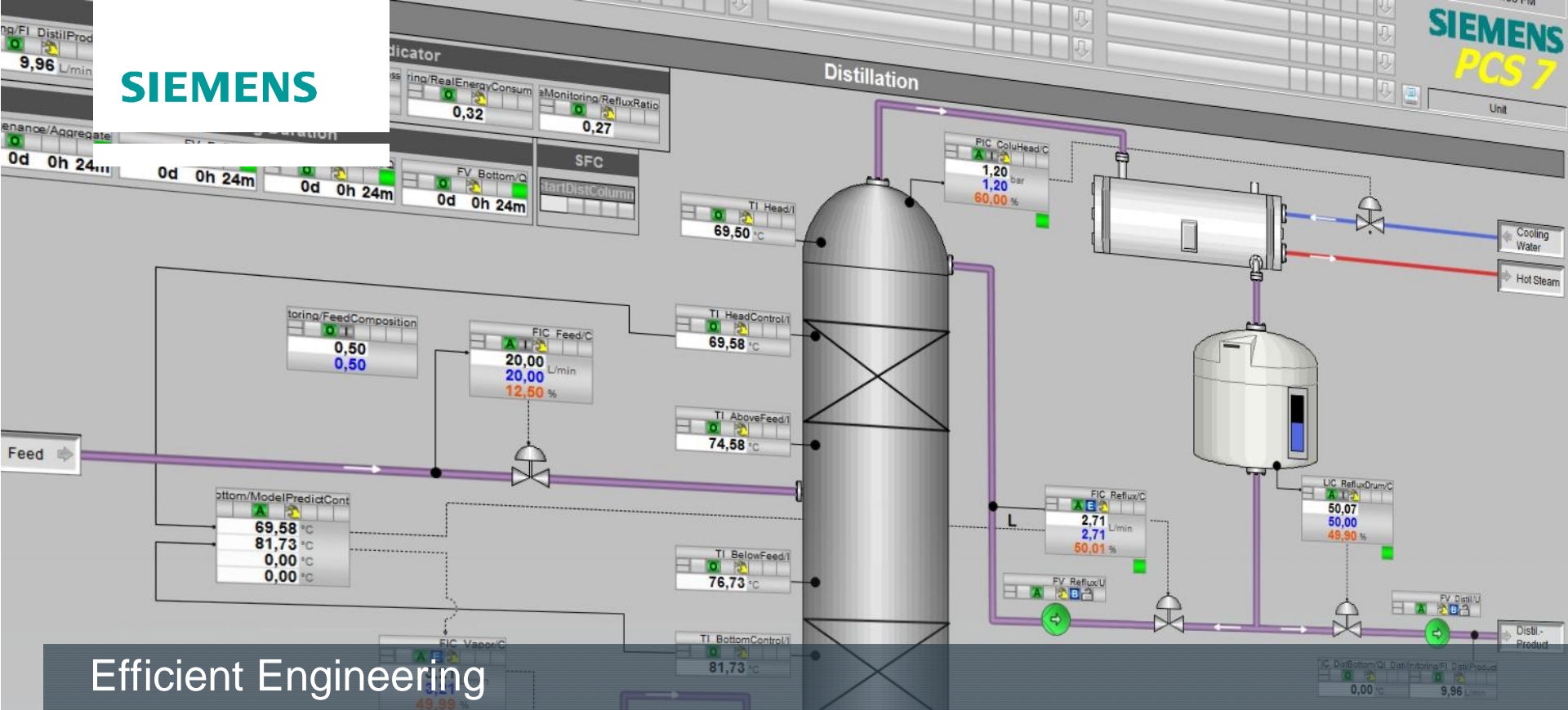


SIEMENS

SIEMENS
PCS 7

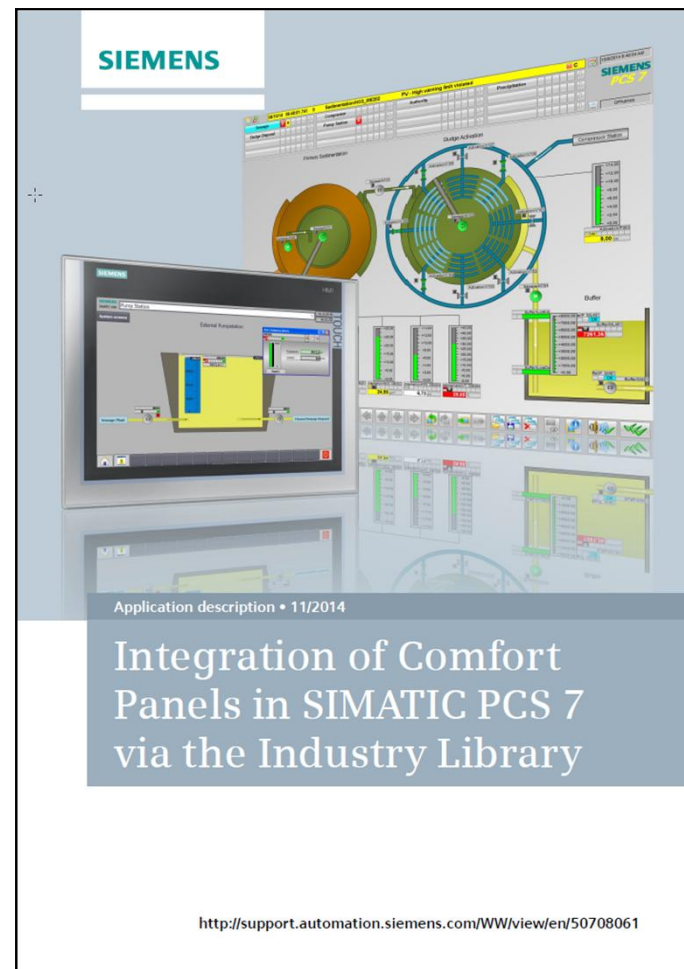


Efficient Engineering

PCS 7 Application Examples

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Introduction

This list should give you an overview of the existing PCS 7 Application Examples. Application Examples support you with functional and standardized solutions right from the beginning, in the planning and bidding phase, as well as during the engineering phase and commissioning. Besides the SIMATIC PCS 7 product it also emphasizes on the interaction of the whole system.

This gives you the following advantages:

- Standardized applications, functions and solutions
- Upgrading security thanks to PCS 7 conformance
- Cost-effective offers thanks to available, fully described and tested applications and solutions
- Building of know-how from functional descriptions and technical background knowledge

You can find all PCS 7 application examples and other technical information and solutions at a glance in the Online Support section at: www.siemens.com/industry/onlinesupport/pcs7

If you find our Application Examples useful for the planning and implementation of your projects, we would be very interested in your feedback. For helpful tips, please see the last chapter.

The following symbols help you when sorting out the below listed Application Examples concerning the content:



Commissioning Manual

In the Commissioning Manual you can find descriptions of functional solutions. Besides the SIMATIC PCS 7 product, these put particular emphasis on the interaction of the whole system.



System Architectures

System Architectures describe the architectures and components of SIMATIC PCS 7 in a basic structure. Various options and configured versions are also displayed in addition to the architectures.



Step by Step Instructions

The solutions and configurations are described in detail through step by step instructions that include images and graphics.



Code / Templates

Besides function descriptions there also other files available for download, including PCS 7 templates, blocks, scripts, code, etc.



Performance Data

The performance data available includes execution and response times as well as quantity frameworks such as, for example, how many PA field devices can be operated on one bus segment.



Checklists

Checklists are used to document the system structure and the settings within the software and hardware, including the corresponding function tests.

PCS 7 Compendium

Part A - Configuration Guidelines



