

SIMATIC PCS 7

SEA Electronics is the first company in Africa to start a new competence group to work on SIMATIC PCS 7 in partnership with SIEMENS

Process Control Systems - SIMATIC PCS 7 V7.0

Overview

SIMATIC PCS 7 system configuration

Totally Integrated Automation with SIMATIC PCS 7

The SIMATIC PCS 7 process control system is a significant component of Totally Integrated Automation (TIA), the unique basis offered by Siemens for uniform and customized automation in all sectors of the production, process and hybrid industries. Using TIA, Siemens is the only company able to offer uniform automation technology on one single platform for all applications of process automation, starting with input logistics, covering production or primary processes as well as downstream (secondary) processes, up to output logistics. This is suitable for optimization of all operating sequences of an entire company, i.e. from the ERP (Enterprise Resource Planning) level and MES (Management Execution System) level to the control level, right down to the field level.

Integrated

in a holistic automation solution for a production site, automation of the primary processes is the prime task of SIMATIC PCS 7. On the other hand, secondary processes (e.g. filling, packaging) or input/output logistics (e.g. raw material distribution, storage) are frequently implemented using the PLC-based or PC-based components of SIMATIC.

The advantages of Totally Integrated Automation, in particular the uniform data management, communication and configuration, are already evident during planning and engineering, but also during installation and commissioning, everyday operation as well as maintenance, repairs and modernization.

Uniform data management means that all software components access a common database. Within a project, inputs and modifications are therefore only necessary at one point. This reduces the work required, and simultaneously avoids potential faults. Once symbolic identifications have been introduced, they are understood by every software component. Data consistency is also guaranteed even if several persons are working simultaneously on a project. Parameters defined in the engineering system can be transferred beyond the network limits down to sensors, actuators or drives in the field.

Uniform communication from the corporate management level down to the field level is based on internationally recognized standards such as Industrial Ethernet or PROFIBUS, and also supports the global flow of information via the Internet. Since the hardware and software components involved also use these communications mechanisms, connections are extremely easy to configure, also cross-system or over different networks.

The use of an engineering system with a uniform and matched range of tools minimizes the configuration overhead. The engineering tools for the application software, the hardware components and the communications functions can be called from a central project manager (SIMATIC Manager). This is also the basic application for creation, management, saving and documentation of a project.

Compatibility of further developments is guaranteed within TIA. This also guarantees that the company's investments have a secure future, and allows the company to modernize and expand the plants throughout the complete lifecycle.

Benefits

With its pioneering design, modular and open architecture based on state-of-the-art SIMATIC technology, consistent application of industrial standards, and the I&C functionality paired with high-performance, the SIMATIC PCS 7 process control system allows cost-effective implementation and economical

operation of I&C plants in all phases of their lifecycle and with consideration of all aspects: from planning, engineering, commissioning, training, through operation, maintenance and repair, up to expansion and refurbishment. In the process, SIMATIC PCS 7 combines high-performance and reliability with simple and safe operation and maximum convenience.

You primarily profit from Totally Integrated Automation with the SIMATIC PCS 7 process control system through:

Calculable
development, implementation and lifecycle costs
Minimization
of engineering overhead
Facilities
for process optimization
Adaptability
to changing requirements
Advantages
resulting from the use of standard SIMATIC components, such as:

Low
hardware and engineering costs
Proven
quality and stability
Simple,
fast definition and selection of system components
Low
costs for spare parts
Short
delivery times for spare parts and expansion components
Global
availability
Savings
in logistics, maintenance and training costs

Function

A consistent and
homogeneous overall system

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PCS 7 is a modern process control system that can be used alone or in combination with other systems, e.g. SIMATIC, SIMOTION or drive systems, as a consistent and homogenous overall system. Its popularity is increasing along with the demand for seamlessly integrated universal automation engineering solutions, which is determined by sustained competition and price pressure, the demand for increasingly flexible production plants and the need for increased productivity.

Against

the background of ever-increasing complexity, in particular due to the merging of automation engineering with information technology, horizontal and vertical integrated system platforms are being increasingly accepted in comparison to automation solutions with so-called "best-in-class products".

Totally

Integrated Automation with SIMATIC PCS 7 combines consistent data management, communication and configuration with outstanding system properties and high performance. This guarantees that the typical demands placed on a process control system are comprehensively satisfied, and that you are perfectly equipped for future requirements:

Simple and
reliable process control
User-friendly
operation and visualization, also using the Internet
Powerful,
fast and consistent system-wide engineering
System-wide
online modifications
System openness
at all levels
Flexibility
and scalability
Redundancy
at all levels
Safety-related
automation solutions
Extensive
fieldbus integration
Flexible
solutions for batch processes
Efficient
control of material transport
Asset
management for I&C equipment (diagnostics, preventive maintenance and
repairs)
Direct
interface with the IT world
Advanced
security concept for safeguarding the I&C system.

Flexibility and scalability

As a result of its modular architecture based on selected hardware and software components from the standard SIMATIC range, SIMATIC PCS 7 can be applied effectively in small and large plants alike. It allows easy expansion or system modification to enable customers to meet the changing production requirements of their facility. SIMATIC PCS 7 is scalable from a small single system consisting of approx. 160 process tags (motors, valves, PID controllers), such as might be used for a laboratory system or a test center, up to a distributed multi-user system with client/server architecture and approx. 60,000 process tags, such as might be used for automation of a very large production plant or for groups of connected facilities.

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PCS 7 thus covers all sizes of plant - and if the plant grows, SIMATIC PCS 7 grows with it!

Open for the future

SIMATIC PCS 7 is based on modular hardware and software components, which are perfectly matched to one another due to their conformance with TIA. These components can be expanded and innovated seamlessly and with little effort and are open for the future via long-term stable interfaces. This makes long-term protection of customer investments possible, despite the fast pace of innovation and short product cycles.

SIMATIC

PCS 7 consistently applies new, powerful technologies together with internationally established industrial standards such as IEC, XML, PROFIBUS, Ethernet Gigabit technology, TCP/IP, OPC, ISA 88 or ISA 95, just to mention a few.

Openness

with SIMATIC PCS 7 covers all levels, and equally applies to automation systems and process I/Os as to industrial communications networks, operator systems or engineering systems.

Not just

system architecture and communication are characterized by openness. This is a feature also evident in the programming and data transfer interfaces for user programs as well as in the import and export functions for graphics, text and data, e.g. from the CAD/CAE world. SIMATIC PCS 7 can therefore also be combined with components from other vendors, and integrated in existing infrastructures.