

Eco²truxure™
Innovation At Every Level

Control Dekk customer story

Innovative automated irrigation system cuts costs,
improves product quality, giving greenhouses
a competitive advantage

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Life Is On

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A profitable commercial greenhouse owner anticipates consumer preferences for the next season and grows large quantities of those plants. Today, people want bigger flowers, better quality and more variety from their floral purchases. This challenges growers to improve product quality without increasing costs.

Consistency improves quality

By watering each hanging basket to its necessary moisture level, plants are uniformly of better quality, leading to higher sales and less waste. Plus, production costs are lower because the process becomes more efficient and water waste is eliminated. The process is simply monitored and documented for evaluating plant quality improvements.

Consistent product quality is important to ensure plants can be sold. This can be especially challenging when dealing with different varieties of flowers. Even identical baskets may not need the same amount of water due to differing conditions by location in a greenhouse. For instance, each basket may be exposed to different air flow, temperature and sunlight, which impacts moisture loss.

Examination of baskets grown using the timed watering method shows that there are often large weight differences between baskets. One test showed basket weights varying from 3 to 6 pounds each, indicating a huge difference in soil moisture. After the OASIS is installed, the basket weights even out after just one pass.

Background

Len Logsdon, owner of control engineering firm Control Dekk, has spent decades designing irrigation systems that help commercial growers improve their operations. In 2014, young entrepreneurial growers and Control Dekk partners Jared and Jordan Dekker wanted to find a better way to water their nursery's 12,500 hanging plants. The Dekker brothers were seeking an innovative way to use automation technology to solve problems with increasing costs and inconsistent product quality.

“Knowing that each basket is going to be watered to exactly the same weight takes a lot of stress off the grower. The grower has the peace of mind that all plants are intelligently watered, so OASIS is an industry game changer. Demonstrating the importance of watering consistency has helped us open some eyes and close some sales. Some people have expressed an audible disbelief of the inconsistent watering happening in their greenhouses. It's been the same situation everywhere we went.”

— Len Logsdon, Owner
Control Dekk



Introduction to a new market

By choosing a Schneider Electric control package, Logsdon has components with plenty of capabilities at a reasonable price, creating high value that is worth the investment. Greenhouses operate on very tight budgets, so it's important to bring value and demonstrate profitable results. Even growers with stationary basket lines have been eager to switch to cable conveyors because the new OASIS system would make the entire investment worthwhile.

“To break into a new market with a totally new product, the system needs to be at a cost level where people are willing to try it. Once they try the OASIS, they fully see its benefits and are willing to invest. To try something new, it requires some confidence in ROI, so the price point is important.”

— Len Logsdon, Owner
Control Dekk

Challenge

Conventionally, many floral baskets are hung from pipes placed throughout the greenhouse. When the grower determines the baskets need water, a valve is activated, watering the entire line for a set time using incorporated drip lines.

Other facilities have cable conveyors from which baskets are hung. When the grower determines that these baskets need water, the conveyor is started. As each basket passes a single watering station, a switch is activated that causes that basket to be watered for a set time.

The problems with these methods have been labor-intensive and inconsistent product quality due to over- or under-watering. Logsdon knew the solution was to design an intelligent, automated irrigation system that could customize watering for each basket based on its individual needs for greater, more consistent yields.





Safety features

To protect the entire system, Logsdon has added an emergency stop button, a power disconnect and breakers from Schneider Electric. While not common in greenhouse applications, this level of safety and component protections reflects Logsdon's commitment to providing a high-performance product without compromise.

"I feel strongly about the safety and protection of the OASIS devices and components. It has added a little cost to the system, but it's the right decision to prevent damage and premature wear. Without it, I wouldn't be comfortable standing behind its reliability."

— Len Logsdon, Owner
Control Dekk

Solution

In 2016, Control Dekk introduced the OASIS automated watering system, which measures and controls basket weight to precisely manage soil moisture and improve overall growing results for hanging baskets.

Logsdon partnered with Schneider Electric to design a watering system that was reliable, simple to operate and cost-effective. Once a grower sets the pre-determined weight desired for plant watering on a Magelis touchscreen, Altivar drives precisely move the cable conveyor lines full of hanging baskets. When the baskets reach the OASIS module, a sensor determines each basket's weight and reports to the Modicon PLC, which opens the proper water valve only for the necessary time to achieve the grower's target basket weight.

The Magelis HMI has an intuitive screen that requires little operator training. After watering, the HMI displays feedback that can help growers evaluate whether to make changes to the line. Vijeo Design'Air software replicates the Magelis display on a mobile or tablet device allowing growers to monitor and control the system remotely. The Altivar 12 variable frequency drives are capable of operating on a 120V power line and can use Modbus for free and simple communication protocol. The Modicon M221 Nano PLC provides high performance and flexibility in a small, modular package. It has enough logic to control multiple conveyor lines in a greenhouse while taking minimal panel space. All panel components are in a non-metallic enclosure that resists rust and protects against the greenhouse environment.

"Having all that control in a small footprint is especially advantageous because greenhouse growers want to keep panels small to avoid blocking sunlight. I can add capabilities without increasing size by easily plugging in analog and digital modules to the PLC."

— Len Logsdon, Owner
Control Dekk



Design support keeps business running

Over the years, Logsdon has consistently used Schneider Electric products, service and support to help grow his business and develop new solutions.

In addition, the Schneider Electric brand name has been beneficial in getting OASIS sales because of its reputation for reliable components.


“Schneider Electric has been more of a partner to me than just another supplier. Technicians spent a lot of time helping me figure out the software for OASIS. If I’d done that alone, it would have taken me so much longer, and I would have been behind schedule. They’ve been generous with their time and responsive when I’ve called for help. If I didn’t have the local support from Schneider Electric, I don’t know what I would have done. I’ve called attention to the Schneider Electric brand quite often because it adds a lot of value to my product. When growers bring their maintenance technicians into the decision making, the choice to buy the OASIS becomes a no-brainer. They know first-hand Schneider Electric has a good product line to work with.”

— Len Logsdon, Owner
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