Part A is about the implementation of the required automation functions with PCS 7. The work steps described in this document for project creation, configuration and parameter assignment provide the basis for the PCS 7 application to be created.

Entry ID: [107196780](#)

Part B – Process Safety



Part B is dedicated to the implementation of the fail-safe part of an S7 program. It examines the following F software components:

- S7 F Systems
- Safety Matrix Engineering Tool

Entry ID: [109476989](#)

Part C - Technical Functions with SFC Types



Part C focuses on implementing equipment phases with the help of SFC types. The description can be used for individual phases in continuous processes or for supporting SIMATIC BATCH applications in a "SIMATIC PCS 7-compliant" manner. Particular attention is paid to the following topics:

- Terms
- State logics
- Functionalities
- Solutions, recommendations
- Connecting to SIMATIC BATCH

Entry ID: [109098121](#)

Templates for specification of technical functions with SFC Types



The manual for implementing technical functions "PCS 7 Compendium Part C - Technical Functions with SFC Types" can be used for individual functions in continuous processes or for supporting batch applications in a "PCS 7-compliant" manner. In addition to it, we provide here several practice examples and templates to you which support at the specification of your technical functions.

Entry ID: [33412955](#)

PCS 7 Compendium

SIEMENS	Index	11
SIEMATIC	General information	12
Process Control System PCS 7	General information	13
Operation and Maintenance	General information	14
Hardware Manual	General information	15
	Index	16

Part D - Operation and Maintenance



Part D describes several runtime scenarios of a plant, for example, maintenance, expansion and upgrading. Particular attention is paid to the following topics in this regard:

- Planning and implementing PCS 7 updates
- Replacing modules as spare parts
- Updating firmware and PDM data
- Adding hardware and functions
- Checklists

Entry ID: [109098107](#)

SIEMENS	Index	11
SIEMATIC	General information	12
Process Control System PCS 7	General information	13
Hardware Manual	General information	14
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Part E – Hardware Installation



Part E is devoted to defining and describing test points for the hardware installation of process-related production facilities. Particular attention is paid to the following topics in this regard:

- Lines and connection technology
- Configuration and design of control cabinets
- Earthing, potential equalization and lightning protection
- Bus lines

Entry ID: [107226067](#)

