

Automation case study

Greenhouse automation

Customer Profile

Inovance recently worked with a leading Indian automation solutions provider on its greenhouse automation offering. The company has been in operation for over ten years, with an excellent track record of steady growth and quality service to its customers. Its vision is to provide the right products, services, and support at the best price to a range of automation customers, including greenhouse operations.

The Challenge

Making growing plants more efficient is a major challenge in light of rising inflation, increasing populations and higher energy costs, as well as growing demand for sustainability, both from customers and legislators. Global demand for food is increasing as the world's population grows, and modern, large-scale greenhouses have an additional challenge in managing an ever-changing inventory of plants. Agricultural companies must track and manage plants throughout the growing process, from sowing seeds to harvesting in order to meet stringent government regulations and ensure a good quality yield. Greenhouse automation is needed to automate traditional manual growing systems, replacing them with remote monitoring and digital control in order to reduce labor and maintenance costs, and providing 24/7/365 oversight of operations.



The solution

After conducting thorough research, the company called in global industrial automation specialist Inovance to provide a complete solutions package. Inovance has a strong product range and provided quality service and support to help the customer overcome the challenges it was facing. The customer chose the H2U PLC with analog I/Os and the IT6070T-INT HMI to meet the requirements of I/Os in automated greenhouses. The system is managed using a Modbus RTU-enabled H2U PLC and Analog I/O functionality to provide smooth operation and management of heat, lighting, CO₂, ventilation, shelter, cooling, humidity, irrigation, and more. Inovance also provided third party IIoT devices for remote monitoring and control of the greenhouse via an Android phone, enabling closer monitoring, and providing instant alerts in case of faults or system failure.

The benefits

In order to deliver greenhouse automation systems for successful growing, the IoT-powered automated control and real-time monitoring of all crop conditions and processes helps maximize the production and quality of the customer's crops. Automating traditionally error-prone manual processes also assists agricultural companies with reducing labor and maintenance costs. By integrating easy-to-use automated controls and remote monitoring systems to run their commercial greenhouse in an efficient and hassle-free manner, greenhouse operators can gain a competitive advantage. In addition, with an IoT-enabled controller, the costs of energy used for lighting, cooling, and heating a commercial greenhouse can be reduced.



Key Benefits

- Temperature accuracy ($\pm 2^{\circ}\text{C}$)
- Humidity accuracy ($\pm 2\%$)
- Automatic light ON/OFF control with RTC
- Auto-schedule system start/stop with set time on RTC based facility
- Monitoring real time data via IIoT based system
- System alarm status update to user/operator

