Your Building Automation Partner

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BUILDING AUTOMATION

Increase Control, Safety, Efficiency

Your facility is the foundational element of your operational strategy, and controlling the physical environment is job one.

A Building Automation System (BAS) monitors and manages all your facility's systems — electrical, HVAC, lighting, security, and more — to create and maintain a safe and productive environment. Implementing an industrial BAS provides tangible benefits, including:

- Increased energy efficiency
- Higher productivity
- Automated, centralized control
- Increased safety and security
- Data-driven decision making
- Reduced maintenance, downtime

All Your Control Systems in One Place, Accessible Anywhere

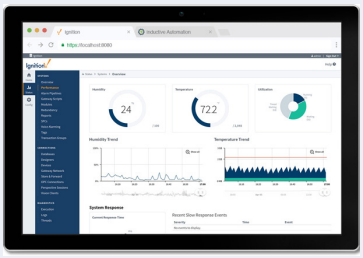
We integrate your separate control systems to create a comprehensive BAS, giving you the power to monitor and maintain your manufacturing conditions on one screen and from any location. Key features and benefits include:

Remote Monitoring and Alarms
Monitor key envrionmental conditions such as temperature, humidity, pressure, vibration, and other metrics, to ensure that your environment is safe and compliant and machinery is operating at maximum efficiency.

Easier Compliance
By integrating multiple systems, BAS automates the process of tracking and reporting against regulatory standards, simplifying what can often be a complex and time-consuming aspect of operations.

Data-Driven Maintenance
Transform equipment data into actionable insights, to implement data-driven maintenance schedules that extend the lifespan of your equipment and optimize efficiency and reliability.

Improve with Analytics
Extensive data collection allows for in-depth analysis. This leads to more effective strategies, whether in resource allocation, maintenance scheduling, or process optimization.



Control and Convenience

PLC-based BAS with SCADA/HMI front end provides control and convenience.

- Seasonal modes of operation
- Use of enthalpy to determine whether outside air can be used for cooling
- Freeze protection sequences
- AHU startup and shutdown procedures
- Modulating fan speeds based on the summation of multiple air flow sensors
- Alarming and sequences based on smoke detectors
- Differential pressure control strategies to maintain positive pressure when doors are opened into controlled areas
- Collection, visibility, reporting, analytics on environmental data

Significant Experience in PLC-Based BAS

We have implemented industrial BAS control systems for some of the world's most demanding end users — including life-sciences facilities that require validated solutions and facilities with high environmental control needs for critical laboratories.

We have worked with a variety of VAV/CV box controllers and have experience specifying and procuring BMS instrumentation. We also have significant experience using Rockwell PLCs for BAS, and we work with other leading vendors such as Aveva, Emerson, Inductive Automation, Schneider, Siemens, and more.

GAMP-Based Methodology

All of our projects are implemented following the InflexionPoint Methodology for Automation and Software. Based on GAMP, our approach ensures that systems are developed with the necessary planning, lifecycle documentation, and testing. Our methodology consists of a set of Quality Management Procedures that describe both Project Specific Validation Activities, as well as General Validation Activities. The project-specific activities of design, implementation, and testing follow a life-cycle development model. In addition, general quality procedures govern activities such as document control, scheduling, training and internal auditing.

Real-World Results

BeiGene
We provided control system design and implementation, instrumentation, installation / wiring / tubing, and startup for BAS and utility controls for a bioprocess manufacturing campus consisting of (6) buildings including GMP operations (drug substance, drug product), labs, warehouse, and office locations. Environment includes (29) AHUs and related equipment (fans, pumps, VAVs, cooling towers, boilers, chillers, unit heaters, distribution of chilled water and steam etc.), as well as facility / utility related systems such as gas detection, deaerators, gas detection, chemical treatment skids, fuel oil systems, and refrigerant monitoring.

SAIC/Leidos – EMS
(2 projects / sites)
Designed and implemented SCADA system based on Rockwell FactoryTalk View, ControlLogix PLC platform and Flex I/O. Over multiple projects we have modified the Rockwell based system to add new environmental monitoring points to monitor temperature and humidity of various rooms, temperature for various freezer rooms, differential pressure for various rooms and corridors and status on common alarms for various scientific equipment across multiple floors of the facility. Also included a user interface with remote pressure monitoring for door interlocking.

University of Pennsylvania
(multiple science buildings / labs)
InflexionPoint has deployed a series of BAS projects focused on the control and monitoring of AHUs for medical school and lab buildings (including electron microscope lab) requiring high levels of accuracy and stability. Control platform is Rockwell. Scope includes instruments, control system hardware and implementation, and installation / wiring services.

Shire
Implemented a BMS system based on a complete Rockwell SCADA and PLC platform solution that provided monitoring and controls for (4) Air Handling Units and associated CV Box controls, (1) RTU, (4) Chillers with distribution loop and (1) Hot Water System with distribution loop. We also implemented a Balance of Plant PLC that provided environmental monitoring for the process area such as room humidity, temperature, status of utility skids, biowaste systems,process water systems, WFI Generation and distribution system, TCM common trouble alarms and some other miscellaneous points.

Emergent BioSolutions
(2 projects / sites)
BAS Automation based on Rockwell platform for (2) fill / finish sites, including a total of (12) AHUs. We also implemented the environmental monitoring system and process automation system.

Federal Facilities
(2 projects / sites)
Developed the unique combination of software needed. Many different features were controlled by BAS: (8) Chillers, (10) CTs, (1) AHU, hydronics, instrumentation, temperature and humidity monitoring, equipment monitoring, utility control, clean steam generation, sterilization, neutralization and biowaste. Also includes full US/DS equipment monitoring (40) skids and processes, complete room monitoring (P+T+H). Having these all seamlessly integrated allows the client to maintain strict conditions in the lab.

Global Life Sciences Company
AHU sequence of operation management is a critical component of this BAS. Also included in these controls is economizer mode, dew point overrides, room temperature and DP control, chiller load balancing, OEM equipment monitoring via BACnet gateways or Kepware server, data historization and custom reports.