SIEMENS	Index	11
SIEMATIC	General information	12
Process Control System PCS 7	General information	13
Hardware Manual	General information	14
	Index	15

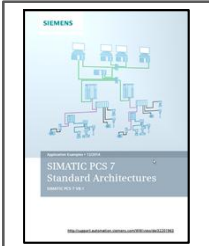
Part F – Industrial Security



Part F orients itself on the concept of defense-in-depth in its design and structure. In line with the concept, the individual sections are divided into the measures of network security (division into security cells, securing access points and secure communication between components in different security cells) and the measures of system integrity. (System hardening, User management & operator authorization, Patch management and Virus scanners)

Entry ID: [109476100](#)

Configurations

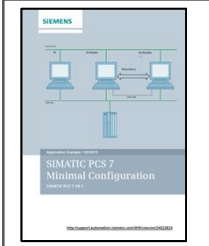


PCS 7 Standard Architectures



This document describes SIMATIC PCS 7 architectures and the components that are required to implement them. For the described architectures, various options and design choices are illustrated.

Entry ID: [32201963](#)



PCS 7 Minimal Configurations



SIMATIC PCS 7 is a scalable DCS which can be used both in small and large plants. The documentation focuses on the selection of suitable PC constellations for small plants and minimum configurations. The setup and configuration steps for the individual configurations are described in addition.

Entry ID: [24023824](#)

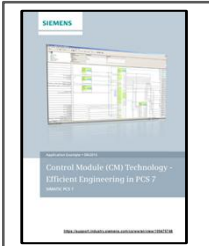


Process automation with the SIMATIC PCS 7 CPU 410-5H controller



The main focus of this document is to describe scenarios which explain relevant functions of the CPU 410-5H Process Automation in the AS 410 and illustrate advantages over the complementary S7-400 systems.

Entry ID: [96839331](#)



Control Module (CM) Technology - Efficient Engineering with SIMATIC PCS 7

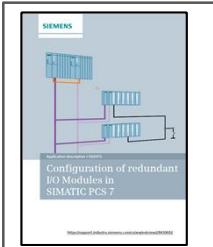


The Control Module (CM) technology is used not only to optimize engineering efforts but also to enable a standardized structure of the automation program while quickly adapting to future requirements.

This Application Example describes how to use the Control Module technology in the PCS 7 environment based on individual technology components and typical applications.

Entry ID: [109475748](#)

Configurations



Configuration of Redundant I/O Modules in SIMATIC PCS 7



In principle, the high availability in PCS 7 can be used at all levels. With SIMATIC ET 200M modules, the distributed I/O can also be designed as redundant. In this documentation the emphasis is placed on the application of redundant distributed I/O using ET 200M modules. Thereby, particularly the wiring options of the input/output modules as well as the individual configuration steps are explained.

Entry ID: [28430682](#)

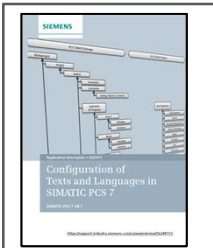


PCS 7 Multiproject / Multi-user Engineering



This document provides an overview of the different variants and positioning of multi-project and multi-user engineering. Both concepts are always independent; however, they supplement each other to provide efficient and flexible engineering.

Entry ID: [22258951](#)

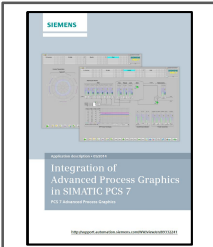


Configuration of Texts and Languages in SIMATIC PCS 7



SIMATIC PCS 7 is a powerful distributed control system which supports a number of languages. The documentation focuses on the necessary setting options for texts and languages in the operating system, as well as in AS and OS engineering.

Entry ID: [56248153](#)



Integration of Advanced Process Graphics in SIMATIC PCS 7

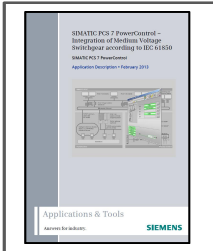


New HMI concepts such as Advanced Process Graphics (APG) are the key to task-specific or situation-specific decision-making criteria. APG is a visualization concept in which the plant operator and his tasks are the central focus.

The main application of APG is the visualization of plant sections in overview displays as well as the display of the overall process status. APG offloads plant operators and ensures that, despite increasing complexity and the expansion of operator tasks, the plant operator's work becomes simpler and more efficient.

Entry ID: [89332241](#)

Configurations

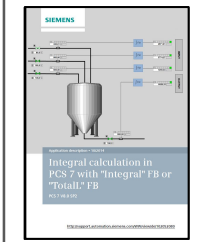


SIMATIC PCS 7 PowerControl Integration of Medium Voltage Switchgear according to IEC 61850



Two worlds, one system: SIMATIC PCS 7 PowerControl is our solution for the integration of the switchgear automation into process industry. It enables combining the process automation and the automation of electronic switchgear for medium voltage into one single system. The advantages for the plant operator: significant cost reduction across the entire life cycle of the plant.

