
SIMATIC S5 Ethernet Layer 4 + TCP/IP	up to 60
SIMATIC S7 Protocol Suite	up to 64
SIMATIC 505 Ethernet Layer 4 + TCP/IP OMS+	up to 60 up to 128

Via PROFIBUS, a maximum of 8 controllers can be connected with CP 5612, and a maximum of 44 controllers with CP 5613. Industrial Ethernet is recommended when 10 or more controllers are used.

Mixed operation with different controllers

With their multi-protocol stack, the CP 1613 and CP 5613 communication processors enable the parallel operation of two protocols, such as for the mixed operation of different controllers, via a single bus cable. WinCC supports the operation of two similar interface boards only in connection with the channels SIMATIC S5 Ethernet Layer 4 (2 x CP 1613), SIMATIC S7 Protocol Suite (2 x CP 1613, 2 x CP 5613) as well as PROFIBUS DP (4 x CP 5613; max. 122 slaves for each CP 5613).
In addition to communication via Industrial Ethernet CP 1613 or PROFIBUS CP 5613, one CP 5612/5622 can be used in each case for communication with SIMATIC S7 via MPI.

Client-server communication

Communication between the clients and the server is via TCP/IP protocol.
Setting up a separate PC LAN is recommended. For small projects with a correspondingly low incidence of message frames, SIMATIC NET Industrial Ethernet communication can be used for both process communication (WinCC/Server ↔ PLC) and PC-PC communication (WinCC/client ↔ WinCC/server).

Channel DLL PROFIBUS DP

In accordance with the PROFIBUS standard, DP/slaves are always permanently assigned to a DP master; i.e. a second WinCC station (DP/master) cannot access the same controllers (DP/slaves). This means that redundant operation of two WinCC stations is not possible using the PROFIBUS DP connection.

Integration (continued)

Connection to controllers from other manufacturers:

If a native driver is not available, OPC (OLE for process control) is available for connection to third-party controllers.

Current notes and information about OPC servers from various suppliers can be found at:

http://www.opcfoundation.org

WinCC supports the standards:

- OPC Data Access 2.05a
- OPC Data Access 3.00
- OPC XML Data Access 1.00 (Connectivity Pack/Connectivity Station)
- OPC HDA 1.20 (Connectivity Pack/Connectivity Station)
- OPC A&E 1.10 (Connectivity Pack/Connectivity Station)
- OPC UA Client Data Access
- OPC UA Server Data Access, HDA, Alarm & Condition (Connectivity Pack / Connectivity Station)

Connection overview

Protocol	Description
SIMATIC S7	
SIMATIC S7 Protocol Suite	Channel DLL for S7 functions via MPI, PROFIBUS or Ethernet Layer 4 + TCP/IP
SIMATIC S5	
SIMATIC S5 Ethernet Layer 4	Channel DLL for S5 Layer 4 communication + TCP/IP
SIMATIC S5 Programmer Port AS511	Channel DLL and driver for serial communication with S5 using AS511 protocol to programmers port
SIMATIC S5 Serial 3964R	Channel DLL and driver for serial communication with S5 using RK512 protocol
SIMATIC S5 PROFIBUS-FDL	Channel DLL for S5-FDL
SIMATIC 505	
SIMATIC 505 Serial	Channel DLL and driver for serial communication with 505 using NITP/TBP protocol to SIMATIC 535/545/555/565/575
SIMATIC 505 Ethernet Layer 4	Channel DLL for 505 Layer 4 communication
SIMATIC 505 TCP/IP	Channel DLL for 505 TCP/IP communication
SIMATIC S7-1200, S7-1500	
SIMATIC S7-1200, S7-1500 Channel	Channel DLL for S7-1200 and S7-1500 communication

Protocol	Description
Third-party controllers	
Allen Bradley Ethernet IP	Channel DLL and drivers for communication with Allen Bradley controllers via Ethernet TCP/IP using Ethernet IP protocol
Modbus TCP/IP	Channel DLL and drivers for communication with Modicon controllers via Ethernet TCP/IP using Modbus TCP/IP protocol
Mitsubishi MC TCP/IP	Channel DLL and drivers for communication with Mitsubishi controllers via Ethernet TCP/IP using Mitsubishi MC TCP/IP protocol
Cross-manufacturer	
OPC Client for DA, XML DA	Channel DLL for OPC communication, WinCC can acquire data from OPC server applications.
OPC Server for DA, XML DA, A&E, HDA	Server applications for OPC communication; WinCC provides process data to OPC Clients
OPC UA server for DA, HDA, A&C	Server applications for OPC UA communication
PROFIBUS FMS	Channel DLL for PROFIBUS FMS
PROFIBUS DP	Channel DLL for PROFIBUS DP
SIMOTION	Channel DLL for SIMOTION

Application note:

Parallel usage of the OPC client channel allows, for example, connection to an SNMP-OPC server for visualization of the data contained there. The SNMP OPC server enables monitoring of any network components (such as switches) that support the SNMP protocol.

You can find more information under SIMATIC NET Communications Systems/SNMP OPC Server.

