Building Automation Systems (BAS)

World's first LON device for optimisation of air distribution in Variable Air Volume (VAV) AHU systems

Unique chiller plant control solution (CPCS) that guarantees best performance and energy saving

Full range of pre-programmed controllers that simplify installation, commissioning, reduces implementation time and ensures proper and energy efficient operation

Our BAS solution

Hardware

We provide a complete HVAC and lighting solution for commercial, institutional and industrial buildings.

Representing multiple product lines utilizing LonWorks and BACnet communications protocols allows us to maintain an objective perspective when designing and implementing solutions for our clients. In addition, this depth of representation allows us to implement transition plans which bring clients forward out of proprietary systems into open systems while protecting their existing investments.

Software

Using our building management software provides the operator with optimum communication between automation and management levels.

A SCADA system-level software is developed from considerable experience in the automation sector to bring benefits to all users, from system integrators to end-users, by minimising investment in familiarisation and training. It can easily be integrated into any Windows application and brings to you real-time viewing and control over your building services.
Highlight 1: Pre-programmed Controllers

We offer a series of open, pre-programmed controllers for virtually every application:

- Fan Coil Unit
- Variable Air Volume (VAV) Terminal Boxes
- Air Handling Units
- Chillers, Boilers & Pumps
- Ventilation Fans
- Lighting Direct Digital Controllers
- General Purpose Direct Digital Controllers
- Motor Direct Digital Controllers

Simplifies installation, commissioning and future expansion, dramatically reduces implementation time ensures proper operation, effectively reduces engineering and maintenance cost, saves time and money for System Integrators, provides reliability and peace of mind to building owners and ensures energy efficient control strategies

Highlight 2: Universal Chiller Plant Control Solution

An application specific LonWorks DDC based system for capacity and lead/lag control of a group of chillers and necessary peripheral equipment. The system is pieced together using specific interactive modules, one for each type of equipment that makes up a chiller plant, and together with duty coordinating modules and a capacity commander module, is able to sequence all related equipment for the proper functioning of the chiller.

FEATURES

- automatically calculates cooling demand from supply/return temperature and the flow rate of chilled water to decide the number of chillers to switch on or off.
- determines next available chiller, pump and cooling tower to turn on or off in sequence to maintain equal running hours and even wear & tear of each piece of equipment.
- modulates bypass valve to maintain differential pressure across supply and return headers. System also works with de-coupling systems without bypass valves.
- eliminates single point failures by having distributed intelligence- each piece of equipment is assigned one DDC- ensuring reliable chiller plant control.

- automatically avoids activating faulty equipment, relying on serviceable equipment to meet calculated cooling demand.
- suitable for all chiller plants piped in common header pipe configuration, even when of quantity of chillers, cooling towers and water pumps are not equal in number (E.g.: in plants with extra standby pumps and or cooling towers)
Our BAS solution - Feature Highlights

Highlight 3: Variable Pressure Regulator

The world’s first Lon device designed to optimise air distribution in Variable Air Volume (VAV) AHU systems and has been proven to greatly reduce energy usage. This is achieved by continually adjusting static air pressure set-points of an AHU as opposed to conventional VAV AHU systems which rely on a fixed static air pressure set-point.

Key Advantages

- AHU fan runs at lower average speeds resulting in more energy savings
- Individual VAV boxes receive ‘just enough’ cooling air flow resulting in more effective cooling in individual rooms
- Cooling demand is met more quickly and efficiently
- Requires no modification of existing hardware beyond installation of the device
- Small dimensions - easy panel mount installation.
- Huge energy savings at low installation cost

The diagram shows comparison of AHU duct pressure when using constant static pressure control method (purple) and UVP-LD (blue).

The initial spike shows how the UVP-LD allowed for higher static pressure to improve cooling/heating response, allowing the space temperature to reach desired set-points sooner than a constant static pressure system is able to achieve. After that, the duct pressure maintained was considerably lower than when controlled with constant pressure method - resulting in huge energy savings without compromising on space temperature.

Real installation testing has revealed that saving of almost 50% on power energy was achieved using variable static pressure regulator instead on standart constant pressure control.

Case study - University Campus

With the HVAC and lighting controls integrated using our LonWorks devices, the University Campus started operations in the last quarter of 2005.

With eight chillers in two chiller plants generating a total capacity 5550 tons, after fine tuning, an energy savings of approximately 20% was achieved in first quarter of 2006 even with the increasing student population.

In addition, using a variable pressure regulator for the Air Handling Units operation, a saving of almost 50% on power energy was achieved using variable static pressure regulator instead on standart constant pressure control.
Building Management Systems is a Green Building systems provider, offering renewable energy solutions and building automation systems for governmental, commercial, industrial, residential buildings and Home infrastructure projects.

Our product portfolio and expertise help our customers and communities in improving their business efficiency, reducing their operating costs, optimizing their energy usage, and ultimately increasing their profitability.

We are taking the lead in transforming the way communities and buildings are designed, built and operated, towards creating Green Building communities, maintaining sustainable built-environment, protecting the ecosystem, and reducing the CO2 emission in our environment.