

Integrated Control Systems



Solutions for Controlling Environments in Research, Biotechnology, Horticulture and Aquaculture

Argus provides **advanced control systems** that are customized to each grower's requirements and adaptable to their changing needs, enabling them to operate their facilities exactly the way they want

No matter what your specialty, Argus can provide a custom control solution for your facility and the crops you grow.

Commercial Horticulture

Argus provides custom control strategies for precision climate management, integrated irrigation control and advanced nutrient injection systems for comprehensive management of commercial greenhouse and nursery production facilities.



Bio-Science

Argus systems provide precision climate control and overall facility management required to meet the rigorous performance specifications of greenhouses, plant growth chambers, and larger growth rooms.

Aquaculture and Aquaponics

Argus systems control and monitor all critical growth and aquatic health parameters including water circulation, temperatures, oxygenation, lighting, pH, and EC. For aquaponics facilities the system provides seamless integration of both terrestrial and aquatic climates.

Conservatories

From jungle houses to alpine meadows to desert houses, an Argus system maintains the optimum environmental conditions and precision irrigation needed to keep valuable collections in peak condition.

Custom Applications

Argus systems can be used in many diverse applications from barometric growth studies to wood drying kilns, and other operations requiring precision control and monitoring.

KNOW YOUR OPERATION

Understand your facility and your growth processes better with comprehensive real-time monitoring and historical trend analysis

An Argus system keeps you informed of every aspect of your controlled environments with real-time feedback and detailed trend histories of measured conditions and events.

Comprehensive Data Acquisition

- Continuously record all settings, readings and crop parameters
- Collect data from advanced sensor systems for measuring light, carbon dioxide, oxygen, fruit loading, moisture, water flow, leachate volumes, spectral reflectance, and photosynthesis
- Review your recorded data in a full featured graphing tool for a deeper understanding of your production environment.

Performance Tracking & Equipment Optimization

- Monitor the activity of each managed device, record equipment on/off cycles, total running times, and set maintenance reminders
- Monitor energy and water use and compare actual performance to your control targets
- Track all user interactions for system security and audit purposes.

Constant Contact

- 24/7 alarm monitoring of all critical conditions with quick detection of any deviations
- Automatic voice and email alerts keep you in touch with your facility wherever you are
- Multiple alarm conditions can be linked to build intelligent alarm models.



BE IN CONTROL

Seamless integration of your facility and all controlled environments provides complete command of your operation

Extreme flexibility in programming capabilities enables you to change control parameters and operational targets so that you can operate your facility exactly the way you want. You are in command with:

- Custom client/server software that enables simultaneous fully-encrypted PC access to the system from local or remote locations
- Password protection that maximizes system security.

The Argus system can seamlessly integrate entire facilities and any combination of greenhouse zones, plant growth chambers, growth rooms, aquaculture containments, vernalization rooms, bulb conditioning, and other specialized environments. Argus also provides:

- Intelligent, demand-based management of central heating/chilling plants and energy distribution systems to ensure operating efficiency
- Fully integrated operation of equipment such as HVAC units, roof vents, curtain systems, lighting, and carbon dioxide dosing systems.



OPTIMIZE PRODUCTION

Optimize production with intelligent control of climates, irrigation, and nutrients

An Argus system helps you steer your crop towards optimum production. The wealth of information captured by the system enables you to make informed decisions and precise adjustments to your operating environment.

Precision Climate Control

- Multi-day temperature averaging options provide precision crop timing and energy savings
- Climate energy balancing algorithms match the heating/cooling demand in response to outdoor conditions
- Coordinated management of shade curtains, ventilation, pad/fan systems, mist/fog, and heating equipment
- Dynamic weather and wind sensitive applications for controlling roof vents and open roof greenhouses
- Global weather programming models for simulating daily light intensities and climate conditions in growth chambers at any location.

Intelligent Lighting Control

- Intelligent management of all lighting equipment types and lighting strategies
- Daily light integral (DLI) management to ensure achievement of target light levels using the least amount of energy
- Advanced control options for LED lighting systems, including instantaneous light intensity control, spectral control, and full-day lighting simulations.

Advanced Irrigation & Fertigation

- Comprehensive control of irrigation systems and application methods
- Control of any type of pump, irrigation valve, flood floor, flood table, or watering boom
- Built-in modeling of water demand, including light accumulation, evapotranspiration, leachate volumes and EC measurement
- Support for all types of moisture sensors and crop water status indicators
- Argus Multi-Feed fertigation equipment manages multiple feed recipes using A/B ratio feeding or single element dosing.

Custom Monitoring Solutions

- Supplemental carbon dioxide control based on crop demand, time, and light levels
- Precision oxygen monitoring and dosing for aquaculture and aquaponics
- Crop status monitoring using load cells, light imagery, and other specialized instrumentation
- Pressure differential monitoring for negative or positive pressure containments.



MINIMIZE RISK

Our robust systems feature greenhouse-hardened components designed for long-life and trouble free operation

With over 30 years of experience, we understand that greenhouses and other engineered bio-production facilities require complex and reliable equipment systems to maintain optimal conditions at all times. As a result, the components of the Argus system are designed for maximum durability - some systems have been in operation for over 20 years.

Back-up and contingency strategies are integral design elements of an Argus system:

- All user programming for controlled environments is stored in non-volatile memory
- All data is backed-up, and in the event of a loss of power, the controllers simply resume operation once power is restored
- To protect equipment and reduce electrical loading, controlled equipment is activated sequentially during the power up sequence.



RELY ON US

Our equipment and our entire organization are designed to provide you rapid response and full support whenever you need it

We partner with you to ensure proper installation, system commissioning, and operator training. In addition to routine assistance, we provide 24/7 after-hours, weekend, and holiday emergency support.

Argus systems feature comprehensive self-monitoring of all control components and communications pathways as well as extensive monitoring of controlled equipment and processes. In the event of emergencies, our flexible alarm annunciation options ensure that problems are detected early, enabling the most prompt response possible.

Our systems are fully designed for remote support, so the location of your facility does not matter. Modular parts ensure easy in-field replacement, and to assure uninterrupted operation, we supply you with a stock of critical spare parts and maintain a deep factory inventory of all standard parts ready for overnight or express shipment. In the event of a system-based issue, manual overrides are provided on most equipment relays to assist in troubleshooting, repairs, and emergency operation.



About Argus

Argus provides advanced control systems that are customized to each grower's requirements and adaptable to their changing needs, enabling them to operate their facilities exactly the way they want.

With over thirty years of leadership and innovation in controls technology, we were among the first to use computers for controlling greenhouse environments and irrigation systems. Today, Argus systems are used by growers throughout the world to control their facilities for horticulture, agriculture and biotechnology research, aquaculture and aquaponics.

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