Integration (continued)

Communications components for PG/PC for SIMATIC (for WinCC V7.4 SP1)

Industrial Ethernet	SIMATIC S5 Ethernet Layer 4	SIMATIC S5 TCP/IP	SIMATIC S7 Protocol Suite	SIMATIC 505 Ethernet Layer 4	SIMATIC 505 TCP/IP [1]	Article No.
WinCC – channel DLL						
SIMATIC S5 Ethernet Layer 4 Channel DLL for S5 Layer 4 communication + TCP/IP	•	•				Included in the basic package
SIMATIC S7 Protocol Suite Channel DLL for S7 functions			•			Included in the basic package
SIMATIC 505 Ethernet Layer 4 Channel DLL for 505 Layer 4 communication				•		Included in the basic package
SIMATIC 505 TCP/IP [1] Channel DLL for 505 TCP/IP communication					•	Included in the basic package
Communication components for extension of the OS/OP						
CP 1612 A2 PCI card for connecting a PG/PC to Industrial Ethernet (SOFTNET-S7 or SOFTNET-S7 Lean communication software must be ordered separately)		•	•		•	**6GK1161-2AA01**
SOFTNET-IE S7 communication software for S7 functions (max. 64 connections) • Version 13 SP2 [2][3] for Windows 7 SP1 (32/64-bit), Windows 8.1 (32/64-bit), Windows 2008 R2 SP1 Server, Server 2012 R2 (64-bit), and Windows 10 (64-bit)		•	•			**6GK1704-1CW13-0AA0**
SOFTNET-IE S7 Lean communication software for S7 functions (max. 8 connections) • Version 13 SP2 [2][3] for Windows 7 SP1 (32/64-bit), Windows 8.1 (32/64-bit), Windows 2008 R2 SP1 Server, Server 2012 R2 (64-bit), and Windows 10 (64-bit)		•	•			**6GK1704-1LW13-0AA0**
CP 1613 A2 PCI card (32-bit) for connecting a PG/PC to Industrial Ethernet (S7-1613 communication software required)	•	•	•	•	•	**6GK1161-3AA01**
CP 1623 PCI Express X1 card (32-bit) for connecting a PG/PC to Industrial Ethernet (S7-1613 communication software required)	•	•	•	•	•	**6GK1162-3AA00**
CP 1628 PCI Express X1 card (32-bit) for connecting a PG/PC to Industrial Ethernet (HARDNET-IE S7 / S7-1613 communication software required)	•	•	•	•	•	**6GK1162-8AA00**
HARDNET-IE S7 / S7-1613 communication software for S7 functions, OPC, PG/OP communication • Version 13 SP2 [2][3] for Windows 7 SP1 (32/64-bit), Windows 8.1 (32/64-bit), Windows 2008 R2 SP1 Server, Server 2012 R2 (64-bit), and Windows 10 (64-bit)	•	•	•	•		**6GK1716-1CB13-0AA0**

• System interface possible

[1] Via any interface board with NDIS 3.0 interface; no separate communication software required

[2] See ordering data for SIMATIC NET upgrade packages

[3] SIMATIC NET Version V12 SP2 is supplied together with WinCC V7.4 SP1

[4] SOFTNET-S7 Lean included in scope of supply of WinCC V7.4 SP1

Integration (continued)

Communications components for PG/PC for SIMATIC (for WinCC V7.4 SP1)

PROFIBUS	SIMATIC S5 PROFIBUS FDL	SIMATIC S7 Protocol Suite	PROFIBUS DP	PROFIBUS FMS	Article No.
WinCC – channel DLL					
SIMATIC S5 PROFIBUS FDL Channel DLL for S5-FDL	•				Included in the basic package
SIMATIC S7 Protocol Suite Channel DLL for S7 functions		•			Included in the basic package
PROFIBUS DP Channel DLL for PROFIBUS DP			•		Included in the basic package
Communication components for extension of the OS/OP					
CP 5612 [2] PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communication software included in WinCC basic package)		•			**6GK1561-2AA00**
CP 5622 [2] PCI Express X1 card (32-bit) for connecting a PG/PC to PROFIBUS (communication software included in WinCC basic package)		•			**6GK1562-2AA00**
CP 5711 USB adapter for connecting a PG/PC to PROFIBUS or MPI (communication software included in WinCC basic package)		•			**6GK1571-1AA00**
CP 5613 A3 PCI card (32-bit) for connecting a PC to PROFIBUS (S7-5613, DP-5613 or FMS-5613 communication software required)	•	•	•	•	**6GK1561-3AA02**
CP 5614 A3 PCI card (32-bit) for connecting a PC to PROFIBUS (communication software must be ordered separately)	•	•	•	•	**6GK1561-4AA02**
CP 5623 PCI Express X1 card (32-bit) for connecting a PG/PC to PROFIBUS or MPI (**HARDNET PB S7** or **HARDNET PB DP** communication software required)	•	•	•	•	**6GK1562-3AA00**
HARDNET PB S7 Communication software for S7 functions + FDL • Version 8.2 SP1 [1)2)] for Windows 7 (32/64-bit) and Server 2008 R2 (64-bit)	•	•			**6GK1713-5CB08-2AA0**
HARDNET PB DP Communication software for DP master + FDL • Version 8.2. SP1 [1)2)] for Windows 7 (32/64-bit) and Server 2008 R2 (64-bit)	•		•		**6GK1713-5DB08-2AA0**

• System interface possible

1) See ordering data for SIMATIC NET upgrade packages

2) SIMATIC NET Version 8.2 SP1 is supplied together with WinCC V7.4 SP1

Integration (continued)

Communication components for PG/PC for SIMATIC (for WinCC V7.3)