Entry ID: [67688155](#)



Integral calculation in PCS 7 with "Integral" FB or "TotalL" FB



This Application Example describes how to calculate material quantities by using PCS 7 standard blocks from the APL (Advanced Process Library). Two different solution possibilities with the "Integral" and "TotalL" APL function blocks shall be shown to you.

Entry ID: [102052080](#)



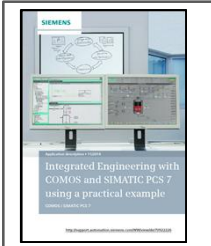
Buffering of Process Messages including Time Stamps with ALARM_7B



In the case of a disrupted connection to the operator station, the process messages can be buffered by using the SIMATIC PCS 7 alarm block "ALARM_7B". After restoration of the connection, the buffered alarms will be sent to the OS, together with the time stamp generated when the event occurred.

Entry ID: [20614217](#)

Engineering Tools



Integrated Engineering with COMOS and SIMATIC PCS 7



In this application, the principle of operation of "Integrated Engineering" with COMOS and SIMATIC PCS 7 is described in detail. Using an example, it is illustrated how the data exchange between both systems works.

Entry ID: [70922226](#)



Performant Bulk Engineering with SIMATIC PCS 7 Advanced ES



SIMATIC PCS 7 Advanced Engineering System (AdvES) extends the functionality of a system configuration. It serves as a link between standard engineering tools from the SIMATIC PCS 7 Engineering Toolset (CFC, HW Config, Technological Hierarchy) and basic and detail configuration tools, e.g. EPlan, ELCAD, or SmartPlant.

Entry ID: [61627479](#)



Adaption of existing PCS 7 Projects for the Use of Advanced ES



This document describes how to adapt an already existing SIMATIC PCS 7 project in order to apply the new PCS 7 type concept (with control module types and control modules) and PCS 7 Advanced ES (AdvES).

Entry ID: [82949027](#)

Advanced Process Control



Configuring of Cascade Control



The project example shows the application of cascade control to a simulated process with one main and one auxiliary process variable. The objective of this application note is to show the issues in configuration of cascade control loops that are particularly relevant to achieve fast dynamics and correct behaviour in all operating modes of real world applications.

Entry ID: [43033319](#)



PID Control with Gain Scheduling and PID Tuning



The objective is fast and tight control of processes with non linear behaviour, which requires different control parameters for each operating point. The application example considered here shows a control loop with PID controller and gain scheduling based on the corresponding process tag type of the SIMATIC PCS 7 Advanced Process Library.

Entry ID: [38755162](#)



PID Control with Dynamic Disturbance Compensation



The objective is fast and tight control of processes affected by strong disturbances. Thereby the disturbances must be known and measurable. The implementation and the potential for improvement in comparison to a conventional PID controller will be shown with the "APL_Example_EU".

Entry ID: [38755516](#)



Control Performance Monitoring (CPM) for Monitoring Control Loops



Control Performance Monitoring (CPM) as a function of SIMATIC PCS 7 Advanced Process Control (APC) enables the permanent automatic monitoring of the performance of control loops of a plant. This gives the plant operator the opportunity to counteract reduced performance with specific measures at an early stage. The configuration example on hand shows the integration of the CPM functionality into a PCS 7 project and the operator view in process mode.

Entry ID: [32486166](#)

Advanced Process Control

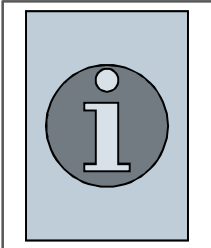


Configuration of the model based predictive controller MPC10x10 for Tennessee Eastman Benchmark Process in SIMATIC PCS 7



In addition to the model based predictive controller ModPreCon for up to 4x4 interacting manipulated and controlled variables the new large predictive controller MPC10x10 for up to 10x10 manipulated and controlled variables is introduced in the context of PCS 7 V8.1. The MPC10x10 not only offers larger variable numbers but also some principally new functions which are introduced in this application note.

Entry ID: [101978659](#)



Further Advanced Process Control Application Examples

You can find further Advanced Process Control Application Examples on the PCS 7 summary page.
www.siemens.de/industry/onlinesupport/pcs7

Entry ID: [63481413](#)

Safety



Wiring and Voting Architectures for ET200M F-DIs and F-Dos



The voting can, for example, be realized in the digital input modules and/or in the CPU. The various possibilities of wiring and voting failsafe signals are illustrated in this Functional Example. Additionally the wiring and voting of failsafe outputs are illustrated too.

Entry ID: [37236961](#)



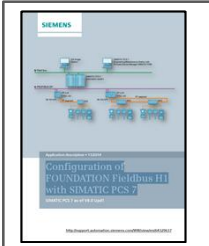
Wiring and Voting Architectures for ET200M F-AIs



The voting can, for example, be realized in the analog input modules and/or in the CPU. The various possibilities of wiring and voting failsafe signals are illustrated in this Functional Example.

