

INU-100
USB Deviceserver

Helix Pflanzen GmbH takes leap into Industry 4.0

Source: Helix Pflanzen GmbH

„Green Automation“ in plant breeding

International competition and constantly changing consumer requirements are presenting industrial companies such as German specialty plant breeder, Helix Pflanzen GmbH, with ever greater challenges. The reliability and efficiency of the production facilities are being questioned. The core of such facilities are usually industrial computers, which are not always state of the art. As in the example of Helix Pflanzen, todays modern process automation controls computer systems and applications that are ten years and older - and is thus reaching its limits. Sooner or later, companies will have to decide whether to replace old, tried and tested industrial computers at a high cost or to continue using them by upgrading them.

The Premise

As part of a modernization project in 2010, Helix Pflanzen GmbH wanted to digitize its long-standing greenhouses. This affected existing serially connected industrial PCs (IPCs) used as climate computers, to which sensors for temperature and humidity levels are attached, as well as actuators, for ventilation and irrigation or for the heating circuit. The climate computers could only be accessed for parameterization from locally connected PCs or client computers. The aim was to integrate the climate computers into the modern server environment and to access the control and monitoring system from remote locations.

Legacy protection for cost-efficient use of high-quality hardware

The company from Kornwestheim was confronted with a typical IT situation: new servers with modern operating systems and current client computers had to replace existing devices during operation. However, the IT managers wanted to leave the current technology connected there, such as irrigation and climate computers, running. They functioned trouble-free and reliably, which made them an important value factor within the overall topology.

Features
INU-100 USB Deviceserver

- USB devices are integrated seamlessly and comfortably
- Access control via a PC/Industrial PC possible
- The use of standard USB devices allows for a cost-effective solution
- Fail-safe and highly available
- The integrated change-over (CO) relay allows for automatic or event-controlled switching
- Fast data transfer with up to 100 MB/s
- The INU-100 ensures highest data security during transmission

Research and Tests

While searching for ways to link the old infrastructure with the new client-server environment, Lothar Idelberger, Managing Director at Helix GmbH, first came across a hardware solution that did not yet meet one of the most important requirements: live monitoring via Teamviewer from remote locations. This, however, did bring with it a system that was openly visible to the outside world. In the event of an alarm or malfunction, an administrator would have had to locate any errors and manually correct them by restarting, because the devices did not always boot up automatically after a system restart. To control this, the administrators would verify this on site. In a further evaluation phase, Idelberger and his team came across products from SEH Computertechnik GmbH in Bielefeld. The combination of the two products proved to be a practical solution: INU-100, a USB device server, and SU-302, a serial-to-USB data converter. The two devices are explicitly designed for use in industrial environments and can be placed in server cabinets using DIN rail mounting. In addition, the combination of USB 3-to-Ethernet (INU-100) and serial-to-USB (SU-302) is an ideal combination for integration of peripherals with a serial interface into an Ethernet-based network and easy management from remote locations.



The INU-100 and SU-302 are made for simple installation in control cabinets via top-hat rail housing.

Such a scenario offers a decisive advantage: the optimal and flexible modernization and adaptation of the production facilities with the lowest possible investment. Resulting in cost savings and the implementation of an „Industry 4.0“, „M2M“ strategy and integration into a modern IT environment with many possibilities for expansion. This creates the basis for future IT and network developments, so that companies remain competitive and the prerequisites for further expansion are present. In the event of expansion, new production facilities or branches can be easily integrated into the centrally controlled and managed concept.

„Our example clearly shows that it is not always necessary to replace the entire computer infrastructure for modernization. Cost-intensive servers and industrial PCs (IPCs) will continue to be used for many years in our switch and server cabinets with SEH products. The essential factor here is the compatibility between old and modern computer systems.“

Lothar Idelberger, Project Manager and Managing Director Helix GmbH

The Results

The short evaluation phase at Helix GmbH was enough to identify the now possible simplification of the required monitoring and administration functions. Like many other companies, Helix GmbH uses a so-called Supervisory Control and Data Acquisition System (SCADA) to control its computer irrigation systems. For efficiency reasons, those responsible rely on Remote Desktop Protocols (RDP). The software runs both on the company's own servers and on outsourced servers - physically as well as on virtual machines. It is often not operated directly on the server itself, but via a panel or client PC in order to control and monitor water supply or ambient temperatures.

As an additional „gimmick", Idelberger's team now has a further advantageous function for monitoring planting systems: the recently awarded „Mobile Green Rooms®", a compact planting system that can be transported quickly and mobile by container construction*.

*Helix GmbH was recently ranked among the Top 100 most innovative companies for their concept „Mobile Green Room®".

Administrators can be informed of the plant systems current status via SMS, even if the systems are installed at different locations, as in the case of the green rooms. By linking the industrial PCs - which perform climate and humidity control tasks - with the communication equipment, Helix GmbH has a future-oriented and scalable network-based IT infrastructure.

Helix Pflanzen GmbH

Helix Pflanzen GmbH, based in Kornwestheim, Germany, is a producer of plants and a manufacturer of planting systems. With integrated concepts for irrigation and nutrient supply, Helix is breaking new ground in greening.
Helix plant systems demonstrably relieve the environment. They bind air pollutants, improve air quality, reduce noise, save energy, protect against wind and air-conditioned buildings.
The associated subsidiary Helix Pflanzensysteme GmbH develops innovative and contemporary plant systems and technologies.

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SEH Computertechnik GmbH

SEH Computertechnik is an innovator for network solutions, primarily in the licensed software/USB management and printing sectors. Founded in 1986 as a custom software and technology company, SEH has evolved to offer professional and secure network solutions for all types of businesses across a variety of industries. SEH adapts its technologies to create unique, highly integrated solutions with exceptional price/performanceratios.

All SEH products are developed and produced at the company's headquarters in Bielefeld, Germany. U.S. headquarters are located in Phoenixville, PA, with offices across Europe, Asia and North America.