Industrial Ethernet	SIMATIC S5 Ethernet Layer 4	SIMATIC S5 TCP/IP	SIMATIC S7 Protocol Suite	SIMATIC 505 Ethernet Layer 4	SIMATIC 505 TCP/IP [1]	Article No.
WinCC – channel DLL						
SIMATIC S5 Ethernet Layer 4 Channel DLL for S5 Layer 4 communication + TCP/IP	•	•				Included in the basic package
SIMATIC S7 Protocol Suite Channel DLL for S7 functions			•			Included in the basic package
SIMATIC 505 Ethernet Layer 4 Channel DLL for 505 Layer 4 communication				•		Included in the basic package
SIMATIC 505 TCP/IP [1] Channel DLL for 505 TCP/IP communication					•	Included in the basic package
Communication components for extension of the OS/OP						
CP 1612 A2 PCI card for connecting a PG/PC to Industrial Ethernet (SOFTNET-S7 or SOFTNET-S7 Lean communication software must be ordered separately)		•	•		•	**6GK1161-2AA01**
SOFTNET-IE S7 communication software for S7 functions (max. 64 connections)		•	•			
• Version 8.2 SP1 [2)3)] for Windows 7 (32/64-bit) and Server 2008 R2 (64-bit)						**6GK1704-1CW08-2AA0**
• Edition 2008 SP6 (V7.1) [2)] for Windows XP/2003 Server/(32-bit) 2008 Server						**6GK1704-1CW71-3AA0**
SOFTNET-IE S7 Lean communication software for S7 functions (max. 8 connections)		•	•			
• Version 8.2 SP1 [2) 4)] for Windows 7 (32/64-bit) and Server 2008 R2 (64-bit)						**6GK1704-1LW08-2AA0**
• Edition 2008 SP6 (V7.1) [2) 4)] for Windows XP/2003 Server / (32-bit) 2008 Server						**6GK1704-1LW71-3AA0**
CP 1613 A2 PCI card (32-bit) for connecting a PG/PC to Industrial Ethernet (S7-1613 communication software required)	•	•	•	•	•	**6GK1161-3AA01**
CP 1623 PCI Express X1 card (32-bit) for connecting a PG/PC to Industrial Ethernet (S7-1613 communication software required)	•	•	•	•	•	**6GK1162-3AA00**
CP 1628 PCI Express X1 card (32-bit) for connecting a PG/PC to Industrial Ethernet (HARDNET-IE S7 / S7-1613 communication software required)	•	•	•	•	•	**6GK1162-8AA00**
HARDNET-IE S7 / S7-1613 communication software for S7 functions and S5/505 Layer 4 communication with TCP/IP	•	•	•	•		
• Version 8.2 SP1 [2)3)] for Windows 7 (32/64-bit) and Server 2008 R2 (64-bit)						**6GK1716-1CB08-2AA0**
• Edition 2008 SP6 (V7.1) [2)] for Windows XP/2003 Server / (32-bit) 2008 Server						**6GK1716-1CB71-3AA0**

• System interface possible

1) Via any interface board with NDIS 3.0 interface; no separate communication software required

2) See ordering data for SIMATIC NET upgrade packages

3) SIMATIC NET Version 8.2 SP1 is supplied together with WinCC V7.3

4) SOFTNET S7 Lean included in scope of supply of WinCC V7.3

Integration (continued)

Communication components for PG/PC for SIMATIC (for WinCC V7.3)

PROFIBUS	SIMATIC S5 PROFIBUS FDL	SIMATIC S7 Protocol Suite	PROFIBUS DP	PROFIBUS FMS	Article No.
WinCC – channel DLL					
SIMATIC S5 PROFIBUS FDL Channel DLL for S5-FDL	•				Included in the basic package
SIMATIC S7 Protocol Suite Channel DLL for S7 functions		•			Included in the basic package
PROFIBUS DP Channel DLL for PROFIBUS DP			•		Included in the basic package
PROFIBUS FMS Channel DLL for PROFIBUS FMS				•	Included in the basic package
Communication components for extension of the OS/OP					
CP 5612 [2] PCI card (32-bit) for connecting a PG/PC to PROFIBUS (communication software included in WinCC basic package)		•			**6GK1561-2AA00**
CP 5622 [2] PCI Express X1 card (32-bit) for connecting a PG/PC to PROFIBUS (communication software included in WinCC basic package)		•			**6GK1562-2AA00**
CP 5711 USB Adapter for connecting a PG/PC to PROFIBUS or MPI (communications software included in the WinCC basic package)		•			**6GK1571-1AA00**
CP 5613 A3 PCI card (32-bit) for connecting a PC to PROFIBUS (S7-5613, DP-5613 or FMS-5613 communication software required)	•	•	•	•	**6GK1561-3AA02**
CP 5614 A3 PCI card (32-bit) for connecting a PC to PROFIBUS (communication software must be ordered separately)	•	•	•	•	**6GK1561-4AA02**
CP 5623 PCI Express X1 card (32-bit) for connecting a PG/PC to PROFIBUS or MPI (S7-5613 communication software or DP-5613 or FMS-5613 required)	•	•	•	•	**6GK1562-3AA00**
HARDNET PB S7 Communication software for S7 functions + FDL					
• Version 8.2 SP1 [1][2] for Windows 7 (32/64-bit) and Server 2008 R2 (64-bit)	•	•			**6GK1713-5CB08-2AA0**
• Edition 2008 SP6 (V7.1) [1] [2] for Windows XP/2003 Server / (32-bit) 2008 Server	•	•			**6GK1713-5CB71-3AA0**
HARDNET PB DP Communication software for DP master + FDL					
• Version 8.2. SP1 [1][2] for Windows 7 (32/64-bit) and Server 2008 R2 (64-bit)	•		•		**6GK1713-5DB08-2AA0**
• Edition 2008 SP6 (V7.1) [1] [2] for Windows XP/2003 Server / (32-bit) 2008 Server	•		•		**6GK1713-5DB71-3AA0**
FMS-5613 communication software for PROFIBUS-FMS + FDL	•			•	**6GK1713-5FB71-3AA0**
• Edition 2008 SP6 (V7.1) [1] [2] for Windows XP/2003 Server / (32-bit) 2008 Server					