Entry ID: [24690377](#)

Communication



Configuration of FOUNDATION Fieldbus H1 with SIMATIC PCS 7



Thanks to the seamless integration of FF technology in SIMATIC PCS 7, you are provided with an ideal standard solution. This application gives you a practical procedure for planning and configuring FF segments in the PCS 7 environment. The application provides a quick introduction to the topic and supports you with numerous step-by-step instructions (Getting Started character).

Entry ID: [64329637](#)

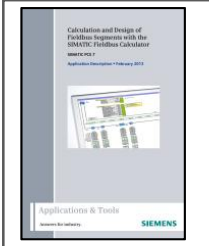


PCS 7 with PROFINET – Typical Architectures and Engineering



With the integration of PROFINET as field bus, SIMATIC PCS 7 supports a great number of technologies for the communication on the field level. The PROFINET, based in the international standards IEC 61158 and IEC 61784, combines the advantages of the open network standard Ethernet and the field bus system PROFIBUS. PROFINET can be used as the only field bus or in combination with the proven PROFIBUS DP for the communication between automation systems and process periphery.

Entry ID: [72887082](#)



Fieldbus Calculator: Calculation & Design of Fieldbus Segments



The successful planning of fieldbus segments requires to find an optimum combination with regard to the area of application, quantity framework and topology. Furthermore, the physical and system-specific requirements and restrictions (number of devices, length of lines, topology) must be taken into account. The SIMATIC Fieldbus Calculator assists the user in the planning and laying out of fieldbus segments.

Entry ID: [53842953](#)



Modbus PtP - Standardized communication with Third-Party Systems



With the fully described Modbus PtP solution for slave as well as master architecture, you can reduce your engineering costs and efforts. You may use them either for new configurations or integrate them in existing projects. All required hardware and software components are Siemens products which, as always, guarantee best compatibility, state-of-the-art technology and upgradability. The PCS 7 standard and the Modbus standard are followed without exception.

Entry ID: [61586633](#)

Communication



Modbus TCP - Standardized Communication with Third-Party Systems



The Application introduce you to a Modbus/TCP library – available in different versions – that allows you to connect third-party systems to PCS 7 via Modbus/TCP. A general description is followed by a configuration example that completely describes the Modbus/TCP client solutions for redundant connection of third-party systems to PCS 7 via Industrial Ethernet.

Entry ID: [75867147](#)

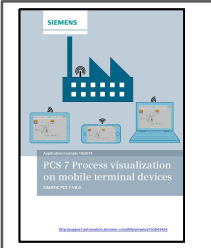


OPC Client Excel Applications for Data Access via OpenPCS 7



Standardized data accesses in Excel applications were realized with the OpenPCS 7 supported OPC DA (Data Access), OPC HDA (Historical Data Access) and OPC A&E (Alarm & Events) specifications. This OPC client Excel applications access PCS 7 OS process data. This solution makes enables data access of superior systems for, e.g. production planning, process data evaluation and management.

Entry ID: [44444703](#)



PCS 7 Process visualization on mobile terminal devices



Thanks to the portability, weight and computing power, smartphones and tablets offer the best conditions for a comfortable and process-oriented operation of the system.

Entry ID: [102843424](#)

Simulation

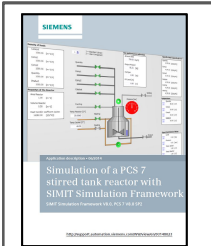


Simulation with SIMIT and SIMATIC PCS 7



SIMIT as central software with graphic user interface, makes it possible to create simulations (without real hardware) in order to test automation software. SIMIT can therefore lead to saving costs and increasing the quality in automation projects. Due to its wide range, SIMIT assists you in every phase of the project. Possible sources of error can therefore be detected at an early stage and can be cost-efficiently removed. Faults can be simulated without any risk for humans or machines.

Entry ID: [77362399](#)



Simulation of a PCS 7 stirred tank reactor with SIMIT Simulation Framework



This application example describes how to use the SIMIT Simulation Framework software to easily and quickly create the required simulation for your PCS 7 project.

A stirred tank reactor is used as a simulated unit. This is based on the "stirred tank reactor" PCS 7 Unit Template.

Entry ID: [93148023](#)



SIMIT Simulation Framework (Video)



The media system offers you comprehensive information, illustrative explanations and numerous general and technical videos on the topic of SIMIT Simulation Framework.

This gives you an opportunity to experience the SIMIT Simulation Framework within a short time and in a comfortable way.

Entry ID: [101298066](#)

Virtualization



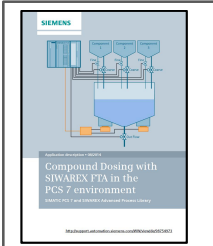
PCS 7 Virtualization

This document provides an overview over the PCS 7 virtualization. Typical configurations on virtualized servers are displayed and measured performance data is represented.



