
Laboratory automation with SIMATIC PCS 7 LAB

SIMATIC PCS 7

Answers for industry.
Greater efficiency in the laboratory

Considerably less overhead

Whether it be in the chemical, pharmaceutical or biotechnology industry, synthetic processes play an important role in the production of substances and materials. In process engineering laboratories, this necessitates numerous experiments and test series to determine the best reaction conditions, suitable catalysts and the best possible parameters for the reaction.

SIMATIC PCS 7 LAB has been designed specifically for the requirements of the laboratory. This laboratory automation system significantly simplifies the continuous execution of tests.

Compact and rugged

SIMATIC PCS 7 LAB is modularly designed and based on proven standard components of the SIMATIC automation system and the SIMATIC PCS 7 universal process control system. Its distributed setup in the sturdy enclosure allows it to be deployed extremely flexibly in a wide range of different environments.

The system comprises five components – the PC module, I/O module, serial module, ET 200pro module, and the power module – and can be installed in any laboratory, taking up very little space thanks to its compact design.
Developing faster and more cost-effectively

The constantly increasing cost pressure means work processes must be flexible, efficient and reliable. The key to success: short development times for processes, high quality, and the reproducibility of results.

Our innovative laboratory automation system operates using the standard system software of SIMATIC PCS 7. This enables you to expand your system without any compatibility problems. As a processing station and thanks to its use of the SIMATIC PCS 7 box module, the PC module combines the following functions: automation, operator control and monitoring, as well as engineering. The I/O stations are based on SIMATIC ET 200M and ET 200pro distributed I/O, which can also be integrated directly into the laboratory equipment thanks to its high degree of protection (IP67). Both systems offer numerous channels (analog, binary) and serial interfaces which you can use to easily connect up, for example, scales and agitators. The individual channels are designed as plug-in connections, a feature that greatly simplifies the task of assembling the laboratory setup.

You can modify or add to the standard configurations of SIMATIC PCS 7 LAB at any time. This ensures you maximum flexibility for the respective application. Due to the fact the laboratory system can be operated both as stand-alone unit and as part of a plant system, laboratories can be integrated in the plant network with ease – to facilitate a highly effective exchange of information.

Other advantages arise from the scalability of SIMATIC PCS 7. Thanks to its structure and the wide range of components available, the process control system is suitable for automating the most varied of types and sizes of plant and it optimizes the acquisition of information in automated process engineering laboratories. In further steps, the applications developed can be transferred to the pilot plant system and later to the production systems. Simple scaling-up to full process quantities brings about significant advantages for users, because every application developed can be implemented without system discontinuities.
High development quality

SIMATIC PCS 7 LAB provides for far greater safety – through reliable monitoring, alerting, and complete and comprehensive logging of the events. As such, the laboratory system fulfills the requirements for certified test and production monitoring. A crucial role in this is played by end-to-end and comprehensive acquisition of data as well as its evaluation and archiving.

Thanks to the significantly improved quality of the information and simultaneously optimized process control, SIMATIC PCS 7 LAB permits a clear increase in efficiency.

Safety – viewed from different angles

The whole idea of development work is to compile reliable and consistent – in other words, verified – information about the behavior of processes. The state-of-the-art and open system architecture of SIMATIC PCS 7 LAB allows this information then to be used for further applications.

During the early phase of the development work, there is quite naturally no complete information available on the behavior of the reaction. SIMATIC PCS 7 LAB reliably measures and monitors safety-relevant parameters. Appropriately configured algorithms then ensure that the test procedure – for example, when temperature or pressure ranges are exceeded – is made safe. This protects the devices and built-on accessories against destruction and, even more important, employees against injury.
SIMATIC PCS 7 LAB at a glance

The automation of laboratories poses special requirements: Time and cost pressures demand a flexible system that monitors and controls the testing process reliably.

Siemens delivers the perfect answer to these requirements in the form of SIMATIC PCS 7 LAB.

Simple
SIMATIC PCS 7 LAB is simple to use: Adding a new measuring point or replacing an instrument does not require an I&C specialist. The system is preconfigured and adjustments – setting the parameters for measuring ranges, for instance – are carried out by the laboratory staff themselves.

Reliable
The automated processing of test series reduces the risk of faulty parameter settings. The comprehensive documenting of the measured values enables economical evaluation of the results. These results in turn result, for example, in optimized control algorithms or multi-variable controllers for cost-efficient operation of your plant.

Optimized
SIMATIC PCS 7 LAB uses components from the SIMATIC family. The open-loop and closed-loop control solutions can be scaled up for application in the technical center, in pilot systems, and in production without any problem. Seamless integration in the process automation functions of the plant is ensured. This opens up new possibilities for optimizing your value-added chain, because the automation methods can be transferred without any problem.

Global support
Siemens offers you 24/7 after-sales support, a hotline manned by experts, and flexible training opportunities. Siemens AG is at home in more than 190 countries around the world, which means we are always close at hand. All this gives you, the user, the assurance of having made the right decision in favor of the automation system that is optimum in all respects.
The information provided in this brochure contains only general 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 the contract.

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