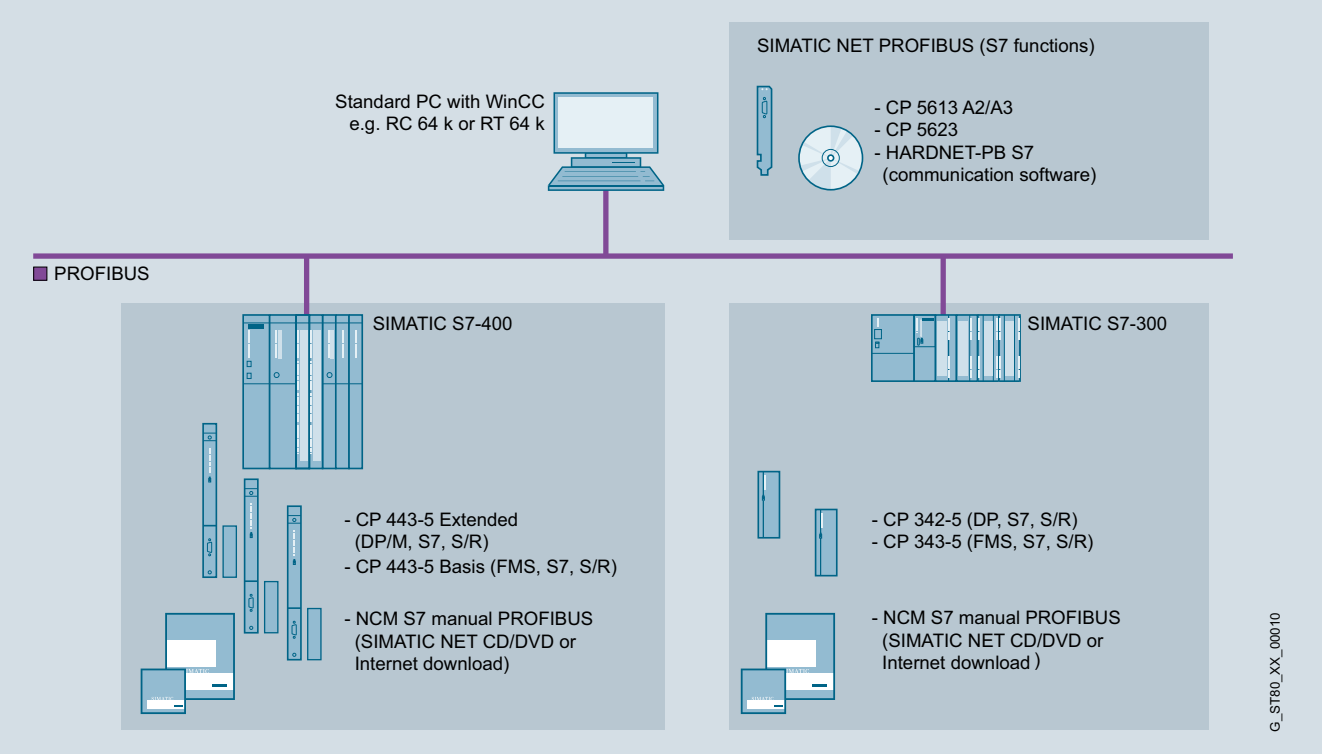
• System interface possible

[1] See ordering data for SIMATIC NET upgrade package

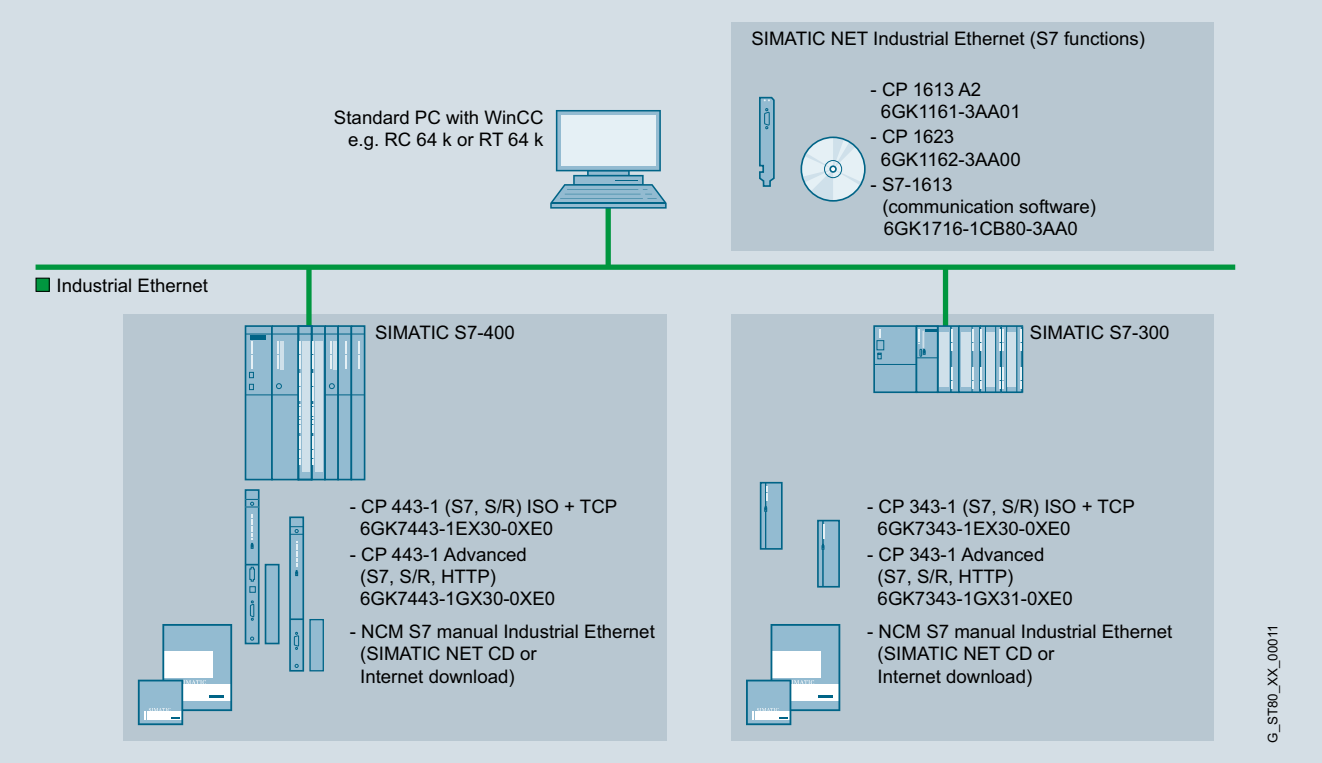
[2] SIMATIC NET Version 8.2 SP1 is supplied together with WinCC V7.3