Entry ID: [51975791](#)

Weighing Systems

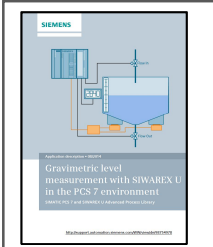


Compound Dosing with SIWAREX FTA in the PCS 7 environment



Dosing operations are often required in process automation. Different methods are used depending on the requirements of the process. In the process industry, a common use of the electronic weighing system is the dosing of one or more substances in a reactor. The following Application Example describes the application of a compound dosage in the PCS 7 environment. Three different components are to be dosed into a reactor according to the recipe. The dosing functions are controlled directly by the SIWAREX FTA.

Entry ID: [98754973](#)



Gravimetric level measurement with SIWAREX U in the PCS 7 environment



In the process industry, a common use of the electronic weighing system is the gravimetric level measurement of a storage silo. This Application Example allows us to describe the application of a gravimetric level measurement in the PCS 7 environment. The level of a storage silo should be monitored during the process.

Entry ID: [98754978](#)

Drives



Configuration of SINAMICS Frequency Converter with Drive ES in PCS 7



This application example describes the procedure for the configuration of a frequency converter of the MICROMASTER 4 and SINAMICS product families. You will be introduced to the solution templates, which are based on the standard functions of the Advanced Process Library (APL) and the Drive ES Library, and which will help you to significantly reduce your engineering requirements, especially in the course of a first integration process.

Entry ID: [58007228](#)



Configuration of motor with the APL Block „FbSwtMMS”



For the integration of the direct starter drives Siemens therefore offers a modern motor channel block „FbSwtMMS”, which is part of the PCS 7 standard library Advances Process Library (APL), allowing for an integration into PCS 7 of all the drives which support the standard profiles of the technical specification „Profiles for Low Voltage Switchgear Devices”.

Entry ID: [64182525](#)

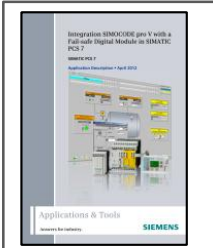


Configuration of Frequency Converters with the APL Block „FbDrive”



For the integration of the frequency-controlled drives Siemens therefore offers a modern motor channel block „FbDrive”, which is part of the PCS 7 standard library Advances Process Library (APL) allowing for an integration of all drives which support the telegram type 1 or 20 into PCS 7. The specifications of the telegram types 1 and 2 are described in detail in the „Profiles Drive Technology PROFIdrive”.

Entry ID: [64181993](#)



Integration SIMOCODE pro V with a Fail-safe Digital Module in PCS 7



This application example shows how a motor in connection with the process control system and a safety system is to be safely shut down safely in compliance with the requirements for SIL 2 and SIL 3 (SIL – Safety Integrity Level, standard: IEC 61508/IEC 62061). The flexible motor management system SIMOCODE pro V with the DM-F PROFIsafe module is used as a drive here.

Entry ID: [58824610](#)

Drives



Integration of a SINAMICS G120 (F version) in PCS 7



As an example of a PROFIsafe slave, a SINAMICS G120 (Failsafe version) is to be linked to an S7-400F CPU in a failsafe way using the new F system library V1_3. The configuration and parameterization of the distributed I/Os is to be carried out with PCS 7 via routing functions.

Entry ID: [35928862](#)

Integration

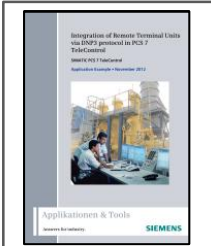


Integration of Comfort Panels, Operator Panels and S7-300 Package Units in SIMATIC PCS 7 with PCS 7 Industry Library



This application provides different standardized options for the integration of S7-300 CPUs and operator panels in a SIMATIC PCS 7 system. The solutions are based on PCS 7 Industry Library V8.0 (IL). The PCS 7 Industry Library provides technological blocks for the control and monitoring of actuators and sensors which are also suitable for operation in S7-300 CPUs (IL for S7), as well as interface blocks, which interact with the PCS 7 APL, for the connection of operator panels (IL for PCS 7).

Entry ID: [50708061](#)



TeleControl: Integration of Remote Terminal Units via DNP3 protocol



Via different telecontrol protocols the remote control center in SIMATIC PCS 7 allows controlling and monitoring of widely distributed remote terminal units (RTUs) via serial or Ethernet TCP/IP communication connections. This compact configuration guideline describes integrating Remote Terminal Units via DNP3 protocol in PCS 7 TeleControl. This guidelines provides you a quick, easy introduction to the topic and helps you to implement a simple project independently.

Entry ID: [60711573](#)

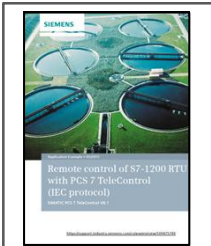


TeleControl: Integration of Remote Terminal Units via ST7 protocol



SIMATIC PCS 7 TeleControl brings the automation of centralized plants and the monitoring of decentrally distributed process areas together in one control room. In the compact configuration guideline describes integrating Remote Terminal Units via SINAUT ST7 protocol in PCS 7 TeleControl. This guidelines provides you a quick, easy introduction to the topic and helps you to implement a simple project independently.