Integration (continued)

Communication examples

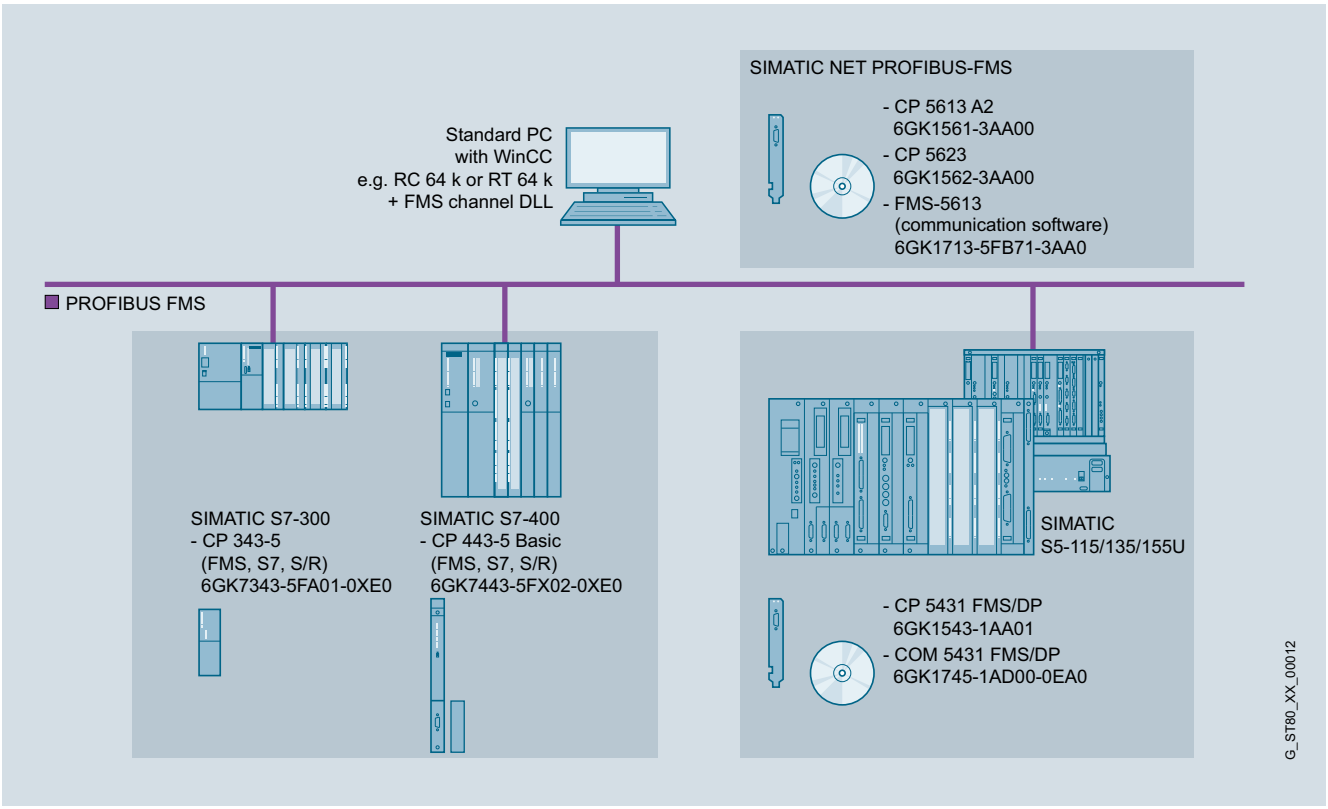


WinCC single-user system: PROFIBUS with S7 communication

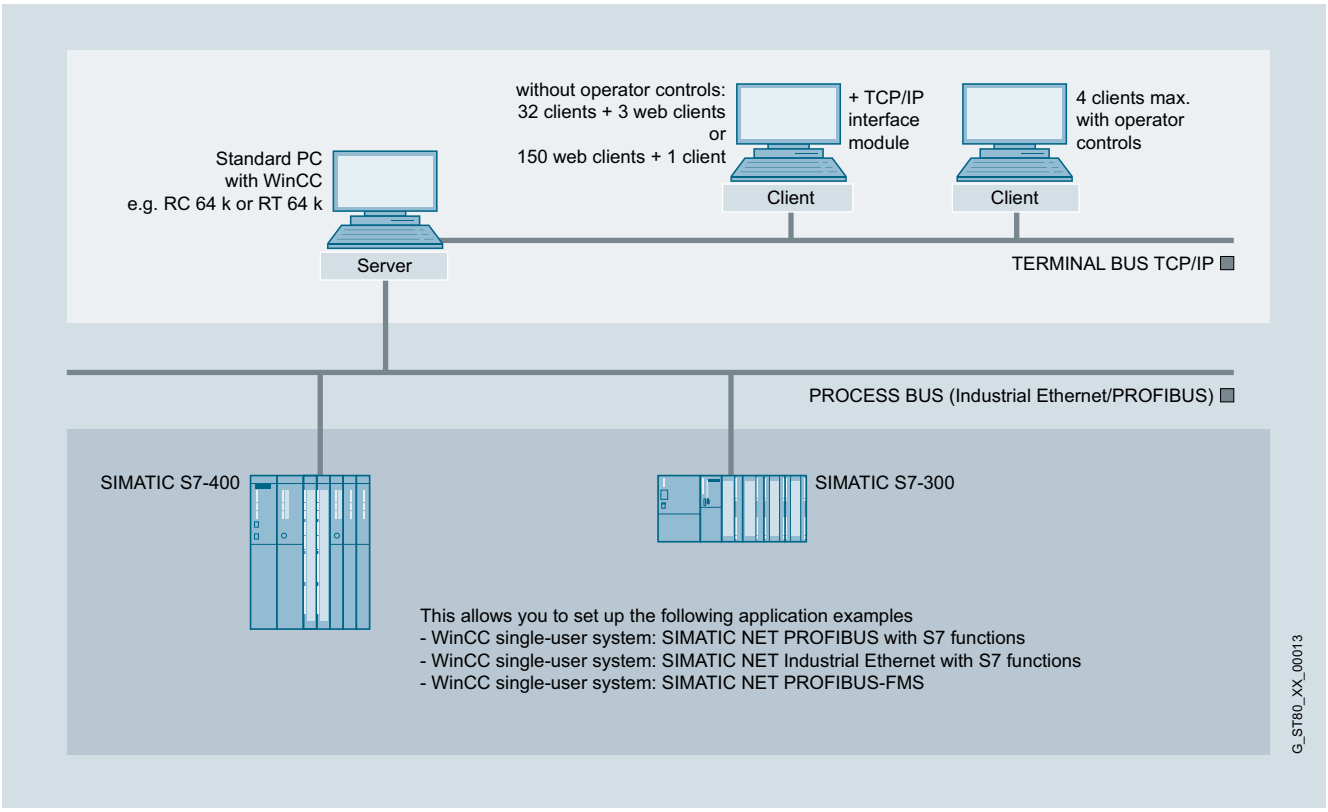


WinCC single-user system: Industrial Ethernet with S7 communication

Integration (continued)

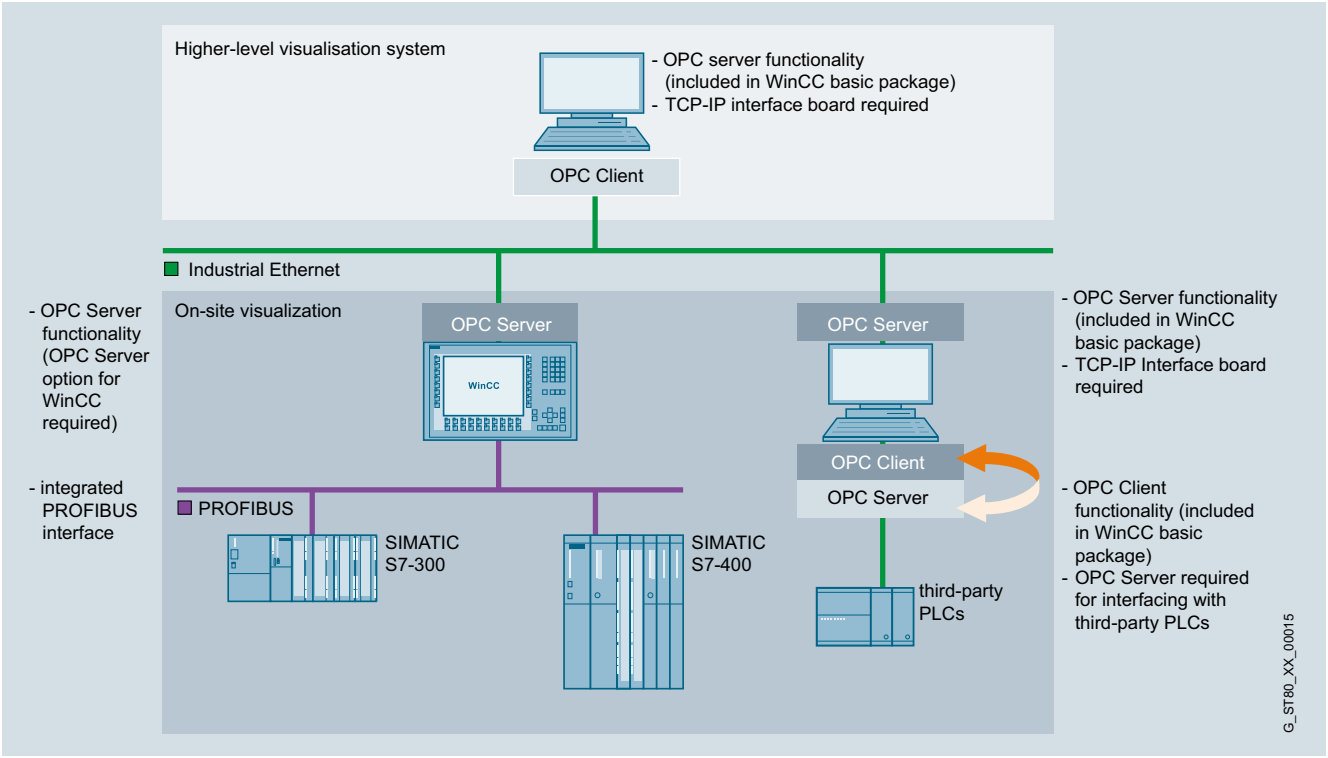


WinCC single-user system: PROFIBUS FMS



WinCC multi-user system with operable server

Integration (continued)



OPC link

Technical specifications

Type	SIMATIC WinCC V7.4 SP1 [1]
Operating system	• Windows 7 Ultimate, Professional and Enterprise (32-bit / 64-bit) • Windows 8.1 Professional and Enterprise (32-bit / 64-bit) • Windows 10 Professional, Enterprise, LTSB 2015, LTSB 2016 (64-bit) • Windows 2008 Server R2 SP1 (64-bit) • Windows 2012 Server R2 (64-bit) • Windows 2016 Server (64-bit)
PC hardware requirements	
Processor type [1]	
• Minimum	Single-user station/server: Dual-core; 2.5 GHz [2] Client: Dual-core; 2.5 GHz [2] Web client: Dual-core; 2 GHz
• Recommended	Single-user station/server: Multi-core; 3.5 GHz [2] Client: Multi-core; 3 GHz [2] Web client: Dual-core; 3 GHz

Type	SIMATIC WinCC V7.4 SP1 [1]
Work memory RAM	
• Minimum	Windows 7/ Windows 8.1 (32-bit) • Single-user station/server: 2 GB • Client: 1 GB • Web client: 1 GB Windows 7/ Windows 8.1/ Windows 10 (64-bit) • Single-user station/server: 4 GB • Client: 2 GB • Web client: 1 GB Windows Server 2008 R2/ Windows Server 2012 R2 Server: 4 GB
• Recommended	Windows 7/ Windows 8.1 (32-bit) • Single-user station/server: 3 GB • Client: 2 GB • Web client: 2 GB Windows 7/ Windows 8.1/ Windows 10 (64-bit) • Single-user station/server: 4 GB • Client: 4 GB • Web client: 2 GB Windows Server 2008 R2/ Windows Server 2012 R2 Server: 8 GB

[1] An AMD system with comparable performance can also be used

[2] Hardware requirements when using Microsoft XP Professional

Technical specifications (continued)

Type	SIMATIC WinCC V7.4 SP1 [1]
Graphics card	
• Minimum	16 MB, 800 x 600 [2]
• Recommended	32 MByte, 1 920 x 1 080 [2]
Hard disk	
• Minimum	Single-user station/server: 80 GB
	Client: 20 GB
	WebClient/DataMonitor Client: 5 GB
• Recommended	Single-user station/server: 160 GB
	Client: 40 GB
	WebClient/DataMonitor Client: 10 GB
• Hard disk (available memory for installation)	
- Minimum	• Client: 1.5 GB • Server: > 1.5 GB
- Recommended	• Client: > 1.5 GB • Server: 2 GB
CD-ROM/DVD-ROM/disk drive/ USB port	For software installation

[1] An AMD system with comparable performance can also be used

[2] Hardware requirements when using Microsoft XP Professional

Type	SIMATIC WinCC V7.4 SP1
Functionality/quantity structure	
Number of messages	150,000
• Message text (number of characters)	10 x 256
• Message archive	system-limited [1]
• Process values per message	10
• Constant load of messages, max.	Server/single-user station: 10/s
• Message burst, max.	Server/single-user station: 2,000/10 s every 5 min
Archives	
• Archive data points	Max. 80,000 per server [2]
• Archive types	Short-term archive with and without long-term archiving
• Data storage format	Microsoft SQL Server 2014 SP1
• Measured values per second, max.	Server/single-user station: 5 000/s
User archive	
• Total archives	No limit
• Fields per user archive	500 (maximum number of 1 000 000 fields)
• Data records per user archive	10 000
• User archive views	No limit
Graphics system	
• Number of screens	System-limited [1]
• Number of objects per screen	System-limited [1]
• Number of controllable fields per screen	System-limited [1]
PowerTags	256 K [3]
Trends	
• Trend views per image	25
• Trends per trend view	80
User administration	
• User groups	128
• Number of users	128
• Authorization groups	999
Configuration languages	5 European (deu, eng, fra, ita, esp), 4 Asian (chs, cht, kor, jpn)
Protocols	
• Message sequence reports (simultaneously)	1 per server/single-user station
• Message archive reports (simultaneously)	3
• User reports	System-limited [1]
• Report lines per group	66
• Tags per report	300 [4]
Multi-user system	
• Server	18
• Uni Client (without its own project)	max. 64
• Multi-Client (with its own project)	max. 50

[1] Dependent on the available storage space

[2] Dependent on the number of licensed archive tags (ArchiveTags)

[3] Dependent on the number of licensed PowerTags

[4] The number of tags per report is dependent on the process communication performance

Ordering data	Article No.
SIMATIC WinCC system software	
V7.4 SP1	
Runtime packages on DVD	
Incl. 512 archive tags each; language/script versions: en, de, fr, it, es; with license for	
• WinCC RT Client	**6AV6381-2CA07-4AX0**
• 128 PowerTags (RT 128)	**6AV6381-2BC07-4AX0**
• 512 PowerTags (RT 512)	**6AV6381-2BD07-4AX0**
• 2 048 PowerTags (RT 2 048)	**6AV6381-2BE07-4AX0**
• 8 192 PowerTags (RT 8 192)	**6AV6381-2BH07-4AX0**
• 65 536 PowerTags (RT 65 536)	**6AV6381-2BF07-4AX0**
• 102 400 PowerTags (RT 102 400)	**6AV6381-2BJ07-4AX0**
• 153 600 PowerTags (RT 153 600)	**6AV6381-2BK07-4AX0**
• 262 144 PowerTags (RT 262 144)	**6AV6381-2BL07-4AX0**
As download	
• WinCC RT Client	**6AV6381-2CA07-4AH0**
• 128 PowerTags (RT 128)	**6AV6381-2BC07-4AH0**
• 512 PowerTags (RT 512)	**6AV6381-2BD07-4AH0**
• 2 048 PowerTags (RT 2 048)	**6AV6381-2BE07-4AH0**
• 8 192 PowerTags (RT 8 192)	**6AV6381-2BH07-4AH0**
• 65 536 PowerTags (RT 65 536)	**6AV6381-2BJ07-4AH0**
• 102 400 PowerTags (RT 102 400)	**6AV6381-2BJ07-4AH0**
• 153 600 PowerTags (RT 153 600)	**6AV6381-2BK07-4AH0**
• 262 144 PowerTags (RT 262 144)	**6AV6381-2BL07-4AH0**
Complete packages on DVD	
Language versions: en, de, fr, it, es; with license for	
• WinCC RC Client	**6AV6381-2CB07-4AX0**
• 128 PowerTags (RC 128)	**6AV6381-2BM07-4AX0**
• 512 PowerTags (RC 512)	**6AV6381-2BN07-4AX0**
• 2 048 PowerTags (RC 2 048)	**6AV6381-2BP07-4AX0**
• 8 192 PowerTags (RC 8 192)	**6AV6381-2BS07-4AX0**
• 65 536 PowerTags (RC 65 536)	**6AV6381-2BQ07-4AX0**
• 102 400 PowerTags (RC 102 400)	**6AV6381-2BT07-4AX0**
• 153 600 PowerTags (RC 153 600)	**6AV6381-2BU07-4AX0**
• 262 144 PowerTags (RC 262 144)	**6AV6381-2BV07-4AX0**
As download	
• WinCC RC Client	**6AV6381-2CB07-4AH0**
• 128 PowerTags (RC 128)	**6AV6381-2BM07-4AH0**
• 512 PowerTags (RC 512)	**6AV6381-2BN07-4AH0**
• 2 048 PowerTags (RC 2 048)	**6AV6381-2BP07-4AH0**
• 8 192 PowerTags (RC 8 192)	**6AV6381-2BS07-4AH0**
• 65 536 PowerTags (RC 65 536)	**6AV6381-2BQ07-4AH0**
• 102 400 PowerTags (RC 102 400)	**6AV6381-2BT07-4AH0**
• 153 600 PowerTags (RC 153 600)	**6AV6381-2BU07-4AH0**
• 262 144 PowerTags (RC 262 144)	**6AV6381-2BV07-4AH0**