Entry ID: [64196173](#)



Remote control of S7-1200 RTU with PCS 7 TeleControl (IEC protocol)



In this application example, a storm water tank is controlled by an S7-1200 controller and integrated into the high-level control system using PCS 7 TeleControl. The communication between PCS 7 TeleControl and the remote terminal unit is based on the IEC 60870-5-104 protocol.

Entry ID: [109475749](#)

Integration



Integration of third-party Systems with SIMATIC PCS 7/OPEN OS



The SIMATIC PCS 7/OPEN OS option package enables the integration of the following components into the PCS 7 process control system:

- Programmable logic controllers (PLC) from Siemens that do not belong to the spectrum of PCS 7 system components
- Programmable logic controllers (PLC) from other manufacturers
- Controllers from process control systems (PCS, DCS)
- Package units

Entry ID: [49740087](#)



Connecting external periphery to PCS 7 via IE/PB Link PN IO



The application shows how, in an existing system, field devices at a profibus from an external manufacturer can be parameterized via PCS 7 with the Process Device Manager (PDM). The steps for the configuration of the IE/PB Link PN IO on a PCS 7 Engineering Station (ES) are described by in the example of the connection with a PROFIBUS PA device at a SIEMENS DP/PA Link.

Entry ID: [31536572](#)



AS-AS Communication between PCS 7 and Freelance 800F by ABB



In the case of an expansion or modernization of large plants it is necessary that various process control systems are linked to be able to exchange important data quickly and easily. Communication blocks and function blocks are offered for the AS 417-4 in PCS 7 and AC 800F controller in Freelance 800F to realize the data transmission via UDP protocol over Industrial Ethernet.

Entry ID: [39168210](#)

Archiving and Reporting

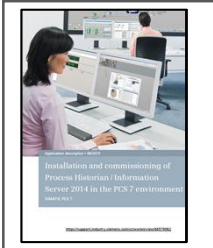


Creating Report Templates for the Information Server



As a long-term archive server for process data the der Process Historian has been available since SIMATIC PCS 7 V8.0. This application describes the basics and the principle of operation of the Process Historian (PH) and of the Information Server (IS). It will be explained in detail how you can create individual reports in order to be able to read out data promptly from the Process Historian database. Furthermore, you will learn how to work with the Process Historian database.

Entry ID: [64906050](#)

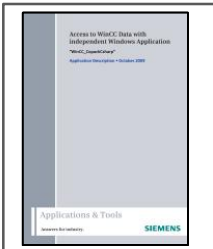


Installing and Commissioning of Process Historian/Information Server



In this Application you can find several instructions around the topic installation, implementation and commissioning of the Process Historian (PH) and the Information Server (IS) within a PCS 7 environment.

Entry ID: [66579062](#)



Export of WinCC / CAS Archive Data using the WinCC OLE DB Provider



The WinCC Runtime database is segmented for WinCC V6.0 and higher. This means that the data is stored in several archive segments (several databases), partly in compressed, binary form. Both WinCC and the WinCC "WinCC Connectivity Pack" option provide the WinCC OLE DB Provider. It enables direct reading of the Tag Logging and Alarm Logging Runtime data. The WinCC OLE DB Provider provides the data from the respective archive segments in decompressed, decrypted form.

Entry ID: [35840700](#)



Fast archiving of process data in SIMATIC PCS 7 with AR_SEND



In order to archive a large number of process values in fast cycles and simultaneously keep the load on the system bus as small as possible, the process data is stored in the AS buffer and sent to the OS in bundles by the S7-400 / WinAC RTX system function block "AR_SEND / SFB 37".

Entry ID: [23780904](#)

Chemistry



Equipment Modules for PCS 7 using the example of the Chemical Industry



This application example contains standardized equipment modules in form of software typicals (process tag types), which are supplied in SIMATIC PCS 7 as a multiproject. The equipment modules supply a template containing the typical components of a partial automation solution, its control, the required logic and the visualization.

Entry ID: [53843373](#)



PCS 7 Unit Template "Fermenter" using the example of the Chemical Industry



This application example refers to the unit of a universal fermenter (bioreactor) for white biotechnology plants which can be integrated in various types of industrial plants. The "Fermenter" unit template offers a model which includes all typical components, ranging from regulation and control over the necessary logistics and interlocking functions up to visualization. Its modular structure is based on standardized equipment modules.

Entry ID: [68098270](#)



PCS 7 Unit Template "Stirred Tank Reactor" using the example of the Chemical Industry



This application example refers to a stirred tank reactor for continuous processes which can be integrated as a unit in various types of industrial plants. The unit template "stirred tank reactor" offers a model which includes all typical components of a stirred tank reactor from regulation and control over the necessary logistics and interlocking functions up to visualization.

Entry ID: [60546560](#)



PCS 7 Unit Template "Distillation Column" using the example of the Chemical Industry



This application example describes a pre-engineered, standardized partial automation solution (template) for the engineering process of a distillation column (unit). The example contains all typical components of a distillation column, its control, the required logic and the visualization.

Entry ID: [48418663](#)

Chemistry

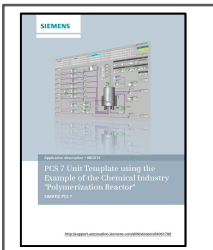


PCS 7 Unit Template "Dryer" using the example of the Chemical Industry



This application example presents a fluidized bed dryer, with which the energy consumption can be optimized by using an MPC (Model Predictive Control) controller. Drying operations require a high amount of energy, which is why optimum and economical drying (as dry as necessary) is the objective.

Entry ID: [74747848](#)



PCS 7 Unit Template "Polymerization Reactor" using the example of the Chemical Industry



The unit template "Polymerization Reactor" provides a template that comprises all typical components, their open- and closed-loop control, the necessary logic and interlocking as well as the visualization. It is modularly structured and based on standardized equipment modules and process tag types.

Entry ID: [84061788](#)

Pharma

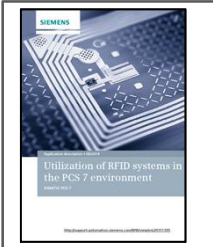


Configuring of Electronic Signatures in SIMATIC PCS 7



This application example supports you in engineering of electronic signature functions. The downloadable ZIP archive contains the installation files. With the installation all necessary files and scripts as well as a demo project are copied onto your computer. In the documentation you will find the description to the demo project as well as step-by-step instructions for configuring of electronic signatures.

Entry ID: [66926225](#)



Application of RFID for Recording and Identification within in the PCS 7 and STEP 7



In the course of this application, the RFID system SIMATIC RF300 is connected to a SIMATIC S7-300/400 controller. This shall illustrate that any process can harmonize with the RFID system. A program library is used which forms the interface between the RFID systems and the application. Generating and operating this RFID library is the main focus of this application.

Entry ID: [29351305](#)



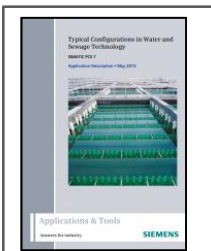
SIMATIC PCS 7 in the pharmaceutical industry “blood plasma fractionation” (demo project)



The Application Example is realized as a SIMATIC PCS 7 multiproject in accordance with ISA-88 and provides a template that comprises all typical components, their open- and closed-loop control, the necessary logic and locking as well as the visualization. It is modularly structured and based on standardized technical functions and process tag types.

Entry ID: [109475708](#)

Water and Wastewater



Typical Configurations in Water and Sewage Technology



This document describes architectures and components of water and sewage treatment technology in its general setup. The hardware configurations in the examples are used for illustration purposes and may differ in real projects. Apart from displaying automation and communication concepts, process tags and drive connections within small plants will also be shown.

Entry ID: [61024766](#)

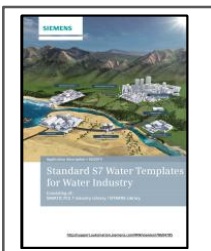


Remote Configurations in Water and Wastewater Technology



This document describes concepts and components of the water and wastewater technology together with telecontrol technology. Telecontrol systems realise the communication between the remote control center and the local outstations for the automation on-site.

Entry ID: [61024137](#)



Standard PCS 7 und S7 Water Templates for Water industry



The standard PCS 7 and S7 Water Templates focus mainly on their use by communal or private system operators in the water industry.

Benefits of using the Standard PCS 7 and S7 Water Templates:

- Cost reduction during planning and configuring
- Standardization through unified program structures
- Life cycle warranty with short maintenance and service times

Entry ID: [78604785](#)



PCS 7 Unit Template - Biological Stage Control of a Wastewater Treatment Plant with Primary Denitrification



The application example "PCS 7 Unit Template - Biological Stage Control of a Wastewater Treatment Plant with Primary Denitrification" is a unit template for water treatment plants, which can be integrated as a plant section in the most diverse urban water management plants. The unit template provides a template that comprises all typical components, their open- and closed-loop control, the necessary logic and interlocks as well as the visualization.

Entry ID: [109478073](#)

Food and Beverage



PCS 7 Unit Template "CIP - Cleaning in Place"



The "CIP" unit template was realized as a SIMATIC PCS 7 multi-project in accordance with ISA S88.01.

The multi-project includes an AS project (user program), an OS project (visualization with process images), and a SIMATIC BATCH facility (production and cleaning recipes).

The AS project was created with Advanced Process Library (APL), BRAUMAT Library, and SIMATIC BATCH modules.

Entry ID: [78463886](#)

Feedback

Your feedback is important to us

Please let us know about your experiences, achievements, but also difficulties you encountered or problems understanding the presented PCS 7 Application Examples.

We would be also happy to receive suggestions regarding missing topics, requests for changes or suggestions for improvement.

You can send your feedback to the following link:

online-support.industry@siemens.com

Thank you very much,

your PCS 7 Online Support team