	Article No.
V7.4 SP1 ASIA	
Runtime packages on DVD	
Incl. 512 archive tags each; language/script versions: en, zh-CN, zh-TW, ko, ja; with license for	
• WinCC RT Client	**6AV6381-2CA07-4AV0**
• 128 PowerTags (RT 128)	**6AV6381-2BC07-4AV0**
• 512 PowerTags (RT 512)	**6AV6381-2BD07-4AV0**
• 2 048 PowerTags (RT 2 048)	**6AV6381-2BE07-4AV0**
• 8 192 PowerTags (RT 8 192)	**6AV6381-2BH07-4AV0**
• 65 536 PowerTags (RT 65 536)	**6AV6381-2BF07-4AV0**
• 102 400 PowerTags (RT 102 400)	**6AV6381-2BJ07-4AV0**
• 153 600 PowerTags (RT 153 600)	**6AV6381-2BK07-4AV0**
• 262 144 PowerTags (RT 262 144)	**6AV6381-2BL07-4AV0**
Complete packages on DVD	
Language versions: en, zh-CN, zh-TW, ko, ja; with license for	
• WinCC RC Client	**6AV6381-2CB07-4AV0**
• 128 PowerTags (RC 128)	**6AV6381-2BM07-4AV0**
• 512 PowerTags (RC 512)	**6AV6381-2BN07-4AV0**
• 2 048 PowerTags (RC 2 048)	**6AV6381-2BP07-4AV0**
• 8 192 PowerTags (RC 8 192)	**6AV6381-2BS07-4AV0**
• 65 536 PowerTags (RC 65 536)	**6AV6381-2BQ07-4AV0**
• 102 400 PowerTags (RC 102 400)	**6AV6381-2BT07-4AV0**
• 153 600 PowerTags (RC 153 600)	**6AV6381-2BU07-4AV0**
• 262 144 PowerTags (RC 262 144)	**6AV6381-2BV07-4AV0**
V7.4 SP1 Powerpacks	
For upgrading from:	
Runtime packages	
• 128 to 512 PowerTags	**6AV6371-2BD07-4AX0**
• 512 to 2 048 PowerTags	**6AV6371-2BG07-4AX0**
• 2 048 to 8 192 PowerTags	**6AV6371-2BM07-4AX0**
• 8 192 to 65 536 PowerTags	**6AV6371-2BN07-4AX0**
• 65 536 to 102 400 PowerTags	**6AV6371-2BP07-4AX0**
• 102 400 to 153 600 PowerTags	**6AV6371-2BQ07-4AX0**
• 153 600 to 262 144 PowerTags	**6AV6371-2BR07-4AX0**
As download	
• 128 to 512 PowerTags	**6AV6371-2BD07-4AJ0**
• 512 to 2 048 PowerTags	**6AV6371-2BG07-4AJ0**
• 2 048 to 8 192 PowerTags	**6AV6371-2BM07-4AJ0**
• 8 192 to 65 536 PowerTags	**6AV6371-2BN07-4AJ0**
• 65 536 to 102 400 PowerTags	**6AV6371-2BP07-4AJ0**
• 102 400 to 153 600 PowerTags	**6AV6371-2BQ07-4AJ0**
• 153 600 to 262 144 PowerTags	**6AV6371-2BR07-4AJ0**
Complete packages	
• 128 to 512 PowerTags	**6AV6371-2BD17-4AX0**
• 512 to 2 048 PowerTags	**6AV6371-2BG17-4AX0**
• 2 048 to 8 192 PowerTags	**6AV6371-2BM17-4AX0**
• 8 192 to 65 536 PowerTags	**6AV6371-2BN17-4AX0**
• 65 536 to 102 400 PowerTags	**6AV6371-2BP17-4AX0**
• 102 400 to 153 600 PowerTags	**6AV6371-2BQ17-4AX0**
• 153 600 to 262 144 PowerTags	**6AV6371-2BR17-4AX0**
As download	
• 128 to 512 PowerTags	**6AV6371-2BD17-4AJ0**
• 512 to 2 048 PowerTags	**6AV6371-2BG17-4AJ0**
• 2 048 to 8 192 PowerTags	**6AV6371-2BM17-4AJ0**
• 8 192 to 65 536 PowerTags	**6AV6371-2BN17-4AJ0**
• 65 536 to 102 400 PowerTags	**6AV6371-2BP17-4AJ0**
• 102 400 to 153 600 PowerTags	**6AV6371-2BQ17-4AJ0**
• 153 600 to 262 144 PowerTags	**6AV6371-2BR17-4AJ0**